

VILLAGE OF GERMANTOWN  
N112 W17001 MEQUON ROAD  
GERMANTOWN, WI 53022

**\*\*\*AMENDED\*\*\***

MEETING: **PUBLIC WORKS & HIGHWAY COMMITTEE**

DATE AND TIME: **WEDNESDAY, November 7th, 2018** **\*\*\*6:00 P.M.\*\*\***

LOCATION: **Germantown Village Hall – \*\*\*CONFERENCE ROOM “A”\*\*\***

- I. **CALL TO ORDER:** This meeting has been given public notice in accordance with Wisconsin Statutes, Section 19.83 and 19.84 in such form that will apprise the general public and news media of subject matter that is intended for consideration and action.
- II. **ROLL CALL:** Chairman Kaminski, Trustees Hughes, Warren and Zabel
- III. **APPROVAL OF MINUTES:** October 9, 2018
- IV. **PUBLIC COMMENT:** Please be advised per State Statute Section 19.84(2), information will be received from the public. It is the policy of this municipality that there be a three minute time period, per person, with time extensions per the Chief Presiding Officer's discretion; be further advised that there may be limited discussion on the information received, however, NO ACTION will be taken under public comments.
- V. **NEW BUSINESS:**
  - A. Starnet Technologies Invoice
  - B. Goldendale Road Water & Sewer Extension – Phase II Bids
  - C. Topsoil Removal – Germantown Gateway Corporate Park (TID #8)
  - D. Stop Sign Request – Maple & Freistadt Roads Intersection
- VI. **NEXT MEETING DATE:** Set December, 2018 Meeting Date and Time
- VII. **ANNOUNCEMENTS:**
- VIII. **ADJOURNMENT:**

***UPON REASONABLE NOTICE***, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting.

\*\*\* Notice is given that a majority of the Village Board may attend this meeting to gather information about an agenda item over which they have decision making responsibility. This may constitute a meeting of the Village Board per State ex rel. Badke v. Greendale Village Board, even though the Village Board will not take formal action at this meeting.

# PUBLIC WORKS & HIGHWAY COMMITTEE MEETING MINUTES

October 9, 2018  
Village Hall Board Room

**CALL:** Chm. Kaminski called the meeting to order at 6:00 p.m.

**ROLL CALL:** Chm. Kaminski, Trustee Members Hughes, Warren and Zabel (6:04 p.m.). Also present were Director Ratayczak, Engr. Nitschke and Secretary Wick.

**APPROVAL OF MINUTES:** MOTION made by Warren, seconded by Hughes to approve the Minutes of September 11, 2018.

Motion carried unanimously.

**PUBLIC COMMENT:** None

## **RETAINER RELEASE – 2017 SEALCOAT PROGRAM – FAHRNER ASPHALT:**

MOTION made by Hughes, seconded by Warren authorizing the release of the contract retainer in the amount of \$13,731.16 to Fahrner Asphalt which was held during the one-year warranty period for the 2017 Sealcoat Program.

Motion carried unanimously.

**2018 SEALCOAT PROJECT DELAY:** Supt. Olszewski reported they will delay the 2018 sealcoat projects due to the abnormal wet weather across the State causing area wide project delays. The flex patching part of the project has been completed. A contract change order will be issued and 2018 pricing will remain in effect for year 2019.

**CULVERT REPLACEMENT – ROCKFIELD ROAD – D.F. TOMASINI:** Supt. Olszewski reported a 48" culvert located at the west end of Rockfield Road had failed. Staff had worked with D.F. Tomasini for the culvert replacement and restoration of the area. As the culvert replacement was categorized as an emergency repair, the invoice of \$22,326.51 was unbudgeted. Further discussion suggested funding come from the following Accts's: 10-542-530-3550 & 40-541-570-8892. As part of Emergency Management, Supt. Olszewski stated there may be the potential to obtain funding reimbursement for the culvert repair through Washington County due to the excessive rains the County had experienced.

MOTION made by Hughes, seconded by Warren to forward to the Village Board with a positive recommendation authorizing the payment of \$22,326.51 to D.F. Tomasini for the emergency repair of the 48" culvert at the west end of Rockfield Road. Funds to be allocated from Acct. #'s 10-542-530-3550 (\$5,000) and 40-541-570-8892 (\$17,326.51)

Motion carried unanimously.

**ROCK CRUSHING PERMIT – RAINBOW CHILDCARE:** Dir. Ratayczak reported Rainbow Childcare requested a Temporary Rock Crushing Permit for their site on Mequon Road. Due to the proposed location for the crushing operation, Village Code required the crusher be located at least 200 feet from any exterior property line. The dimensions of the parcel did not allow for the Code requirement to be met on all sides. It was noted the temporary crushing operation requirements could be met on the northern property line which had the residential element.

**MOTION made by Zabel, seconded by Warren authorizing staff to approve the Rainbow Childcare temporary Rock Crushing Permit.**

Discussion followed.

**MOTION made by Warren, seconded by Zabel to amend the Motion to include any outside calls of concern with the crushing operation shall be reported back to the Public Works Committee to revisit the requirements of the Rock Crushing Permit.**

**Motion as amended carried 3 – 1 (Kaminski)  
Original Motion carried unanimously.**

**LOCATION OF WATER BOOSTER/REDUCER STATION – GOLDENDALE ROAD:**

As part of the development of TID #7 and TID #8, sewer and water utilities will be expanded to TID #8. With the water utility expansion and the elevation of land in TID #8 the Village would need to construct a pressure booster/pressure reducing station. The station would need to be located on Goldendale Road between Freistadt Road and Holy Hill Road and preferably south of the Isabelle Farms subdivision entrance.

The Village would need to purchase approximately 0.28 acres for the construction of the station. Staff had identified several possible locations and was currently working on finalizing the building details to determine the exact size of land required. Funds to purchase the land was included in the TID #8 Feasibility Analysis.

**MOTION made by Warren, seconded by Hughes authorizing staff to proceed with the acquisition of land for constructing a pressure booster/pressure reducing station on Goldendale Road between Freistadt Road and Holy Hill Road.**

**Motion carried unanimously.**

**PRIVATE PROPERTY INFILTRATION/INFLOW (PP I&I) UPDATE:** Engr. Nitschke noted delays for the PP I&I Program were due to the Request for Proposal (RFP) and specifications for this work. Staff had modeled the RFP and bid specs based on successful bid packages other communities had prepared through MMSD's program. MMSD in their review stated they were going a different direction moving forward and sent staff numerous comments to change the Village's bid specs. Staff will now start over to reset the bid specifications and RFP. Staff could not go out for bid without MMSD's approval or the Village may have had to forfeit their contract between the Village and MMSD. MMSD has provided direction, and staff will be working with a consultant who had worked with other communities to move the Village's project forward. There was no sunset clause in the contract for the monies MMSD was expending for the PP I&I project. Engr. Nitschke did not believe there would be a risk in losing the funding already in place as it was MMSD who had provided a different direction the Village should take. The revised bid specifications will be forwarded to MMSD for review with staff anticipating an approval within the next couple of months.

*Ken Krause, W159 N9809 Butternut Road, voiced concern on the communication efforts regarding the PP I&I Program. He commended Engr. Nitschke on his efforts to notify affected residents regarding the program in the beginning but did not have any further communication since. Mr. Krause expressed he didn't have internet or cable to determine when the PP I&I*

program would be discussed or if there had been any updates or changes since. He felt the residents should be updated by U.S. Postal mail. Engr. Nitschke apologized. He noted staff did not have direction or guidance on how the project would move forward until the day of the Public Works meeting and therefore a letter notification to the affected residents would not have provided any information.

**NEXT MEETING DATE:** The next Public Works and Highway Committee meeting will be held **WEDNESDAY**, November 7, 2018 at 6:00 p.m.

**ANNOUNCEMENTS:** None

**ADJOURNMENT:** There being no further business, the meeting was adjourned at 6:30 p.m.

A handwritten signature in cursive script, reading "Janice Wick", followed by a small checkmark.

Janice Wick, Recording Secretary

**BUSINESS OF THE PUBLIC WORKS & HIGHWAYS COMMITTEE  
GERMANTOWN, WI**

MEETING DATE: November 7, 2018

AGENDA ITEM: New Business **A**

ITEM TITLE: Authorization to Pay Invoice – Starnet Technologies

SUBMITTED BY: Timothy K. Zimmerman – Wastewater Superintendent

SUMMARY EXPLANATION:

On October 14, 2018 Lift 6 suffered a catastrophic failure of The VFD for pump 1. The capacitor bank exploded. Fortunately, there was not any down stream damage to the motor starters or pump motors. A field engineer from Rockwell Automation assisted us with the failure analysis and suggested replacing both drives since they were the same age. Starnet Technologies was contacted to provide services for their replacement. I also contacted Focus on Energy to apply for a grant for the replacement. A claim was also filed with the Village insurance carrier for the failed unit. Equipment was replaced under emergency authorization.

ATTACHMENT: ORDINANCE\_\_\_\_\_ RESOLUTION\_\_\_\_\_ OTHER  X

RECOMMENDATION:

It is staff's recommendation to pay the invoice to Starnet Technologies for the amount of \$9,415.04. With reimbursements as follows:

Focus on Energy Rebate - \$3,200.00

Insurance Settlement - \$610.52

Net cost to Utility \$5,604.52

Money to be allocated from capital account 60-180-184-3230 Electric Pumping Equipment

COMMITTEE ACTION:

Proper parliamentary procedure to deny a request is to have a motion made in the affirmative and by voting NAY would deny the request if a majority vote.

**PROPOSAL****Date:** October 15, 2018**Attention:** Timothy K. Zimmerman, Wastewater Superintendent  
**Project:** 2018 AFD LS 6  
**Location:** Wastewater Utility, Village of Germantown, Wisconsin**Quote:** DAJ181015-1  
**Version:** 1

This proposal is for AFD replacement at Lift Station 6. The currently installed AFDs are Allen Bradley Powerflex 400. Pump 1 is damaged and Pump 2 is reaching end of product life. Our proposal is, per the referenced RFP, replacement of the existing AFDs with new Allen Bradley 753 units. Thank you for the opportunity to allow us to provide the following proposal.

| SCOPE OF SUPPLY |      |           |                                                                                                                                                                           |
|-----------------|------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NO.             | QTY. | ITEM      | DESCRIPTION                                                                                                                                                               |
| 1.1             | 1    | Equipment | <b>Adjustable Frequency Drives (AFDs)</b><br>(2) Rockwell 40HP 753 AFDs<br>(2) Rockwell 753 Keypads<br>(1) Miscellaneous Materials (Wire, cable, terminals, relays, etc.) |
| 1.2             | 1    | Services  | <b>Proposal Services</b><br>Remove existing AFDs<br>Install new 40HP AFDs<br>Reconnect/rewire as needed<br>Program changes/modifications/setup                            |

**SPECIFICALLY EXCLUDED ITEMS**

- ✗ Drawing updates
- ✗ Tax(es) [Add if Applicable]
- ✗ Any Items and Services not listed in the Proposal

**QUOTATION****TOTAL NET Price for listed items and services:** **\$9415.04**Respectfully Submitted,  
Dan Jacob  
Starnet Technologies  
(414) 840-9552 [Mobile]



Liberty Mutual Insurance  
Commercial Insurance Property  
Claims  
PO Box 7215  
London, KY 40742-72159

October 29, 2018

Mr Tim Zimmerman  
Village of Germantown  
N112 W7001 Mequon Rd  
PO Box 337  
Germantown, WI 53022

|          |                   |                                                                       |
|----------|-------------------|-----------------------------------------------------------------------|
| Subject: | Insured:          | Village of Germantown                                                 |
|          | Loss Location:    | Lift station #6<br>N96 W17956 County Line Rd,<br>Germantown, WI 53022 |
|          | Loss Description: | VFD                                                                   |
|          | LM Claim Number:  | 162052400                                                             |
|          | Date of Loss:     | 10/14/2018                                                            |
|          | Policy:           | YB2-L9L-463384-018                                                    |
|          | Term:             | 1/1/2018 TO 1/1/2019                                                  |
|          | Underwriting Co.: | Liberty Mutual Fire Insurance Company                                 |

Dear Mr Zimmerman;

This letter confirms our emails on October 29, 2018. During the communications, we reached an agreement on the settlement of your equipment breakdown claim for \$3,107.52. This is in full settlement of a claim for the electrical damage of 10/14/2018. This claim provided a quote for the repair.

We have requested an issuance of payment in the amount of \$607.52 which is net of the \$2,500.00 deductible in your policy.

You should receive payment by mail within 10 business days.

This concludes my investigation of the claim; however, should you have questions concerning the adjustment, please contact me at 317-975-6475.

Sincerely yours,

*Greg Lundberg*

Greg Lundberg  
General Adjuster  
Liberty Mutual Ins  
Office 317-975-6475  
[Gregory.Lundberg@LibertyMutual.com](mailto:Gregory.Lundberg@LibertyMutual.com)  
Working hours are 7 to 3:30 Eastern Time

CC: [emily.donohue@m3ins.com](mailto:emily.donohue@m3ins.com)

## SECTION 1

## ACCOUNT AND CUSTOMER INFORMATION

TAX IDENTIFICATION NUMBER (Check one.)

☒ FEIN or ☐ SSN 068280  
 FEIN OR SOCIAL SECURITY NUMBER

## BUSINESS CLASSIFICATION OF CUSTOMER

(Check one. Required for all businesses, including non-profits.)

☐ Sole Proprietorship ☐ Individual ☐ Single-Member LLC  
☐ C Corporation ☐ S Corporation ☐ Partnership  
☐ Limited Liability Corporation Classification C, S, P  
 (C = C corporation, S = S corporation, P = partnership)  
☒ Other Municipality

OWNER NAME (REQUIRED IF SSN IS USED AS TAX IDENTIFICATION NUMBER)

Village of Germantown

COMPANY NAME

N112 W17001 Mequon Road PO Box 337

LEGAL ADDRESS (AS SHOWN ON COMPANY W-9)

 Germantown WI 53022  
 CITY STATE ZIP

How did you hear about us? (Check all that apply.)

☐ Utility ☐ Trade Ally ☐ Energy Advisor ☐ Internet ☐ E-mail  
☒ Trade Show/Event ☐ Direct Mail ☐ Other:

Chris Sietz

WHO DID YOU WORK WITH FROM FOCUS ON ENERGY ON THIS PROJECT? (CONTACT NAME)

## SECTION 2

## JOB SITE INFORMATION

(Please refer to your utility bills for account numbers below.)

Village of Germantown Lift 6

JOB SITE BUSINESS NAME

WE Energies 3856-019-016

ELECTRIC UTILITY AT JOB SITE

ELECTRIC ACCOUNT #

N/A

GAS UTILITY AT JOB SITE

GAS ACCOUNT #

☐ Job Site Address is same as Legal Address  
☒ Job Site Address is different (complete below.)

N96W17956 County Line Road

JOB SITE ADDRESS

 Germantown WI 53022  
 CITY STATE ZIP

## SECTION 3

## CUSTOMER CONTACT INFORMATION

Timothy K. Zimmerman

JOB SITE CUSTOMER CONTACT NAME

262-253-7765 tzimmerman@village.germantown.wi.us

PRIMARY PHONE #

E-MAIL ADDRESS

If Focus on Energy has a question about this application, we should contact:

☒ Customer ☐ Trade Ally ☐ Other

## SECTION 4

## TRADE ALLY INFORMATION



TRADE ALLY CONTACT NAME

PRIMARY PHONE #

E-MAIL ADDRESS

TRADE ALLY COMPANY NAME

ADDRESS

CITY STATE ZIP

## INCENTIVE APPLICATION

PLEASE COMPLETE ALL SECTIONS. INCOMPLETE APPLICATIONS CANNOT BE PROCESSED AND WILL DELAY PAYMENT OF INCENTIVES. APPLICATIONS MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETED PROJECT INSTALLATION. FOR AN ELECTRONIC COPY OF THIS FORM, VISIT [FOCUSONENERGY.COM/APPLICATIONS](http://FOCUSONENERGY.COM/APPLICATIONS).

FOR PROJECTS COMPLETED BY 12/31/18

## SECTION 5

## BUSINESS PAYMENT INFORMATION

Make incentive check payable to:

☒ Customer ☐ Trade Ally ☐ Third Party / Other Payee

For Third Party, please specify relationship to utility account holder:

☐ Tenant ☐ Building Owner ☐ Other (specify)

If a Trade Ally or Third Party is receiving the incentive payment, please provide the Tax Identification Number. To receive payment, a Trade Ally must be registered. Please note: Payee understands that they are responsible for any associated tax consequences.

TAX IDENTIFICATION NUMBER (Check one.)

☐ FEIN or ☐ SSN  
 FEIN OR SOCIAL SECURITY NUMBER

## BUSINESS CLASSIFICATION OF THIRD PARTY/OTHER PAYEE

(Check one. Required for all businesses, including non-profits.)

☐ Sole Proprietorship ☐ Individual ☐ Single-Member LLC  
☐ C Corporation ☐ S Corporation ☐ Partnership  
☐ Limited Liability Corporation Classification C, S, P  
 (C = C corporation, S = S corporation, P = partnership)  
☐ Other

Mail check to:

☐ Customer Address ☐ Job Site Address ☐ Trade Ally Address  
☐ Third Party or Alternate Address (complete below.)

COMPANY NAME

ADDRESS

CITY STATE ZIP

ATTENTION TO (OPTIONAL)



focus on energy™

Partnering with Wisconsin utilities

## SECTION 6

## BUSINESS PROPERTY TYPE

☒ Existing Building ☐ New Construction

(Select one only. If applying for both existing and new construction equipment incentives please complete two separate applications).

Select one (1) property type that best describes your business:

☐ Agriculture Producer

☐ Dairy  
☐ Other: \_\_\_\_\_

☐ Education  
☐ Grocery/Convenience Store  
☐ Financial Institution  
☐ Food Service

☐ Government

☐ Federal/State  
☒ Municipal/County  
☐ Native American

☐ Healthcare  
☐ Clinic  
☐ Hospital  
☐ Skilled Nursing  
☐ Other: \_\_\_\_\_

☐ Hotels & Lodging

☐ Manufacturing (product): \_\_\_\_\_

☐ Multifamily

☐ Apartment  
☐ Condominium  
☐ Mixed Use

Number of Units: \_\_\_\_\_  
Number of Buildings: \_\_\_\_\_

☐ Religious Worship

☐ Retail  
☐ Water/Wastewater  
☐ Other: \_\_\_\_\_

## SECTION 7

## INCENTIVE PRODUCT INFORMATION

Please refer to:

- **Applicable Incentive catalog at [focusonenergy.com/applications](http://focusonenergy.com/applications)** for incentive codes, incentive per unit and product eligibility requirements.
- **[focusonenergy.com/business/qpls](http://focusonenergy.com/business/qpls)** for qualified products lists.
- **Invoice showing proof of purchase** for Manufacturer and Model Number.
- **Incentive Product Information Sheet at [focusonenergy.com/applications](http://focusonenergy.com/applications)** if you need additional lines in the table below.

| INCENTIVE CODE                                        | MANUFACTURER NAME | MODEL #                                 | UNIT MEASURE                            | # OF UNITS (A) | INCENTIVE PER UNIT (B)                                            | TOTAL INCENTIVE (A X B) |
|-------------------------------------------------------|-------------------|-----------------------------------------|-----------------------------------------|----------------|-------------------------------------------------------------------|-------------------------|
| L3111 (example)                                       | STARK LIGHTING    | LED5V2P                                 | Fixture                                 | 10             | \$ 25.00                                                          | \$ 250.00               |
| PS2648                                                |                   |                                         | hp                                      | 80             | \$ 40                                                             | \$ 3200.00              |
|                                                       |                   |                                         |                                         |                | \$                                                                | \$                      |
|                                                       |                   |                                         |                                         |                | \$                                                                | \$                      |
|                                                       |                   |                                         |                                         |                | \$                                                                | \$                      |
|                                                       |                   |                                         |                                         |                | \$                                                                | \$                      |
| Manufacturer Specifications Attached (if applicable): |                   | Yes <input type="checkbox"/>            | RESERVATION CODE(S)<br>(if applicable): |                | Subtotal from Incentive Product Information Sheet (if applicable) | \$                      |
| Itemized Invoice(s) Attached:                         |                   | Yes <input checked="" type="checkbox"/> | INSTALLATION DATE: 10 / 22 / 2011       |                | INCENTIVE TOTAL *                                                 | \$ 3200                 |

## SECTION 8

## CUSTOMER SIGNATURE

Certification: The following certifications are required in order for this form to substitute for the IRS form W-9. Under penalty of perjury, I certify that:

- The number shown on this form is the correct taxpayer identification number.
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding.
- I am a U.S. citizen (includes a U.S. resident alien).

I agree that the stated energy-efficient measure(s) was (were) installed at the job site address listed above as part of the Focus on Energy Program. I have read and agree to the provisions set forth herein and to the Terms and Conditions posted at [focusonenergy.com/terms](http://focusonenergy.com/terms). I understand that Focus on Energy may revise these Terms and Conditions at any time and I will not be notified in the event changes are made. To the best of my knowledge, the statements made on this application are complete, true and correct, and I have submitted the appropriate supporting documentation to receive an incentive. The Internal Revenue Service does not require your consent to any provision of this document other than the certifications required to avoid backup withholding.

I, the Customer, attest I am the ratepayer (utility account holder) for the site(s) listed in Section 2 and I assign the right to participate in and receive incentives from the Focus on Energy Program to the Third Party identified in Section 5 (if applicable).

(Please use blue or black ink in the signature box below.)

Timothy K Zimmerman

10/31/2018

SIGN  
HERE  
←

CUSTOMER SIGNATURE

NAME (PRINT)

DATE

Please select the program for which you are applying (check one):

☒ Agriculture, Schools and Government Program  
AgSGapps@focusonenergy.com

☐ Business Incentive Program  
BIPapps@focusonenergy.com

☐ Large Energy Users Program  
LEUapps@focusonenergy.com

☐ Multifamily Energy Savings Program  
MESapps@focusonenergy.com

☐ Small Business Program  
SBPapps@focusonenergy.com

☐ Multifamily New Construction Program  
MNCapps@focusonenergy.com

Please see the Program Descriptions and Submittal Information page for mailing addresses and fax numbers.

\*Incentive total may be adjusted based on project caps. See measure requirements and Terms and Conditions for more information.

NEED HELP?

CALL  
800.762.7077

**BUSINESS OF THE PUBLIC WORKS & HIGHWAYS COMMITTEE  
GERMANTOWN, WI**

MEETING DATE: November 7, 2018

AGENDA ITEM: New Business B

ITEM TITLE: Goldendale Road Water & Sewer Extension- Phase II Bids

SUBMITTED BY: Lawrence W Ratayczak, P.E., Director of Public Works

SUMMARY EXPLANATION:

Bids were received on October 18, 2018 and 2 bids were submitted with one of the bids being non-responsive. The non-responsive bid had written a qualification of a revised completion date which automatically disqualifies the bid. The one responsive bid was submitted by Super Excavators, Inc in the amount of \$14,483,607.00. Estimate in the TID study was \$3,775,000. Staff has redesigned the water main and proposes to bid as a separate project and the sanitary sewer is redesigned to traverse through easement in place of Goldendale Road and Holy Hill Road to avoid the excessive depth and rock. Staff feels at the redesign and separation of the water and sanitary sewer will make the projects more appealing to contractors due to manageable completion times and reduced depth and rock in the case of the sanitary sewer.

ATTACHMENT: ORDINANCE\_\_\_ RESOLUTION\_\_\_ OTHER \_\_X\_

- Bid Summary

RECOMMENDATION:

Staff recommends the Public Works & Highway Committee reject the bids received on October 18, 2018 and authorize the Director of Public Works to redesign and rebid the proposed Goldendale Road Sanitary Sewer and Water Main Phase II project.

COMMITTEE ACTION:

Proper parliamentary procedure to deny a request is to have a motion made in the affirmative and by voting NAY would deny the request if a majority vote.

**GOLDENDALE ROAD WATER & SEWER EXTENSION - PHASE 2  
VILLAGE OF GERMANTOWN  
WASHINGTON COUNTY, WISCONSIN**

**BID OPENING  
THURSDAY, OCTOBER 18, 2018  
10:00 AM  
AT: VILLAGE OF GERMANTOWN DPW**

| I. BASE BID SCHEDULE |                                                        |        |      | Super Excavators, Inc. |                 | Advance Construction, Inc.* |       |
|----------------------|--------------------------------------------------------|--------|------|------------------------|-----------------|-----------------------------|-------|
| ITEM NO.             | DESCRIPTION                                            | QTY    | UNIT | UNIT \$                | TOTAL           | UNIT \$                     | TOTAL |
|                      |                                                        |        |      |                        |                 | * Non-responsive, rejected  |       |
| 1                    | 18" Sanitary Sewer (open cut less than 35' deep)       | 3,922  | LF   | \$ 1,750.00            | \$ 6,863,500.00 |                             | \$ -  |
| 2                    | 18" Sanitary Sewer (open cut MH 10 to MH 12 greater th | 967    | LF   | \$ 4,120.00            | \$ 3,984,040.00 |                             | \$ -  |
| 3                    | 15" Sanitary Sewer (open cut)                          | 205    | LF   | \$ 5,450.00            | \$ 1,117,250.00 |                             | \$ -  |
| 4                    | 12" Sanitary Sewer (open cut)                          | 49     | LF   | \$ 1,335.00            | \$ 65,415.00    |                             | \$ -  |
| 5                    | 6" Sanitary Lateral (7)                                | 355    | LF   | \$ 320.00              | \$ 113,600.00   |                             | \$ -  |
| 6                    | 48" Sanitary Manhole (12)                              | 360    | VF   | \$ 700.00              | \$ 252,000.00   |                             | \$ -  |
| 7                    | 6" Sanitary Riser (5)                                  | 60     | VF   | \$ 300.00              | \$ 18,000.00    |                             | \$ -  |
| 8                    | Allowance for New Sewer Connection to Existing Manhol  | 2      | EA   | \$ 1,000.00            | \$ 2,000.00     |                             | \$ -  |
| 9                    | 16" C-900 Water Main                                   | 5205   | LF   | \$ 180.00              | \$ 936,900.00   |                             | \$ -  |
| 10                   | Connection to Existing 16" Water Main                  | 2      | EA   | \$ 5,000.00            | \$ 10,000.00    |                             | \$ -  |
| 11                   | 16" Butterfly Valve                                    | 15     | EA   | \$ 4,500.00            | \$ 67,500.00    |                             | \$ -  |
| 12                   | 1 1/2" HDPE Water Service (7)                          | 333    | LF   | \$ 120.00              | \$ 39,960.00    |                             | \$ -  |
| 13                   | Hydrant Assembly                                       | 10     | EA   | \$ 13,000.00           | \$ 130,000.00   |                             | \$ -  |
| 14                   | Temporary Hydrant                                      | 2      | EA   | \$ 5,000.00            | \$ 10,000.00    |                             | \$ -  |
| 15                   | 24" CMP with Endwalls                                  | 52     | LF   | \$ 260.00              | \$ 13,520.00    |                             | \$ -  |
| 16                   | 48" CMP                                                | 122    | LF   | \$ 950.00              | \$ 115,900.00   |                             | \$ -  |
| 17                   | Traffic Control                                        | 1      | LS   | \$ 75,000.00           | \$ 75,000.00    |                             | \$ -  |
| 18                   | Excavation Below Subgrade                              | 330    | CY   | \$ 30.00               | \$ 9,900.00     |                             | \$ -  |
| 19                   | Crushed Aggregate, 3-inch (EBS)                        | 725    | TON  | \$ 20.00               | \$ 14,500.00    |                             | \$ -  |
| 20                   | Crushed Aggregate, 1 1/4-inch                          | 4,500  | TON  | \$ 16.00               | \$ 72,000.00    |                             | \$ -  |
| 21                   | Crushed Aggregate, 3/4-inch (Shoulder)                 | 700    | TON  | \$ 30.00               | \$ 21,000.00    |                             | \$ -  |
| 22                   | 3" HMA Pavement Binder Course (3 LT 58-28 S)           | 2,300  | TON  | \$ 70.00               | \$ 161,000.00   |                             | \$ -  |
| 23                   | 2.5" HMA Pavement Surface Course (4 LT 58-28 S)        | 2,000  | TON  | \$ 75.00               | \$ 150,000.00   |                             | \$ -  |
| 24                   | Lawn Restoration                                       | 11,400 | SY   | \$ 8.00                | \$ 91,200.00    |                             | \$ -  |
| 25                   | Erosion Mat Urban Class I Type B                       | 5,700  | SY   | \$ 2.00                | \$ 11,400.00    |                             | \$ -  |
| 26                   | Pavement Marking, Epoxy, 4" Edge Line                  | 10600  | LF   | \$ 1.00                | \$ 10,600.00    |                             | \$ -  |
| 27                   | Pavement Marking, Epoxy, 4" Centerline                 | 6,030  | LF   | \$ 1.00                | \$ 6,030.00     |                             | \$ -  |
| 28                   | Pavement Marking, Epoxy, 18" Stop Bar                  | 48     | LF   | \$ 9.00                | \$ 432.00       |                             | \$ -  |
| 29                   | Pavement Marking, Epoxy, 8" Channelizing               | 110    | LF   | \$ 1.00                | \$ 110.00       |                             | \$ -  |

| I. BASE BID SCHEDULE                    |                                            |       |      | Super Excavators, Inc. |                         | Advance Construction, Inc.* |             |
|-----------------------------------------|--------------------------------------------|-------|------|------------------------|-------------------------|-----------------------------|-------------|
| ITEM NO.                                | DESCRIPTION                                | QTY   | UNIT | UNIT \$                | TOTAL                   | UNIT \$                     | TOTAL       |
| 30                                      | Pavement Marking, Epoxy, Railroad Crossing | 1     | EA   | \$ 750.00              | \$ 750.00               |                             | \$ -        |
| 31                                      | Pavement Removal (Goldendale Rd)           | 4800  | SY   | \$ 10.00               | \$ 48,000.00            |                             | \$ -        |
| 32                                      | Common Excavation (Plan Quantity)          | 2400  | CY   | \$ 30.00               | \$ 72,000.00            |                             | \$ -        |
| 33                                      | Rock Excavation                            | 10000 | CY   | \$ 0.01                | \$ 100.00               |                             | \$ -        |
| <b>TOTAL BID SCHEDULE (ITEMS 1-33):</b> |                                            |       |      |                        | <b>\$ 14,483,607.00</b> |                             | <b>\$ -</b> |

| I. ALTERNATE BID SCHEDULE                 |                                                |     |      | Super Excavators, Inc. |             | Advance Construction, Inc.* |             |
|-------------------------------------------|------------------------------------------------|-----|------|------------------------|-------------|-----------------------------|-------------|
| ITEM NO.                                  | DESCRIPTION                                    | QTY | UNIT | UNIT \$                | TOTAL       | UNIT \$                     | TOTAL       |
|                                           |                                                |     |      |                        |             | *Non-responsive, rejected   |             |
| 2A                                        | 18" Sanitary Sewer (Trenchless MH 10 to MH 12) | 967 | LF   | 0                      | \$ -        |                             | \$ -        |
| 3A                                        | 15" Sanitary Sewer (Trenchless MH 10 to MH 12) | 205 | LF   | 0                      | \$ -        |                             | \$ -        |
| <b>TOTAL ALTERNATE BID (ITEMS 2A-3A):</b> |                                                |     |      |                        | <b>\$ -</b> |                             | <b>\$ -</b> |

**BUSINESS OF THE PUBLIC WORKS & HIGHWAYS COMMITTEE  
GERMANTOWN, WI**

**MEETING DATE:** November 7, 2018

**AGENDA ITEM:** New Business 

**ITEM TITLE:** Permit to Remove Excess Topsoil / Zilber Development

**SUBMITTED BY:** Lawrence W Ratayczak, P.E., Director of Public Works

**SUMMARY EXPLANATION:**

Pursuant to Village of Germantown Municipal Code Section 17.441 (Protection of Topsoil Resource) Pinnacle Engineering Group, Engineers for the Zilber Development, has submitted a request to remove 145,000 cubic yards of excess topsoil from the project site. Earthwork Quantity Calculations by their engineer are attached. Total calculated topsoil volume is 220,000 CY with topsoil to be replaced of 75,000 CY and the request is to remove the balance of 145,000 CY.

**ATTACHMENT:** ORDINANCE\_\_\_\_ RESOLUTION\_\_\_\_ OTHER \_\_X\_\_

- Written Request & Calculations by Pinnacle Engineering Group including Section 17.441 of the Municipal Code

**RECOMMENDATION:**

Staff recommends approval by the Public Works & Highway Committee for the Request by Riley Construction to remove 145,000 cubic yards of excess topsoil.

**COMMITTEE ACTION:**

Proper parliamentary procedure to deny a request is to have a motion made in the affirmative and by voting NAY would deny the request if a majority vote.



10/8/2018

Larry Ratayczak, PE | Director of Public Works  
Village of Germantown  
N112 W17001 Mequon Road Germantown, WI 53022

**Re: GERMANTOWN GATEWAY CORPORATE PARK | TOPSOIL**  
Village of Germantown, Washington County, WI  
PEG # 1296.00-WI

Mr. Ratayczak,

At the request of Zilber Property Group ("Zilber"), Pinnacle Engineering Group has prepared this letter to serve as a request to consider removal of excess topsoil from the Germantown Gateway Corporate Park. In review of section 17.441 – Protection of Topsoil Resource, of the Germantown Code of Ordinances, the code states:

*"In case of developments, the size, natural site features or topography of which render it infeasible or impractical to redistribute and regrade all native top soil on the site after development, the developer may apply for and be issued a special permit to remove topsoil from the site. Such application must be accompanied by supporting engineering data as shall permit the requisite determination of infeasibility or impracticality. Application for such permit shall be made to the office of the Building Inspector upon forms prescribed for such purpose, and shall be accompanied by such administrative permit fee as shall be established from time to time.*

*4(a) If redistribution of on-site topsoil should result in a depth in excess of 12 inches the owner or developer may apply for a special exemption permit through the Public Works Committee, said special exemption permit may be granted if the following conditions are met:*

*1. Twelve inches of topsoil must be redistributed on all pervious areas of the proposed site not exempt from construction activity.*

*2. An as-built must be provided by an outside firm employed by the owner certifying the proper topsoil depth has been achieved."*

The nature of the proposed development will feature a high impervious coverage ratio for the overall development to those standards allowed by the zoning district. With such allowable construction of impervious surfaces from existing farm field condition, a significant amount of excess topsoil will be encountered. Approval is requested to remove excess topsoil from the site to create pad-ready conditions to facilitate continued development consistent with the requirements of the Tax Incremental District project plan.

In order to control costs, the topsoil removal is intended to occur in the initial mass grading operations to avoid double handling that would be associated with resspreading topsoil thicker than needed for the final development conditions. Additionally, the amount of areas in no-touch buffer to the down gradient stream further amplify the inability to keep materials onsite.

In support of this request, I offer the following computations:

- Topsoil to be stripped in the development limits: 220,000 cubic yards
    - Average depth is 1.08-feet across 5,525,000 square feet
  - Topsoil to be replaced following grading efforts: 75,000 cubic yards
    - Average replacement 6-inches
- 
- **Extra Topsoil** **145,000 cubic yards**
    - *Shrinkage on the raw topsoil amounts listed above could reduce the extra by upwards of 20% depending on the insitu moisture contents found as areas are stripped.*

In an effort to demonstrate compliance with the 4(a), the resspread depth that would be required to keep all topsoil onsite in post-development conditions would be drastically above 12-inches.

Please let me know if any additional information is required to consider this request or if there are any questions pertaining to that contained in this letter.

Sincerely,  
PINNACLE ENGINEERING GROUP



Adam R. Artz, P.E.  
Senior Project Manager | Principal

**BUSINESS OF THE PUBLIC WORKS AND HIGHWAY COMMITTEE  
GERMANTOWN, WI**

MEETING DATE: November 7, 2018

AGENDA ITEM: New Business D

ITEM TITLE: Discussion and possible action regarding the stop sign request at the intersection of Maple Road and Freistadt Road.

SUBMITTED BY: Eric Nitschke, P.E., Village Engineer

SUMMARY EXPLANATION:

Concerns from residents and elected officials have been raised regarding the intersection of Freistadt Road and Maple Road. Despite temporary modifications to the intersection, there continues to be a significant amount of traffic accidents each year. The Public Safety Committee requested that the Village Engineering Department review the Traffic Impact Study that was completed in 2015 to determine what actions may be taken to improve safety and traffic flow through the intersection.

ATTACHMENT: ORDINANCE\_\_\_\_\_ RESOLUTION\_\_\_\_\_ OTHER X

Committee Agenda Item Request Form  
Intersection Alternatives Study  
Aerial Photo of Intersection

RECOMMENDATION:

A motion was made, seconded and carried unanimously to forward the following items to Public Works and Highway Committee meeting:

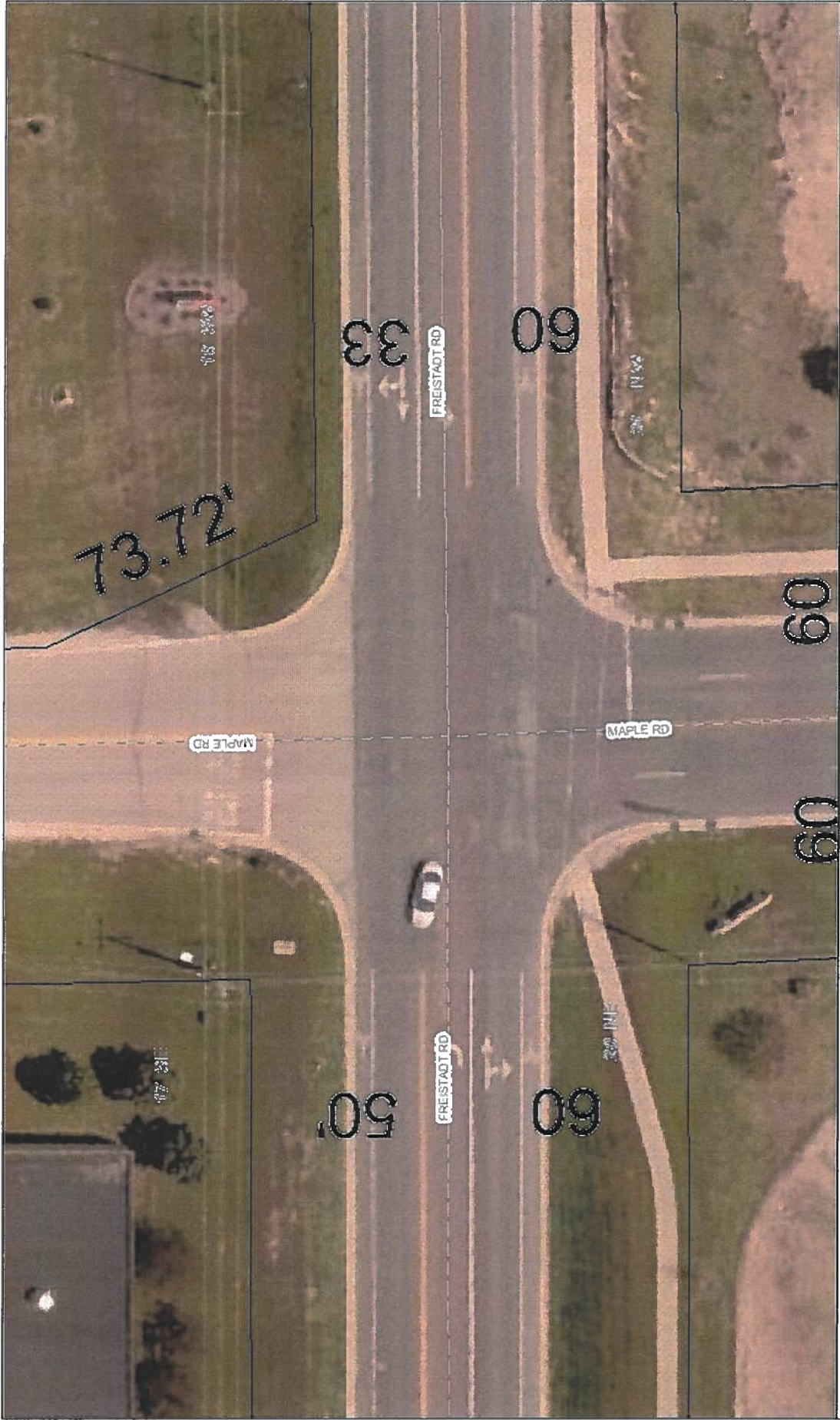
1. Purchase upgraded stop signs for Maple Road at Freistadt Road. The stop signs are to be LED solar powered signs. The cost estimate is \$1,600 per sign, and two signs are to be ordered.
2. Purchase two (2) LED solar powered radar speed signs to be installed on Freistadt Road. The cost estimate is approximately \$4,000 per sign.
3. Upgrade the "Dangerous Intersection" signs to high reflectivity.
4. Upgrade both speed limit signs to high reflectivity.

The recommended upgrades are to cost no more than \$14,000. It is also recommended that funds for items 1 and 2 be approved to come from the 2018 Road Program. Items 3 and 4 would be funded by the Highway Department's Street Sign account.

Staff further requests that the recommendation from the 2015 Traffic Impact Study, to implement a signalized intersection, be followed. Staff is seeking authorization to solicit Requests for Proposals (RFP) from professional engineering firms to complete the design and bid specifications for a signalized intersection at Freistadt Road and Maple Road. Upon receipt of the proposals, staff will bring a recommendation to award professional design services back to the Public Works and Highway Committee for discussion and possible action.

**COMMITTEE ACTION:**

Proper parliamentary procedure to deny a request is to have a motion made in the affirmative and by voting NAY would deny the request if a majority vote.



**Village Of Germantown**  
N112 W17001 Mequon Road  
Germantown, WI 53022  
262-250-4700



**Village of Germantown**

**DISCLAIMER:**

This map is not a survey of the actual boundary of any property this map depicts.

The Village of Germantown Does not guarantee the accuracy of the material contained here in and is not responsible for any misuse or misrepresentation of this information or its derivatives.



SCALE: 1 = 36'

Print Date: 11/1/2018



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## MEMORANDUM

**TO:** Brionne Bischke, P.E.

**FROM:** Shana Brummond, P.E., PTOE

**DATE:** January 21, 2015

**SUBJECT:** Freistadt Road (CTH F) & Maple Road Intersection Alternatives Study  
Village of Germantown, Wisconsin

### Introduction

The Village of Germantown has identified potential safety and operational concerns for the Freistadt Road (CTH F) and Maple Road intersection. GRAEF has prepared this study to evaluate the existing conditions and analyze intersection improvement alternatives. The study includes a safety assessment, traffic forecasts, signal warrant analysis, traffic operational analyses, alternatives analysis and recommendation.

### Study Area

The Freistadt Road and Maple Road intersection is shown on Exhibit 1. The intersection is located within the Germantown Business Park. Machining Concepts, Inc. is planning a manufacturing development in the northeast quadrant of the intersection. The intersection currently operates under two-way stop control and the existing intersection geometrics are shown on Exhibit 2.

The study area roadways are discussed below.

**Freistadt Road (CTH F)** is an east-west four-lane undivided roadway with a posted speed limit of 40 miles per hour (mph) through the study area. It should be noted that the four-lane undivided roadway is a 1 mile long section from approximately 600 feet west of McCormick Drive to River Lane. Freistadt Road narrows to a two-lane undivided roadway outside of this four-lane section. According to the Wisconsin Department of Transportation (WisDOT), the Year 2013 annual average daily traffic (AADT) along Freistadt Road was 4,300 vehicles per day (vpd) east of Maple Road

**Maple Road** is a north-south four-lane undivided roadway between Lannon Road (STH 167) and Freistadt Road and narrows to a two-lane undivided roadway north of Freistadt Road. The posted speed limit on Maple Road is 40 mph in the vicinity of

Freistadt Road. According to the WisDOT, the Year 2013 AADT for Maple Road ranged from 1,100 vpd south of STH 145 to 9,600 vpd north of Mequon Road.

### **Safety Assessment**

The Village provided crash reports for the study area intersection for the most recent five year period (January 1, 2009 through December 31, 2013). During these five years, 23 crashes were reported at the intersection. It should be noted that property damage crashes with less than \$1,000 of damage do not need to be reported in Wisconsin. Table 1 summarizes the type and severity of the crashes.

**Table 1**  
**Year 2009-2013 Intersection Crash Summary**

| Crash Type   | Crash Severity       |           |          | Total     |
|--------------|----------------------|-----------|----------|-----------|
|              | Property Damage Only | Injury    | Fatal    |           |
| Right Angle  | 9                    | 7         | 0        | 16        |
| Left Turn    | 2                    | 2         | 0        | 4         |
| Rear End     | 2                    | 1         | 0        | 3         |
| <b>Total</b> | <b>13</b>            | <b>10</b> | <b>0</b> | <b>23</b> |

For comparison purposes, intersection crash rates are expressed as crashes per million entering vehicles (MEV) to account for the traffic volumes. The study area intersection has a crash rate of 1.73 crashes per MEV. Intersections with crash rates exceeding 1.5 crashes per MEV should be evaluated further to identify potential safety improvements. An intersection collision diagram is provided in Appendix 1. Approximately 70 percent of the crashes were right angle. As shown on the collision diagram, the right angle crashes were comprised of the following patterns:

- 6 right angle crashes involved southbound and westbound vehicles
- 6 right angle crashes involved northbound and eastbound vehicles
- 4 right angle crashes involved northbound and westbound vehicles

The majority of the right angle crashes involved westbound vehicles that could be related to the crest vertical curve on Freistadt Road east of the intersection. Based on field observation, vehicles on Freistadt Road appear to be traveling at speeds higher than the posted speed limit. Freistadt Road could operate acceptably as a two-lane roadway and the additional capacity is allowing for increased travel speeds. Higher travel speeds along Freistadt Road causes safety concerns for drivers on Maple Road crossing the intersection to be able to identify an appropriate gap in traffic. In January of 2014, the Village installed dangerous intersection signs on Freistadt Road in the vicinity of the Maple Road intersection.

### **Roadway Review**

As part of the safety assessment, GRAEF conducted a preliminary review of the study area roadways in the vicinity of the intersection to evaluate design standards. The roadway design speed is 5 mph higher than the posted speed limit. Therefore a design speed of 45 mph was used for Freistadt Road and Maple Road.

### Vertical Curve

The existing Freistadt Road profile east of the Maple Road intersection has a crest vertical curve with the PI located approximately 200 feet east of the intersection. The existing grade extending to the east from the Maple Road intersection has a +2.05% grade leading into the crest vertical curve, followed by a -2.35% grade. The crest vertical curve has a length of approximately 500 feet which exceeds the minimum sight distance for a design speed of 45 mph.

Based on the survey provided by the Village, the existing Maple Road profile does not have a vertical curve through the intersection. The grades approaching the intersection are approximately 1.5% making a change of grade of 3.0% across the crown of Freistadt Road. This grade break exceeds the 0.7% maximum change of grade without a vertical curve threshold for the 45 mph design speed. The grade break has been acceptable under a low speed two-way stop control condition. If traffic signals are installed, the substandard profile should be brought up to current design standards.

### Stopping Sight Distance

The stopping sight distance along Freistadt Road was evaluated with the 45 mph design speed. The K value is defined as the horizontal distance needed to produce a 1% change in gradient; a higher K value indicates a flatter curve making it acceptable for higher speeds. The existing 500 foot crest vertical curve has a K value of 113. The vertical curve exceeds the minimum criteria for stopping sight distance (K=61), but does not meet the desirable decision sight distance (K=212) for an object height of 24 inches.

### Intersection Sight Distance

There are safety concerns related to the intersection sight distance specifically looking to the east over the crest vertical curve. A field evaluation was conducted to review the intersection sight distance. Table 2 summarizes the intersection sight distances looking to the east over the crest vertical curve.

**Table 2**  
**Intersection Sight Distances Looking to the East**

| Type of Vehicle                              | Direction of View                     | Intersection Sight Distance |           | Existing Conditions |
|----------------------------------------------|---------------------------------------|-----------------------------|-----------|---------------------|
|                                              |                                       | Minimum                     | Desirable |                     |
| Passenger Vehicle<br>(Eye Height - 3.5 feet) | South Approach – looking to the right | 535                         | 700       | Exceeds minimum     |
|                                              | North Approach – looking to the left  | 500                         | 535       | Exceeds minimum     |
| Semi Truck<br>(Eye Height - 7.6 feet)        | South Approach – looking to the right | 815                         | 955       | Exceeds minimum     |
|                                              | North Approach – looking to the left  | 790                         | 955       | Exceeds minimum     |

As shown in Table 2, the existing sight distance for the north and south approaches looking to the east meets the minimum requirement. Although traffic along Freistadt Road may be traveling above the 45 mph design speed, which would require longer sight distances.

### Existing Traffic

In April of 2014, GRAEF conducted a turning movement traffic count at the Freistadt Road and Maple Road intersection. Based on the traffic count, the weekday morning peak hour was identified to be 6:45 to 7:45 am, the weekday afternoon peak hour was identified to be 2:15 to 3:15 pm and the weekday evening peak hour was identified to be 4:30 to 5:30 pm. The existing (Year 2014) peak hour traffic volumes are shown on Exhibit 3. The intersection traffic count is included in Appendix 2.

### Traffic Forecasts

GRAEF evaluated the trends of the historic daily traffic volumes for Freistadt Road and Maple Road in the vicinity of this intersection. Based on historic and anticipated traffic growth for this area, an annual growth rate of 2% was applied to the existing traffic to develop the traffic forecasts. The trips expected to be generated by the manufacturing development are included in the traffic forecasts. For the purpose of this study, construction was estimated to occur in the Year 2017. The daily traffic forecasts for the anticipated construction year (Year 2017) and design year (Year 2037) are summarized in Table 3.

**Table 3**  
**Daily Traffic Forecasts**

|                                                   | Existing AADT<br>(Year 2013) | Daily Traffic Forecasts |           |
|---------------------------------------------------|------------------------------|-------------------------|-----------|
|                                                   |                              | Year 2017               | Year 2037 |
| Freistadt Road<br>(East of CTH Y/Goldendale Road) | 3,500 (2010)                 | 4,100                   | 6,100     |
| Freistadt Road (East of Maple Road)               | 4,300                        | 4,700                   | 7,000     |
| Maple Road (North of Mequon Road)                 | 9,600                        | 10,600                  | 15,700    |
| Maple Road (South of STH 145)                     | 1,100                        | 1,200                   | 1,800     |

As shown in Table 3, the design year (Year 2037) daily traffic forecast for Freistadt Road ranges from 6,100 vpd east of CTH Y/Goldendale Road to 7,000 vpd east of Maple Road. The Year 2037 traffic forecast for Freistadt Road indicates a two-lane roadway is sufficient. A two-lane roadway typically reaches its capacity with 14,000 to 15,000 vehicles per day. The Year 2037 daily traffic forecast for Maple Road ranges from 1,800 vpd south of STH 145 to 15,700 vpd north of Mequon Road. The design year peak hour traffic volumes for the study area intersection are shown on Exhibit 4.

### Traffic Signal Warrant Analysis

The existing (Year 2014) traffic volumes for the Freistadt Road intersection with Maple Road were compared to the warrants for traffic signal installation set forth in the *2009 Edition of the Manual on Uniform Traffic Control Devices* (MUTCD) to determine if a traffic signal is warranted. The existing traffic volumes do not meet any warrants with the existing four-lane roadway section on Freistadt Road. Based on the traffic forecasts, Freistadt Road is expected to operate acceptably as a two-lane roadway through the Year 2037. With two travel lanes on Freistadt Road, the existing traffic volumes meet Warrant 2 (Four Hour Volume), which justifies further consideration of installing a traffic signal. The signal warrant analyses are provided in Appendix 3.

## Traffic Operational Analysis

### Level of Service Definition

The study area intersection was analyzed using procedures set forth in the *2010 Highway Capacity Manual* (HCM). Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS 'A', to very poor, represented by LOS 'F'. For analysis and design purposes, Level of Service (LOS) 'D' was used to define acceptable peak hour operating conditions. Descriptions of the various levels of service are presented below and summarized in Table 4:

**LOS A** is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized intersections, average delays are less than 10 seconds. At stop controlled intersections, average delays are less than 10 seconds.

**LOS B** represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At stop controlled intersections, average delays are 10 to 15 seconds.

**LOS C** still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At stop controlled intersections, average delays are 15 to 25 seconds.

**LOS D** represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At stop controlled intersections, average delays are 25 to 35 seconds.

**LOS E** represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At stop controlled intersections, average delays are 35 to 50 seconds.

**LOS F** represents jammed conditions where the intersection is over capacity and acceptable gaps for stop controlled intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At stop controlled intersections, average delays exceed 50 seconds.

**Table 4**  
**Intersection Level of Service (LOS) Designations**

| Level of Service (LOS) | Stop Control                           | Traffic Signals                        |
|------------------------|----------------------------------------|----------------------------------------|
|                        | Average Delay per Vehicle<br>(sec/veh) | Average Delay per Vehicle<br>(sec/veh) |
| A                      | <10.0                                  | <10.0                                  |
| B                      | 10.1 – 15.0                            | 10.1 – 20.0                            |
| C                      | 15.1 – 25.0                            | 20.1 – 35.0                            |
| D                      | 25.1 – 35.0                            | 35.1 – 55.0                            |
| E                      | 35.1 – 50.0                            | 55.1 – 80.0                            |
| F                      | >50.0                                  | >80.0                                  |

### Existing (Year 2014) Traffic Analysis

The existing (Year 2014) peak hour traffic volumes are shown on Exhibit 3. The existing intersection geometrics are shown on Exhibit 2. The existing peak hour operating conditions with the two-way stop control and intersection geometrics is shown on Exhibit 5. The southbound approach and the northbound left-turn and through movements currently operate unacceptably at LOS F conditions during the morning peak hour. All movements currently operate at LOS D or better conditions during the afternoon and evening peak hours. The existing traffic analysis is included in Appendix 4.

### Alternatives Analysis

Based on discussions with Village staff, a roundabout was not desired at this location and therefore not considered during the alternatives analysis. The two improvement alternatives include restriping the four-lane undivided section of Freistadt Road to provide one through lane in each direction with exclusive left-turn lanes at the Maple Road intersection. Consider a 3-lane section with a two-way left-turn lane (TWLTL) outside of the intersection.

**Two-Way Stop With Median Alternative:** The intersection continues to operate under two-way stop control for the Maple Road approaches with a raised median provided on Freistadt Road to allow for two-stage crossing. Exhibit 6 shows the design year traffic operations for the two-way stop with median alternative. With the two-way stop with median alternative, select northbound and southbound movements are expected to experience unacceptable operations (LOS E or F) during the weekday morning and evening peak hours.

**Traffic Signal Alternative:** The intersection operates under fully actuated traffic signal control. Due to the low traffic volumes on Freistadt Road (major street), the existing traffic meets one warrant for traffic signals with the major street becoming a two-lane roadway (i.e. one lane in each direction). Exhibit 7 summarizes the design year traffic operations for the traffic signal alternative. All movements are expected to operate acceptably at LOS D or better conditions with the traffic signal alternative.

The design year (Year 2037) traffic analysis is included in Appendix 5.

### **Recommendations**

Based on the traffic analysis, the two-way stop with median alternative is expected to experience unacceptable delays with the design year (Year 2037) traffic and therefore is not a feasible improvement. It is recommended to reduce the travel lanes on the one mile section of Freistadt Road to a two-lane roadway and plan for a future traffic signal at this intersection. The recommended intersection geometry for the traffic signal alternative is shown on Exhibit 8. The conceptual layouts and cost estimate are provided in Appendix 6. The estimated cost for the improvement project including the one mile section of Freistadt Road is approximately \$480,000. It should be noted that the cost estimate is based on conceptual level design and does not account for utility impacts, construction engineering or real-estate acquisitions for grading easements. As traffic volumes increase in the future, exclusive right-turn lanes may be needed at the signalized intersection for the eastbound and northbound right-turn movements to reduce delays and traffic queues.

### Interim Safety Improvements

Consider the following interim safety improvements for the two-way stop control intersection:

- Reduce the travel lanes on Freistadt Road to a two-lane roadway. Geometric improvements are typically more effective at reducing the travel speeds than signage alone. The interim improvement would require seal coating and pavement marking for the one mile section of roadway and is estimated to cost approximately \$125,000.
- Grading the terrace along the north side of Freistadt Road (east of Maple Road) to improve sight distance for the north approach. This could be required with the development of the northeast quadrant.
- Install intersection warning sign (W2-1) with flashing beacon on Freistadt Road on the approach to the Maple Road intersection.
- Install radar speed feedback signs on Freistadt Road to increase driver's awareness of their travel speed.
- Increase police presence and enforcement along Freistadt Road.

### **Conclusions**

Freistadt Road could operate acceptably as a two-lane roadway and the additional capacity of the four-lane roadway is allowing for increased travel speeds. The higher travel speeds along Freistadt Road and crest vertical curve could be contributing to the right angle crashes occurring at the Maple Road intersection. The intersection currently experiences operational issues during the morning peak hour under two-way stop control. A traffic signal is warranted with Freistadt Road reconfigured to a two-lane roadway. It is recommended to plan for a future traffic signal at this intersection and consider interim safety improvements for the two-way stop control condition.

### Exhibits

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| Exhibit 1 | Study Area Map                                                                    |
| Exhibit 2 | Existing Intersection Geometrics                                                  |
| Exhibit 3 | Existing (Year 2014) Peak Hour Traffic Volumes                                    |
| Exhibit 4 | Design Year (Year 2037) Peak Hour Traffic Volumes                                 |
| Exhibit 5 | Existing (Year 2014) Traffic Operations with Existing Geometrics                  |
| Exhibit 6 | Two-Way Stop With Median Alternative – Design Year (Year 2037) Traffic Operations |
| Exhibit 7 | Traffic Signal Alternative – Design Year (Year 2037) Traffic Operations           |
| Exhibit 8 | Traffic Signal Alternative Recommended Geometrics                                 |

### Appendix

|            |                                                                |
|------------|----------------------------------------------------------------|
| Appendix 1 | Intersection Collision Diagram                                 |
| Appendix 2 | Intersection Traffic Count                                     |
| Appendix 3 | Traffic Signal Warrant Analyses                                |
| Appendix 4 | Existing (Year 2014) Traffic Operational Analysis              |
| Appendix 5 | Design Year (Year 2037) Traffic Operational Analysis           |
| Appendix 6 | Traffic Signal Alternative – Conceptual Layout & Cost Estimate |



NORTH  
NOT TO SCALE

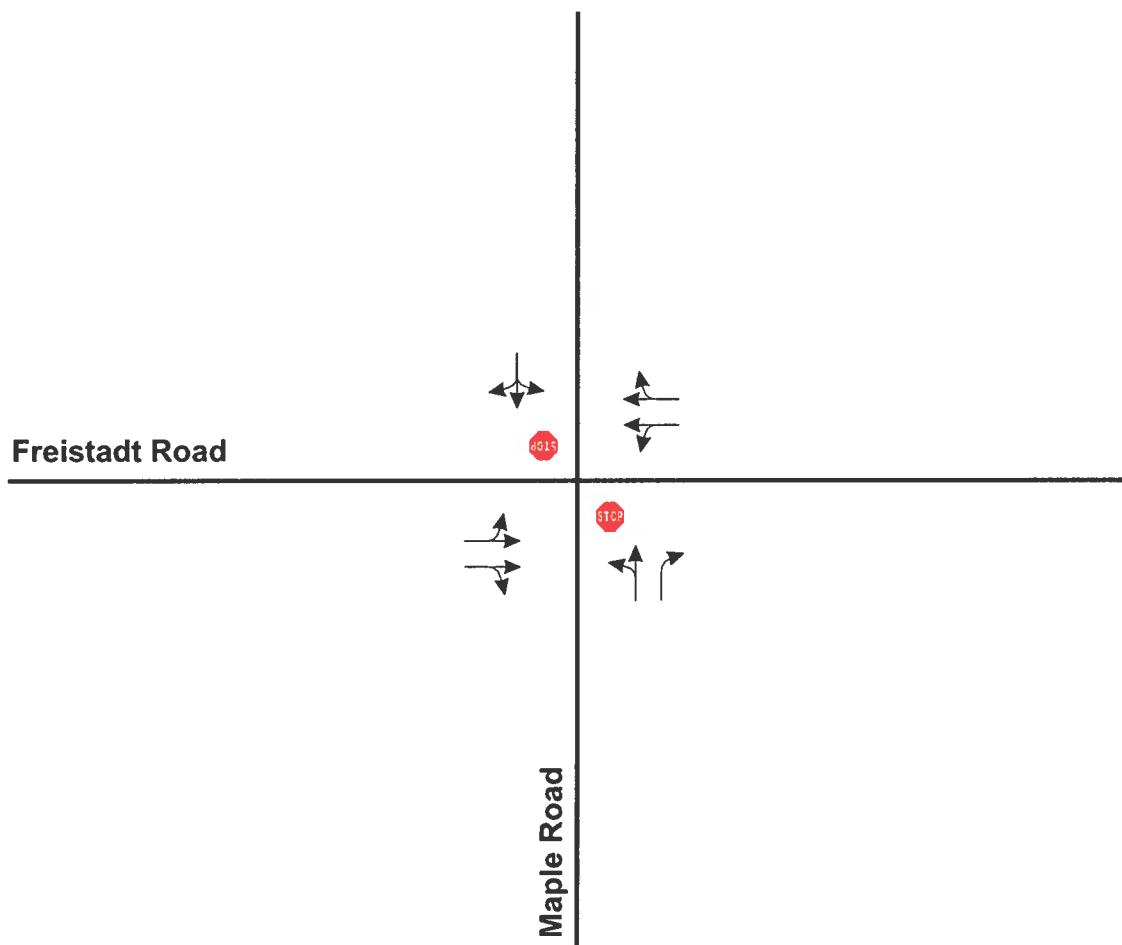


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EXHIBIT 1  
STUDY AREA MAP  
FREISTADT ROAD & MAPLE ROAD INTERSECTION  
GERMANTOWN, WISCONSIN



NORTH  
NOT TO SCALE

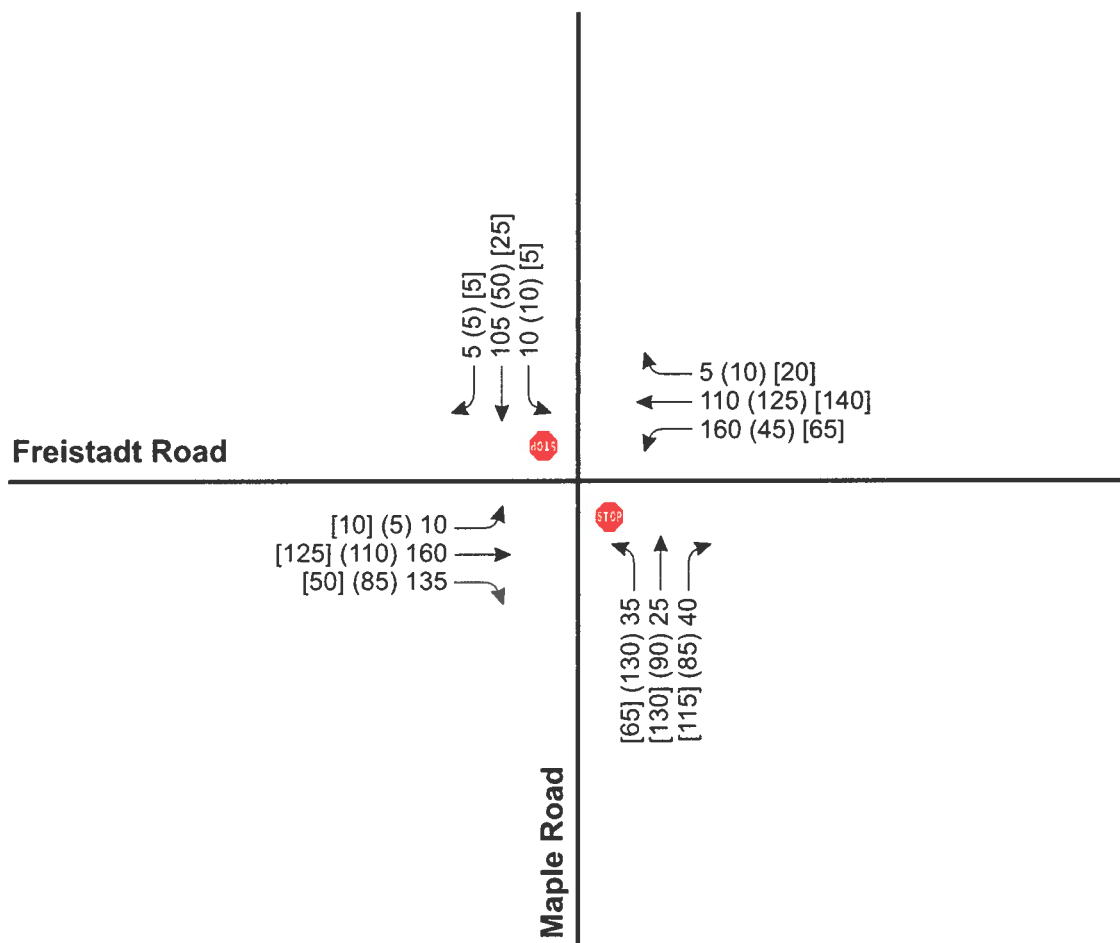


LEGEND

-  STOP SIGN
-  EXISTING GEOMETRICS



NORTH  
NOT TO SCALE

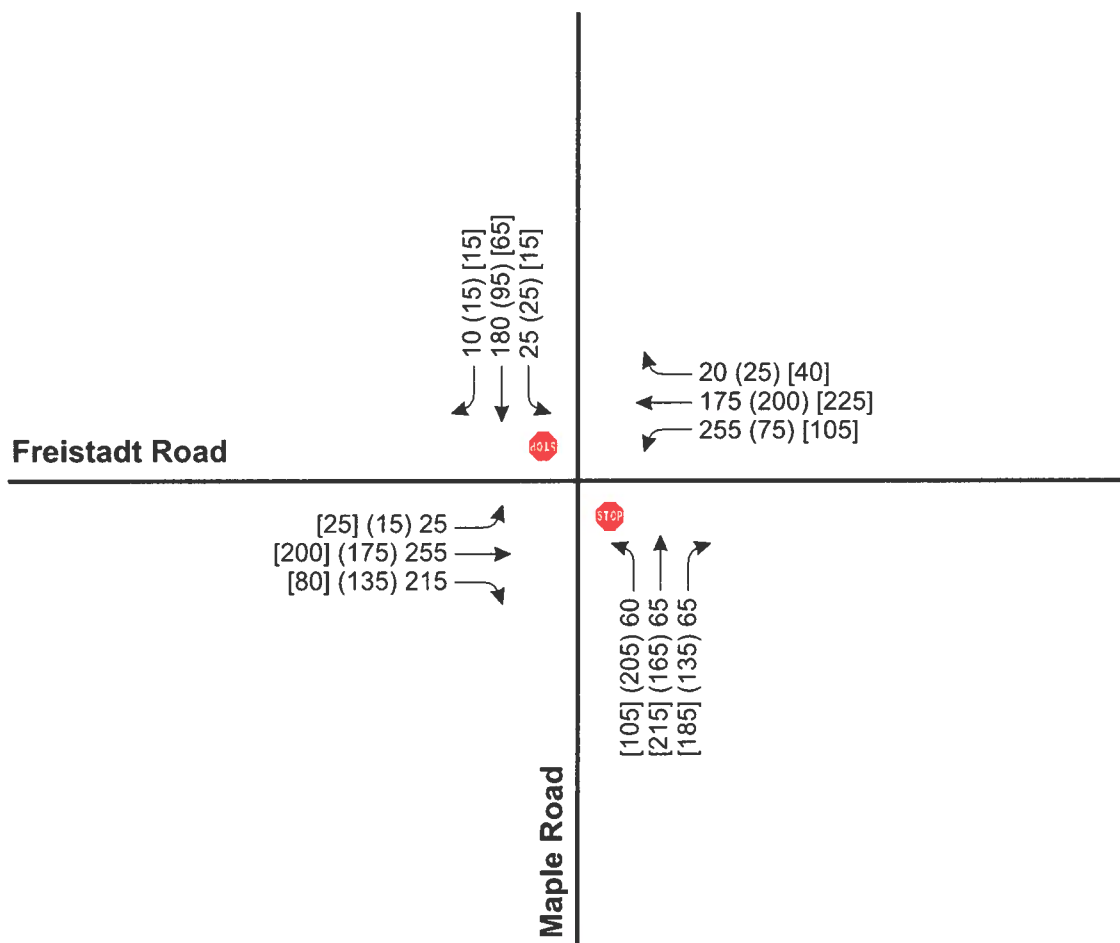


#### LEGEND

- STOP SIGN
- XXX WEEKDAY MORNING PEAK HOUR (6:45 - 7:45 AM) TRAFFIC VOLUMES
- (XXX) WEEKDAY AFTERNOON PEAK HOUR (2:15 - 3:15 PM) TRAFFIC VOLUMES
- [XXX] WEEKDAY EVENING PEAK HOUR (4:30 - 5:30 PM) TRAFFIC VOLUMES



NORTH  
NOT TO SCALE

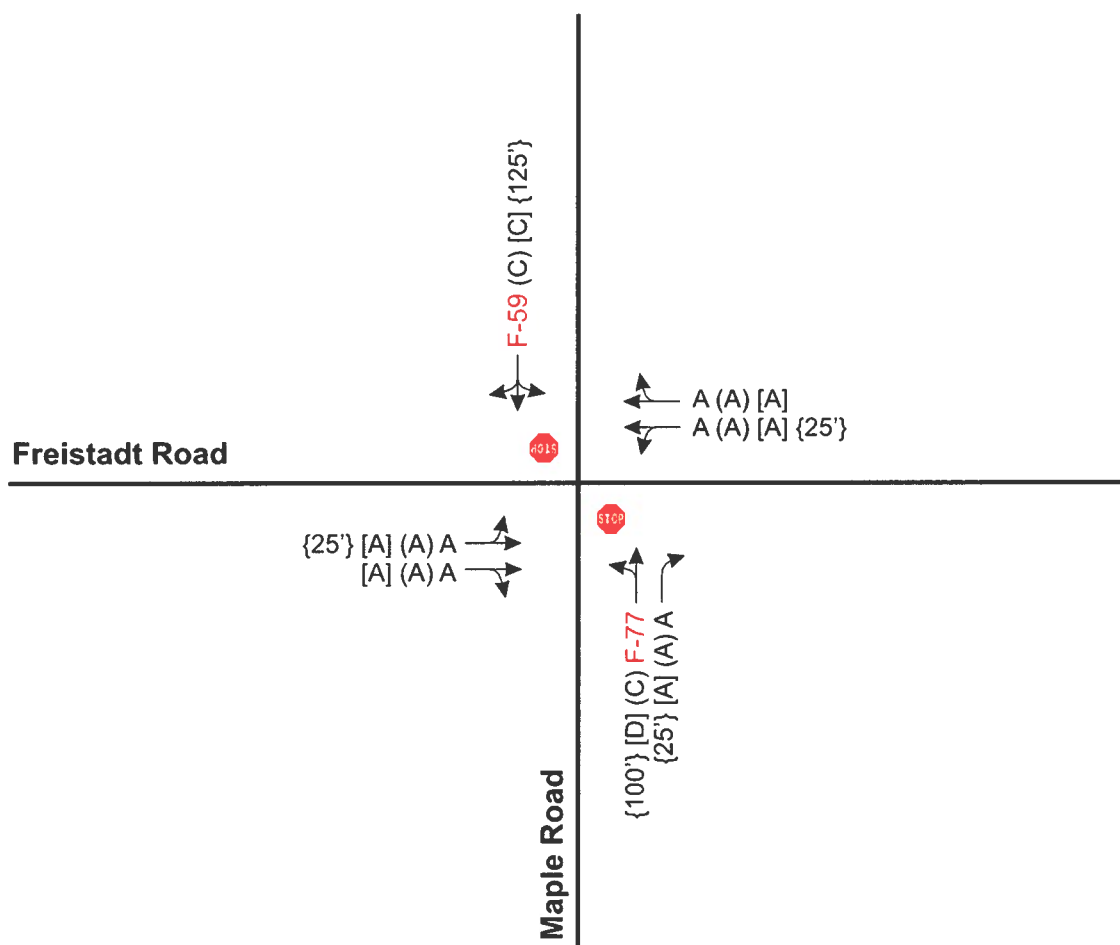


#### LEGEND

-  STOP SIGN
- XXX WEEKDAY MORNING PEAK HOUR (6:45 - 7:45 AM) TRAFFIC VOLUMES
- (XXX) WEEKDAY AFTERNOON PEAK HOUR (2:15 - 3:15 PM) TRAFFIC VOLUMES
- [XXX] WEEKDAY EVENING PEAK HOUR (4:30 - 5:30 PM) TRAFFIC VOLUMES



NORTH  
NOT TO SCALE



#### LEGEND

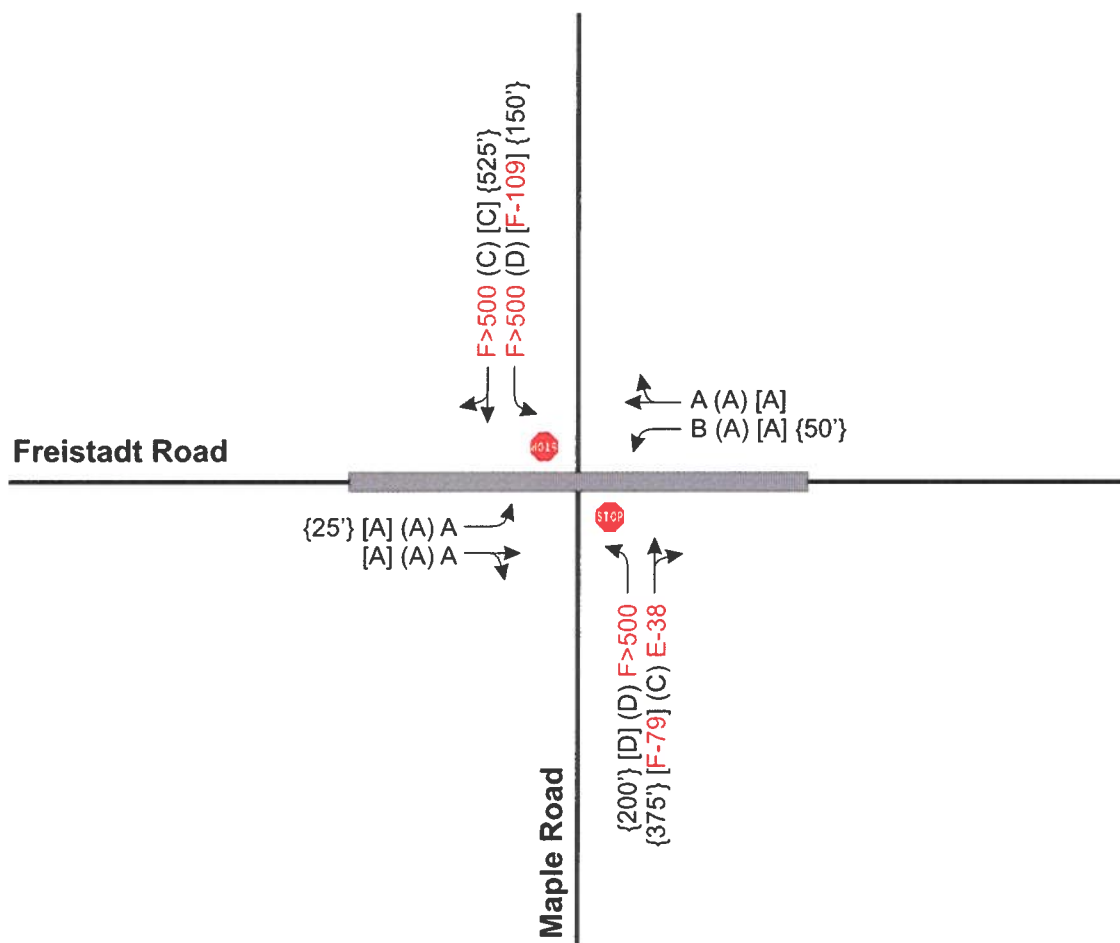
- STOP SIGN
- EXISTING GEOMETRICS
- X WEEKDAY MORNING PEAK HOUR (6:45 - 7:45 AM) LEVEL OF SERVICE
- (X) WEEKDAY AFTERNOON PEAK HOUR (2:15 - 3:15 PM) LEVEL OF SERVICE
- [X] WEEKDAY EVENING PEAK HOUR (4:30 - 5:30 PM) LEVEL OF SERVICE
- {XXX'} MAXIMUM 95TH PERCENTILE TRAFFIC QUEUE (IN FEET)

NOTE: FOR MOVEMENTS WITH LOS E OR F OPERATIONS, THE AVERAGE DELAY PER VEHICLE (IN SECONDS) IS PROVIDED.

### EXHIBIT 5 EXISTING (YEAR 2014) TRAFFIC OPERATIONS WITH EXISTING GEOMETRICS FREISTADT ROAD & MAPLE ROAD INTERSECTION GERMANTOWN, WISCONSIN



NORTH  
NOT TO SCALE



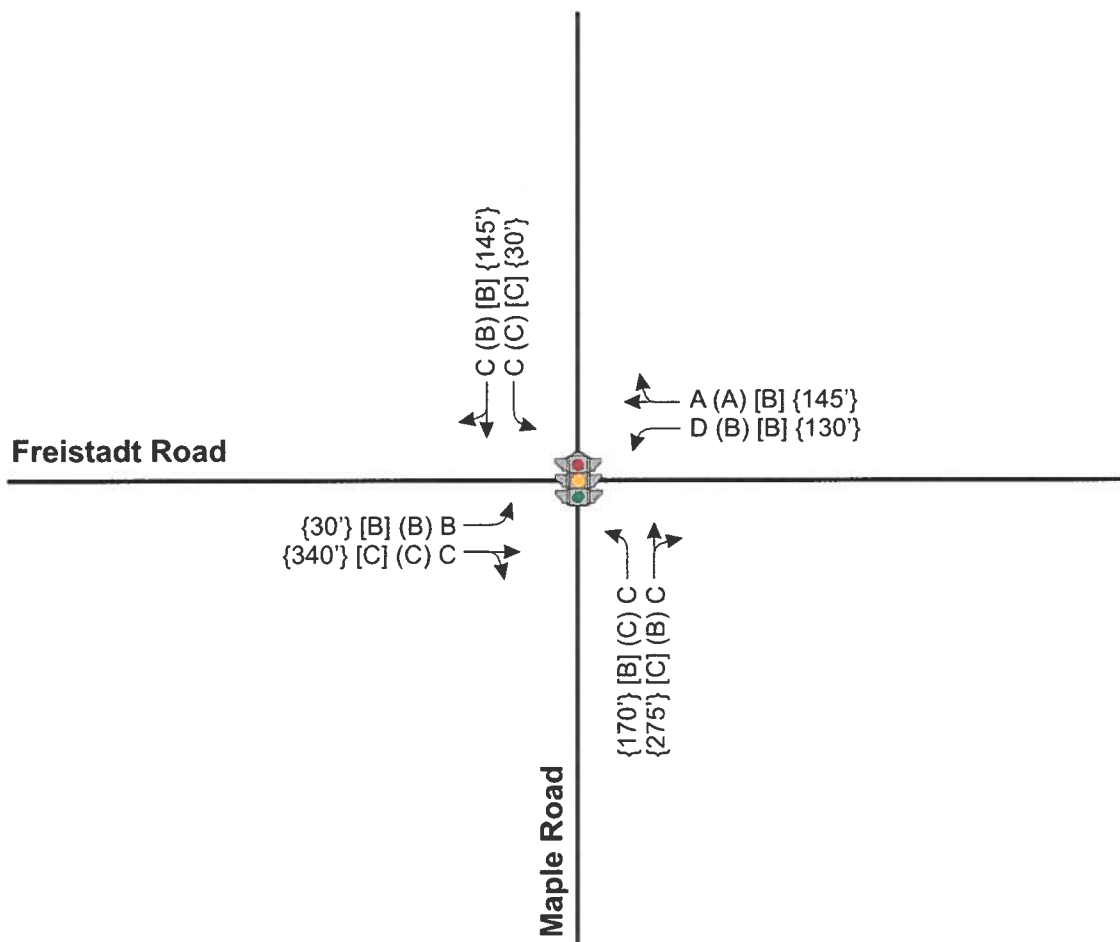
#### LEGEND

- STOP SIGN
- RECOMMENDED GEOMETRICS
- RAISED MEDIAN
- X WEEKDAY MORNING PEAK HOUR (6:45 - 7:45 AM) LEVEL OF SERVICE
- (X) WEEKDAY AFTERNOON PEAK HOUR (2:15 - 3:15 PM) LEVEL OF SERVICE
- [X] WEEKDAY EVENING PEAK HOUR (4:30 - 5:30 PM) LEVEL OF SERVICE
- {XXX'} MAXIMUM 95TH PERCENTILE TRAFFIC QUEUE (IN FEET)

NOTE: FOR MOVEMENTS WITH LOS E OR F OPERATIONS, THE AVERAGE DELAY PER VEHICLE (IN SECONDS) IS PROVIDED.



NORTH  
NOT TO SCALE

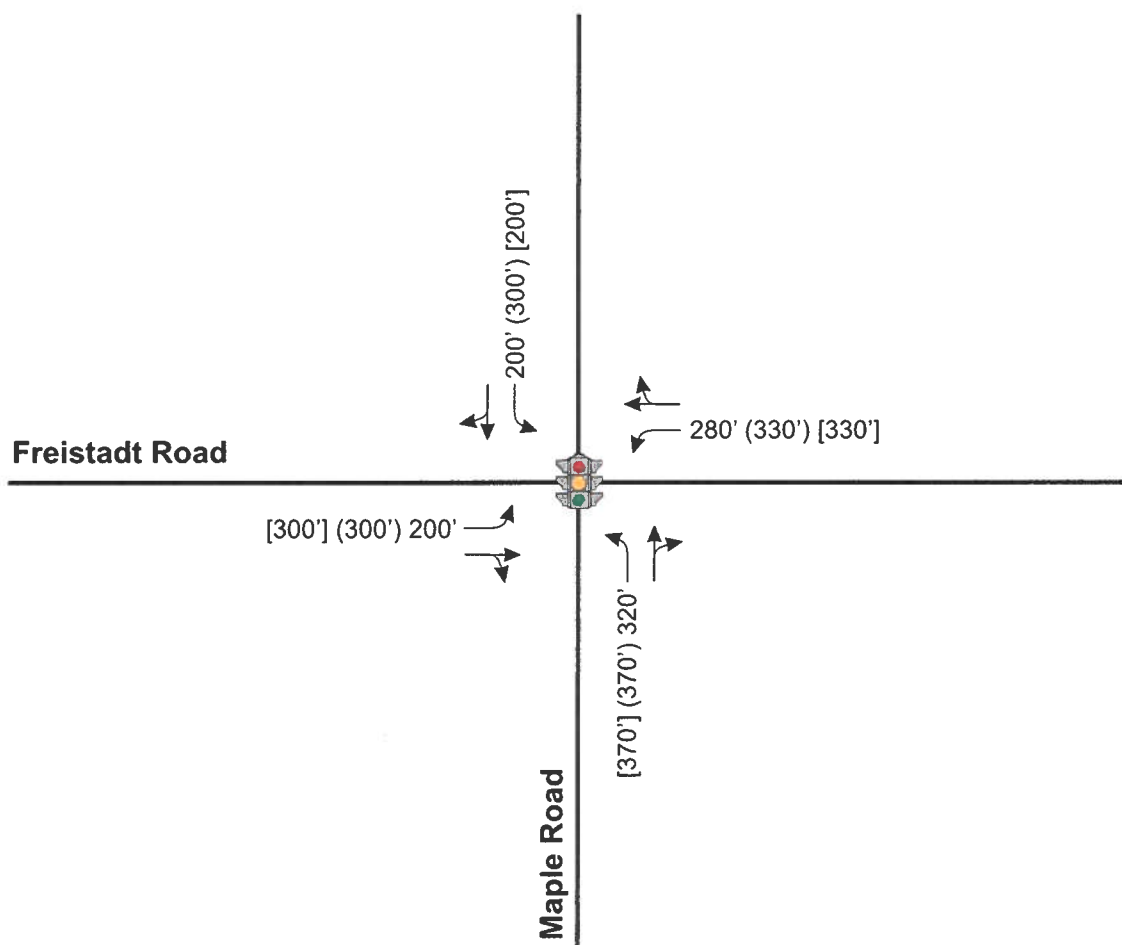


#### LEGEND

-  TRAFFIC SIGNAL
-  EXISTING GEOMETRICS
- X WEEKDAY MORNING PEAK HOUR (6:45 - 7:45 AM) LEVEL OF SERVICE
- (X) WEEKDAY AFTERNOON PEAK HOUR (2:15 - 3:15 PM) LEVEL OF SERVICE
- [X] WEEKDAY EVENING PEAK HOUR (4:30 - 5:30 PM) LEVEL OF SERVICE
- {XXX'} MAXIMUM 95TH PERCENTILE TRAFFIC QUEUE (IN FEET)



NORTH  
NOT TO SCALE



#### LEGEND

-  TRAFFIC SIGNAL
-  RECOMMENDED GEOMETRICS
- XXX' MINIMUM STORAGE LENGTH (IN FEET)
- (XXX') DESIRABLE STORAGE LENGTH (IN FEET)
- [XXX'] RECOMMENDED STORAGE LENGTH (IN FEET)