

**CHARTER TOWNSHIP OF VAN BUREN BOARD OF TRUSTEES  
DECEMBER 16, 2018 WORK STUDY MEETING 4:00 P.M.  
TENTATIVE AGENDA**

**ROLL CALL:**

Supervisor McNamara \_\_\_\_\_  
Clerk Wright \_\_\_\_\_  
Treasurer Budd \_\_\_\_\_  
Trustee Frazier \_\_\_\_\_  
Trustee Martin \_\_\_\_\_

Trustee Miller \_\_\_\_\_  
Trustee White \_\_\_\_\_  
Engineer Potter \_\_\_\_\_  
Attorney McCauley \_\_\_\_\_  
Secretary Montgomery \_\_\_\_\_

**UNFINISHED BUSINESS:**

**NEW BUSINESS:**

1. Discussion on changing the language of the Elected Official's Manual to reflect the Retiree Benefits change effective September 1, 2019 to receiving a Health Care Saving Account.
2. Discussion on Daniel Power's Personal Service Agreement to fill the Planning Director Position.
3. Discussion on the selection of Fishbeck, Inc to provide engineering services in the design and planning phase of the proposed Old Michigan Avenue/Denton Road Water Main Rehabilitation Project not to exceed the amount of \$213,000.

**PUBLIC COMMENT:**

**ADJOURNMENT:**

# Charter Township of Van Buren

Agenda Item: \_\_\_\_\_

Work Study: December 16, 2019  
Board Meeting Date: December 17, 2019

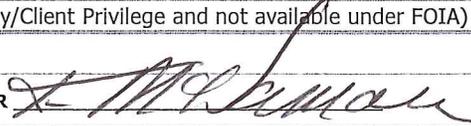
## REQUEST FOR BOARD ACTION

**x Consent Agenda**    New Business    Unfinished Business    Public Hearing

<b>ITEM (SUBJECT)</b>	Elected Officials Manual Retire Benefits Change
<b>DEPARTMENT</b>	Human Resources
<b>PRESENTER</b>	Nicole Sumpter, Human Resource Director
<b>PHONE NUMBER</b>	734.699.8900 ext. 9293
<b>INDIVIDUALS IN ATTENDANCE (OTHER THAN PRESENTER)</b>	Nicole Sumpter, Human Resource Director

### Agenda topic

<b>ACTION REQUESTED:</b>	
Second discussion to change language to reflect the Retiree Benefits changed effective September 1, 2019 to receiving a Health Care Saving account.	
<b>BACKGROUND – (SUPPORTING AND REFERENCE DATA, INCLUDE ATTACHMENTS)</b>	
<p>Previous discussion on changing manual to reflect the change across the board including newly Elected Full Time Officials coming into office after the effective date of September 1, 2019 to receive a Health Care Savings Account. However, the change should not alter any Full time Official elected prior to the September 1, 2019 who has already met the vesting period for the retiree benefits.</p> <p>Full-Time officials elected after the September 1, 2019 effective date that have not vested shall receive the Health Care Saving account annual amount.</p>	

<b>BUDGET IMPLICATION</b>	
<b>IMPLEMENTATION NEXT STEP</b>	
<b>DEPARTMENT RECOMMENDATION</b>	Approval
<b>COMMITTEE/COMMISSION RECOMMENDATION</b>	N/A
<b>ATTORNEY RECOMMENDATION</b>	
(May be subject to Attorney/Client Privilege and not available under FOIA)	
<b>ADDITIONAL REMARKS</b>	
<b>APPROVAL OF SUPERVISOR</b>	

# Charter Township of Van Buren

Agenda Item: \_\_\_\_\_

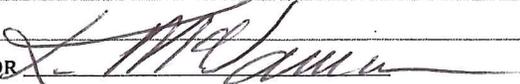
Work Study: December 16, 2019  
Board Meeting Date: December 17, 2019

## REQUEST FOR BOARD ACTION

	Consent Agenda	<b>x New Business</b>	Unfinished Business	Public Hearing
<b>ITEM (SUBJECT)</b>	Personal Service Agreement for Daniel Power			
<b>DEPARTMENT</b>	Human Resources			
<b>PRESENTER</b>	Matthew Best, Public Services Director			
<b>PHONE NUMBER</b>	734.699.8900			
<b>INDIVIDUALS IN ATTENDANCE (OTHER THAN PRESENTER)</b>	Nicole Sumpter, Human Resource Director			

### Agenda topic

<b>ACTION REQUESTED:</b>	
Discuss the approval of Daniel Power's PSA to fill the Planning Director position.	
<b>BACKGROUND – (SUPPORTING AND REFERENCE DATA, INCLUDE ATTACHMENTS)</b>	
<p>Daniel Powers has a Bachelors in Science from Central Michigan University majoring in Environmental Studies and Land Use and a Masters in Landscape Architecture from University of Michigan.</p> <p>All of his experiences leading community events and trainings as an AmeriCorps Community Forestry intern in 2008-09 and with the Greening of Detroit in 2012-13 taught him that healthy communities require resident stewardship. These experiences also taught him how to communicate and educate. With Spicer Group, he provided grant-writing and design of grant-funded recreation projects. He also employed master plan and recreation plan services, zoning ordinances and site plan review for municipalities.</p> <p>Daniel has served as zoning administrator and also facilitate development review in an era of continuing growth for the City. In addition leading 98 Planning Commission meetings and 61 meetings of the Zoning Board of Appeals, and have shepherded over 160 unique development, master plan, or zoning ordinance amendment projects partially or fully through the formal review process. He also received AICP certification during this time.</p>	

<b>BUDGET IMPLICATION</b>	
<b>IMPLEMENTATION NEXT STEP</b>	
<b>DEPARTMENT RECOMMENDATION</b>	Approval
<b>COMMITTEE/COMMISSION RECOMMENDATION</b>	N/A
<b>ATTORNEY RECOMMENDATION</b>	
(May be subject to Attorney/Client Privilege and not available under FOIA)	
<b>ADDITIONAL REMARKS</b>	
<b>APPROVAL OF SUPERVISOR</b>	

# Charter Township of Van Buren

Agenda Item \_\_\_\_\_

## REQUEST FOR BOARD ACTION

WORK STUDY MEETING DATE:  
2019-12-16

BOARD MEETING DATE:  
2019-12-17

Consent Agenda \_\_\_\_\_ New Business X Unfinished Business \_\_\_\_\_ Public Hearing \_\_\_\_\_

<b>ITEM (SUBJECT)</b>	Engineering Services for Old Michigan Avenue / Denton Road Water Main Rehabilitation Project
<b>DEPARTMENT</b>	Public Services / Water & Sewer
<b>PRESENTER</b>	Water & Sewer Director James T. Taylor
<b>PHONE NUMBER</b>	734-699-8947
<b>INDIVIDUALS IN ATTENDANCE (OTHER THAN PRESENTER)</b>	Public Services Director Matthew Best

### Agenda topic

<b>ACTION REQUESTED</b>	
Recommend to the Township Board to approve Fishbeck, Inc. to provide engineering services in the design and planning phase of the proposed Old Michigan Avenue / Denton Road Water Main Rehabilitation Project for a not to exceed the amount of \$213,000.00.	
<b>BACKGROUND – (SUPPORTING AND REFERENCE DATA, INCLUDE ATTACHMENTS)</b>	
See attached memos.	
<b>BUDGET IMPLICATION</b>	To be paid from the Water & Sewer Capital Outlay 592-537-970-000.
<b>IMPLEMENTATION NEXT STEP</b>	Approval by Township Board of Trustees
<b>DEPARTMENT RECOMMENDATION</b>	Board approval of request recommended by Public Services and Water & Sewer Directors
<b>COMMITTEE/COMMISSION RECOMMENDATION</b>	
<b>ATTORNEY RECOMMENDATION</b>	
(May be subject to Attorney/Client Privilege and not available under FOIA)	
<b>ADDITIONAL REMARKS</b>	
<b>APPROVAL OF SUPERVISOR</b>	



## DEPARTMENT OF PUBLIC SERVICES

### WATER & SEWER

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DATE: December 17, 2019  
TO: Township Board of Trustees  
FROM: James T. Taylor, Director of Water & Sewer / Matthew Best, Director of Public Services  
RE: Design & Planning for the Old Michigan Avenue / Denton Road Water Main Rehabilitation Project

Board of Trustees,

The management team of the Van Buren Public Services Department requested a Project Concept Report for the Old Michigan Avenue Water Main Replacement from its engineering consultant Fishbeck (formerly FTCH). This project report is for the replacement of the existing 8-inch cast iron water main along Old Michigan Ave located near VB-06 (Rawsonville) meter pit, including the rehabilitation/reconstruction of Old Michigan Avenue, and the water main crossing of Michigan Avenue at Denton Road. Funds are also available for the rehabilitation of Old Michigan Avenue through the 2019 Local Partnering Initiative (see attachment).

The Public Services management team believes this to be an important and critical project for the following reasons:

1. This project will replace an aging 8" cast iron water main (50 years old) along Old Michigan Avenue that will be providing increased flows and pressures from VB-06 (Rawsonville) through a newly installed bypass at Ecorse and Beck Roads serving the Water Tower.
2. Replace a seriously deteriorated road (Old Michigan Avenue) in coordination with water main replacement minimizing disruption of area access to a single project timeline.
3. Replacing an out-of-service section of water main (Michigan Avenue & Denton Road) to insure positive flows for the entire northwestern service area presently under serious consideration for development, in addition to eliminating a dead end for water quality improvement.

The estimated total cost of the project ranges from \$1.85M to \$2.4M. We are requesting approval of the planning and design phase at a not to exceed cost of \$213,000.00. If approved by the Board of Trustees, this project will begin planning and design phase immediately.

The Conceptual Opinion of Probable Construction and Project Cost have both been included for your review.

#### **MISSION STATEMENT**

*"The Van Buren Public Services Department is committed to a clean and safe environment, enhanced service delivery to its customers and protection of the significant public investment in the township's buildings and grounds, and water distribution and sanitary collection systems."*



Warren C. Evans  
Wayne County Executive

November 5, 2019

Supervisor Kevin McNamara  
Van Buren Township  
46425 Tyler Rd  
Van Buren Twp., Michigan 48111

**RE: 2019 Local Partnering Initiative for Township Roads**

Dear Supervisor McNamara:

Wayne County Department of Public Services - Engineering Division would like to notify you of the continuation of the *local Partnering Initiative* program for fiscal year 2019/20. The County will allocate funds to repair, resurface or reconstruct existing local township residential roads under Wayne County's Jurisdiction.

We will make available \$375,000.00 to Van Buren Township to fund this initiative. The township has approximately two years from execution of an intergovernmental agreement (IGA) with Wayne County to utilize the allocated funding. To qualify for project reimbursement, your township must match at least 20% of the total cost of a project with local funding. Wayne County will fund up to 80% of the project costs capped at the amount available.

Construction administration and design must be performed by a qualified engineer and paid for by the township. Wayne County will not reimburse for administration and design cost. Contracts for all construction work will be advertised, bid and awarded by the township. Copies of each agreement executed between the township and the contractor shall be provided to us. All design and construction work must be approved, permitted, and inspected by the Wayne County Department of Public Services - Engineering Division.

Funds cannot be provided in advance of project completion, the Township will be reimbursed for project costs up to the amount approved in the intergovernmental agreement (IGA). Work shall not commence until the IGA is fully approved and executed. After project completion, the Township shall timely submit invoices, waivers of lien and other required documentation by mail to **Wayne County Department of Public Services - Engineering Division, 400 Monroe, 3rd Floor, Detroit, MI 48226.**

Thank you for your cooperation.

Sincerely,

Beverly J. Watts, Director  
Department of Public Services

cc: Commissioner Haidous, District 11  
Genelle Allen, Chief Operating Officer  
Andrew Kandrevas, County Executive's Office  
Elmeka Steele, DPS  
Ronald Agacinski, DPS

Department of Public Services · Administration Division  
400 Monroe, 3rd Floor, Detroit, Michigan 48226 · (313) 224-7373 · Fax (313) 224-2609

November 8, 2019  
Project No. 191456

Mr. James T. Taylor  
Director of Water and Sewer  
Charter Township of Van Buren  
46425 Tyler Road  
Van Buren, MI 48111

Re: Project Concept Report – Old Michigan Avenue/Denton Road Watermain Loop Rehabilitation

Dear Mr. Taylor:

As part of the ongoing Professional Engineering Service Agreement with Van Buren Township (Township), Fishbeck has been asked to develop the following Project Concept Report (PCR) for the replacement and upgrade to the water system in the high-pressure district (NW quadrant) of the Township. More specifically, the replacement of the existing 8-inch/12-inch water main along Old Michigan Avenue and under Michigan Avenue near Dellor Road and the reconnection of the 12-inch water main crossing under Michigan Avenue at Denton Road. With the replacement of the water main under Old Michigan Avenue and Michigan Avenue, the Township has requested that Fishbeck investigate alternatives for rehabilitating the roadway, which has deteriorated to substandard conditions over the years.

The analysis and recommendation for the water main upgrade is based on the Township Water Model that Fishbeck recently calibrated and has been continuously adjusting by utilizing live flow tests. Limited field investigations were done, however, discussions with the Township personnel have outlined a basic history of both the water main issue and roadway conditions. Fishbeck has developed a conceptual project cost estimate, which includes construction costs, design services, and construction engineering services for the construction of the 12-inch water main upgrade along Old Michigan Avenue and under Michigan Avenue near Dellor Road, the resulting Old Michigan Avenue pavement rehabilitation, and the 12-inch water main crossing under Michigan Avenue at Denton Road.

## Statement of Understanding

There are multiple factors contributing to the need to upgrade the high-pressure district of the Township Water System. First, the Township discovered sections of water main that were previously thought to have been replaced and upsized, were not constructed as designed. At the time of construction, it was determined the existing stretch of water main along Old Michigan Avenue and under Michigan Avenue near Dellor Road would have enough capacity for future development and would not need upsizing, however, with the expanding commercial and industrial development in this district, capacity and reliability need to be upgraded.

The second factor, which contributes to the lack of reliability, is with the crossing of Michigan Avenue at Denton Road. The current system, as indicated on the Township GIS, once had a 12-inch water main crossing Michigan Avenue, creating a looped system for the high-pressure district. This loop not only created redundancy for the customers, but it also created higher pressures for the system in general. Unfortunately, during some previous private utility work within the Michigan Avenue right-of-way (ROW), the existing 12-inch main was damaged by traffic signal drilling operations, causing the water main break. At the time, the crossing was isolated and shut down, until the Township eventually decided to permanently sever and cap the crossing, rather than repair the broken main.



Currently in 2019, as the Subaru Research and Development campus is finishing utility construction and other vendors are showing interest in this district of the Township, it is imperative to repair and upgrade these water system deficiencies before they become a larger issue.

The final portion of the work Fishbeck investigated is the existing roadway and pavement condition of Old Michigan Avenue between Rawsonville Road and US-12. The existing partial asphalt roadway is severely damaged with countless number of potholes, spot repairs, and even some concrete patch work; with the shoulder often being indiscernible from the roadway due to lack of a pavement edge. The years of patches have overtaken the majority of the roadway with much of the pavement now looking more like aggregate than asphalt.

### Existing/Proposed System Evaluation

The evaluation of the existing water supply system first began during the design phase of the Subaru Research and Development project, formerly Smith Farms. At that time, the Subaru site design engineer indicated that a fire flow of 3,500 gpm was required to meet the system needs of the building. Due to the severed main at the Denton Road crossing, this pressure demand could not occur without the following adjustments to the existing system:

- The Subaru design needed to add a new connection across Michigan Avenue, looping the system between Subaru and Old Michigan Avenue, tying the low-pressure district to the high-pressure district by way of a 12-inch water main.
- The Township would increase the pressure from the PRV at Meter VB-6 from 53 psi to 58 psi.

#### Existing System (prior to any improvement)

VB-6 PRV Setting (psi)	Available Fire Flow at Smith Farms (gpm)	Pressure at High point of Northwest District (psi)	Pressure at Low point of Northwest District (psi)
53	963	51.2	64.0
57	974	55.2	68.0
58	977	56.2	69.0
65	1,023	63.2	76.0

#### Proposed System (12-inch loop from Subaru to Old Michigan Avenue)

VB-6 PRV Setting (psi)	Available Fire Flow at Smith Farms (gpm)	Pressure at High point of Northwest District (psi)	Pressure at Low point of Northwest District (psi)
53	3,321	51.2	64.0
57	3,456	55.2	68.0
58	3,503	56.2	69.0
65	3,768	63.2	76.0

During the construction of this 12-inch water main loop between Subaru and Old Michigan Avenue, a differing condition required a reevaluation of the system. The existing water main being tied into at Old Michigan Avenue was not a 12-inch line as shown on the Township GIS, but rather an 8-inch water main. The differing pipe size required the 12-inch loop line to be reduced to an 8-inch line at the connection point. The change did not, however, negatively affect the Subaru fire suppression as they had adjusted their system to a foam-based suppression and only 600 gmp was required.



Upon further investigation of the system along Old Michigan Avenue, it was discovered that the entire water main along the roadway, from Rawsonville Road to US-12 was in fact only an 8-inch water main, as previously noted in the Statement of Understanding.

After discovering the above referenced differing existing conditions and accounting for the new 12-inch loop from Subaru, the water model was adjusted, and the following flow data was determined:

**Existing System (as of 9/2019): 8-inch water main along Old Michigan Avenue**  
*Crossing of Michigan Avenue at Denton is NOT connected.*

VB-6 PRV Setting (psi)	Available Fire Flow at Smith Farms (gpm)	Pressure at Smith Farms (psi)
60	2,068	63.1
65	2,155	68.1
70	2,284	73.1

**Proposed System: 12-inch water main along Old Michigan Avenue**  
*Crossing of Michigan Avenue at Denton is NOT connected.*

VB-6 PRV Setting (psi)	Available Fire Flow at Smith Farms (gpm)	Pressure at Smith Farms (psi)
60	3,566	63.7
65	3,741	68.7
70	3,953	73.7

As indicated in the above tables, increasing the size of the water main along Old Michigan Avenue will substantially increase the flow along the newly constructed 12-inch main. This will allow for future expansion on the system without negatively impacting others in the area. Replacing the Old Michigan Avenue water main provides an opportunity to replace the encased 8-inch water main crossing under Michigan Avenue at Dellor Road. Even though upsizing the water main at this location will not provide higher flows through the system near the Subaru property, it will provide a reliable crossing and connection point for future water main replacement along Dellor and Mott. Additionally, the condition of the existing crossing is unknown, and the added pressure created by the upgraded Old Michigan Avenue water main could cause future issues.

Not indicated in the tables above is the affect the repair to the disconnected loop under Michigan Avenue at Denton Road will have on the system. The reconnection will not increase flow to the area of the Subaru loop, but will increase the flow to the water mains along Mott Road and Dellor Road, and more importantly will create a redundancy to all the customers within this area. Without this redundancy, in the event of a water main break, customers in this part of the system could potentially be without service or have limited service while a repair is completed.

To repair the disconnected loop at Denton Road, Fishbeck investigated directionally drilling a new 12-inch water main under Michigan Avenue just West of Denton Road and connecting back to the existing main on the North and South side of Michigan Avenue. A graphic of this is indicated on Exhibit C.

### Old Michigan Avenue Rehabilitation

As noted earlier in this report, preliminary investigations of Old Michigan Avenue have shown that the existing roadway has severely deteriorated. Drainage concerns have also been observed which could be a factor in the deterioration of the pavement. Because of these conditions and the need to replace the existing water main, the



Township has asked Fishbeck to investigate possible strategies to rehabilitate Old Michigan Avenue while replacing the water main. See Exhibit D for Old Michigan location and project limits.

Several different roadway rehabilitation and water main replacement options were evaluated; hot mix asphalt (HMA) pulverizing with pipe bursting, and partial or full reconstruction of the roadway with open cut water main replacement. It was determined that the most practical and cost-effective option was to partially reconstruct the roadway and replacing the water main by open cut construction methods.

Partially reconstructing the roadway would involve removing the existing pavement course, leveling the existing aggregate course with new aggregate and placing a multi-layer HMA course. Exhibit E shows a typical road cross section for partial reconstruction. Drainage ditches or an enclosed storm system will be constructed, and existing ditches will be cleaned out to provide positive drainage away from the roadway and surrounding properties to a positive outlet.

## Scope of Services

With the above listed issues to both the water main system and the condition of Old Michigan Avenue, Fishbeck anticipates the following work necessary to complete the project. This work includes, but is not limited to:

- Directional drilling approximately 300 feet of 12-inch HDPE/PVC water main across Michigan Avenue and Denton Road. Open cut connections to both existing mains, install valves, test, and put in service.
- Directional drilling approximately 200 feet of 12-inch HDPE/PVC water main across Michigan Avenue near Dellor Road. Open cut connections to the existing mains, install valves, test, and put in service.
- Open cut and remove approximately 2000 feet of existing 8-inch cast iron water main and replace with 12-inch ductile iron pipe. Open cut work will consist of installation of hydrants, valves, and reconnection of service lines as necessary. Reconnect all other mains and update any connections as necessary.
- Remove the existing HMA surface along Old Michigan Avenue between Rawsonville Road and Michigan Avenue. Regrade and top with aggregate, pave with a multi-layer HMA course, and regrade shoulders. Driveways, mailboxes, and any other roadway features within the construction zone will be removed, salvaged, and/or replaced.
- Existing drainage improvements will include incorporating underdrains, culvert replacements, and ditch cleanout, as necessary. Problematic areas will be determined, and additional improvements will be integrated.
- For all disturbed areas, regrading, turf establishment and landscape repair are anticipated to finalize the work.

In addition, the following items have been included as part of the design services and construction engineering services fee estimate:

### DESIGN SERVICES PHASE

- Survey Services: Topo survey, utility investigation including WTUA and YCUA sanitary forcemains.
- Plans and Specifications: Construction plans and specifications, permits (Wayne County, Michigan Department of Transportation (MDOT) ROW), submittals and reviews.
- ROW Services: Plat determination, easement research, proposed and temporary easement descriptions/exhibits.
- Bid and Procurement Assistance: Provide construction docs, pre-bid meeting, bid tabulation, and recommendation.



**CONSTRUCTION ENGINEERING SERVICES PHASE**

- Construction Engineering: Submittal review and field design, adjustments, and evaluation.
- Contract Administration: Progress meetings, contract pay apps and project closeout coordination.
- Construction Observation/Inspection: Construction inspection and observation, shop drawing review, change orders and punch lists.
- Construction Staking and As-Built: Construction staking and preparation of record drawings.
- Coordination of Material and Density Testing.

**SUBCONSULTANT FEES**

- Geotechnical Soils Report and Recommendations.
- Geotechnical Material and Density Testing.
- ROW Research, Title Research, Easement Acquisitions.

**Cost Analysis**

A detail of known costs, fees and assumptions/exclusions as part of the overall Conceptual Opinion of Probable Project Cost breakdown for the construction of the Old Michigan Avenue/Denton Road Watermain Loop Rehabilitation Project is attached, see Exhibit A. The Conceptual Opinion of Probable Construction Cost is also attached, see Exhibit B. A summary breakdown for the design and construction services plus construction costs is as follows:

<u>Old Michigan Avenue/Denton Road Watermain Loop Rehabilitation</u>	
I. Construction Cost Estimate (Contingency Included)	\$1,553,500
II. Design Services Fee	\$107,000
III. Construction Engineering Services Fee	\$133,000
IV. Other Fees (Subconsultant, ROW, Administrative)	\$55,500
<b>Conceptual Opinion of Probable Project Cost</b>	<b>\$1,850,500</b>

**ASSUMPTIONS/EXCLUSIONS**

The following assumptions/exclusions were made while developing the Conceptual Opinion of Probable Project Cost:

- There will be some fees associated with the work outside of the established right-of-way (ROW). Some permanent easements, as well as temporary easements due to drilling operations and construction staging.
- Only minimal work will need to be done to pavement areas on surrounding roadways, intersections, and drives.
- Driveways will be paved to the ROW only.
- Topographic survey will be included as part of the design fee.
- All disturbed grass/turf will be reestablished with topsoil, seed, fertilizer and mulch.
- No other utility work outside of that scoped, due to conflicts or not, is included.



## Project Additions and Variables

Through discussions with the Township and initial investigations of the project, Fishbeck has developed a conceptual engineering solution that improves the water service in the Northwest District and rehabilitate an unsatisfactory roadway within the Township. However, it should be noted that until a full topographic survey, a more in-depth utility investigation, and an existing system evaluation are completed, the estimated scope and project costs are subject to change. Before knowing the full scope of potential issues, as well as governmental agency requirements, unforeseen costs can accrue. Unknown underground conditions, both soil and utility conflicts, can change the scope of the project during the design phase and during the construction phase.

It should also be noted that without initial classification of stockpiled and subgrade material, soil boring reports, and discussions with Wayne County, the proposed HMA removal and overlay solution may not meet the requirements of the county and a full reconstruction could be required. A full reconstruction would require a significant amount removal and replacement of the aggregate base, as well as potential for subgrade undercutting.

The Township also mentioned that during the construction of the gas station in the Northeast (NE) quadrant of Denton Road and Michigan Avenue, contaminated soils were previously discovered. Depending on final design of the water main, an environmental assessment may be required to determine the level of effort in constructing the water main in this quadrant.

Another issue is the water main cap along Denton Road, north of Michigan Avenue. The exact location of where the water main was capped in order to sever the water main under Michigan Avenue is unknown. Depending on the location on the cap, additional costs could accrue.

Any additional work to the area will impact the cost of design, but more likely, the overall cost of construction. For this reason, Fishbeck has developed a "Cost Ranging" model that will help the Township understand the possible cost range of the project through the design process. The following items summarize the examples of possible additional work that may be necessary:

- Utility conflict resolution and relocation.
- Water system updates based on investigation and final model analysis.
- Additional ROW and/or easements costs/fees.
- Roadway design for County standards.
- Environmental impact assessment mitigation.
- Determination of positive drainage outlet.

All changes to the scope of work and impacts due to these unforeseen issues will be discussed with the Township prior to final decisions being developed. Based on these variables, the following Cost Range has been estimated:

I. Construction Cost Estimate Range	\$1,553,500 – \$1,886,000
II. Design Services Fee Range	\$107,000 – \$128,000
III. Construction Services Fee Range	\$133,500 – \$165,000
IV. Other Fees (Subconsultant, ROW, Administrative)	\$55,500 – \$85,000
<b>Total Conceptual Project Cost Estimate</b>	<b>\$1,850,500 – \$2,264,000</b>

The above Conceptual Cost Range of **\$1,850,500 – \$2,264,000** can be assumed for all aspects of the project, including conceptual design and construction phase services and estimated construction cost.



Mr. James Taylor  
Page 7  
November 8, 2019

### Township Acknowledgements

We appreciate the opportunity to provide assistance to the Township to develop a resolution to improving the Township water system, as well as the necessary improvements to Old Michigan Avenue.

If you have any questions or require additional information, please contact Paul Kammer, PE at 248.324.2137 ([pjkammer@ftch.com](mailto:pjkammer@ftch.com)), or David Potter, PE at 248.320.5819 ([dpotter@ftch.com](mailto:dpotter@ftch.com)).

Sincerely,

FISHBECK, THOMPSON, CARR, & HUBER, INC.

Paul J. Kammer, PE

David L. Potter, PE

ag2  
Attachments  
By email



**Denton Rd and Old Michigan Ave Water Main Reconstruction**  
**CONCETPTUAL OPINION OF PROBABLE PROJECT COST**

**Exhibit A**

PROJECT NAME: Denton Rd and Old Michigan Ave Water Main Reconstruction  
 CLIENT NAME: Van Buren Township  
 PREPARED BY: Mike Leppek

PROJECT NO: 191456  
 DATE: 11/8/2019

CHECKED BY: Paul Kammer

Construction			
A	Construction (Engineer's Estimate)	\$	1,350,000.00
B	Contingency (15%)	\$	203,000.00
I	TOTAL ESTIMATED CONSTRUCTION COST	\$	1,553,000.00
Design			
A	Design & Plan Production		\$107,000
II	TOTAL DESIGN COST	\$	107,000.00
Construction Engineering			
A	Construction Contract Administration (CCA)	\$	27,000.00
B	Engineering Assistance (EA)	\$	6,800.00
C	Construction Observation	\$	87,800.00
D	Construction Staking & As-Built Drawing Preparation	\$	13,400.00
III	TOTAL CONSTRUCTION ENGINEERING COST	\$	135,000.00
Subconsultant Engineering			
A	Geotechnical Soils Report and Recommendations	\$	20,500.00
B	Geotechnical Material and Density Testing	\$	20,000.00
IV	TOTAL SUBCONSULTANT ENGINEERING COST	\$	40,500.00
Rights-of-way (Fee Simple, Easements, etc.)			
A	Right-of-way Document Preparation (Varies)	\$	2,500.00
B	Right-of-way Acquisition/Negotiation (Varies)	\$	2,500.00
C	Condemnation (varies)		N/A
D	Cost of Real Estate (Varies)		N/A
E	WC DPS Rights-of-way Permit/Inspection Fees (Varies)	\$	10,000.00
F	WC Drain Permit Fee		N/A
V	TOTAL COST FOR RIGHTS-OF-WAY / PERMITTING	\$	15,000.00
VI	TOTAL CITY LEGAL COST (EXCLUDING CONDEMNATION & BONDING)		N/A
VII	TOTAL CITY ADMINISTRATIVE COSTS (Cost Included in City's General Budget)		N/A
<b>CONCEPTUAL OPINION OF PROBABLE PROJECT COST</b>		<b>\$</b>	<b>1,850,500.00</b>

## Conceptual Opinion of Probable Construction Costs

EXHIBIT B

Fishbeck, Thompson, Carr &amp; Huber, Inc.

Project: Van Buren Township - Old Michigan Avenue/Denton Road Water Main Loop Rehabilitation  
 Location: Denton Road and Michigan Avenue and Old Michigan Avenue and Rawson Road  
 Work: Water Main Construction and Road Rehabilitation  
 Submittal: Conceptual Construction Cost Estimate

Date: 11/8/2019  
 Project No. 191456  
 Estimator: ML2  
 Reviewer: PK2

ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL QTY	UNIT PRICE	TOTAL
<b>General</b>					
1	Bonds, Insurance, and Mobilization	LS	1	\$100,000.00	\$100,000.00
2	Preconstruction Audio-Visual Documentation	LS	1	\$4,000.00	\$4,000.00
3	Maintenance of Traffic	LS	1	\$25,000.00	\$25,000.00
<b>General Subtotal:</b>					<b>\$129,000.00</b>
<b>Water Main Reconnection Under Michigan Avenue at Denton Road</b>					
4	Road Section Remove	SYD	40	\$25.00	\$1,000.00
5	Water Main, 12 inch, Directional Drill	FT	300	\$350.00	\$105,000.00
6	Water Main, 12 inch	FT	90	\$150.00	\$13,500.00
7	Water Main, Live Tap	EA	1	\$3,000.00	\$3,000.00
8	Gate Valve and Well, 12 inch	EA	2	\$7,500.00	\$15,000.00
9	Water Main Cap, Remove and Connection to Existing	EA	1	\$3,000.00	\$3,000.00
10	Pavement Restoration	SYD	40	\$100.00	\$4,000.00
11	Restoration	SYD	250	\$15.00	\$3,750.00
<b>Task 1 Subtotal:</b>					<b>\$147,250.00</b>
<b>Water Main Replacement and Pavement Rehabilitation of Old Michigan Avenue</b>					
12	Culv, Rem, Less than 24 inch	EA	2	\$1,000.00	\$2,000.00
13	Gate Valve and Well, 12 inch	EA	3	\$7,500.00	\$22,500.00
14	Hydrant Assembly	EA	6	\$6,000.00	\$36,000.00
15	Water Main, 12 inch, Directional Drill	FT	210	\$350.00	\$73,500.00
16	Water Main, 12 inch	FT	2060	\$150.00	\$309,000.00
17	Drainage Improvements (Ditching or Enclosed System)	LS	1	\$150,000.00	\$150,000.00
18	Underdrain, 6 inch	FT	2350	\$12.00	\$28,200.00
19	Culv, Cl A, 12 inch	FT	75	\$120.00	\$9,000.00
20	Clearing, Ditch	FT	750	\$10.00	\$7,500.00
21	HMA Surface, Rem	SYD	8600	\$2.00	\$17,200.00
22	Aggregate Stockpile, Transport and Grade	SYD	8100	\$2.50	\$20,250.00
23	HMA Pavement (4.5")	TON	2000	\$175.00	\$350,000.00
24	Mailbox	EA	14	\$250.00	\$3,500.00
25	Sign	EA	2	\$500.00	\$1,000.00
26	Restoration	SYD	5500	\$5.00	\$27,500.00
<b>Task 2 Subtotal:</b>					<b>\$1,057,150.00</b>
<b>TOTAL CONCEPTUAL CONSTRUCTION COST ESTIMATE</b>					<b>\$1,350,000.00</b>

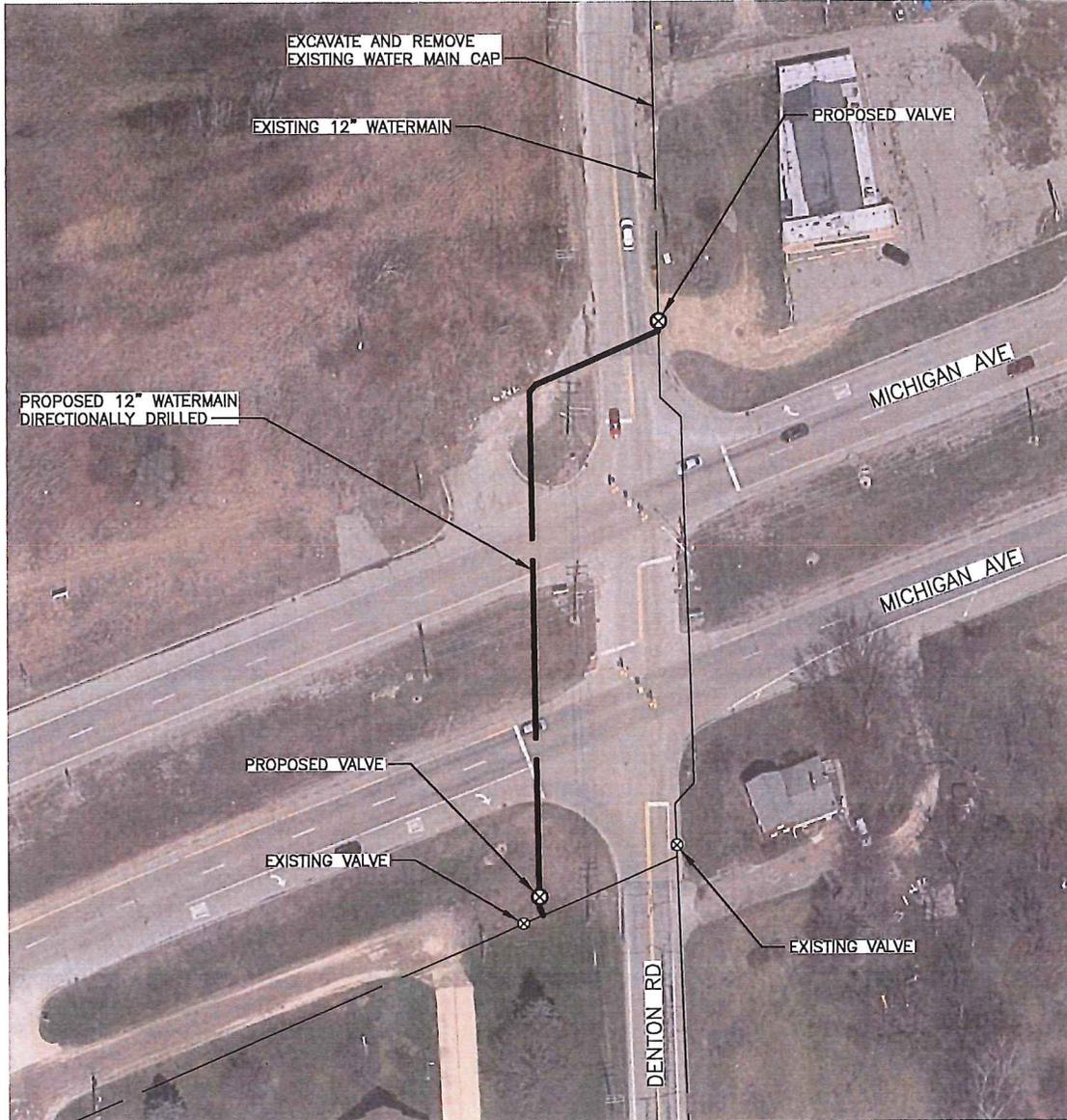
*In providing opinions of probable construction cost, the Client understands that the Consultant has no control over the cost or availability of labor, equipment or materials, or over market conditions or the Contractor's method of pricing.*

*The Consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience.*

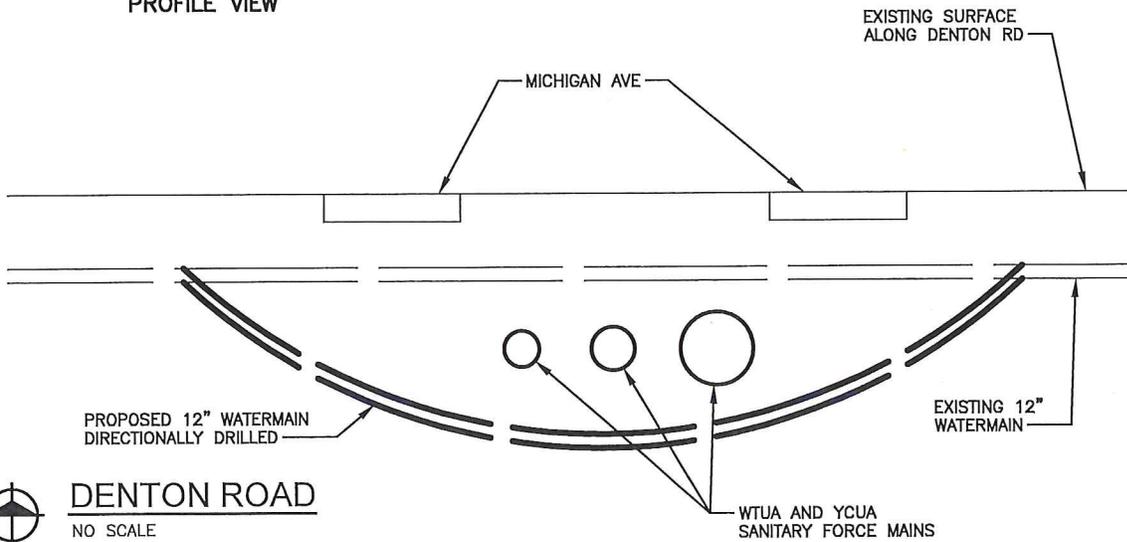
*The Consultant makes no warranty, expressed or implied, that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.*

PLAN VIEW

EXHIBIT C



PROFILE VIEW



**DENTON ROAD**  
NO SCALE

WTUA AND YCUA  
SANITARY FORCE MAINS

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any other size.

**Charter Township of Van Buren**  
Van Buren Township  
**Denton Road and Old Michigan Water Main Reconstruction**

11/8/2019

PROJECT NO.  
191456

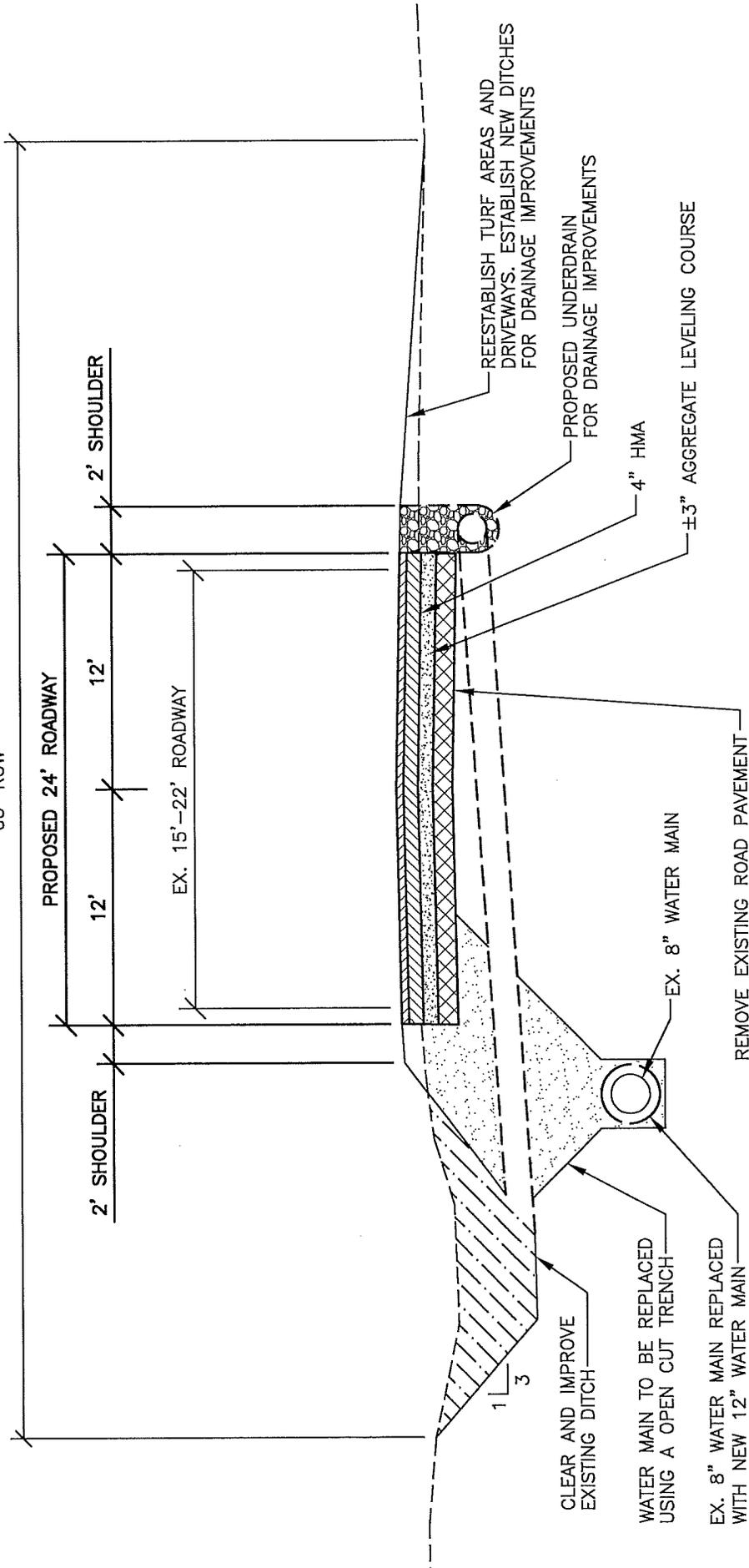
FIGURE NO.

**C**



OLD MICHIGAN AVENUE  $\phi$   
66' ROW

EXHIBIT E



OLD MICHIGAN AVENUE PROPOSED TYPICAL  
NO SCALE

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**Charter Township of Van Buren**  
Van Buren Township  
Denton Road and Old Michigan Water Main Reconstruction

11/8/2019

PROJECT NO.  
191456

FIGURE NO.





## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019

### Denton Rd and Michigan Ave Water Main Crossing Photos



Photo No. 1: Northeast Quadrant of Michigan Avenue and Denton Road Intersection Existing Conditions, Looking Southwest



Photo No. 2: Northwest Quadrant of Michigan Avenue and Denton Road Intersection Existing Conditions, Looking East

11/08/2019

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## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019



Photo No. 3: Northwest Quadrant of Michigan Avenue and Denton Road Intersection Existing Conditions, Looking South



Photo No. 4: Southwest Quadrant of Michigan Avenue and Denton Road Intersection Existing Conditions, Looking West

11/08/2019

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## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019

### Old Michigan Avenue Photos



Photo No. 5: Old Michigan Avenue Existing Conditions



Photo No. 6: Old Michigan Avenue Typical Section



## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019



Photo No. 7: Old Michigan Avenue Drainage Ditch Existing Conditions



Photo No. 8: Drainage Culvert under Old Michigan Avenue Existing Conditions

11/08/2019

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## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019

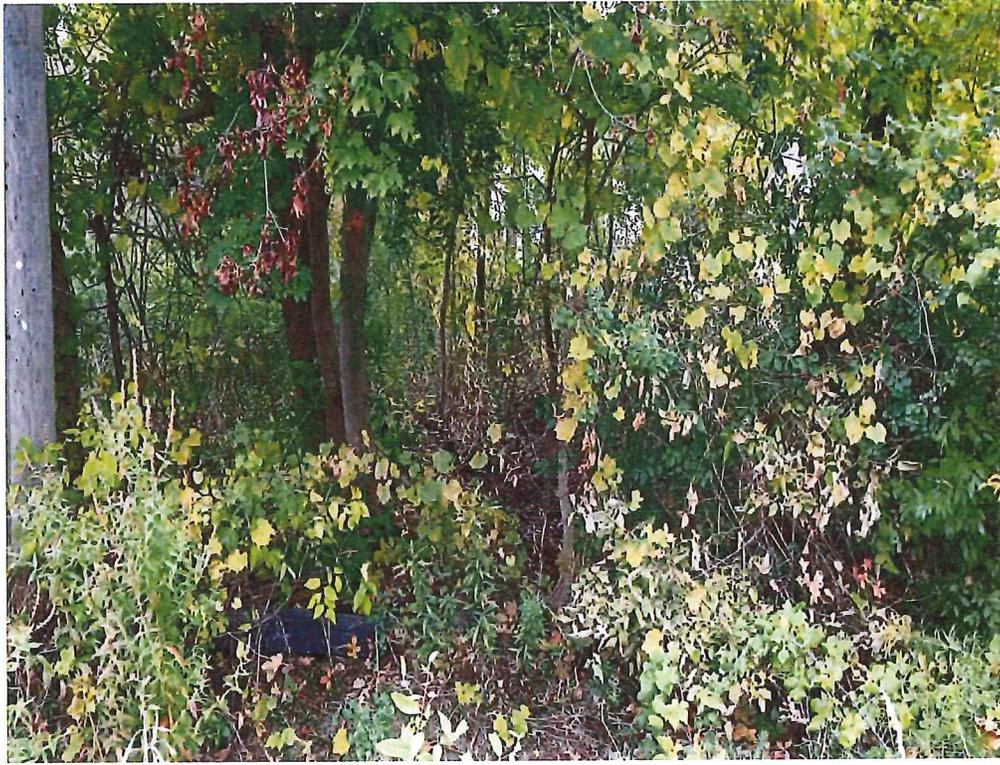


Photo No. 9: Evidence of Drainage Ditch Flowing North



Photo No. 10: Water Main crossing at Michigan Ave and Old Michigan Ave

11/08/2019

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## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019



Photo No. 11: Eastbound Old Michigan Avenue Dead End Existing Conditions



Photo No. 12: Old Michigan Avenue and Outer Drive Intersection Existing Conditions.

11/08/2019

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## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019



Photo No. 13: Old Michigan Avenue and Shelley Drive Intersection Existing Conditions



Photo No. 14: Old Michigan Avenue and Parkside Drive Intersection Existing Conditions



## Site Photolog

Van Buren Township — Denton Road Watermain Construction

Denton Road and Michigan Avenue

Project No: 191456

Date of Site Visit: October 2019



Photo No. 15: Old Michigan Avenue Existing Conditions Showing Drainage Issues



Photo No. 16: Old Michigan Avenue Typical Section Showing Drainage Issues