



TRAFFIC COMMITTEE AGENDA

July 21, 2021 – 7:30 P.M.

Council Boardroom – Troy City Hall – 500 West Big Beaver

1. Roll Call
2. Approval of Minutes – March 17, 2021 Traffic Committee

PUBLIC HEARINGS

3. Request for Sidewalk Waiver – 195 McKinley (Sidwell # 88-20-09-426-029)

REGULAR BUSINESS

4. Request for Traffic Control – Wyngate Drive at County Ridge Drive
5. Public Comment
6. Other Business
7. Adjourn

Copy to:

Traffic Committee Members; Sgt. Justin Novak, Police Department; Lt. Eric Caloia, Fire Department

TRAFFIC COMMITTEE

MESSAGE TO VISITORS, DELEGATIONS AND CITIZENS

The Traffic Committee is composed of seven Troy citizens who have volunteered their time to the City to be involved in traffic and safety concerns. The stated role of this Committee is:

- a. To give first hearing to citizens' requests and obtain their input.
- b. To make recommendations to the City Council based on technical considerations, traffic surveys, established standards, and evaluation of citizen input.
- c. To identify hazardous locations and recommend improvements to reduce the potential for traffic crashes.

Final decisions on sidewalk waivers will be made by the Committee at this meeting.

The recommendations and conclusions arrived at on regular items this evening will be forwarded to the City Council for their final action. Any citizen can discuss these recommendations before City Council. The items discussed at the Traffic Committee meeting will be placed on the City Council Agenda by the City Manager. The earliest date these items might be considered by City Council would normally be 10 days to 2 weeks from the Traffic Committee meeting. If you are interested, you may wish to contact the City Manager's Office in order to determine when a particular item is on the Agenda.

Persons wishing to speak before this Committee should attempt to hold their remarks to no more than 5 minutes. Please try to keep your remarks relevant to the subject at hand. Please speak only when recognized by the Chair. These comments are made to keep this meeting moving along. Anyone wishing to be heard will be heard; we are here to listen and help in solving or resolving your particular concerns.

2. Approval of Minutes – March 17, 2021 Traffic Committee

PUBLIC HEARING

3. Request for Sidewalk Waiver – 195 McKinley (Sidwell # 88-20-09-426-029)

Jonathan Aronson of 2137 Red Maple Drive requests a sidewalk waiver for the sidewalk at 195 McKinley (Sidwell # 88-20-09-426-029). Mr. Aronson states:

- a. *There are no other sidewalks in the subdivision. This would be the only sidewalk and property on both sides as well as across the street have no sidewalks. A sidewalk would literally be a sidewalk to nowhere.*
- b. *There are several new construction homes in the subdivision and none of them have sidewalks.*
- c. *The builder has quoted a cost of \$10,000 to \$15,000 to install the sidewalk, including having to put in a second catch basin because of the sidewalk.*
- d. *We are building this ranch as an “age in place” home for ourselves and adding the burden of clearing a sidewalk (that no one will use) increases the difficulty of continuing to live independently.*

The Department of Public Works (DPW) recommends approving the waiver request and not requiring the installation of sidewalk “*Due to the lack of sidewalk on the surrounding parcels and the open drainage ditches of the area*”, subject to the submission of a cash deposit for future construction to assure consent and participation in any future sidewalk installation.

SUGGESTED RESOLUTIONS:

1. WHEREAS, City of Troy Ordinances, Chapter 34, allows the Traffic Committee to grant waivers of the City of Troy Design Standards for Sidewalks upon a demonstration of necessity; and

WHEREAS, Jonathan Aronson has requested a waiver of the requirement to construct sidewalk based on lack of sidewalk on surrounding parcels; and

WHEREAS, the Traffic Committee has determined the following:

- a. A waiver will not impair the public health, safety or general welfare of the inhabitants of the City and will not unreasonably diminish or impair established property values within the surrounding area, and
- b. A strict application of the requirements to construct a sidewalk would result in practical difficulties to, or undue hardship upon, the owners, and
- c. The construction of a new sidewalk would lead nowhere and connect to no other walk, and thus will not serve the purpose of a pedestrian travel-way.

NOW THEREFORE, BE IT RESOLVED, that the Traffic Committee **GRANTS** a waiver of the sidewalk requirement for 195 McKinley (Sidwell # 88-20-09-426-029) subject to the submission of a cash deposit commensurate with the cost of sidewalk construction.

2. WHEREAS, the Traffic Committee has determined, after a public hearing, that Petitioner failed to establish the standards justifying the granting of a waiver,

NOW THEREFORE, BE IT RESOLVED, that the Traffic Committee **DENIES** a waiver of the sidewalk requirement for 195 McKinley (Sidwell # 88-20-09-426-029).

REGULAR BUSINESS

4. Request for Traffic Control – Wyngate Drive at Country Ridge Drive

The Wyngate of Troy Homeowner's Association states that the lack of traffic control signs at the intersection of Wyngate Drive at Country Ridge Dive creates a hazardous condition.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Wyngate Drive at Country Ridge Drive be **MODIFIED** from no traffic control to **ADD** YIELD signs on the Country Ridge Drive approaches to the intersection.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Wyngate Drive at Country Ridge Drive.

5. Public Comment

6. Other Business

7. Adjourn

An electronic meeting of the Troy Traffic Committee was held remotely using GoToMeeting software on Wednesday, March 17, 2021. Pete Ziegenfelder called the meeting to order at 7:33 p.m.

1. Roll Call

Present: Richard Kilmer
Cindy Nurak
Sunil Sivaraman
Pete Ziegenfelder
Alankar Shende, Student Representative

Absent: Al Petrulis
Cynthia Wilsher

Also present: Tom Duszynski, 5068 Tyler Drive
Sgt. Justin Novak, Police Department
Lt. Eric Caloia, Fire Department
Bill Huotari, City Engineer/Traffic Engineer

2. Proposed Resolution to Conduct Electronic Meeting

Public bodies may conduct public meetings remotely during the COVID-19 pandemic pursuant to Public Act 254 of 2020. The suggested resolution must be approved at the start of the meeting.

Resolution # 2021-03-04
Moved by Ziegenfelder
Seconded by Sivaraman

RESOLVED, that the Troy Traffic Committee hereby allows all members to participate in public meetings by electronic means as allowed by Public Act 254 of 2020, since an in person meeting could detrimentally increase exposure of board members and the general public to COVID-19, and would also be difficult to facilitate in light of the recent Michigan Department of Health and Human Services epidemic orders protecting public health and safety.

Members participating electronically will be considered present and in attendance at the meeting and may participate in the meeting as if physically present. However, members must avoid using email, texting, instant messaging, and other such electronic forms of communication to make a decision or deliberate toward a decision.

RESOLVED, that the Troy Traffic Committee hereby establishes public participation rules to provide for two methods by which members of the public can be heard by others during meetings. Email sent to HuotariWJ@troymi.gov and received by 3:00 p.m. on the day of the meeting will be read during the public comment period of the meeting. Voicemail left at 248.524.3387 and received by 3:00 p.m. on the day of the meeting will be read into the

record during the public comment period of the meeting. Both email and voicemail public comments will be limited to three minutes each.

Yes: Kilmer, Nurak, Sivaraman, Ziegenfelder
No: None
Absent: Petrulis, Wilsher

MOTION CARRIED**3. Minutes – January 20, 2021**

Resolution # 2021-03-05
Moved by Sivaraman
Seconded by Kilmer

To approve the January 20, 2021 minutes as printed.

Yes: Kilmer, Nurak, Sivaraman, Ziegenfelder
No: None
Absent: Petrulis, Wilsher

MOTION CARRIED**PUBLIC HEARINGS****4. No Public Hearings****REGULAR BUSINESS****5. Request for Traffic Control – Lila at Allison**

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

Four (4) emails and two (2) phone calls were read into the record as public comment.

William -

Hello, I received a notice in the mail regarding a resident request for traffic signs in my neighborhood.

I fully support this request! Since the new housing development went in, there is much more traffic and cars routinely drive too fast on Allison Dr.

My recommendation is to add stop signs for Midvale at Allison, Lila at Allison, Ellery at Lila, and Prentis at Lila (may be one here already?), in addition to stop signs for Allison at Lila.

The notice mentions Yield or Stop signs. In my experience, Yield signs are invisible to most people and nobody pays attention to cross traffic unless there is a Stop sign.

Thank you,
Jason Piotrowski
5158 Allison Dr, Troy, MI 48085

Hi, this is from resident 5331 Ludstone, Troy, MI 48085. I request all the Stop sign for all intersections, thank you.

Sincerely, Mei Yu

Hello,
My name is Mary Pat Acord and I am a resident of East Long Lake Estates 2 on Hale Dr, just north of Lila. My husband and I support the resident request for yield or stop signs at the cross-sections of Lila. I have seen so many near miss accidents, including vehicles nearly hitting pedestrians or children riding bikes. I believe adding these signs will bring more awareness to the dangers these intersections can present.

Thank you for your consideration into this matter.
Mary Pat Acord

To whom it may concern,

My name is Ray Elliott. My family and I live at 1460 Lila Dr, at the intersection of Lila and Ellery. My family and I have lived here for 5 years. As expected, we have seen increased traffic through the intersection since many families have moved into new development. This increased traffic has created unsafe conditions around the intersection because drivers do not stop to look for pedestrians, cars coming out of their driveways, or people crossing the street. I have had to stop many times while backing out of my drive way (even when I am almost all the way out) due to people coming out of the new development and not looking for other cars. There will also be an increase in pedestrian and bicycle traffic as the months get warmer, since Lila Dr leads directly to Jaycee Park. I worry for the safety of my three young children and the other children in the neighborhood.

I would like to see a stop sign installed on Ellery drive where it meets Lila Dr, and at least a yield sign at Prentis and Lila.

Thank you for your consideration.

Ray and Keri Elliott

Diane Jakowenko of 5302 Allison supports Stop signs at the intersection of Lila at Allison. She is all in favor of Stop signs. Ms. Jakowenko does not believe Yield signs work. She is

concerned with all the new traffic from Whispering Park. She has lived in her home for 25 years.

Mindy Withum of 5270 Allison supports Stop signs at the intersection of Lila at Allison. She fully supports Stop signs. Ms. Withum does not believe Yield signs work.

Tom Duszynski of 5068 Tyler Drive was present at the meeting and walks the streets in his subdivision frequently. The new subdivision [Whispering Park] that was built on Troy School District property is adding another 50-60 families, which means more children and more traffic. This area needs traffic control signs at the intersections. Mr. Duszynski requested that four (4) intersections in his subdivision be reviewed for purposes of traffic control signage. He does not see or believe speeding is an issue in this area, but lack of drivers not stopping or yielding at intersections is an issue. He agrees with the OHM recommendations.

Ms. Nurak prefers Yield signs when appropriate. She prefers not to stop unnecessarily.

Mr. Ziegenfelder prefers Stop signs as the remove ambiguity.

Student Representative Shende asked if this issue (traffic not stopping or yielding at the intersection) has been around for years or if it has been a new issue since residents have started to move into the new subdivision.

Mr. Duszynski said he has noticed over the years but it has been more problematic now that residents have moved into the new subdivision. The west end of Lila has existing Yield signs. New residents are using Allison to get to Long Lake Road. Prentis at Lila is the most problematic intersection as drivers don't stop and there are some vision obstructions. He would be in favor of Stop signs.

Mr. Sivaraman asked if there was a bus stop at this location.

Mr. Duszynski replied that Prentis at Lila has been used as a Troy school bus stop.

Mr. Sivaraman asked about how many new homes are going in at Whispering Park. The plans call for 50 units.

Resolution # 2021-03-06

Moved by Ziegenfelder

Seconded by Kilmer

RESOLVED, that the intersection of Lila Drive at Allison Drive be **MODIFIED** from no traffic control to **ADD** a new STOP sign on the eastbound Lila Drive approach to Allison Drive.

Yes: Kilmer, Sivaraman, Ziegenfelder

No: Nurak

Absent: Petrulis, Wilsher

MOTION CARRIED

6. Request for Traffic Control – Lila at Prentis

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

Comments from Item #5 were noted as applicable to this intersection as well.

One (1) phone call was read into the record as public comment.

Mary Jo Bak of 5153 Prentis supports Stop signs at the intersection of Lila at Prentis.

She stated that traffic and speeds have increased with new residents occupying new homes in the Whispering Park subdivision. She is concerned about people walking to the park on Prentis and believes Stop signs would help in this area.

Resolution # 2021-03-07

Moved by Ziegenfelder

Seconded by Nurak

RESOLVED, that the intersection of Lila Drive at Prentis Drive be **MODIFIED** from no traffic control to **ADD** a new STOP sign on the northbound Prentis Drive approach to Lila Drive.

Yes: Kilmer, Nurak, Sivaraman, Ziegenfelder

No: None

Absent: Petrulis, Wilsher

MOTION CARRIED

7. Request for Traffic Control – Lila at Ellery

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

Comments from Item #5 and #6 were noted as applicable to this intersection as well.

Ms. Nurak stated that she believes a Yield sign would be appropriate at this intersection.

Unnecessary Stop signs can increase speeds.

Mr. Duszynski stated that on Ellery southbound lines of sight are clear. There is also parking allowed on the south side of Lila.

Mr. Kilmer stated that Yield signs do not work. Many drivers don't understand what a Yield sign is and pay no attention to them. He drives around Troy and our neighboring communities and does not see many Yield signs outside of Troy. He states that most other cities do not use Yield signs, they use Stop signs as drivers understand a Stop sign.

Resolution # 2021-03-08

Moved by Ziegenfelder

Seconded by Kilmer

RESOLVED, that the intersection of Lila Drive at Ellery Drive be **MODIFIED** from no traffic control to **ADD** a new STOP sign on the southbound Ellery Drive approach to Lila Drive.

Yes: Kilmer, Sivaraman, Ziegenfelder

No: Nurak

Absent: Petrulis, Wilsher

MOTION CARRIED

8. Request for Traffic Control – Midvale at Allison

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

Comments from Item #5, #6 and #7 were noted as applicable to this intersection as well.

One (1) email was read into the record as public comment.

Traffic Committee,

Please find below my comments for the subject meeting:

My wife and I have lived at 5534 Allison Drive for the last 37 years. Our home is the first home south of and opposite to the "T" intersection of Midvale Drive at Allison Drive. We have a direct view from our living room window of the intersection and can observe the flow of traffic in and out of the new Whispering Park subdivision.

As a result and most alarming we see many small children who have recently moved onto

Allison Drive in the last years, riding their bikes and power toys up and down the sidewalk, crossing the intersection often without regard to traffic! Both homes located on the intersection corners have shrubbery and trees planted at the corners. Rendering the oncoming view of the intersection obscure for both children and drivers. This is aggravated by the speed of both moving objects and the ratio of the driver perspective to the ground level of the children moving on small bikes or sitting on powered toys.

In my opinion the suggested resolution for a yield sign is not strong enough to prevent a tragic accident from occurring in the near future at this intersection. It's only a matter of time before one of these new families will have a tragedy on their hands and the city will have another lawsuit to deal with. I've seen way too many Yield signs ignored in my lifetime.

Further, having observed the traffic at the subject intersection for the last two years, moving at speeds well above the residential limit. It's my strong belief a Yield sign will do little to nothing to prevent the inevitable.

In my estimation, based on just ½ of the number of residents living in the Whispering Park subdivision, the following opportunities for a tragedy to occur are; 75 / day, 2,250 / month and 27,000 / year. Please don't take this high risk. Do what is right and proper, post a Stop Sign on Midvale Drive at the intersection of Allison Drive.

Kind regards,
Patrick J. Eveland

Resolution # 2021-03-09
Moved by Ziegenfelder
Seconded by Kilmer

RESOLVED, that the intersection of Midvale Drive at Allison Drive be **MODIFIED** from no traffic control to **ADD** a new STOP sign on the eastbound Midvale Drive approach to Allison Drive.

Yes: Kilmer, Nurak, Sivaraman, Ziegenfelder
No: None
Absent: Petrulis, Wilsher

MOTION CARRIED

9. Request for Traffic Calming – Firefighter's Park

Paula Kreuter of 1240 Prosper submitted two (2) service requests through the City's online portal regarding traffic calming measures at Firefighter's Park. She would like Firefighter's Park to be considered for speed bumps. Ms. Kreuter states *"the traffic from teens and golfers is very erratic and dangerous. She proposes a speed bump between the back parking lot and the restroom to slow traffic between the gazebo and playground"*. Ms. Kreuter added in her second service request *"I truly believe speed bumps are needed at Firefighter's Park. Speed limits are not practiced and it's becoming dangerous to cross the park safely"*.

A winter field investigation would not provide meaningful data due to the weather and lower activity levels at the park.

In the interim, we do have some options in accordance with the Michigan Vehicle Code (MVC):

Section 257.627 (2) except as provided in subsection (1), it is lawful for the operator of a vehicle to operate that vehicle on a highway at a speed not exceeding the following:

(c) 25 miles per hour on a highway segment within the boundaries of a public park. A local authority may decrease the speed limit to not less than 15 miles per hour in a public park under its jurisdiction.

The way the MVC reads is that 25 mph is the default speed limit with 15 mph optional. The lower 15 mph speed limit would require a Traffic Control Order (TCO) and the reason why this item is before the Traffic Committee.

The net effect is to have an enforceable speed limit within Firefighter's Park, but reserves the option of additional studies and possibility of future actions if needed.

The intent would be to follow-up with a traffic study in mid to late spring when the weather is more conducive to activity at the park and overall pedestrian activity and traffic is at normal levels.

One (1) email was read into the record as public comment.

Please note that I will not be able to attend that meeting. We will be on vacation, plus are you aware that's St. Patrick's evening?

Paula Kreuter

Mr. Kilmer discussed that the driveway to the back has curves and slows traffic down just by its layout.

Mr. Sivaraman noted that he has witnessed teen driver's drag racing in the rear parking lot as you can't see the area from the main road.

Student Representative Shende stated that high school students will do whatever they want in the rear of the park as it is secluded.

Mr. Sivaraman requested that Troy Police have an officer drive through the park on a Saturday or Sunday afternoon to witness careless driving.

Sgt. Novak stated that Troy Police has officers in and out of the park frequently due to reports of criminal activity in the back of the park.

Resolution # 2021-03-10
Moved by Ziegenfelder

Seconded by Kilmer

RESOLVED, that Firefighter's Park speed limit be posted at 15 mph pursuant to Section 257.627 (2) (c) of the Michigan Vehicle Code.

Yes: Kilmer, Nurak, Sivaraman, Ziegenfelder

No: None

Absent: Petrulis, Wilsher

MOTION CARRIED

10. Election of Officers

In accordance with the By-Laws of the City of Troy Traffic Committee, Article III, nomination of officers shall be made from the floor on the third Wednesday of February of each year for the purpose of electing a Chairperson and a Vice-Chairperson. There was no Traffic Committee meeting held in February so this item was moved to the March 17, 2021 meeting.

A candidate receiving a majority vote of the members present at the meeting shall be declared elected and shall serve for one year or until his or her successor shall take office. Vacancies in offices shall be filled immediately by regular election procedure.

Article II of the By-Laws speaks to the Officers and Their Duties, which states:

Section 1 - The officers of the Traffic Committee shall consist of a Chairperson and a Vice-Chairperson.

Section 2 - The Chairperson shall preside at all meetings of the Traffic Committee and shall have the duties normally conferred by parliamentary usage on such officers.

Section 3 - The Chairperson shall be one of the citizen members of the Committee and shall have the privilege of discussing all matters before the Committee and voting thereon.

Section 4 - The Vice-Chairperson shall act for the Chairperson in his or her absence. The Vice-Chairperson shall be a citizen member of the Committee, with the rights and privileges of the Chairperson.

Resolution # 2021-03-11

Moved by Kilmer

Seconded by Sivaraman

RESOLVED, that Pete Ziegenfelder be elected Chairperson of the Traffic Committee for calendar year 2021.

Yes: Kilmer, Nurak, Sivaraman,

No: None

Absent: Petrulis, Wilsher

Abstain: Ziegenfelder

MOTION CARRIED

Resolution # 2021-03-12

Moved by Wilsher

Seconded by Sivaraman

RESOLVED, that Al Petrulis be elected Vice-Chairperson of the Traffic Committee for calendar year 2021.

Yes: Kilmer, Nurak, Sivaraman, Ziegenfelder

No: None

Absent: Petrulis, Wilsher

MOTION CARRIED

11. Public Comment

There was no further public comment at the meeting.

12. Other Business

Big Beaver is to close Friday, March 19 at 6AM and open on Monday, March 22 by 6PM. The DDI at I75 and Big Beaver will be complete and open to traffic when they open Big Beaver to traffic.

I75/Crooks/Corporate interchange will close on Tuesday, March 23 at 7AM for two weeks. MDOT anticipates re-opening the Crooks/Corporate interchange by Tuesday, April 6 at 5PM.

It is unknown at this time if the April meeting will be virtual, in-person or a hybrid meeting. The current order lasts until the end of March 2021 and we are waiting to see if it is extended, rescinded or modified in some fashion. Once we know more it will be shared with the members.

13. Adjourn

The meeting adjourned at 8:21 p.m.

Pete Ziegenfelder, Chairperson

William J. Huotari, City Engineer/Traffic Engineer

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June 7, 2021

TO: The City of Troy Traffic Committee

FROM: Kurt Bovensiep, Public Works Director
Scott Carruthers, Streets and Drains Operations Manager

SUBJECT: Request for Waiver of Sidewalk Requirement
Sidwell Number 88-20-09-426-029

Per the attached waiver form, Jonathan Aronson is requesting a waiver for the sidewalk on the property located at 195 McKinley, Sidwell Number 88-20-09-426-029.

Chapter 34 City of Troy Sidewalks and Driveway Approaches Ordinance # 34-07 requires, all owners of lots and premises abutting dedicated streets open to the public shall be required to construct sidewalks and driveway approaches at the time of construction of any new buildings or structures, or additions to buildings or structures, or at the time a nonconforming use changes to a permitted use in the Zoning District. No occupancy permit shall be issued until such time as the owners of said property have complied with the requirements of this provision provided only that the Director of Building and Zoning may extend the time for completion of the required sidewalks and driveway approaches in accordance with established procedure.

City of Troy Sidewalks and Driveway Approaches Ordinance # 34.07.01 also requires that a sidewalk be installed in conjunction with the development of a parcel due to a recent lot split, combination of parcels or a re-platting.

Please be advised that there is currently not a sidewalk to the east or west of 195 McKinley or across the street.

Due to the lack of sidewalk on the surrounding parcels and the open drainage ditches of the area, we recommend that the sidewalk not be installed at 195 McKinley, as per ordinance #34.07.

If the sidewalk requirements were to be waived, we recommend the approval be subject to the submission of a cash deposit for future construction to assure consent and participation in any future sidewalk installation.

JONATHAN ARONSON
2137 Red Maple Drive
Troy, MI 48098
248 879-5528
Email: Jonaronson2137@gmail.com

Date: June 1, 2021

City of Troy
Mr. Kurt Bovensiep
Public Works Director
4693 Rochester Road
Troy, MI 48098

RE: Sidewalk Waiver

Dear Mr. Bovensiep:

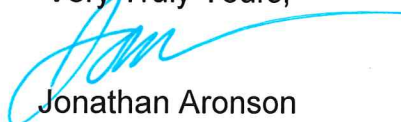
My wife and I are the owners of a residential vacant lot located at 195 McKinley, in Troy. We are in the process of building a ranch home on the property and the builder has told us the City requires a sidewalk on new construction.

We are respectfully requesting that the sidewalk requirement be waived for the following reasons:

- A) There are no other sidewalks in the subdivision. This would be the only sidewalk and property on both sides as well as across the street have no sidewalks. A sidewalk would literally be a sidewalk to nowhere.
- B) There are several new construction homes in the subdivision and none of them have sidewalks.
- C) The builder has quoted a cost of \$10,000 to \$15,000 to install the sidewalk, including having to put in a second catch basin because of the sidewalk.
- D) We are building this ranch as an "age in place" home for ourselves and adding the burden of clearing a sidewalk (that no one will use) increases the difficulty of continuing to live independently.

I would appreciate your waiving the requirement for the sidewalk on this property. If there are any questions or problems, or if you need more information, please feel free to call me. Thank you.

Very Truly Yours,



Jonathan Aronson

City of Troy
Mr. Kurt Bovensiep
Public Works Director
4693 Rochester Road
Troy, MI 48098



Mr. Bovensiep,

I am/we are the owner(s) of the property at 195 McKinley

Lot number 88-20-09-426-029

Subdivision Name Houghton

Sidewell Number _____

I/we would like to request a sidewalk variance for the following reasons: See ATTACHED Letter.

See attached plan/sketch.

I/We can be contacted at 248 879-5528
Phone Number

JONARONSON2137@Gmail.com
Email Address

Jonathan ARONSON
Name

2137 Red MAPle
Address

TROY, MI 48098
City, State, Zip

[Signature]
Signature



GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=252

Created: June 21, 2021




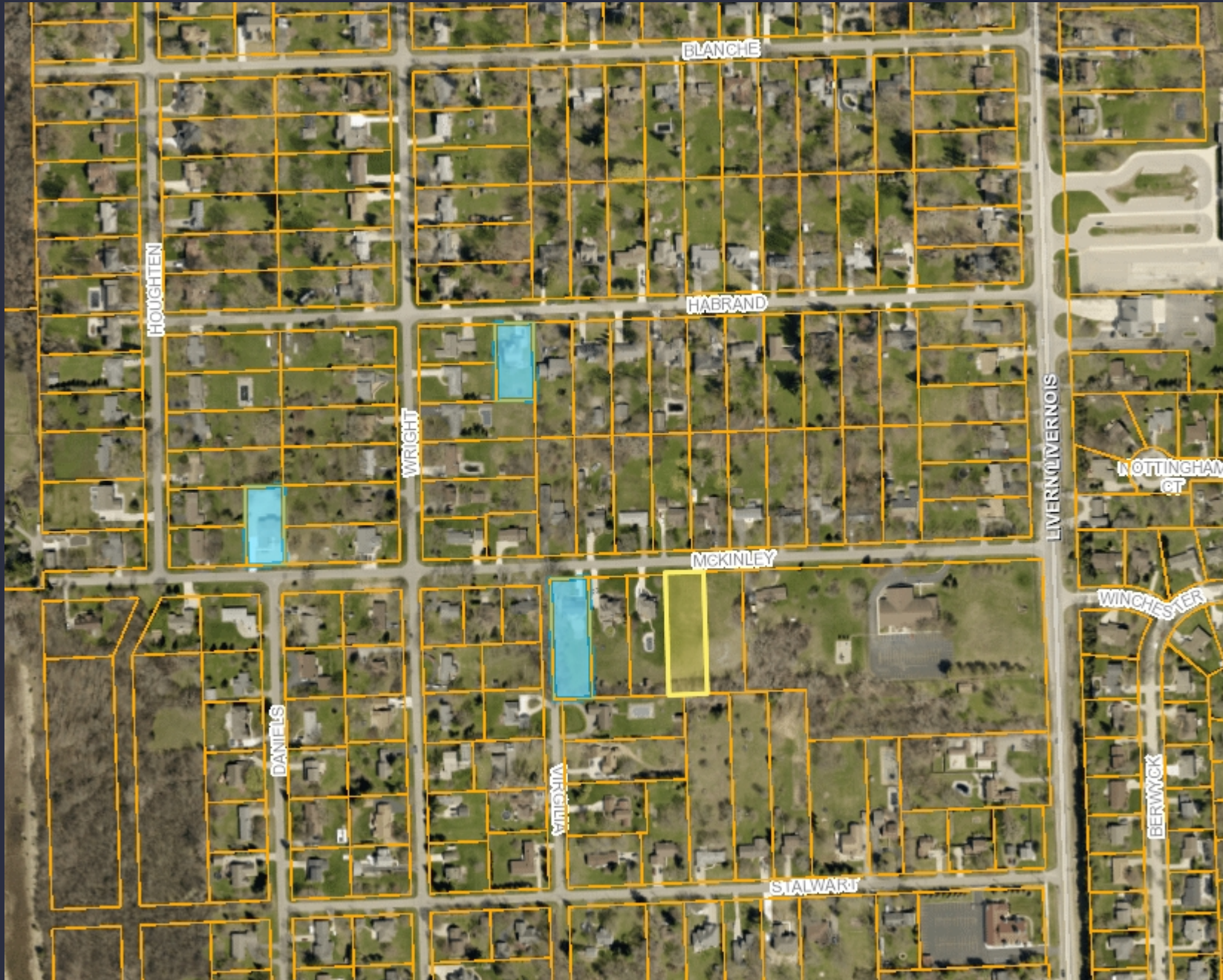
Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.



GIS Online

Legend:

-  Sidewalk Waiver
- Road Centerline Text



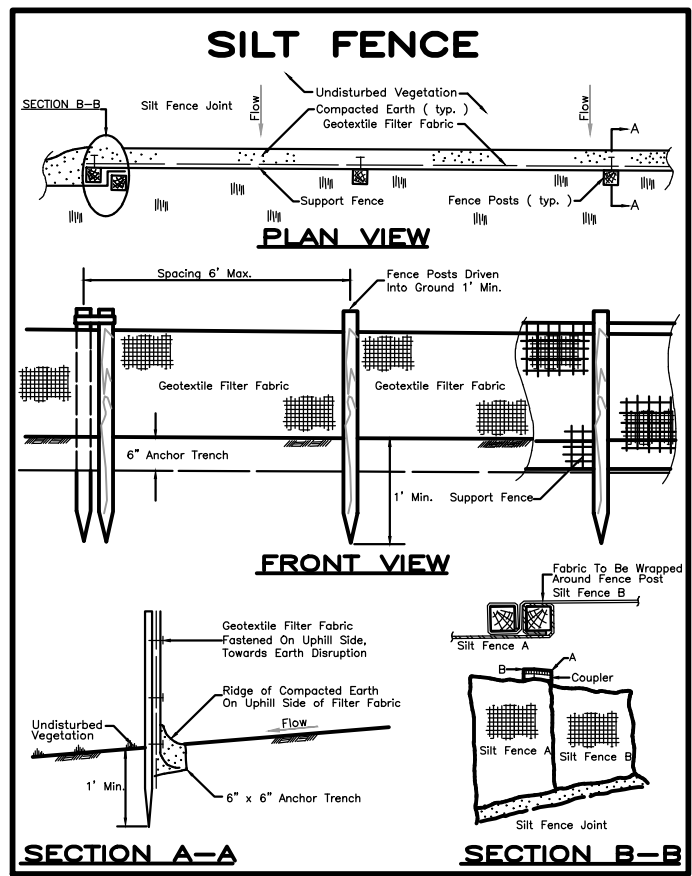
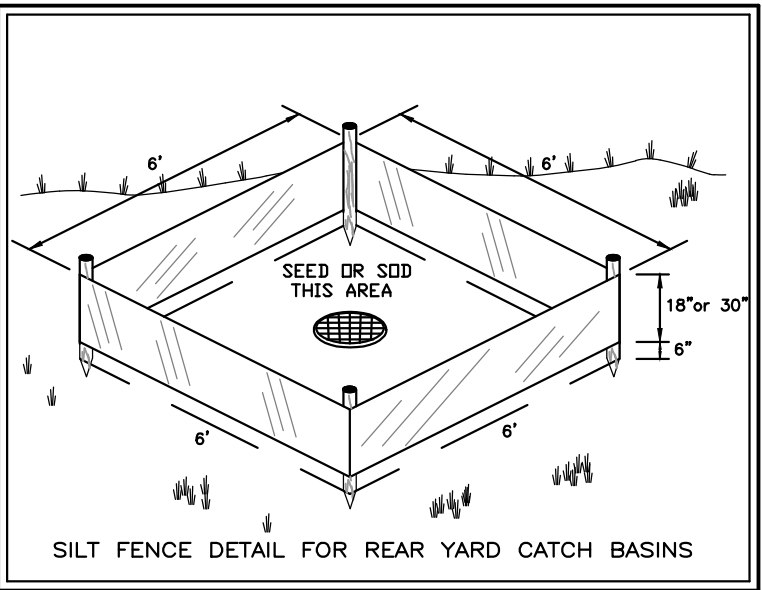
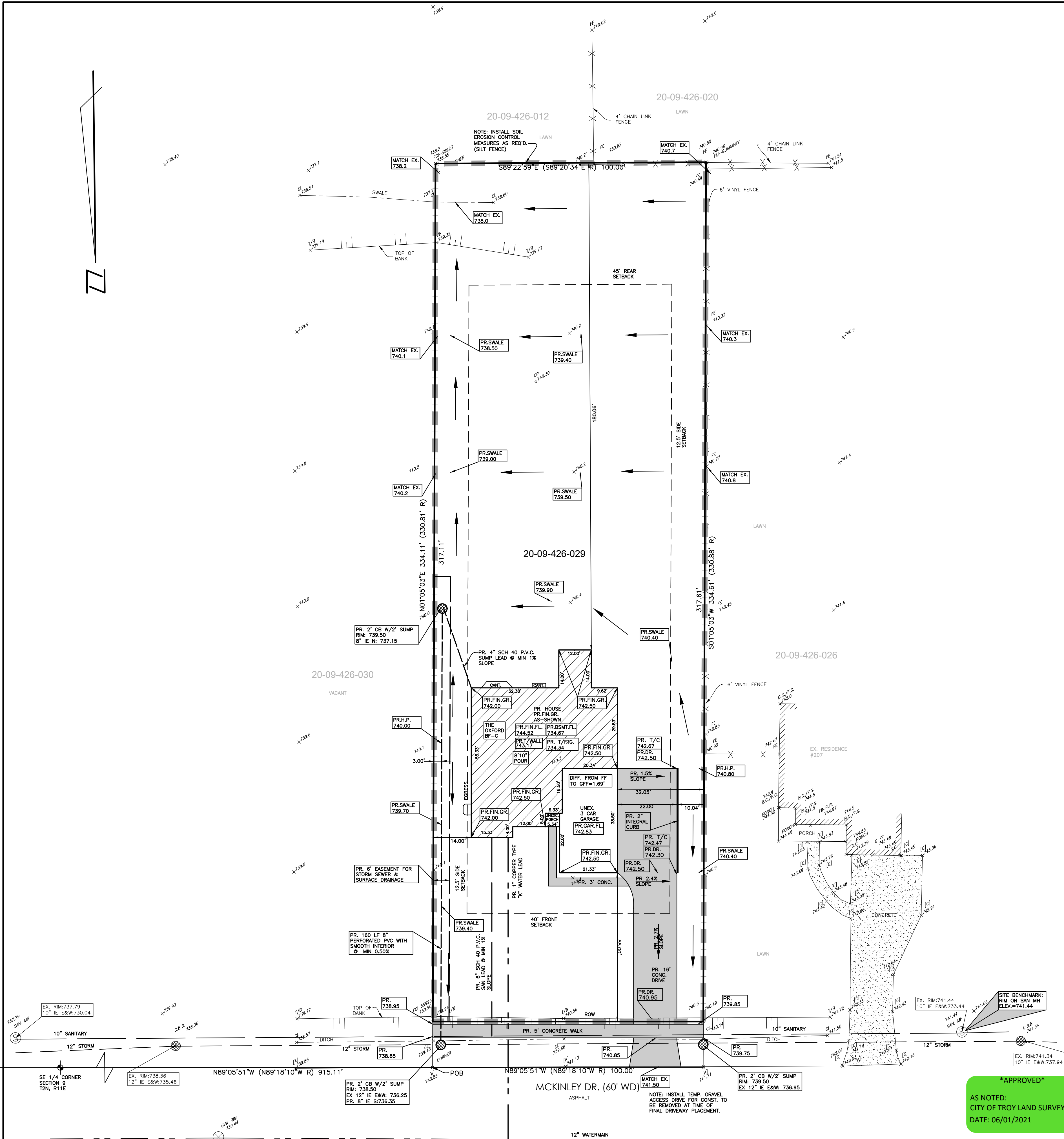
Notes:

Map Scale: 1=504

Created: June 21, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.



TYPICAL SILT FENCE DETAILS

CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE - BEGINNING											
	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
A. SOIL EROSION CONTROL MEASURE												
B. HOUSE CONSTRUCTION												
C. DRIVEWAY & SIDEWALK CONSTRUCTION												
D. FINAL GRADING												
E. PERMANENT SOIL EROSION												

NOTE: THIS TIMING AND SEQUENCE CHART IS TO BE FILLED IN BY THE CLIENT PRIOR TO SUBMITTAL TO THE CITY/TOWNSHIP.

SOIL EROSION NOTES:

- 1) INSTALL EROSION CONTROL MEASURES PRIOR TO CONSTRUCTION.
- 2) ALL SOIL EROSION MEASURES MUST BE IN PLACE PRIOR TO ANY EARTH MOVEMENT.
- 3) COMPLETE ALL EARTH MOVEMENT.
- 4) RIGHT-OF-WAY MUST BE STABILIZED PRIOR TO FINAL GRADE INSPECTION.
- 5) ALL SWALE AREAS, ALL SLOPES GREATER THAN 1:5 AND 10' AROUND STORM STRUCTURES MUST BE STABILIZED PRIOR TO FINAL GRADE INSPECTION.
- 6) AFTER PERMANENT EARTH STABILIZATION IS COMPLETED, REMOVE EROSION CONTROL MEASURES.

NOTE: AREA OF PROPOSED EARTH CHANGE = 17,973 SQ. FT.

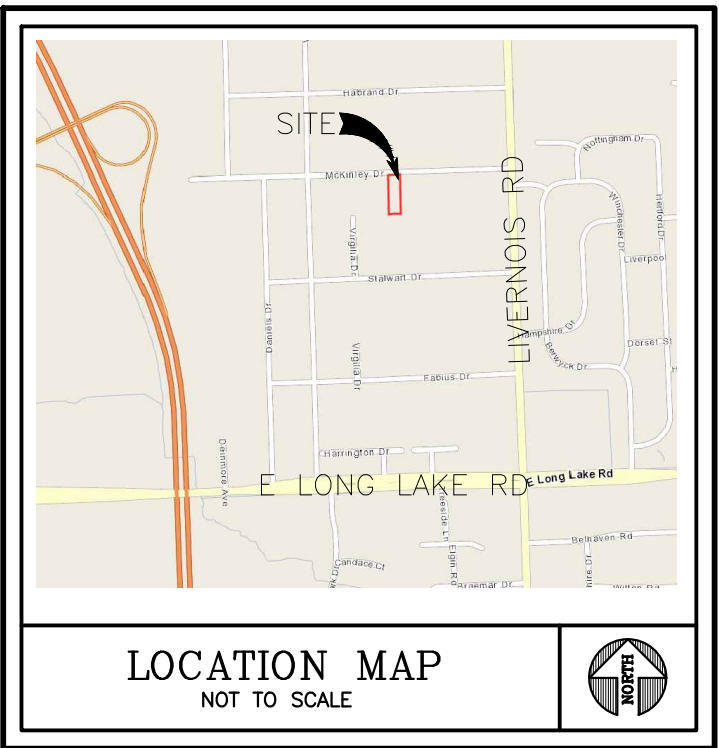
NOTE: SOIL EROSION CONTROL MEASURES WILL BE MAINTAINED ON A WEEKLY BASIS AND AFTER EACH STORM EVENT BY THE BUILDER.

NOTE: THE NEAREST WATER COURSE IS BIG BEAVER CREEK, APPROX. 4200'± TO THE EAST.

NOTE: PROPOSED HOUSE ELEVATIONS ARE BASED ON A 9'10" POURED WALL WITH A VARIABLE BRICKLEDGE. VERIFY WITH BUILDER PRIOR TO EXCAVATION.

NOTE: SOIL TYPE PER OAKLAND COUNTY SOIL MAP: SHEBON-URBAN LAND COMPLEX

NOTE: PROPOSED SANITARY CLEAN-OUT MUST BE CONSTRUCTED IN ACCORDANCE WITH TOWNSHIP/CITY STANDARDS. LEAVE RIM HIGH UPON INSTALLATION AND SAWCUT DOWN TO MEET FINAL GRADES.



NOTE: ALL INTERIOR GRADES (ARCHITECTURAL) SUCH AS FINISH FLOOR, BASEMENT FLOOR, FOOTING GRADES WALL SECTIONS SHALL BE VERIFIED BY THE BUILDER AND/OR ARCHITECT PRIOR TO CONSTRUCTION. ALL TRADES MUST USE THE ARCHITECTURAL PLANS OF RECORD TO CONSTRUCT ANYTHING OTHER THAN EXTERIOR GRADES AS SHOWN ON THIS PLOT PLAN.

NOTE: SETBACKS AS SHOWN ON THIS PLOT PLAN WERE OBTAINED FROM THE MUNICIPALITY. IT IS THE RESPONSIBILITY OF THE CLIENT TO INSURE THAT THIS INFORMATION IS CORRECT. SINCE DEED RESTRICTIONS ARE NOT SUPPLIED BY THE MUNICIPALITY, THE CLIENT MUST INFORM THIS OFFICE OF ANY SPECIAL RESTRICTIONS WHICH MAY AFFECT THIS PLOT PLAN.

NOTE: FENN AND ASSOCIATES ASSUMES NO RESPONSIBILITY FOR GIVEN HOUSE DIMENSIONS. CLIENT MUST VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

NOTE: THIS PLOT PLAN WAS PREPARED IN THE OFFICE. FIELD WORK WAS PERFORMED. APPROVAL OF THIS PLOT PLAN DOES NOT RELIEVE THE OWNER/BUILDER OF COMPLIANCE WITH ALL APPLICABLE CODES AND/OR ORDINANCES.

NOTE: THIS DRAWING IS NOT INTENDED OR REPRESENTED TO BE A LAND OR PROPERTY LINE SURVEY. THIS DRAWING IS NOT TO BE USED FOR THE ESTABLISHMENT OF ANY PROPERTY LINES OR OTHER IMPROVEMENTS.

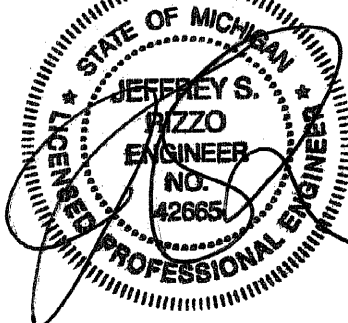
NOTE: ACTUAL AS-BUILT LEAD LOCATIONS MUST BE OBTAINED FROM THE CITY/TOWNSHIP.

NOTE: PROPOSED HOUSE HAS PROPOSED DROP BRICK LEDGE.

LEGEND

- SECTION CORNER
- FOUND IRON, MON., NAIL
- SET IRON
- RECORDED
- MEASURED
- CALCULATED
- UTILITY POLE
- EDGE OF WOODS
- BOTTOM OF BERM
- TOP OF BERM
- EDGE OF ASPHALT
- EDGE OF CONCRETE
- CORRUGATED METAL PIPE INVERT
- TOP OF WALL
- BOTTOM OF WALL
- EDGE OF WATER
- BUILDING CORNER/FINISHED GRADE
- MARKER
- WATER SHUT OFF
- CENTERLINE
- SANITARY MANHOLE
- CATCH BASIN BEEHIVE
- TOP OF CURB
- STORM MANHOLE
- TOP OF BANK
- BOTTOM OF BANK
- CENTERLINE
- CATCH BASIN SQUARE
- LIGHT POLE
- GATE VALVE/WEEL
- PROPOSED GRADE
- EXISTING GRADE
- PLAN PROPOSED GRADE NO LONGER APPLICABLE
- C.B. FILTER
- SILT FENCE

PROPERTY DESCRIPTION:
T2N, R11E, SEC 9 PART OF SE 1/4 BEG AT PT DIST N 89-18-10 W 915.11 FT FROM E 1/4 COR, TH N 89-18-10 W 100 FT, TH S 01-05-03 W 330.88 FT, TH S 89-20-34 E 100 FT, TH N 01-05-03 E 330.81 FT TO BEG EXC N 17 FT TAKEN FOR MCKINLEY RD 0.72 A 10-10-19 FR 028



AREA OF LOT = 33,083 SF
AREA OF HOUSE FOOTPRINT = 3,353 SF
LOT COVERAGE = 10.1%

SITE BENCHMARK: RIM ON SANITARY MANHOLE, ELEVATION: 741.44 (NAVDB8)

REVISIONS

REVISIONS			
5/21/21 PER CITY			
DATE: 3/31/21	CHECKED: J.S.R./P.E.	SHEET SIZE: 24 x 36	DRAWN BY: R.PERRI
TOPO-PLOT PLAN OVER 191 MCKINLEY DR. PART OF THE SE 1/4 OF SECTION 9, T2N, R11E CITY OF TROY, OAKLAND COUNTY, MICHIGAN			
CLIENT: ANYWHERE LOMBARDO			DRAWING NUMBER: 21-00189.01



ADDRESS: 195 MCKINLEY DR.
PARCEL I.D. #20-09-426-029

NOTE: THIS PLAN IS BASED ON SIDEWALK BEING INSTALLED. IF IT IS DETERMINED THAT SIDEWALK DOES NOT NEED TO BE INSTALLED, THE DRAINAGE OF THIS SITE CAN BE RE-REVIEWED TO DETERMINE IF THE PROPOSED STORM SEWER IS STILL NEEDED.

APPROVED
AS NOTED:
CITY OF TROY LAND SURVEYOR
DATE: 06/01/2021



195 McKinley





TRAFFIC COMMITTEE REPORT

June 28, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Control – Wyngate Drive at Country Ridge Drive

Background:

The Wyngate of Troy Homeowner's Association states that the lack of traffic control signs at the intersection of Wyngate Drive at Country Ridge Drive creates a hazardous condition.

The posted speed limit on both streets is 25 mph.

The intersection is currently uncontrolled.

Country Ridge Drive would be considered the minor road at the intersection, while Wyngate Drive would be considered the major road as it has continuity and is a road that provides access to the rest of the neighborhood.

There were zero crashes recorded in the past full five (5) years within a 200' radius of the intersection.

The major potential sight distance obstruction at the intersection for a motorist traveling northbound on Country Ridge Drive would be the house corner on the southeast quadrant and a bush next to the house corner on the southwest quadrant of the intersection. The major potential sight distance obstruction at the intersection for a motorist traveling southbound on Country Ridge Drive would be the house corner on the northeast quadrant and the trees in the median on the northwest quadrant of the intersection.

The safe approach speed on Country Ridge Drive is 18.9 mph for northbound vehicles due to the permanent sight distance obstruction from the house corner on the southwest and southeast quadrants. The safe approach speed on Country Ridge Drive is 22.0 mph for southbound vehicles due to the permanent sight distance obstruction from the house corner on the northwest quadrant and the median island with trees on the northwest quadrant.

OHM recommends that YIELD signs be installed on the Country Ridge Drive approaches to the intersection.

The city requested that OHM review the intersection and provide their findings and recommendations (copy attached).



GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=504

Created: June 28, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

April 28, 2021

Mr. William Huotari, PE
City Engineer
City of Troy
500 W. Big Beaver Rd
Troy, MI 48084

RE: Traffic Control Recommendation for
Wyngate Drive at Country Ridge Drive

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Wyngate Drive at Country Ridge Drive to determine the proper traffic control. Wyngate Drive at Country Ridge Drive is a 4-legged intersection located in the city of Troy. There are no controlled approaches at the intersection. Attached are aerial and intersection photos.

Types of Roadways

Both Wyngate Drive and Country Ridge Drive are considered local streets. Wyngate Drive runs east/west providing direct access to Coolidge Highway for the existing neighborhood. Country Ridge Drive runs north/south providing access to New Castle Drive which connects to the eastern part of the neighborhood.

The surrounding land use is entirely single-family residential. On-street parking is permitted on Country Ridge Drive and the east side of Wyngate Drive. Country Ridge Drive would be considered the minor road at the intersection, while Wyngate Drive would be considered the major road as it has continuity and is a road that provides access to the rest of the neighborhood.

Traffic Control Analyses

Traffic control analyses described herein adhere to the requirements presented in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) that are considered mandates of state law. A reference document explaining the background behind the analyses is attached to this memo.

Crash Analysis

Based on information obtained through the Traffic Improvement Association of Michigan, there were zero crashes recorded in the past full five (5) years within a 200' radius of the intersection. The crash history does not constitute a compelling case for modifying the existing controls.



Traffic Volumes

Traffic counts were not collected in the vicinity of the intersection due to the ongoing COVID-19 pandemic response and the subsequent effect of diminished traffic volumes. Traffic volumes in residential areas are predominantly driven by the number of single-family residential homes in the neighborhood. Based on the residential nature and the number of homes in the surrounding area it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP (see attached Reference Guide).

It is therefore extremely unlikely that Wyngate Drive meets and sustains the 300 vehicles per hour threshold for a minimum of 8 hours. The combined vehicular, pedestrian, and bicycle volumes entering from Country Ridge Drive is similarly unlikely to average at least 200 units for any 8 hours. Additionally, since the posted speed limit is only 25mph, it is reasonable to assume that the 85th percentile approach speed does not exceed 40mph on either road; thus, the minimum vehicular volume warrants cannot be discounted to 70 percent of the values described previously. Finally, the study intersection is likely to fall significantly shy even of the reduced 80 percent volumes, based on expected trip generation for this neighborhood. Therefore, the minimum volume criteria for an all-way STOP has not likely been met.

Approach Speed Limits

The approach speed limit on all study streets is 25 mph. Speed limits alone cannot be used in this case to determine which direction of traffic should be assigned the right-of-way.

Sight Distance

The major potential sight distance obstruction at the intersection of Wyngate Drive at Country Ridge Drive for a motorist traveling northbound on Country Ridge Drive would be the house corner on the southeast quadrant and a bush next to the house corner on the southwest quadrant of the intersection. The major potential sight distance obstruction at the intersection of Wyngate Drive at Country Ridge Drive for a motorist traveling southbound on Country Ridge Drive would be the house corner on the northeast quadrant and the trees in the median on the northwest quadrant of the intersection.

When the safe approach speed is found to be less than 10 mph, a STOP sign is recommended. When the safe approach speed is found to be more than 10 mph, a YIELD sign is recommended. In this case, the safe approach speed on Country Ridge Drive is 18.9 mph for northbound vehicles due to the permanent sight distance obstruction from the house corner on the southwest and southeast quadrants. The safe speed approach on Country Ridge Drive is 22.0 mph for southbound vehicles due to the permanent sight distance obstruction from the house corner on the northeast quadrant and the median island with trees on the northwest quadrant. Thus, based on the safe approach speed calculations, YIELD-control is appropriate for the Country Ridge Drive. The safe approach speed calculation spreadsheet for the intersection is attached for reference.



Recommendation

The preceding analysis determined that the criteria were not met for all-way STOP-control. The safe approach speed calculations determined that YIELD-control would be the appropriate traffic control treatment on the Country Ridge Drive.

OHM recommends implementing a YIELD sign on the Country Ridge Drive approaches. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.

Sincerely,

OHM Advisors

Ife Ogundeji
Traffic Engineer

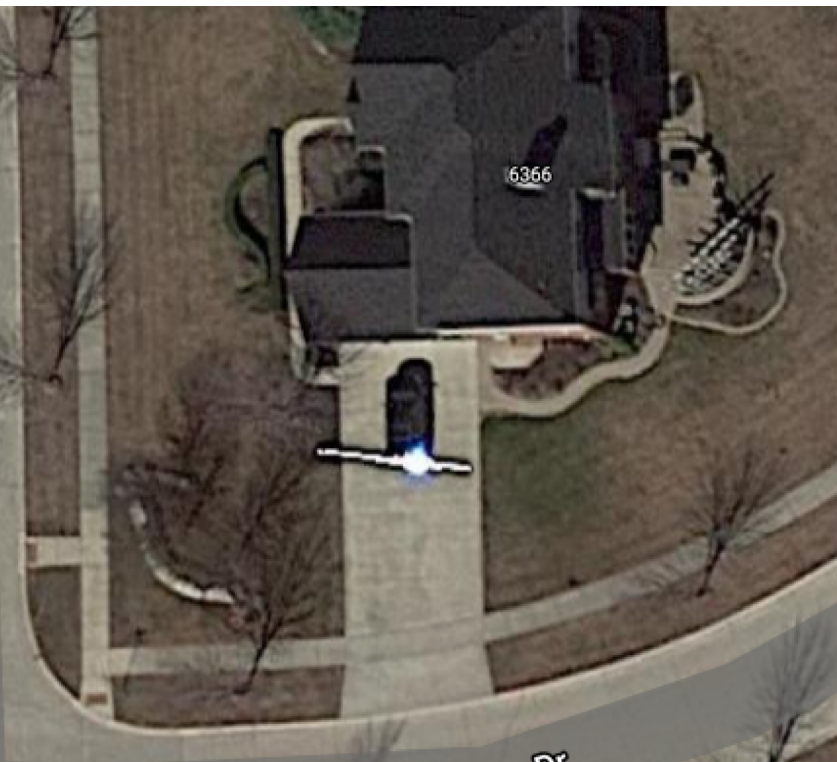
Stephen Dearing, PE, PTOE
Practice Leader - Traffic

Attachments:

- Aerial Photo
- Safe Approach Speed Calculation Spreadsheets
- Intersection Photos
- Traffic Control Determination Reference Guide



Country Ridge Dr



Country Ridge Dr

Country Ridge Dr

Google



Safe Approach Speed Calculation

Wyngate Dr and Country Ridge Dr
City of Troy

Date: 3/19/2021
Analyst: Ife Ogundeji

Measured:

Width of Roads
Road 1 = 28 (ft)
Road 2 = 28 (ft)

Distance to Obstructions
a = 72 (ft) e = 61 (ft)
b = 60 (ft) f = 78 (ft)
c = 52 (ft) g = 60 (ft)
d = 92 (ft) h = 55 (ft)

Angle of Intersection
Delta = 90 (degrees, measure counterclockwise)

Road 1 Posted
Speed Limit = 25 (mph)

Assumed:

Speed of Vehicle A = Speed of Vehicle C
= Posted Speed Limit on Road 1
+ 5 (mph)
V₁ = 30 (mph)

Perception / Reaction Time (AASHTO)
t = 2.5 (sec)

Deceleration rate (AASHTO)
A = 11.20

Clearance distance in excess of safe stopping distance (AAA)
EC = 0 (ft)

Calculated Safe Approach Speed for Vehicle B

Approaching on Road 2

V₂ = 22.0 (mph) [Based on Veh. A]
or V₂ = 22.2 (mph) [Based on Veh. C]

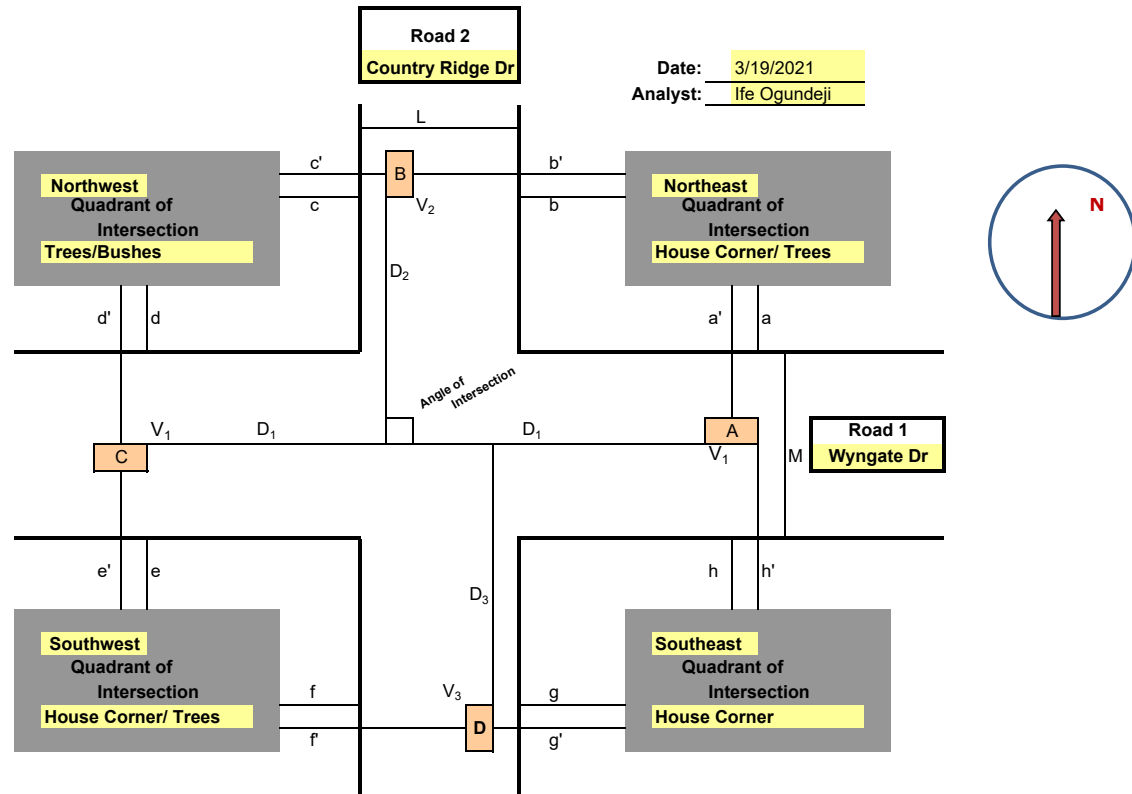
Calculated Safe Approach Speed for Vehicle D

Approaching on Road 2

V₃ = 18.9 (mph) [Based on Veh. A]
or V₃ = 22.2 (mph) [Based on Veh. C]

Threshold of Safe Approach Speed (AAA, FHWA & NSC)

to Recommend STOP Control 10.0 (mph),
to Recommend YIELD Control 25.0 (mph),
Otherwise Recommends NO CONTROL.



Intermediate Calculations:

D₁ = 196 a' = 78 e' = 67
D_{2A} = 127 b' = 76 f' = 94
D_{2C} = 128.9 c' = 58 g' = 66
D_{3A} = 103.4 d' = 108 h' = 71
D_{3C} = 129

Based On $D_1 = (1.075 V_1^2 / A) + 1.4667 V_1 t + EC$
 $D_{2A} = \frac{a' \cdot D_1}{(D_1 - b')}$ or $D_{2C} = \frac{c' \cdot D_1}{(D_1 - d')}$ or $D_{3A} = \frac{g' \cdot D_1}{(D_1 - h')}$ or $D_{3C} = \frac{e' \cdot D_1}{(D_1 - f')}$

Notes: Enter field measurements in yellow highlighted area.
Blue fields are std. default values; change only for cause.
Calculated by spreadsheet

Recommended ROW control for Road 2
based on safe approach speed :

YIELD SIGN



Photograph No. 1: Country Ridge Dr- Heading North
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 2: Country Ridge Dr- Heading North looking left
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 3: Country Ridge Dr- Heading North looking Right
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 4: Wyngate Dr- Heading West
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 5: Wyngate Dr- Heading West and looking left
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 6: Wyngate Dr- Heading West and Looking Right
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 7: Country Ridge Dr- Heading South
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 8: Country Ridge Dr- Heading South and Looking Left
Date: 03/19/2021 **Photographer:** Ife Ogundeji



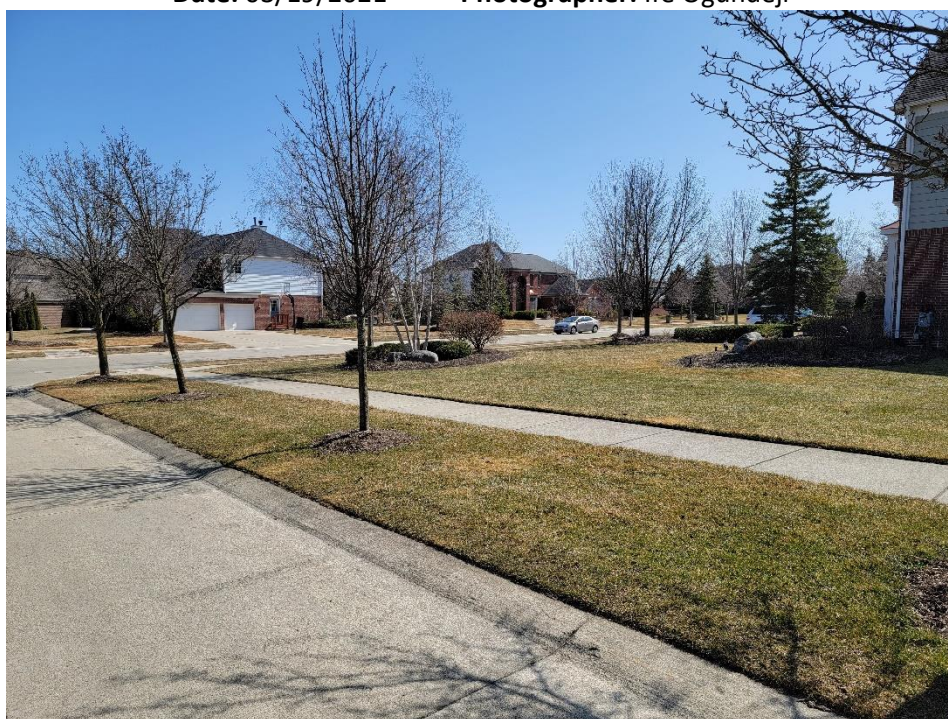
Photograph No. 9: Country Ridge Dr- Heading South and Looking right
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 10: Wyngate Dr- Heading East
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 11: Wyngate Dr- Heading East and Looking Left
Date: 03/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 12: Wyngate Dr- Heading East and Looking right
Date: 03/19/2021 **Photographer:** Ife Ogundeji

Reference Guide on Traffic Control Determination in the State of Michigan

Background

This document is intended to be used as a reference guide for performing intersection traffic control studies of intersections on public roadways in Michigan. The document explains the procedure and requirements necessary to implement traffic control at an intersection as stipulated by the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). Act 300 of Public Acts of 1949 (as amended) requires the adoption of this Manual, and further requires conformance to the manual for all state highways, county roads and local streets open to public travel.

Generally, the starting premise is an uncontrolled intersection. The first step would then be to verify if the intersection should remain uncontrolled or if YIELD or STOP controls on the minor street approach(es) should be provided. For locations with higher traffic volumes and /or crash issues, then an evaluation of the location for all-way STOP warrants would be performed. The appropriate analysis for each level of control described below.

YIELD Traffic Control Guidance

The use of a YIELD sign is intended to assign the right-of-way at intersections where it is not usually necessary to stop before proceeding into the intersection. Conversely, the STOP sign is intended for use where it is usually necessary to stop before proceeding into the intersection.

The following conditions should be fully evaluated to determine how the right-of-way should be assigned:

- Traffic Volumes: Normally, the heavier volume of traffic should be given the right-of-way.
- Approach Speeds: The higher speed traffic should normally be given the right-of-way.
- Types of Highways: When a minor highway intersects a major highway, it is usually desirable to control the minor highway.
- Sight Distance: Sight distance across the corners of the intersection is the most important factor and is critical in determining safe approach speeds.

STOP Traffic Control Guidance

Based on the MMUTCD there are four conditions where STOP signs may be warranted:

- At the intersection of a less important road with a main road where application of the normal right-of-way rule is unduly hazardous.
- On a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At other intersections where a combination of high speed, restricted view, or crash records indicate a need for control by the STOP sign.

In many cases STOP signs are installed where they may not be warranted. Traffic experts agree that unnecessary STOP signs:

- Cause accidents they are designed to prevent.
- Breed contempt for other necessary STOP signs.
- Waste millions of gallons of gasoline annually.
- Create added noise and air pollution.
- Increase, rather than decrease, speeds between intersections.

There is also an explicit restriction in the MMUTCD that STOP signs are not to be used for speed control, in Section 2B.04.

Evaluation of All-Way STOP Traffic Control

Based on the MMUTCD there are four conditions where **all-way** STOP signs may be warranted:

- A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
- B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
- C. *Minimum volumes:*
 - 1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 - 2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 - 3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
- D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*