



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
TOWNSHIP BOARD – REGULAR MEETING
July 24, 2018 6:00 pm

1. CALL MEETING TO ORDER*
 2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS
 3. ROLL CALL
 4. PRESENTATION
 - A. Haslett-Okemos Kiwanis Club
 - B. Groundwater Protection-Tri-County Regional Planning Commission
 5. CITIZENS ADDRESS AGENDA ITEMS AND NON-AGENDA ITEMS*
 6. TOWNSHIP MANAGER REPORT
 7. BOARD MEMBER REPORTS AND ANNOUNCEMENTS
 8. APPROVAL OF AGENDA
 9. CONSENT AGENDA
 - A. Communications
 - B. Minutes-July 10, 2018 Regular Meeting
 - C. Bills
 10. QUESTIONS FOR THE ATTORNEY
 11. HEARINGS (CANARY)
 - A. Commercial Planned Unit Development #18024 (Affinity 9 Investments-Panera)
 12. ACTION ITEMS (PINK)
 - A. Zoning Amendment #18060 (Township Board) outdoor recreation in C-2 and C-3-**Final Adoption**
 - B. Rezoning #18070 (M78 Insite Venture) 6365 Newton Road-**Final Adoption**
 - C. 2018 Order to Maintain Sidewalk- S.A.D. #18 Resolutions #1 and #2
 - D. Woodingham Lift Station- Sewer Contract Addendum
 - E. Township Manager Employment Agreement Modification
 - F. Police Chief Appointment
 13. BOARD DISCUSSION ITEMS (ORCHID)
 - A. Commercial Planned Unit Development #18024 (Affinity 9 Investments-Panera)
 - B. Land Transfer for Farmers' Market Relocation Plan
 - C. Police Canine Unit Retirement Agreement
 14. COMMENTS FROM THE PUBLIC*
 15. OTHER MATTERS AND BOARD MEMBER COMMENTS
 16. ADJOURNMENT
 17. POSTSCRIPT-PATRICIA HERRING JACKSON
-

All comments limited to 3 minutes, unless prior approval for additional time for good cause is obtained from the Supervisor.
Appointment of Supervisor Pro Tem and/ or Temporary Clerk if necessary.

Individuals with disabilities requiring auxiliary aids or services should contact the Meridian Township Board by contacting:
Township Manager Frank L. Walsh, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4258 - Ten Day Notice is Required.
Meeting Location: 5151 Marsh Road, Okemos, MI 48864 Township Hall

**CLERK'S OFFICE BOARD
COMMUNICATIONS
July 24, 2018**

Riley Millard

From: Skyline Hills Association <nitacprn=comcast.net@mail73.atl31.mcdlv.net> on behalf of Skyline Hills Association <nitacprn@comcast.net>
Sent: Tuesday, July 10, 2018 2:42 PM
To: Board
Subject: Letter to Meridian Township Staff



Skyline Hills Association Newsletter

Letter to Meridian Township Staff

The following is a copy of the letter that was sent to the Meridian Township Staff.

It was sent to Peter Menser and the Board of Trustees.



Letter to Meridian Township Staff

Dear Township staff,

The Skyline Hills Neighborhood association requests that the owners of Walnut Hills property 2874 E. Lake Lansing Road be required to address issues on their property that are in violation of township ordinances.

The items that need to be assessed and reviewed by township officials and property owner are as follows:

1. The historical home at the front of the property needs the lawn mowed. The residents of SHA were told by township board members at previous meetings regarding the property that all grass around buildings needs to be maintained. Furthermore, the home should be checked for safety and health codes. The house seems to have the smell of animal feces. Behind the home, a “well” is only secured with a wood cover and rocks to secure the wood lid. The

building has been known to have vagrants living in the house. The grounds should be checked for broken windows and unsecured doors.

2. The swimming pool on the property is not secured and still has standing water inside. This needs immediate attention given the huge safety risk created by leaving the pool unsecured.

3. On the way up the driveway of the property on the left side (there appears to be an open “well”). The cap is no longer on this very dangerous open-well system. This should be addressed immediately as an animal or child could be harmed on such an open system.

Please advise the property owner on the expectations of the township related to these issues and educate the property owner about township ordinances. The Skyline Hills neighborhood needs our township officials to hold the property owners accountable as the township would any resident.

Sincerely,

The Skyline Neighborhood Association.



Let's Slow Down

In case you haven't noticed, Skyline Drive does not have sidewalks or curb and gutters. That's for a reason. The residents on this street don't want them. A slower way of life starts when you turn off Lake Lansing Road. We like to stroll down the street, visit with neighbors, watch the kids play and ride their bikes. These are important quality of life values. Remember that's what you liked when you moved in. Please tell your service providers to slow down and respect these

Riley Millard

From: Stephanie Sherman <spoirier75@hotmail.com>
Sent: Monday, July 16, 2018 3:20 PM
To: Board
Subject: Rezoning Hearing- Sanctuary Neighborhood

Dear Board Members,

I am writing to you regarding the proposed re-zoning request within the Sanctuary Neighborhood.

We are disappointed Mr. Giguere is allowed to submit a rezoning request immediately after being denied. We were told during that meeting that he had to wait 1 year, but apparently that's not the case. It's poor customer service to tell the community what is and isn't allowed during a public meeting and be wrong!

Mr. Giguere was allowed to push the last public hearing back at least two meetings to accommodate administrative preparations and vacations. Now that we are subject to another rezoning public hearing in the middle of summer, we respectfully request that the hearing be held during a September meeting so our neighbors have time to return from various summer activities with their families, to be made aware of this frustrating news, and react.

Sincerely,

Stephanie Sherman
Sanctuary Neighborhood

Riley Millard

From: Mary Fox <mcfox98@yahoo.com>
Sent: Tuesday, July 17, 2018 6:12 AM
To: Board
Subject: 1811 Crest St, Haslett
Attachments: 1811 Crest St, Haslett.pdf

[Meridian Township](#) Board

Dear Board Members:

I am writing to you with the hope of resolution and reversal of a \$125 fee I received for being in violation of the lawn ordinance. I have exhausted my options trying to resolve this myself and hope that you can help me. I have lived here for the past 12 years and I am currently feeling very undervalued as a citizen of this township, as even a courtesy return phone call was not given. I would appreciate your review of my situation and reversal of the fees.

On May 14, a notice of violation was posted in my yard stating that I had 3 days to cut my lawn or be subject to a fine. I do not dispute the fact that my lawn was long at the time, but I have a regular lawn service that would be there soon to mow. My lawn service in fact, was there later that same day and mowed my lawn. I called the number on the notice and left a message with all of my information and stated that my lawn had been mowed, and requested a call back to make sure that this was resolved and make sure there was no other issues. I did not receive a return call until May 21st. A voice message just said to please call them back. I had attempted to call back twice and received no response.

On July 2, I received an invoice from the township totaling \$125; a \$75 fine and an additional \$50 to mow my lawn. You can imagine my surprise having thought this had been taken care of since my lawn was mowed the very same day as the initial notice. After making two more phone calls without response, I took time off work that Friday to go in to the township office along with the invoice from my lawn service showing the dates they mowed. The person I spoke with told me she could not help me and that I would need to speak to Joe Wade, who was out in field at the time. I left a message at the office with all my information asking that Mr. Wade call me.

On Monday July 9, I received a return call from Angela Ryan. After explaining the situation, she told me there was nothing she could do and I would need to talk to Joe Wade. I received a call back from Mr. Wade later that afternoon, and explained the situation again with him. He notified me that someone had gone back to my house on May 24th, 10 days after the initial notice, and at that time, my lawn was also in violation. No additional notice was left so there was no way for me to verify this visit. Coincidentally, my lawn service, who mows for me every 7-10 days, was also out that day to mow for me as well. When I asked Mr. Wade why the department waited 10 days to check my property, when I was given 3 days to fix the issue, he had no answer. He also told me he could not do anything about the fees and did not know who could. He said he would get back to me to let me know, but it has been over a week and I have not heard back from him yet.

If the department had come out on the third day, they would have seen that the violation had been remedied within the required time and that would have been the end of it. I can not control how fast my grass grows and I pay to have a service mow for me on a regular schedule. This is just a matter of bad timing and I don't feel that a fee is warranted.

Attached are copies of my records concerning this charge, including the invoices from my lawn service showing the days they mowed.

I look forward to your reply and a resolution to my situation. Please contact me at the address below or by phone.

Sincerely,

Mary Fox
[1811 Crest St.](#)
[Haslett, MI 48840](#)
[517-575-0764](#)

<p>PROPOSED BOARD MINUTES</p>

PROPOSED MOTION:

Move to approve and ratify the minutes of the Regular Meeting of July 10, 2018 as submitted.

ALTERNATE MOTION:

**Move to approve and ratify the minutes of the July 10, 2018 Regular Meeting with the following amendment(s):
[insert amendments]**

CHARTER TOWNSHIP OF MERIDIAN
TOWNSHIP BOARD REGULAR MEETING **-DRAFT-**
5151 Marsh Road, Okemos MI 48864-1198
853-4000, Town Hall Room
TUESDAY, JULY 10, 2018 **6:00 pm.**

PRESENT: Supervisor Styka, Clerk Dreyfus, Treasurer Brixie, Trustees Deschaine, Jackson, Opsommer, Sundland,

ABSENT: NONE

STAFF: Township Manager Frank Walsh, Director of Public Works Derek Perry, Economic Development Director Chris Buck, Principal Planner Peter Menser, Fire Chief Mike Hamel, Human Resources Director Joyce Marx, Interim Police Chief Ken Plaga, Information Technology Director Stephen Gebes

1. CALL MEETING TO ORDER

Supervisor Styka called the meeting to order at 6:01 pm.

2. PLEDGE OF ALLEGIANCE/INTRODUCTIONS

Supervisor Styka led the Pledge of Allegiance.

3. ROLL CALL

The Recording Secretary called the roll of the Board.

4. PRESENTATIONS

A. Haslett-Okemos Rotary Club

John Brewster of the Rotary Club reported on the mission and impact of the organization. Discussed operations in Meridian Township, future projects, and international initiatives.

B. Semi-Annual Township Report

Township Manager Walsh discussed the progress of the Redevelopment Ready Community initiative, the recent audit process, and work on special projects by various departments.

5. CITIZENS ADDRESS AGENDA ITEMS AND NON-AGENDA ITEMS

Supervisor Styka opened public remarks at 6:13 pm.

Rollie Harmes, 5120 Cornell Road, Okemos; supports the Master Plan's designation of the eastern third of the Township to remain rural.

Leonard Provencher, 5824 Buena Parkway, Haslett; supports Zoning Amendment #18060 (Agenda 12A), opposed to Rezoning #18050 (12B) and in favor of motion to deny. Developers should

support the Master Plan's focus on minimal development in this area and thus be a part of the community. He noted that the Township Board and Planning Commission need to consider detrimental effects of unplanned population growth and road expansion.

Doris Schwartz, 2209 Kent Street, Okemos; opposed to Redevelopment Ready Communities (RRC) plan (Item 12D) and the Economic Development strategy being presented to the Board. She stated that the Methodist St. right-of-way was designated as a pathway on the map, but the CATA consultant drafted an inaccuracy on half of the county right-of-way, indicating potential development of this property. This Redevelopment Plan is not protecting the neighborhood in the Okemos PICA, it causes damage and it's not supportive of the Master Plan. Don't pass the RRC/Economic Development Strategy Plan right now, get the diagrams and maps correct.

Supervisor Styka closed public remarks at 6:20 pm.

6. TOWNSHIP MANAGER REPORT

- Update on the search for new Police Chief
- Archie Virtue retirement party took place on July 10th, he's been with the Township 56 years
- Kiwanis Club and Groundwater Management Board will present at Board Meeting on July 24th

7. BOARD MEMBER REPORTS AND ANNOUNCEMENTS

Trustee Sundland reported:

- Communications Commission meeting on June 6th discussed HOM-TV and their national recognition on "overall excellence," and an alumni donation program proposal that would help support interns

Treasurer Brixie reported:

- Summer tax bills have been sent out

Clerk Dreyfus reported:

- Permanent Absentee Voter list increased from 3400 to 5200
- 4300 ballots mailed out, 850 ballots received
- Clerk's Office will be open Saturday August 4th
- Election workers needed, training provided - \$11 an hour

Trustee Deschaine reported:

- Attended Sexual Assault Prevention meeting
- Transportation Commission will be discussing what roads to address at upcoming meeting
- Met with CATA to find ways to discuss fare increase for Redi-Ride

Supervisor Styka reported:

- Thanks to staff and volunteers that helped make Celebrate Meridian a success

8. APPROVAL OF AGENDA

Treasurer Brixie moved to approve the Agenda. Seconded by Trustee Deschaine.

VOICE VOTE: Motion carried 7-0

9. CONSENT AGENDA

Supervisor Styka reviewed the consent agenda.

Clerk Dreyfus moved to approve the Consent Agenda. Seconded by Trustee Deschaine.

ROLL CALL VOTE: YEAS: Treasurer Brixie, Clerk Dreyfus, Trustees Jackson, Deschaine, Sundland, Opsommer, Supervisor Styka

NAYS:

Motion carried 7-0

A. Communications

Clerk Dreyfus moved that the communications be received and placed on file and any communications not already assigned for disposition be referred to the Township Manager or Supervisor for follow-up. Seconded by Trustee Deschaine.

ROLL CALL VOTE: YEAS: Treasurer Brixie, Clerk Dreyfus, Trustees Jackson, Deschaine, Sundland, Opsommer, Supervisor Styka

NAYS:

Motion carried 7-0

B. Minutes – June 19, 2018 Regular Meeting

Clerk Dreyfus moved to approve and ratify the minutes of the Regular Meeting of June 19, 2018 as submitted. Seconded by Trustee Deschaine.

ROLL CALL VOTE: YEAS: Treasurer Brixie, Clerk Dreyfus, Trustees Jackson, Deschaine, Sundland, Opsommer, Supervisor Styka

NAYS:

Motion carried 7-0

C. Bills

Clerk Dreyfus moved to approve that the Township Board approve the Manager’s Bills as follows, seconded by Trustee Deschaine:

Common Cash	\$341,145.06
Public Works	\$335,169.63
Trust & Agency	\$51,866.22

Retainage	\$33,434.89
Total Checks	\$761,615.80
Credit Card Transactions June 8th to July 4th, 2018	\$23,337.33
Total Purchases	<u>\$784,953.13</u>
ACH Payments	<u>\$1,350,777.65</u>

ROLL CALL VOTE: YEAS: Treasurer Brixie, Clerk Dreyfus, Trustees Jackson, Deschaine, Sundland, Opsommer, Supervisor Styka

NAYS:

Motion carried 7-0

10. QUESTIONS FOR THE ATTORNEY (NONE)

11. HEARINGS (NONE)

12. ACTION ITEMS

A. Zoning Amendment #18060 (Township Board) outdoor recreation in C-2 and C-3 – Introduction

Trustee Jackson moved to adopt the attached resolution to introduce Zoning Amendment #18060 for publication and subsequent adoption. Seconded by Trustee Deschaine.

Board Discussion:

- Economic Development Corporation has recommended to support
- Current rule is that unless zoning is allowed in ordinance, it's considered prohibited
- Special use permit process gives chance to review the requests

ROLL CALL VOTE: YEAS: Clerk Dreyfus, Trustees Jackson, Deschaine, Sundland, Opsommer, Supervisor Styka, Treasurer Brixie

NAYS:

Motion carried

B. Rezoning #18050 (Eyde) 5080 Cornell Road

Clerk Dreyfus moved to adopt the attached resolution to deny Rezoning #18050, a request to rezone approximately 10.01 acres located at 5080 Cornell Road from RR (Rural Residential) to RAA (Single Family-Low Density). Seconded by Trustee Opsommer.

Board Discussion:

- Does not meet criteria for rezoning
- Need to maintain eastern third of Township as rural, doesn't align with Future Land Use Map

ROLL CALL VOTE: YEAS: Trustees Jackson, Deschaine, Sundland, Opsommer, Supervisor Styka, Treasurer Brixie, Clerk Dreyfus

NAYS:

Motion carried 7-0

C. Rezoning #18070 (M78 Insite Venture) 6365 Newton Road – Introduction

Trustee Jackson moved to adopt the resolution to introduce Rezoning Petition #18070 for publication and subsequent adoption. Seconded by Trustee Opsommer.

Board Discussion:

- Planning Commission recommended this action
- Consistent with Future Land Use Map

ROLL CALL VOTE: YEAS: Trustees Deschaine, Sundland, Opsommer, Jackson, Supervisor Styka, Treasurer Brixie, Clerk Dreyfus

NAYS:

Motion carried 7-0

D. Redevelopment Ready Communities

Trustee Deschaine moved to adopt the resolution to approve the Economic Development Strategy and Corridor Plan as presented. Seconded by Trustee Jackson.

Economic Development Director Chris Buck reported on the status of the proposed Economic Development Strategy and Corridor Plan, adapted to fit Michigan Economic Development Corporation (MEDC) requirements for submission for Redevelopment Ready Communities certification.

Board Discussion:

- No specific deadlines or available funding from MEDC requires immediate Board action
- Concern the Township is moving too fast in this process and time should be taken to submit an accurate application, Township Economic Director believes there is a sense of urgency
- Questions on how the Redevelopment Plan fits within the Economic Development Strategy
- Redevelopment Ready Communities rating needed for competitive funding from MEDC

Trustee Opsommer moved to amend the resolution by having staff redact the blue overlay on the paper extension of Methodist (Street), and also the slight orange overlay of General Flex Three, to have it accurately reflect the street grid.

Trustee Opsommer added: Liverance also has a small extension that doesn't reflect the street grid off the southern end. Townhouse small apartment is the overlay and it extends slightly off of Liverance. Seconded by Treasurer Brixie.

Board Discussion:

- Color coded map segments are clearly erroneous, omissions by the consultant

VOICE VOTE: Motion carried 7-0

Treasurer Brixie moved to amend the resolution by adding the following statements to the resolution (after the 4th Whereas): "Whereas the Corridor Plan includes an extension of Methodist Street which does not reflect the Township Master Plan;"

Trustee Opsommer offered a Friendly Amendment: "Whereas the Corridor Plan includes an extension of Liverance which does not exist." Accepted by maker of the motion. Seconded by Trustee Deschaine.

Board Discussion:

- Motion not required due to previous motion to correct the map upon submission
- Belief that the motion would help to clarify our intentions on the resolution itself
- This motion would not fit with standard drafting of Township resolutions

VOICE VOTE: Motion failed 3-4

Supervisor Styka moved to amend the resolution's Therefore;" clause to include "as corrected and approved" after the words "Corridor Plan." Supported by Trustee Opsommer.

VOICE VOTE: Motion carried 7-0

Treasurer Brixie moved to accept the new language for the amended resolution as: "to approve the Economic Development Strategy and Corridor Plan as presented, corrected and approved." Seconded by Trustee Opsommer.

VOICE VOTE: Motion carried 7-0

Trustee Deschaine moved to adopt the amended resolution to approve the Economic Development Strategy and Corridor Plan as presented, corrected and approved. Seconded by Trustee Jackson.

Board Discussion:

- Board member belief that Meridian Township is not "Redevelopment Ready" at this time, more detailed Economic Development vision needed, the \$650,000 Meridian Redevelopment Fund is too vague, essential to take time to develop Economic Strategy
- Belief that the Meridian Redevelopment Fund (MRF) is part of the Economic Development Strategy being submitted to MEDC, the MRF is not well-thought out so its inclusion is premature in the certification request to the State of Michigan
- Belief the MRF is not related to the Economic Development Strategy, separate programs
- Language in Economic Development Strategy states MRF is part of economic strategy, Board member concern about MRF effectiveness as a development tool

- MRF will be operated by Meridian EDC and Township Board
- Opinions sought on the Economic Development Strategy from the Meridian EDC, the Planning Commission and from the Corridor Improvement Authority

ROLL CALL VOTE: YEAS: Trustees Sundland, Opsommer, Jackson, Deschaine, Supervisor Styka, Treasurer Brixie

NAYS: Clerk Dreyfus

Motion carried 6-1

E. Michigan Employee Retirement System 2017 Actuarial Report

Treasurer Brixie moved to accept the MERS 2017 Actuarial Report. Seconded by Trustee Deschaine.

Township Manager reported on the status of the Township MERS contributions. Currently funded at 61%, does not include the \$1,500,000 (2017) contribution; with that funding, the level is approximately 64%. ARC (annual required contribution) has gone done for the first time. Mentions factors to get to 100% funded.

Board Discussion:

- Report is available for residents to view on the Township website
- Question if this is required as an action item, or would discussion be sufficient, questioning the necessity to vote to “accept” this report
- Presentation is stated as a transparency measure, similar to the audit, up to the Board to choose to accept the report by vote or be presented with the information and discussion
- Recent mortality rates have gone up, and rates of return have gone down; Meridian Township has kept ahead of the curve even with these changes

VOTE VOICE: Motion carried 7-0

13. BOARD DISCUSSION ITEMS

A. 2018 Order to Maintain Sidewalk – S.A.D. #18 Resolutions #1 and #2

Public Works Director Derek Perry reported: in accordance with Township ordinance Section 58-32b, and Section 58-32d, the Township Board may order the repair of defective sidewalks. If the property owner fails to repair the sidewalk within 20 days after written notification, the Township may repair or replace the sidewalk and bill the cost of construction to the property owner.

Consensus of the Board to bring this item back at the next meeting for action.

B. Woodingham Lift Station – Sewer Contract Addendum

Public Works Director Perry reported on the partnership with East Lansing and MSU for wastewater treatment. For improvements to be made, Township needs to extend the January 1961 Sewer Contract.

Consensus of the Board to bring this item back at the next meeting for action.

C. Township Manager Employment Agreement Modification

Township Manager Frank Walsh requested changes made to his employment contract to allow work outside of his Township employment, including specific wording that would allow him to conduct managerial searches for township and city managers (as a Recruitment Consultant) on his own time; allowing up to three consulting contracts a year.

Board discussion:

- Employment Agreement does not specifically permit outside work
- Each managerial search requires a 40 to 50 hour commitment over a multi-week span
- Township Manager questioned why his personal time should be of interest to the Board
- Most organizations and companies have personnel policies that limit an employee's outside employment; reasons include limiting conflict of interest and ensuring that outside work does not interfere with the full-time position
- Township HR Director reported that all Township personnel are required to clear outside employment with their respective Directors, police even have form to fill out
- HR Director noted Township Manager has Employment Agreement, different than other staff
- Board member belief that all employees need to follow the same rules, including the Township Manager, regardless if he has an Employment Agreement
- Manager is requesting permission to do additional work, so belief he is following the rules
- Helping in managerial searches could be perceived as doing public good for the community
- No evidence of conflict of interest is immediately evident during this discussion

Consensus of the Board to bring this item back at the next meeting for action.

14. COMMENTS FROM THE PUBLIC

Supervisor Styka Opened Public Remarks at 8:00 pm.

Leonard Provencher, 5824 Buena Parkway, Haslett; commented on personal experiences with HR policies that limited him from outside employment while he had a full-time position, showed appreciation for Public Works Director Derek Perry and his prompt action in addressing concerns/requests.

Doris Schwartz, 2209 Kent Street; voiced appreciation for Director Perry. She hopes that the Redevelopment Ready Community comprehensive plan will be reviewed for more than just the changes made at this Board meeting, to be congruent with the Master Plan. Introduced the Okemos Four Corners Group.

Supervisor Styka closed Public Remarks at 8:06 pm.

15. OTHER MATTERS AND BOARD MEMBER COMMENTS

Trustee Deschaine reported:

- Love a Park Day (May) events were voluntarily and spontaneously assisted by Meridian citizen Mike Wilson. Gratitude to Mike for his help.

16. ADJOURNMENT

Treasurer Brixie moved to adjourn. Seconded by Trustee Jackson.

Supervisor Styka adjourned the meeting at 8:08 pm.

17. POSTSCRIPT - BRETT DREYFUS

RONALD J. STYKA,
TOWNSHIP SUPERVISOR

BRETT DREYFUS,
TOWNSHIP CLERK



To: Board Members
From: Miriam Mattison, Finance Director
Date: July 24, 2018
Re: Board Bills

MOVED THAT THE TOWNSHIP BOARD APPROVE THE MANAGER'S
BILLS AS FOLLOWS:

COMMON CASH \$ 295,069.67

PUBLIC WORKS \$ 425,827.16

TRUST & AGENCY \$ 838,254.88

TOTAL CHECKS: \$ 1,559,151.71

CREDIT CARD TRANSACTIONS \$ 11,597.22
July 5th to July 19th

TOTAL PURCHASES: \$ 1,570,748.93

ACH PAYMENTS \$ 1,615,806.47

Vendor Name	Description	Amount	Check #
1. AIRGAS GREAT LAKES	STANDING PO - MEDICAL OXYGEN	490.15	
	STANDING PO - MEDICAL OXYGEN	45.35	
	TOTAL	535.50	
2. ALLGRAPHICS CORP	T-SHIRTS FOR FITNESS OVER 50	295.00	
	T-SHIRTS FOR SPORTIES FOR SHORTIES	1,131.50	
	JERSEYS U10-14 OKEMOS GIRLS SOFTBALL JERSEYS	30.00	
	TOTAL	1,456.50	
3. ROXANNE ANDREWS	FARM MARKET VENDOR	43.00	
4. AT & T	MONTHLY SERVICE	30.00	
5. AT & T	MONTHLY SERVICE	158.23	98312
	MONTHLY SERVICE	171.61	98312
	MONTHLY SERVICE	310.54	98312
	MONTHLY SERVICE	167.74	98312
	MONTHLY SERVICE	390.18	98312
	MONTHLY SERVICE	539.46	98312
	MONTHLY SERVICE	579.45	98312
	TOTAL	2,317.21	
6. AT & T MOBILITY	MONTHLY SERVICE	69.18	
7. AUTO VALUE OF EAST LANSING	FLEET REPAIR PARTS 2018	3.59	
	FLEET REPAIR PARTS 2018	5.39	
	FLEET REPAIR PARTS 2018	12.38	
	FLEET REPAIR PARTS 2018	77.58	
	FLEET REPAIR PARTS 2018	4.09	
	TOTAL	103.03	
8. B & D ELEVATOR INC.	QTRLY ELEVATOR MAINTENANCE ON 6.22.18	145.00	
9. CHRIS PASSALACQUA	MOTHERBOARD REPAIR & CAPACITOR RECAP	125.00	
10. BAKEWELL, LLC	FARM MARKET VENDOR	25.00	
	FARM MARKET VENDOR	14.00	
	TOTAL	39.00	
11. BOARD OF WATER & LIGHT	STREET LIGHTING - JUNE	540.46	
12. BOTACH	44 GAS MASK CANISTERS	1,980.00	
13. BOYNTON FIRE SAFETY SERVICE	FIRE EXTINGUISHER INSPECTION & SERVICE	40.00	
	FIRE EXTINGUISHER INSPECTION & SERVICE	46.00	
	TOTAL	86.00	
14. CALIBRATION TECHNOLOGIES INC	CALIBRATION SERVICE CO DETECTORS CENTRAL FIRE PER QUOTE	2,147.00	
15. BRIAN S. CANEN	REIMB FOR MILEAGE TO 55TH COURT AND RETURN	23.98	
16. CAPITAL AERIAL IMAGING	CELEBRATE MERIDIAN AERIAL FOOTAGE	75.00	
17. CARLISLE WORTMAN ASSOC	PLAN REVIEW FOR DONELLY SCHOOL PERMIT	807.50	
	PLAN REVIEW FOR DONELLY SCHOOL PERMIT	225.00	
	TOTAL	1,032.50	

Vendor Name	Description	Amount	Check #
18. CDW	OFFICE 365 KIOSK LICENSES AND E1 LICENSES	106.00	
19. CINTAS CORPORATION #725	UNIFORMS TODD, JIMMY 2018	40.13	
	UNIFORMS TODD, JIMMY 2018	40.13	
	UNIFORMS TODD, JIMMY 2018	40.13	
	TOTAL	120.39	
20. CITY OF EAST LANSING	SHARED ASSESSOR SERVICES - JUNE	6,948.30	
	2ND QTR - 50% REVENUE - MEP	73,814.88	
	LICENSE FOR EVERBRIDGE NOTIFICATION PLATFORM	4,845.00	
	TOTAL	85,608.18	
21. CITY PULSE	TWP NOTICES	30.18	
22. CLEAN AIR CONCEPTS	SUPPLY & INSTALL AIR HAWK 3000 XL AIR FILTRATION SYSTEM SOUTH FIRE STATION	35,087.38	
23. COMCAST CABLE	MONTHLY SERVICE	159.85	
24. CONSUMERS ENERGY	CRC EMERG PM'T TO RESTORE UTILITIES	400.00	98313
	CRC EMERG PM'T TO AVOID SHUTOFF	172.25	98314
	CRC EMERGY PM'T TO AVOID SHUTOFF	644.33	98318
	CRC EMERG PM'T TO AVOID SHUTOFF	600.00	98317
	TOTAL	1,816.58	
25. CONSUMERS ENERGY	MONTHLY SERVICE	7.47	
26. COURTESY FORD	WHEEL ALIGNMENT	59.95	
27. CULLIGAN WATER CONDITIONING	WATER SOFTENER SALT - HNC	17.00	
28. CUT RATE BATTERIES, INC	RADIO BATTERIES	1,745.00	
29. DBI	ERASER, DRY ERASE	5.64	
	MISC OFFICE SUPPLIES	57.92	
	BINDERS	29.25	
	TOTAL	92.81	
30. OFILIA DIAZ	FARM MARKET VENDOR	29.00	
	FARM MARKET VENDOR	11.00	
	FARM MARKET VENDOR	14.00	
	FARM MARKET VENDOR	62.00	
	TOTAL	116.00	
31. SHAWN DIEMER	FARM MARKET VENDOR	172.00	
	FARM MARKET VENDOR	627.00	
	TOTAL	799.00	
32. DL WALKER	MANITOWOC MOD # UD-0190A ICE MAKER	634.86	
33. DOLCI ITALIAN BAKEHOUSE	FARM MARKET VENDOR	22.00	
34. INGHAM COUNTY DRAIN COMMISSIONER	OLD RABY CULVERT REPLACEMENT	525.00	
35. MARK EBENER	FARM MARKET VENDOR	24.00	
	FARM MARKET VENDOR	30.00	
	TOTAL	54.00	

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Vendor Name	Description	Amount	Check #
36. FAHEY SCHULTZ BURZYCH RHODES PLC	LEGAL FEES - JULY	5,000.00	
	LEGAL FEES - LABOR	360.00	
	LEGAL FEES	360.00	
	LEGAL FEES	1,852.00	
	LEGAL FEES - LABOR	140.00	
	LEGAL FEES - LAND	1,832.00	
	LEGAL FEES - POLICE	905.00	
	LEGAL FEES - POLICE	120.00	
	LEGAL FEES - POLICE	976.50	
	LEGAL FEES	880.00	
	LEGAL FEES	2,312.00	
	LEGAL FEES	150.00	
	LEGAL FEES	328.00	
	LEGAL FEES	112.00	
	LEGAL FEES	1,880.00	
	LEGAL FEES	200.00	
	LEGAL FEES	260.00	
	LEGAL FEES	440.00	
	LEGAL FEES	220.00	
	LEGAL FEES	160.00	
	LEGAL FEES	260.00	
	TOTAL	18,747.50	
37. FIRST COMMUNICATIONS	MONTHLY SERVICE - (LESS DOUBLE PMT)	5.56	
38. GALLAGHER BENEFIT SERVICES, INC	MONTHLY CONSULTING FEE - JULY	2,741.77	
39. JOHN PULICE	FOOD FOR STAFF @ CELEBRATE MERIDIAN	148.00	
40. GOODYEAR COMMERCIAL TIRE	STATE CONTRACT LARGE TRUCK TIRES 2018	722.87	
41. GRAMPAS PASTYS LLC	FARM MARKET VENDOR	27.00	
42. GRANGER	ACCT#1106100 - MONTHLY SERVICE - JULY	111.00	
	ACCT#1106200 - MONTHLY SERVICE - JULY	128.51	
	ACCT#1106300 - MONTHLY SERVICE - JULY	67.40	
	ACCT#2509750 - MONTHLY SERVICE - JULY	76.00	
	ACCT#17334070 - MONTHLY SERVICE - JULY	87.00	
	ACCT#17349880 - MONTHLY SERVICE - JULY	17.50	
	TOTAL	487.41	
43. HAMMOND FARMS	BARK - TOWN HALL	219.60	
	BARK - TOWN HALL	109.80	
	TOTAL	329.40	
44. KATHLEEN HANNA	FARM MARKET VENDOR	8.00	
45. HASLETT PUBLIC SCHOOLS	APRIL, MAY, JUNE MAINTENANCE	4,434.39	
46. WILBUR HOCHSTETLER	FARM MARKET VENDOR	182.00	
	FARM MARKET VENDOR	256.00	
	FARM MARKET VENDOR	314.00	
	TOTAL	752.00	
47. INGHAM COUNTY SHERIFF DEPT	4 OPERATORS - DEF-TECH MUNITIONS	1,990.77	
48. INGHAM COUNTY TREASURER	REFUND DOUBLE PM'T MERIDIAN MILLAGES (DDA) 2017	815.92	98315
49. KEBS INC	SURVEY AND MARK OTTAWA HILLS & FOREST HILLS	3,219.11	
50. KOLACHE KITCHEN	FARM MARKET VENDOR	60.00	

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51. LANSING UNIFORM COMPANY	STANDING PO FOR UNIFORMS	154.95	
	STANDARD POLICE UNIFORM PURCHASE	452.50	
	TOTAL	607.45	
52. REBECKAJO LEWIS	REIMB FOR MANDATED MEDICAL TREATMENT	77.25	
53. LUKE LANDSCAPE CO	MOWING SERVICES-6045 HARDY	125.00	
	MOWING SERVICES-1705 NEWMAN	300.00	
	MOWING SERVICES-1492 GRAND RIVER	125.00	
	MOWING SERVICES-2324 RABY	125.00	
	MOWING SERVICES-6315 PORTER	75.00	
	MOWING SERVICES-2930 JOLLY	125.00	
	MOWING SERVICES-3557 VAN ATTA	285.00	
	MOWING SERVICES-3203 BIRCH ROW	125.00	
	MOWING SERVICES-6207 RUTHERFORD	85.00	
	MOWING SERVICES-2940 JOLLY	135.00	
	TOTAL	1,505.00	
54. JOYCE A MARX	REIMB - SUPPLIES FOR BRING YOUR CHILD TO WORK DAY	70.39	
55. MCLAUGHLIN FARM LTD	FARM MARKET VENDOR	25.00	
56. SUE MCMASTER	FARM MARKET VENDOR	144.00	
57. MERIDIAN TOWNSHIP	TRANSFER FOR FLEX CKING P/R 7.20.18	763.61	
58. MEAN GREEN MOWERS	CXR60 INDUSTRIAL MOWER	49,503.00	
59. MICHIGAN MUNICIPAL LEAGUE	MEMBERSHIP 9/1/18 TO 8/31/19	8,302.00	
60. MID MICHIGAN EMERGENCY EQUIPMENT	CONFIGURED DUAL STACK RED LED BEACON	794.00	
61. MOORE MEDICAL LLC	STANDING PO FOR MEDICAL SUPPLIES/EQUIPMENT	179.90	
	STANDING PO FOR MEDICAL SUPPLIES/EQUIPMENT	357.00	
	STANDING PO FOR MEDICAL SUPPLIES/EQUIPMENT	59.50	
	STANDING PO FOR MEDICAL SUPPLIES/EQUIPMENT	578.63	
	STANDING PO FOR MEDICAL SUPPLIES/EQUIPMENT	279.00	
	TOTAL	1,454.03	
62. NAPA	FLEET REPAIR PARTS 2018	73.06	
	FLEET REPAIR PARTS 2018	200.19	
	TOTAL	273.25	
63. NIGHT MAGIC DISPLAYS	FIREWORKS FOR CELEBRATE MERIDIAN	21,000.00	
64. OKEMOS MARATHON	TOWING - BLUE SUBRU OUTBACK	150.00	
	TOW - BLACK BUICK LACROSSE	150.00	
	TOW - BLACK & SILVER HARLEY DAVISON	175.00	
	TOTAL	475.00	
65. DEBORAH S OLIVER	FARM MARKET VENDOR	33.00	
	FARM MARKET VENDOR	22.00	
	TOTAL	55.00	

Vendor Name	Description	Amount	Check #
66. PECKHAM	TOWN HALL & RESTROOM CLEAN UP AFTER CELEBRATE MERIDIAN	56.25	
	JANITORIAL SERVICES PSB, HARRIS ,MB,SC 2018	6,391.99	
	TOTAL	6,448.24	
67. PETERSEN MANUFACTURING CO. INC	TWO CONCRETE BASEBALL BOULARDS FOR TOWNER ROAD PARK	2,413.00	
68. THE POLACK CORPORATION	CONTRACT BILL 6/10 TO 7/09	1,187.14	
69. PORK FAT SLIMS	PARTIAL REFUND-FOOD TRUCK UNABLE TO ATTEND CELEBRATE MERIDIAN	200.00	
70. POSTMASTER	UTILITY BILL RUN 7.16.18	312.51	98316
71. PRINT MAKERS SERVICE INC	PRINTER MAINTENANCE	153.68	
	PRINTER MAINTENANCE	195.19	
	PRINTER MAINTENANCE	185.75	
	TOTAL	534.62	
72. PRO-TECH MECHANICAL SERVICES	SERVICE CENTER	276.00	
	NO A/C IN PSB	1,469.75	
	PBS LABOR	200.00	
	RELOCATE T'STAT IN ADMIN WING	80.00	
	NO AIR NORTH FIRE	172.00	
	SERVICE CENTER - PARTS & LABOR	88.92	
	TOTAL	2,286.67	
73. PURE GREEN	SEASONAL WEED AND FEED SOCCER/ SOFTBAL FIELDS	1,350.00	
74. BETTY ANNE RUPLEY	FARM MARKET VENDOR	16.00	
	FARM MARKET VENDOR	5.00	
	TOTAL	21.00	
75. SAFETY SERVICES INC	SAFETY GLASSES	194.96	
76. SAFETY SYSTEMS INC	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	60.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	51.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	107.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	41.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	54.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	43.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	52.00	
	ANNUAL BUILDING ALARM MONITORING SERVICE- JUNE THRU MAY	31.00	
	TOTAL	439.00	
77. SINGLEWIRE SOFTWARE	1 YEAR MAINTENANCE SUB FOR IMFORM CAST	1,840.00	

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78. SPARROW OCCUPATIONAL	PROFESSIONAL SERVICES	820.50	
	PROFESSIONAL SERVICES	325.00	
	PROFESSIONAL SERVICES	627.50	
	PROFESSIONAL SERVICES	140.00	
	PROFESSIONAL SERVICES	546.97	
	TOTAL	2,459.97	
79. SPARTAN PRINTING INC	ENVELOPES WITH BLACK INK	122.00	
	SCOOP NEWSLETTER	130.00	
	TOTAL	252.00	
80. SPRINT	CELLULAR PHONE SERVICE FOR SGT'S VEHICLES	97.41	
81. STANDARD ELECTRIC CO	ELECTRIC SUPPLIES 2018	197.77	
82. STATE OF MICHIGAN	SALE TAX-BEER TENT @ CELEBRATE MERIDIAN	448.50	
83. SUPREME SANITATION	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL	340.00	
	PORTABLE TOILET RENTAL	85.00	
	PORTABLE TOILET RENTAL-MAY	160.00	
	PORTABLE TOILET RENTAL	170.00	
	PORTABLE TOILET RENTAL	455.00	
	TOTAL	1,720.00	
84. S.V.C.I.C.C.	CLASS REGISTRATION-M. WALL	40.00	
85. SWAGIT PRODUCTIONS, LLC	CONTRACTUAL SERVICE FOR HOMTV VIDEO HOSTING LIVE STREAMING & CLOSED CAPTIONING	3,462.00	
86. SWEETIE PIE PANTRY LLC	FARM MARKET VENDOR	8.00	
87. AXON ENTERPRISE, INC	TWO TASERS WITH CAMERAS	3,437.92	
88. THE CHEESE PEOPLE OF GRAND RAPIDS	FARM MARKET VENDOR	37.00	
89. TITUS FARM LLC	FARM MARKET VENDOR	124.00	
90. UNITED STATES TREASURY	2017 (PCORI) - SELF-INSURED HEALTH PLANS 2ND QTR	743.89	
91. USA TODAY NETWORK	FARM MARKET AD	247.47	
	FARM MARKET AD	328.54	
	TOTAL	576.01	
92. BILL VANG	FARM MARKET VENDOR	26.00	
93. VERIZON WIRELESS	MONTHLY SERVICES & NEW EQUIPMENT	4,253.78	
94. WEST SHORE FIRE	STANDING PO FOR SCBA FILL STATION MAINTENANCE/PARTS AGREEMENT	752.09	
95. WILX	CELEBRATE MERIDIAN	400.00	
96. YEO & YEO	PROFESSIONAL SERVICES THROUGH 6/30/18	1,000.00	
97. ZOLL MEDICAL CORP	STANDING PO FOR EKG SUPPLIES/EQUIPMENT	517.50	

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Vendor Name	Description	Amount	Check #
TOTAL - ALL VENDORS		295,069.67	
FUND TOTALS:			
Fund 101 - GENERAL FUND		206,594.28	
Fund 203 - LOCAL ROADS		22.95	
Fund 204 - PEDESTRIAN BIKEPATH MILLAGE		562.45	
Fund 205 - CATA Millage		18.35	
Fund 207 - SENIOR CENTER MILLAGE		7.71	
Fund 208 - PARK MILLAGE		3,433.49	
Fund 209 - Land Preservation Millage		1,869.79	
Fund 211 - PARK RESTRICTED/DESIGNATED		25,188.76	
Fund 230 - CABLE TV		3,925.87	
Fund 250 - COMMUNITY NEEDS FUND		1,816.58	
Fund 661 - MOTOR POOL		51,629.44	

Vendor Name	Description	Amount	Check #
1. BANNASCH WELDING INC	PATCH ALUMINUM TUBES	503.32	
2. CITY OF EAST LANSING	SEWERR - 5545-02 INTEREST PAYMENT	10,879.00	
	SRF-WRRF-DEBT PAYMENT	361,651.00	
	TOTAL	372,530.00	
3. COOK FARMS	2 BALES OF STRAW	6.50	
4. DL WALKER	MANITOWOC MOD # UD-0190A ICE MAKER	1,287.83	
5. EJ USA, INC.	WATER REPAIR PARTS	305.03	
	WATER REPAIR PARTS	1,516.05	
	HYDRANT PARTS	265.00	
	TOTAL	2,086.08	
6. FERGUSON WATERWORKS #3386	2 T10 MTR R9001 USG	2,003.55	
	REG5/8 T10 V4 R9001 USG PIT	3,686.00	
	WATER SYSTEM PARTS	5,662.00	
	WATER SYSTEM PARTS	2,700.00	
	TOTAL	14,051.55	
7. GALLAGHER BENEFIT SERVICES, INC	MONTHLY CONSULTING FEE - JULY	508.23	
8. GRAND TRUNK WESTERN RAILROAD CO	ANNUAL LICENSE FEE 8/1/18 TO 7/31/19	100.00	
9. MAULDON BROTHERS CONSTRUCTION LLC	GRAND RIVER/SIRHAL-JODON WATER MAIN 2018	11,115.00	
10. MICHIGAN RURAL WATER ASSOC	MEMBERSHIP 7/1/2018 TO 6/30/19	825.00	
11. ONE WAY ASPHALT PAVING	2017 ASPHALT REPAIRS	11,828.89	
12. POLLARD WATER	HYDRANT DIFFUSER, PITOT, TEST STRIPS AND DECHLORINATOR	3,414.65	
	HYDRANT DIFFUSER, PITOT, TEST STRIPS AND DECHLORINATOR	75.96	
	TOTAL	3,490.61	
13. MERIDIAN TOWNSHIP RETAINAGE	GR/SIRHAL-JODON WATER MAIN 2018-MAULDON BROTHERS	1,235.00	
14. TAO SANG	REFUND OVERPM'T FINAL #SEBE-001331-0000-01	62.49	
15. CARL SCHLEGEL INC	SAND, GRAVEL, TOP SOIL 2018	1,220.99	
	SAND, GRAVEL, TOP SOIL 2018	958.23	
	TOTAL	2,179.22	
16. SCHONSTEDT INSTRUMENT CO	REPAIR TO GA-72CD LOCATOR HANDHELD UNIT	304.04	
17. TRANSNATION TITLE	REFUND OVERPM'T FINAL #RUTH-006013-0000-07	47.55	
18. TRI TITLE AGENCY LLC	REFUND OVERPM'T FINAL #SNHO-006285-0000-02	86.62	
19. VERIZON WIRELESS	MONTHLY SERVICES	3,459.33	
20. WIELAND DAVCO CORP	REFUND OVERPM'T PERMIT #5897-NEW HOPE CHURCH	119.90	
TOTAL - ALL VENDORS		425,827.16	
FUND TOTALS:			
Fund 590 - SEWER FUND		375,281.08	
Fund 591 - WATER FUND		50,546.08	

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Vendor Name	Description	Amount	Check #
1. BELL TITLE CO	REFUND OVERPM'T SUMMER TAX @ 5402 MAPLE RIDGE #23	372.44	12326
2. EAST LANSING PUBLIC SCHOOLS	SUMMER 2018 TAX COLLECTION	22,095.09	12318
	SUMMER 2018 TAX COLLECTION	59,996.94	12327
	TOTAL	82,092.03	
3. FIRST AMERICAN TITLE INS CO	REFUND OVERPM'T SUMMER TAX @ 3773 YOSEMITE	662.67	12328
4. HASLETT PUBLIC SCHOOLS	SUMMER 2018 TAX COLLECTION	38,873.76	12319
	SUMMER 2018 TAX COLLECTION	48,919.52	12329
	TOTAL	87,793.28	
5. INGHAM INTERMEDIATE SCHOOL	SUMMER 2018 & DELINQ PP - TAX COLLECTION	164,841.23	12320
	SUMMER 2018 TAX COLLECTION & DELINQ PP TAX	254,166.89	12330
	TOTAL	419,008.12	
6. LANSING COMMUNITY COLLEGE	DELINQ PERSONAL PROPERTY TAX COLLECTION	149.91	12321
7. OKEMOS PUBLIC SCHOOLS	SUMMER 2018 & DELINQ PP - TAX COLLECTION	88,201.91	12322
	SUMMER 2018 TAX COLLECTION & DELINQ PP TAX	153,564.11	12331
	TOTAL	241,766.02	
8. MARY DIANN TUREK	REFUND OVERPM'T SUMMER PROPERTY TAX #33-02-02-26-102-002	40.00	12323
9. WILLIAMSTON SCHOOLS	SUMMER 2018 TAX COLLECTION	3,542.95	12324
	SUMMER 2018 TAX COLLECTION	2,827.46	12332
	TOTAL	6,370.41	
TOTAL - ALL VENDORS		838,254.88	
FUND TOTALS:			
Fund 701 - TRUST & AGENCY		838,254.88	

Credit Card Charges from July 5th to July 19th, 2018

Date	Merchant Name	Amount	Name
2018/07/10	4IMPRINT	\$205.78	ANDREA SMILEY
2018/07/10	4IMPRINT	\$225.05	ANDREA SMILEY
2018/07/18	ACCO BRANDS DIRECT	\$60.69	MICHELLE PRINZ
2018/07/13	ADMIRAL #181	\$40.96	TODD FRANK
2018/07/13	ALRO STEEL CORP	\$84.56	ROBERT STACY
2018/07/19	AMAZON MKTPLACE PMTS	\$50.99	ROBERT MACKENZIE
2018/07/13	AMAZON MKTPLACE PMTS	\$16.27	MICHELLE PRINZ
2018/07/16	AMAZON MKTPLACE PMTS WWW.	\$11.99	KRISTI SCHAEING
2018/07/06	AMAZON MKTPLACE PMTS WWW.	\$25.17	MICHELLE PRINZ
2018/07/18	AMAZON MKTPLACE PMTS WWW.	\$19.98	MICHELLE PRINZ
2018/07/13	ASSC FOR WOMEN IN COMMS	\$179.00	ANDREA SMILEY
2018/07/19	AVI SYSTEMS INC	\$165.26	ANDREA SMILEY
2018/07/19	B&H PHOTO 800-606-6969	\$63.42	DEBORAH GUTHRIE
2018/07/18	BEST BUY 00004168	\$799.99	DENNIS ANTONE
2018/07/13	BOYNTON FIRE SAFETY SVC	\$51.00	MATTHEW WALTERS
2018/07/06	CATHEY COMPANY	\$129.60	ROBERT STACY
2018/07/06	COMCAST	\$596.60	ANDREA SMILEY
2018/07/09	COMPLETE BATTERY SOURCE	\$16.96	MATTHEW WALTERS
2018/07/16	COMPLETE BATTERY SOURCE	\$4.81	PETER VASILION
2018/07/18	COMPLETE BATTERY SOURCE	\$108.63	STEPHEN GEBES
2018/07/10	COSTCO WHSE#1277	\$76.35	MICHAEL DEVLIN
2018/07/05	DENNYS CENTRAL PARK BI	\$28.98	KRISTI SCHAEING
2018/07/11	DISPLAYS2GO	\$32.83	MICHAEL DEVLIN
2018/07/12	DOLLAR TREE	\$30.00	JANE GREENWAY
2018/07/16	FAMILY FARMHOME 8	\$29.98	TYLER KENNEL
2018/07/10	FERGUSON WTRWRKS #3386	\$130.00	DAVID LESTER
2018/07/12	FLEETPRIDE 476	\$435.46	TODD FRANK
2018/07/11	GENERATOR GURU PARTS	\$65.02	JIM HANSEN
2018/07/16	GOOGLE *ADWS3069275384	\$148.28	ANDREA SMILEY
2018/07/09	HAMMOND FARMSLANDS	\$109.80	LAWRENCE BOBB
2018/07/09	HAMMOND FARMSLANDS	\$109.80	LAWRENCE BOBB
2018/07/19	HASLETT TRUE VALUE HARDW	\$15.78	TODD FRANK
2018/07/19	HOBBY LOBBY #360	\$31.48	DARCIE WEIGAND
2018/07/06	HOPCAT-EAST LANSIN	\$14.11	CHRIS BUCK
2018/07/19	JIMMY JOHNS - 90055 - MOT	\$76.99	MICHELLE PRINZ
2018/07/11	LANSING SANITARY SUPPL	\$47.46	DAN PALACIOS
2018/07/16	LARRY CUSHION TROPHIES	\$90.00	MICHAEL DEVLIN
2018/07/12	LEXISNEXIS RISK DAT	\$120.75	KRISTI SCHAEING
2018/07/13	LEXISNEXIS RISK SOL EPIC	\$67.10	KRISTI SCHAEING
2018/07/19	MEIJER INC #025 Q01	\$47.48	DARCIE WEIGAND
2018/07/12	MEIJER INC #025 Q01	\$29.46	JANE GREENWAY
2018/07/19	MEIJER INC #025 Q01	\$40.92	MICHAEL DEVLIN
2018/07/16	MEIJER INC #025 Q01	\$41.61	CATHERINE ADAMS
2018/07/12	MEIJER INC #025 Q01	\$52.04	MICHELLE PRINZ
2018/07/18	MI PERMIT LIC PLAN REV	\$225.00	JOHN HECKAMAN
2018/07/11	MICHIGAN MUNICIPAL LEAGUE	\$390.00	MICHELLE PRINZ
2018/07/11	MICHIGAN MUNICIPAL LEAGUE	\$780.00	MICHELLE PRINZ
2018/07/12	MICHIGAN MUNICIPAL LEAGUE	\$390.00	MICHELLE PRINZ
2018/07/19	MICHIGAN PLUMBING	\$250.00	ROBERT MACKENZIE
2018/07/11	MIDWEST POWER EQUIPMEN	\$119.99	MATT FOREMAN
2018/07/19	NATIONAL ARCHERY ASSOC	\$30.00	CATHERINE ADAMS
2018/07/18	OFFICEMAX/DEPOT 6194	\$16.99	KRISTI SCHAEING

2018/07/13	OFFICEMAX/DEPOT 6194	\$179.99	STEPHEN GEBES
2018/07/16	OFFICEMAX/DEPOT 6194	(\$110.00)	PETER MENSER
2018/07/16	OFFICEMAX/DEPOT 6194	\$211.99	PETER MENSER
2018/07/19	OFFICEMAX/DEPOT 6869	\$224.95	STEPHEN GEBES
2018/07/13	PANERA BREAD #600715	\$84.33	MICHELLE PRINZ
2018/07/19	QUALITY TIRE	\$256.54	TODD FRANK
2018/07/17	SITEONE LANDSCAPE S	\$10.02	ROBERT STACY
2018/07/09	SOLDANS FEEDS PET S	\$13.63	CATHERINE ADAMS
2018/07/16	SOLDANS FEEDS PET S	\$76.21	CATHERINE ADAMS
2018/07/13	SP * FINE FILTERS	\$90.00	WILLIAM RICHARDSON
2018/07/10	SQ *CAPITAL AERIAL IMAGIN	\$75.00	ANDREA SMILEY
2018/07/19	STAMPRITE	\$15.00	KRISTI SCHAEDING
2018/07/16	THE HOME DEPOT #2723	\$34.70	ROBERT STACY
2018/07/16	THE HOME DEPOT #2723	\$7.96	ROBERT STACY
2018/07/18	THE HOME DEPOT #2723	\$149.97	ROBERT STACY
2018/07/09	THE HOME DEPOT #2723	\$14.27	TYLER KENNEL
2018/07/05	THE HOME DEPOT #2723	\$7.88	KYLE ROYSTON
2018/07/19	THE HOME DEPOT #2723	\$7.97	DENNIS ANTONE
2018/07/19	THE HOME DEPOT #2723	\$93.75	DENNIS ANTONE
2018/07/16	THE HOME DEPOT #2723	\$21.60	WILLIAM RICHARDSON
2018/07/11	THE HOME DEPOT #2723	\$32.42	PETER VASILION
2018/07/13	THE HOME DEPOT #2723	\$12.89	PETER VASILION
2018/07/19	THE HOME DEPOT #2723	\$14.95	PETER VASILION
2018/07/19	THE HOME DEPOT #2723	\$19.92	PETER VASILION
2018/07/19	THE HOME DEPOT #2723	\$59.90	PETER VASILION
2018/07/11	THE HOME DEPOT #2723	\$61.70	MATT FOREMAN
2018/07/13	THE HOME DEPOT #2723	\$8.67	MATT FOREMAN
2018/07/19	THE HOME DEPOT #2723	\$31.90	MATT FOREMAN
2018/07/19	THE HOME DEPOT #2723	\$64.27	MATT FOREMAN
2018/07/16	THE HOME DEPOT 2723	\$245.00	MATT FOREMAN
2018/07/06	THE UPS STORE 0811	\$33.09	ROBERT STACY
2018/07/13	THE UPS STORE 0811	\$116.47	ROBERT STACY
2018/07/13	THE UPS STORE 0811	\$174.19	DAN PALACIOS
2018/07/19	TICKETS*LANSINGLUGNUTS	\$2,100.00	MICHELLE PRINZ
2018/07/19	TOM'S FOOD	\$15.84	DENNIS ANTONE
2018/07/06	TRACTOR SUPPLY #1149	\$8.99	JIM HANSEN
2018/07/16	WEST MARINE #184	\$59.96	TODD FRANK
2018/07/17	WOODEN SPOON CAFE	\$20.94	DEBORAH GUTHRIE
2018/07/10	WWW.NEWEGG.COM	\$119.99	STEPHEN GEBES

TOTAL	\$11,597.22
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ACH Transactions

Date	Payee	Amount	Purpose
07/10/18	Blue Care Network	20,214.52	Employee Health Insurance
07/03/18	MERS	223,362.55	Employee Retirement
07/17/18	Blue Care Network	15,562.04	Employee Health Insurance
07/17/18	Elan	26,957.21	Credit Card Bill - June Charges
07/19/18	ICMA	35,639.37	Payroll Deductions 07/20/18 Payroll
07/19/18	IRS	97,672.94	Payroll Taxes 07/20/18 Payroll
07/19/18	Various Financial Institutions	272,001.82	Direct Deposit 07/20/18 Payroll
07/19/18	State of Michigan	28,807.82	Withholding - July
07/05/18	Meridian Twp	223.82	Water & Sewer
07/15/18	Meridian Twp	828.49	Water & Sewer
07/06/18	Ingham Co Treasurer	352,192.77	Tax Collection Payout
07/12/18	Ingham Co Treasurer	542,343.12	Tax Collection Payout
	Total ACH Payments	<u><u>1,615,806.47</u></u>	



12.A

To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Peter Menser, Principal Planner

Date: July 18, 2018

Re: Zoning Amendment #18060 (Township Board) - Final Adoption

The Township Board voted to approve for introduction the zoning amendment to allow limited outdoor recreation activities by special use permit in the C-2 and C-3 (Commercial) zoning districts at its last meeting on July 10, 2018. Attached for the Board's consideration is a resolution for final adoption of Zoning Amendment #18060. As directed by the Board, the Clerk published the proposed ordinance as required.

- **Move to adopt the resolution for final adoption of Ordinance No. 2018-08 pursuant to Zoning Amendment #18060.**

Attachment

1. Resolution to approve

G:\Community Planning & Development\Planning\ZONING AMENDMENTS (ZA)\2018\ZA 18060 (Township Board)\ZA 18060.tb3.docx

RESOLUTION TO APPROVE

**Zoning Amendment #18060
Township Board
FINAL ADOPTION**

RESOLUTION

At the regular meeting of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 24th day of July, 2018, at 6:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, the Township Board, at its meeting on March 20, 2018 initiated the zoning amendment to amend Section 86-404 (C-2 Commercial District) of the Code of Ordinances; and

WHEREAS, the proposed zoning amendment would revise the current prohibition of outdoor uses in the C-2 and C-3 (Commercial) zoning districts to allow outdoor recreation, such as, but not limited to, batting cages and court games (such as basketball and volleyball) by special use permit when ancillary to a bowling alley, indoor recreation facility, or health and physical fitness establishment; and

WHEREAS, the Planning Commission held a public hearing on the proposed zoning amendment at its regular meeting on May 14, 2018 and reviewed staff material forwarded under cover memorandum dated May 8, 2018; and

WHEREAS, at its regular meeting on May 21, 2018, the Planning Commission voted 7-0 to recommend approval of the proposed zoning amendment with revised draft ordinance language; and

WHEREAS, the Township Board reviewed the material from staff and the Planning Commission forwarded under cover memorandum dated June 13, 2018 and discussed the proposed zoning amendment at its meeting on June 19, 2018; and

WHEREAS, the proposed zoning amendment is consistent with Goal 3 of the 2017 Master Plan to enhance the viability of Township businesses; and

WHEREAS, the proposed zoning amendment is consistent with Goal 3, Objectives A and D of the 2017 Master Plan to upgrade commercial areas and promote economic development; and

WHEREAS, the Township Board introduced Zoning Amendment #18060 for publication and subsequent adoption at its meeting on July 10, 2018.

Zoning Amendment #18060 (Township Board)

July 24, 2018

Page 2

NOW THEREFORE BE IT RESOLVED THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN hereby **FINALLY ADOPTS** Ordinance No. 2018-08, entitled "Ordinance Amending the Code of the Charter Township of Meridian, Ingham County, Michigan, Chapter 86, Article IV, Division III, by amending Sections 86-404 (C-2 Commercial District) and 86-405 (C-3 Commercial District)."

BE IT FURTHER RESOLVED that the Clerk of the Charter Township of Meridian is directed to publish the Ordinance in the form in which it was adopted within 15 days of this meeting.

ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Clerk of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Township Board on the 24th day of July, 2018.

Brett Dreyfus
Township Clerk

ORDINANCE NO. 2018-08

**ORDINANCE AMENDING THE CODE OF THE
CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN
CHAPTER 86 ARTICLE IV, DIVISION III, BY AMENDING SECTIONS 86-404 (C-2 COMMERCIAL
DISTRICT) AND 86-405 (C-3 COMMERCIAL DISTRICT).**

THE CHARTER TOWNSHIP OF MERIDIAN ORDAINS:

Section 1.

- A. Amendment to Article IV, District Regulations, Division III, Commercial, Retail, and Business Districts C-1, C-2, and C-3, Section 86-404 C-2 Commercial District of the code of the Charter Township of Meridian, Ingham County, Michigan, hereby amends Section 86-404 to read as follows:

Section 86-404 C-2 Commercial District

- (a) Purpose and intent. – Remains as written.
- (b) Standards applying to all C-2 commercial uses. – Remains as written.
- (c) Uses permitted by right. – Remains as written.
- (d) Permitted conditional uses. – Remains as written.
- (e) Uses permitted by special use permit:
 - (1) – (16) – Remain as written.

(17) Outdoor recreation, such as, but not limited to, batting cages and court games, such as basketball and volleyball, when ancillary to a bowling alley, indoor recreation facility, or health and physical fitness establishment.

- B. Amendment to Article IV, District Regulations, Division III, Commercial, Retail, and Business Districts C-1, C-2, and C-3, Section 86-405 C-3 Commercial District of the code of the Charter Township of Meridian, Ingham County, Michigan, hereby amends Section 86-405 to read as follows:

Section 86-405 C-3 Commercial District

- (a) Purpose. – Remains as written.
- (b) Standards applying to all C-3 commercial uses. – Remains as written.
- (c) Uses permitted by right. – Remains as written.
- (d) Permitted conditional uses. – Remains as written.
- (e) Uses permitted by special use permit:

Zoning Amendment #18060 (Township Board)

July 24, 2018

Page 4

(1) – (13) – Remain as written.

(14) Outdoor recreation, such as, but not limited to, batting cages and court games, such as basketball and volleyball, when ancillary to a bowling alley, indoor recreation facility, or health and physical fitness establishment.

Section 2. Validity and Severability. The provisions of this Ordinance are severable and the invalidity of any phrase, clause or part of this Ordinance shall not affect the validity or effectiveness of the remainder of the Ordinance.

Section 3. Repealer Clause. All ordinances or parts of ordinances in conflict therewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

Section 4. Savings Clause. This Ordinance does not affect rights and duties matured, penalties that were incurred, and proceedings that were begun, before its effective date.

Section 5. Effective Date. This Ordinance shall be effective seven (7) days after its publication or upon such later date as may be required under Section 402 of the Michigan Zoning Enabling Act (MCL 125.3402) after filing of a notice of intent to file a petition for a referendum.

Ronald J. Styka, Township Supervisor

Brett Dreyfus, Township Clerk



12.B

To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Peter Menser, Principal Planner

Date: July 18, 2018

Re: Rezoning #18070 (M78 Insite Venture, LLC) - Final Adoption

The Township Board voted to approve for introduction the rezoning of 6365 Newton Road from RD (Multiple Family) to C-2 (Commercial) at its last meeting on July 10, 2018. Attached for the Board's consideration is a resolution for final adoption of Rezoning #18070. As directed by the Board, the Clerk published the proposed ordinance as required.

- **Move to adopt the resolution for final adoption of Ordinance No. 2018-09 pursuant to Rezoning #18070.**

Attachment

1. Resolution to approve.

G:\Community Planning & Development\Planning\REZONINGS (REZ)\2018\REZ 18070 (M78 Insite Venture)\REZ 18070.tb3.doc

RESOLUTION TO APPROVE

**Rezoning #18070
M78 Insite Venture, LLC
6365 Newton Road
FINAL ADOPTION**

RESOLUTION

At a regular meeting of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 24th day of July, 2018, at 6:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, M78 Insite Venture, LLC requested a rezoning of an approximate 41.04 acre parcel located at 6365 Newton Road from RD (Multiple Family) to C-2 (Commercial); and

WHEREAS, the Planning Commission held a public hearing and discussed the rezoning at its meeting on May 14, 2018; and recommended approval 7-0 at its meeting on May 21, 2018; and

WHEREAS, the Township Board discussed the rezoning at its meeting on June 19, 2018 and has reviewed the staff and Planning Commission material forwarded under a cover memorandum dated June 13, 2018; and

WHEREAS, the subject site meets or exceeds the minimum standards for lot area and lot width of the proposed C-2 (Commercial) zoning district; and

WHEREAS, the subject site is located adjacent to properties zoned C-2 (Commercial) to the east and south; and

WHEREAS, the proposed rezoning to C-2 (Commercial) is consistent with changes in land use along the Saginaw Highway corridor; and

WHEREAS, public water and sanitary sewer services are available to serve the subject site;

WHEREAS, the Township Board introduced Rezoning #18070 for publication and subsequent adoption at its meeting on July 10, 2018.

NOW THEREFORE, BE IT RESOLVED THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN hereby **FINALLY ADOPTS** Ordinance No. 2018-09, entitled "Ordinance Amending the Zoning District Map of Meridian Township pursuant to Rezoning Petition #18070 from RD (Multiple Family) to C-2 (Commercial).

BE IT FURTHER RESOLVED that the Clerk of the Charter Township of Meridian is directed to publish the Ordinance in the form in which it is adopted within 15 days of this meeting.

Rezoning #18070 (M78 Insite Venture, LLC)

July 24, 2018

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ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Clerk of the Township of Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Township Board on the 24th day of July, 2018.

Brett Dreyfus
Township Clerk

ORDINANCE NO. 2018-09

**ORDINANCE AMENDING THE ZONING DISTRICT MAP
OF MERIDIAN TOWNSHIP
PURSUANT TO REZONING #18070**

The Charter Township of Meridian ordains:

Section 1. Amending the Zoning District Map.

A. The Zoning District Map of Meridian Township, as adopted in Section 86-312 of the Code of the Charter Township of Meridian, Michigan, as previously amended, is hereby amended by changing the RD (Multiple Family) District symbol and indication as shown on the Zoning District Map, for 6365 Newton Road, the property legally described as:

That part of the North 52.44 acres of the Northwest fractional $\frac{1}{4}$ of Section 4, T4N, R1W, beginning on the North-South $\frac{1}{4}$ line of said Section 4 at its point of intersection with the South line of said north 52.44 acres, said point being 1744.58 feet North of the center of said Section 4, running thence S 89° 24' 23" W 673.00 feet on the South line of said North 52.44 acres, North 269.88 feet parallel with said North-South $\frac{1}{4}$ line, N 89° 24' 23" E 673.00 feet parallel with said South line of North 52.44 acres to the North-South $\frac{1}{4}$ line, South 269.88 feet to the point of beginning; said described parcel containing 4.1694 acres of land, more or less; also that part of the Northwest fractional $\frac{1}{4}$ of Section 4, T4N, R1W, beginning on the North-South $\frac{1}{4}$ line at a point 673.22 feet North of the center of said Section 4, said point also being 100 feet North of the intersection of said $\frac{1}{4}$ line with the centerline of the West bound lanes of Highway M-78 running thence North 1071.35 feet on the $\frac{1}{4}$ line to the South line of the North 52.44 acres of said Northwest fractional $\frac{1}{4}$, thence S 89° 24' 23" W 673.00 feet on the South line of said North 52.44 acres, S 43° 41' 14" W 791.98 feet, South 730.00 feet parallel with said North-South $\frac{1}{4}$ line, S 59° 51' 30" E 599.06 feet to a point on the Northwesterly line of Highway M-78, said point being 60 feet from and measured at right angles to the centerline of the West bound lanes of Highway M-78, thence on said Northwesterly line the following three courses, Northeasterly 626.40 feet on the arc of a 3789.72 foot radius curve to the right whose chord bears N 52° 39' 23" E 625.70 feet to the point of tangency, thence N 57° 23' 30" E 157.92 feet, N43° 49' 00" E 103.24 feet to the point of beginning, said described parcel containing 35.1761 acres of land, more or less; also that part of the Northwest fractional $\frac{1}{4}$ of Section 4, T4N, R1W, described as commencing at the center of said Section 4, North along the North and South $\frac{1}{4}$ line 673.23 feet, thence along the Northwesterly right of way line of Highway M-78, 60 feet from and measured at right angles to the centerline of the West bound lanes of Highway M-78, the following three courses, S 43° 49' 00" W 103.24 feet, S 57° 23' 30" W 157.92 feet to a point of tangency, thence Southwesterly 626.40 feet on the arc of a 3789.72 foot radius curve to the left whose chord bears S 52° 39' 23" W 625.70 feet to the point of beginning of this description: thence N 89° 54' 40" W 518.02 feet, North 300.00 feet parallel to said North and South $\frac{1}{4}$ line, S 59° 51' 30" 599.06 feet to the point of beginning, said parcel contains 1.78 acres of land, more or less.

to that of C-2 (Commercial).

Rezoning #18070 (M78 Insite Venture, LLC)

July 24, 2018

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Section 2. Validity and Severability. The provisions of this Ordinance are severable and the invalidity of any phrase, clause or part of this Ordinance shall not affect the validity or effectiveness of the remainder of the Ordinance.

Section 3. Repealer Clause. All ordinances or parts of ordinances in conflict therewith are hereby repealed only to the extent necessary to give this Ordinance full force and effect.

Section 4. Savings Clause. This Ordinance does not affect rights and duties matured, penalties that were incurred, and proceedings that were begun, before its effective date.

Section 5. Effective Date. This Ordinance shall be effective seven (7) days after its publication or upon such later date as may be required under Section 402 of the Michigan Zoning Enabling Act (MCL 125.3402) after filing of a notice of intent to file a petition for a referendum.

Ronald J. Styka, Township Supervisor

Brett Dreyfus, Township Clerk

Legal description confirmed by:

Mark Kieselbach, Director
Community Planning and Development



12.C.

To: Township Board Members

From: Derek N. Perry, Assistant Township Manager
Director of Public Works & Engineering

Younes Ishraidi, P.E., Chief Engineer

Date: July 24, 2018

Re: 2018 Order to Maintain Sidewalk
Special Assessment District #18 – Resolutions 1 & 2

Since 1999, the Township has developed a proactive approach to minimize residential sidewalk hazards and potential liability to the Township by adopting a sidewalk replacement program.

In accordance with Township ordinance Section 58-32b, and Section 58-32d, the Township Board may order the repair of defective sidewalks. If the property owner fails to repair the sidewalk within 20 days after written notification, the Township may repair or replace the sidewalk and bill the cost of construction to the property owner.

As part of the ongoing sidewalk replacement program for this year, engineering staff has designated locations in Sections 2, 3, 5, 8, 10, 15, 16, 20, 27, 33, and 34 to continue the sidewalk replacement program. The proposed project areas include the following subdivisions: Banyon Park; Briarwood #5; East Lansing Athletic Club and Health Service Pavilion; Forest Hills #6; Heritage Hills #4; Heritage Office Park; Hiawatha Lakes #5, 6, 7, & 8; Northport of Meridian Condos; Okemos Pointe Office Park; Old English Estates & #2; Spring Lake & #2, & 5; Trails at Lake Lansing #3; Whitehills Lakes & #4; Wildflower Estates & #2; also 5800 Benson Drive; 2859 & 2947 Eyde Parkway; 4750 Hagadorn; 2841 Hannah; 1660 Haslett; 3950 Heritage; and 3681 Okemos.

The following motion is recommended when approved for ACTION:

“Move to approve 2018 Order to Maintain Sidewalk Special Assessment District #18 – Resolutions #1 and #2, which tentatively approves the improvements and the cost estimates of proposed improvements, and sets the date for a public hearing on August 21, 2018.”

Attachments: SAD #18 Maps
Public Hearing Notice
Assessment Roll
Order to Maintain Brochure

**2018 ORDER TO MAINTAIN SIDEWALK
SPECIAL ASSESSMENT DISTRICT #18**

RESOLUTION NO. 2

At a regular meeting of the Township Board of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, Michigan 48864-1198, (517) 853-4000, on Tuesday, July 24, 2018, at 6:00 p.m.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, the Township Board of the Charter Township of Meridian acting on its own initiative, as permitted by Act 188, Public Acts of Michigan, 1954, as amended, deems it advisable and necessary for the public health, safety, and welfare of the Township and its inhabitants to make the following described public sidewalk improvements: Repair and Maintain Sidewalk, in the following areas:

(SEE ATTACHED LEGAL DESCRIPTION)

and to defray the cost thereof by special assessment against the properties specially benefited thereby in accordance with Township Ordinance 58-32d; and,

WHEREAS, the Township Board has caused to be prepared by the Township Engineer, a list of the improvement locations and an estimate of the cost thereof; and,

WHEREAS, the same has been received by the Township Board; and,

WHEREAS, the Township Board desires to proceed further with the improvements.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN, THAT:

1. The list of the improvement locations and an estimate of the cost thereof be filed with the Township Clerk and be available for public examination.
2. The Township Board tentatively declares its intention to make the public sidewalk improvements previously listed in this resolution.
3. There is hereby tentatively designated a special assessment district against which the cost of said improvement is to be assessed, consisting of the lots and parcels of land described as:

(SEE ATTACHED LEGAL DESCRIPTION)

**2018 Order to Maintain Sidewalk
Special Assessment District No. 18
Resolution No. 2
Page 2**

4. The Township Board shall meet in the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, MI on Tuesday, August 21, 2018 at 6:00 p.m. at which time and place the Township Board will hear objections to the improvement and to the special assessment district therefore.
5. The Township Clerk is hereby ordered to cause notice of such hearing and the fact that the Township Board is proceeding with this project to be published twice prior to said hearing in a newspaper of general circulation in the Township, the first publication to be at least ten (10) days before the time of the hearing, pursuant to Act 188, Public Acts of Michigan, 1954, as amended, and shall cause said notice to be mailed by first class mail to all record owners of, or parties with interest in property in the special assessment district, at the addresses shown on the current tax records of the Township, at least ten (10) full days before the date of said hearing.
6. Said notice shall be in substantially the following form: **(SEE ATTACHED)**
7. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution be and the same are hereby rescinded.

ADOPTED:

YEAS: _____

NAYS: _____

Resolution declared adopted.

STATE OF MICHIGAN)

)ss.

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Clerk of the Charter Township of Meridian, Ingham County, **DO HEREBY CERTIFY**, that the foregoing is a true and complete copy of proceedings taken by the Township Board at a regular meeting held on Tuesday, July 24, 2018.

Brett Dreyfus, Township Clerk
Charter Township of Meridian



CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY

PUBLIC HEARING NOTICE:

2018 ORDER TO MAINTAIN SIDEWALK
SPECIAL ASSESSMENT DISTRICT NO. 18

Parcel Number
Owner
Owner Address
City, State ZIP

SUBJECT PROPERTY:
Property Address
City, State ZIP

August 21, 2018 AT 6:00 PM

**TO THE RECORD OWNERS OF, OR PARTIES IN INTEREST IN, THE FOLLOWING PROPERTY
CONSTITUTING THE PROPOSED SPECIAL ASSESSMENT DISTRICT:**

(SEE ATTACHED LEGAL DESCRIPTION)

Township Ordinance Section 58-32 places the duty to maintain the sidewalk in a good and usable condition with the adjacent property owner; and also states the Township Board may order the maintenance of the sidewalk and establish an assessment district of the benefited properties. The adjacent property owner will be allowed 20 days, from date of notification, to perform the work, and if not completed, the Township shall proceed with the work and assess the cost in accordance with the assessment district.

PLEASE TAKE NOTICE that the Township Board of the Charter Township of Meridian, acting on its own initiative as permitted by Act 188, Public Acts of Michigan, 1954, as amended, has determined for the public health, safety, and welfare of the Township and its inhabitants to make the following described public sidewalk improvements: repair and maintain sidewalk in the aforementioned proposed special assessment district and to defray the cost thereof by special assessment against the properties specially benefited thereby.

Plans and estimates have been prepared and are on file with the Township Clerk for public examination.

TAKE FURTHER NOTICE that the Township Board will meet on **Tuesday, August 21, 2018, at 6:00 p.m.** at the Meridian Township Municipal Building, 5151 Marsh Road, Okemos, MI 48864-1198, for the purpose of hearing objections, written or oral, to the proposed improvement, special assessment, and the special assessment district therefore. The Township Board is also interested in hearing those that favor the proposed project.

An owner or party in interest, or his or her agent, may appear in person at the hearing to protest the project, the special assessment district, or the special assessment, or shall be permitted to file his or her appearance or protest by letter before the hearing and his or her personal appearance shall not be required.

**“FOR PURPOSES OF THIS HEARING, THE AMOUNT TO BE ASSESSED AGAINST YOUR
PROPERTY IS ESTIMATED TO BE \$_____.”**

Dated:

Brett Dreyfus, Township Clerk
Charter Township of Meridian

2018 ORDER TO MAINTAIN SIDEWALK SAD #18

LEGAL DESCRIPTION

Banyon Park, Section 16	Lots 6, 7, 11, 31, 37
Briarwood #5 , Section 33	Lot 213
East Lansing Athletic Club and Health Service Pavilion, Section 20 – Common Element (Ingham County Condo Sub Plan No 286)	
Forest Hills #6, Section 27	Lots 394, 395, 397, 402, 416, 417
Heritage Hills #4, Section 8	
Lot 209, also beginning at the southwest corner of said lot 209; thence westerly 14 feet along an extension of the southerly lot line; thence northerly 96.97 feet parallel with the west line of said lot 209; thence easterly 14.11 feet along an extension of the northerly lot line to the northwest corner of said lot 209; thence southerly 95.21 feet to the point of beginning.	
Heritage Office Park, Section 33 (Ingham County Condo Sub Plan 268) – Unit 4	
Hiawatha Lakes #5, Section 33	Lots 43, 47, 64, and Birch Commons
Lot 57 excluding the northwesterly 20 in width thereof; also lot 73 (Hiawatha Lakes #6) excluding the northwesterly 20 in width thereof.	
Hiawatha Lakes #6, Section 33	Lot 68
Lots 75 and 76 including a parcel described as beginning at the southwest corner of said lot 76; thence S89°54'46"W 177.36 feet; thence N0°03'15"W 206.53 feet; thence N89°35'35"E 177.6 feet along the east line of East Meadow Condominiums to the west line of lot 75; thence S0°05'14"E 207.63 feet on the west line of said lots to the point of beginning.	
Lot 77, also beginning at the southwest corner of said lot 77; thence S89°54'46"W 177.36 feet; thence N0°03'15"W 125 feet; thence N89°54'46"E 177.36 feet to the northwest corner of said lot 77; thence S0°03'15"E 125 feet to the point of beginning.	
Hiawatha Lakes #7, Section 33	Lots 89, 90
Lot 79, also beginning at the southwest corner of said lot 79; thence S83°19'45"W 79.89 feet; thence N0°08'22"W 34.67 feet; thence N26°46'39"W 107.08 feet; thence N83°19'45"E 128.29 feet to the northwest corner of lot 79; thence S0°06'26"E 135.89 feet to the point of beginning.	
Hiawatha Lakes #8, Section 33	Lot 106
Northport of Meridian Condo, Section 3	Units 2, 3, 12, 21, 43
Okemos Pointe Office Park, Section 33 (Ingham County Condo Sub Plan No 267, thru 2nd Amendment) – Unit 1	
Old English Estates, Section 15	Lots 3, 11, 12
Old English Estates #2, Section 15	Lots 40, 52, 65, 84
Spring Lake, Section 34	Lots 22, 23
Spring Lake #2, Section 34	Lot 43
Spring Lake #5, Section 34	Lot 102
Trails at Lake Lansing #3, Section 2	Lot 109
Whitehills Lakes, Section 5	Lot 17 excluding the easterly 10 feet thereof.
Whitehills Lakes #4, Section 5	Lot 96
Wildflower Estates, Section 10	Lots 7, 11, 14, 18
Wildflower Estates #2, Section 10	Lots 27, 28, 30, 34, 38, 41, 44
5800 Benson, Section 10 – Commencing at the north ¼ corner of Section 10; thence S0°34'43"E 785.53 feet along the west line of the Plat of Oak Grove Park to the southwest corner of said plat; thence south along the ¼ line 810 feet to the point of beginning; east 335 feet; thence S50°51'30"E 167.52 feet; thence N88°07'32"E 420 feet; thence S76°21'12"E 279 feet to the centerline of Marsh Road; thence S01°28'07"E along the centerline 855 feet; thence S87°52'27"W 1078.55 feet; thence south 40 feet; thence S28°05'37" E 211.37 feet; thence S02°07'33"E 60 feet to the north line of Haslett Road (60 feet north of centerline); thence S87°52' 27"W 200 feet along the north line to the north-south ¼ line; thence N0°22'46"W 276.53 to the center of Section 10; thence north 1,069.88 feet to the beginning; excluding the Benson Drive, Lake Drive, and Marsh Road Rights-of-Way.	

2859 Eyde, Section 20 – Part of the southwest $\frac{1}{4}$ of Section 20 T4NR1W described as: Commencing at the west $\frac{1}{4}$ corner of Section 20; thence S00°05'46"W 893.81 feet along the west section line to the south line of Eyde Parkway extended; thence S89°37'44"E 431.25 feet along said south line and its extension; thence S00°22'16"W 260 feet to the south line of the north 70 rods of the southwest $\frac{1}{4}$; thence S89°37'44"E 884.14 feet along said south line to the point of beginning; thence S89°37'44"E 44.76 feet; thence N00°22'16"E 354.89 feet to the south line of Eyde Parkway; thence along said south line following five courses: southeasterly 51.22 feet along a curve to the right with a radius of 867 feet and a chord bearing S79°44'38"E 51.21 feet – S89°54'44"E 3.59 feet – N00°05'46"E 6.98 feet – southeasterly 12.32 feet along a curve to the left with a radius of 1,033 feet and a chord bearing S88°30'24"E 12.32 feet – S88°50'53"E 100.86 feet; thence S00°22'16"W 130.75 feet; thence S89°54'44"E 31.08 feet; thence S00°02'59"E 34.77 feet; thence S89°39'07"E 4.5 feet; thence S00°26'56"W 225.87 feet; thence N89°42'11"W 14.56 feet; thence S00°07'53"W 127.87 feet to the north line of the Plat of Herron Acres; thence N89°37'32"W 232.46 feet along said north line to the northwest corner of said plat; thence N00°02'05"E 166.63 feet to the point of beginning.

2947 Eyde, Section 20 – Part of the southwest $\frac{1}{4}$ of Section 20 T4NR1W described as: Commencing at the west $\frac{1}{4}$ corner of Section 20; thence S00°05'46"W 893.81 feet along the west section line to the south line of Eyde Parkway extended; thence S89°37'44"E 431.25 feet along said line and its extension to the point of beginning; thence along said south line following three courses: S89°37'44"E 325.22 feet – northeasterly 125.94 feet along a curve to the left with a radius of 295.91 feet and a chord bearing N78°10'43"E 124.99 feet – northeasterly 492.97 feet along a curve to the right with a radius of 867 feet and a chord bearing N82°16'29"E 486.35 feet; thence S00°22'16"W 354.89 feet to the south line of the north 70 rods of the southwest $\frac{1}{4}$; thence N89°37'44"W 928.9 feet along said south line; thence N00°22'16"E 260 feet to the point of beginning.

4750 Hagadorn, Section 20 – Commencing at the west $\frac{1}{4}$ corner of Section 20; thence N0°25'30"E 23.75 feet on the west section line; thence S89°59'30"E 33 feet to the point of beginning; thence N0°25'30"E 260.50 feet; thence S89°59'30"E 518.16 feet; thence S0°25'30"W 260.50 feet; thence N89°59'30"W 518.16 feet, more or less, to the point of beginning.

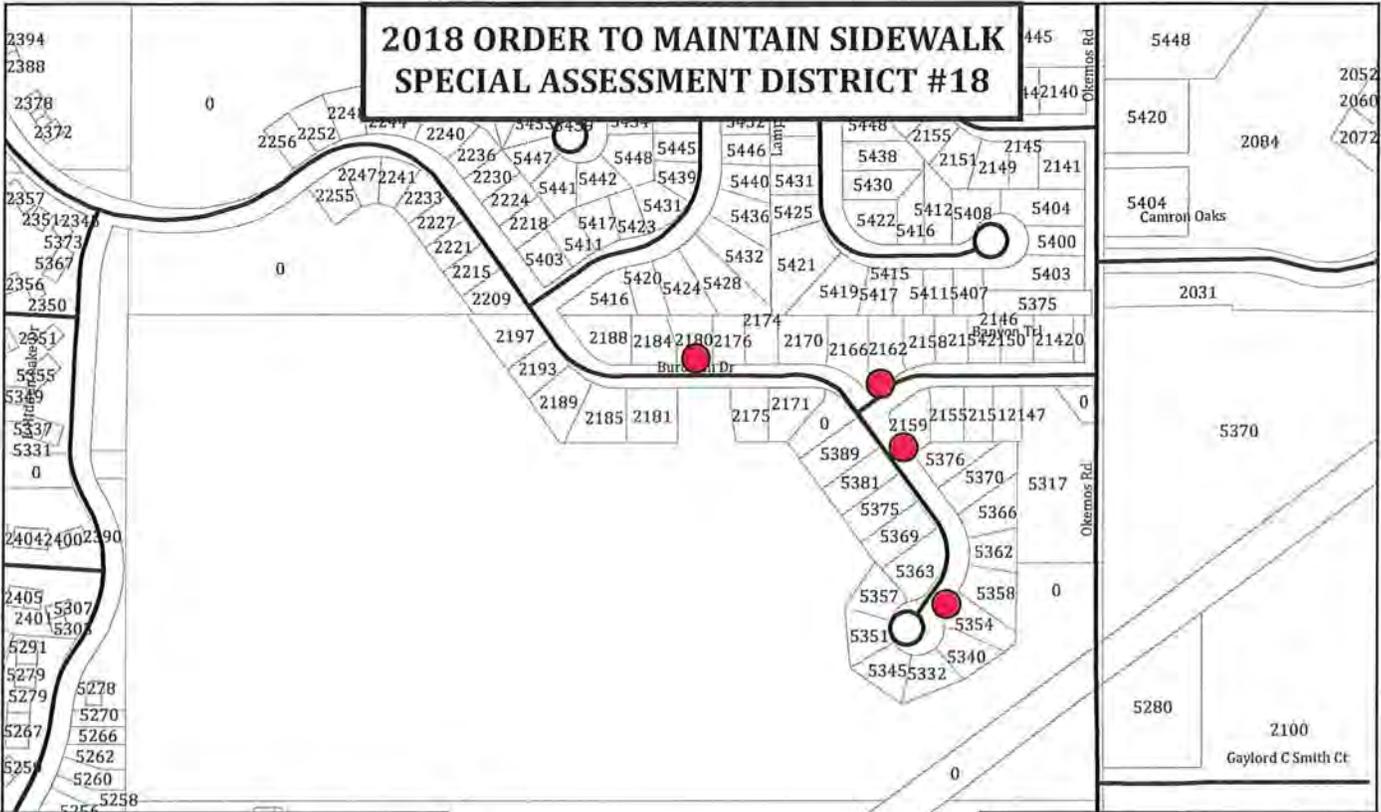
2841 Hannah, Section 20 – Part of the southwest $\frac{1}{4}$ of Section 20 T4NR1W described as: Commencing at the west $\frac{1}{4}$ corner of Section 20; thence N00°29'56"E 23.75 feet along the west line of the northwest $\frac{1}{4}$; thence S89°54'14"E 1,414.42 feet perpendicular to said west line and along the north line of Hannah Boulevard; thence N80°06'51"E 175.26 feet; thence northeasterly 103.41 feet along a curve to the right with a radius of 900 feet and a chord bearing N89°24'21"E 103.35 feet along said south line to the point of beginning; thence along said south line following two courses: northeasterly 53.39 feet along a curve to the right with a radius of 900 feet and a chord bearing N88°23'49"E 53.38 feet – S89°54'14"E 207.22 feet; thence S00°25'03"W 418.76 feet; thence N89°34'57"W 260.57 feet; thence N00°25'03"E 415.72 feet to the point of beginning.

1660 Haslett, Section 10 – Commencing at the center of Section 10; thence S0°22'46"E, 276.53 feet; thence N87°52'27"E 200 feet on the north right-of-way line of Haslett Road to the point of beginning; thence N02°07'33"W 60 feet; thence N28°05'37"W 211.37 feet; thence north 40 feet; thence N87°52'27"E 292.27 feet; thence S02°07'33"E 290 feet; thence S87°52'27"W 201.2 feet on the north line of Haslett Road to the point of beginning.

3950 Heritage, Section 33 – Commencing at the north $\frac{1}{4}$ corner of Section 33; thence S0°W 900 feet on the north section line; thence S0°E 43 feet to the south right-of-way line of Bennett Road and the point of beginning; thence S90°W 248 feet along the right-of-way; thence S0°E 364 feet on the east right-of-way line of Heritage Avenue; thence southeasterly 306.25 feet on a curve to the left along the right-of-way having a radius of 355 feet and a chord bearing S24°42'51"E 296.85 feet; thence southeasterly 364.13 feet on a curve to the left on the right-of-way having a radius of 605 feet; thence N06°05'14"E 93.20 feet; thence N42°30'00"E 309.74 feet; thence N0°23'30"E 234.30 feet; thence N56°54'02"W 108.24 feet; thence N29°09'15"E 100.43 feet to the south right-of-way line of Bennett Road; thence northwesterly 295.32 feet on the right-of-way on a curve to the left having a radius of 580.39 feet; thence S90°W 101.7 feet on the right-of-way to the point of beginning.

3681 Okemos, Section 33 – Commencing at the south $\frac{1}{4}$ corner of Section 33; thence north on the north-south $\frac{1}{4}$ line 1,716.01 feet; thence S89°44'37"W 50 feet to the point of beginning; thence S89°44'37"W 290 feet on the north right-of-way line of Coyote Creek Drive; thence north 215 feet on the east right-of-way line of Sonoma Vista Drive; thence N89°44'37"E 290 feet; thence south 215 feet on the west right-of-way line of Okemos Road to the point of beginning.

2018 ORDER TO MAINTAIN SIDEWALK SPECIAL ASSESSMENT DISTRICT #18



CONCRETE REPAIR LOCATION

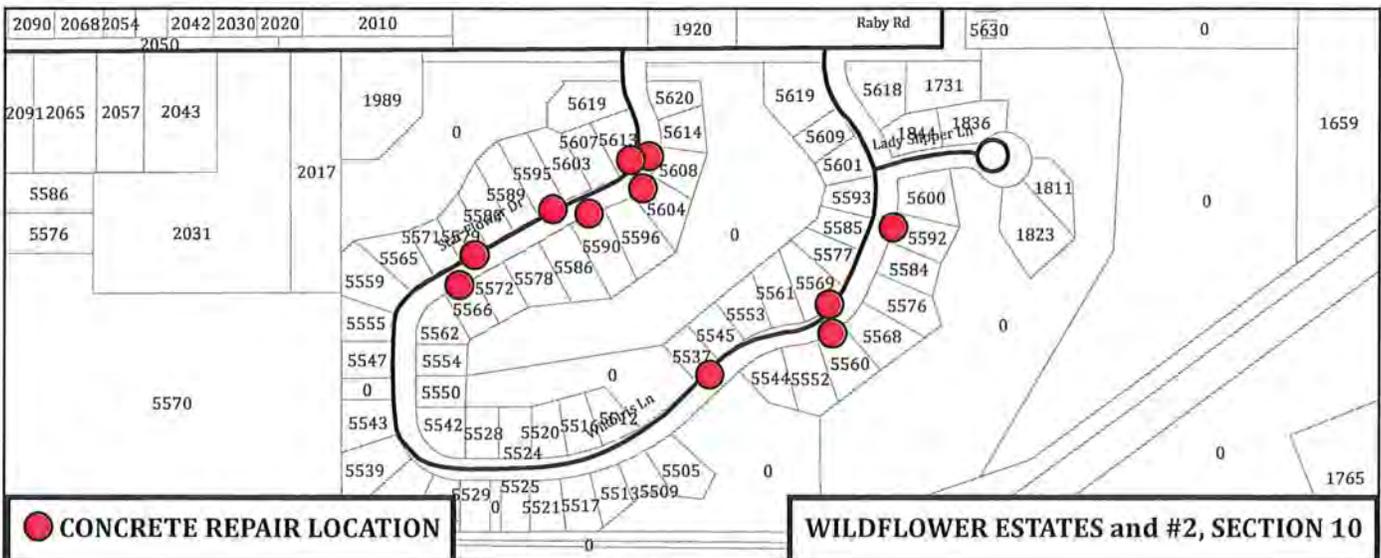
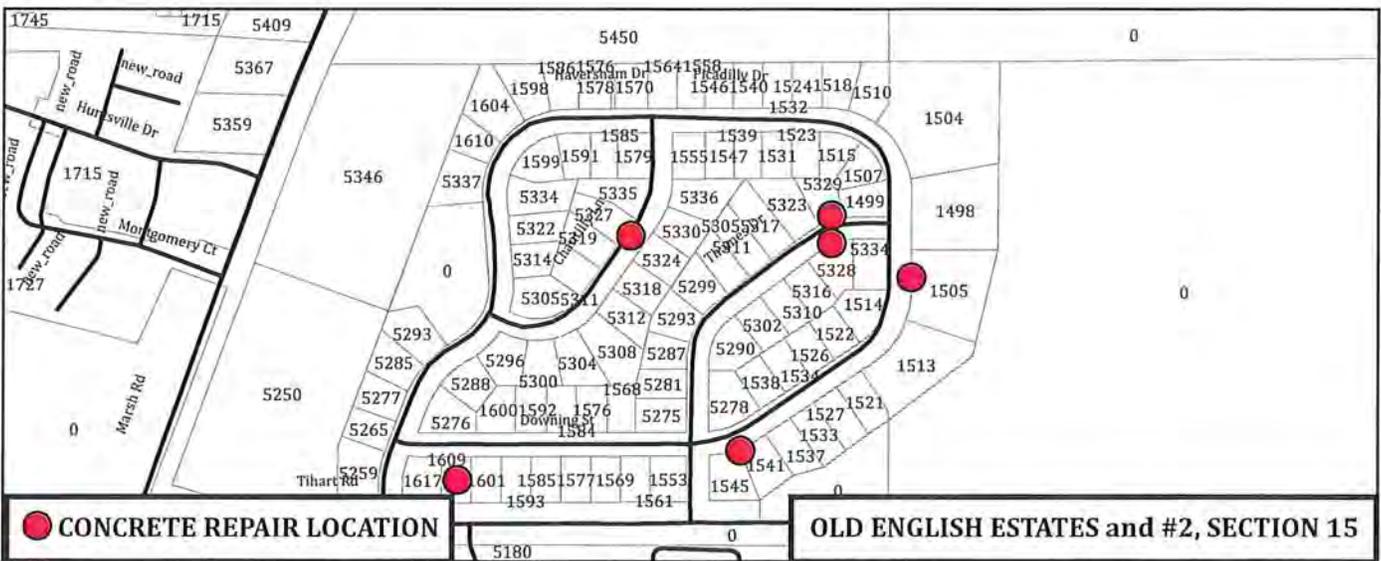
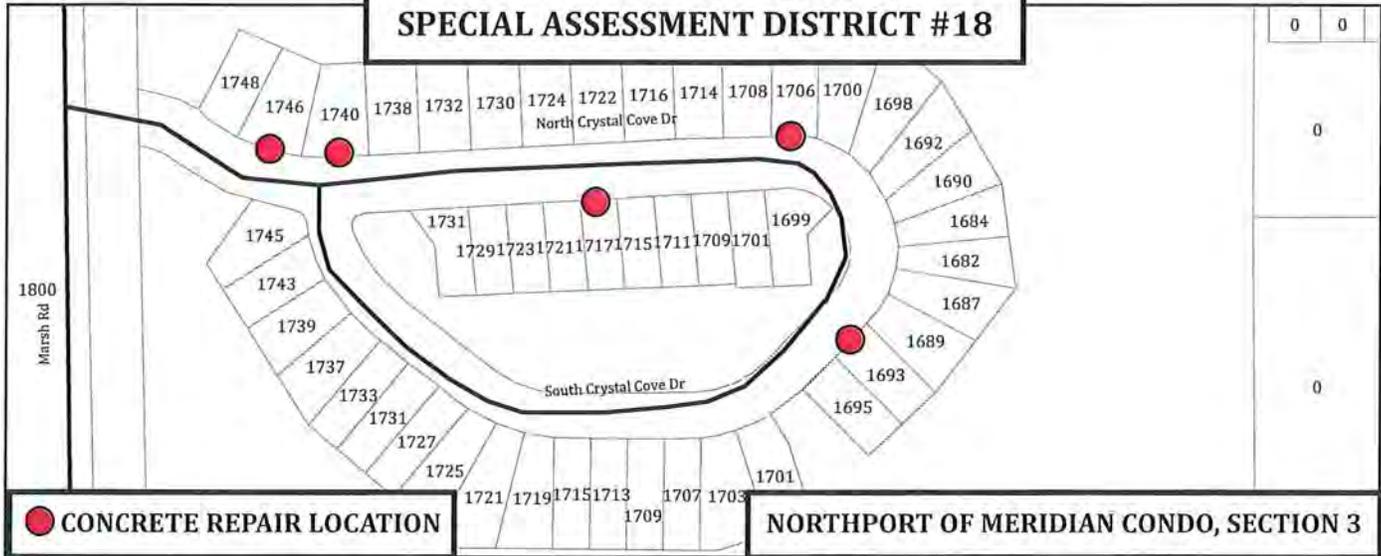
BANYON PARK, SECTION 16



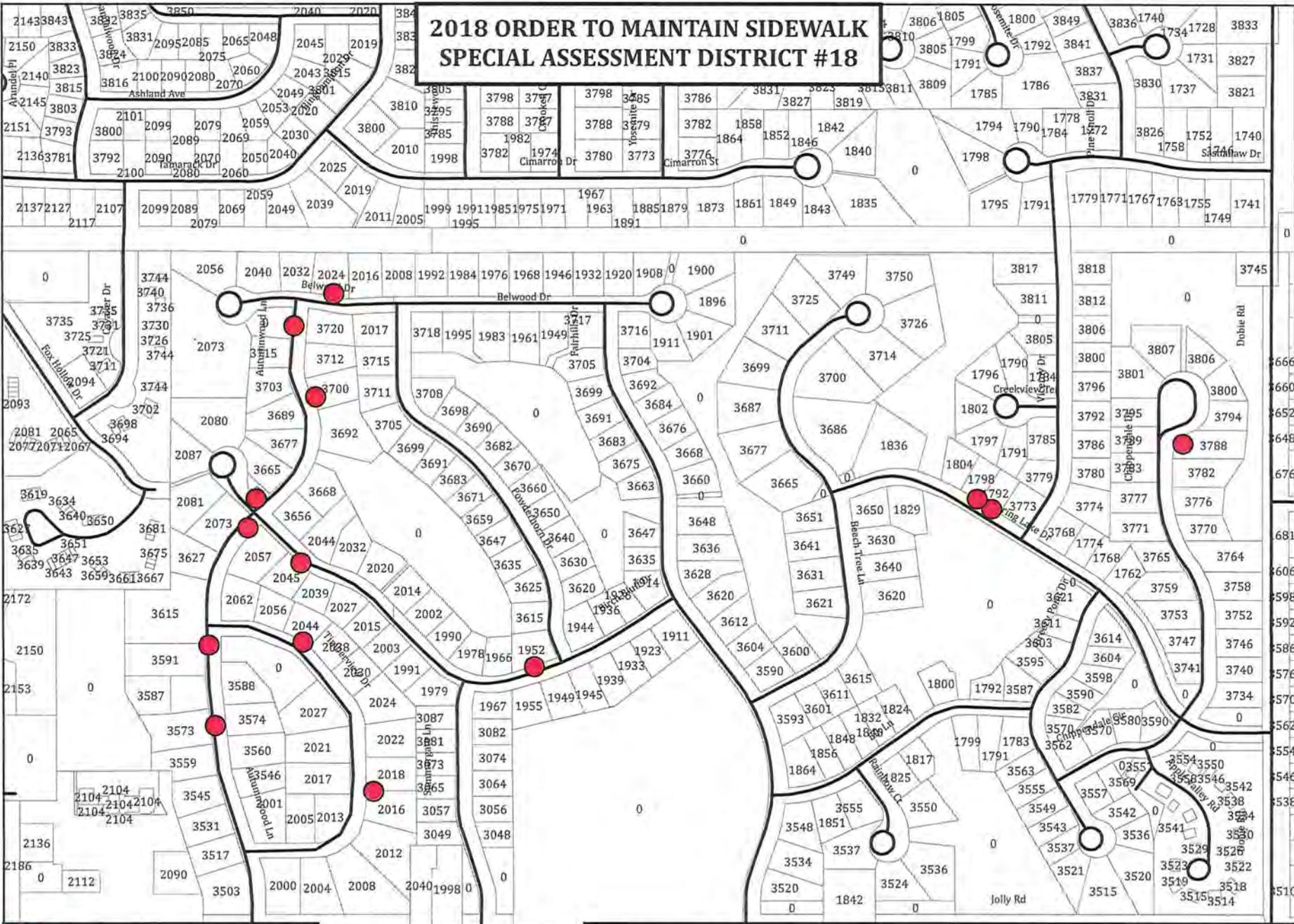
CONCRETE REPAIR LOCATION

BENSON HILLS APARTMENTS, SECTION 10

**2018 ORDER TO MAINTAIN SIDEWALK
SPECIAL ASSESSMENT DISTRICT #18**

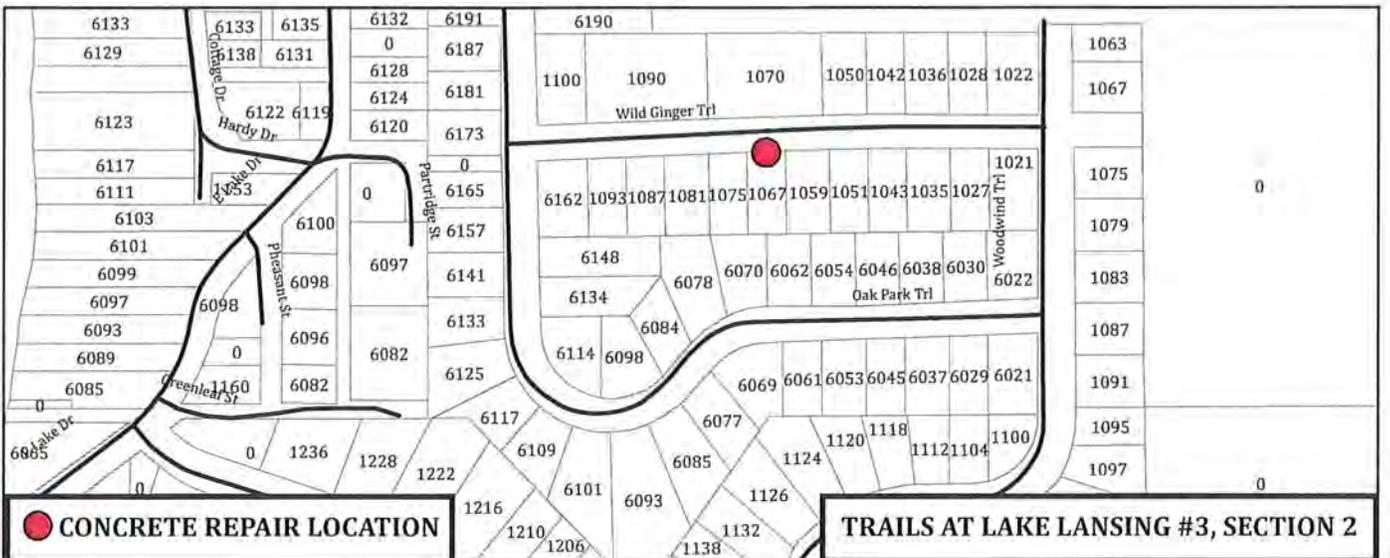
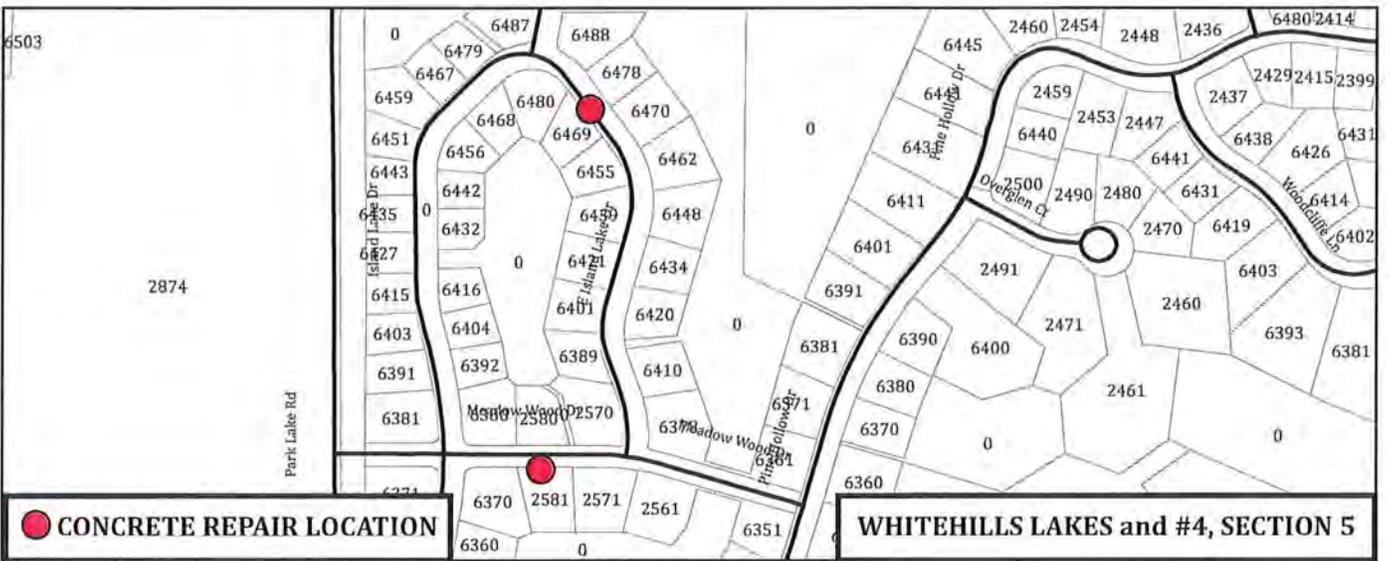
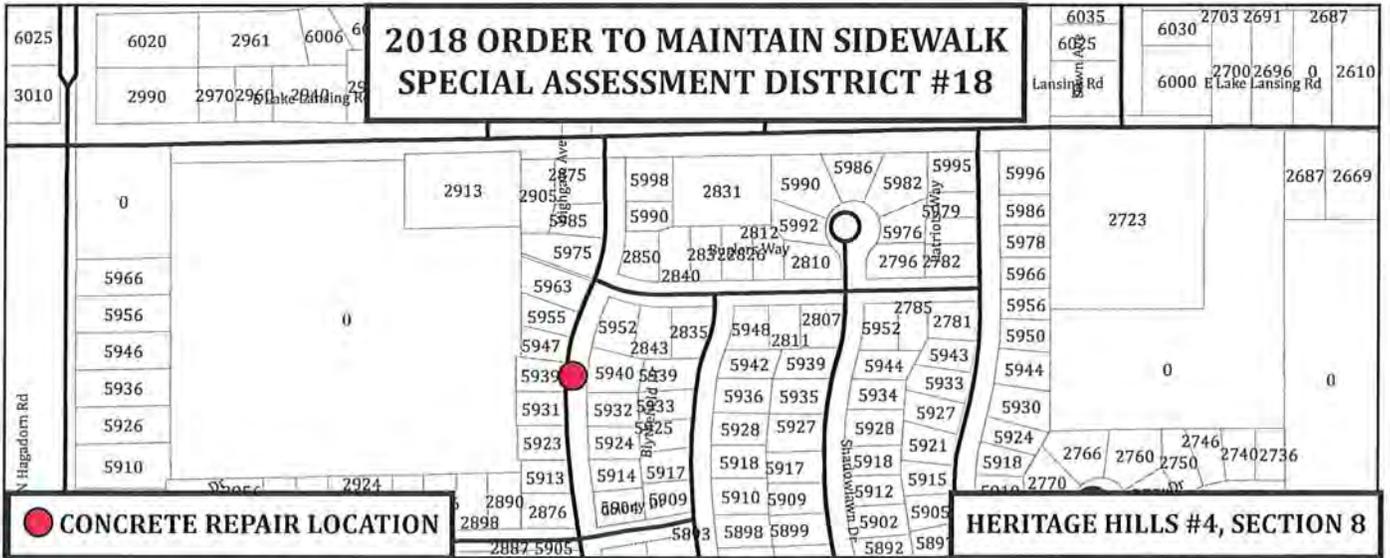


2018 ORDER TO MAINTAIN SIDEWALK SPECIAL ASSESSMENT DISTRICT #18



● CONCRETE REPAIR LOCATION

HIAWATHA LAKES #5, 6, 7, SECTION 33; SPRING LAKE and #2, 5, SECTION 34



2018 ORDER TO MAINTAIN SIDEWALK
SPECIAL ASSESSMENT DISTRICT NO. 18 - RESOLUTION 2

Repair Address				Mailing Address					Property Owner Cost	
Parcel #	Subdivision	Lot No.	Repair Address	Primary Name	Street Address	City	ST	Zip		
1	33-02-02-33-476-009	HIAWATHA LAKES #7	79+	3573 AUTUMNWOOD	JAPA, ANITHA & KETHIREDDY, SAMPATH	3573 AUTUMNWOOD LN	OKEMOS	MI	48864	\$228.99
2	33-02-02-33-428-026	HIAWATHA LAKES #6	77+	3591 AUTUMNWOOD	ESSA, JULIE K LAWTON	2152 COMMONS PARKWAY	OKEMOS	MI	48864	\$508.88
3	33-02-02-33-428-035	HIAWATHA LAKES #6	75 & 76+	3615 AUTUMNWOOD	AGGARWAL, ASHIM & KALYANI VANGALE-AGGARWAL	3615 AUTUMNWOOD LN	OKEMOS	MI	48864	\$254.44
4	33-02-02-33-428-010	HIAWATHA LAKES #5	BIRCH COMMONS	0 AUTUMNWOOD	HIAWATHA LAKES ASSOCIATION	PO BOX 25125	LANSING	MI	48909	\$254.44
5	33-02-02-33-427-008	HIAWATHA LAKES #5	43	3700 AUTUMNWOOD	MADALA, MOHAN C & SOUMYA C TRUSTEES	3700 AUTUMNWOOD LN	OKEMOS	MI	48864	\$228.99
6	33-02-02-16-251-007	BANYON PARK SUB	37	2159 BANYON	CHEUNG, SING Y & GIN S	2159 BANYON TRL	EAST LANSING	MI	48823	\$167.93
7	33-02-02-16-252-007	BANYON PARK SUB	6	2162 BANYON	DISANO, JOSEPH RAYMOND & DEMAS, SUSAN JEAN	2162 BANYON TRL	EAST LANSING	MI	48823	\$228.99
8	33-02-02-33-428-032	HIAWATHA LAKES #8	106	2024 BELWOOD	YOUNG JR, MICHAEL D & RACHAEL A	2024 BELWOOD DR	OKEMOS	MI	48864	\$407.10
9	33-02-02-33-428-004	HIAWATHA LAKES #5	47	0 BELWOOD	GUPTA, SUBHASH & JO ANNE SORLIE	2073 BELWOOD DR	OKEMOS	MI	48864	\$254.44
10	33-02-02-10-251-003	N/A	N/A	5800 BENSON DRIVE	BENSON HILLS HASLETT LLC C/O PEAK MANAGEMENT LLC	408 LAYFAYETTE AVE STE 100	ROYAL OAK	MI	48067	\$305.33
11	33-02-02-34-352-004	SPRING LAKE #5	102	1952 BIRCH BLUFF	SCHAEFER, B PATRICK & GWEN	1952 BIRCH BLUFF DR	OKEMOS	MI	48864	\$297.56
12	33-02-02-33-478-007	HIAWATHA LAKES #5	64	2045 BIRCH BLUFF	PATEL, DEVAL A & ACHAL	2045 BIRCH BLUFF DR	OKEMOS	MI	48864	\$218.79
13	33-02-02-33-428-028	HIAWATHA LAKES #5 & #6	57-, 73-	2073 BIRCH BLUFF	LEVINE, MICHAEL C & MARY P	2073 BIRCH BLUFF DR	OKEMOS	MI	48864	\$152.66
14	33-02-02-27-281-010	FOREST HILLS SUB #6	402	1581 BIRCHWOOD	GUNASEKARAN, TAMILSELVAN & KATE	1581 BIRCHWOOD DR	OKEMOS	MI	48864	\$137.40
15	33-02-02-16-252-008	BANYON PARK SUB	7	2166 BURCHAM	ZHONG, SHIYUAN & JESSICA JIAJIA BIAN	2166 BURCHAM DR	EAST LANSING	MI	48823	\$137.40
16	33-02-02-16-252-012	BANYON PARK SUB	11	2180 BURCHAM	HABTEMARIAM, EPHRAIM T & ASMERET H	2180 BURCHAM DR	EAST LANSING	MI	48823	\$254.44
17	33-02-02-16-251-013	BANYON PARK SUB	31	5354 BURCHAM	LAM, VIEM	5354 BURCHAM DR	EAST LANSING	MI	48823	\$544.38
18	33-02-02-15-281-011	OLD ENGLISH ESTATES #2	84	5327 CHANTILLY	AMACHREE, OPUENE E & KAREN	5327 CHANTILLY LN	HASLETT	MI	48840	\$228.99
19	33-02-02-27-281-018	FOREST HILLS SUB #6	394	4261 CHERRY HILL	SOBEL, JESSE & KELLI	4261 CHERRY HILL DR	OKEMOS	MI	48864	\$788.76
20	33-02-02-27-281-017	FOREST HILLS SUB #6	395	4271 CHERRY HILL	ZUHLKE, DAVID J & JAYNE A	4271 CHERRY HILL DR	OKEMOS	MI	48864	\$254.44
21	33-02-02-27-281-015	FOREST HILLS SUB #6	397	4291 CHERRY HILL	SCOTT, THOMAS & SUZANNE TRUSTEES	4291 CHERRY HILL DR	OKEMOS	MI	48864	\$264.50
22	33-02-02-34-401-006	SPRING LAKE #2	43	3788 CHIPPENDALE	CRANDELL, CHAD A & DAWN M	3788 CHIPPENDALE DR	OKEMOS	MI	48864	\$508.88
23	33-02-02-03-205-012	NORTHPORT OF MERIDIAN CONDO	12	1706 CRYSTAL COVE, NORTH	TALARICO, MARY J	1706 N CRYSTAL COVE DR	HASLETT	MI	48840	\$297.56
24	33-02-02-03-205-043	NORTHPORT OF MERIDIAN CONDO	43	1717 CRYSTAL COVE, NORTH	ROEBER, EDWARD D & DEBORAH S TRUSTEES	PO BOX 519	HASLETT	MI	48840	\$254.44
25	33-02-02-03-205-003	NORTHPORT OF MERIDIAN CONDO	3	1740 CRYSTAL COVE, NORTH	JONES, SHERREN K	1740 N CRYSTAL COVE DR	HASLETT	MI	48840	\$279.88
26	33-02-02-03-205-002	NORTHPORT OF MERIDIAN CONDO	2	1746 CRYSTAL COVE, NORTH	KÜHLMANN, FREDERICK A & NANETTE M	1746 N CRYSTAL COVE DR	HASLETT	MI	48840	\$254.44
27	33-02-02-03-205-021	NORTHPORT OF MERIDIAN CONDO	21	1693 CRYSTAL COVE, SOUTH	LAIRD, BRENDA L TRUST	3712 WHIPPOORWILL BLVD	PUNTA GORDA	FL	33950	\$279.88
28	33-02-02-15-278-019	OLD ENGLISH ESTATES #2	40	1505 DOWNING	HOLCOMB, JAMES R & LISA M	1505 DOWNING ST	HASLETT	MI	48840	\$254.44
29	33-02-02-15-278-002	OLD ENGLISH ESTATES	12	1541 DOWNING	BARANTCHOUK, OLEG & DEBORAH E	1541 DOWNING ST	HASLETT	MI	48840	\$508.88
30	33-02-02-15-278-001	OLD ENGLISH ESTATES	11	1545 DOWNING	BOYER, LINDSEY A & MICHAEL	1545 DOWNING ST	HASLETT	MI	48840	\$254.44
31	33-02-02-15-277-002	OLD ENGLISH ESTATES	3	1609 DOWNING	TUTHILL, GORDON R & JUDITH A TRUSTEES	1609 DOWNING ST	HASLETT	MI	48840	\$254.44
32	33-02-02-20-327-003	N/A	N/A	2859 EYDE	R & B INVESTMENTS LLC	362 OSBORNE RD	DANSVILLE	MI	48819	\$1,078.13
33	33-02-02-20-303-004	N/A	N/A	2947 EYDE	EYDE CONSTRUCTION CO	PO BOX 4218	EAST LANSING	MI	48826	\$254.44

2018 ORDER TO MAINTAIN SIDEWALK
SPECIAL ASSESSMENT DISTRICT NO. 18 - RESOLUTION 2

34	33-02-02-20-152-008	N/A	N/A	4750	HAGADORN	EYDE HANNAH PLAZA LLC C/O CBRE MARTIN	1111 MICHIGAN AVE SUITE 300	EAST LANSING	MI	48823	\$508.88
35	33-02-02-20-326-011	N/A	N/A	2841	HANNAH	HANNAH HOSPITALITY LLC	2785 W WOODLANDS DR	TRAVERSE CITY	MI	49685	\$254.44
36	33-02-02-20-153-100	EAST LANSING ATHLETIC CLUB AND HEALTH SERVICE PAVILION (INGHAM COUNTY CONDO SUB PLAN NO 286)	COMMON ELEMENT	2900	HANNAH	SPARROW DEVELOPMENT INC	1215 E MICHIGAN AVE	LANSING	MI	48912	\$483.43
37	33-02-02-10-403-002	N/A	N/A	1660	HASLETT	HASLETT COMMERCE CENTER LLC	2149 JOLLY RD STE 200	OKEMOS	MI	48864	\$508.88
38	33-02-02-33-126-004	HERITAGE OFFICE PARK (INGHAM COUNTY CONDO SUB PLAN NO 268)	4	3800	HERITAGE	EYDE LTD PARTNERSHIP	P O BOX 4218	EAST LANSING	MI	48826	\$1,238.69
39	33-02-02-33-100-021	N/A	N/A	3950	HERITAGE	EYDE LTD PARTNERSHIP	P O BOX 4218	EAST LANSING	MI	48826	\$203.55
40	33-02-02-08-104-009	HERITAGE HILLS #4	209+	5939	HIGHGATE	COMSTOCK JR, RICHARD & KAY	5939 HIGHGATE AVE	EAST LANSING	MI	48823	\$356.21
41	33-02-02-27-280-005	FOREST HILLS SUB #6	417	4291	INDIAN GLEN	MANTICA JR, PAUL F & STACY A HICKOX	4291 INDIAN GLEN DR	OKEMOS	MI	48864	\$712.43
42	33-02-02-27-280-004	FOREST HILLS SUB #6	416	4297	INDIAN GLEN	MERICLE, ANGELINE	3799 S BANANA RIVER BLVD APT 604	COCOA BEACH	FL	32931	\$279.88
43	33-02-02-05-202-012	WHITEHILLS LAKES #4	96	6469	ISLAND LAKE EAST	WALLING JR, JOHN F & ANGELA S	6469 E ISLAND LAKE DR	EAST LANSING	MI	48823	\$330.63
44	33-02-02-05-252-033	WHITEHILLS LAKES	17-	2581	MEADOW WOOD	THEIS, CHARLES L & NANCY A	2581 MEADOW WOOD DR	EAST LANSING	MI	48823	\$297.56
45	33-02-02-33-329-001	OKEMOS POINTE OFFICE PARK (INGHAM COUNTY CONDO SUB PLAN NO 267)	1	3657	OKEMOS	MICHIGAN DENTAL ASSOCIATION HQ LLC	3657 OKEMOS RD STE 200	OKEMOS	MI	48864	\$585.21
46	33-02-02-33-326-032	N/A	N/A	3681	OKEMOS	EYDE PORTFOLIO B LLC	P O BOX 4218	EAST LANSING	MI	48826	\$934.38
47	33-02-02-34-327-014	SPRING LAKE SUBDIVISION	23	1792	SPRING LAKE	HONG, HONG	1792 SPRING LAKE DR	OKEMOS	MI	48864	\$228.99
48	33-02-02-34-327-015	SPRING LAKE SUBDIVISION	22	1798	SPRING LAKE	JUNG, JIA YING TRUST	1798 SPRING LAKE DR	OKEMOS	MI	48864	\$269.68
49	33-02-02-10-353-011	WILDFLOWER EST. #2	34	5566	STAR FLOWER	ZEKA, BESIM & SEMSA	5566 STAR FLOWER DR	HASLETT	MI	48840	\$483.43
50	33-02-02-10-352-009	WILDFLOWER EST. #2	44	5579	STAR FLOWER	HUMBLE, RYAN	5579 STAR FLOWER DR	HASLETT	MI	48840	\$254.44
51	33-02-02-10-353-007	WILDFLOWER EST. #2	30	5590	STAR FLOWER	YU, LI	5590 STAR FLOWER DR	HASLETT	MI	48840	\$228.99
52	33-02-02-10-352-006	WILDFLOWER EST. #2	41	5595	STAR FLOWER	FUDALY, CAROL M TRUSTEE	5595 STAR FLOWER DR	HASLETT	MI	48840	\$254.44
53	33-02-02-10-353-005	WILDFLOWER EST. #2	28	5604	STAR FLOWER	BOLIN, STEVEN R & CAROLE A	5604 STAR FLOWER DR	HASLETT	MI	48840	\$264.50
54	33-02-02-10-353-004	WILDFLOWER EST. #2	27	5608	STAR FLOWER	REILLY, MARY JO & WILLIAM D BAUGH	5608 STAR FLOWER DR	HASLETT	MI	48840	\$228.99
55	33-02-02-10-352-003	WILDFLOWER EST. #2	38	5613	STAR FLOWER	VILLAIRE, CATHERINE C & ANDREW J	5613 STAR FLOWER DR	HASLETT	MI	48840	\$284.91
56	33-02-02-33-278-019	BRIARWOOD SUB #5	213	2060	TAMARACK	PERENCE, ROBERT A & RUTH ANN TRUSTEES	2060 TAMARACK DR	OKEMOS	MI	48864	\$534.32
57	33-02-02-15-279-008	OLD ENGLISH ESTATES #2	52	5328	THAMES	ZAND, HAMID R	5328 THAMES DR	HASLETT	MI	48840	\$254.44
58	33-02-02-15-280-026	OLD ENGLISH ESTATES #2	65	5329	THAMES	KIM, SEONG-SU & HYUNKYUNG	5329 THAMES DR	HASLETT	MI	48840	\$254.44
59	33-02-02-33-478-019	HIAWATHA LAKES #7	89	2016	TIMBERVIEW	MOORE, EDDIE A & MARILYN M	2016 TIMBERVIEW DR	OKEMOS	MI	48864	\$203.55
60	33-02-02-33-478-018	HIAWATHA LAKES #7	90	2018	TIMBERVIEW	BROWN, JONATHAN K & GUPTA, MALANI M	2018 TIMBERVIEW DR	OKEMOS	MI	48864	\$203.55
61	33-02-02-33-478-012	HIAWATHA LAKES #6	68	2044	TIMBERVIEW	LI, SHU GUANG & XU WU	2044 TIMBERVIEW DR	OKEMOS	MI	48864	\$254.44
62	33-02-02-02-431-019	TRAILS AT LAKE LANSING #3	109	1067	WILD GINGER	HUBBARD, BRANDON C & SARAH J	1067 WILD GINGER TRL	HASLETT	MI	48840	\$381.66
63	33-02-02-10-377-011	WILDFLOWER EST.	14	5537	WILD IRIS	PALACIO, DOMINICA	5537 WILD IRIS LN	HASLETT	MI	48840	\$305.33
64	33-02-02-10-376-017	WILDFLOWER EST.	11	5560	WILD IRIS	BROWNBACK, DAVID W & ALISON D	5560 WILD IRIS LN	HASLETT	MI	48840	\$203.55
65	33-02-02-10-377-007	WILDFLOWER EST.	18	5569	WILD IRIS	ZHU, DAVID C & LEANNA B	5569 WILD IRIS LN	HASLETT	MI	48840	\$534.32
66	33-02-02-10-376-013	WILDFLOWER EST.	7	5592	WILD IRIS	SHAH, DHIRAJ & ASHA	5592 WILD IRIS LN	HASLETT	MI	48840	\$254.44
											\$23,175.28



Meridian Township
5151 Marsh Road
Okemos, MI 48864

P 517.853.4000
F 517.853.4096

Township Board:

Ronald J. Styka
Township Supervisor

Brett Dreyfus
Township Clerk

Julie Brixie
Township Treasurer

Phil Deschaine
Township Trustee

**Patricia Herring
Jackson**
Township Trustee

Dan Opsommer
Township Trustee

Kathy Ann Sundland
Township Trustee

Frank L. Walsh
Township Manager

DEPARTMENT OF PUBLIC WORKS

ORDER-TO-MAINTAIN SIDEWALK PROGRAM

Why has my sidewalk been chosen for replacement or leveling?

Township inspectors found certain sections of the sidewalk abutting your property need to be replaced or leveled to make the sidewalk safer. This inspection is part of a yearly program created to replace or level defective sidewalk. Sidewalk maintenance is important because it may save a pedestrian from injury and you from an expensive lawsuit.

Why is replacement or leveling necessary?

Removal and replacement or leveling is necessary to provide reasonably safe and accessible sidewalks. Leveling by "mudjacking" may be possible if the sidewalk is not cracked.

How can I replace the sidewalk?

You have three options:

1. Take no action and allow the Township's contractor to replace or level the sidewalk as part of the sidewalk maintenance program.
2. Hire your own contractor.
3. Perform the work yourself.

If you elect to hire a contractor or do the work yourself, you must obtain a permit from the Department of Public Works. For work related to this Order-To-Maintain sidewalk program, application for a permit is free of charge for both contractors and homeowners. All work must be completed in accordance with the standards and specifications of Meridian Township. Copies of the standards and specifications are available from the Department of Public Works. An inspection is required when forms are ready and when the concrete is poured.

If you do nothing, the Township's contractor will be in your area and will replace or level the sidewalk at your expense, and you will be billed as explained in this brochure. You do not have to obtain a permit if the work is done by the Township's contractor.

Can I make temporary repairs instead of replacement or leveling?

No, filling vertical or horizontal gaps or displacements by placing mortar or asphalt is not considered a permanent repair.

How much will replacing or leveling the defective sidewalk cost?

Your exact cost will be determined **after** completion of the work; however your estimated cost is indicated on the enclosed "Notice of Public Hearing", and is on file with the Township Clerk. You may contact the Department of Public Works for a detailed breakdown of your costs and the location of the sidewalk to be replaced or leveled.

You are responsible for 100% of the sidewalk across your frontage. If you own a residential corner lot, the Township will pay for 40% of the cost of the sidewalk replacement or leveling along the street to which the house is not addressed. The Township will pay 100% for ramp replacement at the street intersection.

How will I be billed?

You will receive a bill, called a special assessment, in **June 2019, with a due date of July 1, 2019**. The assessment may be paid in full with one payment (in 2019), or over 5 years at 5% interest per year. Please do not make any payments until after you receive this bill.

The Township sidewalk contractor will complete the work over the Summer/Fall of 2018. Once the sidewalk repairs have been completed, a Township inspector will measure the exact dimensions of the replacement sidewalk. Your special assessment will be based on these measurements.

(Please note you will receive a second Township Board "Notice of Hearing" in early 2019 after the contractor has completed all of the sidewalk replacements. It will state the exact cost of your sidewalk repairs. The purpose of the second hearing is for the public to comment on the proposed assessments.)

What about damage caused by trees or utility structures?

Where tree roots have displaced the sidewalk they will be removed prior to new sidewalk installation. A healthy tree should survive this process.

Property owners are responsible for replacement of all sidewalk damaged by tree roots whether the tree is on public or private land. The Township will pay for 100% of the cost for sidewalk directly damaged by Township manhole covers or water valves.

Will the contractor restore my lawn after the work?

Usually only a few inches of grass adjacent to the replaced sidewalk is uprooted. This strip will be filled with topsoil, seeded, and mulched after the concrete forms are removed.

How do I protect my sprinkler or invisible fence system (or other private utility)?

The contractor is responsible for damage to underground utilities, **but only those that are marked**.

You will receive a notice in the mail and a doorhanger shortly before the start of construction notifying you to mark any private utilities near the sidewalk. If you have a sprinkler system or private underground wires (e.g. invisible fence or private lights) they must be marked prior to construction. Contact the person that installed your lines for a detailed layout.

If private utilities are not marked and become damaged during construction, the contractor is NOT responsible to fix them. If the utility is marked and becomes damaged by the contractor, then the contractor is responsible to fix the utility.

May I have private work done by the Township's contractor?

You may have additional work (driveways, approaches, patios, etc.) performed under a private agreement between you and the Township contractor. You also must be sure that you are not paying the Township contractor directly for work to be done under their contract with the Township.

The Township will not become involved in disputes between you and the contractor for private work. You and the contractor must negotiate the price, timing, restoration, and payment terms for all private work.

What about tree branches and other vegetation that obstruct the sidewalk?

The property owner is responsible for removal of all obstructions; including vegetation such as tree limbs, branches, shrubs, and bushes and other objects; that interfere with the safe use of the sidewalk. The area to be kept clear is one (1) foot from the edges of the sidewalk and eight (8) feet above the sidewalk.

If I still have questions, whom should I contact?

Department of Public Works at (517) 853-4440 or DPW@meridian.mi.us.





12.D.

To: Township Board Members
From: Derek N. Perry, Assistant Township Manager
Director of Public Works & Engineering
Date: July 24, 2018
Re: Woodingham Lift Station-Sewer Contract Addendum

In order to effectively and efficiently treat our wastewater in the Township, we have successfully partnered with the City of East Lansing and Michigan State University for several decades. This partnership has allowed all three organizations to save significant costs by not operating and maintaining duplicate infrastructure to the benefit to all of our respective customers.

In addition to the significant renovations occurring at the Water Reuse and Reclamation Facility (WRRF), we also need to make improvements to the East Lansing Woodingham Lift Station. This lift station provides conveyance of wastewater from the northwest portion of the Township through the City of East Lansing to the WRRF. While the majority of the wastewater is generated by East Lansing customers, we estimate that 25-30 percent of the flows are a result of Meridian Township customers.

In order to fund the improvements estimated at \$8,000,000.00, the City of East Lansing will be using the State of Michigan Water Pollution Control Revolving Fund, better known as the State Revolving Fund (SRF). The SRF is a low-interest loan (2% for 20-year loans and 2.25% for 30-year loans in fiscal year 2018) financing program that assists qualified local municipalities with the construction of needed water pollution control facilities.

One of the SRF requirements is that repayment of the loan be guaranteed and that participating municipalities that share infrastructure have an agreement in place for the term of the SRF loan. In order to comply with this provision, the City of East Lansing is requesting that Meridian Township amend the January 17, 1961 Sewer Contract to extend it to December 31, 2043 from the current term of January 25, 2038 (5 year extension).

Attachments- City of East Lansing sanitary sewer system map

Proposed Motion:

“Move to authorize the Township Supervisor and Township Clerk to approve the Addendum to the Sewer Contract and Agreement of January 17, 1961 as Amended.”

ADDENDUM TO THE SEWER CONTRACT
AND AGREEMENT OF JANUARY 17, 1961 AS AMENDED

This Contract made this ___ day of _____, 2018, by and between the CITY OF EAST LANSING (hereinafter referred to as the “City”) and the CHARTER TOWNSHIP OF MERIDIAN (hereinafter referred to as the “Township”), both being Municipal Corporations of the County of Ingham, State of Michigan, having hereto executed Agreements for the City of East Lansing to provide sewer service to Meridian Township with the original agreement dated January 17, 1961, say as follows;

WHEREAS, the Agreement of January 17, 1961, as supplemented and amended from time to time, provides for the transmission of sewage from the Charter Township of Meridian to the City of East Lansing, and determines the rights, duties and liabilities of the parties, and;

WHEREAS, one of the lines transporting sewage from Meridian Township is the Towar Interceptor, which has been the subject of a number of contracts and addendums thereto, and;

WHEREAS, the City and Township have established formulas for determining the Township’s proportionate share of the annual cost of operation, maintenance, and repair of the East Lansing sewer system, and;

WHEREAS, the City and Township have agreed to proceed with the replacement of the Woodingham Pump Station on the Towar Interceptor as part of the MDEQ FY 2019 SRF Project and have agreed to share the cost consistent with the manner in which the parties have previously shared the annual costs of operation, maintenance and repair;

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. In addition to any other payments owed the City pursuant to other agreements and addenda, the Township agrees to pay a portion of the future debt service for the construction of the new Woodingham Pump Station equal to:
[(Each Year’s Actual Debt Service for the Construction of the New Woodingham Pump Station) x (That Corresponding Year’s Metered Flow from Meridian at Towar Meter Divided by the Corresponding Year’s Metered Flow from City for Woodingham Pump Station)].
2. The parties hereto agree that the general sewer contract dated January 17, 1961, as supplemented, between the City and Township covering the sanitary sewers and sewage disposal system used by the City and the Township is hereby amended to the extent necessary by reason of the specific provisions of this Agreement: Provided, however, that every other section, paragraph, clause and word of said

general sewer contract and supplements between the City and the Township not inconsistent herewith shall in all other respects remain in full force and effect.

3. This contract shall be in full force and affect until no less than December 31, 2043 and shall inure to the benefit of and be binding upon the parties hereto, their successors and assigns.

WITNESSES:

CHARTER TOWNSHIP OF MERIDIAN:

BY: _____

Supervisor

BY: _____

Clerk

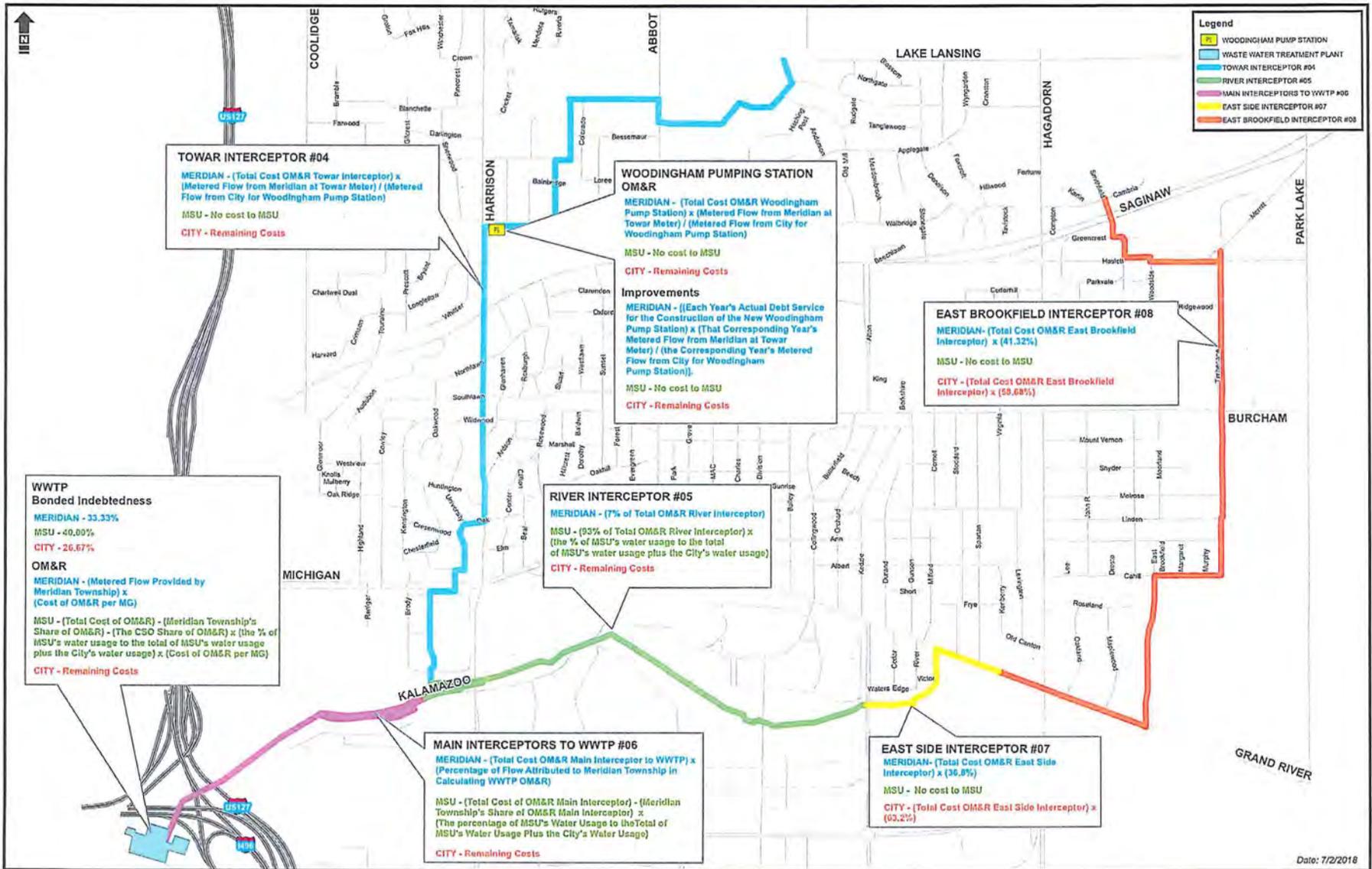
CITY OF EAST LANSING

BY: _____

Mayor

BY: _____

Clerk





To: Board Members
From: Frank L. Walsh, Township Manager
Date: July 20, 2018
Re: Township Manager Employment Agreement Modification

As you are aware, over the past 20 years, I've helped many Michigan communities recruit and retain their leadership. In sum, I've conducted 27 searches for city and village managers, a police chief and Road Commission Director. Last year, with Board approval, I led the search for a new Three Oaks Village Manager and Caro City Manager. Currently, the Township Board has authorized me to conduct one search every 12 months.

The work I perform is conducted solely on my own time and with my own resources. The personal work that I do has never interfered with my work responsibilities. I've been contacted to consider doing a search beginning this month and want to be clear of my intentions. I'm asking that the Township Board clearly indicate in my employee agreement the authorization to conduct managerial searches on my own time.

Please consider adding the following language to 3 B. of my current employment agreement.

The Township Board acknowledges that Township Manager is authorized to conduct up to three managerial searches per calendar year. The Township Manager shall notify the Township Supervisor of each search process.

The following motion has been prepared for Board consideration:

MOVE TO ADD THE ABOVE LANGUAGE, AUTHORIZING THE TOWNSHIP MANAGER TO CONDUCT UP TO THREE MANAGERIAL SEARCHES PER CALENDAR YEAR, TO THE TOWNSHIP MANAGER'S EMPLOYMENT AGREEMENT UNDER SECTION 3 B.

Attachment:

1. Township Manager Employment Agreement

EMPLOYMENT AGREEMENT

This AGREEMENT made on the date affixed by the parties below, between the CHARTER TOWNSHIP OF MERIDIAN, County of Ingham, State of Michigan (hereinafter referred to as the "Employer"), and Frank L. Walsh (hereinafter referred to as the "Township Manager").

RECITALS

WHEREAS, the Township Board has appointed Frank L. Walsh as Township Manager of the Charter Township of Meridian; and

WHEREAS, it is the desire of the Township Board to provide certain benefits, establish certain conditions of employment, and to set working conditions for the Township Manager; and

WHEREAS, the Township Manager desires to accept the appointment as Township Manager under the provisions as set forth herein.

IT IS AGREED as follows:

1. Appointment and Duties. The Employer hereby agrees to appoint Frank L. Walsh as Township Manager of the Charter Township of Meridian to perform the functions and duties specified in paragraphs (a) through (o) inclusive of Section 10 of the Charter Townships Act (MCL 42.10; MSA 5.46[10]), and to perform such other legally permissible and proper duties and functions as the Township Board shall from time to time assign. The Township Board reserves the unilateral right to add to, amend, modify, or withdraw any and all of the delegated and assigned functions and duties. The Township Manager accepts such appointment on the terms and conditions of this Agreement.

2. Term. The original term of this Agreement will begin on January 9, 2018 and end on January 7, 2020.

Prior to December 1 of each year, the Employer or its authorized representative(s) shall meet with the Township Manager, and the parties shall review such

information as they deem relevant. The Employer may extend this Agreement for a successor year with any modifications to which the parties mutually agree.

Failure to renew or extend this Agreement or any successor Agreement at the end of its term shall obligate the Employer to pay to the Township Manager a Severance Settlement as specified and defined in Section 7 of this Agreement, but shall give the Township Manager no other right or claim. Failure to renew or extend this or any successor Agreement shall not be considered a breach hereof or a termination with or without cause, nor give rise to any cause of action which may be arbitrated under the terms of this Agreement or adjudicated in any court of law, tribunal or administrative agency.

3. Extent of Services.

A. Best Efforts. Except as provided in Section 3.8., the Township Manager shall devote his entire time, attention, and energies to the Employer's business and shall not, during the term of this Agreement, be engaged in any other employment or business activity, whether or not pursued for gain, profit, or pecuniary advantage, without the express prior written consent of the Township Board. The Township Manager also shall not engage in any activity which conflicts or interferes with the performance of his duties as specified in this Agreement and as directed by the Employer or any of its agents as described in Section 1 above.

B. Other Activities. The Township Manager may, with prior written consent of the Township Board, teach, write or engage in similar or related activities which do not interfere with, but rather enhance, the Township Manager's performance of the duties and functions required under this Agreement.

4. Salary. The Employer shall pay the Township Manager for all services rendered pursuant to this Agreement calculated at an annual rate of \$117,565. The Township Manager's salary shall be payable in installments at the same time and in the same manner as other employees of the Township are paid.



To: Board Members
From: Frank L. Walsh, Township Manager
Date: July 24, 2018
Re: Police Chief Appointment

Over the past three (3) months, we have spent countless hours recruiting, interviewing and vetting 31 candidates who sought to succeed Chief Hall. We used three (3) committees during the process, including several members of the Police Department. The process was transparent and inclusive. As a collective group, we are more than pleased with the outcome.

Tonight, I will recommend that you confirm the appointment of Assistant Chief Ken Plaga to serve as Meridian’s next Police Chief. Ken’s resume is attached for you review. He exemplifies trust, energy and vision needed for this position. He will be a welcome addition to our M-Team.

I appreciate your consideration and look forward to your direction.

The following motion has been prepared for Board consideration:

MOVE THAT THE BOARD CONFIRM THE TOWNSHIP MANAGER’S RECOMMENDATION TO APPOINT KEN PLAGA TO THE POSITION OF MERIDIAN TOWNSHIP POLICE CHIEF EFFECTIVE JULY 23, 2018.

Attachment:

1. Ken Plaga’s Resume

Internal Committee

Joyce Marx
Pastor Dave Davis
Jeremy Wilson
Cecelia Kramer
Deniece Fisher
Supervisor Styka
Manager Walsh

Police Internal Committee

Chris Lofton
Becky Payne
Adam Slavick
Richard Grillo

M-Team Committee

LuAnn Maisner
Stephen Gebes
Miriam Mattison
Derek Perry
Chris Lofton

Kenneth Plaga

CAREER SUMMARY: Dedicated law enforcement professional with over 25 years of leadership, training and policy development focused on driving performance and developing team continuity while committed to community development and customer service.

AREAS OF EXPERTISE:

Investigation Management and Supervision	Emergency Management	Patrol Function
Training Development and Management	Grant Writing	Property Control
Policy Development	Grant Management	Records Management
Law Enforcement Information Systems	Community Policing	
Personnel Management	Customer Service	

EXPERIENCE:

MICHIGAN STATE UNIVERSITY

08/2016-Present

Fixed Term Instructor

- Instruct undergraduate criminal justice course work for the School of Criminal Justice

MERIDIAN TOWNSHIP POLICE DEPARTMENT

09/1995-Present

Assistant Chief of Police

02/2016-Present

- Direct Department operations with oversight of all divisions

Uniform Division Commander: Lieutenant

02/2010-02/2016

- Direct road patrol operations throughout Meridian and Williamstown Townships with a staff of 6 Sergeants and 24 patrol officers.
- Manage the School and Community Resource Unit with 2 officers providing DARE and TEAM training in Okemos and Haslett schools.
- Oversee the Township Community Policing Program by assigning Meridian officers to Township neighborhoods. Organizing regular community contacts to ensure neighborhood needs are being met and hosting community leader meetings to provide direct contact to administration.
- Facilitate traffic safety initiatives and assigning officers to perform directed patrols in areas of concern by utilizing speed trailers and motorcycle patrols.
- Represent Meridian Township Police Department in multi-jurisdictional professional committees and work groups with memberships in the Ingham County Local Emergency Planning Committee, Safe Schools Initiative, The State of Michigan's Young Drivers Action Committees, Lansing Area Safety Committee and the Ingham County Homeland Security Local Planning Team.
- Develop and head operational plans for 4th of July celebrations and other community events within the Township.
- Coordinate law enforcement assisting Michigan State University home football games and other large-scale campus events.

Services Division Commander: Lieutenant

04/2005-02/2010

- Oversee Investigations Unit utilizing a Sergeant, 5 Investigators and a Court Services Officer. This Unit provides investigative support to the Department
- Manage the Records Management Unit consisting of a civilian supervisor and 3 records clerks. This Unit provides dictation and dissemination of reports to officers, prosecutors and the public.
- Supervise the Evidence and Quartermaster functions that are provided by a civilian employee responsible for evidence control, equipment management and property auction and disposal.
- Coordinate grant management and applications by coordinating applications for state and federal grants, ensuring reporting and compliance with standards.
- Work cooperatively with outside agencies to implement a countywide Records Management System (RMS) utilized by 7 law enforcement agencies in Ingham County.
- Represent County wide law enforcement for the distribution of Homeland Security grant funds to provide funding for training and equipment necessary in the response to incidents related to homeland security.
- Organize investigative efforts with external agencies to insure cooperation and effective deployment of resources.
- Facilitate the Citizens Police Academy teaching community members on the services and challenges in law enforcement
- Deliver tabletop exercises and assistance in the development of emergency preparedness plans for schools and community facilities.

Training/Administrative Sergeant

08/2001-04/2005

- Supervise and develop the Police Department training program by providing 40 hours of in-service training annually along with specialized training provided by outside vendors.
- Manage and apply for State and Federal grants
- Develop and write Departmental police and procedure on training, use of force and other high liability areas
- Manage the CALEA Recognition program by insuring the department met all required standards necessary for recognition
- Manage traffic safety operations by identifying areas of concern through research and data analysis. Provide comprehensive action plans to address the issues identified.
- Represent the Department as a coordinator for the Mid-Michigan Police Academy mentoring recruits and providing training in incident command and terrorism awareness

Patrol Sergeant

12/1999-08/2001

- Supervise patrol officers on a daily basis providing guidance and developing officers abilities in law enforcement, customer service and community responsiveness.
- Evaluate personnel performance and mentor those under my command to improve performance and career satisfaction.
- Supervise the firearms program as range master ensuring the quality of training and equipment.

Detective 10/1998-12/1999

- Enforcement of laws and ordinances
- Case management and follow up investigations.
- Development of informants and investigation operational plans

Public Safety Officer 09/1995-10/1998

- Patrol and enforcement of laws and ordinances during uniform police operations.
- Community policing activities with assigned community members.
- Field training officer for newly hired officers providing instruction and evaluation.
- Firearms instructor providing in-service training to Department members

BLACKMAN TOWNSHIP PUBLIC SAFETY 10/1992–09/1995

Public Safety Officer

- Patrol and enforcement of laws and ordinances.
- Fire suppression and emergency medical response.

EDUCATION:

FBI National Academy Graduate Class 229 06/2007

School of Staff and Command Class 299, Northwestern University 11/2005

Master of Public Administration, Western Michigan University, 12/1997

Mid-Michigan Police Academy (MCOLES Cert), Lansing Community College,
05/1992

Bachelor of Arts, Michigan State University, Criminal Justice
12/1991

Associates in Science, Jackson Community College 12/1989

CERTIFICATION:

MCOLES Certified police officer

State of Michigan licensed Medical First Responder (MFR)

State Certified Professional Emergency Manager (PEM)

State Certified Fire Fighter I and II



To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Justin Quagliata, Assistant Planner

Date: July 18, 2018

**Re: Commercial Planned Unit Development #18024 (Affinity 9 Investments, LLC),
demolish existing restaurant and construct a new restaurant with drive-through window at 2080 Grand River Avenue.**

Jeffrey W. Kyes of Kebs, Inc., on behalf of Affinity 9 Investments, LLC, has submitted a request to establish a commercial planned unit development (C-PUD) at 2080 Grand River Avenue. The redevelopment plans include the demolition of the existing Mongolian BBQ restaurant and the construction of a new approximately 4,534 square foot Panera restaurant with drive-through window. The 1.16 acre subject site is zoned C-2 (Commercial).

The Planning Commission held the public hearing on the C-PUD request at its June 11, 2018 meeting and voted 9-0 to recommend approval at its June 25, 2018 meeting, citing the following reasons for its decision:

- The proposed commercial planned unit development will be harmonious and appropriate with the existing and intended character of adjacent commercial developments surrounding the subject site.
- The requested waivers for impervious surface coverage, parking lot landscape buffers, and water features setbacks are necessary to facilitate redevelopment of the site due to the constraints related to the size of the property and the nature of the proposed land use.
- The proposed commercial planned unit development will be adequately served by public water and sanitary sewer.
- The proposed project is consistent with Objectives A and D of Goal 3 of the 2017 Master Plan to upgrade commercial areas.

Staff memorandums outlining the C-PUD request and minutes from the Planning Commission meetings at which the request was discussed are attached for the Board's review.

Township Board Options

The Township Board may approve, approve with conditions, or deny the proposed C-PUD. If the Board amends the proposal, the request may be referred back to the Planning Commission for a recommendation. A resolution will be provided at a future meeting.

**Commercial Planned Unit Development #18024 (Affinity 9 Investments, LLC)
Township Board (July 24, 2018)
Page 2**

Attachments

1. Staff memorandums dated June 7, 2018 and June 21, 2018 with attachments.
2. Resolution recommending approval dated June 25, 2018.
3. Planning Commission minutes dated June 11, 2018 (public hearing) and June 25, 2018 (decision).

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To: Planning Commission

From: Peter Menser, Principal Planner
Justin Quagliata, Assistant Planner

Date: June 7, 2018

Re: Commercial Planned Unit Development #18024 (Affinity 9 Investments, LLC), demolish existing restaurant and construct a new restaurant with drive-through window at 2080 Grand River Avenue.

Jeffrey W. Kyes of Kebs, Inc., on behalf of Affinity 9 Investments, LLC, has submitted a request to establish a commercial planned unit development (C-PUD) at 2080 Grand River Avenue. The 1.16 acre subject site is zoned C-2 (Commercial). The redevelopment plans include the demolition of the existing Mongolian BBQ restaurant and the construction of a new approximately 4,534 square foot Panera restaurant with drive-through window. A portion of the project site is located in the floodplain. The Township requires special use permits for a drive-through window and work in the floodplain. However, a C-PUD serves as the special use permit review for any case requiring a special use permit. The Planning Commission reviewed a C-PUD concept plan for the project at its meeting on January 8, 2018.

The Future Land Use Map from the 2017 Master Plan designates the subject property in the Mixed Use Core category.

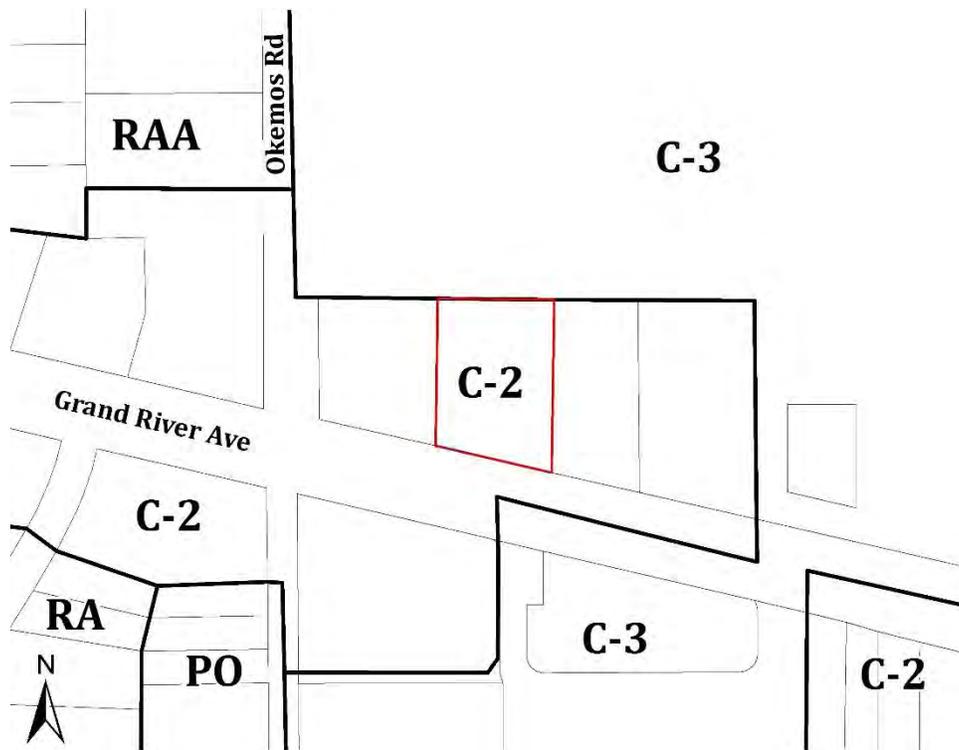
FUTURE LAND USE MAP



Zoning

The subject site is zoned C-2 (Commercial). With 200.51 feet of frontage on Grand River Avenue and 1.16 acres of lot area, the site meets and exceeds the minimum requirements of 100 feet of lot frontage and 4,000 square feet of lot area for the C-2 zoning district. A C-PUD is permitted in the C-1, C-2, C-3 (Commercial), and CS (Community Service) zoning districts. All uses permitted by right and by special use permit in the underlying C-2 zoning district are permitted in a C-PUD.

ZONING MAP



Physical Features

The site is currently developed with a vacant 4,929 square foot restaurant building, a paved parking lot, shrubs and bushes, and an associated access drive. Landscaping consisting of grass and street trees is installed between the parking lot and Grand River Avenue. The site does not have any special designation on the Township Greenspace Plan.

Floodplain

A portion of the project site is located in the floodplain. The submitted site plan depicts the elevation of the floodplain at 842.1 feet above mean sea level; the lowest floor of the new building will be located one foot above the floodplain. The applicant is proposing to place 150 cubic yards of fill in the floodplain to facilitate re-grading of the parking lot to eliminate parking and sidewalk grades that are currently over 5% and reduce parking lot runoff to Grand River Avenue. A 410 cubic yard storm water detention area is proposed to the west of the site entrance, and also serves as compensating excavation for fill in the floodplain.

The Michigan Department of Environmental Quality (MDEQ) reviewed the proposed work in the floodplain and issued approval on May 3, 2018. The Township requires a special use permit for work in the floodplain; however, a C-PUD serves as the special use permit review for any case requiring a special use permit, including work in the floodplain.

Floodplain Map



Wetlands

Township Wetland #21-3 is located to the north of the subject site. A delineation was conducted by the Township's Environmental Consultant to determine the boundary, regulatory status, and size of the wetland. Section 86-471 of the Code of Ordinances requires that all structures and grading activities be set back 40 feet from a delineated wetland boundary and that a natural vegetation strip be maintained within 20 feet of the wetland boundary.

Wetland Map



Streets and Traffic

Access to the site will be from Grand River Avenue, which is classified as a Principal Arterial on the Street Setbacks and Service Drives Map (Section 86-367). Grand River Avenue is a four lane road with curb and gutter and a center turn lane. A seven foot wide pedestrian-bicycle pathway is installed along the frontage of the site. The most recent (2016) traffic count information from the Michigan Department of Transportation (MDOT) for Grand River Avenue, between Okemos Road and Marsh Road, showed a total of 23,554 vehicles in a 24 hour period.

A traffic impact study is required for new special uses which would generate over 100 directional trips during a peak hour of traffic, or over 750 trips on an average day. The applicant submitted a traffic impact study prepared by Traffic Engineering Associates, Inc. dated December 2017 that provides information on traffic generated by the proposed C-PUD. The study looks at existing, background (future traffic volumes without the traffic generated by the proposed development), and future level of service (LOS) during the AM (7:30-8:30 a.m.) and PM (5:00-6:00 p.m.) peak hours at the following three intersections around the project site:

- Grand River Avenue and Okemos Road
- Grand River Avenue and Marsh Road
- Grand River Avenue and Meijer/Chick-Fil-A driveway

The traffic study notes that existing traffic at the studied intersections all operate at an acceptable LOS (LOS D or better) during the AM and PM peak hours, with the exception of several movements at the intersection of Grand River Avenue and Okemos Road, and at the Grand River Avenue and Meijer/Chick-Fil-A driveway. The study shows that background traffic at the studied intersections will operate at an acceptable level of service during AM and PM peak hours, with the exception of several movements at the intersection of Grand River Avenue and Okemos Road, and at the Grand River Avenue and Meijer/Chick-Fil-A driveway.

For future traffic, the study indicates that all studied intersections will continue to operate at an acceptable LOS during the AM and PM peak hours, with the exception of several movements at the following intersections:

Grand River Avenue and Okemos Road

- During the AM peak hour, the westbound through-right movement on Grand River Avenue is expected to operate at a LOS E with 70.3 seconds of vehicle delay, an increase of 7.3 seconds from background conditions.
- During the AM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue is projected to operate at a LOS F with 83.4 seconds of vehicle delay.
- During the PM peak hour, the eastbound through movement on Grand River Avenue is anticipated to operate at a LOS F with 75.5 seconds of vehicle delay, an increase of 5.1 seconds from background conditions.
- During the PM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue is expected to operate at a LOS E with 65.0 seconds of vehicle delay.
- During the PM peak hour, the northbound through-right movement on Okemos Road is projected to operate at a LOS E with 60.8 seconds of vehicle delay.

- During the PM peak hour, the southbound left turn movement on Okemos Road to eastbound Grand River Avenue is anticipated to operate at a LOS E with 63.3 seconds of vehicle delay, an increase of 0.5 seconds from background conditions.

Grand River Avenue and Marsh Road

- During the AM peak hour, the westbound through movement on Grand River Avenue is projected to operate at a LOS E with 61.2 seconds of vehicle delay, an increase of 6.6 seconds from background conditions.
- During the PM peak hour, the eastbound through-right movement on Grand River Avenue is anticipated to operate at a LOS E with 55.6 seconds of vehicle delay, an increase of 1.0 second from background conditions.
- During the PM peak hour, the southbound left turn movement on Marsh Road to eastbound Grand River Avenue is expected to operate at a LOS E with 64.6 seconds of vehicle delay.

Grand River Avenue and Meijer/Chick-Fil-A driveway

- During the PM peak hour, the northbound left turn movement from the Meijer/Chick-Fil-A driveway to westbound Grand River Avenue is projected to operate at a LOS F with 80.9 seconds of vehicle delay, an increase of 2.5 seconds from background conditions.

The traffic impact study estimated traffic generation for the proposed project based on a 4,375 square foot *Fast-Food Restaurant with Drive-Through Window*, which is Land Use Code 934 in the Institute of Transportation Engineers (ITE) Trip Generation Manual. Land Use Code 934 describes a restaurant characterized by a large carry-out clientele, long hours of service, and high turnover rates for eat-in customers. The following table estimates traffic generation for the proposed project.

	Proposed C-PUD
Peak Hour trips	176 (a.m.) 143 (p.m.)
Total Weekday Traffic	2,060 trips

The applicant’s traffic consultant recommends that a three lane site entrance/exit be designed for the site driveway on Grand River Avenue to provide one exclusive exiting left turn lane, one exiting right turn lane, and one entering lane. Additionally, MDOT guidelines show that there is justification for a right turn lane for westbound Grand River Avenue at the site driveway.

Utilities

The existing building is served by municipal water and sanitary sewer, both of which are available to serve the proposed redevelopment. The location and capacity of utilities will be reviewed in detail during site plan review if the C-PUD is approved.

Staff Analysis

The applicant is proposing to develop the site using the commercial planned unit development (C-PUD) ordinance. A C-PUD is reviewed in accordance with the provisions of Section 86-444 of the Code of Ordinances. A C-PUD serves as the special use permit review for any case requiring a special use permit, therefore separate approvals are not required. For this project the special use permits that would normally be required for a drive-through window and work in the floodplain will be covered under the C-PUD review. A special use permit is reviewed in accordance with the provisions of Section 86-126 of the Code of Ordinances. Section 86-436(n) of the Code of Ordinances provides additional standards for projects in the floodplain, which are as follows:

1. All new residential structures and residential structures requiring substantial improvements shall have the lowest floor, including basement, elevated to one foot above the level of the base flood elevation.
2. All new nonresidential structures and nonresidential structures requiring substantial improvements shall have the lowest floor, including basement, elevated to one foot above the level of the base flood elevation or shall be floodproofed to one foot above the level of the base flood elevation.
3. Excavation and shaping of the floodway fringe shall be conducted in such a manner as to maintain or improve the natural impoundment capacity of the base flood elevation. In no case shall the impoundment capacity of the floodway fringe be reduced.

The lowest floor of the new building will be located one foot above the floodplain elevation of 842.1. The placement of 150 cubic yards of fill in the floodplain when considered along with the compensating cut of 410 cubic yards for the storm water detention area, will not reduce the impoundment capacity of the floodplain.

The Code of Ordinances standards for a drive-through include provisions for an order window, stacking for three cars, and a bypass lane. The submitted site plan indicates the project meets the ordinance standards for a drive-through window.

The C-PUD process mirrors that of the mixed use planned unit development (MUPUD) process, with public hearings held by both the Planning Commission and Township Board. The Planning Commission makes a recommendation on the project with the Township Board having final approval.

**Commercial Planned Unit Development #18024 (Affinity 9 Investments)
Planning Commission (June 11, 2018)
Page 8**

Following is a summary of the project's consistency with the C-PUD ordinance standards. As part of this project analysis, standards for the underlying C-2 zoning district and other requirements applicable to development in the C-2 district will be compared to what is proposed on the submitted site plan.

Land use: All uses permitted by right and by special use permit in the underlying C-2 zoning district are permitted in a C-PUD. The proposed land use is a restaurant with drive-through window.

Performance objectives: Minimum C-PUD performance objectives include the following:

- *Provide good internal and external access to the street for pedestrians and bicycles* – a painted cross walk is proposed to connect pedestrians and bicyclists to the building from the pathway along Grand River Avenue to the restaurant.
- *Minimize environmental impacts by using green building and site development standards* – the submitted site plan does not indicate whether environmental impacts will be minimized.
- *Enhance access to alternative transportation modes including public transportation* – the subject site is located along CATA route 1.
- *Use of quality building materials* – generally, building materials in a C-PUD should include, but are not limited to, wood, brick, clapboards, beadboard, glass, and stone. Other materials such as vinyl, aluminum, and other metal sidings should be avoided. All buildings should be completed on all sides with acceptable materials. The design of the building should relate to and blend with the facades of adjacent buildings and complement streetscape improvements in the area. The proposed building material for the restaurant is a brick masonry system. A sample board of the building materials submitted by the applicant will be displayed at the public hearing.
- *Provide for buffering between any conflicting feature of the design and an adjacent residential land use* – the site is surrounded entirely by commercial land uses.
- *Adherence to smart growth principles* – the proposed project would redevelop a previously developed site and is located within the Urban Services Boundary.
- *Preference for parking located in the rear or side yard* – the setbacks for a parking area and the number of parking spaces required can be waived in a C-PUD. 47 parking spaces are required for the project and the applicant is proposing 52 parking spaces. Parking is located in the front, rear, and side yards.

Railings, benches, trash receptacles, or bicycle racks: Accessory items such as railings, benches, trash receptacles, or bicycle racks shall be of commercial quality and complement the building design and style. Three bicycle racks (six bicycle parking spaces) are shown on the submitted site plans. Information on proposed railings, benches, trash receptacles, or other accessory items were not provided.

The following section summarizes other aspects of the project:

Bicycle parking: One bicycle parking space is required for every ten motor vehicle parking spaces required. There are 47 parking spaces required; therefore the project must have a minimum of five bicycle parking spaces. Three bicycle parking racks (six bicycle parking spaces) are shown on the submitted site plan near the main entry to the building.

Landscaping: Proposed landscaping must generally comply with the provisions of the Code of Ordinances. Section 86-758 of the Code of Ordinances outlines the typical landscape requirements for off-street parking areas including landscaped islands at least ten feet in width, building perimeter landscaping at least four feet in width, a minimum of 200 square feet of interior landscaping for every ten parking spaces, and two interior canopy trees per ten parking spaces. Section 86-473 provides standards for street trees. A landscape plan was provided and notes building perimeter landscaping is to be determined.

Outdoor lighting: The C-PUD ordinance requires site lighting to comply with the Outdoor Lighting Ordinance (Section 38-371). A photometric plan was submitted and will be reviewed in detail during site plan review if the C-PUD is approved.

Waiver requests

The C-PUD ordinance is intended to provide flexibility for the Planning Commission and Township Board to set appropriate standards during the review process. The C-PUD ordinance generally waives the standard requirements for lot size, setbacks, number of required parking spaces, building perimeter landscaping, and impervious surface coverage, provided the purpose and intent of the ordinance is incorporated into the overall development plan. Based on the submitted site plan the applicant is requesting the following waivers for the project:

Impervious surface coverage

The maximum impervious surface allowed in the C-2 zoning district is 70 percent. The project proposes 74.10 percent. A waiver of 4.10% is requested.

Parking lot landscape buffer (side and rear)

A 15 foot wide landscaped buffer is required between a parking area and a property line. The submitted site plan shows landscape buffers of 13.14 feet, 3.79 feet, and 4.00 feet from the north, east, and west property lines and is therefore requesting waivers of 6.86 feet, 11.21 feet, and 11.00 feet.

Wetland setback

All structures and grading activities are required to be set back 40 feet from regulated wetlands equal to or greater than two acres in area. The applicant is proposing an 11.63 foot parking setback from the north property line. A waiver of 28.37 feet is requested.

Natural vegetation strip

A 20 foot natural vegetation strip must be maintained from the edge of a regulated wetland. The applicant is proposing a six foot grading setback. A waiver of 14 feet is requested.

Amenities

One or more amenities are required for every C-PUD project. Examples of amenities are grouped into categories in the zoning ordinance, which include conservation, environment, accessibility, parks, recreation and culture, social interaction, and site and building design. If multiple amenities are shown, the ordinance suggests they should represent multiple categories. Criteria to determine whether a proposed amenity is acceptable for consideration are found in Section 86-444(e)(2) of the C-PUD ordinance.

Sheet 1 of the submitted site plan shows the proposed amenities for the project, including connection to the pedestrian-bicycle pathway along Grand River Avenue and public Wi-Fi.

Planning Commission Options

The Planning Commission may recommend approval, approval with conditions, or denial of the C-PUD. A resolution will be provided at a future meeting.

Attachments

1. Application and supporting materials
2. Site plans dated April 16, 2018, received by the Township on April 17, 2018
3. Floor plan and building elevations dated October 24, 2017, received by the Township on April 17, 2018

CPUD Fee
\$ 500.00

CHARTER TOWNSHIP OF MERIDIAN
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT
5151 MARSH ROAD, OKEMOS, MI 48864
PHONE: (517) 853-4560, FAX: (517) 853-4095

COMMERCIAL PLANNED UNIT DEVELOPMENT APPLICATION

Before submitting this application for review, an applicant shall participate in the pre-application conference with the Director of Community Planning and Development to discuss the requirements for a Commercial Planned Unit Development.

Part I

A. Applicant AFFINITY 9 INVESTMENTS (TOM HANNAWAY)
Address of Applicant 1721 MARLEANE AVE. HOTEL PARK MICH. 48030
Telephone - Work 248-241-1666 E-Mail thannaw@affinity9.com Fax 248-248-0531
Interest in property (circle one): Owner Tenant Option Other
(Please attach a list of all persons with an ownership interest in the property.)

B. Site address / location / parcel number 2080 W. GRAND RIVER AVE, OKEMOS
Legal description (please attach if necessary) SEE SITE PLAN
Current zoning C-2
Project name 2080 GRAND RIVER CPUD

C. Developer (if different than applicant) _____
Address _____
Telephone: Work _____ E-Mail _____ Fax _____

D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:
Name JEFFREY W. KYLES, KYLES, INC.
Address 2116 HASLET RD. HASLET, MI 48840
Telephone(s) (517) 339-1014 E-Mail jkyles@kyles.com Fax (517) 339-8047

E. Acreage of all parcels in the project: Gross 1.17 Net 1.17

F. Proposed Uses and Site Amenities:

1. Use(s)
 - a. Type(s) RESTAURANT WITH DRIVE THROUGH
 - b. Gross Floor Area 4,534
 - c. Usable floor area 1400± PARKING BASED ON SEATING 95 SEATS
 - e. Number of employees 15
 - f. Hours of operation _____

3. Number of Parking Spaces Required: 47
Number of Parking Spaces Proposed: 52

4. Proposed Amenities: Type CONNECTION TO PUBLIC PATHWAY SYSTEM
Type PUBLIC WIFI
Type _____
Type _____

G. The following support materials must be submitted with the application:

1. Nonrefundable fee.
2. Legal Description of the property. (A sealed survey may be required)

3. Evidence of property ownership or a letter from the property owner authorizing the request submitted with proof of property owner from the author of the letter.
4. A site analysis indicating the principal factors which influenced design decisions. The analysis shall include but need not be limited to: soil conditions, topography, surrounding land uses, and surrounding pedestrian and vehicular circulation systems.
5. If the project is to be phased, a document generally describing the proposed phasing program.
6. A written request identifying each waiver and each amenity.
7. A map drawn to an engineer's scale of the total property showing its location in the township and its relation to adjacent property.
8. A reproducible two foot contour topographic map based on United States Geological Survey (USGS) drawn at the same scale as the site plan and showing existing relief features on the site.
9. A schematic layout of the proposed storm sewer system.
10. Site Plans: 16 copies (Fifteen (15) 24"x36" and one 8½" x11") of a Site Plan drawn to a readable scale containing the following (may be a multiple site plans for readability):
 - Total property, its location in the Township, its relationship to adjacent properties
 - Boundaries of subject property
 - Location and dimensions of all existing and proposed structures
 - Approximate location and distance of all structures within 100 feet of the subject property
 - Proposed means of vehicular and pedestrian ingress and egress to the subject property
 - Public and private roads and streets, rights-of-way and easements indicating names and widths of streets which abut or cross the site
 - Existing and proposed parking spaces and vehicular and pedestrian circulation patterns
 - Dimensions of setbacks from streets, property lines and between buildings on the site
 - Location of proposed amenities
 - Location and size of existing utilities including power lines and towers, both above and below ground
 - Amount and location and calculation of all impervious surfaces
 - Verified boundaries of all natural water features and required setback lines
11. Building elevations (all sides) drawn to scale and in color. Elevations should be accompanied by material samples or a display board of the proposed exterior materials and colors.
12. A Traffic Study (if the project will exceed 100 vehicle trips during the peak hours of the roadway(s)), prepared by a qualified traffic engineer, based on the most current edition of *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation.
13. Natural Features Study for previously undeveloped properties which includes a written description of natural features proposed to be retained, removed, or modified. Natural features shall include, but are not limited to, wetlands, floodways, floodway fringe, waterbodies, significant stands of trees or individual trees greater than 12 inches dbh, identified groundwater vulnerable areas, slopes greater than 20 percent.
14. A lighting plan (see Chapter 38, Article VII).

15. Copies of comments from reviewing agencies such as, but not limited to, the following:
- Ingham County Road Commission
 - Ingham County Drain Commission
 - Michigan Department of Transportation (if applicable)
 - Michigan Department of Environmental Quality (if applicable)

H. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.

Part II

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes No (Please check one)

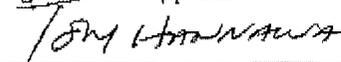
By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate



 Signature of Applicant

4-9-18

 Date



 Type/Print Name

Fee: _____
 Received by: _____
 Date: _____
 Pre-Application Meeting Held: _____
 Date
 Application Complete: _____
 Date
 By: _____
 Staff



KEBS, INC

Engineering • Surveying

May 7, 2018

Mark Kieselbach
Community Planning and Development Director
Meridian Charter Township
5151 Marsh Road
Okemos, MI 48864

RECEIVED
MAY 07 2018

RE: 2080 W. Grand River Avenue CPUD Site Analysis

Mr. Kieselbach,

This letter is to provide a site analysis for the re-development of the property located at 2080 W. Grand River Ave, Okemos, MI. The existing building on the site is currently vacant with the closing of the Mongolian BBQ that occupied the building until the beginning of this year. The owner of the property is planning on demolishing the outdated building and constructing a new Panera Bread Co building with drive through using the Commercial Planned Unit Development Ordinance.

The site is currently fully developed with building and parking. The site is unique due to the amount of flood plain on the property, existing parking setbacks which do not meet Ordinance requirements and an existing wetland located at the north end of the property that has a required buffer that encroaches on the site.

There were 2 main goals in coming up with a new layout for a restaurant with drive through, required parking and frontage road requirement.

The first goal was to limit the impact the project would have on the existing flood plain on the site. Currently only a small portion of the site where the building is located is above the flood plain. The proposed building was moved a little closer to Grand River Ave. which is more in line with the neighboring buildings. Fill in the flood plain is required to keep the proposed building floor 1' above the 100 year flood plan as required by Ordinance, MDEQ and FEMA. A joint flood plain application has been submitted to the MDEQ and Township. The application shows a fill of 150 cubic yards in the flood plain and a cut of 410 cubic yards for a net increase in flood plain volume of 260 cubic yards.

The second goal for this project was to try and reduce the amount of waivers needed on the site compared to the existing site. Attached to this site analysis is a list of waivers being requested along with a comparison to the existing site conditions.

The proposed use is dependent on deliveries provided by semi-trucks. The proposed layout has taken into account the turning radius needed to get delivery vehicles on and off the site without impacting Grand River Ave. or neighboring properties. The site is laid out to provide

the required frontage road in the future when adjacent properties are redeveloped. There will also be a non-motorized connection from the Grand River Ave. pathway to the proposed building.

The developer and Kebs, Inc. look forward to discussing the CPUD with Staff, Planning Commission and Township Board. We hope to be in the position to start construction in the fall of 2018 or spring of 2019

If you have any questions or concerns please feel free to contact me.

Thank you,

Jeffrey W. Kyes
Kebs, Inc.

A handwritten signature in blue ink, appearing to read 'Jeffrey W. Kyes', is written over the typed name. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

RECEIVED

MAY 07 2018

2080 W. Grand River Avenue CPUD Waiver List

Below please find the list of waivers being requested and comparison to the existing site.

Section 86-402-(17) Maximum impervious area 70%. The proposed impervious area for the site is 74.10% which will require a waiver of 4.10%. The existing site has an impervious coverage of 79.25%. The proposed site has a reduction of 5.15% in impervious coverage.

Section 86-756(14) 15' side and rear parking setback required. The proposed site will require waivers from this section on the west, north and east sides.

The proposed parking setback on the west side of the property is 4.00' which will require an 11.00' waiver. The existing setback is 6.1'. This is the only proposed waiver that is slightly more than what is currently constructed.

The proposed parking setback on the north side of the property is 13.14' which requires a waiver of 1.86'. The existing setback is 7.4'

The proposed parking setback on the east side of the property is 3.79' which requires a waiver of 11.21'. The existing setback is 3.6'

Section 86-471(b)(1) 40' wetland buffer required. The proposed parking setback from the existing wetlands is 11.63' which requires a 28.37' waiver. The parking area is currently 6.92'.

Section 86-471(b)(1) 20' natural strip from a wetlands. The proposed project shows grading of the site to 6' from the existing wetlands requiring a waiver of 14'. The area will remain grass after construction. There is not a comparison to the existing site since the work was all ready completed.

Patrick E. Lindemann

Ingham County Drain Commissioner

PO Box 220
707 Buhl Avenue
Mason, MI 48854-0220

Phone: (517) 676-8395

Fax: (517) 676-8364

<http://dr.ingham.org>



2018-2021
County Drain Commissioner
1997-2001
County Drain Commissioner
2001-2006
County Drain Commissioner
2006-2011
County Drain Commissioner

May 2, 2018

Meridian Charter Township Planning Commission
5151 Marsh Road
Okemos, MI 48864

RE: Panera Okemos CPUD – Site Re-development
2080 W. Grand River Avenue
CPUD - Conceptual Plan Review; Drain Office #18039

Meridian Charter Township Planning Commission:

We are in receipt of an April 16, 2018 request by KEBS, Inc. on behalf of Panera for a preliminary site plan review of the restaurant re-construction project at this site.

This conceptual review is offered as a courtesy to the Meridian Charter Township Planning Commission only and should not be construed by the project owner or others as formal submission to the Ingham County Drain Commissioner for site plan or drainage review.

The Ingham County Drain Commissioner (ICDC) offers the Meridian Charter Township Planning Commission the following conceptual review comments on the stormwater system for this project:

1. The site is in the Okemos Drain Drainage District and is currently served by the Okemos Drain, a county drain, which flows through a regulated wetland north of the site.
2. The site is located in the 100-year floodplain. There is frequent flooding in the Okemos Drain floodplain, caused mainly by the back-up of the Red Cedar River.
3. As a Phase II community, Meridian Charter Township should take every opportunity to require developers to provide some form of cleansing of the runoff water before it goes off-site into a wetland. The Drain Commissioner's Standards require that all development in areas overseen by the Drain Commissioner's Office be evaluated with low impact design principles that provide the potential for keeping as much runoff on the site as possible.

COPY

4. Drainage plans must meet the Rules of the Ingham County Drain Commissioner for low impact development (LID), pretreating the first 1.0-inch of runoff from the site and outletting the treated water to a positive public outlet.

We appreciate the opportunity to comment on this plan. It is an honor and a privilege to serve you and the other businesses, citizens and municipalities of Ingham County.

Sincerely,

A handwritten signature in blue ink, appearing to read "David C. Love". The signature is written in a cursive style with a large initial "D".

David C. Love
Ingham County Drain Engineer

cc: Jeff Kyes, P.E., KEBS, Inc.



AGENCY USE	Previous USACE File Number	Date Received	DEQ File Number
	USACE File Number		Fee received \$

Validate that all parts of this checklist are submitted with the application package. Fill out application and additional pages as needed.

- All items in Sections 1 through 9 are completed.
 Project-specific Sections 10 through 20 are completed.
 Dimensions, volumes, and calculations are provided for all impact areas.
 All information contained in the headings for the appropriate Sections (1-20) are addressed, and identified attachments (➔) are included.
 Map, site plan(s), cross sections; one set must be black and white on 8 1/2 by 11 inch paper; photographs.
 Application fee is attached.

1 Project Location Information For Latitude, Longitude, and TRS info anywhere in Michigan see www.mcqi.state.mi.us/wetlands/

Project Address (road, if no street address) 2080 GRAND RIVER AVENUE	Zip Code 48864	Municipality (Township/Village/City) MERIDIAN CHARTER TOWNSHIP	County INGHAM
Property Tax Identification Number(s) 33-02-02-21-226-004	Latitude 42.7225 N	Township/Range/Section (TRS) T 4 N or S; R 21 E or W;	
Subdivision/Plat and Lot Number	Longitude - 84 4262 W	Sec 21 OR Private Claim # _____	

2 Applicant and Agent Information

Owner/Applicant (individual or corporate name) AFFINITY 9 INVESTMENTS, LLC	Agent/Contractor (firm name and contact person) KEBS, INC. - JEFF KYES
Mailing Address 1721 MAPLELANE AVE.	Mailing Address 2116 HASLETT ROAD
City HAZEL PARK State MI Zip Code 48030	City HASLETT State MI Zip Code 48840
Contact Phone Number Fax 248-361-1666 248-298-0531	Contact Phone Number Fax 517-339-1014 517-339-8047
Email	E-mail jkyes@kebs.com
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? ➔ If no, attach letter(s) of authorization from all property owners including the owner of the disposal site.	
Property Owner's Name (If different from applicant)	Mailing Address
Contact Phone Number	City State Zip Code

3 Project Description

Project Name 2080 GRAND RIVER AVE.	Preapplication File Number - - -P
Name of Water body RED CEDAR RIVER	Date project staked/flagged
The proposed project is on, within, or involves (check all that apply)	
<input type="checkbox"/> an inland lake (5 acres or more) <input type="checkbox"/> a pond (less than 5 acres) <input type="checkbox"/> a stream, river, ditch or drain <input type="checkbox"/> a legally established County Drain Date Drain was established <input type="checkbox"/> a channel/canal <input type="checkbox"/> 500 feet of an existing water body	<input type="checkbox"/> a Great Lake or Section 10 Waters <input type="checkbox"/> a wetland <input checked="" type="checkbox"/> a 100-year floodplain <input type="checkbox"/> a dam <input type="checkbox"/> a designated high risk erosion area <input type="checkbox"/> a designated critical dune area <input type="checkbox"/> a designated environmental area
Project Use	
<input type="checkbox"/> private <input checked="" type="checkbox"/> commercial <input type="checkbox"/> public/government <input type="checkbox"/> project is receiving federal/state transportation funds <input type="checkbox"/> Wetland Restoration <input type="checkbox"/> other	

Indicate the type of permit being applied for: General Permit Minor Project Individual (All other projects.) ➔ See Appendix C.

Written Summary of All Proposed Activities **REMOVE EXISTING BUILDING AND EXISTING ASPHALT PARKING. FILL AS NEEDED IN FLOODPLAIN AROUND NEW BUILDING, CONSTRUCT NEW BUILDING. REGRADE FOR NEW PARKING AREA AND REMOVE MATERIAL FROM FLOODPLAIN AS NEEDED TO ELIMINATE GRADES IN EXCESS OF 5% TO MEET TOWNSHIP STANDARDS, ADD WALKS AND CURBS. ADD SEDIMENT BASINS AND EQUALIZER PIPE FOR WATER QUALITY STANDARDS. PROVIDE DRAINAGE FOR NEW PARKING AREA TO REDUCE PARKING AREA RUN OFF TO GRAND RIVER AVENUE. COMPENSATING CUT FOR FILL PLACED IN FLOOD PLAIN TO BE ACCOMPLISHED WITH GRADING AND REMOVAL OF MATERIAL FROM NEW PARKING AREA. CONNECT TO EXISTING ON SITE PRIVATE ENCLOSED STORM DRAIN.**



Construction Sequence and Methods *INSTALL SOIL EROSION MEASURES, REMOVE EXISTING BUILDING, CONSTRUCT NEW BUILDING, REGRADE PARKING AND ADD CURB AND WALKS WHERE REQUIRED. REVEGITATE DISTURBED AREAS.*

**4 Project Purpose, Use and Alternatives** *Attach additional sheets as necessary.*

Describe the purpose of the project and its intended use; include any new development or expansion of an existing land use.

REMOVE EXISTING BUILDING AND PARKING PARKING AREAS TO PROVIDE FOR NEW BUILDING AND PARKING AREA. IMPROVE PUBLIC SAFETY BY ELIMINATING PARKING AND SIDEWALK GRADES THAT ARE CURRENTLY OVER 5% AND REDUCE PARKING LOT RUNOFF TO GRAND RIVER AVENUE.

Describe the alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative locations, project layout and design, and construction technologies. For utility crossings include alternative routes and construction methods.

INITIAL LAYOUTS HAD THE PROPOSED BUILDING WITHIN THE EXISTING UPLAND AREA AT THE BACK OF THE PARCEL; HOWEVER, THAT ELIMINATED THE DEPTH NEEDED FOR A DRIVE THRU LANE MADE TRUCK TURNING MOVEMENTS IMPOSSIBLE TO SERVICE THE SITE. THE CURRENT DESIGN ALLOWS FOR A TURNING LANE, MEETS TRUCK TURNING REQUIREMENTS FOR DELIVERIES, PROVIDES FOR FUTURE CROSS LOT PARKING DRIVE ACCESS, AND ALLOWS FOR GRADING AND DRAINAGE IMPROVEMENTS TO BE MADE COMPARED TO THE EXISTING SITE.**5 Locating Your Project Site** *Attach a legible black and white map with a North arrow.*Names of roads of closest intersection **OKEMOS ROAD & GRAND RIVER AVE**Directions from main intersection to the project site, with distances from the best and nearest visible landmark and water body **2ND PARCEL EAST OF OKEMOS ROAD ON THE NORTH SIDE OF GRAND RIVER AVENUE.**Description of buildings on the site (*color; 1 or 2 story, other*)
EXISTING RESTAURANT WITH TAN BRICKDescription of adjacent landmarks or buildings (*address; color; etc*)
PROJECT SITE IS EAST OF PAYLESS SHOE STORE AND WEST OF DISCOUNT TIRE.How can your site be identified if there is no visible address? **SEE ABOVE****6 Easements and Other Permits** No Yes Is there a conservation easement or other easement, deed restriction, lease, or other encumbrance upon the property?

➔ If yes, attach a copy. Provide copies of court orders and legal lake levels if applicable.

List all other federal, interstate, state, or local agency authorizations including required assurances for Critical Dune Area projects.

Agency	Type of Approval	Number	Date Applied	Date approved /denied	Reason for denial
MERIDIAN TOWNSHIP	SPECIAL USE PERMIT FOR WORK IN FLOODPLAIN		TO BE APPLIED FOR		
INGHAM COUNTY DRAIN COMMISSIONER	SOIL EROSION PERMIT		TO BE APPLIED FOR		

7 ComplianceIf a permit is issued, when will the activity begin? (M/D/Y) **AUG 2018**Proposed completion date (M/D/Y) **SEPTEMBER 2019** No Yes Has any construction activity commenced or been completed in a regulated area?

➔ If Yes, identify the portion(s) underway or completed on drawings or attach project specifications and give completion date(s).

 No Yes Were the regulated activities conducted under a DEQ and/or USACE permit?

➔ If Yes, list the permit numbers

 No Yes Are you aware of any unresolved violations of environmental law or litigation involving the property?

➔ If Yes, attach explanation.

8 Adjoining Property Owners *Provide current mailing addresses. Attach additional sheets/labels for long lists.* Established Lake Board

Contact Person

Mailing Address

City

State and Zip Code

 Lake Association

List all adjoining property owners.

If you own the adjoining lot, provide the requested information for the first adjoining parcel that is not owned by you.

Property Owner's Name	Mailing Address	City	State and Zip Code
LANSING MART LLC	C/O GERSHENSON REALTY & INVESTMENTS, 31500 NORTHWESTERN HWY, SUITE 100	FARMINGTON	MI. 48334
SANLYSE, LLC	185 NW SPANISH RIVER BLVD., SUITE 100	BOCA RATON	FL. 33431
REINALT THOMAS REALTY CO.	DEPT. 1100 MIL11 20225 SCOTTSDALE RD.	SCOTTSDALE	AZ. 85225



9 Applicant's Certification

Read carefully before signing.

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application; that it is true and accurate; and, to the best of my knowledge, that it is in compliance with the State Coastal Zone Management Program. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the DEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site before and during construction and after the completion of the project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

<input checked="" type="checkbox"/> Property Owner <input type="checkbox"/> Agent/Contractor <input type="checkbox"/> Corp. or Public Agency / Title	Printed Name	Signature	Date
--	--------------	-----------	------

**10 Projects Impacting Inland Lakes, Streams, Great Lakes, Wetlands or Floodplains**

- Complete only those sections A through M applicable to your project.
- If your project impacts wetlands also complete Section 12. If your project impacts regulated floodplains also complete Section 13.
- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27. Example: (25 ft long x 10 ft wide x 2 feet deep) / 27 = 18.5 cubic yards
- Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
 - ➔ Provide a black and white overall site plan, with cross-section and profile drawings. Show existing lakes, streams, wetlands, and other water features; existing structures; and the location of all proposed structures, land change activities and soil erosion and sedimentation control measures. Review Appendix B and EZ Guides for aid in providing complete site-specific drawings.
 - ➔ Provide tables for multiple impact areas or multiple activities such as multiple fill areas or multiple culverts. Include your calculations.

Water Level Elevation

On inland waters NGVD 29 NAVD 88 other Observed water elevation (ft) date of observation (M/D/Y)
 On a Great Lake IGLD 85 surveyed converted from observed still water elevation.

 A. PROJECTS REQUIRING FILL (See All Sample Drawings)

- ➔ Attach a site plan and cross-section views to scale showing maximum and average fill dimensions with calculations.
- ➔ For multiple impact areas on a site provide a table with location, dimensions and volumes for each fill area.

Purpose bioengineered shore protection boat ramp boat well bridge or culvert crib dock
 riprap seawall swim area other **NEW BUILDING & PARKING LOT REGRADING**

Dimensions of fill (ft) Length 205 Width 160 Maximum Depth 1.4	Total volume (cubic yards) 150	Volume below OHWM (cubic yards) 0
Maximum water depth in fill area (ft) 0	Area filled (sq ft) 19,175	Will filter fabric be used under proposed fill? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, type)

Fill will extend **0** feet into the water from the shoreline and upland feet out of the water.

Type of clean fill peastone % sand % gravel % other **COMMERCIAL**

Source of clean fill commercial on-site ➔ If on-site, show location on site plan.
 other ➔ If other, attach description of location.

 B. PROJECTS REQUIRING DREDGING OR EXCAVATION (See Sample Drawings)

- Refer to www.mi.gov/jointpermit for spoils disposal and authorization requirements.
- ➔ Attach a site plan and cross-section views to scale showing maximum and average dredge or excavation dimensions with calculations.
- ➔ For multiple impact areas on a site provide a table with location, dimensions and volumes for each dredge/excavation area.

Purpose boat ramp boat well bridge or culvert maintenance dredge
 navigation pond/basin other **PARKING LOT REGRADING**

Dimensions (ft) Length Width Maximum Depth SEE TABLES	Total volume (cu yds) 410	Volume below OHWM (cu yds) 0
Has this same area been previously dredged?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, provide date and permit number:
Will the previously dredged area be enlarged?	<input type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, when and how much?
Is long-term maintenance dredging planned?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, how often?

Dredge or Excavation Method Hydraulic Mechanical other

Spoils Disposal
 Dredged or excavated spoils will be placed on-site landfill USACE confined disposal facility other upland off-site
 For disposal, provide a ➔ Detailed spoils disposal area location map and site plan with property lines.
 ➔ Letter of authorization from property owner of spoils disposal site, if disposed off-site.
 For volumes less than 5,000 cu yards, has proposed dredge material been tested for contaminants within the past 10 years?
 No Yes ➔ If Yes, provide test results with a map of sampling locations.

 C. PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 22, and 23)

Riprap water ward of the ordinary high water mark: dimensions (ft) length 8 width 5 depth 0.67	Volume(cu yd) 1.0x9 = 9.0
Riprap landward of the ordinary high water mark: dimensions (ft) length width depth	Volume(cu yd)
Type and size of riprap (inches) <input type="checkbox"/> field stone <input checked="" type="checkbox"/> angular rock .50 <input checked="" type="checkbox"/> other .50	Will filter fabric or pea stone be used under proposed riprap? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, Type AMOCO 4551

**2 Activities That May Impact Wetlands** (See Sample Drawings 8 & 9). Complete other Sections as applicable.

- Locate your site and wetland information with the DEQ Wetlands Map Viewer at www.mcqi.state.mi.us/wetlands/
- For information on the DEQ's Wetland Identification Program (WIP) visit www.mi.gov/wetlands.
 - Provide a detailed site plan with labeled property lines, upland and wetland areas, and dimensions and volumes of wetland impacts.
 - Complete the wetland dredge and wetland fill dimension information below for each impacted wetland area.
 - Attach tables for multiple impact areas or activities.
 - Attach at least one cross-section for each wetland dredge and/or fill area; show wetland and upland boundaries on the cross-section.

Has the DEQ conducted a wetland assessment for this parcel?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➤ If Yes, provide a copy or WIP number:
Has a professional wetland delineation been conducted for this parcel?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	➤ If Yes, provide a copy with data sheets
Is there a recorded DEQ easement on the property?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➤ If Yes, provide the easement number
Did the applicant purchase the property before October 1, 1980?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➤ If Yes, provide documentation.
Is any grading or mechanized land clearing proposed?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➤ If Yes, label the locations on the site plan.
Has any of the proposed grading or mechanized land clearing been completed?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➤ If Yes, label the locations on the site plan

Proposed Activity	<input type="checkbox"/> boardwalk or deck (Section 10I)	<input type="checkbox"/> bridges and culverts (Section 14)	<input type="checkbox"/> designated environmental area
	<input type="checkbox"/> dewatering	<input type="checkbox"/> draining surface water	<input type="checkbox"/> driveway / road
	<input type="checkbox"/> fences (Section 10L)	<input type="checkbox"/> fill or dredge	<input type="checkbox"/> restoration
	<input type="checkbox"/> septic system	<input type="checkbox"/> stormwater discharge (Section 10J)	<input type="checkbox"/> other

	Dimensions maximum length (ft) maximum width (ft)	Area <input type="checkbox"/> acres <input type="checkbox"/> sq ft	Average depth (ft)	Volume (cu yd)
FILL				
DREDGE				

Spoils Disposal	Dredged or excavated spoils will be placed <input type="checkbox"/> on-site <input type="checkbox"/> landfill <input type="checkbox"/> USACE confined disposal facility <input type="checkbox"/> other upland off-site
	For disposal, provide a <ul style="list-style-type: none"> ➤ Detailed spoils disposal area location map and site plan with property lines. ➤ Letter of authorization from property owner of spoils disposal site, if disposed off-site.

Septic System	The proposed project will be serviced by: <input type="checkbox"/> public sewer <input type="checkbox"/> private septic system ➤ Show system on plans.	If a private septic system is proposed, has an application for a permit been made to the County Health Department? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, has a permit been issued? <input type="checkbox"/> No <input type="checkbox"/> Yes ➤ Provide a copy of the permit.
----------------------	--	---

Describe the wetland impacts, the proposed use or development, and the alternatives considered:

Does the project impact more than 1/3 acre of wetland? No Yes
➤ If Yes, submit a Mitigation Plan with the type and amount of mitigation proposed. For more information go to www.mi.gov/wetlands

Describe how impacts to waters of the United States will be avoided and minimized:

Describe how the impact to waters of the United States will be compensated. OR Explain why compensatory mitigation should not be required for the proposed impacts.

**13 Floodplain Activities** (See Sample Drawing 5 and others. Complete other applicable sections.)

- For more information go to www.mi.gov/floodplainmanagement. This site also lists the projects and requirements for an expedited floodplain review under "Expedited Review Information for Minor Floodplain Projects."
- Examples of projects proposed within the non-floodway portions of the 100-year-floodplain which may qualify for an expedited review: Open pile decks and boardwalks; residences, commercial/industrial facilities, garages and accessory structures; parking lots; pavilions, gazebos, large community playground structures; residential swimming pools
- Examples of projects proposed within the floodway portions of the floodplain which may qualify for an expedited review: Open pile decks and boardwalks, (non-enclosed) that are anchored to prevent floatation and that do not extend over the bed and bank of a watercourse; parking lots constructed at grade or resurfacing that is no more than 4 inches above the existing grade; dry hydrants that do not require fill placement; scientific structure such as staff gauges, water monitoring devices, water quality testing devices, and core sampling devices which meet specific design criteria and fish structures that meet specific design criteria.
- For expedited review include:
 - ⇒ Photographs of the work site labeled to identify what is being shown and with the direction of the photo clearly indicated. Include photographs of any river or stream adjacent to the project.
 - ⇒ A letter or statement from the local unit of government acknowledging your proposed application. See the website for sample wording.
- A hydraulic analysis or hydrologic analysis may be required to fully assess floodplain impacts.
- The state building code requires an Elevation Certificate for any building construction or addition in a floodplain. A sample form can be found at www.fema.gov/nfip/elvinst.shtm.
 - ⇒ Attach additional sheets or tables for multiple proposed floodplain activities and provide hydraulic calculations.
 - ⇒ Show reference datum used on plans.

Proposed Activity	<input checked="" type="checkbox"/> fill <input checked="" type="checkbox"/> excavation or cut <input type="checkbox"/> other	100-year floodplain elevation (ft) (if known) 842.10 Datum <input type="checkbox"/> NGVD 29 <input checked="" type="checkbox"/> NAVD 88 <input type="checkbox"/> other
-------------------	--	--

Site is **NA** feet above ordinary high water mark (OHWM) OR observed water level. Date of observation (M/D/Y)

Fill volume below the 100-year floodplain elevation (cu yds) 120	Compensating cut volume below the 100-year floodplain elevation (cu yds) 410
---	---

Buildings and/or Additions	Type of construction is <input type="checkbox"/> residential <input type="checkbox"/> garage/pole barn <input type="checkbox"/> non residential <input checked="" type="checkbox"/> other COMMERCIAL	
	Construction is <input checked="" type="checkbox"/> new <input type="checkbox"/> addition AND Serviced by <input type="checkbox"/> public sewer <input type="checkbox"/> private septic <input checked="" type="checkbox"/> other RECONSTRUCTION	
	Lowest adjacent grade (ft): existing 837.52 proposed 837.52 datum <input type="checkbox"/> NGVD 29 <input checked="" type="checkbox"/> NAVD 88 <input type="checkbox"/> other	
	Existing Structure Information	Proposed Structure Information
	Foundation type <input type="checkbox"/> basement <input checked="" type="checkbox"/> concrete slab on grade <input type="checkbox"/> pilings <input type="checkbox"/> crawl space <input type="checkbox"/> other	Foundation type <input type="checkbox"/> basement <input checked="" type="checkbox"/> concrete slab on grade <input type="checkbox"/> pilings <input type="checkbox"/> crawl space <input type="checkbox"/> other
	Foundation floor elevation (ft) 843.93	Foundation floor elevation (ft) 843.10
	Height of crawl space/basement from finished foundation floor to bottom of floor joists (ft) NA	Height of crawl space/basement from finished foundation floor to bottom of floor joists (ft) NA
	Elevation of 1st floor above basement floor/crawl space (ft) NA	Elevation of 1st floor above basement floor/crawl space (ft) NA
	For enclosed areas below the flood elevation, such as a crawl space, garages and accessory structures: Area of proposed foundation (sq ft) NA Elevation of proposed enclosed area (ft) NA datum <input type="checkbox"/> NGVD 29 <input type="checkbox"/> NAVD 88 <input type="checkbox"/> other	
	Number of flood vents NA net opening of each vent (sq inches) NA lowest elevation of flood vents (ft)	



14 Bridges and Culverts Including Foot and Cart Bridges. (See EZ Guides and Sample Drawings 5, 14A, 14B, 14C, 14D.)

- Complete other applicable Sections, including 10A-C.
- A hydraulic analysis or hydrologic analysis may be required to fully assess impacts. → Attach hydraulic calculations.
- High Water Elevation - describe reference point and highest known water level above or below reference point and date of observation.
 - Attach additional sheets for multiple bridges and/or culverts.
 - Provide detailed site-specific drawings of existing and proposed Plan and Elevation View at a scale adequate for detailed review.
 - Provide all information in the boxes below; do not write in a reference to plan sheets. Show reference datum used on plans.

Stream Information

The site has a high water elevation (ft) **842.10** above or below the Reference Point of _____ Date observed _____

Reference datum used NGVD 29 NAVD 88 IGLD 85 (Great Lakes coastal areas) other _____

Average stream width (ft) at the ordinary high water mark (OHWM) outside the influence of any ponding or scour holes around the structure

Upstream	
Downstream	

Cross-sectional area of primary channel (sq ft) _____ (See Sample Drawing 14C for more information)

The width of the stream where the water begins to overflow its banks. Bankfull width (ft) _____

The invert of the stream 100-feet from structure (ft)

Upstream	
Downstream	

Is the existing culvert perched? No Yes If Yes, provide a profile of the channel bottom at the high and low points for a distance of 200 feet upstream and downstream of the culvert.

Complete this form for each bridge / culvert location.

Existing

Proposed

Bridge

	Existing	Proposed
Number of bridge spans		
Bridge type (concrete box beam, concrete I-beam, timber, etc.)		
Bridge span (length perpendicular to stream) (ft)		
Bridge width (parallel to stream) (ft)		
Bottom of bridge beam (ft)	Upstream	
	Downstream	
Stream invert elevation at bridge (ft)	Upstream	
	Downstream	
Bridge rise from bottom of beam to streambed (ft)		

Culvert

Number of culverts	0	1
Culvert type (arch, bottomless, box, circular, elliptical, etc.)	NA	12" DIA., EQUALIZER PIPE
Culvert material (concrete, corrugated metal, plastic, etc.)	NA	CONC.
Culvert length (ft)	NA	68
Culvert <input type="checkbox"/> width <input checked="" type="checkbox"/> diameter (ft)	NA	NA
Culvert height prior to any burying (ft)	NA	1
Depth culvert will be buried (ft)	NA	0
Elevation of culvert crown (ft)	Upstream	838.94
	Downstream	838.94
Higher elevation of <input checked="" type="checkbox"/> culvert invert OR <input type="checkbox"/> streambed within culvert (ft)	Upstream	837.94
	Downstream	837.94

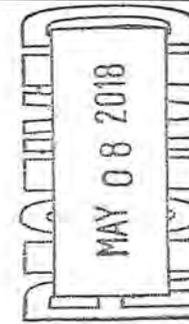
Complete for both Bridges and Culverts

Entrance design (mitered, projecting, wingwalls, etc.)	NA	MITERED END SECTION
Total structure waterway opening above streambed (sq ft)	NA	.785
Total structure waterway area below the 100-year elevation (sq ft) (if known)	NA	.785
Elevation of road grade at structure (ft)	NA	839.25
Elevation of low point in road (ft)	NA	839.25
Distance from low point of road to mid-point of bridge crossing (ft)	NA	17
Length of approach fill from edge of bridge/culvert to existing grade (ft)	NA	34
A Licensed Professional Engineer may certify that your project will not cause a harmful interference for a range of flood discharges up to and including the 100-year flood discharge. The "Required Certification Language" is found under "forms" on the "maps, forms and documents" link from the www.mi.gov/jointpermit page or a copy may be requested by phone, email, or mail. A hydraulic report supporting this certification may also be required.		
Is Certification Language attached? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		

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 APPROVED PLANS
 PERMIT NO WRD011311
 ISSUED 5-3-2018
 Page 1 of 10

2080 Grand River

MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



LEGAL DESCRIPTION:

A parcel of land in the Northeast 1/4 of Section 21, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the North 1/4 corner of said Section 21; thence N88°47'52"E along the North line of said Section 21 a distance of 1355.76 feet to the Northwest corner of the East 1/2 of said Northeast 1/4; thence S00°36'29"E along the West line of the East 1/2 of said Northeast 1/4 as monumented a distance of 1306.27 feet; thence N89°58'36"E 231.35 feet to the point of beginning of this description; thence continuing N89°58'36"E 199.82 feet; thence S01°52'11"W 279.62 feet to the Northerly line of Grand River Avenue (M-43); thence N77°03'29"W along said Northerly line 200.51 feet; thence N01°09'11"E 234.53 feet to the point of beginning; said parcel containing 1.16 acres more or less; said parcel subject to all easements and restrictions if any.

BENCHMARKS

BENCHMARK #1 ELEV. = 842.24 (NAVD88)
 CENTER OF BLACK "X", NORTH SIDE OF CONCRETE LIGHT POLE
 BASE, IN SOUTHWEST CURB ISLAND OF FOUR CURB ISLANDS IN
 FRONT OF #2080 GRAND RIVER AVENUE, 75' NORTH-NORTHEAST
 OF BACK OF CURB OF GRAND RIVER AVENUE AND #43'
 WESTERLY OF CENTERLINE OF ENTRANCE DRIVE TO #2080
 GRAND RIVER AVENUE.

BENCHMARK #2 ELEV. = 840.83 (NAVD88)
 NORTH FLANGE BOLT, UNDER "B" IN "1968", FIRE HYDRANT,
 #24' NORTH-NORTHEAST OF BACK OF CURB OF GRAND RIVER
 AVENUE, #14' EASTERLY OF THE EXTENSION OF THE WESTERLY
 WALL LINE OF #2080 GRAND RIVER AVENUE.



EX. SEWER INVENTORIES

CATCH BASIN #100 RM ELEV. = 837.05 NW INV. = 834.97	SANITARY MANHOLE #200 RM ELEV. = 839.43 3" PVC NE INV. = 836.43 15" RCP E INV. = 828.73 15" RCP SW INV. = 828.72
CATCH BASIN #101 RM ELEV. = 840.18 10" RCP N INV. = 837.86 PROP. I.E. 12" S 837.86	SANITARY MANHOLE #201 RM ELEV. = 837.14 15" RCP NE INV. = 828.87 15" RCP W INV. = 828.84
CATCH BASIN #102 RM ELEV. = 840.23 8" VCP NW INV. = 838.63	

KEBS, INC.

2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047

Merahall Office
 Ph. 269-781-9800



2080 Grand River
LOCATION MAP & LEGAL
FLOOD PLAIN CUT & FILL

SCALE: NONE
 PROJECT MGR.
 LBP
 APPROVED BY: JWK

AUTHORIZED BY:
 AFFINITY 9 INVESTMENTS, LLC

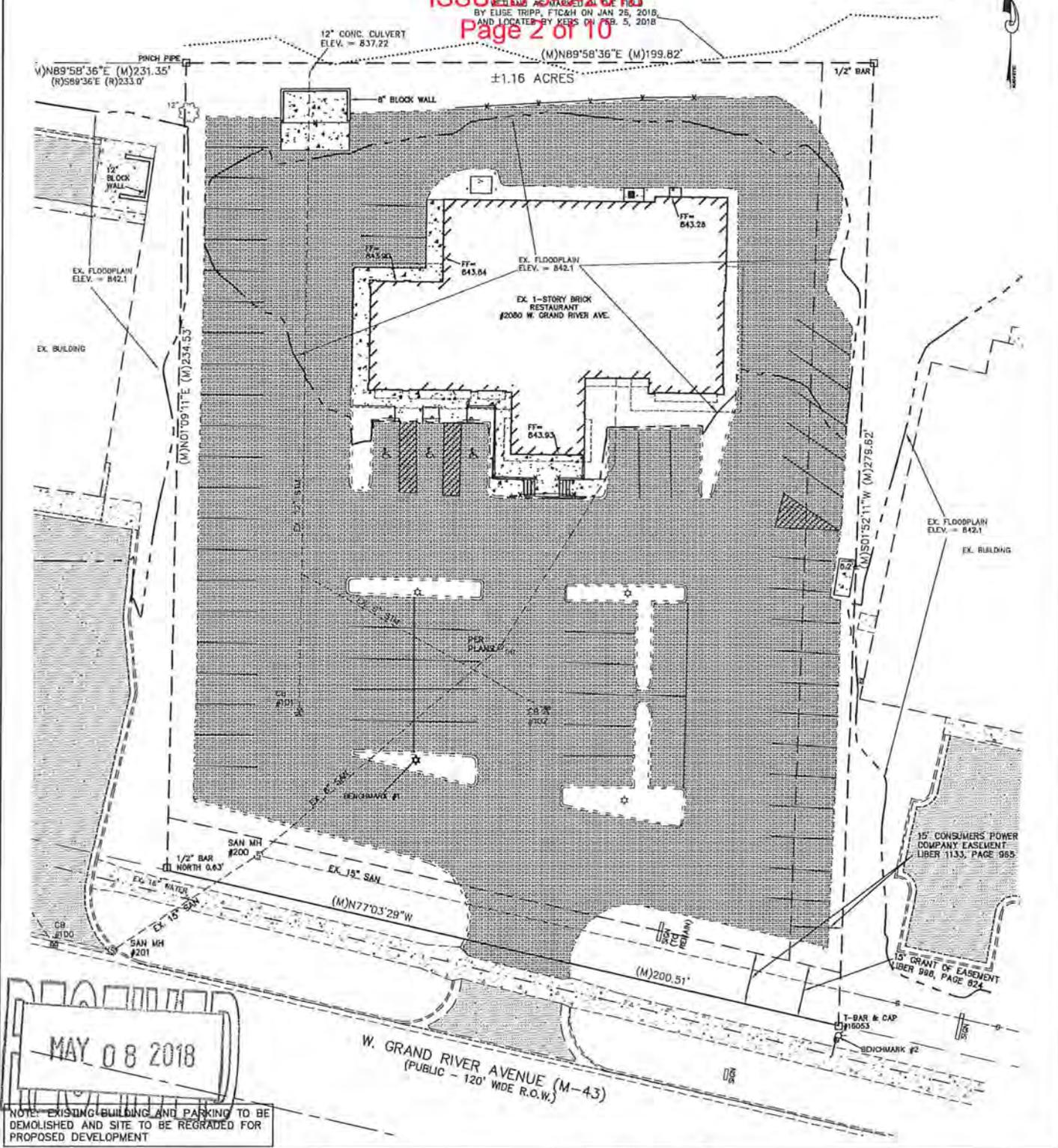
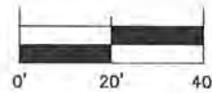
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 91998
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SHEET	1 OF 10

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2080 Grand River
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MAY 08 2018

NOTE: EXISTING BUILDING AND PARKING TO BE DEMOLISHED AND SITE TO BE REGRADED FOR PROPOSED DEVELOPMENT

SHEET 2 OF 10	REVISIONS
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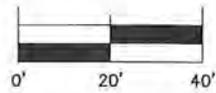
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 Marshall Office
 Ph. 269-781-9800

SCALE: 1"=40'
 PROJECT MGR.
 LBP
 APPROVED BY: JWK

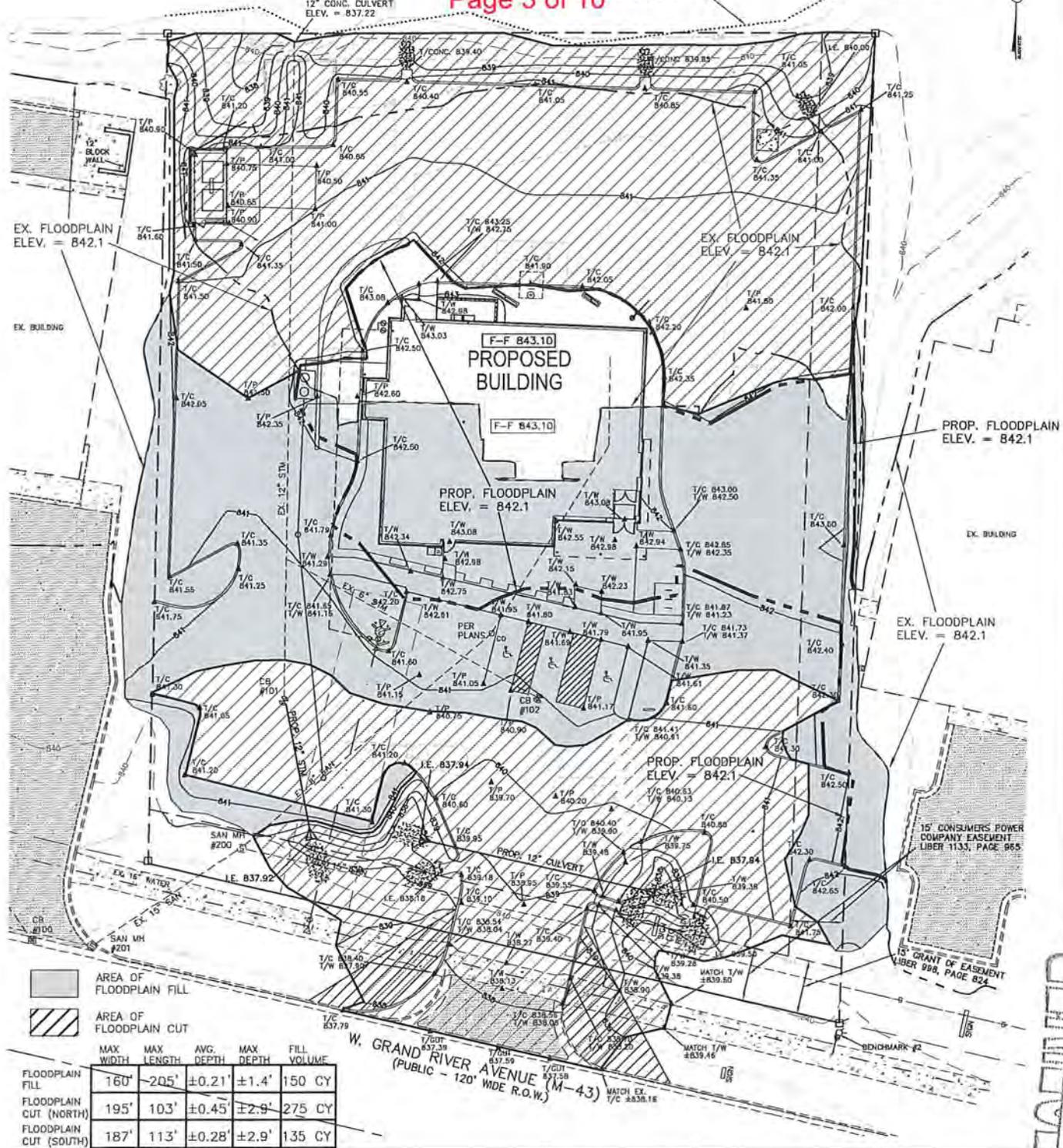
2080 Grand River
 EXISTING SITE
FLOOD PLAIN CUT & FILL
 AUTHORIZED BY:
 AFFINITY 9 INVESTMENTS, LLC
 JOB# DEQ-WRD-1311 V.1.0
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2080 Grand River
APPROVED PLANS
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WETLAND AS MARKED IN FIELD
 BY ELISE TRIPP, FTC&I ON JAN 25, 2018,
 AND LOCATED BY MEES ON FEB. 5, 2018



AREA OF FLOODPLAIN FILL
 AREA OF FLOODPLAIN CUT

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
FLOODPLAIN CUT (SOUTH)	187'	113'	±0.28'	±2.9'	135 CY

SHEET	REVISIONS
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SCALE: 1"=40'
 PROJECT MGR. LBP
 APPROVED BY: JWK

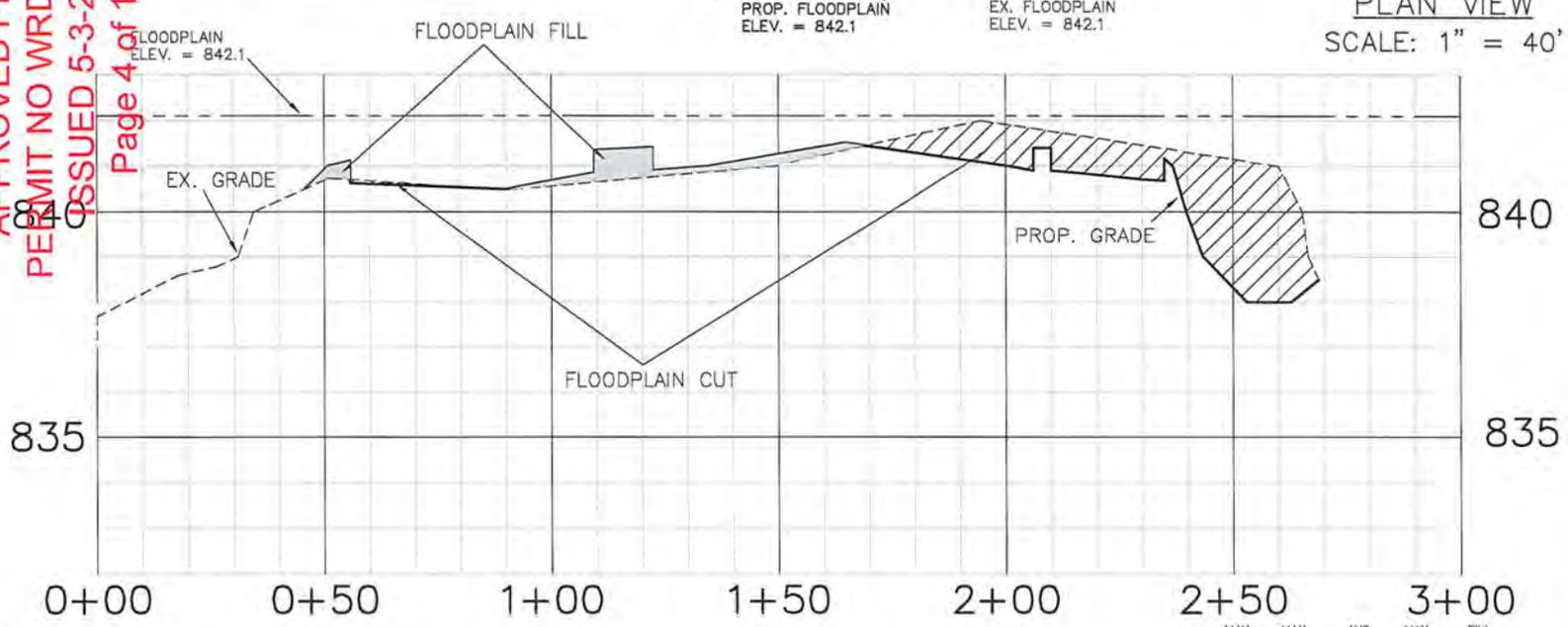
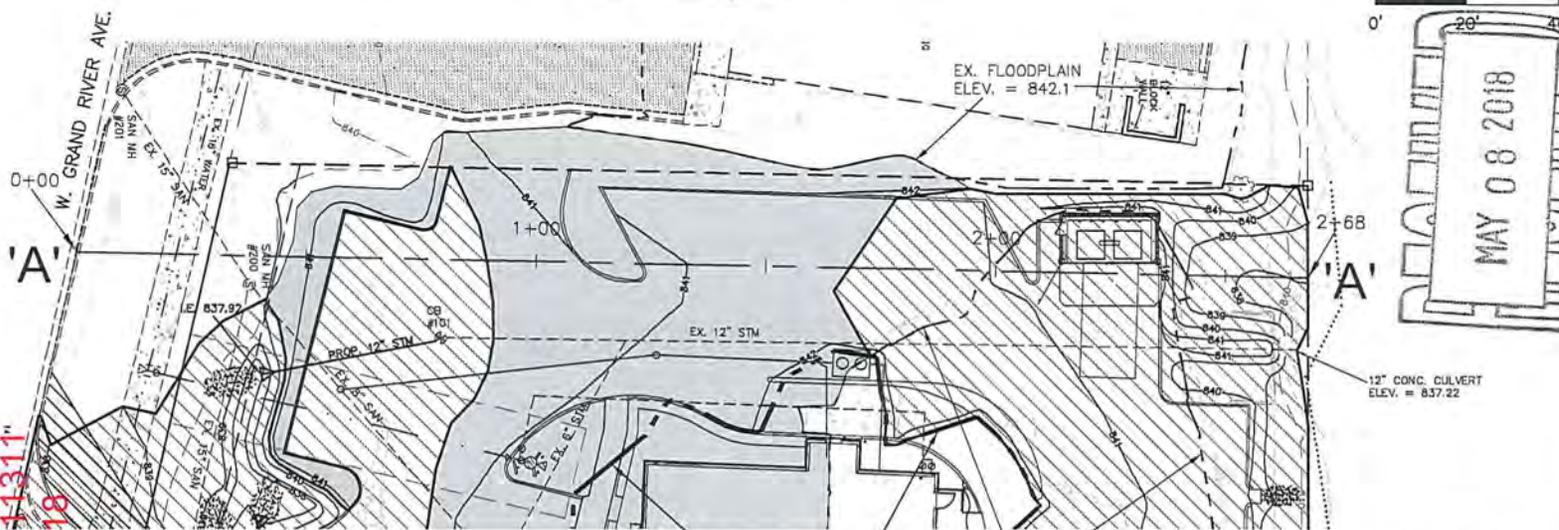
2080 Grand River
PROPOSED SITE
FLOOD PLAIN CUT & FILL

AUTHORIZED BY:
 AFFINITY 9 INVESTMENTS, LLC

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 Expires On: 05/03/2023

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AREA OF FLOODPLAIN FILL
 AREA OF FLOODPLAIN CUT

SECTION A-A

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
FLOODPLAIN CUT (SOUTH)	187'	113'	±0.28'	±2.9'	135 CY

2080 Grand River
CROSS SECTION A-A
FLOOD PLAIN CUT & FILL

SCALE: 1"=40'
PROJECT MGR.
LBP
APPROVED BY: JWK

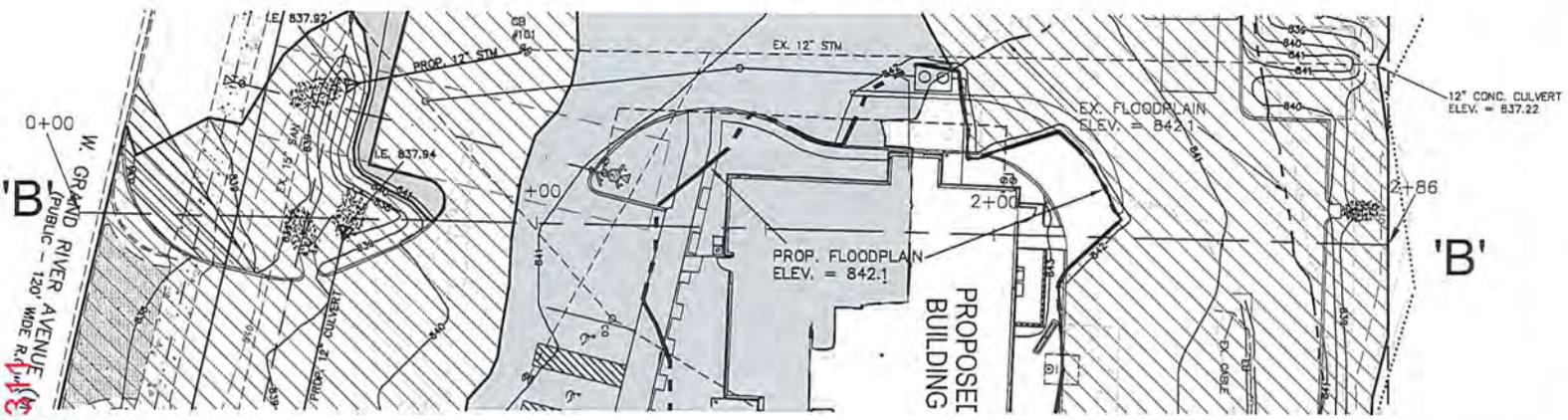
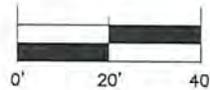
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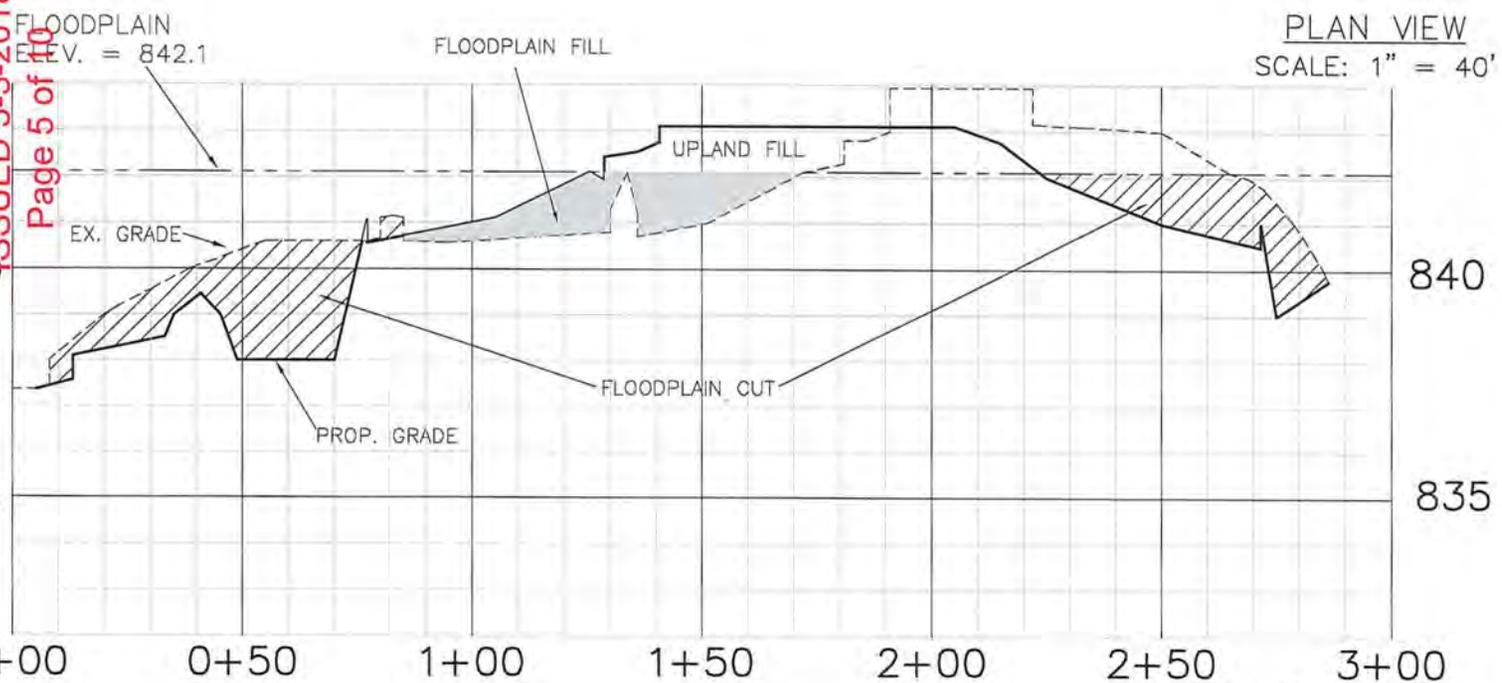
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AUTHORIZED BY:
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JOB # 91998
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Approved
Issued On: 05/03/2018
Expires On: 05/03/2023

MAY 08 2018



PLAN VIEW
SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

AREA OF FLOODPLAIN FILL
 AREA OF FLOODPLAIN CUT

SECTION B-B

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
FLOODPLAIN CUT (SOUTH)	187'	113'	±0.28'	±2.9'	135 CY

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 APPROVED PLANS
 PERMIT NO WRD01131
 ISSUED 5-3-2018
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2080 Grand River
 CROSS SECTION B-B
 FLOOD PLAIN CUT & FILL

SCALE: 1"=40'
 PROJECT MGR. LBP
 APPROVED BY: JWK

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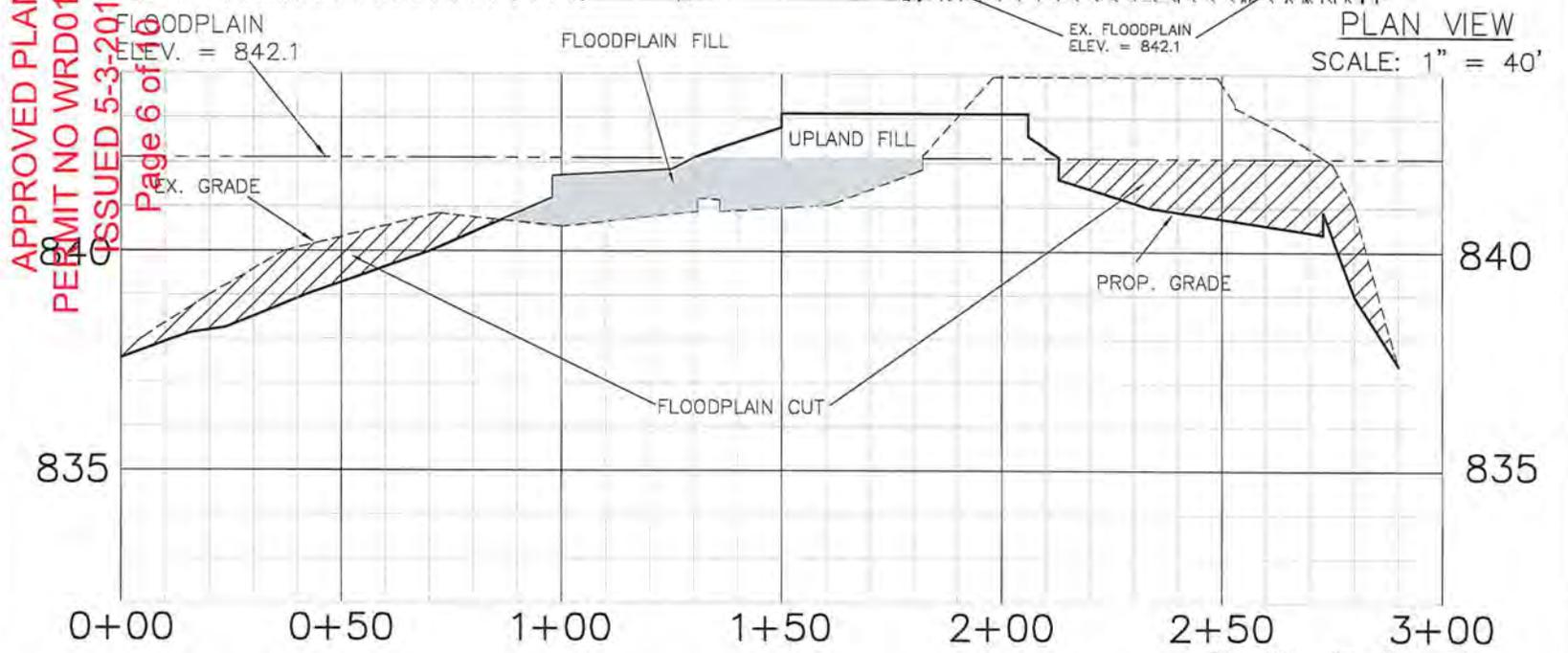
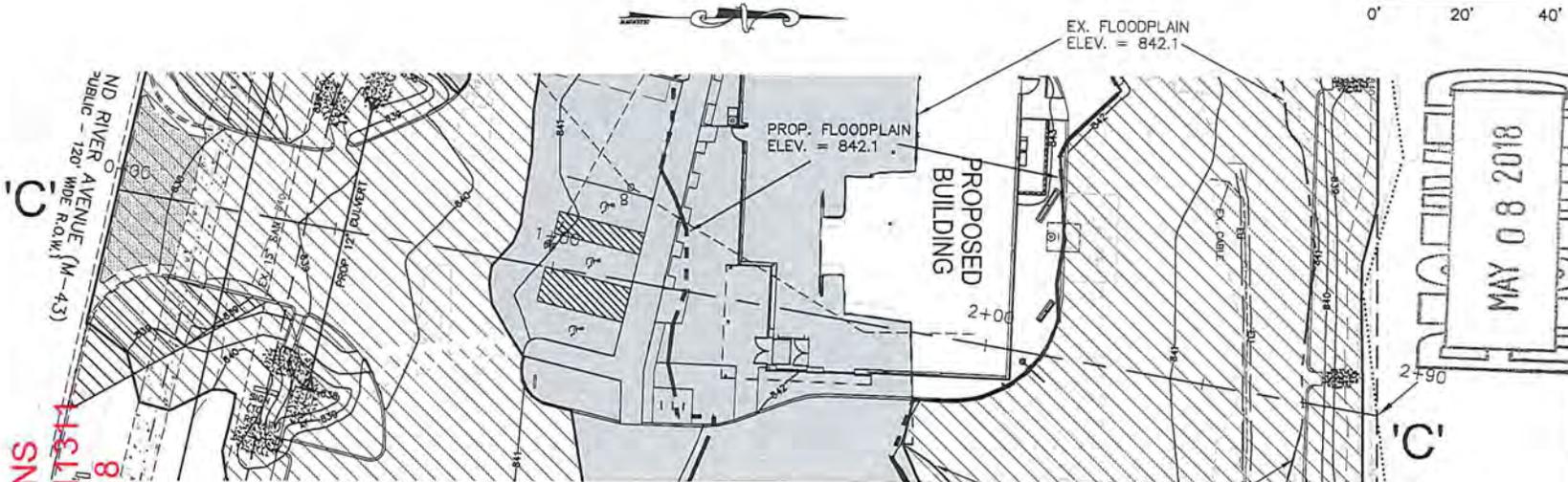


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Page 6 of 16



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

AREA OF FLOODPLAIN FILL
 AREA OF FLOODPLAIN CUT

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
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2080 Grand River
CROSS SECTION C-C
FLOOD PLAIN CUT & FILL

AUTHORIZED BY:
AFFINITY 9 INVESTMENTS, LLC

JOB # **91998**

Approved
Issue On: 05/03/2018
Expires On: 05/03/2023

SCALE: 1" = 40'
PROJECT MGR.
LBP

APPROVED BY: JWK

KEBS, INC.

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PH. 517-339-1014 FAX. 517-339-8047

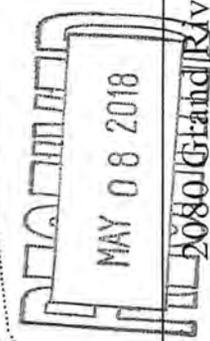
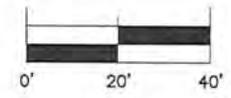
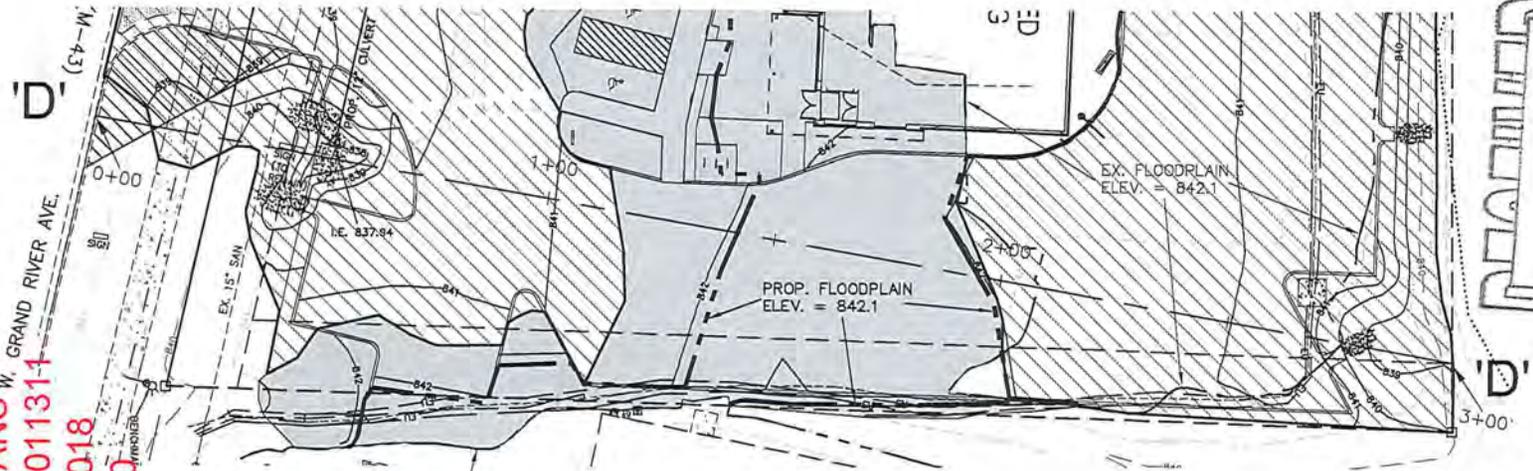
Marshall Office
Ph. 269-781-9800

REVISIONS

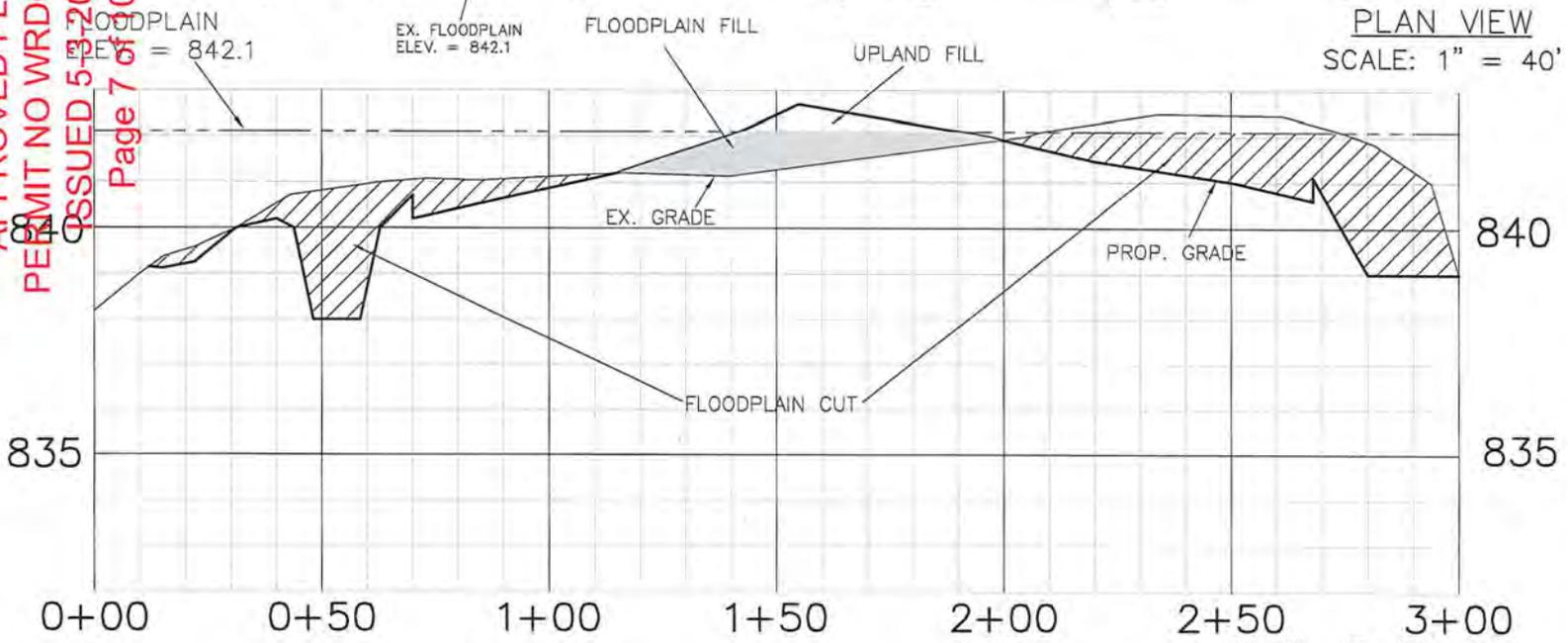
4-16-18 SUBMITTAL

SHEET 6 OF 10

DEQ-WRD-LDO
 APPROVED PLANS
 PERMIT NO WRD011311-1
 ISSUED 5-3-2018
 Page 7 of 10



PLAN VIEW
 SCALE: 1" = 40'



PROFILE VIEW
 SCALE: HORIZ. 1" = 40'
 VERT. 1" = 4'

AREA OF FLOODPLAIN FILL
 AREA OF FLOODPLAIN CUT

SECTION D-D

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
FLOODPLAIN CUT (SOUTH)	187'	113'	±0.28'	±2.9'	135 CY

CROSS SECTION D-D
 FLOOD PLAIN CUT & FILL
 AUTHORIZED BY:
 AFFINITY 9 INVESTMENTS, LLC
 JOB # WRT
 1311
 91998
 Approved

SCALE: 1" = 40'
 PROJECT MGR:
 LBP
 APPROVED BY: JWK

KEBS, INC.
 2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshall Office
 Ph. 269-781-9800

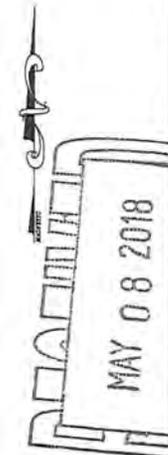
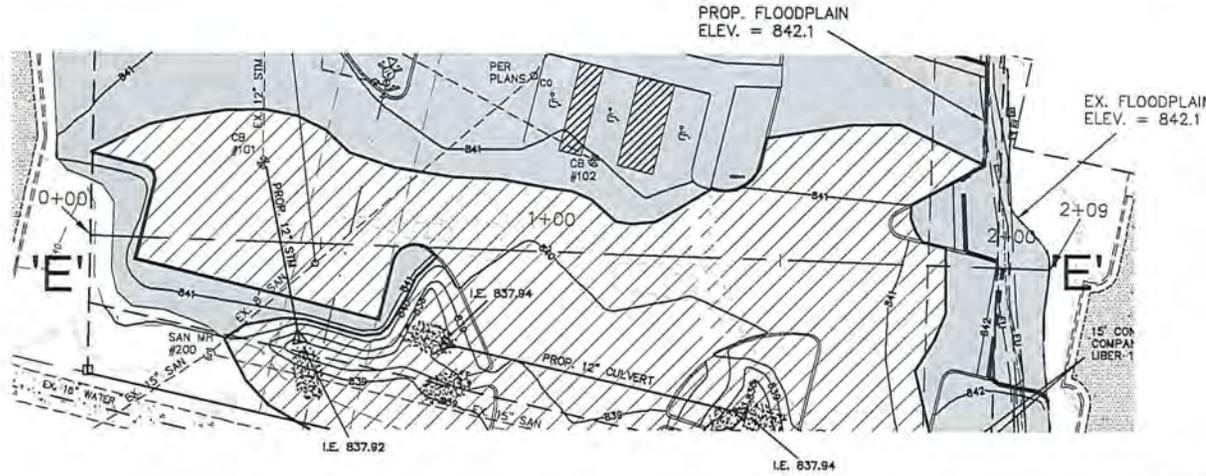


REVISIONS	4-18-18	SUBMITTAL

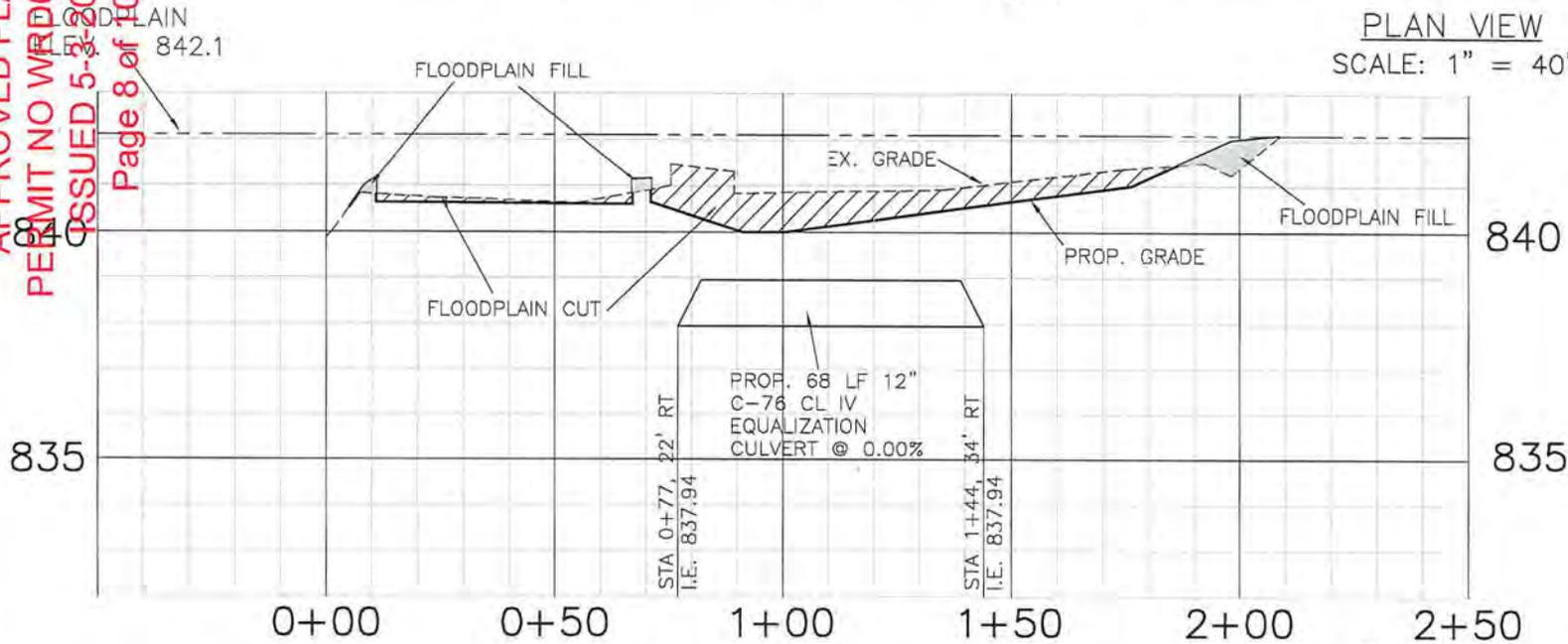
SHEET 7 OF 10

Issued On: 05/03/2018
 Expires On: 05/03/2023

DEQ-WRD-LDO
APPROVED PLANS
PERMIT NO WRD011311
ISSUED 5-3-2018
Page 8 of 10



PLAN VIEW
SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SECTION E-E

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
FLOODPLAIN CUT (SOUTH)	187'	113'	±0.28'	±2.9'	135 CY

KEBS, INC.



2116 HASLETT ROAD, HASLETT, MI 48840
PH. 517-339-1014 FAX. 517-339-8047
Marshall Office
Ph. 269-781-9800

Grand River
CROSS SECTION E-E
FLOOD PLAIN CUT & FILL

SCALE: 1" = 40'
PROJECT MGR.
LBP
APPROVED BY: JWK

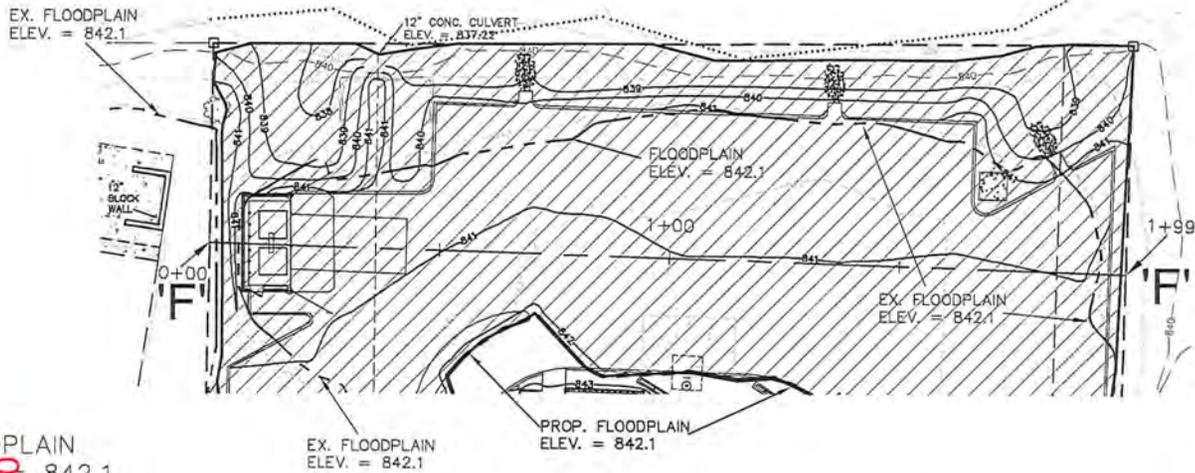
AUTHORIZED BY:
AFFINITY 9 INVESTMENTS, LLC

JOB # 2-WRT
1311 V.0
9/1998

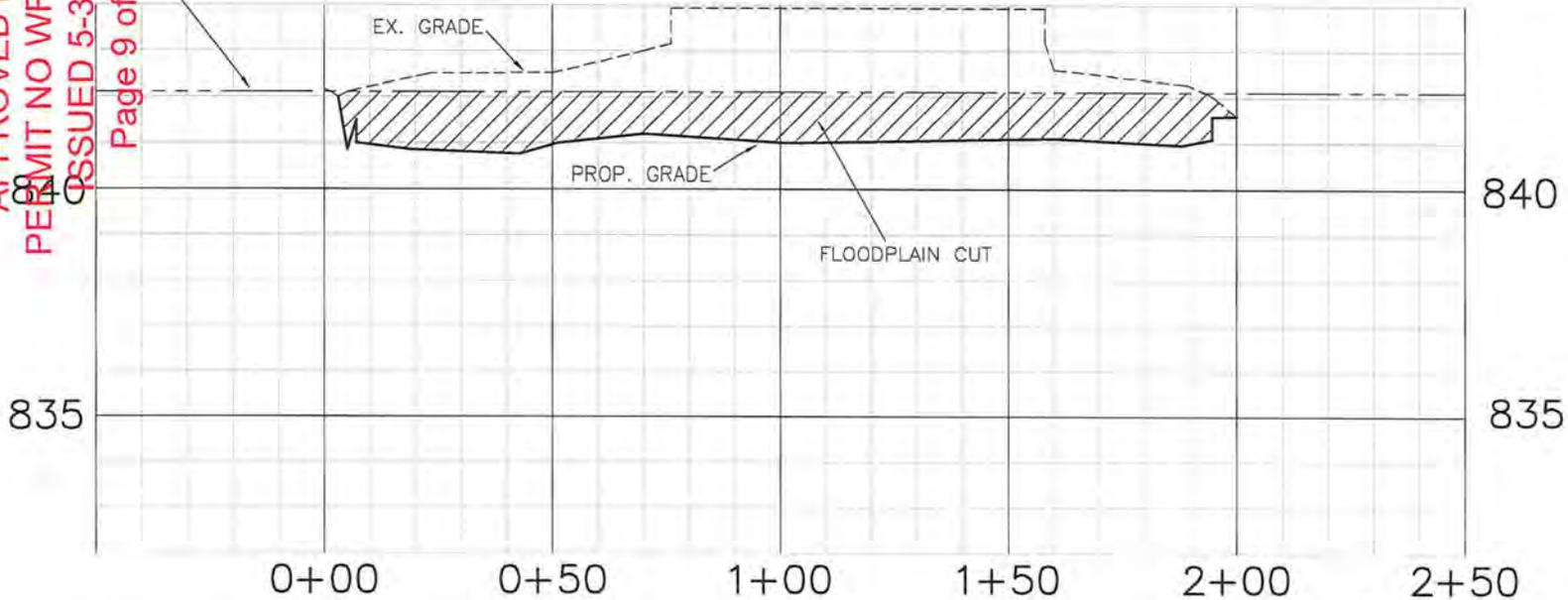
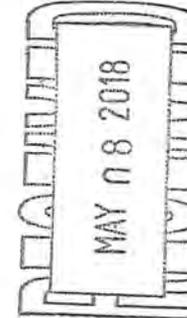
Issued On: 05/03/2018
Expires On: 05/03/2023

REVISIONS	4-16-18	SUBMITTAL
SHEET 8 OF 10		

DEQ-WRD-LDO
APPROVED PLANS
PERMIT NO WRD041311
ISSUED 5-3-2008
Page 9 of 10



PLAN VIEW
SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

AREA OF FLOODPLAIN FILL
 AREA OF FLOODPLAIN CUT

SECTION F-F

	MAX WIDTH	MAX LENGTH	AVG. DEPTH	MAX DEPTH	FILL VOLUME
FLOODPLAIN FILL	160'	205'	±0.21'	±1.4'	150 CY
FLOODPLAIN CUT (NORTH)	195'	103'	±0.45'	±2.9'	275 CY
FLOODPLAIN CUT (SOUTH)	187'	113'	±0.28'	±2.9'	135 CY

2080 Grand River LOCATION MAP & LEGAL FLOOD PLAIN CUT & FILL		JOB # 04-3111 91998 AUTHORIZED BY: AFFINITY 9 INVESTMENTS, LLC
SCALE: 1"=40'	PROJECT MGR. LBP	APPROVED BY: JWK
KEBS, INC. 2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047 Marshall Office Ph. 269-781-9800		
REVISIONS	4-16-18 SUBMITTAL	
SHEET 9 OF 10		

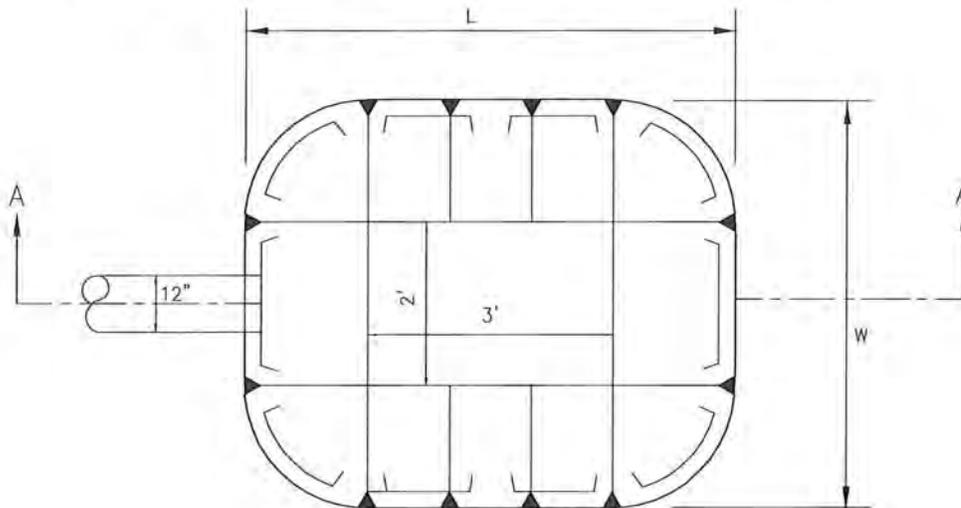
Approved
Issued On: 05/03/2018
Expires On: 05/03/2023

DEQ-WRD-LDO
CONSTRUCTION NOTES

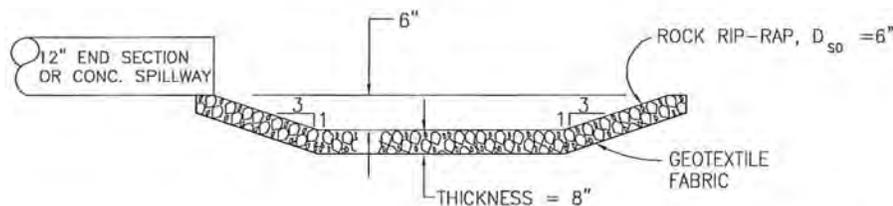
APPROVED PLANS
PERMIT NO WRD011311

ISSUED 5/3/2018
Page 10 of 10

1. The sub grade for the filter, riprap or gabion shall be prepared to required lines and grade as shown on the plan. Any fill required in the sub grade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The riprap shall conform to the grading limits as shown on the plan.
3. Filter cloth shall be protected from plowing, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire filter cloth.
4. Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the filter cloth. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.
5. 3:1 side slopes are approximate.
6. Riprap shall be composed of a well graded mixture of stone size so that 50 percent of the pieces, by weight, shall be larger than 6 inches. A well graded mixture is defined as a mixture composed primarily of larger stone sizes but a sufficient mixture of other sizes to fill the smaller voids between the stones. The diameter of the largest stone shall be 9 inches.
7. Stone for riprap shall consist of field stone or quarry stone. The stone shall be hard, angular and highly resistant to weathering. The specific gravity of the individual stones shall be at least 2.5.
8. The filter shall be filter cloth. The filter cloth can be woven or non-woven monofilament yarns, and shall meet these basic requirements: thickness 20-60 mils, grab strength 90-120 lbs; and shall conform to ASTM D-1777 and ASTM D-1682.



PLAN VIEW OF
RIPRAP AT INLETS AND OUTLETS



SECTION A-A

12" END SECTION OR CONC. SPILLWAY

LENGTH (L) FT.	WIDTH (W) FT.	ESTIMATED	
		AREA (SQ. YD.)	VOLUME (CU. YD.)
8	5	4.4	1.0

MAY 08 2018

1.0 CY x 9 RIPRAP AREAS = 9.0 CY TOTAL

SHEET 10 OF 10	REVISIONS
	4-16-18 SUBMITTAL



KEBS, INC.

2116 HASLETT ROAD, HASLETT, MI 48840
PH. 517-339-1014 FAX. 517-339-8047

Marshall Office
Ph. 269-781-9800

SCALE: 1"=40'

PROJECT MGR.
LBP

APPROVED BY: JWK

2080 Grand River

RIPRAP DETAIL
FLOOD PLAIN CUT & FILL

AUTHORIZED BY:
AFFINITY 9 INVESTMENTS, LLC

JOB # 12-WR11
W0501311 v1.0
9/998

Approved
Issued On: 05/03/2018
Expires On: 05/03/2023



NOTICE OF AUTHORIZATION

Permit Number: WRP011311 v. 1
Site Name: 33-2080 Grand River-Okemos

Date Issued: May 3, 2018
Expiration Date: May 3, 2023

The Michigan Department of Environmental Quality, Water Resources Division, P.O. Box 30458, Lansing, Michigan 48909-7958, under provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; specifically:

- Part 31, Floodplain Regulatory Authority of the Water Resources Protection.
- Part 301, Inland Lakes and Streams.
- Part 303, Wetlands Protection.

Authorized activity:

Demolish existing building and parking area in floodplain at 2080 Grand River, Okemos.

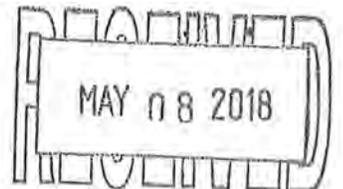
Place approximately 120 cubic yards within the 100-year floodplain to elevate existing grades and construct a new commercial building with lowest floor at least 1 foot above flood level.

Regrade new parking area and stormwater basin, which results in a floodplain cut of 410 cubic yards.

To be conducted at property located in: Ingham County, Waterbody: Red Cedar River Section 21, Town 04N, Range 01W, Meridian Township.

Permittee:
Affinity 9 Investments, LLC, Thomas Hannawa
1721 Maplelane Avenue
Hazel Park, MI 48030

Donna Cervelli
Lansing District Office
Water Resources Division



*This notice must be displayed at the site of work.
Laminating this notice or utilizing sheet protectors is recommended.*
Please refer to the above permit number with any questions or concerns.

DEQ-WRD
WRP011311 v1.0
Approved
Issued On: 05/03/2018
Expires On: 05/03/2023



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER RESOURCES DIVISION
PERMIT**

Issued To:

Affinity 9 Investments, LLC
Attention: Mr. Thomas Hannawa
1721 Maplelane Avenue
Hazel Park, Michigan 48030

Permit No: WRP011311 v.1
Submission No.: HND-3NZH-315GX
Site Name: 33-2080 Grand River-Okemos
Issued: May 3, 2018
Revised:
Expires: May 3, 2023

This permit is being issued by the Michigan Department of Environmental Quality (MDEQ), Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically:

- | | |
|---|---|
| <input type="checkbox"/> Part 301, Inland Lakes and Streams | <input type="checkbox"/> Part 323, Shorelands Protection and Management |
| <input type="checkbox"/> Part 303, Wetlands Protection | <input type="checkbox"/> Part 325, Great Lakes Submerged Lands |
| <input type="checkbox"/> Part 315, Dam Safety | <input type="checkbox"/> Part 353, Sand Dunes Protection and Management |
| <input checked="" type="checkbox"/> Part 31, Water Resources Protection (Floodplain Regulatory Authority) | |

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

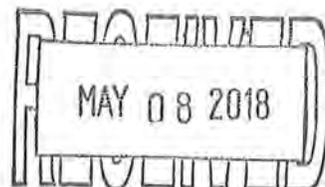
Authorized Activity:

Demolish existing building and parking area in floodplain at 2080 Grand River, Okemos.

Place approximately 120 cubic yards within the 100-year floodplain to elevate existing grades and construct a new commercial building with lowest floor at least 1 foot above flood level.

Regrade new parking area and stormwater basin, which results in a floodplain cut of 410 cubic yards.

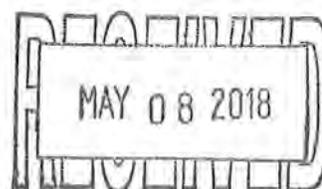
Waterbody Affected: Red Cedar River
Property Location: Ingham County, Meridian Township, Town/Range/Section 04N01W21, Property Tax No. 33-02-02-21-226-004



DEQ-WRD
WRP011311 v.1.0
Approved
Issued On: 05/03/2018
Expires On: 05/03/2023

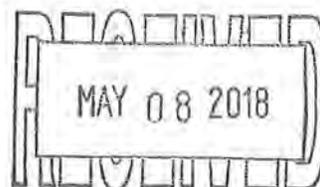
Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify the MDEQ within one week after the completion of the activity authorized by this permit by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of the MDEQ.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, the MDEQ has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, the MDEQ may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, the MDEQ may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from the MDEQ. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by the MDEQ prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of the MDEQ. The permittee must submit a written request to the MDEQ to transfer the permit to the new owner. The new owner must also submit a written request to the MDEQ to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all of the above information may be provided to the MDEQ. The MDEQ will review the request and, if approved, will provide written notification to the new owner.



MDEQ-0110
WRP011311 v1.0
Approved
Issued On: 05/03/2018
Expires On: 05/03/2023

- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
1. Authority granted by this permit does not waive permit or program requirements under Part 91 of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/deqstormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
 2. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
 3. No fill, excess soil, or other material shall be placed in any wetland, floodplain, or surface water area not specifically authorized by this permit, its plans, and specifications.
 4. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
 5. The permit placard shall be kept posted at the work site, in a prominent location at all times for the duration of the project, or until permit expiration.
 6. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by the MDEQ, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.
 7. The design flood or 1% annual chance (100-year) floodplain elevation at this location on Red Cedar River is 842.1 feet N.A.V. Datum of 1988.



DEQ-WRP0
WRP011311 v1.0
Approved
Issued On: 05/03/2018
Expires On: 05/03/2023

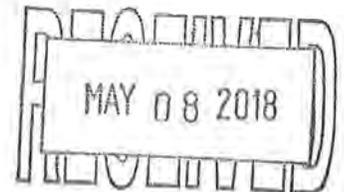
- 8. The proposed fill and building are located within a 100-year floodplain included in the community's Flood Insurance Rate Map and/or flood elevation study. The permittee must apply to the Federal Emergency Management Agency (FEMA) for a Letter of Map Revision based on fill (LOMR-F) if engineered earthen fill is placed within the mapped 100-year floodplain. As part of the National Flood Insurance Program (NFIP) requirements the community must ensure that the requirements found in Section 65.5(a) of the FEMA's 44 CFR Part 65 are followed.
- 9. The structure shall be firmly anchored to prevent flotation or lateral movement.
- 10. This permit does not waive the requirements of Michigan Building Code and its referenced standards, ASCE 7: Minimum Design Loads for Buildings and Other Structures, and ASCE 24: Flood Resistant Design and Construction, for substantial improvements to existing structures or new construction. Please reference the Code for details.
- 11. The elevation certificate shall be submitted to the local building official. When the project is located in a National Flood Insurance Program (NFIP) community, using the elevation certificate form, found at www.fema.gov/nfip, is encouraged. The form is required if the community participates in the Community Rating System. The form may be used in non-NFIP communities.



Issued By: _____

Donna Cervelli
Lansing District Office
Water Resources Division

cc: Mr. Jeff Kyes, KEBS, Inc.
Meridian Township Clerk
Ingham County Drain Commissioner
Ingham County CEA



DEQ:WRD
WRP011311 v1.0
Approved
Issued On:05/03/2018
Expires On:05/03/2023



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

COMMUNITY AND MAP PANEL INFORMATION		LEGAL PROPERTY DESCRIPTION
COMMUNITY	CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN	A portion of Section 21, Township 4 North, Range 1 West, as described in the Warranty Deed, recorded in Liber 1415, Page 650, in the Office of the Register of Deeds, Ingham County, Michigan.
	COMMUNITY NO: 260093	
AFFECTED MAP PANEL	NUMBER: 26065C0156D DATE: 8/16/2011	
FLOODING SOURCE: MUD LAKE/FOSTER DRAIN		APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 42.722572, -84.426269 SOURCE OF LAT & LONG: GPS DATUM: NAD 83

DETERMINATION

LOT	BLOCK/ SECTION	SUBDIVISION	STREET	OUTCOME WHAT IS REMOVED FROM THE SFHA	FLOOD ZONE	1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88)	LOWEST ADJACENT GRADE ELEVATION (NAVD 88)	LOWEST LOT ELEVATION (NAVD 88)
--	--	--	2080 Grand River Avenue	Structure	X (shaded)	--	842.8 feet	--

Special Flood Hazard Area (SFHA) - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

PORTIONS REMAIN IN THE SFHA/FLOODWAY
eLOMA DETERMINATION

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the structure(s) on the property(ies) is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document amends the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. If there are any errors on this eLOMA Determination Letter that cause FEMA to rescind and/or nullify the determination the property owner should consult the Licensed Professional that submitted this eLOMA. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Attn: North Wind Resource Partners (NWRP) eLOMA Coordinator, 3601 Eisenhower Avenue, Alexandria, VA 22304-4605, Fax: 703-751-7415.

Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration

eLOMA



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

Structure Removal:

The following considerations may or may not apply to the determination for your Structure:

PORTIONS OF THE PROPERTY REMAIN IN THE SFHA and/or FLOODWAY - Portions of this property, but not the subject of the Determination document, may remain in the Special Flood Hazard Area (SFHA) and/or the regulatory floodway for the flooding source indicated on the Determination Document. The NFIP regulatory floodway is the area that must remain unobstructed in order to prevent unacceptable increases in base flood elevations. Therefore, no construction may take place in an NFIP regulatory floodway that may cause an increase in the base flood elevation. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management. The NFIP regulatory floodway is provided to the community as a tool to regulate floodplain development. Modifications to the NFIP regulatory floodway must be accepted by both the Federal Emergency Management Agency (FEMA) and the community involved. Appropriate community actions are defined in Paragraph 60.3(d) of the NFIP regulations. Any proposed revision to the NFIP regulatory floodway must be submitted to FEMA by community officials. The community should contact either the Regional Director (for those communities in Regions I-IV, and VI-X), or the Regional Engineer (for those communities in Region V) for guidance on the data which must be submitted for a revision to the NFIP regulatory floodway. Contact information for each regional office can be obtained by calling the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or from our web site at <https://www.fema.gov/regional-contact-information>

STUDY UNDERWAY - This determination is based on the flood data presently available. However, the Federal Emergency Management Agency may be currently revising the National Flood Insurance Program (NFIP) map for the community. New flood data could be generated that may affect this property. If a new NFIP map is issued it will supersede this determination. The Federal requirement for the purchase of flood insurance will then be based on the newly revised NFIP map.

EXTRATERRITORIAL JURISDICTION - The subject of the determination is shown on the National Flood Insurance Program map and may be located in an Extraterritorial Jurisdiction area for the community indicated on the Determination Document.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Attn: North Wind Resource Partners (NWRP) eLOMA Coordinator, NWRP eLOMA Coordinator, 3601 Eisenhower Ave., Alexandria, VA 22304-6439, Fax: 703-751-7415

A handwritten signature in black ink, appearing to read "Luis V. Rodriguez".

Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration

eLOMA



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

GREAT LAKES - The Federal Emergency Management Agency (FEMA) has based this determination on elevation data which is published in the current Flood Insurance Study for the community. However, the elevations established in the U.S. Army Corps of Engineers (USACE) reports on the Great Lakes are the best available data known to us. If in the future there are any subsequent map revisions to the National Flood Insurance Program map and the USACE reports remain the best available data known, FEMA will use those elevations for any such revisions. Further, be advised that the elevations on the Flood Insurance Rate Map (FIRM) may only reflect the Stillwater elevation for the lake and may not account for the effects of wind driven waves or wave run-up. On-site conditions such as wind speed, wind direction, fetch distance, water depth and the slope of the beach or bluff may result in significant increases to the base flood elevation. Therefore, it is strongly recommended that the requestor be aware of these circumstances and, if warranted, evaluate the effects of wind driven waves along the shoreline of the property.

STATE AND LOCAL CONSIDERATIONS - Please note that this document does not override or supersede any State or local procedural or substantive provisions which may apply to floodplain management requirements associated with amendments to State or local floodplain zoning ordinances, maps, or State or local procedures adopted under the National Flood Insurance Program.

COASTAL BARRIER RESOURCE SYSTEM - The subject of this Determination Document may be located within the Coastal Barrier Resource System (CBRS). Federal financial assistance, including Federal flood insurance, is not available in CBRS areas for new construction or substantial improvements occurring after the date on which the area was declared by Congress to be part of the CBRS or otherwise protected area as required by the Coastal Barrier Resources Act (Public Law 97-348) and the Coastal Barrier Improvement Act 1990 (Public Law 101-591). This date is indicated on the National Flood Insurance Program map. For further information on this property and the CBRS or otherwise protected area designation, contact the U.S. Department of the Interior.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, Attn: North Wind Resource Partners (NWRP) eLOMA Coordinator, NWRP eLOMA Coordinator, 3601 Eisenhower Ave., Alexandria, VA 22304-6439, Fax: 703-751-7415

A handwritten signature in black ink, appearing to read "Luis V. Rodriguez".

Luis V. Rodriguez, P.E., Director
Engineering and Modeling Division
Federal Insurance and Mitigation Administration

eLOMA



February 1, 2018
Project No. 180225

Mr. Mark Kieselbach
Charter Township of Meridian
5151 Marsh Road
Okemos, MI 48864

Re: Wetland Delineation – WDV #17-08
2080 West Grand River Avenue, Okemos, Ingham County, Michigan

Dear Mr. Kieselbach:

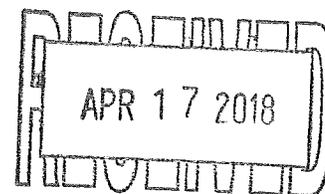
On January 26, 2018, Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) staff conducted a field investigation and delineated wetlands on property located at 2080 West Grand River Avenue, Charter Township of Meridian (Township), Ingham County, Michigan (the Site). As requested by the Township, the adjacent property to the north was also evaluated for wetlands within 40 feet of the subject parcel's property line. The Site is located in the northeast quarter of Section 21 of the Township (Town 4 North, Range 1 West). It is bound by commercial property to the east, west, and south, and undeveloped property to the north. West Grand River Avenue runs along the site's southern property boundary. The Site contains a former Mongolian Barbeque restaurant. The Township wetland map notes Wetland 21-3 is north of the Site. This approximately 1.84-acre emergent and scrub shrub wetland complex is surrounded by roads and development. An approximately 19.11-acre wetland complex (Township Wetland 21-2) is located directly north of Wetland 21-3 and is separated from it by an access road.

The purpose of this letter is to summarize the results of the wetlands investigation. The wetlands investigation was conducted in a manner consistent with the 1987 *Corps of Engineers (USACE) Wetlands Delineation Manual* and 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2)*. The wetlands identification and delineation procedures outlined in these manuals require evaluation of site vegetation, soils, and hydrologic characteristics. Hydrophytic vegetation decisions are based on the wetland indicator status of species that are dominant in the plant community. Species with indicator statuses of obligate wetland (OBL), facultative wetland (FACW), and facultative (FAC) are considered wetland species, while species with indicator statuses of facultative upland (FACU) and upland (UPL) are considered upland species. FAC species are also commonly present in upland plant communities.

Literature Review

According to the Natural Resources Conservation Service (NRCS) *Web Soil Survey* (Attachment 1), the area of investigation contains Urban land-Capac-Colwood complex, 0 to 4 percent slopes (28 percent hydric rating).

The National Wetlands Inventory (NWI) map (Attachment 2) indicates a seasonally flooded, scrub-shrub wetland (mapping unit PSS1C) is located in the area where Township Wetlands 21-3 and 21-2 are mapped.



\\FTCH\ALLPROJECTS\2018\180225\WORK\REPT\MERIDIAN_WETLAND_RPT_2080 GRAND RIVER.DOCX

1515 Arboretum Drive, SE
Grand Rapids, Michigan 49546

616.575.3824
www.ftch.com

Fishbeck, Thompson, Carr & Huber, Inc.
engineers | scientists | architects | constructors



Site Investigation

The site investigation was conducted on January 26, 2018, after a killing frost, which impaired identification of herbaceous vegetation.

The area north of the Site's parking lot graded steeply down into a low area vegetated with trees and shrubs. The dominant vegetation consisted of wetland species, including eastern cottonwood (*Populus deltoides*, FAC), silver maple (*Acer saccharinum*, FACW), and swamp white oak (*Quercus bicolor*, FACW) trees and dogwood (*Cornus* sp., FACW) and European buckthorn (*Rhamnus cathartica*, FAC) shrubs. A colony of common reed (*Phragmites australis*, FACW) was present at the west end of the area of investigation.

The ground surface was frozen or covered with ice; therefore, evaluation of site soil was impeded. Standing water (i.e. ice) was observed within the wetland, verifying wetland hydrology. Standing water or ice extended to the toe of the slope at the east end of the area of investigation. The western half of the investigated area did not contain standing water but the surface soil appeared very moist.

A U.S. Army Corps of Engineers (USACE) Wetland Determination Data Form was completed at sampling point SP-A to describe site vegetation and hydrology (see Attachment 3). Photographs are included in Attachment 4. Site observations verified the presence of wetland vegetation and hydrology. It is likely wetland soil was also present at SP-A.

The wetland boundary north of the Site was flagged with pink ribbon labelled A1 through A9. Flagged points were surveyed with a handheld global positioning system (GPS) unit. The wetland boundary is noted on Figure 1. SHP files of the wetland boundary were emailed to the Township on January 31, 2018.

FTCH verified that the delineated wetland is hydrologically connected to Township Wetland 21-2 via an approximately 15-inch diameter culvert under the access road that divides the two wetlands.

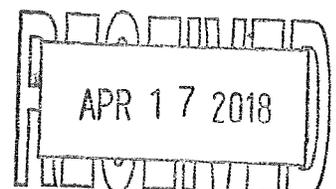
Conclusions

According to Michigan's Natural Resources and Environmental Protection Act (NREPA), Act 451, Section 30301(d), wetlands "contiguous to the Great Lakes or Lake St. Clair, an inland lake or pond, or a river or stream" or "more than 5 acres in size" are regulated by the State of Michigan. Both the State and Township also consider a wetland as regulated if it is separated from a regulated wetland by a barrier, such as a road, if the second wetland is contiguous to a body of water.

Evaluation of aerial photographs and the Ingham County Drain Commissioner's *Meridian Township Southwest Drain Map* confirmed that Township Wetland 21-2 is contiguous to a stream (i.e. the Okemos Drain). Therefore, Wetland 21-2 is regulated by the State and Township, regardless of its size. Additionally, Wetland 21-3 is regulated by the State and Township, even though it is separated from a regulated wetland by a road, due to the noted provisions in State and Township wetland regulations.

A Wetland Use Permit would be required from the Township for any of the following activities within the delineated wetland:

- Placing fill or permitting the placement of fill in regulated wetland.
- Dredging, removing, or permitting the removal of soil or minerals from regulated wetland.
- Constructing, operating, or maintaining any use or development in regulated wetland.
- Draining surface water from regulated wetland.



Mr. Mark Kieselbach
Page 3
February 1, 2018



In addition, the Township requires that all structures and grading activities during site development shall be set back 40 feet from the delineated wetland boundary and a natural vegetation strip shall be maintained within 20 feet of the wetland boundary.

If you have any questions or require additional information, please contact me at 616.464.3738 or email ehtripp@ftch.com.

Sincerely,

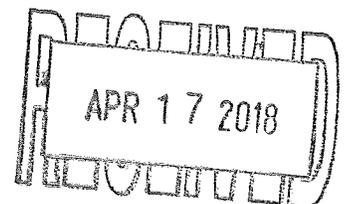
FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink that reads "Elise Hansen Tripp". The signature is written in a cursive, flowing style.

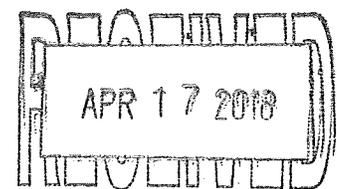
Elise Hansen Tripp, PWS

pmb
Attachments
By email

cc/att: Mr. Peter Menser – Meridian Township



Figures



LEGEND

- ⊙ Wetland Sampling Point
- Delineated Wetland
- - - Approximate Property Boundary

TOWNSHIP WETLAND 21-2

TOWNSHIP WETLAND 21-3

⊙ S.P.A

APR 17 2018

SITE PLAN

NORTH

0 20 40 FEET

W GRAND RIVER AVE

DATA SOURCE: 4/17/18 GOOGLE EARTH AERIAL

PROJECT NO.	180225
FIGURE NO.	1

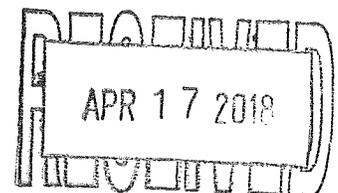
Charter Township of Meridian
 2080 West Grand River Avenue, Okemos, Michigan

Wetland Delineation

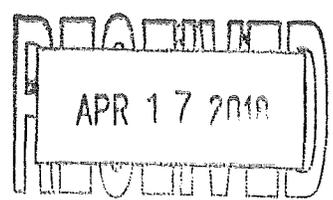
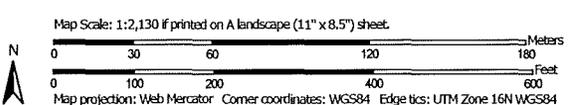
Made with
 ArcGIS
 10.4.1
 10/14/18

ficoh
 engineers
 scientists
 architects
 constructors

Attachment 1



Hydric Rating by Map Unit—Ingham County, Michigan
 (2080 Grand River Avenue, Okemos, MI)



Hydric Rating by Map Unit—Ingham County, Michigan
(2080 Grand River Avenue, Okemos, MI)

MAP LEGEND

- | | | | | | | | | | | | |
|-------------------------------|--|---|-------|--|---------------------|--|-----------|--|-------------|--|-------------|
| Area of Interest (AOI) | Transportation | | | | | | | | | | |
| Area of Interest (AOI) | <table border="0"> <tr> <td>⇄</td> <td>Rails</td> </tr> <tr> <td></td> <td>Interstate Highways</td> </tr> <tr> <td></td> <td>US Routes</td> </tr> <tr> <td></td> <td>Major Roads</td> </tr> <tr> <td></td> <td>Local Roads</td> </tr> </table> | ⇄ | Rails | | Interstate Highways | | US Routes | | Major Roads | | Local Roads |
| ⇄ | Rails | | | | | | | | | | |
| | Interstate Highways | | | | | | | | | | |
| | US Routes | | | | | | | | | | |
| | Major Roads | | | | | | | | | | |
| | Local Roads | | | | | | | | | | |
| Soils | Background | | | | | | | | | | |
| Soil Rating Polygons | Aerial Photography | | | | | | | | | | |
| Hydric (100%) | | | | | | | | | | | |
| Hydric (66 to 99%) | | | | | | | | | | | |
| Hydric (33 to 65%) | | | | | | | | | | | |
| Hydric (1 to 32%) | | | | | | | | | | | |
| Not Hydric (0%) | | | | | | | | | | | |
| Not rated or not available | | | | | | | | | | | |
| Soil Rating Lines | | | | | | | | | | | |
| Hydric (100%) | | | | | | | | | | | |
| Hydric (66 to 99%) | | | | | | | | | | | |
| Hydric (33 to 65%) | | | | | | | | | | | |
| Hydric (1 to 32%) | | | | | | | | | | | |
| Not Hydric (0%) | | | | | | | | | | | |
| Not rated or not available | | | | | | | | | | | |
| Soil Rating Points | | | | | | | | | | | |
| Hydric (100%) | | | | | | | | | | | |
| Hydric (66 to 99%) | | | | | | | | | | | |
| Hydric (33 to 65%) | | | | | | | | | | | |
| Hydric (1 to 32%) | | | | | | | | | | | |
| Not Hydric (0%) | | | | | | | | | | | |
| Not rated or not available | | | | | | | | | | | |
| Water Features | | | | | | | | | | | |
| Streams and Canals | | | | | | | | | | | |

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.
Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

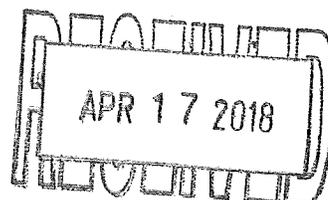
This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ingham County, Michigan
Survey Area Data: Version 15, Oct 5, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 1, 2011—Mar 10, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Hn	Houghton muck, 0 to 1 percent slopes	100	6.4	38.3%
UpA	Urban land-Capac-Colwood complex, 0 to 4 percent slopes	28	10.4	61.7%
Totals for Area of Interest			16.8	100.0%



Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

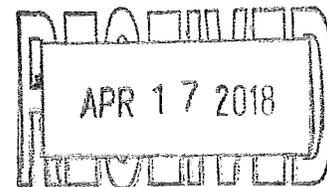
The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.



Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

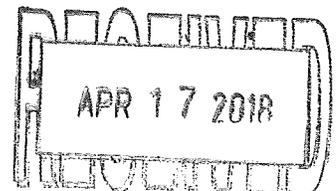
Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



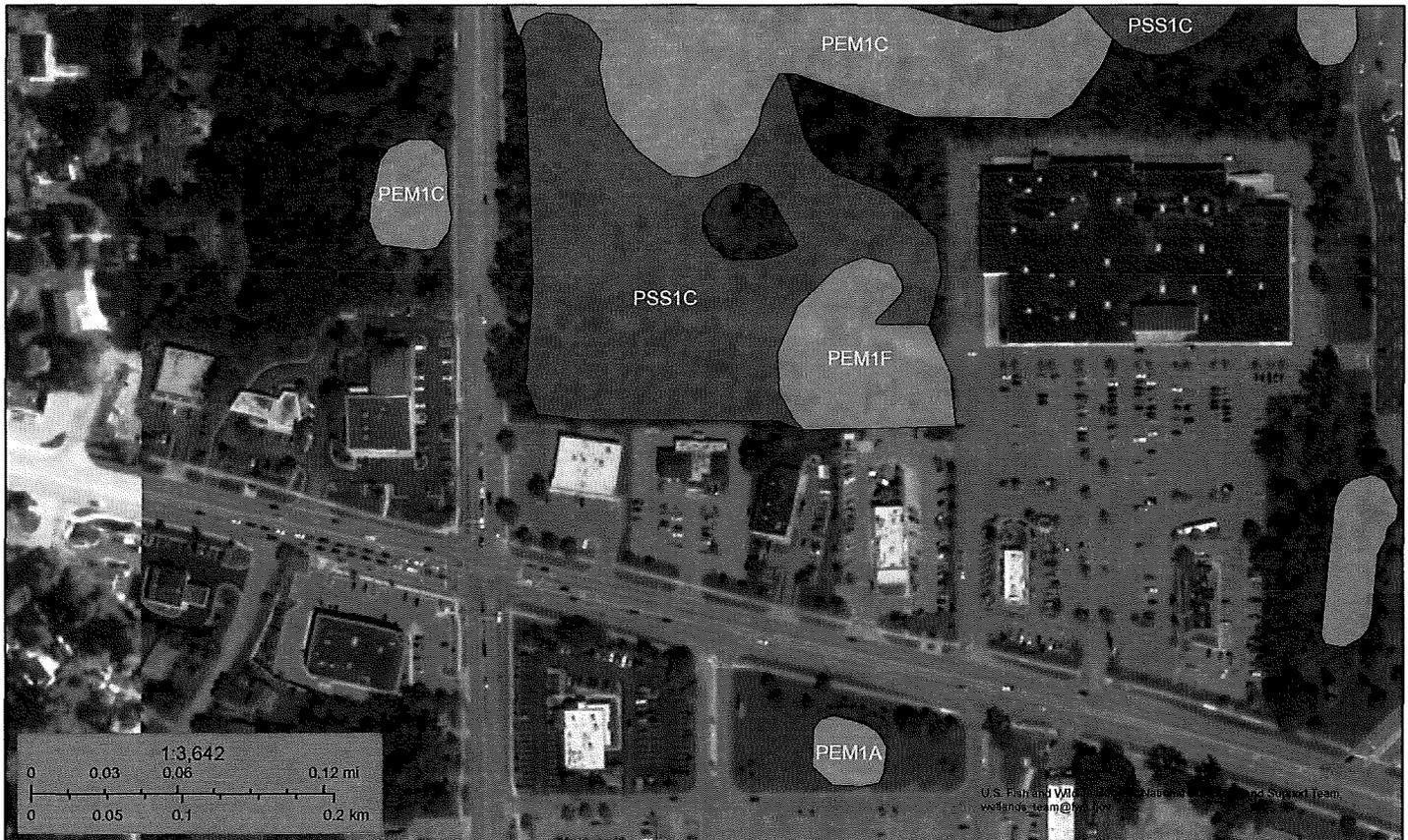
Attachment 2





U.S. Fish and Wildlife Service
National Wetlands Inventory

2080 West Grand River Avenue, Okemos,



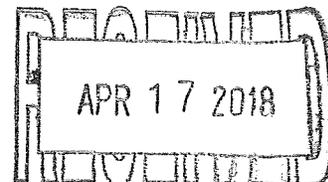
January 25, 2018

Wetlands

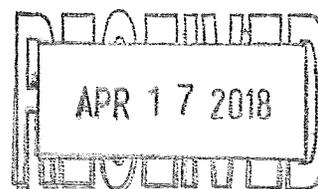
- | | | | | | |
|--|--------------------------------|--|-----------------------------------|--|-------|
| | Estuarine and Marine Deepwater | | Freshwater Emergent Wetland | | Lake |
| | Estuarine and Marine Wetland | | Freshwater Forested/Shrub Wetland | | Other |
| | Freshwater Pond | | Riverine | | |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NMI)
This page was produced by the NM mapper



Attachment 3



WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Meridian Twp/WDV 17-08 **City/County:** Meridian Township/Ingham **Sampling Date:** 26-Jan-18
Applicant/Owner: Kebs, Inc. **State:** Michigan **Sampling Point:** SP-A
Investigator(s): Elise Tripp **Section, Township, Range:** S. 21 T. 4N R. 1W
Landform (hillslope, terrace, etc.): Lowland **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR L **Lat.:** 42.72278988 **Long.:** 84.425839387 **Datum:** WGS84
Soil Map Unit Name: Urban land - Capac-Colwood complex, 0-4% slopes **NWI classification:** PSS1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
Are Vegetation , **Soil** , **or Hydrology** **significantly disturbed?** **Are "Normal Circumstances" present?** Yes No
Are Vegetation , **Soil** , **or Hydrology** **naturally problematic?** (If needed, explain any answers in Remarks.)

Summary of Findings - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: (Explain alternative procedures here or in a separate report.) Soil was not evaluated because the ground was frozen.	

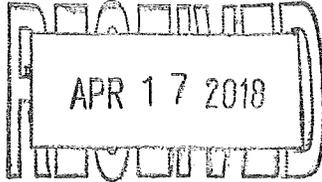
Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of 2 required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>3</u> Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

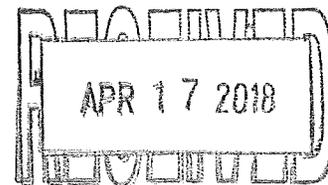


VEGETATION - Use scientific names of plants

Sampling Point: SP-A

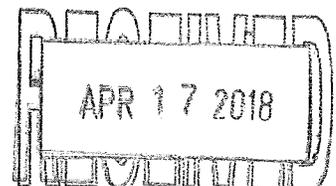
	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30'</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)
1. <u>Populus deltoides</u>	40	<input checked="" type="checkbox"/>	FAC	
2. <u>Acer saccharinum</u>	10	<input checked="" type="checkbox"/>	FACW	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
50 = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>305</u> (B) Prevalence Index = B/A = <u>2.905</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Populus deltoides</u>	15	<input checked="" type="checkbox"/>	FAC	
2. <u>Rhamnus cathartica</u>	10	<input checked="" type="checkbox"/>	FAC	
3. <u>Lonicera tatarica</u>	15	<input checked="" type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
40 = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	15	<input checked="" type="checkbox"/>	FACW	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
15 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				Definitions of Vegetation Strata: Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)



*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Attachment 4

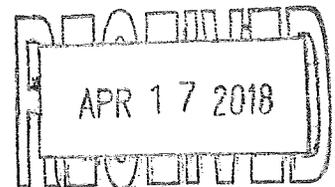


Fishbeck, Thompson, Carr & Huber, Inc.

Site Photographs
2080 West Grand River Avenue
Okemos, MI

frch

Project No. 180225



Township Wetland 21-3



Looking Northwest of SP-A



Looking Northeast of SP-A



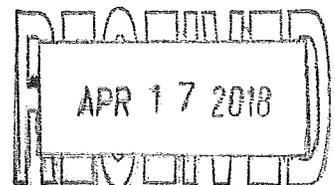
Project No.:

Project No. 180225

Date: 1/26/2018

Project Name:

Meridian Twp/WDV 17-08





Sampling Point SP-A

fr&h

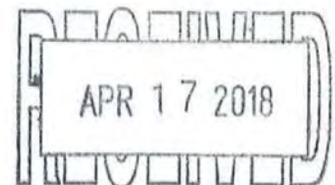
Project No.:

Project No. 180225

Date: 1/26/2018

Project Name:

Meridian Twp/WDV 17-08



Township Wetland 21-3



Looking East from Western Property Boundary



Looking West from Eastern Property Boundary



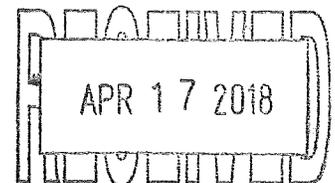
Project No.:

Project No. 180225

Date: 1/26/2018

Project Name:

Meridian Twp/WDV 17-08





TRAFFIC IMPACT STUDY

For The Proposed

Panera Bread Development

**Meridian Charter Township
Ingham County, MI**

December, 2017

Prepared by:

**Traffic Engineering
Associates, Inc.**

PO Box 100 • Saranac, Michigan 48881
517/627-6028 FAX: 517/627-6040

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EXECUTIVE SUMMARY

Traffic Engineering Associates, Inc. (TEA) conducted a traffic impact study to determine the distribution of new traffic generated by the proposed Panera Bread development in Meridian Charter Township, Ingham County, Michigan. The project site is located on the north side of Grand River Avenue (M-43), just east of Okemos Road.

The proposed Panera Bread development will consist of a 4,375 square foot building with a drive-thru window. There will be one (1) full access driveway on Grand River Avenue (M-43). The project has an anticipated completion date by the spring of 2019.

TEA, Inc. conducted vehicle counts during the midweek, of a non-holiday week in the month of November, 2017, at the intersection of Grand River Avenue (M-43) and Okemos Road, Grand River Avenue (M-43) and Marsh Road, and Grand River Avenue (M-43) and the Meijer/Chick-Fil-A driveway. Turning movement counts were taken during the AM and PM peak hours. The weekday AM and PM peak hours of existing traffic on the adjoining road system are 7:30 – 8:30 AM and 5:00 – 6:00 PM respectively.

A level of service analysis for existing traffic at the studied intersections during the AM, and PM peak hours was conducted. All existing turning movements at the studied intersection operate at an acceptable level of service (LOS D or better) during the AM, and PM peak hours except for several movements at the intersection of Grand River Avenue (M-43) and Okemos Road, and at the Grand River Avenue (M-43) and Meijer/Chick Fil A driveway. An optimization of the existing traffic signal at the Okemos Road intersection showed that the existing traffic signal is currently operating at an optimized condition.

According to the Meridian Township Planning Department, the total population growth for Meridian Charter Township from 2010 to 2016 is six point nine percent (6.9%). Using an annual average growth rate of one point one percent (1.1%), and with an anticipated completion date for the spring of 2019, background growth traffic volumes were calculated. All background turning movements at the studied intersection operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for several movements at the intersection of Grand River Avenue (M-43) and Okemos Road, and at the Grand River Avenue (M-43) and Meijer/Chick Fil A driveway. There was a minor increase in the level of service and vehicle delays at all studied intersections.

The ITE trip generation rates for Fast-Food Restaurant with Drive-Through Window (Land Use Code 934) were selected as representing the proposed development. It is projected that the Panera Bread development will generate 176 vehicle trips in the AM peak hour of which 86 trips are pass-by, 143 vehicle trips in the PM peak hour of which 72 trips are pass-by, and 2,060 vehicle trips daily.

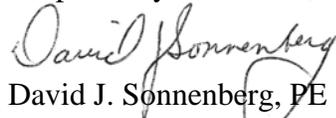
For future traffic conditions, all existing geometrics and traffic control were used. All future turning movements at the studied intersections are anticipated to operate at an acceptable level of



service (LOS D or better) during the AM and PM peak hours except for several movements at the intersection of Grand River Avenue (M-43) and Okemos Road, and at the Grand River Avenue (M-43) and Meijer/Chick Fil A driveway. There was a minor increase in the level of service and vehicle delays at all studied intersections. There are no recommendations to change the existing traffic signal timing or phasing at the studied intersections.

It is recommended that a three (3) lane cross-section be designed for the site driveway on Grand River Avenue (M-43) to provide for one (1) exclusive exiting left turn lane, one (1) exiting right turn lane and one (1) entering lane. The MDOT guidelines show that there is justification for a right turn lane for westbound Grand River Avenue (M-43) at the site driveway.

Respectfully Submitted,


David J. Sonnenberg, PE



INTRODUCTION



PROJECT DESCRIPTION

The purpose of this study is to determine the impact from new traffic generated by the proposed Panera Bread development in Meridian Charter Township, Ingham County, Michigan. The project site is located on the north side of Grand River Avenue (M-43) just east of Okemos Road.

The proposed Panera Bread development will consist of a 4,375 square foot building with a drive-thru window. There will be one (1) full access driveway on Grand River Avenue (M-43). The project has an anticipated completion date by the spring of 2019.

SCOPE OF WORK

The scope of work contained in this report is as follows:

- Analysis of existing traffic conditions on the adjoining street system.
- Analysis of background traffic conditions for the future year (spring of 2019) volumes without the proposed Panera Bread development.
- Projection of future traffic volumes to be generated by the proposed Panera Bread development.
- Evaluation of the impact of future traffic with the proposed Panera Bread development.
- Determination of what roadway and traffic control improvements, if any, will be needed to accommodate future (spring of 2019) traffic volumes.



EXISTING CONDITIONS



ROADWAYS AND INTERSECTIONS

Roadways

Grand River Avenue (M-43) is an east-west five-lane roadway with a two-way center left turn lane with concrete curb and gutter. The posted speed limit is 45 mph and there are sidewalks on both sides of the roadway. Grand River Avenue (M-43) is under the jurisdiction of the Michigan Department of Transportation.

Intersections

Grand River Avenue (M-43) and Okemos Road

The intersection of Grand River Avenue (M-43) and Okemos Road is a four-way intersection and is controlled by a traffic signal. The west approach on Grand River Avenue (M-43) is six (6) lanes with one (1) exclusive left turn lane, one (1) exclusive right turn lane, two (2) thru lanes and two (2) outbound lanes. The east approach is five (5) lanes with one (1) exclusive left turn lane, one (1) thru-right lane, one (1) thru lane and two (2) outbound lanes. The north and south approaches on Okemos Road are five (5) lanes with one (1) exclusive left turn lane, one (1) thru-right lane, one (1) thru lane and two (2) outbound lanes. There are pedestrian crossings with pedestrian signals on all four (4) approaches at this intersection.

Grand River Avenue (M-43) and Marsh Road

The intersection of Grand River Avenue (M-43) and Marsh Road is a four-way intersection and is controlled by a traffic signal. The east approach on Grand River Avenue (M-43) is six (6) lanes with one (1) exclusive left turn lane, one (1) exclusive right turn lane, two (2) thru lanes and two (2) outbound lanes. The west approach is five (5) lanes with one (1) exclusive left turn lane, one (1) thru-right lane, one (1) thru lane and two (2) outbound lanes. The north approach on Marsh Road is six (6) lanes with one (1) exclusive left turn lane, one (1) exclusive right turn lane, two (2) thru lanes and two (2) outbound lanes. The south approach is five (5) lanes with one (1) exclusive left turn lane, one (1) thru-right lane, one (1) thru lane and two (2) outbound lanes. There are pedestrian crossings with pedestrian signals on all four (4) approaches at this intersection.

Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway

This intersection is a “T” intersection controlled with a stop sign, with the northbound Meijer/Chick-Fil-A driveway stopping for Grand River Avenue (M-43). The west approach on Grand River Avenue (M-43) is a six (6) lane roadway with one (1) two-way left turn lane, two (2) thru lanes, one (1) right turn taper and two (2) outbound lanes. The east approach on Grand River Avenue (M-43) is a five (5) lane roadway with one (1) two-way left turn lane, two (2) thru lanes, and two (2) outbound lanes. The Meijer/Chick-Fil-A driveway is four (4) lanes with one (1) exclusive left turn lane, one (1) exclusive right turn lane and two (2) outbound lanes. It should be noted that the island between the inbound and outbound lanes of the driveway was constructed to discourage left turn movements off of Grand River Avenue (M-43). However, there was no apparent signage stating this and field observations show that westbound vehicles on Grand River Avenue (M-43) are turning left into the driveway. This project will assume that this driveway is a full access driveway.



LAND USE

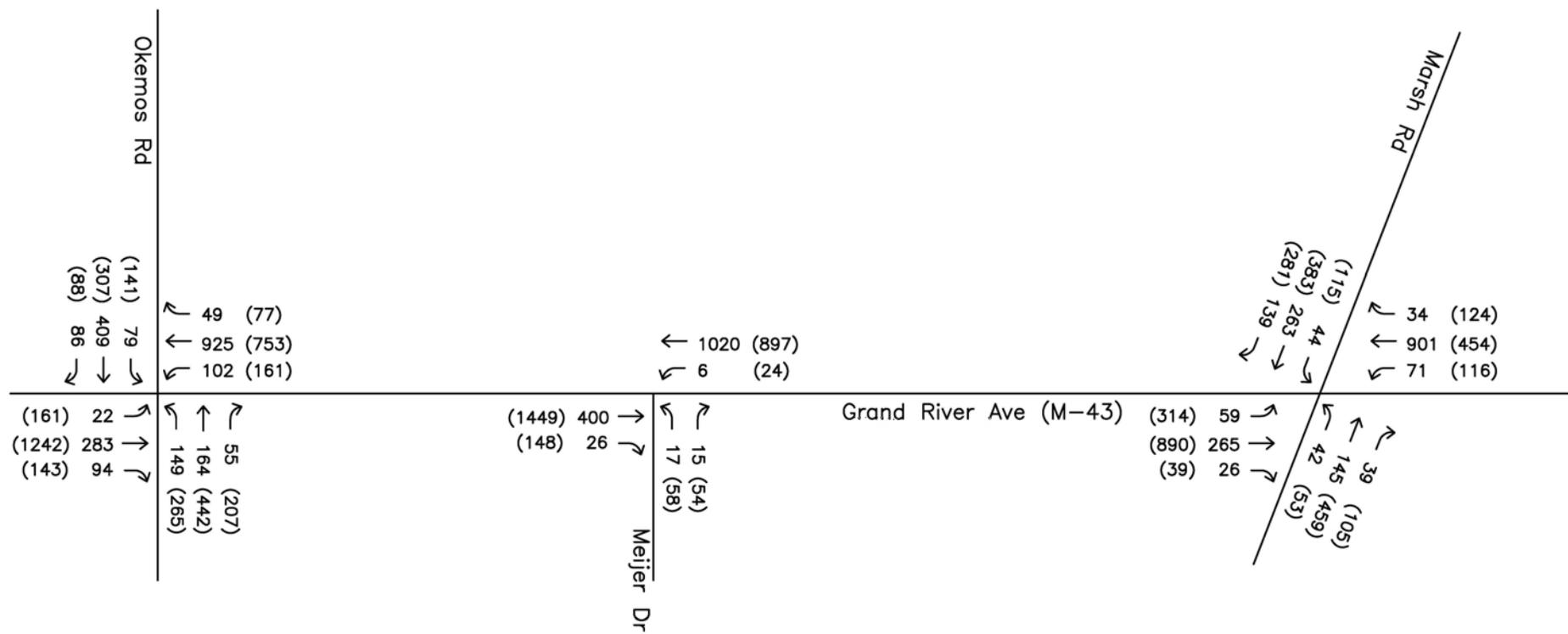
The proposed Panera Bread development will be located on the north side of Grand River Avenue (M-43). The proposed project site has an existing Discount Tire business on the east side and a small strip mall on the west side, each business has their own full access driveway. The surrounding land use is commercial development.

EXISTING TRAFFIC VOLUMES

TEA, Inc. conducted vehicle counts during the midweek, of a non-holiday week in the month of November, 2017, at the intersection of Grand River Avenue (M-43) and Okemos Road, Grand River Avenue (M-43) and Marsh Road, and Grand River Avenue (M-43) and the Meijer/Chick-Fil-A driveway. Turning movement counts were taken during the AM and PM peak hours.

The weekday AM and PM peak hours of existing traffic on the adjoining road system are 7:30 – 8:30 AM and 5:00 – 6:00 PM respectively. The existing peak hour volumes are illustrated in **Figure 1**.





LEVEL OF SERVICE ANALYSIS FOR EXISTING TRAFFIC

The critical intersections defined for this study were analyzed according to the methodologies published in the most recent edition of the *Highway Capacity Manual*. The analysis determines the “Level of Service” of the intersections and is based on factors such as the number and types of lanes, signal timing, traffic volumes, pedestrian activity, etc. The level of service (LOS) is defined by average vehicle delay in seconds created by a traffic control device for a given traffic movement or intersection approach.

Level of Service	Delay per Vehicle (seconds)	
	Non-Signalized	Signalized
A	< 10	<10
B	10 to 15	10 to 20
C	15 to 25	20 to 35
D	25 to 35	35 to 55
E	35 to 50	55 to 80
F	> 50	> 80

Levels of Service are expressed in a range from “A” to “F,” with “A” being the highest LOS and “F” representing the lowest LOS. Level of service “D” is considered the minimum acceptable LOS in an urban area. The above table shows the thresholds for Levels of Service “A” through “F” for non-signalized and signalized intersections, respectively.

All Level of Service computations contained in this report were based upon the Synchro software package which is approved by the Michigan Department of Transportation (MDOT). Delay per vehicle includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

All existing geometrics and traffic control devices were used to analyze the existing level of service and vehicle delays. The Level of Service analysis for existing traffic during the AM and PM peak hours is summarized in **Table 1**. All existing turning movements at the studied intersection operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for the following;

Grand River Avenue (M-43) and Okemos Road

- During the AM peak hour, the westbound thru-right movement on Grand River Avenue (M-43) operates at a LOS E with 58.7 seconds of vehicle delay.
- During the AM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue (M-43) operates at a LOS E with 78.9 seconds of vehicle delay.



- During the PM peak hour, the eastbound thru movement on Grand River Avenue (M-43) operates at a LOS F with 64.0 seconds of vehicle delay.
- During the PM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue (M-43) operates at a LOS E with 65.9 seconds of vehicle delay.
- During the PM peak hour, the northbound thru-right movement on Okemos Road operates at a LOS E with 59.5 seconds of vehicle delay.
- During the PM peak hour, the southbound left turn movement on Okemos Road to eastbound Grand River Avenue (M-43) operates at a LOS E with 62.2 seconds of vehicle delay.

Grand River Avenue (M-43) and Marsh Road

- During the PM peak hour, the southbound left turn movement on Marsh Road to eastbound Grand River Avenue (M-43) operates at a LOS E with 64.0 seconds of vehicle delay.

Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway

- During the PM peak hour, the northbound left turn movement from the Meijer/Chick-Fil-A driveway to westbound Grand River Avenue (M-43) operates at a LOS F with 72.1 seconds of vehicle delay.

LEVEL OF SERVICE ANALYSIS FOR MITIGATED EXISTING TRAFFIC

All existing geometrics and traffic control devices were used to analyze the existing level of service and vehicle delays to determine if an optimization of the traffic signal timing would improve the level of service and the vehicle delays at both Grand River Avenue (M-43) and Okemos Road, and Grand River Avenue (M-43) and Marsh Road intersections. The optimized traffic signal timing for both intersections showed very little changes in the level of service and the vehicle delays. Both intersection traffic signals are operating at their optimized phasing and timing.

With the existing stop sign control at the Meijer-Chick-Fil-A driveway, and with the driveway already configured with an exclusive left turn lane, the PM peak hour level of service F cannot be improved.



Table 1
Level of Service (LOS) Summary
Existing AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Grand River Avenue (M-43) and Okemos Road	EB Left	35.6	D	37.5	D
	EB Thru	26.0	C	<u>64.0</u>	<u>F</u>
	EB Right	25.7	C	24.2	C
	<i>EB Approach</i>	26.5	C	<u>57.6</u>	<u>E</u>
	WB Left	18.8	B	47.7	D
	WB Thru-Right	<u>58.7</u>	<u>E</u>	34.2	C
	<i>WB Approach</i>	54.6	D	36.3	D
	NB Left	<u>78.9</u>	<u>E</u>	<u>65.9</u>	<u>E</u>
	NB Thru-Right	46.6	D	<u>59.5</u>	<u>E</u>
	<i>NB Approach</i>	<u>59.9</u>	<u>E</u>	<u>62.2</u>	<u>E</u>
	SB Left	34.5	C	<u>62.2</u>	<u>E</u>
	SB Thru-Right	43.8	D	47.6	D
	<i>SB Approach</i>	42.8	D	52.0	D
	Intersection	48.1	D	52.5	D
Grand River Avenue (M-43) and Marsh Road	EB Left	15.6	B	31.5	C
	EB Thru-Right	15.6	B	52.1	D
	<i>EB Approach</i>	15.6	B	46.7	D
	WB Left	11.3	B	34.0	C
	WB Thru	51.3	D	29.0	C
	WB Right	24.9	C	27.5	C
	<i>WB Approach</i>	47.6	D	29.5	C
	NB Left	46.5	D	39.5	D
	NB Thru-Right	46.9	D	43.3	D
	<i>NB Approach</i>	47.1	D	43.2	D
	SB Left	43.7	D	<u>64.0</u>	<u>E</u>
	SB Thru	43.8	D	40.6	D
	SB Right	20.0	B	27.7	C
	<i>SB Approach</i>	36.4	D	39.4	D
Intersection	39.7	D	40.8	D	

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



Table 1 (Continued)
Level of Service (LOS) Summary
Existing AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway	EB Thru-Right	Free	A	Free	A
	<i>EB Approach</i>	<i>0.0</i>	<i>A</i>	<i>0.0</i>	<i>A</i>
	WB Left	8.3	A	15.3	C
	WB Thru	Free	A	Free	A
	<i>WB Approach</i>	<i>0.0</i>	<i>A</i>	<i>0.4</i>	<i>A</i>
	NB Left	16.0	C	<u>72.1</u>	<u>F</u>
	NB Right	9.7	A	19.9	C
	<i>NB Approach</i>	<i>13.0</i>	<i>B</i>	<u>46.9</u>	<u>E</u>
	Intersection	0.3	A	2.4	A

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



BACKGROUND CONDITIONS



BACKGROUND TRAFFIC GROWTH VOLUMES

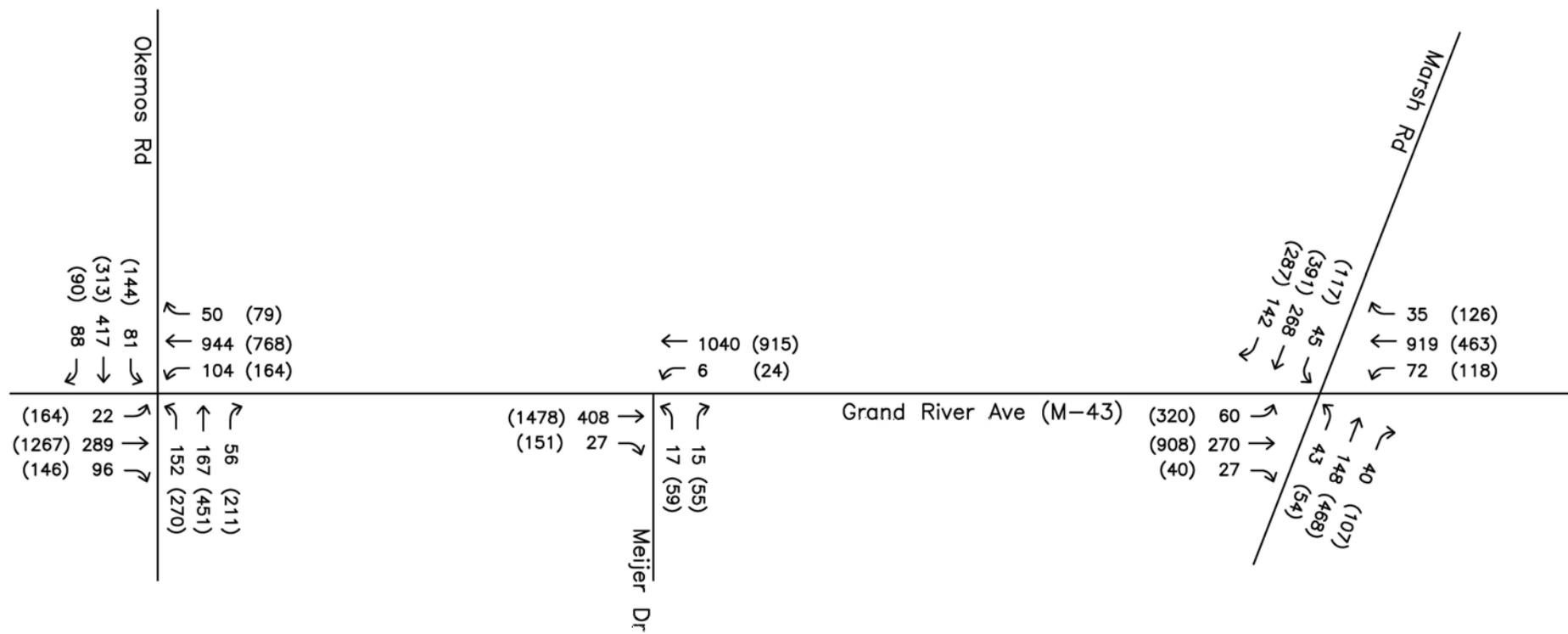
Background traffic represents future volumes without the traffic generated by the proposed Panera Bread development. The target year for completion is the spring of 2019, approximately one (1) and one-half year.

According to the Meridian Township Planning Department, the total population growth for Meridian Charter Township from 2010 to 2016 is six point nine percent (6.9%). Using an annual average growth rate of one point one percent (1.1%), and with an anticipated completion date for the spring of 2019, background growth traffic volumes were calculated. Background volumes are displayed in **Figure 2**.

BACKGROUND DEVELOPMENT TRAFFIC VOLUMES

The only new development identified in the project area is the Chick-Fil-A restaurant located across the street from the site, on the south side of Grand River Avenue (M-43). This new facility was open for business when the new traffic counts were taken; therefore, this was not considered a future new development. Background development traffic volumes were not included in this study.





LEVEL OF SERVICE ANALYSIS FOR BACKGROUND GROWTH TRAFFIC

All existing geometrics and traffic control devices were used to analyze the background growth level of service and vehicle delays.

The Level of Service analysis for background traffic during the AM and PM peak hours is summarized in **Table 2**. All background turning movements at the studied intersection operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for the following:

Grand River Avenue (M-43) and Okemos Road

- During the AM peak hour, the westbound thru-right movement on Grand River Avenue (M-43) is expected to operate at a LOS E with 63.0 seconds of vehicle delay, an increase of 4.3 seconds from existing conditions.
- During the AM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue (M-43) is projected to operate at a LOS F with 83.4 seconds of vehicle delay, an increase of 4.5 seconds from existing conditions.
- During the PM peak hour, the eastbound thru movement on Grand River Avenue (M-43) is anticipated to operate at a LOS F with 70.4 seconds of vehicle delay, an increase of 6.4 seconds from existing conditions.
- During the PM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue (M-43) is expected to operate at a LOS E with 67.3 seconds of vehicle delay, an increase of 1.4 seconds from existing conditions.
- During the PM peak hour, the northbound thru-right movement on Okemos Road is projected to operate at a LOS E with 60.8 seconds of vehicle delay, an increase of 1.3 seconds from existing conditions.
- During the PM peak hour, the southbound left turn movement on Okemos Road to eastbound Grand River Avenue (M-43) is anticipated to operate at a LOS E with 62.8 seconds of vehicle delay, an increase of 0.6 seconds from existing conditions.

Grand River Avenue (M-43) and Marsh Road

- During the PM peak hour, the southbound left turn movement on Marsh Road to eastbound Grand River Avenue (M-43) is expected to operate at a LOS E with 64.8 seconds of vehicle delay, an increase of 0.8 seconds from existing conditions.

Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway

- During the PM peak hour, the northbound left turn movement from the Meijer/Chick-Fil-A driveway to westbound Grand River Avenue (M-43) is projected to operate at a LOS F with 78.4 seconds of vehicle delay, an increase of 6.3 seconds from existing conditions.



Table 2
Level of Service (LOS) Summary
Background Growth for AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Grand River Avenue (M-43) and Okemos Road	EB Left	36.2	D	38.6	D
	EB Thru	26.1	C	<u>70.4</u>	<u>F</u>
	EB Right	25.8	C	24.3	C
	<i>EB Approach</i>	26.6	C	<u>62.8</u>	<u>E</u>
	WB Left	19.2	B	49.8	D
	WB Thru-Right	<u>63.0</u>	<u>E</u>	34.8	C
	<i>WB Approach</i>	<u>58.6</u>	<u>E</u>	37.1	D
	NB Left	<u>83.4</u>	<u>F</u>	<u>67.3</u>	<u>E</u>
	NB Thru-Right	46.5	D	<u>60.8</u>	<u>E</u>
	<i>NB Approach</i>	<u>61.7</u>	<u>E</u>	<u>63.6</u>	<u>E</u>
	SB Left	34.3	C	<u>62.8</u>	<u>E</u>
	SB Thru-Right	44.0	D	47.8	D
	<i>SB Approach</i>	42.9	D	52.3	D
	Intersection	50.1	D	<u>55.1</u>	<u>E</u>
Grand River Avenue (M-43) and Marsh Road	EB Left	15.9	B	32.9	C
	EB Thru-Right	15.7	B	54.6	D
	<i>EB Approach</i>	15.7	B	48.9	D
	WB Left	11.5	B	34.7	C
	WB Thru	54.6	D	29.1	C
	WB Right	24.9	C	27.6	C
	<i>WB Approach</i>	50.6	D	29.8	C
	NB Left	46.5	D	39.3	D
	NB Thru-Right	46.8	D	43.5	D
	<i>NB Approach</i>	47.0	D	43.3	D
	SB Left	43.6	D	<u>64.8</u>	<u>E</u>
	SB Thru	43.7	D	40.4	D
	SB Right	20.0	C	28.1	C
	<i>SB Approach</i>	36.3	D	39.6	D
Intersection	41.2	D	41.8	D	

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



Table 2 (Continued)
Level of Service (LOS) Summary
Background Growth for AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway	EB Thru-Right	Free	A	Free	A
	<i>EB Approach</i>	<i>0.0</i>	<i>A</i>	<i>0.0</i>	<i>A</i>
	WB Left	8.3	A	15.6	C
	WB Thru	Free	A	Free	A
	<i>WB Approach</i>	<i>0.0</i>	<i>A</i>	<i>0.4</i>	<i>A</i>
	NB Left	16.2	C	<u>78.4</u>	<u>F</u>
	NB Right	9.8	A	20.4	C
	<i>NB Approach</i>	<i>13.2</i>	<i>B</i>	<u>50.4</u>	<u>F</u>
Intersection	0.3	A	2.6	A	

Note: Delay = Average control delay per vehicle in seconds.
 LOS = Level of Service



LEVEL OF SERVICE ANALYSIS FOR MITIGATED BACKGROUND TRAFFIC

All existing geometrics and traffic control devices were used to analyze the background level of service and vehicle delays to determine if an optimization of the traffic signal timing would improve the level of service and the vehicle delays at both Grand River Avenue (M-43) and Okemos Road, and Grand River Avenue (M-43) and Marsh Road intersections. The optimized traffic signal timing for both intersections showed very little changes in the level of service and the vehicle delays under existing conditions, and with very small increments in the vehicle delay between existing conditions and background conditions, signal optimization is not needed. Both intersection traffic signals are operating at their optimized phasing and timing.

With the existing stop sign control at the Meijer-Chick-Fil-A driveway, and the driveway is already configured with an exclusive left turn lane, the PM peak hour level of service F cannot be improved.



FUTURE CONDITIONS



SITE TRAFFIC GENERATION

The trip generation rates for the Panera Bread development were derived from the ITE Trip Generation Manual (10th edition). The ITE trip generation rates for Fast-Food Restaurant with Drive-Through Window (Land Use Code 934) were selected as representing the proposed 4,375 square foot restaurant. The ITE description of Fast-Food Restaurant with Drive-Through Window is as follows:

This category includes fast-food restaurants with drive-through windows. This type of restaurant is characterized by a large drive-through clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours per day) and high turnover rates for eat-in customers. These limited-service eating establishments do not provide table service. Non-drive-through patrons generally order at a cash register and pay before they eat.

Primary Trips

Primary trips are made for the specific purpose of visiting the generator (Panera Bread development). Primary trips do add new traffic to the adjoining road system.

Pass-By Trips

Significant shares of trips generated by commercial enterprises are classified as “pass-by” trips. Pass-by trips are already present in the existing traffic stream and represent trips which have other ultimate destinations which are interrupted to visit the commercial site. Pass-by trips are already “passing by” the site and therefore do not add new traffic to the adjoining street system. Pass-by trips are attracted from traffic passing the site on adjacent streets (Grand River Avenue) that offer direct access to the generator (Panera Bread development).

It is projected that the Panera Bread development will generate 176 vehicle trips in the AM peak hour of which 86 trips are pass-by, 143 vehicle trips in the PM peak hour of which 72 trips are pass-by, and 2,060 vehicle trips daily. The projected traffic to be generated by the proposed development is summarized in **Table 3**.



Table 3

**Vehicle Trip Generation Summary
Panera Bread Development**

Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday
		In	Out	Total	In	Out	Total	Total
Fast-Food Restaurant with Drive-Through Window (Code 934)	4,375 Sq. Ft.	90	86	176	74	69	143	2,060
Pass-By Trips		44	42	86	37	35	72	N/A
Total Primary Trips		46	44	90	37	34	71	2,060



FUTURE SITE TRAFFIC DISTRIBUTION

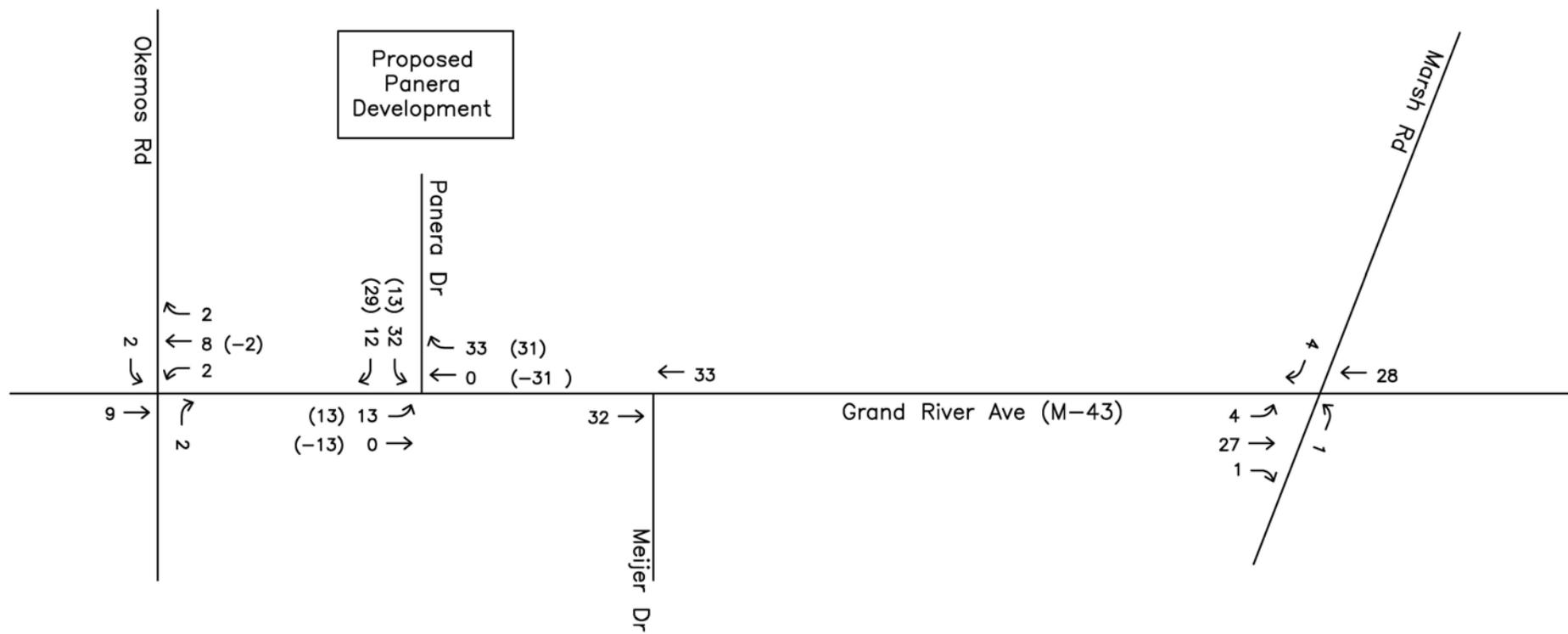
The commercial traffic distribution was based on existing traffic volumes that entered the project area as commercial retail establishments are a destination, not an origin type of facility. The peak hour distribution for the commercial generated traffic is below.

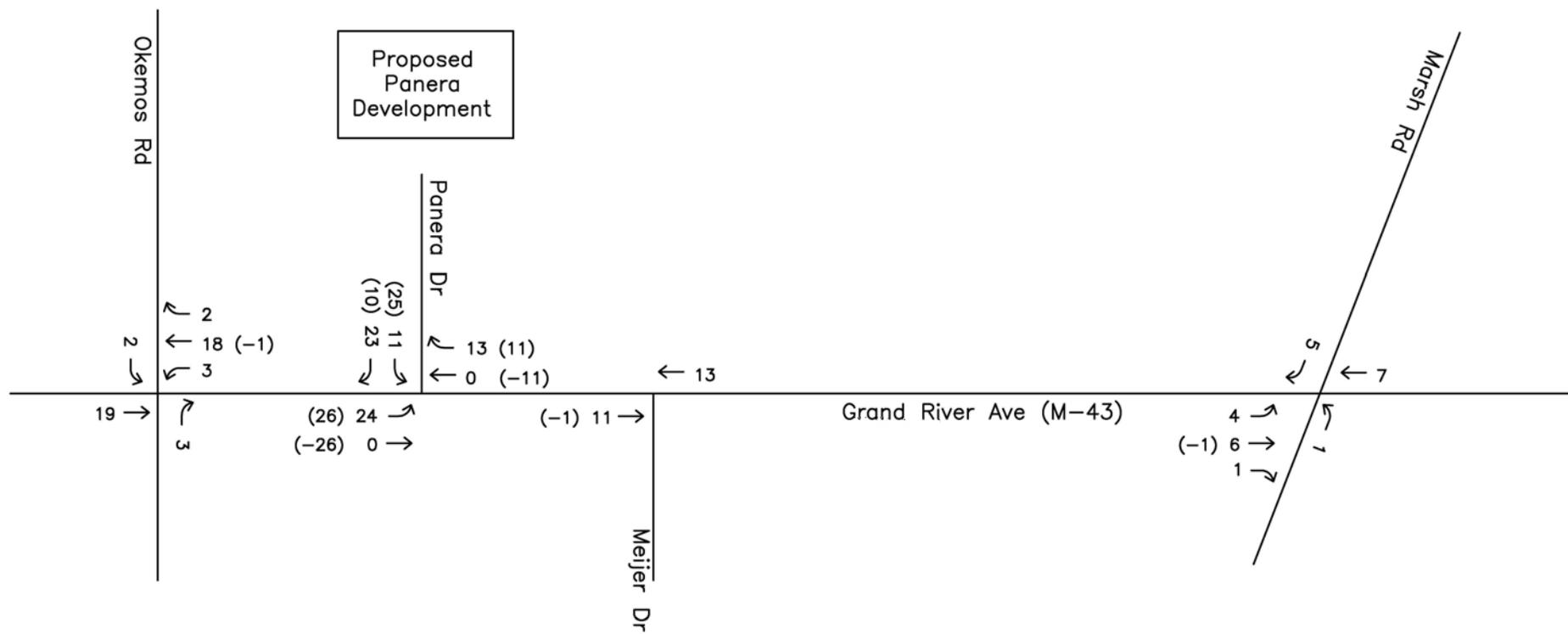
Direction of Approach and Departure	AM Peak Hour	PM Peak Hour
To/From the WEST on Grand River Avenue	19%	52%
To/From the EAST on Grand River Avenue	60%	19%
To/From the NORTH on Okemos Road	5%	6%
To/From the SOUTH on Okemos Road	4%	9%
To/From the NORTH on Marsh Road	9%	12%
To/From the SOUTH on Marsh Road	3%	2%

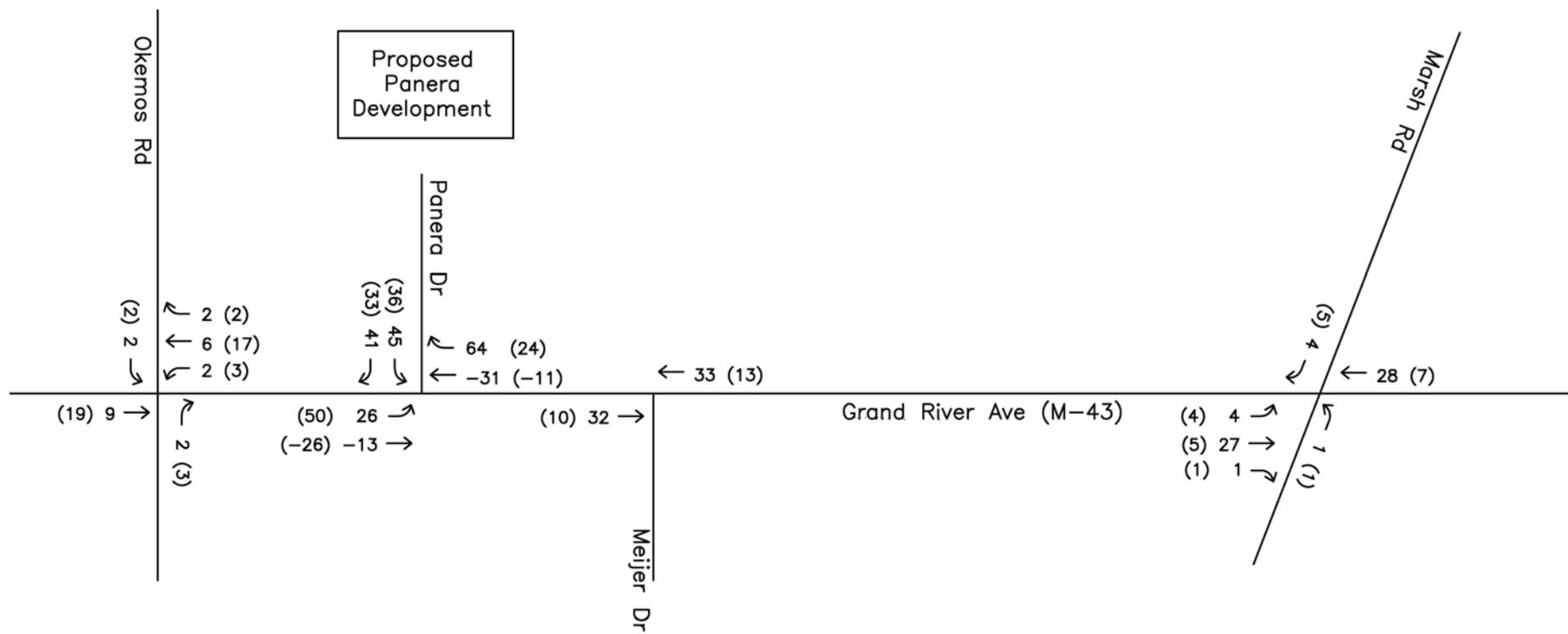
The estimated site generated traffic for the proposed Panera Bread development during the AM peak hour is shown in **Figure 3A**, the PM peak hour is illustrated in **Figure 3B**, and the total site traffic is displayed in **Figure 3C**.

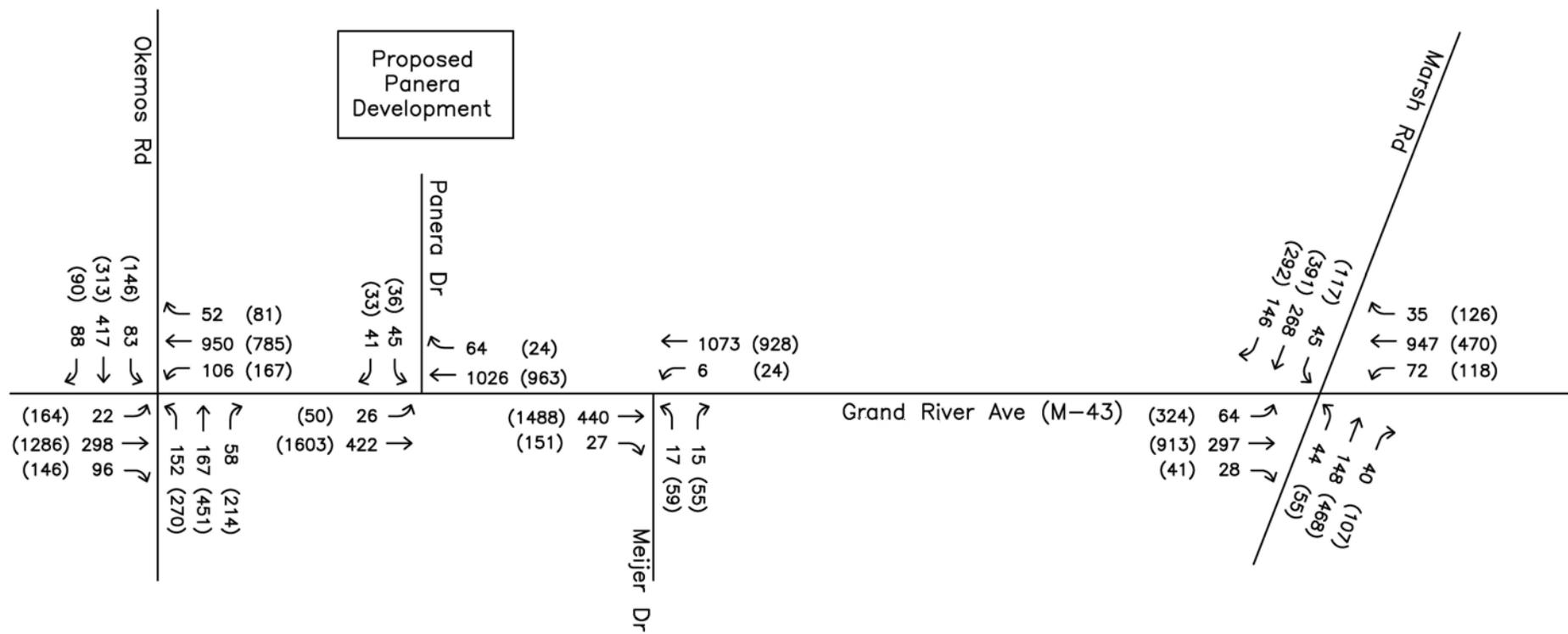
Adding the total site generated traffic (**Figure 3C**) to the background growth traffic volumes (**Figure 2**) results in the total future traffic volumes for the weekday AM and PM peak hours, which are illustrated in **Figure 4**.











LEVEL OF SERVICE ANALYSIS FOR FUTURE TRAFFIC

The level of service analysis for future AM and PM peak hour traffic is summarized in **Table 4**. For future traffic conditions, all existing geometrics and traffic control were used. All future turning movements at the studied intersections are anticipated to operate at an acceptable level of service (LOS D or better) during the peak hours except for the following movements;

Grand River Avenue (M-43) and Okemos Road

- During the AM peak hour, the westbound thru-right movement on Grand River Avenue (M-43) is expected to operate at a LOS E with 70.3 seconds of vehicle delay, an increase of 7.3 seconds from background conditions.
- During the AM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue (M-43) is projected to operate at a LOS F with 83.4 seconds of vehicle delay.
- During the PM peak hour, the eastbound thru movement on Grand River Avenue (M-43) is anticipated to operate at a LOS F with 75.5 seconds of vehicle delay, an increase of 5.1 seconds from background conditions.
- During the PM peak hour, the northbound left turn movement on Okemos Road to westbound Grand River Avenue (M-43) is expected to operate at a LOS E with 65.0 seconds of vehicle delay.
- During the PM peak hour, the northbound thru-right movement on Okemos Road is projected to operate at a LOS E with 60.8 seconds of vehicle delay.
- During the PM peak hour, the southbound left turn movement on Okemos Road to eastbound Grand River Avenue (M-43) is anticipated to operate at a LOS E with 63.3 seconds of vehicle delay, an increase of 0.5 seconds from background conditions.

Grand River Avenue (M-43) and Marsh Road

- During the AM peak hour, the westbound thru movement on Grand River Avenue (M-43) is projected to operate at a LOS E with 61.2 seconds of vehicle delay, an increase of 6.6 seconds from background conditions.
- During the PM peak hour, the eastbound thru-right turn movement on Grand River Avenue (M-43) is anticipated to operate at a LOS E with 55.6 seconds of vehicle delay, an increase of 1.0 second from background conditions.
- During the PM peak hour, the southbound left turn movement on Marsh Road to eastbound Grand River Avenue (M-43) is expected to operate at a LOS E with 64.6 seconds of vehicle delay.



Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway

- During the PM peak hour, the northbound left turn movement from the Meijer/Chick-Fil-A driveway to westbound Grand River Avenue (M-43) is projected to operate at a LOS F with 80.9 seconds of vehicle delay, an increase of 2.5 seconds from background conditions.



Table 4
Level of Service (LOS) Summary
Future AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Grand River Avenue (M-43) and Okemos Road	EB Left	36.3	D	39.3	D
	EB Thru	26.2	C	<u>75.5</u>	<u>F</u>
	EB Right	25.8	C	24.3	C
	<i>EB Approach</i>	26.6	<i>C</i>	<u>67.1</u>	<u>E</u>
	WB Left	20.7	C	51.5	D
	WB Thru-Right	<u>70.3</u>	<u>E</u>	35.5	D
	<i>WB Approach</i>	<u>65.3</u>	<u>E</u>	38.1	D
	NB Left	<u>83.4</u>	<u>F</u>	<u>65.0</u>	<u>E</u>
	NB Thru-Right	46.4	D	<u>60.8</u>	<u>E</u>
	<i>NB Approach</i>	<u>61.6</u>	<u>E</u>	<u>62.9</u>	<u>E</u>
	SB Left	34.4	C	<u>63.3</u>	<u>E</u>
	SB Thru-Right	44.1	D	47.8	D
	<i>SB Approach</i>	42.9	D	52.5	D
	Intersection	53.0	D	<u>56.8</u>	<u>E</u>
Grand River Avenue (M-43) and Marsh Road	EB Left	16.0	B	33.3	C
	EB Thru-Right	16.0	B	<u>55.6</u>	<u>E</u>
	<i>EB Approach</i>	16.0	<i>B</i>	49.7	D
	WB Left	11.8	B	34.7	C
	WB Thru	<u>61.2</u>	<u>E</u>	29.2	C
	WB Right	24.9	C	27.6	C
	<i>WB Approach</i>	<u>56.6</u>	<u>E</u>	29.8	C
	NB Left	46.5	D	39.4	D
	NB Thru-Right	46.7	D	43.5	D
	<i>NB Approach</i>	47.0	D	43.3	D
	SB Left	43.6	D	<u>64.6</u>	<u>E</u>
	SB Thru	43.7	D	40.4	D
	SB Right	20.1	C	28.2	C
	<i>SB Approach</i>	36.2	D	39.5	D
Intersection	43.9	D	42.1	D	

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



Table 4 (Continued)
Level of Service (LOS) Summary
Future AM and PM Peak Hour Traffic

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay	LOS	Avg. Delay	LOS
Grand River Avenue (M-43) and Meijer/Chick-Fil-A Driveway	EB Thru-Right	Free	A	Free	A
	<i>EB Approach</i>	<i>0.0</i>	<i>A</i>	<i>0.0</i>	<i>A</i>
	WB Left	8.4	A	15.8	C
	WB Thru	Free	A	Free	A
	<i>WB Approach</i>	<i>0.0</i>	<i>A</i>	<i>0.4</i>	<i>A</i>
	NB Left	16.7	C	<u>80.9</u>	<u>F</u>
	NB Right	9.9	A	20.6	C
	<i>NB Approach</i>	<i>13.5</i>	<i>B</i>	<u>51.8</u>	<u>F</u>
Intersection	0.3	A	2.7	A	
Grand River Avenue (M-43) and Panera Driveway	EB Left-Thru	1.1	A	5.3	A
	WB Thru-Left	Free	A	Free	A
	SB Left-Right	27.1	D	13.4	B
	Intersection	1.6	A	3.6	A

Note: Delay = Average control delay per vehicle in seconds.
LOS = Level of Service



LEVEL OF SERVICE ANALYSIS FOR MITIGATED FUTURE TRAFFIC

All existing geometrics, traffic control devices and traffic signal timing plans were used to analyze the future mitigated level of service and vehicle delays. The increase in the level of service and vehicle delays were minimal when comparing the background conditions to future conditions at all the studied intersections. There are no recommendations for mitigation for this project.



SIGNIFICANT FINDINGS



DRIVEWAY ANALYSIS FOR A TURN LANE OR TAPER

The Michigan Department of Transportation (MDOT) Geometric Design Guidance Document was used to determine the necessity of a right turn lane/taper, at the Panera Bread development driveway on Grand River Avenue (M-43).

Using the MDOT Geometric Design Guidance Document guideline 1.1.4, Traffic Volume Guidelines for Right-Turn Lanes and Tapers, the results show that the combination of right turning traffic and the peak hour approach volumes during the AM peak hour justify the installation of an westbound right turn lane on Grand River Avenue (M-43) at the site driveway.

INTERSECTION IMPROVEMENT CONSIDERATIONS

Grand River Avenue (M-43) and Okemos Road

This intersection is a signalized intersection. The current cycle length and splits are optimized and no mitigation is recommended for this intersection.

Grand River Avenue (M-43) and Marsh Road

This intersection is a signalized intersection. The current cycle length and splits are optimized and no mitigation is recommended for this intersection.

Grand River Avenue (M-43) and Panera Bread Driveway

The driveway will be controlled by a southbound stop sign. The proposed site plan shows that this driveway will be a full access drive with one (1) inbound lane and one (1) outbound lane. All movements are anticipated to operate at a LOS B or better except during the AM peak hour where the southbound left/right movement from the Panera Bread driveway is projected to operate at a LOS D with a vehicle delay of 27.1 seconds.

The projected future turning volumes from the proposed Panera Bread driveway during the AM peak hour show that the left turning traffic and the right turning traffic is almost equal. If the existing 30 foot driveway were widened to a 36 foot driveway and marked for an exclusive left turn lane and an exclusive right turn lane, the level of service for the left turning traffic would remain the same; however, the level of service for the right turn traffic would improve to a level of service B with only 14.8 seconds of vehicle delay.

The MDOT guidelines show that there is justification for a right turn lane on westbound Grand River Avenue (M-43).



CONCLUSIONS

The findings of this report are as follows:

- It is recommended that the Panera Bread driveway be widened to 36 feet to provide for an exclusive left turn lane and an exclusive right turn lane.
- The MDOT guidelines show that during the AM peak hour, there is justification for a right turn lane for westbound Grand River Avenue (M-43) at the Panera Bread driveway.



SUPPLEMENTAL INFORMATION



Supplemental Information

Site Plan
Vehicle Volume Counts
Timing Plans
LOS Computations
MDOT Traffic Volume Guidelines for
Right-Turn Lanes and Tapers



**C.P.U.D. PLAN FOR:
2080 Grand River
MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN**

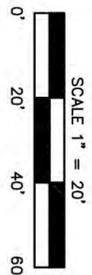
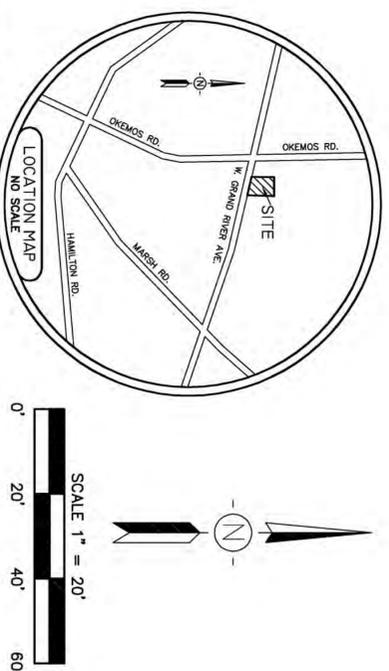
CLIENT:
TENTHLY 9 INVESTMENTS, LLC
172 MARBLE MANHOLE
HAZEL PARK, MI. 48630
PH: (248) 361-1666
FAX: (248) 298-0531

ENGINEER/SURVEYOR:
KES ENGINEERING
2116 HASLETT RD.
HAZELT, MI. 48840
PH: (517) 339-1014
FAX: (517) 339-8047

NORTH 1/4 CORNER
SECTION 21, 14N, 14W
NORTH LINE SECTION 21
(M) 887'47.52"E
(M) 1355.76'

NORTH LINE SECTION 21
N89°59'25"E 1351.91'

NORTHEAST CORNER
SECTION 21, 14N, 14W



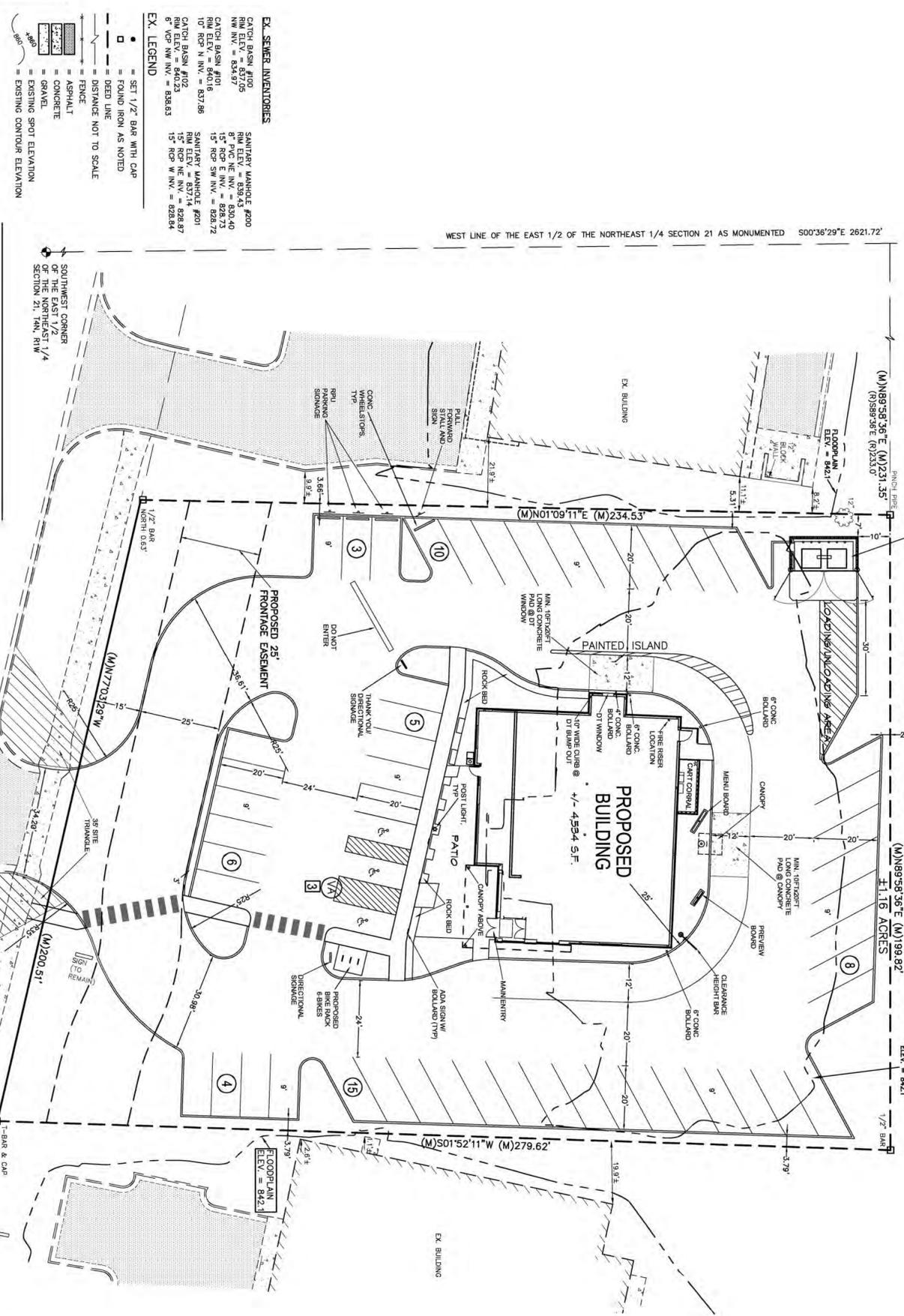
NORTHWEST CORNER
OF THE EAST 1/2
SECTION 21, 14N, 14W
(R) SOUTH (R) 1307'
(M) S00°36'29"E (M) 1306.27'

(M) 887'58'36"E (M) 231.35'
(R) S89°38'E (R) 233.0'

(M) 887'58'36"E (M) 199.82'
11.16 ACRES

FLOOR PLAN
ELEV. = 842.1

WEST LINE OF THE EAST 1/2 OF THE NORTHEAST 1/4 SECTION 21 AS MONUMENTED S00°36'29"E 2621.72'



EX. SEWER INVENTORIES

CATCH BASIN #100
SANITARY MANHOLE #200
SANITARY MANHOLE #201
SANITARY MANHOLE #202
SANITARY MANHOLE #203
SANITARY MANHOLE #204

EX. LEGEND

- SET 1/2" BAR WITH CAP
- FOUND IRON AS NOTED
- DEED LINE
- DISTANCE NOT TO SCALE
- FENCE
- ASPHALT
- CONCRETE
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR ELEVATION

BENCHMARKS

BENCHMARK #1 ELEV. = 842.24 (NAV08)
CENTER OF BLACK "X" NORTH SIDE OF CONCRETE LIGHT POLE
BASED IN SOUTHWEST CORNER ISLAND OF FOUR CORNERS ISLANDS IN
EAST 1/2 OF SECTION 21, 14N, 14W. BENCHMARK #1 IS LOCATED IN
OF BACK OF CURB OF GRAND RIVER AVENUE AND 443'
WESTERLY OF CENTERLINE OF ENTRANCE DRIVE TO #2080
GRAND RIVER AVENUE.

BENCHMARK #2 ELEV. = 840.83 (NAV08)
NORTH PLANK BOLT UNDER 8" X 8" FIRE HYDRANT
NORTH PLANK BOLT UNDER 8" X 8" FIRE HYDRANT
AVENUE 414' EASTERLY OF THE EXTENSION OF THE WESTERLY
WALL LINE OF #2080 GRAND RIVER AVENUE.

LEGEND

- EXT. CONTOURS
- EXT. WATER MAIN
- EXT. SANITARY SEWER
- EXT. STORM SEWER
- EXT. ELEVATIONS
- PROPOSED WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- MANHOLE (NEW)
- MANHOLE (EXIST.)
- UTILITY EMBLEMMENT
- CENTER LINE OF ROAD
- PROPERTY LINE
- FIRE HYDRANT
- WATER VALVE
- THURST BLOCK
- PROPOSED TOP OF CURB ELEV.

EX. LEGEND

- EDGE OF WOODS
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSH
- UNDERGROUND TELEVISION
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- CATCHBASIN
- SIGN
- POST
- AIR CONDITIONING UNIT

NOTE: WATER SHALL HAVE 10' HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.
NOTE: WATER SHALL HAVE 10' HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.



LEGAL DESCRIPTION:
(As provided by Devon Title Agency, agents for Old Republic National Title Insurance Company, Commitment No. 253951, Revision #1, dated January 20, 2017)

That part of the Southeast 1/4 of the Northeast 1/4 of Section 21, 14N, 14W, described as beginning at a point which is 1307 feet South and 233.0 feet South 89°38' East from the North 1/2 post of the Northeast 1/4 of Section 21, 14N, 14W, thence South 89°38' East 233.0 feet to the centerline of US-16 (now M-43 or Grand River Avenue) which is 60 feet of right angles from the centerline thence along the North line of US-16, North 78°24' West 2000.0 feet; thence North 01°18' East 235.4 feet to the Point of Beginning.

AS SURVEYED:
The following legal description describes the same parcel of land as the provided description)

A parcel of land in the Northeast 1/4 of Section 21, 14N, 14W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the North 1/4 corner of said Section 21; thence N89°47'52"E along the North line of said Section 21 a distance of 1355.76 feet to the Northwest corner of the East 1/2 of said Northeast 1/4; thence S00°36'29"E along the West line of the East 1/2 of said Northeast 1/4 as monumented a distance of 1306.27 feet; thence N89°58'36"E 231.35 feet to the point of beginning of this description; thence continuing N89°58'36"E 199.82 feet; thence S01°52'11"W 279.62 feet to the Northernly line of Grand River Avenue (M-43); thence N77°03'29"W along said Northernly line 200.51 feet; thence N01°09'11"E 234.53 feet to the point of beginning; said parcel containing 1.16 acres more or less; said parcel subject to all easements and restrictions if any.

SCHEDULE B, SECTION II, EXCEPTIONS:
(As provided by Devon Title Agency, agents for Old Republic National Title Insurance Company, Commitment No. 253951, Revision #1, dated January 20, 2017)

Item 17. Terms, conditions and provisions contained in Grant or Easement recorded in Liber 996, Page 824 of Ingham County Records, cross parcel, are provable and shown hereon.

Item 18. Easement granted to Consumers Power Company, as disclosed by instrument dated December 27, 1972 recorded in Liber 1133, Page 965, Ingham County Records, cross parcel, is plottable and shown hereon.

SECTION	REQUIREMENT	REASON	WAIVER REQUESTED	COMPARISON TO EXT.
88-402(17)	MAX 70% IMPERVIOUS AREA	78.77% PROP IMPERVIOUS	8.77% WAIVER	79.25% EXT IMPERVIOUS
88-756(4)	15' SIDE AND REAR PARKING SETBACK	3.68' PROP PARKING SETBACK	11.34' WAIVER	6.1' EXT PARKING SETBACK
88-756(4)	15' SIDE AND REAR PARKING SETBACK	3.78' PROP PARKING SETBACK	11.21' WAIVER	3.6' EXT PARKING SETBACK
88-756(4)	15' SIDE AND REAR PARKING SETBACK	2.85' PROP PARKING SETBACK	12.15' WAIVER	7.4' EXT PARKING SETBACK

TOTAL PERVIOUS AREA
10,964 S.F./50,938 S.F. x 100 = 21.52%

TOTAL IMPERVIOUS AREA
39,974 S.F./50,938 S.F. x 100 = 78.48%

PARKING REQUIRED
1/3 SEATS + 1/EMPLOYEE LARGEST SHIFT
REQUIRED = 95 SEATS/3 = 32 SPACES
LARGEST SHIFT = 15 EMPLOYEES = 15 SPACES
= 47 SPACES

PARKING PROVIDED 51 9'x20'
3 B/F
54 TOTAL SPACES

SHEET INDEX

1. CONCEPT PLAN
2. EXISTING PLAN

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	12-1-17	JMK	CONCEPT PLAN
2	12-1-17	JMK	CONCEPT PLAN

2080 Grand River

KEBS, INC.
2116 HASLETT ROAD, HAZELT, MI. 48840
PH. 517-339-1014 FAX. 517-339-8047

KES ENGINEERING
BRYAN LAND SURVEYS
SURVEY #91998/BALTT

TENTHLY 9 INVESTMENTS, LLC
CONCEPT PLAN

APPROVED BY: JMK
DATE: 12-1-17

SCALE: 1" = 20'

JOB # 91998

Traffic Engineering Associates, Inc.

PO Box 100
Saranac, MI 48881
517-627-6028

Location: Marsh Rd. & Grand River
County/City: Meridian Charter Twp.
Weather: Sunny
Counted By: DES

File Name : Grand River & Marsh - AM
Site Code : 11091702
Start Date : 11/9/2017
Page No : 1

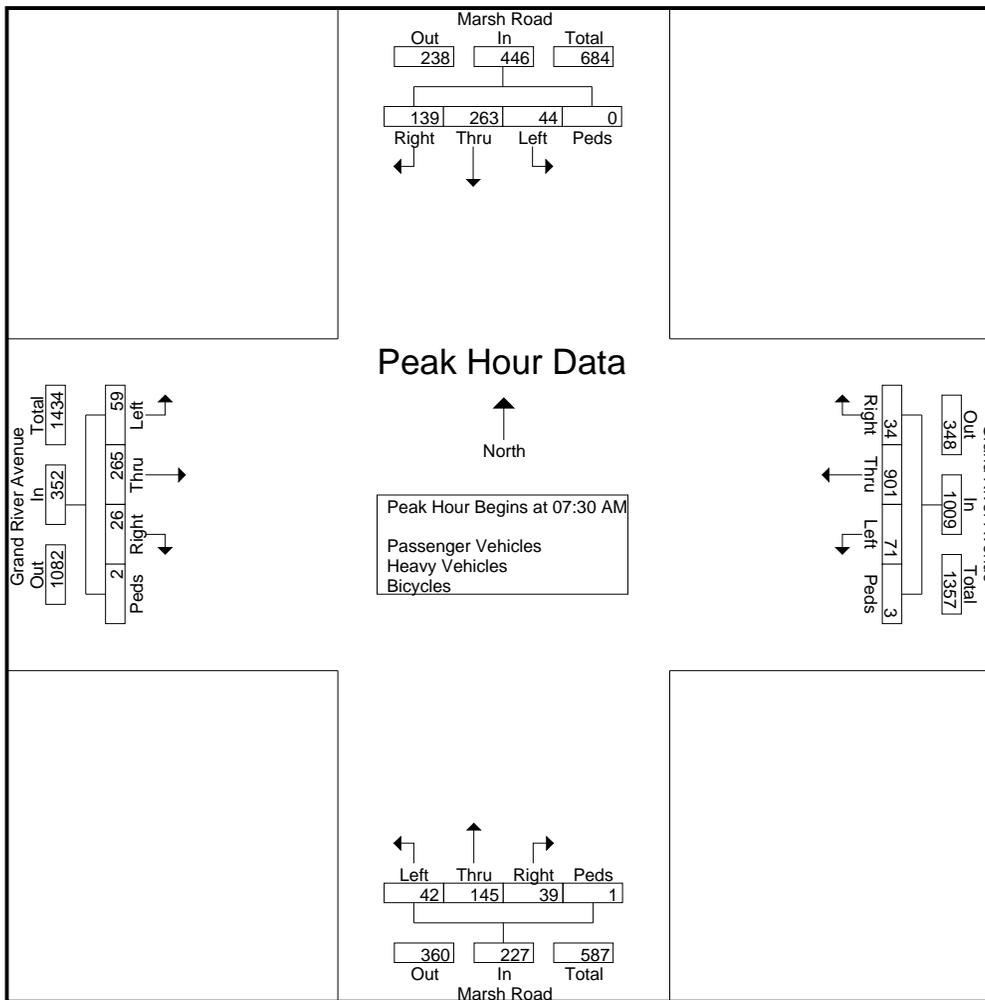
Groups Printed- Passenger Vehicles - Heavy Vehicles - Bicycles

Start Time	Marsh Road From North					Grand River Avenue From East					Marsh Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	6	29	25	0	60	12	107	4	0	123	4	24	4	0	32	11	35	2	0	48	263
07:15 AM	8	50	22	0	80	4	148	2	0	154	2	34	6	0	42	4	48	3	2	57	333
07:30 AM	12	69	33	0	114	18	257	13	0	288	6	40	4	0	50	7	53	3	2	65	517
07:45 AM	20	65	30	0	115	13	258	8	1	280	13	49	12	1	75	13	72	4	0	89	559
Total	46	213	110	0	369	47	770	27	1	845	25	147	26	1	199	35	208	12	4	259	1672
08:00 AM	7	74	33	0	114	25	205	7	1	238	11	28	10	0	49	21	68	8	0	97	498
08:15 AM	5	55	43	0	103	15	181	6	1	203	12	28	13	0	53	18	72	11	0	101	460
08:30 AM	18	64	32	0	114	22	208	12	0	242	7	36	10	0	53	16	62	13	0	91	500
08:45 AM	10	66	34	0	110	20	202	12	0	234	14	64	20	0	98	22	74	6	1	103	545
Total	40	259	142	0	441	82	796	37	2	917	44	156	53	0	253	77	276	38	1	392	2003
Grand Total	86	472	252	0	810	129	1566	64	3	1762	69	303	79	1	452	112	484	50	5	651	3675
Apprch %	10.6	58.3	31.1	0		7.3	88.9	3.6	0.2		15.3	67	17.5	0.2		17.2	74.3	7.7	0.8		
Total %	2.3	12.8	6.9	0	22	3.5	42.6	1.7	0.1	47.9	1.9	8.2	2.1	0	12.3	3	13.2	1.4	0.1	17.7	
Passenger Vehicles																					
% Passenger Vehicles	97.7	97.9	98.4	0	98	93	97.6	95.3	100	97.2	94.2	99.7	96.2	100	98.2	100	96.3	94	100	96.8	97.4
Heavy Vehicles	2	10	4	0	16	9	37	3	0	49	4	1	3	0	8	0	18	3	0	21	94
% Heavy Vehicles	2.3	2.1	1.6	0	2	7	2.4	4.7	0	2.8	5.8	0.3	3.8	0	1.8	0	3.7	6	0	3.2	2.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Marsh Road From North					Grand River Avenue From East					Marsh Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	12	69	33	0	114	18	257	13		288									2		
07:45 AM	20	65	30	0	115	13	258	8	1	280	13	49	12	1	75	13	72	4	0	89	559
08:00 AM	7	74	33	0	114	25	205	7	1	238	11	28	10	0	49	21	68	8	0	97	498
08:15 AM	5	55	43	0	103	15	181	6	1	203	12	28	13	0	53	18	72	11	0	101	460
Total Volume	44	263	139	0	446	71	901	34	3	1009	42	145	39	1	227	59	265	26	2	352	2034
% App. Total	9.9	59	31.2	0		7	89.3	3.4	0.3		18.5	63.9	17.2	0.4		16.8	75.3	7.4	0.6		
PHF	.550	.889	.808	.000	.970	.710	.873	.654	.750	.876	.808	.740	.750	.250	.757	.702	.920	.591	.250	.871	.910

Location: Marsh Rd. & Grand River
 County/City: Meridian Charter Twp.
 Weather: Sunny
 Counted By: DES

File Name : Grand River & Marsh - AM
 Site Code : 11091702
 Start Date : 11/9/2017
 Page No : 2



Traffic Engineering Associates, Inc.

PO Box 100
Saranac, MI 48881
517-627-6028

Location: Marsh Rd. & Grand River Ave.
County/City: Meridian Charter Twp
Weather: Sunny
Counted By: DES

File Name : Grand River & Marsh - PM
Site Code : 11091702
Start Date : 11/9/2017
Page No : 1

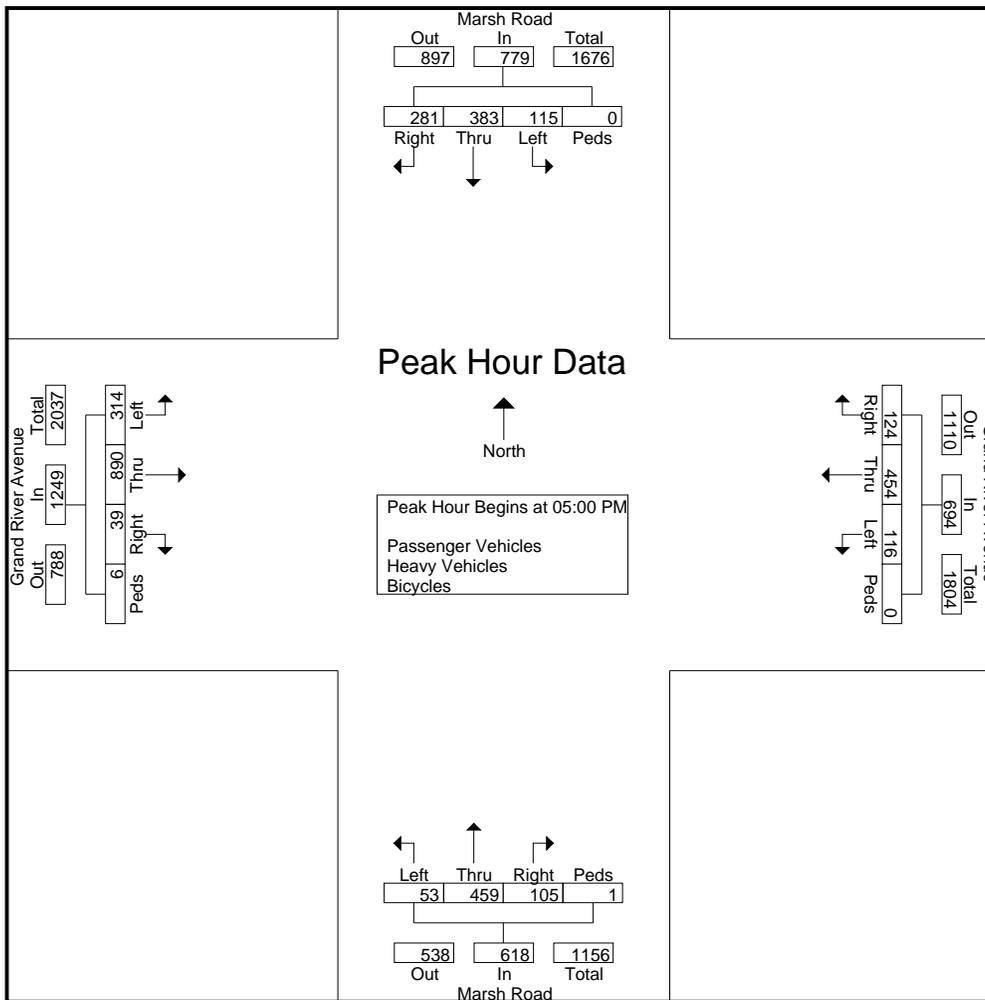
Groups Printed- Passenger Vehicles - Heavy Vehicles - Bicycles

Start Time	Marsh Road From North					Grand River Avenue From East					Marsh Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	29	83	49	0	161	20	119	23	0	162	22	98	31	1	152	68	153	7	1	229	704
04:15 PM	34	76	49	0	159	19	95	28	0	142	14	96	25	0	135	79	171	9	2	261	697
04:30 PM	38	87	71	0	196	29	116	29	1	175	11	95	17	2	125	69	197	12	0	278	774
04:45 PM	33	92	80	0	205	29	104	37	0	170	16	114	16	0	146	80	180	8	2	270	791
Total	134	338	249	0	721	97	434	117	1	649	63	403	89	3	558	296	701	36	5	1038	2966
05:00 PM	26	91	61	0	178	34	106	31	0	171	13	100	22	0	135	71	204	13	3	291	775
05:15 PM	27	97	75	0	199	27	134	22	0	183	16	122	31	0	169	80	248	13	0	341	892
05:30 PM	30	85	67	0	182	26	121	32	0	179	15	108	34	1	158	82	236	8	3	329	848
05:45 PM	32	110	78	0	220	29	93	39	0	161	9	129	18	0	156	81	202	5	0	288	825
Total	115	383	281	0	779	116	454	124	0	694	53	459	105	1	618	314	890	39	6	1249	3340
Grand Total	249	721	530	0	1500	213	888	241	1	1343	116	862	194	4	1176	610	1591	75	11	2287	6306
Apprch %	16.6	48.1	35.3	0		15.9	66.1	17.9	0.1		9.9	73.3	16.5	0.3		26.7	69.6	3.3	0.5		
Total %	3.9	11.4	8.4	0	23.8	3.4	14.1	3.8	0	21.3	1.8	13.7	3.1	0.1	18.6	9.7	25.2	1.2	0.2	36.3	
Passenger Vehicles																					
% Passenger Vehicles	99.2	98.9	99.4	0	99.1	98.1	98.3	99.2	100	98.4	86.2	99.9	97.9	100	98.2	99.8	99.8	98.7	100	99.8	99
Heavy Vehicles	2	8	3	0	13	4	15	2	0	21	16	1	4	0	21	1	3	1	0	5	60
% Heavy Vehicles	0.8	1.1	0.6	0	0.9	1.9	1.7	0.8	0	1.6	13.8	0.1	2.1	0	1.8	0.2	0.2	1.3	0	0.2	1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Marsh Road From North					Grand River Avenue From East					Marsh Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	26	91	61	0	178	34					16	122	31	0	169	80	248	13	3	341	892
05:15 PM	27	97	75	0	199																
05:30 PM	30	85	67	0	182								34	1	158	82	236	8	3	329	848
05:45 PM	32	110	78	0	220						9	129	18	0	156	81	202	5	0	288	825
Total Volume	115	383	281	0	779	116	454	124	0	694	53	459	105	1	618	314	890	39	6	1249	3340
% App. Total	14.8	49.2	36.1	0		16.7	65.4	17.9	0		8.6	74.3	17	0.2		25.1	71.3	3.1	0.5		
PHF	.898	.870	.901	.000	.885	.853	.847	.795	.000	.948	.828	.890	.772	.250	.914	.957	.897	.750	.500	.916	.936

Location: Marsh Rd. & Grand River Ave.
County/City: Meridian Charter Twp
Weather: Sunny
Counted By: DES

File Name : Grand River & Marsh - PM
Site Code : 11091702
Start Date : 11/9/2017
Page No : 2



Traffic Engineering Associates, Inc.

PO Box 100
Saranac, MI 48881
517-627-6028

Location: Meijer Drive & Grand River Ave
County/City: Meridian Charter Township
Weather: Sunny
Counted By: TH

File Name : Grand River & Meijer Driveway - AM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 1

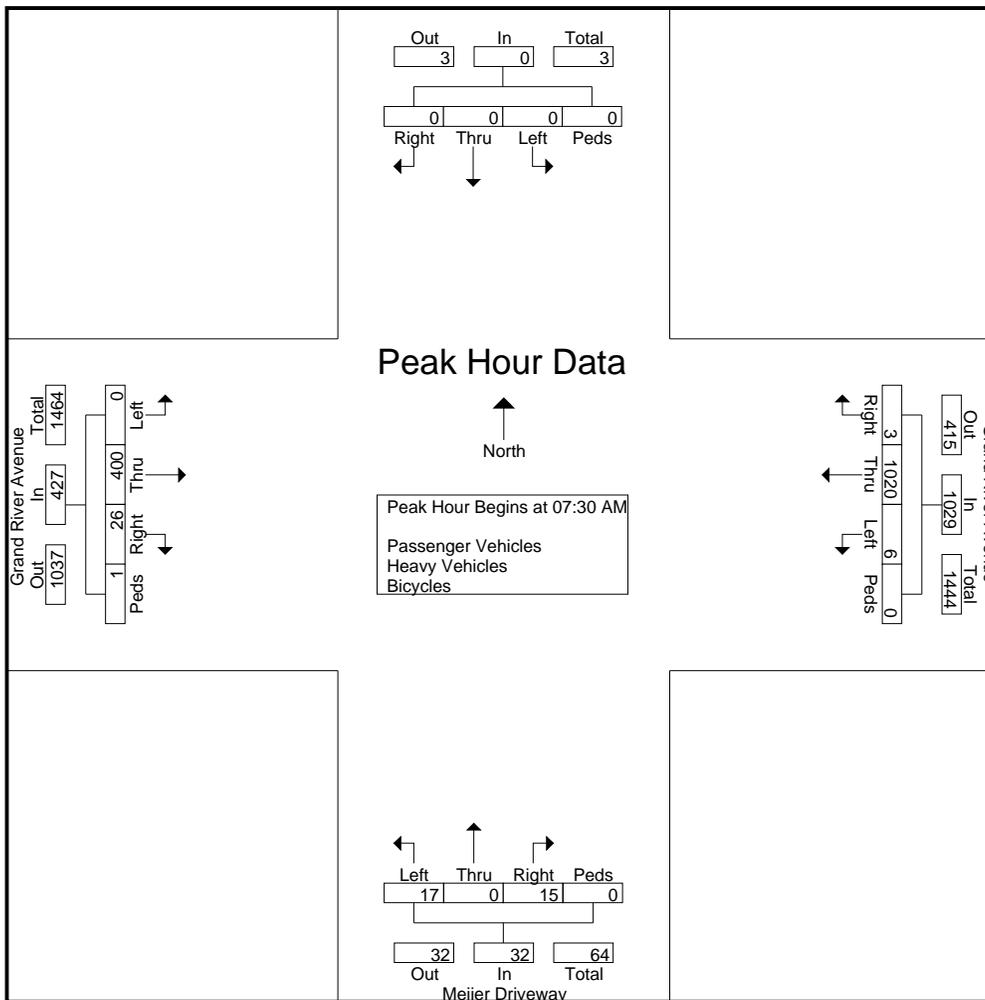
Groups Printed- Passenger Vehicles - Heavy Vehicles - Bicycles

Start Time	From North					Grand River Avenue From East					Meijer Driveway From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	0	0	0	0	1	161	0	0	162	3	0	1	0	4	0	58	1	0	59	225
07:15 AM	0	0	0	0	0	0	230	0	0	230	4	0	0	0	4	0	61	3	0	64	298
07:30 AM	0	0	0	0	0	1	304	1	0	306	3	0	3	0	6	0	106	4	0	110	422
07:45 AM	0	0	0	0	0	5	274	1	0	280	6	0	4	0	10	0	93	7	1	101	391
Total	0	0	0	0	0	7	969	2	0	978	16	0	8	0	24	0	318	15	1	334	1336
08:00 AM	0	0	0	0	0	0	209	0	0	209	3	0	4	0	7	0	95	9	0	104	320
08:15 AM	0	0	0	0	0	0	233	1	0	234	5	0	4	0	9	0	106	6	0	112	355
08:30 AM	0	0	0	0	0	1	233	0	0	234	3	0	2	0	5	1	122	9	0	132	371
08:45 AM	0	0	0	0	0	2	224	0	0	226	6	0	7	0	13	0	144	7	0	151	390
Total	0	0	0	0	0	3	899	1	0	903	17	0	17	0	34	1	467	31	0	499	1436
Grand Total	0	0	0	0	0	10	1868	3	0	1881	33	0	25	0	58	1	785	46	1	833	2772
Apprch %	0	0	0	0	0	0.5	99.3	0.2	0	67.9	56.9	0	43.1	0	2.1	0.1	94.2	5.5	0.1	30.1	
Total %	0	0	0	0	0	0.4	67.4	0.1	0	67.9	1.2	0	0.9	0	2.1	0	28.3	1.7	0	30.1	
Passenger Vehicles																					
% Passenger Vehicles	0	0	0	0	0	100	97.4	100	0	97.4	100	0	96	0	98.3	100	95.4	97.8	100	95.6	96.9
Heavy Vehicles	0	0	0	0	0	0	48	0	0	48	0	0	1	0	1	0	36	1	0	37	86
% Heavy Vehicles	0	0	0	0	0	0	2.6	0	0	2.6	0	0	4	0	1.7	0	4.6	2.2	0	4.4	3.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	From North					Grand River Avenue From East					Meijer Driveway From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	1	304	1	0	306							106				422
07:45 AM	0	0	0	0	0	5	274	1	0	280	6	0	4	0	10	0	93	7	1	101	391
08:00 AM	0	0	0	0	0	0	209	0	0	209	3	0	4	0	7	0	95	9	0	104	320
08:15 AM	0	0	0	0	0	0	233	1	0	234	5	0	4	0	9	0	106	6	0	112	355
Total Volume	0	0	0	0	0	6	1020	3	0	1029	17	0	15	0	32	0	400	26	1	427	1488
% App. Total	0	0	0	0	0	0.6	99.1	0.3	0	67.9	53.1	0	46.9	0	2.1	0	93.7	6.1	0.2	30.1	
PHF	.000	.000	.000	.000	.000	.300	.839	.750	.000	.841	.708	.000	.938	.000	.800	.000	.943	.722	.250	.953	.882

Location: Meijer Drive & Grand River Ave
County/City: Meridian Charter Township
Weather: Sunny
Counted By: TH

File Name : Grand River & Meijer Driveway - AM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 2



Traffic Engineering Associates, Inc.

PO Box 100
Saranac, MI 48881
517-627-6028

Location: Meijer Drive & Grand River Ave
County/City: Meridian Charter Twp
Weather: Sunny
Counted By: TH

File Name : Grand River & Meijer Driveway - PM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 1

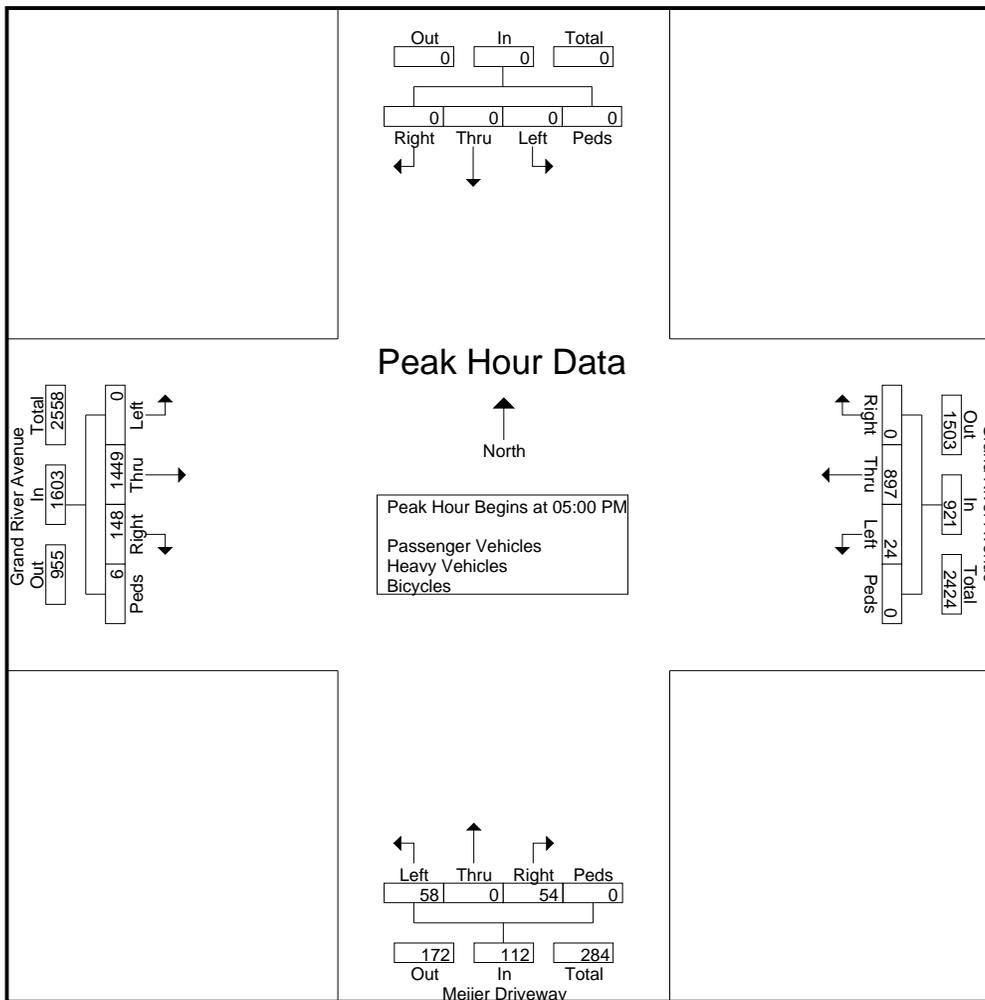
Groups Printed- Passenger Vehicles - Heavy Vehicles - Bicycles

Start Time	From North					Grand River Avenue From East					Meijer Driveway From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	4	193	0	1	198	8	0	16	0	24	0	250	43	0	293	515
04:15 PM	0	0	1	0	1	6	186	0	0	192	12	0	14	0	26	0	261	20	0	281	500
04:30 PM	0	0	0	0	0	5	203	0	0	208	7	0	9	1	17	0	254	23	1	278	503
04:45 PM	0	0	0	0	0	6	190	0	0	196	10	0	12	0	22	1	348	33	3	385	603
Total	0	0	1	0	1	21	772	0	1	794	37	0	51	1	89	1	1113	119	4	1237	2121
05:00 PM	0	0	0	0	0	6	205	0	0	211	12	0	10	0	22	0	370	32	1	403	636
05:15 PM	0	0	0	0	0	8	222	0	0	230	11	0	14	0	25	0	373	34	2	409	664
05:30 PM	0	0	0	0	0	3	238	0	0	241	18	0	16	0	34	0	363	44	2	409	684
05:45 PM	0	0	0	0	0	7	232	0	0	239	17	0	14	0	31	0	343	38	1	382	652
Total	0	0	0	0	0	24	897	0	0	921	58	0	54	0	112	0	1449	148	6	1603	2636
Grand Total	0	0	1	0	1	45	1669	0	1	1715	95	0	105	1	201	1	2562	267	10	2840	4757
Apprch %	0	0	100	0		2.6	97.3	0	0.1		47.3	0	52.2	0.5		0	90.2	9.4	0.4		
Total %	0	0	0	0	0	0.9	35.1	0	0	36.1	2	0	2.2	0	4.2	0	53.9	5.6	0.2	59.7	
Passenger Vehicles																					
% Passenger Vehicles	0	0	100	0	100	100	98	0	100	98	100	0	100	100	100	100	98.6	99.6	100	98.7	98.5
Heavy Vehicles	0	0	0	0	0	0	34	0	0	34	0	0	0	0	0	0	35	1	0	36	70
% Heavy Vehicles	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1.4	0.4	0	1.3	1.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	From North					Grand River Avenue From East					Meijer Driveway From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	6	205	0	0	211	12	0	10	0	22	0	370	32	1	403	636
05:15 PM	0	0	0	0	0	8										373		2	409		
05:30 PM	0	0	0	0	0	3	238	0	0	241	18	0	16	0	34	0	363	44	2	409	684
05:45 PM	0	0	0	0	0	7	232	0	0	239	17	0	14	0	31	0	343	38	1	382	652
Total Volume	0	0	0	0	0	24	897	0	0	921	58	0	54	0	112	0	1449	148	6	1603	2636
% App. Total	0	0	0	0	0	2.6	97.4	0	0		51.8	0	48.2	0		0	90.4	9.2	0.4		
PHF	.000	.000	.000	.000	.000	.750	.942	.000	.000	.955	.806	.000	.844	.000	.824	.000	.971	.841	.750	.980	.963

Location: Meijer Drive & Grand River Ave
 County/City: Meridian Charter Twp
 Weather: Sunny
 Counted By: TH

File Name : Grand River & Meijer Driveway - PM
 Site Code : 11081701
 Start Date : 11/8/2017
 Page No : 2



Traffic Engineering Associates, Inc.

PO Box 100
Saranac, MI 48881
517-627-6028

Location: Okemos Rd. & Grand River
County/City: Meridian Charter Twp.
Weather: Sunny
Counted By: DES

File Name : Grand River & Okemos - AM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 1

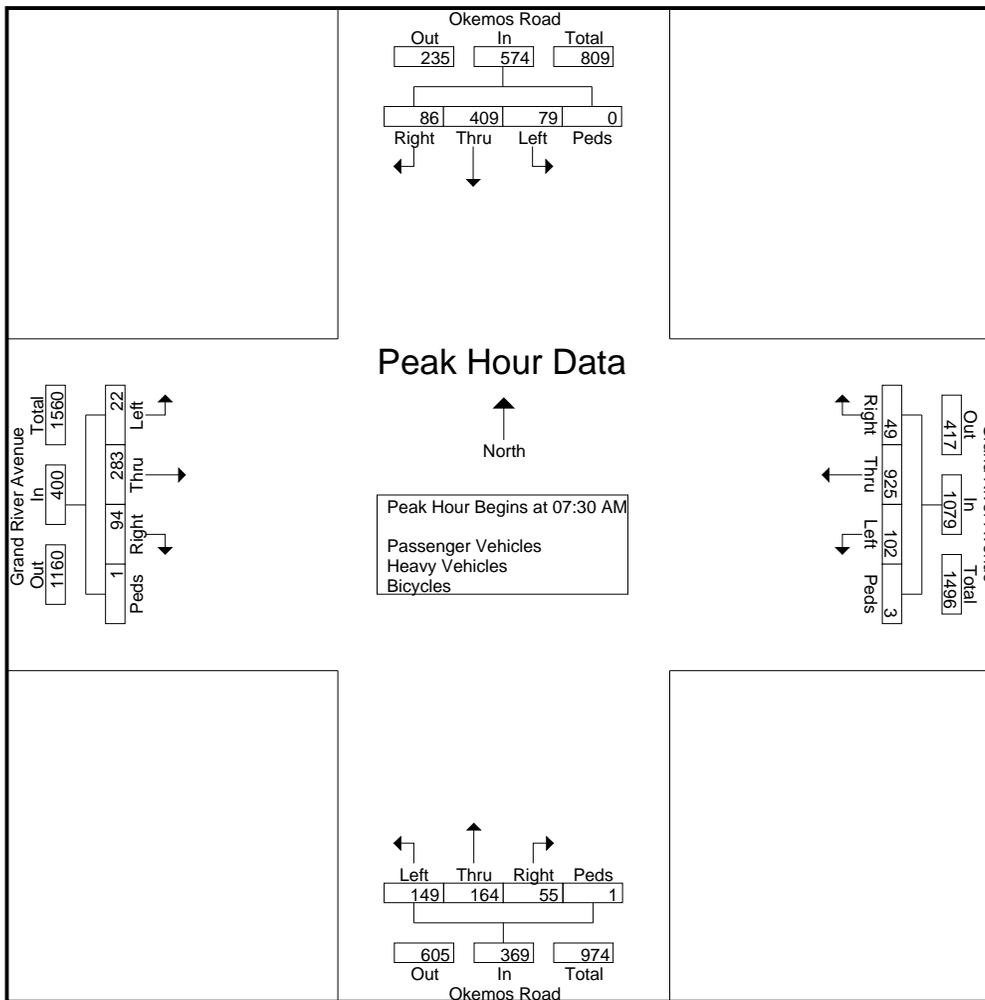
Groups Printed- Passenger Vehicles - Heavy Vehicles - Bicycles

Start Time	Okemos Road From North					Grand River Avenue From East					Okemos Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	9	41	15	0	65	12	105	8	0	125	13	20	6	1	40	6	44	9	0	59	289
07:15 AM	5	56	24	0	85	24	160	11	0	195	20	30	4	0	54	4	43	24	1	72	406
07:30 AM	16	91	20	0	127	28	240	10	1	279	39	40	12	1	92	5	69	22	1	97	595
07:45 AM	24	118	35	0	177	25	263	15	1	304	29	48	17	0	94	8	71	23	0	102	677
Total	54	306	94	0	454	89	768	44	2	903	101	138	39	2	280	23	227	78	2	330	1967
08:00 AM	20	103	8	0	131	24	213	12	0	249	43	48	13	0	104	7	67	24	0	98	582
08:15 AM	19	97	23	0	139	25	209	12	1	247	38	28	13	0	79	2	76	25	0	103	568
08:30 AM	16	91	26	0	133	36	187	7	0	230	29	46	29	2	106	14	64	25	0	103	572
08:45 AM	21	83	21	0	125	23	207	12	1	243	47	63	29	0	139	4	95	16	0	115	622
Total	76	374	78	0	528	108	816	43	2	969	157	185	84	2	428	27	302	90	0	419	2344
Grand Total	130	680	172	0	982	197	1584	87	4	1872	258	323	123	4	708	50	529	168	2	749	4311
Apprch %	13.2	69.2	17.5	0		10.5	84.6	4.6	0.2		36.4	45.6	17.4	0.6		6.7	70.6	22.4	0.3		
Total %	3	15.8	4	0	22.8	4.6	36.7	2	0.1	43.4	6	7.5	2.9	0.1	16.4	1.2	12.3	3.9	0	17.4	
Passenger Vehicles																					
% Passenger Vehicles	96.9	98.5	100	0	98.6	97	97.3	98.9	100	97.3	98.4	99.7	97.6	100	98.9	100	96.6	98.2	100	97.2	97.8
Heavy Vehicles	4	10	0	0	14	6	43	1	0	50	4	1	3	0	8	0	18	3	0	21	93
% Heavy Vehicles	3.1	1.5	0	0	1.4	3	2.7	1.1	0	2.7	1.6	0.3	2.4	0	1.1	0	3.4	1.8	0	2.8	2.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Okemos Road From North					Grand River Avenue From East					Okemos Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	16	91	20	0	127	28			1					1					1		
07:45 AM	24	118	35	0	177	25	263	15	1	304	29	48	17	0	94	8	71	23	0	102	677
08:00 AM	20	103	8	0	131	24	213	12	0	249	43	48	13	0	104	7	67	24	0	98	582
08:15 AM	19	97	23	0	139	25	209	12	1	247	38	28	13	0	79	2	76	25	0	103	568
Total Volume	79	409	86	0	574	102	925	49	3	1079	149	164	55	1	369	22	283	94	1	400	2422
% App. Total	13.8	71.3	15	0		9.5	85.7	4.5	0.3		40.4	44.4	14.9	0.3		5.5	70.8	23.5	0.2		
PHF	.823	.867	.614	.000	.811	.911	.879	.817	.750	.887	.866	.854	.809	.250	.887	.688	.931	.940	.250	.971	.894

Location: Okemos Rd. & Grand River
County/City: Meridian Charter Twp.
Weather: Sunny
Counted By: DES

File Name : Grand River & Okemos - AM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 2



Traffic Engineering Associates, Inc.

PO Box 100
Saranac, MI 48881
517-627-6028

Location: Okemos Rd. & Grand River Ave.
County/City: Meridian Charter Twp.
Weather: Sunny
Counted By: DES

File Name : Grand River & Okemos - PM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 1

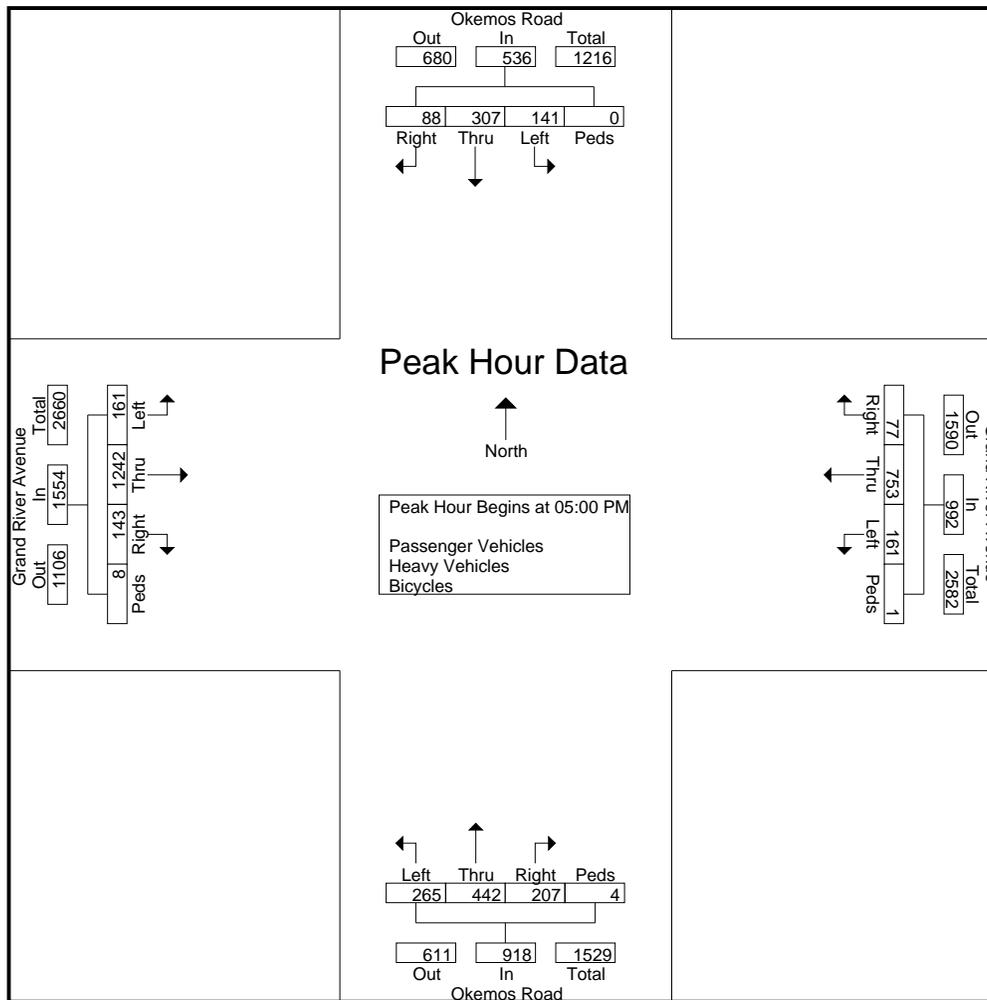
Groups Printed- Passenger Vehicles - Heavy Vehicles - Bicycles

Start Time	Okemos Road From North					Grand River Avenue From East					Okemos Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	26	51	26	0	103	40	152	7	0	199	63	101	36	4	204	36	229	31	1	297	803
04:15 PM	21	46	24	0	91	47	134	13	0	194	71	103	29	0	203	19	220	31	0	270	758
04:30 PM	20	53	21	0	94	31	185	24	1	241	51	99	30	0	180	35	265	34	1	335	850
04:45 PM	38	78	23	0	139	34	146	14	0	194	58	96	39	0	193	31	300	39	7	377	903
Total	105	228	94	0	427	152	617	58	1	828	243	399	134	4	780	121	1014	135	9	1279	3314
05:00 PM	28	93	25	0	146	39	165	13	0	217	58	114	49	0	221	49	325	39	2	415	999
05:15 PM	35	76	16	0	127	36	183	26	1	246	76	116	50	0	242	47	315	32	1	395	1010
05:30 PM	46	68	25	0	139	40	201	18	0	259	63	122	45	0	230	30	319	43	2	394	1022
05:45 PM	32	70	22	0	124	46	204	20	0	270	68	90	63	4	225	35	283	29	3	350	969
Total	141	307	88	0	536	161	753	77	1	992	265	442	207	4	918	161	1242	143	8	1554	4000
Grand Total	246	535	182	0	963	313	1370	135	2	1820	508	841	341	8	1698	282	2256	278	17	2833	7314
Apprch %	25.5	55.6	18.9	0		17.2	75.3	7.4	0.1		29.9	49.5	20.1	0.5		10	79.6	9.8	0.6		
Total %	3.4	7.3	2.5	0	13.2	4.3	18.7	1.8	0	24.9	6.9	11.5	4.7	0.1	23.2	3.9	30.8	3.8	0.2	38.7	
Passenger Vehicles																					
% Passenger Vehicles	98.4	97.2	99.5	0	97.9	98.7	98	99.3	100	98.2	99.8	99.9	99.4	100	99.8	100	99.2	99.6	100	99.3	99
Heavy Vehicles	4	15	1	0	20	4	27	1	0	32	1	1	2	0	4	0	19	1	0	20	76
% Heavy Vehicles	1.6	2.8	0.5	0	2.1	1.3	2	0.7	0	1.8	0.2	0.1	0.6	0	0.2	0	0.8	0.4	0	0.7	1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Okemos Road From North					Grand River Avenue From East					Okemos Road From South					Grand River Avenue From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	28	93	25	0	146	36	183	26	1	246	76	116	50	0	242	49	325	32	1	415	1010
05:15 PM	35	76	16	0	127	40	201	18	0	259	63	122	45	0	230	30	319	43	2	394	1022
05:30 PM	46	68	25	0	139	46	204	20	0	270	68	90	63	4	225	35	283	29	3	350	969
05:45 PM	32	70	22	0	124	46	204	20	0	270	68	90	63	4	225	35	283	29	3	350	969
Total Volume	141	307	88	0	536	161	753	77	1	992	265	442	207	4	918	161	1242	143	8	1554	4000
% App. Total	26.3	57.3	16.4	0		16.2	75.9	7.8	0.1		28.9	48.1	22.5	0.4		10.4	79.9	9.2	0.5		
PHF	.766	.825	.880	.000	.918	.875	.923	.740	.250	.919	.872	.906	.821	.250	.948	.821	.955	.831	.667	.936	.978

Location: Okemos Rd. & Grand River Ave.
County/City: Meridian Charter Twp.
Weather: Sunny
Counted By: DES

File Name : Grand River & Okemos - PM
Site Code : 11081701
Start Date : 11/8/2017
Page No : 2



TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8				TIMING INSTALLED			
		EB LT	WB	NB LT	SB	WB LT	EB	SB LT	NB				REMARKS PHASES # 4 AND # 8 HAVE BEEN TAKEN OFF OF MAXIMUM RECALL DUE TO TRAFFIC LOOPS BEING INSTALLED IN THE MARSH ROAD THRU LANES. THIS TRAFFIC SIGNAL UNDERWENT OPTIMIZATION BY PARSONS IN APRIL 2008.			
MINIMUM GREEN		5	10	5	7	5	10	5	10							
PASSAGE		3.0	0.0	3.0	2.0	3.0	0.0	3.0	2.0							
MAXIMUM NO. 1		13	37	13	37	13	37	13	37							
MAXIMUM NO. 2		0	0	0	0	0	0	0	0							
YELLOW CHANGE		4.3	4.3	3.9	3.9	4.3	4.3	3.9	3.9							
RED CLEARANCE		1.9	1.9	2.5	2.5	1.9	1.9	2.5	2.5							
WALK		0	7	0	7	7	7	7	7							
PEDESTRIAN CLEARANCE		0	20	0	22	0	20	0	22							
EXTENDED PED. CLEARANCE		0	0	0	0	0	0	0	0							
REST IN WALK		0	0	0	0	0	0	0	0							
INITIALIZATION		1	4	1	1	1	4	1	1							
NON-ACT RESPONSE		0	1	0	0	0	1	0	0							
VEHICLE RECALL		0	3	0	0	0	3	0	0							
PEDESTRIAN RECALL		0	0	0	0	0	0	0	0							
NON-LOCK MEMORY		0	0	0	0	0	0	0	0							
DUAL ENTRY		0	1	0	1	0	1	0	1							
	CYCLE									O1	O2	O3	PREPARED BY: HHH	DATE: 03/20/09		
DIAL 1 SPLIT 1		100	13	37	13	37	13	37	13	37	18			FLASH HOURS:		
DIAL 2 SPLIT 1		100	13	37	13	37	13	37	13	37	77			<input type="text"/> to <input type="text"/> DAILY <input type="checkbox"/> NONE <input checked="" type="checkbox"/>		
DIAL 3 SPLIT 1		100	13	37	13	37	13	37	13	37	56			<input type="text"/> to <input type="text"/>		
DIAL SPLIT														NIGHT FLASH:		
DIAL SPLIT														FY =	FR =	
DIAL SPLIT														CONFLICT FLASH:		
	MODE	0	1	0	0	0	1	0	0					FY = M-43	FR = ALL OTHERS	
PHASE		D1/S1/O1: NORMAL											CONTROLLER TYPE:			
1 EB M-43 (GRAND RIVER) LEFT		D2/S1/O1: 06:00-09:00 MON-FRI											<input checked="" type="checkbox"/> EPAC		PRE-EMPT <input checked="" type="checkbox"/>	
2 WB M-43 (GRAND RIVER) THRU		D3/S1/O1: 15:00-18:30 MON-FRI											<input type="checkbox"/> Other:		COUNTDOWN PEDS <input type="checkbox"/>	
3 NB MARSH ROAD LEFT													LOCATION:			
4 SB MARSH ROAD THRU													M-43 (GRAND RIVER)/MARSH ROAD			
5 WB M-43 (GRAND RIVER) LEFT													CITY/TWP: MERIDIAN TOWNSHIP			
6 EB M-43 (GRAND RIVER) THRU													COUNTY : INGHAM			
7 SB MARSH ROAD LEFT													MILE POINT		CONTROL SECTION-SPOT #	
8 NB MARSH ROAD THRU													4.58		33082-01-014	
													Job # (If Applicable): 88119C			

OVERLAPS							
Overlap Phase	Load Bays	Phases Overlapped	T.G. (s)	Y (s)	R (s)	-G/Y	+GRN
A = EB M-43 LEFT			0.0	4.3	1.9	1	2
B = NB MARSH LEFT			0.0	3.9	2.5	3	4
C = WB M-43 LEFT			0.0	4.3	1.9	5	6
D = SB MARSH LEFT			0.0	3.9	2.5	7	8

ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION	LEFT-TURN PHASING						RING AND BARRIER STRUCTURE											
	Phase # / Description	Permissive-Protected		Protected-Only		R1	B1			B2			B3			B4		
		Lead	Lag	Split	Lead		Lag	2	1		4	3						
Controller Type: <input checked="" type="checkbox"/> EPAC <input type="checkbox"/> Other:	PHASE 1: EB M-43 LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R2	6	5									
	PHASE 3: NB MARSH LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R3											
	PHASE 5: WB M-43 LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R4											
	PHASE 7: SB MARSH LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
System Type: <input checked="" type="checkbox"/> Closed Loop <input type="checkbox"/> Stand By <input checked="" type="checkbox"/> Group 1 <input type="checkbox"/> Group 2 Address: 05 <input type="checkbox"/> TBC <input type="checkbox"/> TBC/GPS <input type="checkbox"/> None <input type="checkbox"/> Other: If TBC, Synch by: <input checked="" type="checkbox"/> TOD <input type="checkbox"/> Event Interconnect Type: <input type="checkbox"/> Hardwire <input type="checkbox"/> Fiber-Optic <input checked="" type="checkbox"/> Radio <input type="checkbox"/> Phone Drop <input type="checkbox"/> None <input type="checkbox"/> Other: If Phone Drop, Phone # Controller Status: <input type="checkbox"/> Master <input checked="" type="checkbox"/> Slave <input type="checkbox"/> Isolated <input type="checkbox"/> TBC If Slave, Master Location: M-43 @ OKEMOS Master Spot # : 33082-01-016	VEHICULAR AND PEDESTRIAN DETECTION												DISAPPEARING LEGEND CASE SIGNS					
	Approach		Vehicular Detection						Pedestrian Detection									
			Movements and Call Delay (s)			Type			Push-Button Crossing Locations									
			Left	Thru	Right	Loop	Video	Other										
	EB M-43 (GRAND RIVER)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S. LEG OF M-43									
	WB M-43 (GRAND RIVER)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N. LEG OF M-43									
	NB MARSH ROAD		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. LEG OF M-43									
	SB MARSH ROAD		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	W. LEG OF M-43									
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
ADDITIONAL DIAL SPLIT DATA												COORDINATION DATA						
	PHASE	1	2	3	4	5	6	7	8	O1	O2	O3	Operation Mode	1				
DIAL	SPLIT	CYCLE											Coordination Mode	2				
DIAL	SPLIT	CYCLE											Maximum Mode	0				
DIAL	SPLIT	CYCLE											Correction Mode	2				
DIAL	SPLIT	CYCLE											Offset Mode	0				
DIAL	SPLIT	CYCLE											Force Mode	0				
DIAL	SPLIT	CYCLE											Max Dwell	0				
DIAL	SPLIT	CYCLE											Yield Period	0				
REMARKS:						ADDITIONAL OVERLAP DATA												
						Overlap Phase						Load Bays	Phases Overlapped	T.G. (s)	Y (s)	R (s)	-G/Y	+GRN
						E = SB Marsh RTGA							1	0.0	0.0	0.0		
						=												
						=												
PREPARED BY: HHH DATE: 03/20/09						LOCATION: M-43 (GRAND RIVER)/MARSH ROAD												
						CONTROL SECTION-SPOT # 33082-01-014												
						<input checked="" type="checkbox"/> MDOT <input type="checkbox"/> County <input type="checkbox"/> City <input type="checkbox"/> Consultant												

CLEAR PAGE 2

PREEMPTION INFORMATION FORM

Preemption Description: EB EMERGENCY VEHICLE																			
Preempt # =	1	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	22	Vehicle	Track																
SEL Yellow	4.3		Dwell	G	R	R	R	R	G	R	R								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	0	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	4.3		Dwell																
RET Red Cl	1.9		Cycle																

Preemption Description: WB EMERGENCY VEHICLE																			
Preempt # =	2	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	22	Vehicle	Track																
SEL Yellow	4.3		Dwell	R	G	R	R	G	R	R	R								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	0	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	4.3		Dwell																
RET Red Cl	1.9		Cycle																

Preemption Description: NB EMERGENCY VEHICLE																			
Preempt # =	3	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	22	Vehicle	Track																
SEL Yellow	4.3		Dwell	R	R	G	R	R	R	R	G								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	0	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	4.1		Dwell																
RET Red Cl	2.5		Cycle																

Preemption Description: SB EMERGENCY VEHICLE																			
Preempt # =	4	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	22	Vehicle	Track																
SEL Yellow	4.3		Dwell	R	R	R	G	R	R	G	R								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	0	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	4.1		Dwell																
RET Red Cl	2.5		Cycle																

Preempt System Data						
Ring	1	2	3	4		
MIN GRN/WLK (s)	7.0	7.0				
Priority	PE/FL	PE1/2	PE2/3	PE3/4	PE4/5	PE5/6
Status	0	0	0	0		

REMARKS :

REVISED PRE-EMPT
 INGHAM COUNTY SIGNAL OPTIMIZATION

OPTIMIZED BY PARSONS

PREPARED BY: HHH DATE: 03/20/09

LOCATION:
 M-43 (GRAND RIVER)/MARSH ROAD

CONTROL SECTION-SPOT #
 33082-01-014

TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8				
		EB LT	WB	SB LT	NB	WB LT	EB	NB LT	SB				
MINIMUM GREEN PASSAGE		5	10	5	7	5	10	5	7				
MAXIMUM NO. 1		14	45	16	36	14	45	16	36				
MAXIMUM NO. 2		0	0	0	0	0	0	0	0				
YELLOW CHANGE		4.3	4.3	3.9	3.9	4.3	4.3	3.9	3.9				
RED CLEARANCE		1.9	1.9	2.5	2.5	1.9	1.9	2.5	2.5				
WALK		0	7	0	7	0	7	0	7				
PEDESTRIAN CLEARANCE		0	15	0	20	0	15	0	20				
EXTENDED PED. CLEARANCE		0	1	0	1	0	1	0	1				
REST IN WALK		0	0	0	0	0	0	0	0				
INITIALIZATION		1	4	1	1	1	4	1	1				
NON-ACT RESPONSE		0	1	0	0	0	1	0	0				
VEHICLE RECALL		0	3	0	0	0	3	0	0				
PEDESTRIAN RECALL		0	2	0	0	0	2	0	0				
NON-LOCK MEMORY		1	0	1	0	1	0	1	0				
DUAL ENTRY		0	1	0	1	0	1	0	1				
		CYCLE								O1	O2	O3	
DIAL 1	SPLIT 1	100	14	45	13	28	14	45	13	28	80		
DIAL 2	SPLIT 1	100	13	38	13	36	13	38	13	36	74		
DIAL 3	SPLIT 1	100	13	43	16	28	13	43	16	28	13		
DIAL	SPLIT												
DIAL	SPLIT												
DIAL	SPLIT												
		MODE	0	1	0	0	0	1	0	0			

PHASE

1 EB M-43 (GRAND RIVER) LEFT

2 WB M-43 (GRAND RIVER) THRU

3 SB OKEMOS ROAD LEFT

4 NB OKEMOS ROAD THRU

5 WB M-43 (GRAND RIVER) LEFT

6 EB M-43 (GRAND RIVER) THRU

7 NB OKEMOS ROAD LEFT

8 SB OKEMOS ROAD THRU

D1/S1/O1: NORMAL

D2/S1/O1: 06:00-09:00 MONDAY - FRIDAY

D3/S1/O1: 15:00-18:30 MONDAY - FRIDAY

THIS SUBJECT INTERSECTION IS INCORPORATED WITHIN A CLOSED-LOOP SYSTEM. THE MASTER CONTROLLER IS ALSO LOCATED AT THIS SUBJECT INTERSECTION.

OVERLAPS

Overlap Phase	Load Bays	Phases Overlapped	T.G. (s)	Y (s)	R (s)	-G/Y	+GRN
A = EB M-43 Lefts "FYA"	9		0.0	4.3	1.9	1	2
B = SB Okemos Lefts "FYA"	10		0.0	3.9	2.5	3	4
C = WB M-43 Lefts "FYA"	11		0.0	4.3	1.9	5	6
D = NB Okemos Lefts "FYA"	12		0.0	3.9	2.5	7	8

TIMING INSTALLED 01/31/12

REMARKS

16-LOAD-SWITCH, BASE-MOUNTED EPAC TYPE CONTROLLER.

THE PASSAGE TIMES IN RELATION TO PHASES # 4 AND # 8 HAVE BEEN REVISED.

ALL LEFT TURNS OPERATE ON A LAGGING, PERMISSIVE-PROTECTED BASIS VIA UTILIZING FLASHING-YELLOW-ARROW SIGNAL HEAD DISPLAYS.

PREPARED BY: HHH DATE: 01/27/12

FLASH HOURS: to DAILY NONE

NIGHT FLASH: FY = FR =

CONFLICT FLASH: FY = M-43 (GRAND RVR) THRU & LEFTS FR = ALL OTHERS

CONTROLLER TYPE: EPAC PRE-EMPT
 Other: COUNTDOWN PEDS

LOCATION: M-43 (GRAND RIVER) AT OKEMOS ROAD

CITY/TWP: MERIDIAN TOWNSHIP

COUNTY : INGHAM

MILE POINT CONTROL SECTION-SPOT #
4.19 **33082-01-016**

Job # (If Applicable):

ADVANCED TIMING PARAMETERS FORM

SYSTEM INFORMATION	LEFT-TURN PHASING						RING AND BARRIER STRUCTURE											
	Phase # / Description	Permissive-Protected		Protected-Only		R1	B1			B2			B3			B4		
		Lead	Lag	Split	Lead		Lag	2	1		4	3						
Controller Type: <input checked="" type="checkbox"/> EPAC <input type="checkbox"/> Other:	PHASE 1: EB M-43 (GRAND RIVER) LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R2	6	5									
	PHASE 3: SB OKEMOS ROAD LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R3											
	PHASE 5: WB M-43 (GRAND RIVER) LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R4											
	PHASE 7: NB OKEMOS ROAD LEFT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>												
System Type: <input checked="" type="checkbox"/> Closed Loop <input type="checkbox"/> Stand By <input checked="" type="checkbox"/> Group 1 <input type="checkbox"/> Group 2 Address: 03 <input type="checkbox"/> TBC <input type="checkbox"/> TBC/GPS <input type="checkbox"/> None <input type="checkbox"/> Other: If TBC, Synch by: <input checked="" type="checkbox"/> TOD <input type="checkbox"/> Event Interconnect Type: <input type="checkbox"/> Hardwire <input type="checkbox"/> Fiber-Optic <input checked="" type="checkbox"/> Radio <input type="checkbox"/> Phone Drop <input type="checkbox"/> None <input type="checkbox"/> Other: If Phone Drop, Phone # Controller Status: <input checked="" type="checkbox"/> Master <input type="checkbox"/> Slave <input type="checkbox"/> Isolated <input type="checkbox"/> TBC If Slave, Master Location: Master Spot # :	VEHICULAR AND PEDESTRIAN DETECTION												DISAPPEARING LEGEND CASE SIGNS					
	Approach		Vehicular Detection						Pedestrian Detection									
			Movements and Call Delay (s)			Type			Push-Button Crossing Locations									
			Left	Thru	Right	Loop	Video	Other										
	NB OKEMOS ROAD		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	E. LEG OF M-43									
	SB OKEMOS ROAD		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	W. LEG OF M-43									
	EB M-43 (GD RIVER)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
	WB M-43 (GD RIVER)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>										
ADDITIONAL DIAL SPLIT DATA												COORDINATION DATA						
	PHASE	1	2	3	4	5	6	7	8	O1	O2	O3	Operation Mode	1				
DIAL	SPLIT	CYCLE											Coordination Mode	0				
DIAL	SPLIT	CYCLE											Maximum Mode	0				
DIAL	SPLIT	CYCLE											Correction Mode	3				
DIAL	SPLIT	CYCLE											Offset Mode	0				
DIAL	SPLIT	CYCLE											Force Mode	0				
DIAL	SPLIT	CYCLE											Max Dwell	0				
DIAL	SPLIT	CYCLE											Yield Period	0				
REMARKS:						ADDITIONAL OVERLAP DATA												
						Overlap Phase						Load Bays	Phases Overlapped	T.G. (s)	Y (s)	R (s)	-G/Y	+GRN
						=												
						=												
						=												
PREPARED BY: HHH DATE: 01/27/12						LOCATION:												
						M-43 (GRAND RIVER) AT OKEMOS ROAD												
<input checked="" type="checkbox"/> MDOT <input type="checkbox"/> County <input type="checkbox"/> City <input type="checkbox"/> Consultant						CONTROL SECTION-SPOT #												
						33082-01-016												

CLEAR PAGE 2

PREEMPTION INFORMATION FORM

Preemption Description: EB EMERGENCY VEHICLE																			
Preempt # =	1	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	20	Vehicle	Track																
SEL Yellow	4.3		Dwell	G	R	R	R	R	G	R	R								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	10	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	4.3		Dwell																
RET Red Cl	1.9		Cycle																

Preemption Description: WB EMERGENCY VEHICLE																			
Preempt # =	2	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	20	Vehicle	Track																
SEL Yellow	4.3		Dwell	R	G	R	R	G	R	R	R								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	10	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	4.3		Dwell																
RET Red Cl	1.9		Cycle																

Preemption Description: NB EMERGENCY VEHICLE																			
Preempt # =	3	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	20	Vehicle	Track																
SEL Yellow	4.3		Dwell	R	R	R	G	R	R	G	R								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	10	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	3.9		Dwell																
RET Red Cl	2.5		Cycle																

Preemption Description: SB EMERGENCY VEHICLE																			
Preempt # =	4	Time (s)	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SEL Ped Cl	20	Vehicle	Track																
SEL Yellow	4.3		Dwell	R	R	G	R	R	R	R	G								
SEL Red Cl	2.5		Cycle																
TRACK Green	0		Exit				1					1							
TRACK Ped Cl	0	Ped	Track																
TRACK Yellow	0.0		Dwell		DW		DW		DW		DW								
TRACK Red CL	0.0		Cycle																
DWELL Green	10	Overlap Vehicle	Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
RET Ped Cl	0		Track																
RET Yellow	3.9		Dwell																
RET Red Cl	2.5		Cycle																

Preempt System Data						
Ring	1	2	3	4		
MIN GRN/WLK (s)	7.0	7.0				
Priority	PE/FL	PE1/2	PE2/3	PE3/4	PE4/5	PE5/6
Status	1	1	0	0		

REMARKS :

PREPARED BY: HHH DATE: 01/27/12

LOCATION:
M-43 (GRAND RIVER) AT OKEMOS ROAD

CONTROL SECTION-SPOT #
33082-01-016

HCM 2010 Signalized Intersection Summary
 1014: Marsh Road & Grand River Ave (M-43)

12/05/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	59	265	26	71	901	34	42	145	39	44	263	139
Future Volume (veh/h)	59	265	26	71	901	34	42	145	39	44	263	139
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	68	305	30	81	1024	39	55	191	51	46	277	146
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.88	0.88	0.88	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	579	993	97	838	1079	482	170	290	75	209	421	634
Arrive On Green	0.56	0.62	0.62	0.28	0.31	0.31	0.04	0.10	0.10	0.05	0.12	0.12
Sat Flow, veh/h	1757	3225	315	1757	3505	1563	1774	2779	723	1774	3539	1579
Grp Volume(v), veh/h	68	165	170	81	1024	39	55	120	122	46	277	146
Grp Sat Flow(s),veh/h/ln	1757	1752	1788	1757	1752	1563	1774	1770	1733	1774	1770	1579
Q Serve(g_s), s	0.0	4.4	4.5	0.0	28.6	1.8	0.0	6.5	6.8	0.0	7.5	0.0
Cycle Q Clear(g_c), s	0.0	4.4	4.5	0.0	28.6	1.8	0.0	6.5	6.8	0.0	7.5	0.0
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	579	540	551	838	1079	482	170	184	181	209	421	634
V/C Ratio(X)	0.12	0.31	0.31	0.10	0.95	0.08	0.32	0.65	0.68	0.22	0.66	0.23
Avail Cap(c_a), veh/h	579	540	551	838	1079	482	217	542	530	230	1083	929
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	14.1	14.2	11.3	33.8	24.6	45.4	43.0	43.2	43.1	42.1	19.8
Incr Delay (d2), s/veh	0.1	1.5	1.5	0.0	17.5	0.3	1.1	3.8	4.4	0.5	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	2.4	1.1	16.4	0.8	1.5	3.4	3.5	1.2	3.8	2.7
LnGrp Delay(d),s/veh	15.6	15.6	15.6	11.3	51.3	24.9	46.5	46.9	47.5	43.7	43.8	20.0
LnGrp LOS	B	B	B	B	D	C	D	D	D	D	D	B
Approach Vol, veh/h		403			1144			297			469	
Approach Delay, s/veh		15.6			47.6			47.1			36.4	
Approach LOS		B			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.4	37.0	10.3	18.3	34.4	37.0	11.8	16.8				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 31	6.6	30.6	* 6.8	* 31	6.6	30.6				
Max Q Clear Time (g_c+I1), s	2.0	30.6	2.0	9.5	2.0	6.5	2.0	8.8				
Green Ext Time (p_c), s	0.1	0.2	0.1	2.0	0.1	1.7	0.1	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			39.7									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 1016: Okemos Road & Grand River Ave (M-43)

12/05/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	283	94	102	925	49	149	164	55	79	409	86
Future Volume (veh/h)	22	283	94	102	925	49	149	164	55	79	409	86
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	23	298	99	115	1039	55	167	184	62	98	505	106
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.89	0.89	0.89	0.89	0.89	0.89	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	1	1	1
Cap, veh/h	350	1115	497	588	1077	57	190	281	92	398	622	130
Arrive On Green	0.15	0.32	0.32	0.20	0.42	0.42	0.07	0.11	0.11	0.17	0.21	0.21
Sat Flow, veh/h	1757	3505	1564	1757	3386	179	1792	2648	865	1792	2944	615
Grp Volume(v), veh/h	23	298	99	115	538	556	167	122	124	98	306	305
Grp Sat Flow(s),veh/h/ln	1757	1752	1564	1757	1752	1812	1792	1787	1726	1792	1787	1772
Q Serve(g_s), s	0.0	6.3	4.6	0.0	29.9	29.9	5.2	6.6	6.9	0.0	16.3	16.4
Cycle Q Clear(g_c), s	0.0	6.3	4.6	0.0	29.9	29.9	5.2	6.6	6.9	0.0	16.3	16.4
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.50	1.00		0.35
Lane Grp Cap(c), veh/h	350	1115	497	588	557	576	190	189	183	398	378	375
V/C Ratio(X)	0.07	0.27	0.20	0.20	0.96	0.97	0.88	0.65	0.68	0.25	0.81	0.82
Avail Cap(c_a), veh/h	350	1115	497	588	557	576	190	529	511	398	529	524
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	25.4	24.8	18.6	28.3	28.3	44.9	42.9	43.1	34.2	37.5	37.6
Incr Delay (d2), s/veh	0.1	0.6	0.9	0.2	30.4	29.8	34.0	3.7	4.3	0.3	6.3	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.2	2.1	2.0	19.0	19.6	6.3	3.4	3.5	2.3	8.6	8.8
LnGrp Delay(d),s/veh	35.6	26.0	25.7	18.8	58.7	58.1	78.9	46.6	47.4	34.5	43.8	44.3
LnGrp LOS	D	C	C	B	E	E	E	D	D	C	D	D
Approach Vol, veh/h		420			1209			413			709	
Approach Delay, s/veh		26.5			54.6			59.9			42.8	
Approach LOS		C			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.5	38.0	23.5	17.0	21.5	38.0	13.0	27.5				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 32	6.6	29.6	* 6.8	* 32	6.6	29.6				
Max Q Clear Time (g_c+I1), s	2.0	31.9	2.0	8.9	2.0	8.3	7.2	18.4				
Green Ext Time (p_c), s	0.1	0.0	0.3	1.3	0.1	2.0	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			48.1									
HCM 2010 LOS			D									
Notes												

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	400	26	6	1020	17	15
Future Vol, veh/h	400	26	6	1020	17	15
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	84	84	80	80
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	421	27	7	1214	21	19

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	449	0	1057
Stage 1	-	-	-	-	436
Stage 2	-	-	-	-	621
Critical Hdwy	-	-	4.16	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.23	-	3.52
Pot Cap-1 Maneuver	-	-	1101	-	220
Stage 1	-	-	-	-	619
Stage 2	-	-	-	-	498
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1101	-	218
Mov Cap-2 Maneuver	-	-	-	-	348
Stage 1	-	-	-	-	618
Stage 2	-	-	-	-	495

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	777	-	-	1101	-
HCM Lane V/C Ratio	0.061	0.024	-	-	0.006	-
HCM Control Delay (s)	16	9.7	-	-	8.3	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-

HCM 2010 Signalized Intersection Summary
 1014: Marsh Road & Grand River Ave (M-43)

12/05/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	314	890	39	116	454	124	53	459	105	115	383	281
Future Volume (veh/h)	314	890	39	116	454	124	53	459	105	115	383	281
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1863	1863	1863	1863	1863	1900	1881	1881	1881
Adj Flow Rate, veh/h	341	967	42	122	478	131	58	504	115	129	430	316
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	2	2	2	2	2	2	1	1	1
Cap, veh/h	553	1085	47	407	1090	485	279	622	141	161	610	552
Arrive On Green	0.17	0.31	0.31	0.17	0.31	0.31	0.09	0.22	0.22	0.05	0.17	0.17
Sat Flow, veh/h	1810	3524	153	1774	3539	1574	1774	2866	651	1792	3574	1596
Grp Volume(v), veh/h	341	495	514	122	478	131	58	310	309	129	430	316
Grp Sat Flow(s),veh/h/ln	1810	1805	1872	1774	1770	1574	1774	1770	1747	1792	1787	1596
Q Serve(g_s), s	3.1	26.2	26.2	0.2	10.8	6.3	0.0	16.6	16.8	2.9	11.3	0.0
Cycle Q Clear(g_c), s	3.1	26.2	26.2	0.2	10.8	6.3	0.0	16.6	16.8	2.9	11.3	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	553	556	577	407	1090	485	279	384	379	161	610	552
V/C Ratio(X)	0.62	0.89	0.89	0.30	0.44	0.27	0.21	0.81	0.81	0.80	0.70	0.57
Avail Cap(c_a), veh/h	553	556	577	407	1090	485	279	542	535	192	1094	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	33.0	33.0	33.6	27.7	26.1	39.1	37.2	37.2	45.8	39.1	26.7
Incr Delay (d2), s/veh	2.1	19.1	18.5	0.4	1.3	1.4	0.4	6.1	6.5	18.2	1.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	15.9	16.4	2.8	5.4	2.9	1.5	8.7	8.8	4.3	5.7	7.2
LnGrp Delay(d),s/veh	31.5	52.1	51.5	34.0	29.0	27.5	39.5	43.3	43.8	64.0	40.6	27.7
LnGrp LOS	C	D	D	C	C	C	D	D	D	E	D	C
Approach Vol, veh/h		1350			731			677			875	
Approach Delay, s/veh		46.7			29.5			43.2			39.4	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.7	37.0	15.9	23.5	23.7	37.0	11.2	28.1				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 31	6.6	30.6	* 6.8	* 31	6.6	30.6				
Max Q Clear Time (g_c+I1), s	5.1	12.8	2.0	13.3	2.2	28.2	4.9	18.8				
Green Ext Time (p_c), s	0.3	3.1	0.2	3.5	0.6	1.5	0.1	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			40.8									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 1016: Okemos Road & Grand River Ave (M-43)

12/05/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1242	143	161	753	77	265	442	207	141	307	88
Future Volume (veh/h)	161	1242	143	161	753	77	265	442	207	141	307	88
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1863	1863	1900	1900	1900	1900	1863	1863	1900
Adj Flow Rate, veh/h	171	1321	152	175	818	84	279	465	218	153	334	96
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	357	1290	573	265	1168	120	316	520	242	186	422	120
Arrive On Green	0.11	0.36	0.36	0.11	0.36	0.36	0.13	0.22	0.22	0.06	0.16	0.16
Sat Flow, veh/h	1792	3574	1588	1774	3239	333	1810	2389	1112	1774	2720	770
Grp Volume(v), veh/h	171	1321	152	175	447	455	279	350	333	153	215	215
Grp Sat Flow(s),veh/h/ln	1792	1787	1588	1774	1770	1801	1810	1805	1696	1774	1770	1720
Q Serve(g_s), s	0.0	36.8	6.9	5.4	22.0	22.0	10.5	19.2	19.5	4.6	11.9	12.3
Cycle Q Clear(g_c), s	0.0	36.8	6.9	5.4	22.0	22.0	10.5	19.2	19.5	4.6	11.9	12.3
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.66	1.00		0.45
Lane Grp Cap(c), veh/h	357	1290	573	265	638	650	316	393	369	186	275	267
V/C Ratio(X)	0.48	1.02	0.27	0.66	0.70	0.70	0.88	0.89	0.90	0.82	0.78	0.80
Avail Cap(c_a), veh/h	357	1290	573	265	638	650	316	409	384	238	401	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	32.6	23.0	41.7	27.9	27.9	41.8	38.8	38.8	45.7	41.4	41.6
Incr Delay (d2), s/veh	1.0	31.4	1.1	5.9	6.3	6.2	24.1	20.7	23.1	16.5	6.2	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	23.7	3.2	5.1	11.8	12.0	9.8	11.8	11.5	5.1	6.3	6.4
LnGrp Delay(d),s/veh	37.5	64.0	24.2	47.7	34.2	34.1	65.9	59.5	62.0	62.2	47.6	49.1
LnGrp LOS	D	F	C	D	C	C	E	E	E	E	D	D
Approach Vol, veh/h		1644			1077			962			583	
Approach Delay, s/veh		57.6			36.3			62.2			52.0	
Approach LOS		E			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.4	43.0	13.0	28.6	17.4	43.0	19.4	22.2				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 37	9.6	23.1	* 6.8	* 37	9.6	23.1				
Max Q Clear Time (g_c+I1), s	2.0	24.0	6.6	21.5	7.4	38.8	12.5	14.3				
Green Ext Time (p_c), s	0.4	4.3	0.2	0.7	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			52.5									
HCM 2010 LOS			D									
Notes												

HCM 2010 TWSC
 9000: Meijer Drive & Grand River Ave (M-43)

12/05/2017

Intersection

Int Delay, s/veh 2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	1449	148	24	897	58	54
Future Vol, veh/h	1449	148	24	897	58	54
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	82	82
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	1525	156	25	944	71	66

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1687	0	2132
Stage 1	-	-	-	-	1609
Stage 2	-	-	-	-	523
Critical Hdwy	-	-	4.14	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.22	-	3.5
Pot Cap-1 Maneuver	-	-	375	-	43
Stage 1	-	-	-	-	152
Stage 2	-	-	-	-	565
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	375	-	40
Mov Cap-2 Maneuver	-	-	-	-	119
Stage 1	-	-	-	-	151
Stage 2	-	-	-	-	527

Approach

	EB	WB	NB
HCM Control Delay, s	0	0.4	46.9
HCM LOS			E

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	119	307	-	-	375	-
HCM Lane V/C Ratio	0.594	0.215	-	-	0.067	-
HCM Control Delay (s)	72.1	19.9	-	-	15.3	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	3	0.8	-	-	0.2	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
 1014: Marsh Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	59	265	26	71	901	34	42	145	39	44	263	139
Future Volume (veh/h)	59	265	26	71	901	34	42	145	39	44	263	139
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	69	311	30	82	1044	39	56	195	52	47	282	149
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.88	0.88	0.88	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	571	995	95	832	1079	482	170	294	76	210	427	634
Arrive On Green	0.56	0.62	0.62	0.28	0.31	0.31	0.04	0.11	0.11	0.05	0.12	0.12
Sat Flow, veh/h	1757	3232	310	1757	3505	1563	1774	2780	723	1774	3539	1579
Grp Volume(v), veh/h	69	168	173	82	1044	39	56	122	125	47	282	149
Grp Sat Flow(s),veh/h/ln	1757	1752	1789	1757	1752	1563	1774	1770	1733	1774	1770	1579
Q Serve(g_s), s	0.0	4.5	4.6	0.0	29.4	1.8	0.0	6.6	6.9	0.0	7.6	0.0
Cycle Q Clear(g_c), s	0.0	4.5	4.6	0.0	29.4	1.8	0.0	6.6	6.9	0.0	7.6	0.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	571	540	551	832	1079	482	170	187	183	210	427	634
V/C Ratio(X)	0.12	0.31	0.31	0.10	0.97	0.08	0.33	0.65	0.68	0.22	0.66	0.24
Avail Cap(c_a), veh/h	571	540	551	832	1079	482	217	542	530	230	1083	926
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.8	14.2	14.2	11.4	34.1	24.6	45.4	42.9	43.1	43.1	42.0	19.8
Incr Delay (d2), s/veh	0.1	1.5	1.5	0.1	20.5	0.3	1.1	3.8	4.4	0.5	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.4	2.4	1.1	17.3	0.8	1.5	3.5	3.5	1.3	3.8	2.7
LnGrp Delay(d),s/veh	15.9	15.7	15.7	11.5	54.6	24.9	46.5	46.8	47.5	43.6	43.7	20.0
LnGrp LOS	B	B	B	B	D	C	D	D	D	D	D	C
Approach Vol, veh/h		410			1165			303			478	
Approach Delay, s/veh		15.7			50.6			47.0			36.3	
Approach LOS		B			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.2	37.0	10.3	18.5	34.2	37.0	11.8	17.0				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 31	6.6	30.6	* 6.8	* 31	6.6	30.6				
Max Q Clear Time (g_c+I1), s	2.0	31.4	2.0	9.6	2.0	6.6	2.0	8.9				
Green Ext Time (p_c), s	0.1	0.0	0.1	2.1	0.1	1.7	0.1	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			41.2									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 1016: Okemos Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	283	94	102	925	49	149	164	55	79	409	86
Future Volume (veh/h)	22	283	94	102	925	49	149	164	55	79	409	86
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	24	304	101	117	1060	56	171	188	63	99	515	108
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.89	0.89	0.89	0.89	0.89	0.89	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	1	1	1
Cap, veh/h	338	1115	497	579	1077	57	190	285	93	402	632	132
Arrive On Green	0.15	0.32	0.32	0.20	0.42	0.42	0.07	0.11	0.11	0.17	0.21	0.21
Sat Flow, veh/h	1757	3505	1564	1757	3386	179	1792	2652	862	1792	2944	615
Grp Volume(v), veh/h	24	304	101	117	548	568	171	125	126	99	312	311
Grp Sat Flow(s),veh/h/ln	1757	1752	1564	1757	1752	1813	1792	1787	1726	1792	1787	1772
Q Serve(g_s), s	0.0	6.5	4.7	0.0	30.9	31.0	5.4	6.7	7.0	0.0	16.6	16.7
Cycle Q Clear(g_c), s	0.0	6.5	4.7	0.0	30.9	31.0	5.4	6.7	7.0	0.0	16.6	16.7
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.50	1.00		0.35
Lane Grp Cap(c), veh/h	338	1115	497	579	557	576	190	192	186	402	384	380
V/C Ratio(X)	0.07	0.27	0.20	0.20	0.98	0.98	0.90	0.65	0.68	0.25	0.81	0.82
Avail Cap(c_a), veh/h	338	1115	497	579	557	576	190	529	511	402	529	524
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	25.5	24.9	19.0	28.6	28.6	45.0	42.8	43.0	34.0	37.3	37.4
Incr Delay (d2), s/veh	0.1	0.6	0.9	0.2	34.4	33.9	38.4	3.7	4.3	0.3	6.7	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.2	2.2	2.1	20.2	20.8	6.7	3.5	3.6	2.3	8.9	9.0
LnGrp Delay(d),s/veh	36.2	26.1	25.8	19.2	63.0	62.5	83.4	46.5	47.3	34.3	44.0	44.5
LnGrp LOS	D	C	C	B	E	E	F	D	D	C	D	D
Approach Vol, veh/h		429			1233			422			722	
Approach Delay, s/veh		26.6			58.6			61.7			42.9	
Approach LOS		C			E			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.1	38.0	23.7	17.2	21.1	38.0	13.0	27.9				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 32	6.6	29.6	* 6.8	* 32	6.6	29.6				
Max Q Clear Time (g_c+I1), s	2.0	33.0	2.0	9.0	2.0	8.5	7.4	18.7				
Green Ext Time (p_c), s	0.1	0.0	0.3	1.4	0.1	2.0	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			50.1									
HCM 2010 LOS			D									
Notes												

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	400	26	5	1020	17	15
Future Vol, veh/h	400	26	5	1020	17	15
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	84	84	80	80
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	429	28	6	1239	22	19

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	458	0	1075
Stage 1	-	-	-	-	444
Stage 2	-	-	-	-	631
Critical Hdwy	-	-	4.16	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.23	-	3.52
Pot Cap-1 Maneuver	-	-	1092	-	214
Stage 1	-	-	-	-	614
Stage 2	-	-	-	-	492
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1092	-	213
Mov Cap-2 Maneuver	-	-	-	-	343
Stage 1	-	-	-	-	613
Stage 2	-	-	-	-	489

Approach

	EB	WB	NB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	771	-	-	1092	-
HCM Lane V/C Ratio	0.063	0.025	-	-	0.006	-
HCM Control Delay (s)	16.2	9.8	-	-	8.3	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-

HCM 2010 Signalized Intersection Summary
 1014: Marsh Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	314	890	39	116	454	124	53	459	105	115	383	281
Future Volume (veh/h)	314	890	39	116	454	124	53	459	105	115	383	281
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1863	1863	1863	1863	1863	1900	1881	1881	1881
Adj Flow Rate, veh/h	348	987	43	125	487	133	59	514	118	132	439	322
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	2	2	2	2	2	2	1	1	1
Cap, veh/h	539	1085	47	393	1090	485	283	631	144	164	620	547
Arrive On Green	0.17	0.31	0.31	0.17	0.31	0.31	0.10	0.22	0.22	0.05	0.17	0.17
Sat Flow, veh/h	1810	3523	153	1774	3539	1574	1774	2862	654	1792	3574	1596
Grp Volume(v), veh/h	348	506	524	125	487	133	59	317	315	132	439	322
Grp Sat Flow(s),veh/h/ln	1810	1805	1872	1774	1770	1574	1774	1770	1746	1792	1787	1596
Q Serve(g_s), s	3.8	26.9	26.9	0.7	11.0	6.4	0.0	17.0	17.2	3.1	11.6	0.0
Cycle Q Clear(g_c), s	3.8	26.9	26.9	0.7	11.0	6.4	0.0	17.0	17.2	3.1	11.6	0.0
Prop In Lane	1.00		0.08	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	539	556	577	393	1090	485	283	390	385	164	620	547
V/C Ratio(X)	0.65	0.91	0.91	0.32	0.45	0.27	0.21	0.81	0.82	0.81	0.71	0.59
Avail Cap(c_a), veh/h	539	556	577	393	1090	485	283	542	534	192	1094	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	33.3	33.3	34.2	27.8	26.2	38.9	37.0	37.1	45.7	38.9	27.1
Incr Delay (d2), s/veh	2.7	21.3	20.8	0.5	1.3	1.4	0.4	6.5	6.9	19.1	1.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	16.6	17.2	2.9	5.6	3.0	1.5	9.0	9.0	4.5	5.9	7.4
LnGrp Delay(d),s/veh	32.9	54.6	54.0	34.7	29.1	27.6	39.3	43.5	44.0	64.8	40.4	28.1
LnGrp LOS	C	D	D	C	C	C	D	D	D	E	D	C
Approach Vol, veh/h		1378			745			691			893	
Approach Delay, s/veh		48.9			29.8			43.3			39.6	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.1	37.0	16.1	23.8	23.1	37.0	11.4	28.5				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 31	6.6	30.6	* 6.8	* 31	6.6	30.6				
Max Q Clear Time (g_c+I1), s	5.8	13.0	2.0	13.6	2.7	28.9	5.1	19.2				
Green Ext Time (p_c), s	0.2	3.1	0.2	3.6	0.6	1.1	0.1	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			41.8									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 1016: Okemos Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1242	143	161	753	77	265	442	207	141	307	88
Future Volume (veh/h)	161	1242	143	161	753	77	265	442	207	141	307	88
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1863	1863	1900	1900	1900	1900	1863	1863	1900
Adj Flow Rate, veh/h	175	1348	155	178	835	85	285	475	222	156	340	98
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	344	1290	573	258	1170	119	319	526	244	189	428	122
Arrive On Green	0.11	0.36	0.36	0.11	0.36	0.36	0.13	0.22	0.22	0.07	0.16	0.16
Sat Flow, veh/h	1792	3574	1588	1774	3242	330	1810	2391	1110	1774	2718	772
Grp Volume(v), veh/h	175	1348	155	178	456	464	285	358	339	156	220	218
Grp Sat Flow(s),veh/h/ln	1792	1787	1588	1774	1770	1802	1810	1805	1697	1774	1770	1720
Q Serve(g_s), s	0.1	36.8	7.1	5.7	22.6	22.6	10.9	19.7	19.9	4.7	12.2	12.5
Cycle Q Clear(g_c), s	0.1	36.8	7.1	5.7	22.6	22.6	10.9	19.7	19.9	4.7	12.2	12.5
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.65	1.00		0.45
Lane Grp Cap(c), veh/h	344	1290	573	258	638	650	319	397	373	189	279	271
V/C Ratio(X)	0.51	1.05	0.27	0.69	0.71	0.71	0.89	0.90	0.91	0.83	0.79	0.81
Avail Cap(c_a), veh/h	344	1290	573	258	638	650	319	409	384	238	401	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.4	32.6	23.1	42.2	28.1	28.1	41.7	38.7	38.8	45.6	41.3	41.5
Incr Delay (d2), s/veh	1.2	37.8	1.2	7.6	6.7	6.6	25.6	22.1	24.5	17.2	6.5	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	24.9	3.3	5.3	12.2	12.4	10.1	12.3	11.9	5.2	6.5	6.5
LnGrp Delay(d),s/veh	38.6	70.4	24.3	49.8	34.8	34.6	67.3	60.8	63.3	62.8	47.8	49.4
LnGrp LOS	D	F	C	D	C	C	E	E	E	E	D	D
Approach Vol, veh/h		1678			1098			982			594	
Approach Delay, s/veh		62.8			37.1			63.6			52.3	
Approach LOS		E			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	43.0	13.2	28.8	17.0	43.0	19.6	22.5				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 37	9.6	23.1	* 6.8	* 37	9.6	23.1				
Max Q Clear Time (g_c+I1), s	2.1	24.6	6.7	21.9	7.7	38.8	12.9	14.5				
Green Ext Time (p_c), s	0.5	4.3	0.1	0.6	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			55.1									
HCM 2010 LOS			E									
Notes												

HCM 2010 TWSC
 9000: Meijer Drive & Grand River Ave (M-43)

12/06/2017

Intersection

Int Delay, s/veh 2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	1449	148	24	897	58	54
Future Vol, veh/h	1449	148	24	897	58	54
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	82	82
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	1556	159	26	963	72	67

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1721	0	2174
Stage 1	-	-	-	-	1641
Stage 2	-	-	-	-	533
Critical Hdwy	-	-	4.14	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.22	-	3.5
Pot Cap-1 Maneuver	-	-	364	-	41
Stage 1	-	-	-	-	146
Stage 2	-	-	-	-	558
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	364	-	38
Mov Cap-2 Maneuver	-	-	-	-	115
Stage 1	-	-	-	-	145
Stage 2	-	-	-	-	518

Approach

	EB	WB	NB
HCM Control Delay, s	0	0.4	50.4
HCM LOS			F

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	115	300	-	-	364	-
HCM Lane V/C Ratio	0.627	0.224	-	-	0.071	-
HCM Control Delay (s)	78.4	20.4	-	-	15.6	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	3.2	0.8	-	-	0.2	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 2010 Signalized Intersection Summary
 1014: Marsh Road & Grand River Ave (M-43)

12/06/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	64	297	28	72	947	35	44	148	40	45	268	146
Future Volume (veh/h)	64	297	28	72	947	35	44	148	40	45	268	146
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1845	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	74	341	32	82	1076	40	58	195	53	47	282	154
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.87	0.87	0.87	0.88	0.88	0.88	0.76	0.76	0.76	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	2	2	2
Cap, veh/h	563	998	93	817	1079	482	171	294	78	210	428	633
Arrive On Green	0.56	0.62	0.62	0.28	0.31	0.31	0.04	0.11	0.11	0.05	0.12	0.12
Sat Flow, veh/h	1757	3240	302	1757	3505	1563	1774	2767	733	1774	3539	1579
Grp Volume(v), veh/h	74	183	190	82	1076	40	58	123	125	47	282	154
Grp Sat Flow(s),veh/h/ln	1757	1752	1790	1757	1752	1563	1774	1770	1731	1774	1770	1579
Q Serve(g_s), s	0.0	5.1	5.2	0.0	30.7	1.8	0.0	6.7	7.0	0.0	7.6	0.0
Cycle Q Clear(g_c), s	0.0	5.1	5.2	0.0	30.7	1.8	0.0	6.7	7.0	0.0	7.6	0.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.42	1.00		1.00
Lane Grp Cap(c), veh/h	563	540	551	817	1079	482	171	188	184	210	428	633
V/C Ratio(X)	0.13	0.34	0.34	0.10	1.00	0.08	0.34	0.65	0.68	0.22	0.66	0.24
Avail Cap(c_a), veh/h	563	540	551	817	1079	482	218	542	530	230	1083	925
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	14.3	14.3	11.8	34.6	24.6	45.3	42.9	43.1	43.1	42.0	19.9
Incr Delay (d2), s/veh	0.1	1.7	1.7	0.1	26.6	0.3	1.2	3.8	4.4	0.5	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.7	2.8	1.2	18.8	0.8	1.6	3.4	3.6	1.3	3.8	2.8
LnGrp Delay(d),s/veh	16.0	16.0	16.0	11.8	61.2	24.9	46.5	46.7	47.4	43.6	43.7	20.1
LnGrp LOS	B	B	B	B	E	C	D	D	D	D	D	C
Approach Vol, veh/h		447			1198			306			483	
Approach Delay, s/veh		16.0			56.6			47.0			36.2	
Approach LOS		B			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.1	37.0	10.4	18.5	34.1	37.0	11.9	17.0				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 31	6.6	30.6	* 6.8	* 31	6.6	30.6				
Max Q Clear Time (g_c+I1), s	2.0	32.7	2.0	9.6	2.0	7.2	2.0	9.0				
Green Ext Time (p_c), s	0.1	0.0	0.1	2.1	0.1	1.9	0.1	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			43.9									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 1016: Okemos Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	298	96	106	950	52	152	167	58	83	417	88
Future Volume (veh/h)	22	298	96	106	950	52	152	167	58	83	417	88
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	23	314	101	119	1067	58	171	188	65	102	515	109
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.89	0.89	0.89	0.89	0.89	0.89	0.81	0.81	0.81
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	1	1	1
Cap, veh/h	335	1115	497	574	1075	58	190	285	95	401	632	133
Arrive On Green	0.15	0.32	0.32	0.15	0.32	0.32	0.07	0.11	0.11	0.17	0.21	0.21
Sat Flow, veh/h	1757	3505	1564	1757	3380	184	1792	2629	881	1792	2939	619
Grp Volume(v), veh/h	23	314	101	119	553	572	171	126	127	102	312	312
Grp Sat Flow(s),veh/h/ln	1757	1752	1564	1757	1752	1812	1792	1787	1723	1792	1787	1771
Q Serve(g_s), s	0.0	6.7	4.7	0.0	31.4	31.5	5.4	6.8	7.1	0.0	16.6	16.8
Cycle Q Clear(g_c), s	0.0	6.7	4.7	0.0	31.4	31.5	5.4	6.8	7.1	0.0	16.6	16.8
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.51	1.00		0.35
Lane Grp Cap(c), veh/h	335	1115	497	574	557	576	190	194	187	401	384	381
V/C Ratio(X)	0.07	0.28	0.20	0.21	0.99	0.99	0.90	0.65	0.68	0.25	0.81	0.82
Avail Cap(c_a), veh/h	335	1115	497	574	557	576	190	529	510	401	529	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.2	25.5	24.9	20.6	34.0	34.0	45.0	42.8	42.9	34.1	37.3	37.4
Incr Delay (d2), s/veh	0.1	0.6	0.9	0.2	36.3	35.8	38.4	3.7	4.3	0.3	6.7	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.3	2.2	2.3	20.8	21.5	6.7	3.5	3.6	2.4	9.0	9.0
LnGrp Delay(d),s/veh	36.3	26.2	25.8	20.7	70.3	69.8	83.4	46.4	47.3	34.4	44.1	44.6
LnGrp LOS	D	C	C	C	E	E	F	D	D	C	D	D
Approach Vol, veh/h		438			1244			424			726	
Approach Delay, s/veh		26.6			65.3			61.6			42.9	
Approach LOS		C			E			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.1	38.0	23.7	17.2	21.1	38.0	13.0	27.9				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 32	6.6	29.6	* 6.8	* 32	6.6	29.6				
Max Q Clear Time (g_c+I1), s	2.0	33.5	2.0	9.1	2.0	8.7	7.4	18.8				
Green Ext Time (p_c), s	0.1	0.0	0.3	1.4	0.1	2.1	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			53.0									
HCM 2010 LOS			D									
Notes												

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	440	27	6	1073	17	15
Future Vol, veh/h	440	27	6	1073	17	15
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	84	84	80	80
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	463	28	7	1277	21	19

Major/Minor

	Major1	Major2	Minor1
Conflicting Flow All	0	0	493
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.16
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.23
Pot Cap-1 Maneuver	-	-	1060
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1060
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	NB
HCM Control Delay, s	0	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	329	752	-	-	1060	-
HCM Lane V/C Ratio	0.065	0.025	-	-	0.007	-
HCM Control Delay (s)	16.7	9.9	-	-	8.4	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-

Intersection

Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Vol, veh/h	26	422	1026	64	45	41
Future Vol, veh/h	26	422	1026	64	45	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	84	84	92	92
Heavy Vehicles, %	4	4	3	3	2	2
Mvmt Flow	27	444	1221	76	49	45

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1298	0	-	0	1537 649
Stage 1	-	-	-	-	1260 -
Stage 2	-	-	-	-	277 -
Critical Hdwy	4.18	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.24	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	519	-	-	-	107 412
Stage 1	-	-	-	-	230 -
Stage 2	-	-	-	-	745 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	519	-	-	-	100 412
Mov Cap-2 Maneuver	-	-	-	-	189 -
Stage 1	-	-	-	-	230 -
Stage 2	-	-	-	-	694 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	27.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	519	-	-	-	255
HCM Lane V/C Ratio	0.053	-	-	-	0.367
HCM Control Delay (s)	12.3	0.4	-	-	27.1
HCM Lane LOS	B	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	1.6

HCM 2010 Signalized Intersection Summary
 1014: Marsh Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	324	913	41	118	470	126	55	468	107	117	391	292
Future Volume (veh/h)	324	913	41	118	470	126	55	468	107	117	391	292
Number	1	6	16	5	2	12	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1863	1863	1863	1863	1863	1900	1881	1881	1881
Adj Flow Rate, veh/h	352	992	45	124	495	133	60	514	118	131	439	328
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	2	2	2	2	2	2	1	1	1
Cap, veh/h	537	1083	49	393	1090	485	282	631	144	163	621	549
Arrive On Green	0.17	0.31	0.31	0.17	0.31	0.31	0.10	0.22	0.22	0.05	0.17	0.17
Sat Flow, veh/h	1810	3516	160	1774	3539	1574	1774	2862	654	1792	3574	1596
Grp Volume(v), veh/h	352	509	528	124	495	133	60	317	315	131	439	328
Grp Sat Flow(s),veh/h/ln	1810	1805	1871	1774	1770	1574	1774	1770	1746	1792	1787	1596
Q Serve(g_s), s	4.3	27.2	27.2	0.7	11.3	6.4	0.0	17.0	17.2	3.1	11.6	0.0
Cycle Q Clear(g_c), s	4.3	27.2	27.2	0.7	11.3	6.4	0.0	17.0	17.2	3.1	11.6	0.0
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	537	556	576	393	1090	485	282	390	385	163	621	549
V/C Ratio(X)	0.66	0.92	0.92	0.32	0.45	0.27	0.21	0.81	0.82	0.80	0.71	0.60
Avail Cap(c_a), veh/h	537	556	576	393	1090	485	282	542	534	192	1094	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	33.4	33.4	34.2	27.8	26.2	39.0	37.0	37.1	45.7	38.9	27.1
Incr Delay (d2), s/veh	2.9	22.2	21.7	0.5	1.4	1.4	0.4	6.5	6.9	18.8	1.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	17.0	17.5	2.9	5.7	3.0	1.5	9.0	9.0	4.4	5.9	7.5
LnGrp Delay(d),s/veh	33.3	55.6	55.0	34.7	29.2	27.6	39.4	43.5	44.0	64.6	40.4	28.2
LnGrp LOS	C	E	E	C	C	C	D	D	D	E	D	C
Approach Vol, veh/h		1389			752			692			898	
Approach Delay, s/veh		49.7			29.8			43.3			39.5	
Approach LOS		D			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.2	37.0	16.1	23.8	23.2	37.0	11.4	28.5				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 31	6.6	30.6	* 6.8	* 31	6.6	30.6				
Max Q Clear Time (g_c+I1), s	6.3	13.3	2.0	13.6	2.7	29.2	5.1	19.2				
Green Ext Time (p_c), s	0.1	3.2	0.2	3.6	0.6	1.0	0.1	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			42.1									
HCM 2010 LOS			D									
Notes												

HCM 2010 Signalized Intersection Summary
 1016: Okemos Road & Grand River Ave (M-43)

12/06/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	1286	146	167	785	81	270	451	211	146	313	90
Future Volume (veh/h)	164	1286	146	167	785	81	270	451	211	146	313	90
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1863	1863	1900	1900	1900	1900	1863	1863	1900
Adj Flow Rate, veh/h	174	1368	155	182	853	88	284	475	222	159	340	98
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	336	1290	573	255	1168	120	322	526	244	192	428	122
Arrive On Green	0.10	0.36	0.36	0.10	0.36	0.36	0.13	0.22	0.22	0.07	0.16	0.16
Sat Flow, veh/h	1792	3574	1588	1774	3237	334	1810	2391	1110	1774	2718	772
Grp Volume(v), veh/h	174	1368	155	182	466	475	284	358	339	159	220	218
Grp Sat Flow(s),veh/h/ln	1792	1787	1588	1774	1770	1801	1810	1805	1697	1774	1770	1720
Q Serve(g_s), s	0.4	36.8	7.1	5.9	23.3	23.3	10.8	19.7	19.9	4.9	12.2	12.5
Cycle Q Clear(g_c), s	0.4	36.8	7.1	5.9	23.3	23.3	10.8	19.7	19.9	4.9	12.2	12.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.65	1.00		0.45
Lane Grp Cap(c), veh/h	336	1290	573	255	638	650	322	397	373	192	279	271
V/C Ratio(X)	0.52	1.06	0.27	0.71	0.73	0.73	0.88	0.90	0.91	0.83	0.79	0.81
Avail Cap(c_a), veh/h	336	1290	573	255	638	650	322	409	384	238	401	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	32.6	23.1	42.5	28.3	28.3	41.6	38.7	38.8	45.5	41.3	41.5
Incr Delay (d2), s/veh	1.4	42.9	1.2	9.1	7.2	7.1	23.5	22.1	24.5	17.8	6.5	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	25.8	3.3	5.5	12.7	12.9	9.9	12.3	11.9	5.3	6.5	6.5
LnGrp Delay(d),s/veh	39.3	75.5	24.3	51.5	35.5	35.4	65.0	60.8	63.3	63.3	47.8	49.4
LnGrp LOS	D	F	C	D	D	D	E	E	E	E	D	D
Approach Vol, veh/h		1697			1123			981			597	
Approach Delay, s/veh		67.1			38.1			62.9			52.5	
Approach LOS		E			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	43.0	13.4	28.8	16.8	43.0	19.7	22.5				
Change Period (Y+Rc), s	* 6.2	* 6.2	6.4	6.4	* 6.2	* 6.2	6.4	6.4				
Max Green Setting (Gmax), s	* 6.8	* 37	9.6	23.1	* 6.8	* 37	9.6	23.1				
Max Q Clear Time (g_c+I1), s	2.4	25.3	6.9	21.9	7.9	38.8	12.8	14.5				
Green Ext Time (p_c), s	0.4	4.2	0.1	0.6	0.0	0.0	0.0	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			56.8									
HCM 2010 LOS			E									
Notes												

Intersection

Int Delay, s/veh 2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	1488	151	24	928	59	55
Future Vol, veh/h	1488	151	24	928	59	55
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	82	82
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	1566	159	25	977	72	67

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1731	0	2191
Stage 1	-	-	-	-	1652
Stage 2	-	-	-	-	539
Critical Hdwy	-	-	4.14	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.22	-	3.5
Pot Cap-1 Maneuver	-	-	360	-	40
Stage 1	-	-	-	-	144
Stage 2	-	-	-	-	555
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	360	-	37
Mov Cap-2 Maneuver	-	-	-	-	113
Stage 1	-	-	-	-	143
Stage 2	-	-	-	-	516

Approach

	EB	WB	NB
HCM Control Delay, s	0	0.4	51.8
HCM LOS			F

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	113	298	-	-	360	-
HCM Lane V/C Ratio	0.637	0.225	-	-	0.07	-
HCM Control Delay (s)	80.9	20.6	-	-	15.8	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	3.2	0.8	-	-	0.2	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Vol, veh/h	50	1603	963	24	36	33
Future Vol, veh/h	50	1603	963	24	36	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	92	92
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	53	1687	1014	25	39	36

Major/Minor

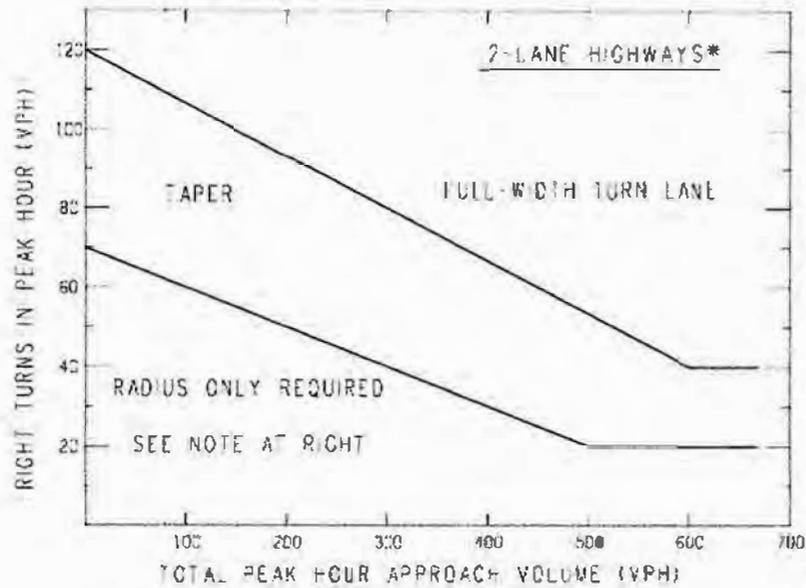
	Major1	Major2	Minor2
Conflicting Flow All	1039	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.21	-	-
Pot Cap-1 Maneuver	671	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	671	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	SB
HCM Control Delay, s	5.3	0	13.4
HCM LOS			B

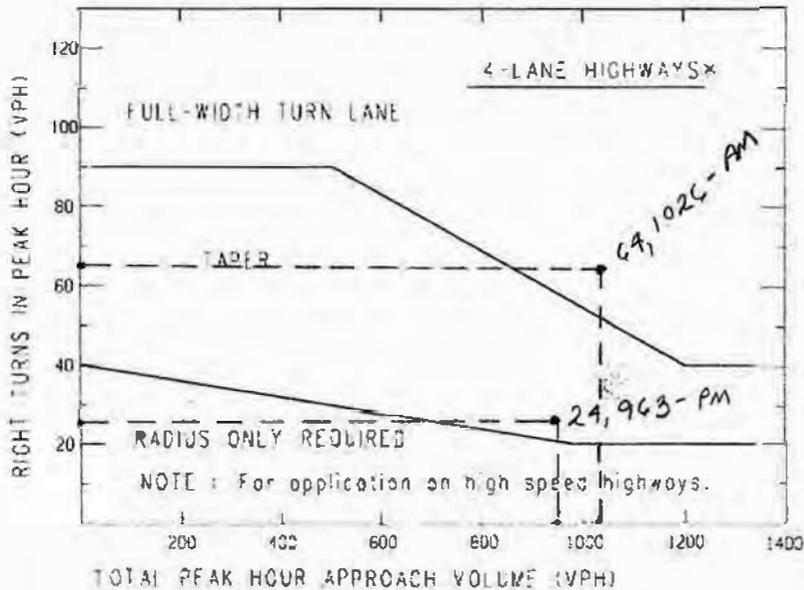
Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	671	-	-	-	502
HCM Lane V/C Ratio	0.078	-	-	-	0.149
HCM Control Delay (s)	10.8	5.1	-	-	13.4
HCM Lane LOS	B	A	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5



NOTE: For posted speeds at or under 45 mph, peak hour right turns greater than 40 vph, and total peak hour approach less than 300 vph, adjust right turn volumes.

Adjust peak hour
 Right turns = Peak hour
 Right turns - 20



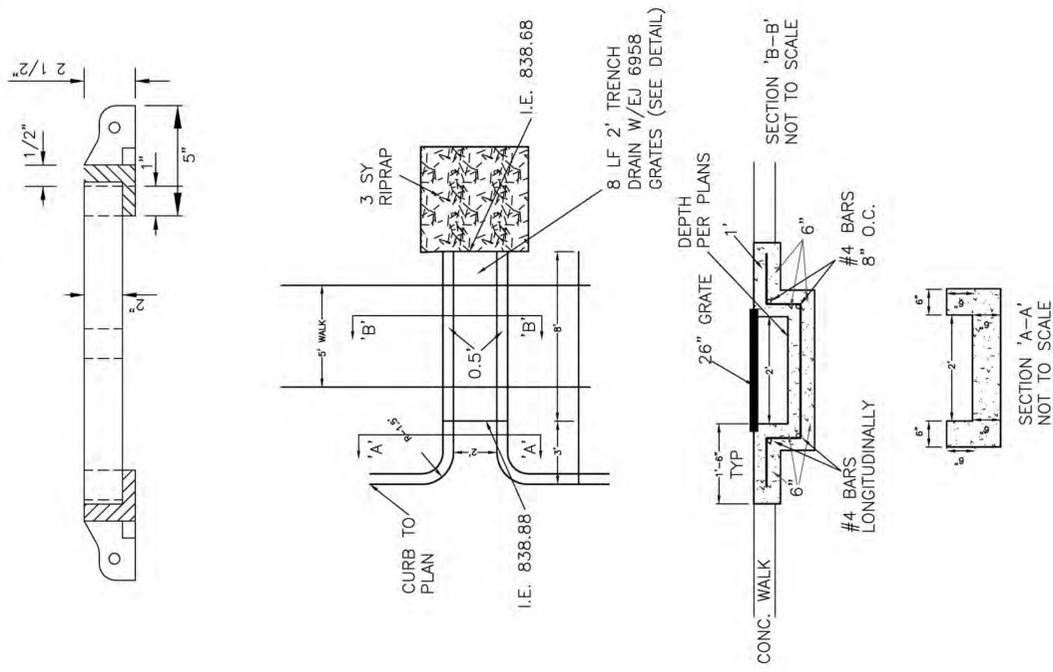
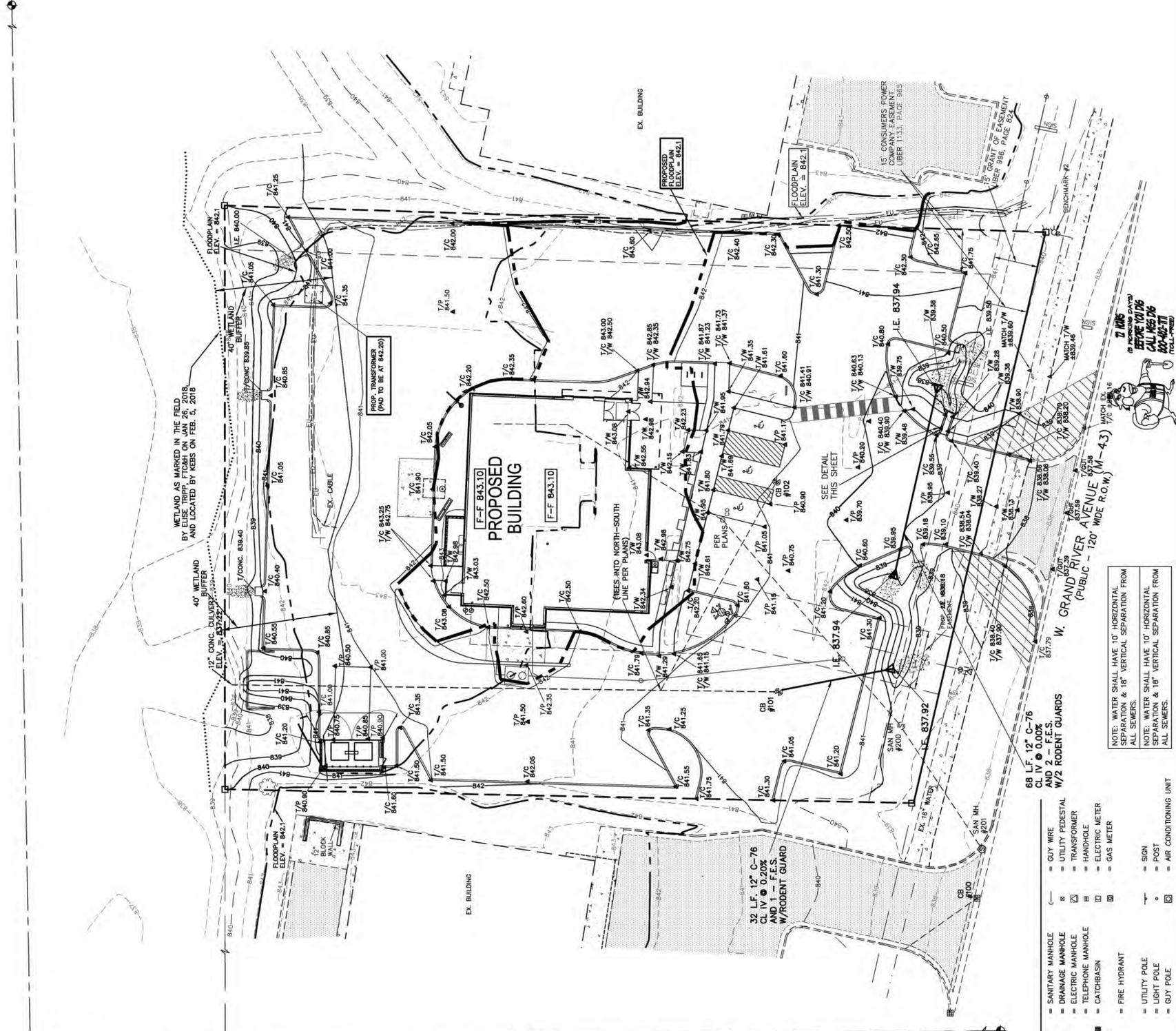
*If a center left-turn lane exists (ie 3 or 5 lane roadway), subtract the number of left turns in approach volume from the total approach volume to get an adjusted total approach volume.

Sample Problem: The Design Speed is 55 mph. The Peak Hour Approach Volume is 300 vph. The Number of Right Turns in the Peak Hour is 100 vph. Determine if a right turn lane is recommended.

Solution: Figure indicates that the intersection of 300 vph and 100 vph is located above the upper trend line; thus, a right-turn lane may be recommended.

C.P.U.D. PLAN FOR:
2080 Grand River
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

NOTE: ALL GRADES SHOWN ARE FOR FINAL CONSTRUCTED CONDITIONS AND CONTRACTOR IS RESPONSIBLE FOR HOLDING DOWN GRADES AS THEY OR THE DEVELOPER DEEMS NECESSARY FOR BASEMENT SPOILS, TOPSOILS ETC...



- EX. SEWER INVENTORIES**
- SANITARY MANHOLE #200
 - SANITARY MANHOLE #201
 - SANITARY MANHOLE #202
 - SANITARY MANHOLE #203
 - SANITARY MANHOLE #204
 - SANITARY MANHOLE #205
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 - SANITARY MANHOLE #283
 - SANITARY MANHOLE #284
 - SANITARY MANHOLE #285
 - SANITARY MANHOLE #286
 - SANITARY MANHOLE #287
 - SANITARY MANHOLE #288
 - SANITARY MANHOLE #289
 - SANITARY MANHOLE #290
 - SANITARY MANHOLE #291
 - SANITARY MANHOLE #292
 - SANITARY MANHOLE #293
 - SANITARY MANHOLE #294
 - SANITARY MANHOLE #295
 - SANITARY MANHOLE #296
 - SANITARY MANHOLE #297
 - SANITARY MANHOLE #298
 - SANITARY MANHOLE #299
 - SANITARY MANHOLE #300

- EX. LEGEND**
- SET 1/2" BAR WITH CAP
 - DEED LINE
 - DISTANCE NOT TO SCALE
 - FENCE
 - ASPHALT
 - CONCRETE
 - GRAVEL
 - EXISTING SPOT ELEVATION
 - EXISTING CONTOUR ELEVATION
 - GAS LINE
 - UNDERGROUND TELEPHONE
 - UNDERGROUND TELEVISION
 - UNDERGROUND ELECTRIC
 - OVERHEAD WIRES
 - EDGE OF WOODS
 - DECIDUOUS TREE
 - CONIFEROUS TREE
 - BUSH
 - SANITARY MANHOLE
 - DRAINAGE MANHOLE
 - ELECTRIC MANHOLE
 - TELEPHONE MANHOLE
 - CATCHBASIN
 - FIRE HYDRANT
 - UTILITY POLE
 - LIGHT POLE
 - GUY POLE
 - GUY WIRE
 - UTILITY PEDESTAL
 - TRANSFORMER
 - HANDHOLE
 - ELECTRIC METER
 - GAS METER
 - SIGN
 - POST
 - AIR CONDITIONING UNIT

- LEGEND**
- EXT. CONTOURS
 - EXT. WATER MAIN
 - EXT. SANITARY SEWER
 - EXT. STORM SEWER
 - EXT. ELEVATIONS
 - PROPOSED SANITARY SEWER
 - PROPOSED STORM SEWER
 - MANHOLE (NEW)
 - MANHOLE (EX)
 - UTILITY EASEMENT
 - CENTER LINE OF ROAD
 - ROAD RIGHT OF WAY
 - PROPERTY LINE
 - FIRE HYDRANT
 - WATER VALVE
 - THURST BLOCK
 - CONIFEROUS TREE
 - DECIDUOUS TREE
 - BUSH
 - PROPOSED TOP OF CURB ELEV.

REVISIONS

2-5-18	BOARD REVIEW
3-23-18	CLIENT REVIEW
4-16-18	CPUD SUBMITTAL

2080 Grand River
 STORM & GRADING PLAN

DESIGNED BY: JMK
 CHECKED BY: JMK
 APPROVED BY: JMK

DATE: 12-1-17
 SCALE: 1" = 20'

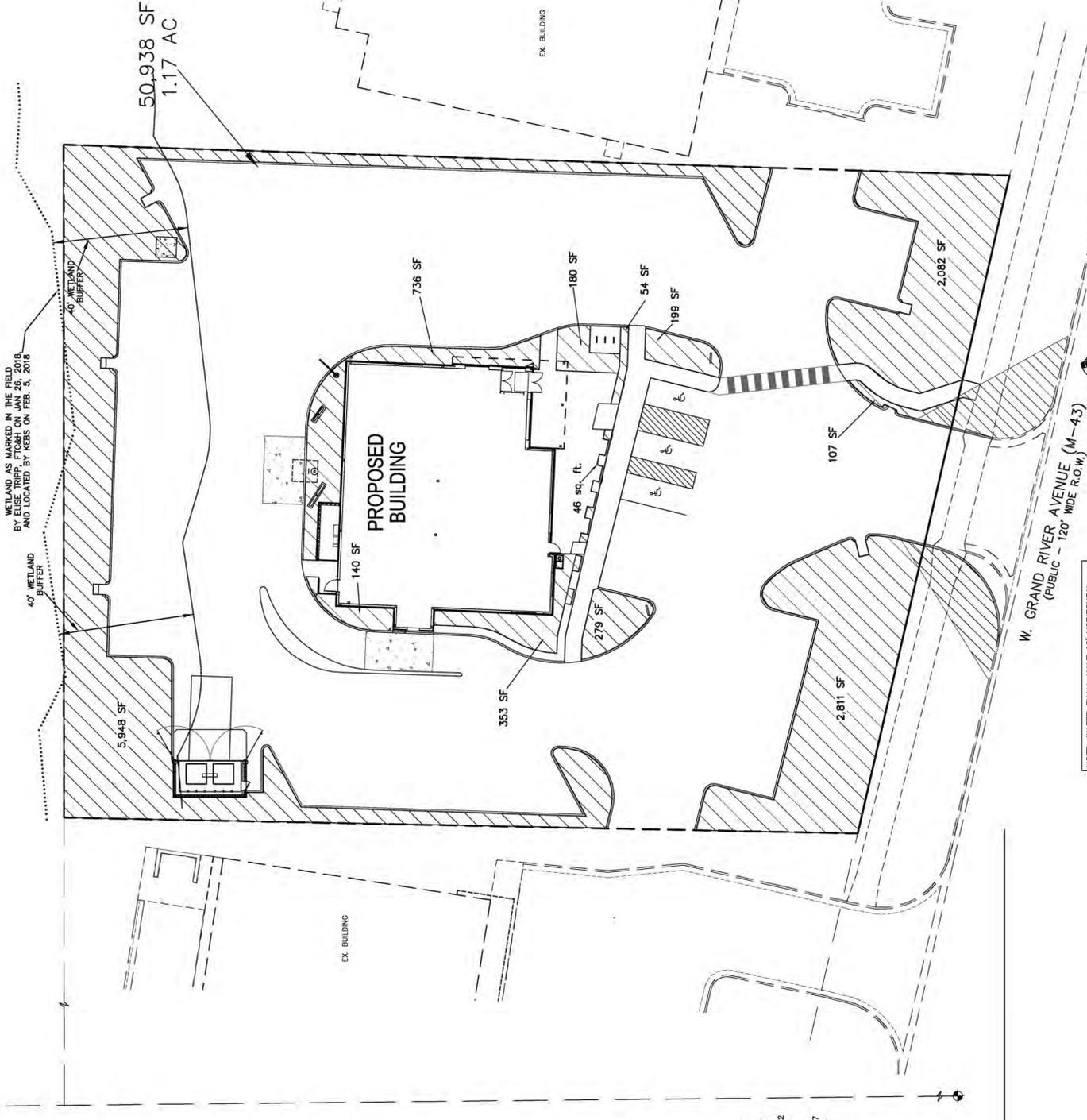
SHEET 3 OF 6
 JOB # 91998
 AFFINITY & INVESTMENTS, LLC
 657 THOMAS TRAVENARA

KEBS, INC. KYES ENGINEERING
 2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshall Office
 Ph. 269-781-9600

E-91988-CPUD.EFF-TRUCK SURVEY#1998ALT

SITE ADDRESS: 2080 GRAND RIVER AVE., OKEMOS, MI. 48864

C.P.U.D. PLAN FOR:
2080 Grand River
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



WETLAND AS MARKED IN THE FIELD BY KEES ON FEB. 5, 2018 AND LOCATED BY KEES ON FEB. 5, 2018

40' WETLAND BUFFER

50,938 SF
1.17 AC

TOTAL PERVIOUS AREA
13,195 S.F./50,938 S.F. x 100 = 25.90%
 TOTAL IMPERVIOUS AREA
37,743 S.F./50,938 S.F. x 100 = 74.10%

EX. SEWER INVENTORIES

CATCH BASIN #00	RM ELEV. = 837.05
15" RCP NE INV. = 830.40	
15" RCP E INV. = 828.73	
15" RCP SW INV. = 828.72	
CATCH BASIN #01	RM ELEV. = 840.16
10" RCP N INV. = 837.86	
10" RCP S INV. = 840.23	
6" VCP NW INV. = 838.63	
SANITARY MANHOLE #200	RM ELEV. = 837.05
8" PVC NE INV. = 830.40	
15" RCP E INV. = 828.73	
15" RCP SW INV. = 828.72	
CATCH BASIN #02	RM ELEV. = 837.14
10" RCP N INV. = 837.86	
10" RCP S INV. = 840.23	
6" VCP W INV. = 828.84	

EX. LEGEND

---	DEED LINE
---	DISTANCE NOT TO SCALE
▨	ASPHALT
▩	CONCRETE
▧	GRAVEL
○	EXISTING SPOT ELEVATION
○	EXISTING CONTOUR ELEVATION

LEGEND

---	EXT. CONTOURS
---	EXT. WATER MAIN
---	EXT. SANITARY SEWER
---	EXT. STORM SEWER
---	EXT. ELEVATIONS
---	PROPOSED SANITARY SEWER
---	PROPOSED STORM SEWER
---	MANHOLE (NEW)
---	MANHOLE (EX)
---	UTILITY EASEMENT
---	CENTER LINE OF ROAD
---	ROAD RIGHT OF WAY
---	PROPERTY LINE
---	FIRE HYDRANT
---	WATER VALVE
---	THRUST BLOCK
---	PROPOSED TOP OF CURB ELEV.

NOTE: WATER SHALL HAVE 10' HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.
 NOTE: WATER SHALL HAVE 10' HORIZONTAL SEPARATION & 16" VERTICAL SEPARATION FROM ALL SEWERS.



SITE ADDRESS: 2080 GRAND RIVER AVE., OKEMOS, MI. 48864 E-91988-CPUD.EFF-TRUCK SURVEY#91988ALT

KEES, INC. KYES ENGINEERING
 2118 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047

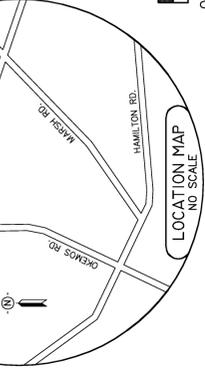
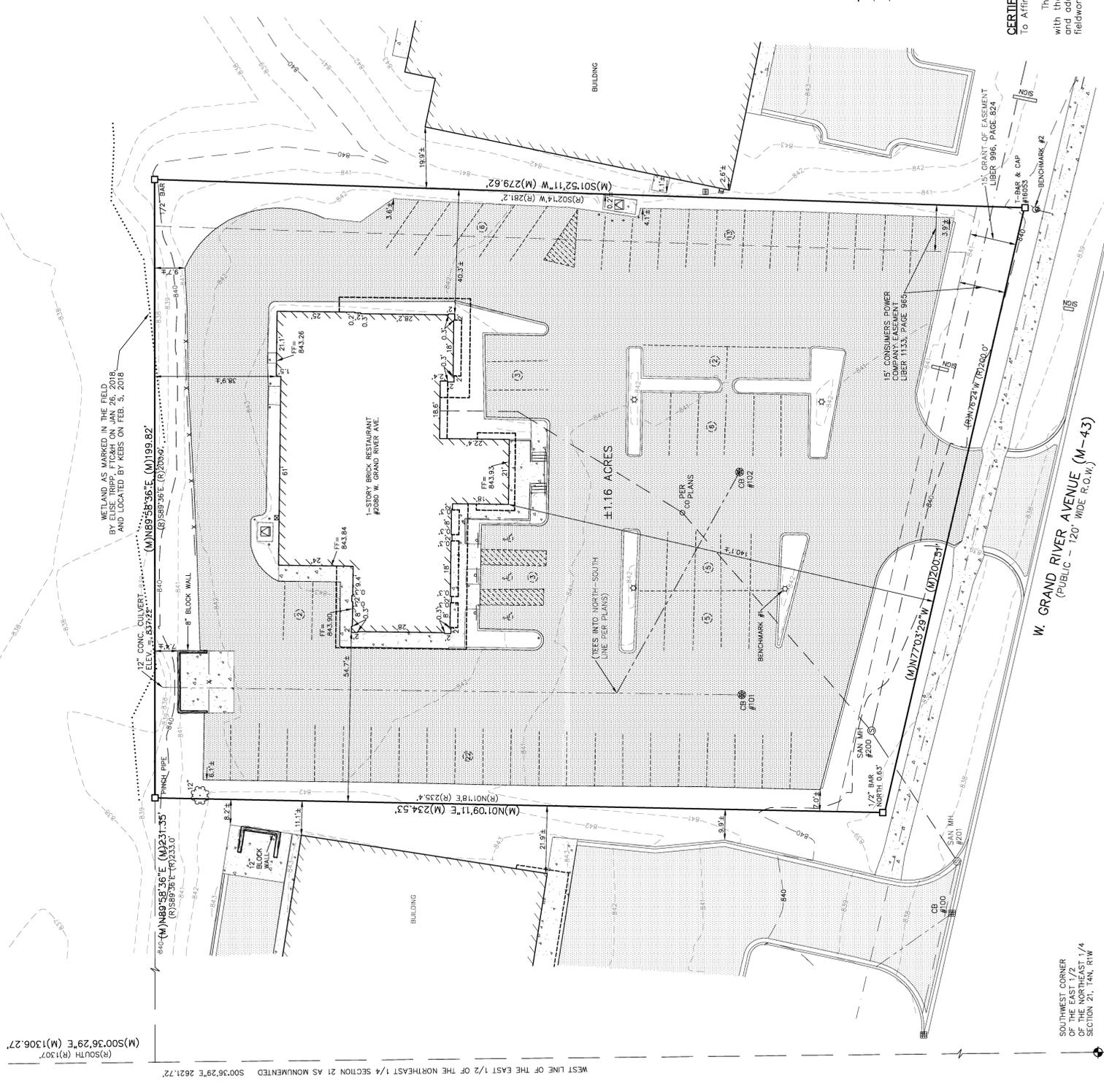
Northall Office
 Ph. 269-781-9600

2080 Grand River

REVISIONS	DESIGNER:	APPROVED BY:
2-5-18	JMK	JMK
BOARD REVIEW	PERVIOUS/IMPERVIOUS PLAN	
3-23-18	JMK	
CLIENT	PROJECT MGR.	
11-18-18 CPUD	JMK	
SUBMITTAL		
	DATE: 12-1-17	SHEET 4 OF 6
		JOB #
		91998

AUTHORIZED BY:
 AFFILIATE INVESTMENTS, LLC
 657 THOMAS TRAVINIA

EXISTING PLAN ALTA/NSPS LAND TITLE SURVEY "2080 W. GRAND RIVER AVENUE, OKEMOS, MI 28864"



LEGAL DESCRIPTION:
(As provided by Devon Title Agency, agents for Old Republic National Title Insurance Company, Commitment No. 253851, Revision #1, dated January 20, 2017)

That part of the Southeast 1/4 of the Northeast 1/4 of Section 21, T4N, R1W, described as beginning at a point which is 1307 feet South and 233.0 feet South 89°36' East from the North 1/8 post of the Northeast 1/4 of Section 21; thence South 89°36' East, 200.0 feet; thence South 02°14' West 281.2 feet to the North line of US-16 (now M-43 or Grand River Avenue) which is 60 feet at right angles from the centerline; thence along the North line of US-16, North 76°24' West, 200.0 feet; thence North 01°18' East 235.4 feet to the Point of Beginning.

AS SURVEYED:
(The following legal description describes the same parcel of land as the provided description)

A parcel of land in the Northeast 1/4 of Section 21, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the North 1/4 corner of said Section 21; thence N88°47'52\"/>

SCHEDULE B. SECTION II. EXCEPTIONS:
(As provided by Devon Title Agency, agents for Old Republic National Title Insurance Company, Commitment No. 253851, Revision #1, dated January 20, 2017)

Item 17: Terms, conditions and provisions contained in Grant of Easement recorded in Liber 996, Page 824 of Ingham County Records, cross parcel, are plottable and shown hereon.

Item 18: Easement granted to Consumers Power Company, as disclosed by instrument dated December 27, 1972 recorded in Liber 1133, Page 965, Ingham County Records, crosses parcel, is plottable and shown hereon.

SURVEYOR'S NOTES:
This survey was conducted in the direction of the parties named herein and is intended solely for their immediate use. Survey prepared from fieldwork performed in May 2017.

2. All bearings and distances on the survey are record and measured unless otherwise noted. All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the Lansing C.O.R.S.

3. All dimensions are in feet and decimals thereof.

4. All elevations are North American Vertical Datum of 1988 (NAVD88).

5. No building tie dimensions are to be used for establishing the property lines.

6. There are no observable potential encroachments onto the subject property from adjoining lands, or from the subject property onto adjoining lands, except as shown hereon.

7. Parcel has direct access to public Grand River Avenue.

ALTA/NSPS LAND TITLE SURVEY - TABLE "A" REQUIREMENTS:
Item 1: Shown on the survey map.
Item 2: Address of the surveyed property, 2080 W. Grand River Avenue, Okemos, MI 48864.

Item 3: By scaled map location and graphic plotting only, this property lies entirely within Flood Zone "AE", areas within the 1% annual chance floodplain, according to the National Flood Insurance Program, Flood Insurance Rate Map for the Charter Township of Meridian, Ingham County, Michigan, Community Panel No. 260093 0156 D, dated August 16, 2011.

Item 4: 1.16 Acres (50,937 square feet)
Item 5: Shown on the survey map.
Item 7a: Shown on the survey map.
Item 8: Shown on the survey map.

Item 9: Parking:
Required Parking Spaces: 64
Disabled Parking Spaces: 3
Total on-site Parking Spaces: 67

SEWER INVENTORIES

- CATCH BASIN #100
NW ELEV. = 830.05
NW INV. = 834.97
- CATCH BASIN #101
RIM ELEV. = 840.16
10\"/>

BENCHMARKS

- BENCHMARK #1 ELEV. = 842.24 (NAVD88)
CENTER OF BLACK "X", NORTH SIDE OF CONCRETE LIGHT POLE BASE, IN SOUTHWEST CURB ISLAND OF FOUR CURB ISLANDS IN FRONT OF #2080 GRAND RIVER AVENUE, 75' NORTH-NORTHEAST OF BACK OF CURB OF GRAND RIVER AVENUE AND ±43' WESTERLY OF CENTERLINE OF ENTRANCE DRIVE TO #2080 GRAND RIVER AVENUE.
- BENCHMARK #2 ELEV. = 840.83 (NAVD88)
NORTH FLANGE BOLT UNDER "8\"/>

LEGEND

- SET 1/2" BAR WITH CAP
- FOUND IRON AS NOTED
- DEED LINE
- FENCE
- BUILDING OVERHANG
- ASPHALT
- CONCRETE
- EXISTING CONTOUR ELEVATION
- BUILDING OVERHANG
- SANITARY SEWER
- STORM SEWER
- DECIDUOUS TREE
- ⊙ SANITARY MANHOLE
- ⊕ DRAINAGE MANHOLE
- ⊖ CATCH BASIN
- ⊗ FIRE HYDRANT
- ⊘ VALVE
- ⊙ LIGHT POLE
- ⊕ UTILITY PEDESTAL
- ⊖ TRANSFORMER
- ⊗ HANDHOLE
- ⊘ ELECTRIC METER
- ⊙ GAS METER
- ⊕ WATER METER
- ⊖ SIGN
- ⊗ POST

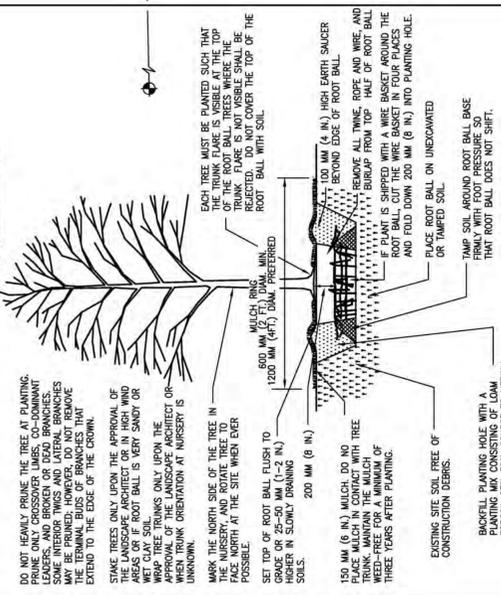
CERTIFICATION:

To Affinity 9 Investments, LLC; Devon Title Agency, and Old Republic National Title Insurance Company. This is to certify that this map or plot and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, as jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 5, 7a, 8, and 9 of Table A thereof. The fieldwork was completed on May 6, 2016.

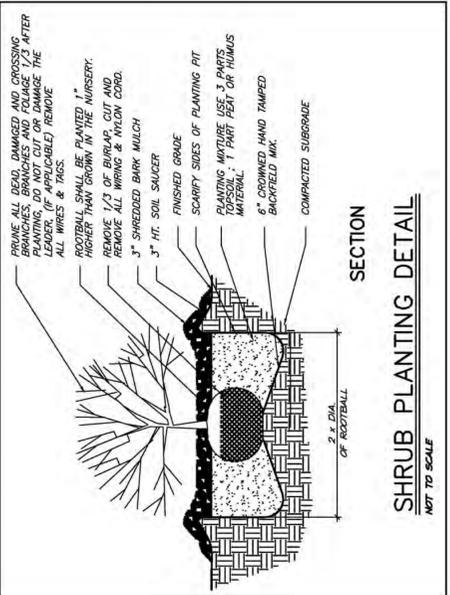
Erick R. Friestrom Date of Plot or Map:
Professional Surveyor No. 53497
erfriestrom@kebs.com

REVISIONS	COMMENTS	KEBS, INC. ENGINEERING AND LAND SURVEYING 2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-3355 WWW.KEBS.COM
05/17/2017	ORIGINAL	
3/23/2018	FIELD REVIEW	
4-16-2018	CPUD SUBMITTAL	
		Marshall Office - Ph. 269-761-9600 SECTION 21, T4N, R1W DRAWN BY SSF FIELD WORK BY NAW SHEET 5 OF 6 JOB NUMBER: 91996.ALT

INTERNATIONAL SOCIETY OF ARBORICULTURE
 1400 WEST ANTHONY DRIVE
 CHAMPAIGN, IL 61821
 (217) 355-9411
 (217) 355-9516 FAX



TREE PLANTING DETAIL - B & B TREES IN ALL SOIL TYPES
 NOTE: THIS DETAIL ASSUMES THAT THE PLANTING SPACE IS LARGER THAN 2400 MM (8 FT.) SQUARE, OPEN TO THE SKY, AND NOT COVERED BY ANY PAVING OR GRASSING.



SHRUB PLANTING DETAIL
 NOT TO SCALE

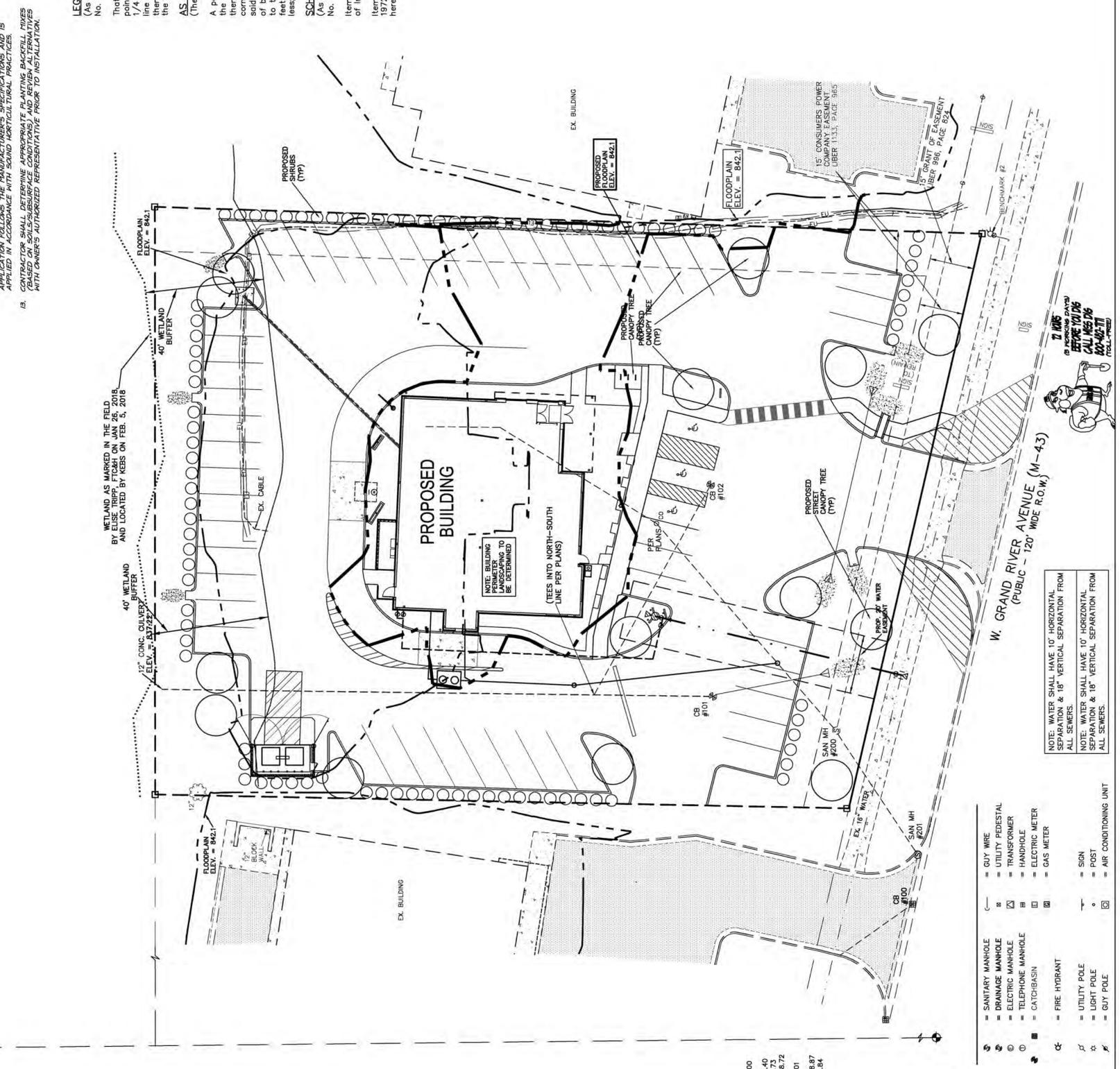
LANDSCAPE NOTES

- INSTALL 3" X 12 GA. EDGING TO SEPARATE LAWN FROM PLANTING BED. (AROUND SHRUBS ONLY)
- INSTALL 3" DEEP SHREDDED BARK MULCH TO ALL PLANTING AREAS/BEDS AND TREE SAUCERS (NO PELT-RULY).
- INSTALL A KENTUCKY BLUEGRASS 500 (SUN/SHADE) VARIETY THAT IS APPROPRIATE FOR THE FOLLOWING:
 - 200 MASSATI KENTUCKY BLUEGRASS
 - 200 PENNSYLVANIA BLUEGRASS
 - 200 PENNSYLVANIA BLUEGRASS
 - 200 PENNSYLVANIA BLUEGRASS
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGE/REMOVAL OF SAID UTILITIES.

C.P.U.D. PLAN FOR:
2080 Grand River
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

- ANY DISCREPANCIES BETWEEN PLANS, NOTES, DETAILS AND EXISTING CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE FOR REVIEW AND DECISION. CONTRACTOR FAILURE TO GIVE SUCH NOTIFICATION FOR ALL REVISIONS DUE TO MATERIALS/IMPROVEMENTS, DAMAGED DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING MATERIALS/IMPROVEMENTS, UTILITIES AND OTHER BASE INFORMATION PROVIDED BY OTHERS.
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGE/REMOVAL OF SAID UTILITIES.
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGE/REMOVAL OF SAID UTILITIES.

- CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT SCHEDULES FOR INSTALLATION OF QUANTITIES DRAWN.
- CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO PLANT MATERIAL LOCATIONS IN FIELD, AS NECESSARY. THE LOCATION OF ALL PLANT MATERIALS SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
- ALL PLANT MATERIAL SHALL BE OF THE SPECIES CALLED FOR IN THE PLANT SCHEDULES. ANY PLANT MATERIAL NOT MEETING THE SPECIES AND QUALITY AS CALLED FOR SHALL BE REMOVED FROM SITE. ALL PLANT MATERIAL SHALL BE CALLED FOR IN THE PLANT SCHEDULES. ANY PLANT MATERIAL NOT MEETING THE SPECIES AND QUALITY AS CALLED FOR SHALL BE REMOVED FROM SITE. ALL PLANT MATERIAL SHALL BE CALLED FOR IN THE PLANT SCHEDULES. ANY PLANT MATERIAL NOT MEETING THE SPECIES AND QUALITY AS CALLED FOR SHALL BE REMOVED FROM SITE.
- ALL PROPOSED TREES OVER 3" CAL. SHALL BE GUINDED/STAKED SECURELY TO PREVENT SWAYING AND DAMAGE TO THE TREE. ALL PROPOSED TREES OVER 3" CAL. SHALL BE GUINDED/STAKED SECURELY TO PREVENT SWAYING AND DAMAGE TO THE TREE.
- ALL PLANTING BEDS TO BE TREATED WITH PRE-EMERGENT HERBICIDE. CONTRACTOR SHALL INSURE THAT PROPOSED PLANT MATERIAL IS APPLICATION TO THE BEDS. CONTRACTOR SHALL INSURE THAT PROPOSED PLANT MATERIAL IS APPLICATION TO THE BEDS. CONTRACTOR SHALL INSURE THAT PROPOSED PLANT MATERIAL IS APPLICATION TO THE BEDS.
- CONTRACTOR SHALL DETERMINE APPROPRIATE PLANTING BACKFILL MIXES (BASED ON SOIL/SUBSURFACE CONDITIONS) AND REVIEW ALTERNATIVES WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION.



LEGAL DESCRIPTION:
 (As provided by Devon Title Agency, agents for Old Republic National Title Insurance Company, Commitment No. 253851, Revision #1, dated January 20, 2017)
 That part of the Southeast 1/4 of the Northeast 1/4 of Section 21, T4N, R1W, Meridian Township, Ingham County, Michigan, which is 1207 feet South from the North line of Section 21, T4N, R1W, Meridian Township, Ingham County, Michigan, and 217 feet East from the West line of Section 21, T4N, R1W, Meridian Township, Ingham County, Michigan, and 200 feet North from the North line of US-16 (now W-43 or Grand River Avenue) which is 60 feet at right angles from the centerline, thence along the North line of US-16, North 78°24' West, 200.0 feet; thence North 01°18' East, 235.4 feet to the Point of Beginning.

AS SURVEYED:
 (The following legal description describes the same parcel of land as the provided description)
 A parcel of land in the Northeast 1/4 of Section 21, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the North 1/4 corner of said Section 21; thence N88°47'52"E along the North line of said Section 21 a distance of 1355.76 feet to the Northwest corner of the East 1/2 of said Section 21; thence S00°36'29"E along the West line of the East 1/2 of said Section 21 a distance of 1306.27 feet; thence N89°58'36"E 231.35 feet to the Point of Beginning of this description; thence continuing N89°58'36"E 199.82 feet; thence S01°52'11"W 279.62 feet to the Northernly line of Grand River Avenue (M-43); thence N77°03'29"W along said Northernly line 200.51 feet; thence N01°09'11"E 234.53 feet to the point of beginning; said parcel containing 1.16 acres more or less; said parcel subject to all easements and restrictions, if any.

SCHEDULE B - SECTION II - EXCEPTIONS:
 (As provided by Devon Title Agency, agents for Old Republic National Title Insurance Company, Commitment No. 253851, Revision #1, dated January 20, 2017)
 Item 17: Terms, conditions and provisions contained in Grant of Easement recorded in Liber 986, Page 824 of Ingham County records, cross parcel, are plotable and shown hereon.
 Item 18: Easement granted to Consumers Power Company, as disclosed by instrument dated December 27, 1972 recorded in Liber 1133, Page 985, Ingham County records, crosses parcel, is plotable and shown hereon.

2,587 S.F. LANDSCAPE TOTAL
 LANDSCAPE REQUIRED = 200 S.F./10 PARKING SPACES
 52 SPACES/10 x 200 = 1,040 S.F.
 LANDSCAPE AREA PROVIDED = 1,440 S.F.

INTERIOR TREES REQUIRED
 2 CANOPY TREES/10 SPACES
 52/10 x 2 = 10.4 = 11 TREES
 TREES PROVIDED = 11

STREET TREES REQUIRED
 1 TREE/70' OF FRONTAGE
 200/70 = 2.85 = 3
 TREES PROVIDED = 3

KEBS, INC. BRYAN LAND SURVEYS
 2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshall Office
 Ph. 269-781-9600

2080 Grand River
 LANDSCAPE PLAN

REVISIONS

2-5-18	BOARD REVIEW
3-23-18	CLIENT REVIEW
4-18-18	CPUD SUBMITTAL

DESIGNER: JMK
SCALE: 1" = 20'
DATE: 12-11-17
AUTHORIZED BY: JMK
APPROVED BY: JMK
PROJECT MGR: JMK
JOB #: 19198
DATE: 6 OF 6
APPRIORATE INVESTMENTS, LLC
 657 THOMAS TRAVINIA

SITE ADDRESS: 2080 GRAND RIVER AVE., OKEMOS, MI, 48864
 E-91988-CPUD.EFF-TRUCK SURVEY#1988ALT

EX. SEWER INVENTORIES

8" PVC BS INV. #200	8" PVC NE INV. = 830.40
15" RCP BS INV. #101	15" RCP E INV. = 828.73
15" RCP SW INV. #201	15" RCP SW INV. = 828.72
10" RCP N INV. = 837.86	SANITARY MANHOLE #201
10" RCP S INV. = 840.16	RM ELEV. = 837.14
15" RCP W INV. = 838.83	15" RCP W INV. = 828.84

EX. LEGEND

- SET 1/2" BAR WITH CAP
- FOUND IRON AS NOTED
- DEED LINE
- DISTANCE NOT TO SCALE
- FENCE
- ASPHALT
- GRAVEL
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR ELEVATION

LEGEND

- EXT. CONTOURS
- EXT. WATER MAIN
- EXT. SANITARY SEWER
- EXT. STORM SEWER
- EXT. ELEVATIONS
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- MANHOLE (NEW)
- MANHOLE (EX)
- UTILITY EASEMENT
- CENTER LINE OF ROAD
- ROAD RIGHT OF WAY
- PROPERTY LINE
- FIRE HYDRANT
- WATER VALVE
- THRUST BLOCK
- 1/2" 800.00
- PROPOSED TOP OF CURB ELEV.

SYMBOLS

- SANITARY MANHOLE
- DRAINAGE MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- CATCH-BASIN
- FIRE HYDRANT
- UTILITY POLE
- LIGHT POLE
- GUY POLE
- GUY WIRE
- UTILITY PEDESTAL
- TRANSFORMER
- HANDHOLE
- ELECTRIC METER
- GAS METER
- SIGN
- POST
- AIR CONDITIONING UNIT

NOTES:
 NOTE: WATER SHALL HAVE 10" HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.
 NOTE: WATER SHALL HAVE 10" HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.



1312191988(4)91-91988-CPUD.EFF-TRUCK.dwg 4/17/2018 7:43:40 AM sb585

PERMIT / BID SET

PANERA BREAD BAKERY-CAFE #0715
2080 GRAND RIVER AVE
OKEMOS, MI 48864



SITE MAP:



SEAT COUNT INFORMATION:

CATEGORY:	EXISTING:	PROPOSED:
NO. OF SEATS:	95	INT. 26 EXT
EFFECTIVE SEATING:		
NO. OF PARKING SPACES:		
NO. OF REGISTER:		
NO. OF TABLES:		32 INT. 13 EXT

REVISION ISSUE LOG

REVISION #	ISSUE DATE	DESCRIPTION	AFFECTED SHEETS	REMARKS
1				

SHEET INDEX

GENERAL	COVER SHEET	GENERAL NOTES, SYMBOLS, LEGENDS, & ACCESSIBILITY GUIDELINES	LIFE SAFETY PLAN	INTERIOR PERSPECTIVES	ARCHITECTURAL SITE PLAN	TRASH ENCLOSURE DETAILS	DRIVE-THRU SIGNAGE DETAILS	ENLARGED PATIO PLAN	SLAB PLAN - DIMENSIONED	FLOOR PLAN DIMENSIONED	ROOF PLAN	ROOF DETAILS	ENLARGED RESTROOM PLANS & INTERIOR ELEVATIONS	PARTITION TYPES	REFLECTED CEILING PLAN	LIGHTING SCHEDULE, DETAILS, & SECTIONS	EXTERIOR PERSPECTIVES	EXTERIOR ELEVATIONS	EXTERIOR SECTIONS	WALL SECTIONS	FLOOR FINISH PLAN	FLOOR FINISH PLAN - KEYED NOTES	INTERIOR ELEVATIONS FRONT OF HOUSE	INTERIOR ELEVATIONS BACK OF HOUSE	INTERIOR ELEVATIONS	CASEWORK SECTIONS & DETAILS	INTERIOR DETAILS	FINISH SCHEDULES, LEGENDS, & NOTES	DOOR ELEVATIONS, SCHEDULES, & DETAILS	STOREFRONT/GLAZING ELEVATIONS, SCHEDULES, & DETAILS	SIGNAGE PLAN	FLOOR PLAN EQUIPMENT	TABLE DELIVERY PLAN	EQUIPMENT SCHEDULES	WOODS/TEEL & FURNITURE SCHEDULES	SIGNAGE & ARTWORK SCHEDULES, DETAIL & NOTES									
G000	G011	G021	G131	A510	A001	A011	A012	A013	A014	A100	A101	A102	A111	A112	A121	A201	A211	A222	A300	A301	A302	A310	A311	A312	A313	A314	A315	A316	A500	A501	A502	A511	A512	A513	A521	A522	A531	A601	A611	A701	A703	A705	A711	A712	A741

SHEET INDEX

STRUCTURAL	STRUCTURAL NOTES	FOUNDATION PLAN	ROOF FRAMING PLAN	TYPICAL FOUNDATION DETAILS	FRONT WALL SECTION	REAR WALL SECTIONS	SIDE WALL SECTIONS	MECHANICAL PLAN & NOTES	MECHANICAL SCHEDULES - SHELL	MECHANICAL SCHEDULES	VENTILATION DETAILS & SCHEDULES	VENTILATION DETAILS & SCHEDULES	MECHANICAL DETAILS & SPECIFICATIONS	MEP ROOF PLAN - SHELL	MEP ROOF PLAN	PLUMBING ROUGH-IN PLANS - SHELL	PLUMBING PLAN - SHELL	WASTE & WATER RISER DIAGRAMS	GAS RISER DIAGRAM	WASTE ROUGH-IN PLAN	WATER ROUGH-IN PLAN	WATER & GAS PLUMBING PLAN	WASTE & VENT RISER DIAGRAM	WATER RISER DIAGRAM	GAS RISER DIAGRAM	PLUMBING DETAILS	PLUMBING SPECIFICATIONS & SCHEDULES	ELECTRICAL POWER PLAN	ELECTRICAL LIGHTING PLAN	PANEL SCHEDULES AND ONE-LINE DIAGRAM	ELECTRICAL SPECIFICATIONS, NOTES AND DETAILS	ELECTRICAL SITE PLAN	ENLARGED ELECTRICAL DRIVE-THRU SITE PLANS	ELECTRICAL ROUGH-IN PLAN	ELECTRICAL ROUGH-IN SCHEDULES	ELECTRICAL POWER PLAN	ELECTRICAL LIGHTING PLAN	SPECIAL SYSTEMS PLAN	POS DIAGRAM AND NOTES	PANEL SCHEDULES AND ONE-LINE DIAGRAM	ELECTRICAL SPECIFICATIONS, NOTES AND DETAILS	DRIVE THRU ELEVATIONS	ELECTRICAL SITE PLAN	ENLARGED ELECTRICAL DRIVE-THRU SITE PLANS	PANEL SCHEDULES AND ONE-LINE DIAGRAM	
S000	S100	S200	S300	S400	S501	S502	S503	S504	M101	M200	M301	M302	M303	M401	M402	M500	M501	P101	P103	P104	P201	P202	P203	P204	P206	P207	P208	P209	E101	E102	E103	E104	E105	E106	E201	E202	E203	E301	E401	E403	E501	E502	E601	E5101	E5102	XXX

Sheet Count: 97

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ATHOMAS@INGHAM.ORG

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MILLEROV@MERIDIAN.MI.US

Bakery Cafe #0715
2080 GRAND RIVER AVE
OKEMOS, MI 48864



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COVER SHEET

Project Number:

170466

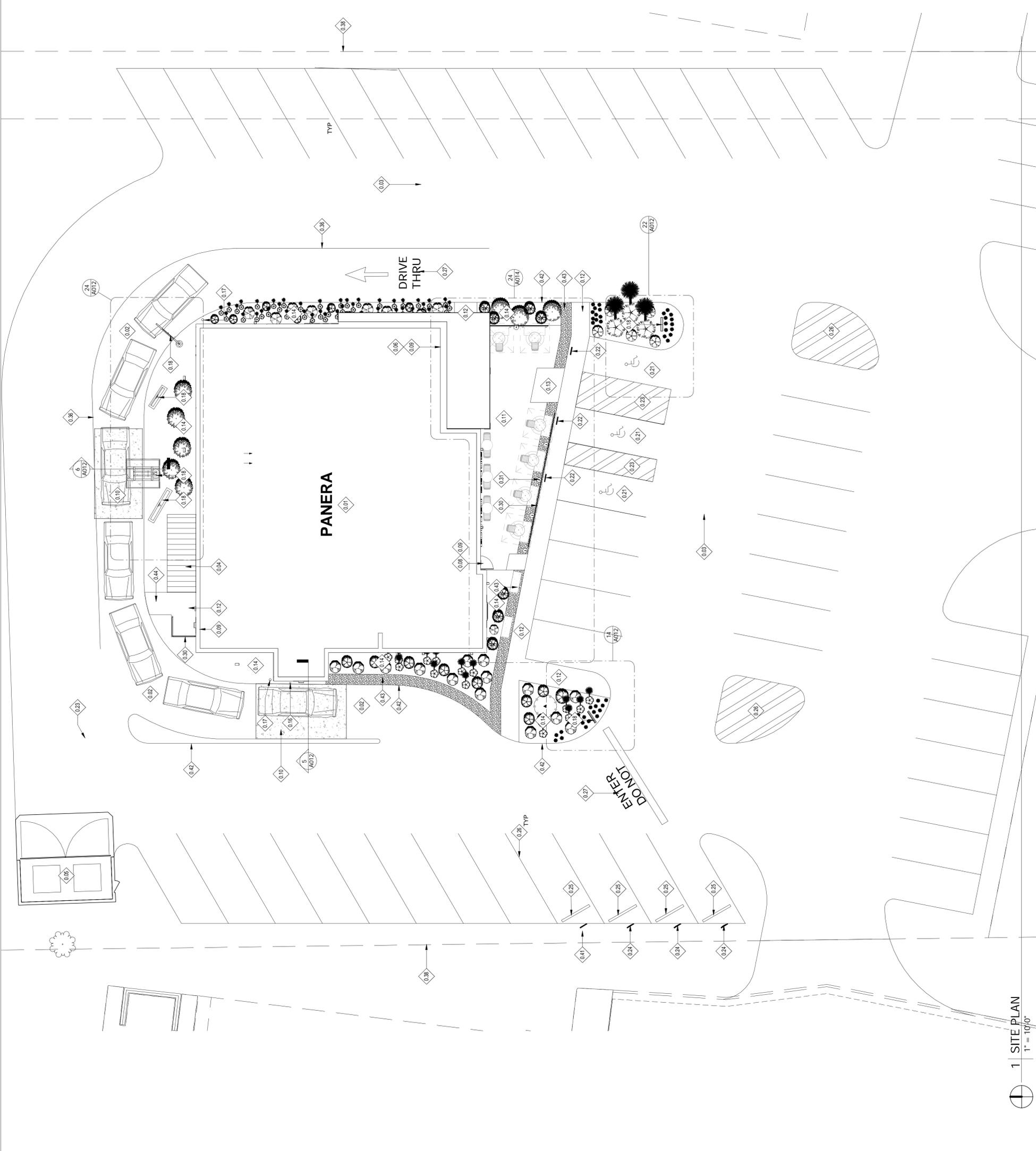
Drawn By:

CJO, MH

Issue Date:

10.24.17

G000



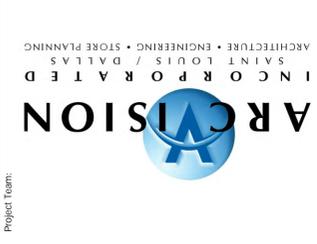
GENERAL NOTES:

- A. SITE PLAN PROVIDED FOR REFERENCE. REFER TO CIVIL DOCUMENTS FOR ADDITIONAL INFORMATION. LANDSCAPE HAS BEEN INTENTIONALLY EXCLUDED FROM THIS SHEET. SEE CIVIL DRAWINGS FOR ALL LANDSCAPE INFORMATION.
- B. ALL WORK SHALL COMPLY WITH THE REGULATION AND ORDINANCES OF MERIDIAN TOWNSHIP, MI, AND ANY OTHER APPLICABLE CODES.
- C. THE GENERAL CONTRACTOR (G.C.) SHALL CONTACT LOCAL UTILITIES TO VERIFY ALL SIZES, LOCATIONS, AND CONNECTION POINTS FOR ALL UTILITIES AFFECTED. ALL INSTALLATIONS TO LOCAL UTILITIES SHALL BE MADE IN ACCORDANCE WITH APPLICABLE CODES.
- D. EXTERIOR BUILDING SIGN FURNISHED AND INSTALLED BY OWNER'S SIGN VENDOR, G.C. TO PROVIDE POWER.
- E. G.C. TO VERIFY EXISTING SITE CONDITIONS PRIOR TO BID. ALSO VERIFY ALL UTILITIES AND EXISTING CONDITIONS AS REQUIRED FOR SITE WORK AS REQUIRED.
- F. G.C. SHALL PROVIDE AND INSTALL ELECTRICAL CONDUIT AND STRUCTURAL FOOTINGS FOR ALL NEW SITE DRIVE-THRU SIGNAGE (TYPICAL).
- G. REFER TO CIVIL DOCUMENTS FOR GENERAL SITE LIGHTING.

KEYED NOTES

- 0.01 PROPOSED PANERA CAFE SPACE.
- 0.02 DRIVE THRU LANE.
- 0.03 ASPHALT PAVING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.04 CART CORRAL. LOCATE ELECTRICAL CABINETS AT EXTERIOR WALL OF BUILDING. PROVIDE CONCRETE PAD BY LANDLORD. REFER TO SHEET A012 SHELL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.05 PRIMARY BUILDING ENTRANCE. REFER TO SHEET A611 FOR ADDITIONAL INFORMATION.
- 0.06 SECONDARY ENTRANCE. REFER TO SHEET A611 FOR ADDITIONAL INFORMATION.
- 0.07 G.C. TO PROVIDE MAXIMUM THRESHOLD HEIGHT OF 1/2" AD11 FOR ADDITIONAL INFORMATION.
- 0.08 CONCRETE PATIO. REFER TO SHEET A014 FOR ADDITIONAL INFORMATION.
- 0.09 PROVIDE CONCRETE SIDEWALK. PROVIDE BROOK FINISH PERPENDICULAR TO BUILDING. TYPICAL. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.10 ACCESSIBLE RAMP. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION AND DETAILS.
- 0.11 PROPOSED LANDSCAPE AREA. REFER TO LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION TO UTILIZE LOCAL FLORA.
- 0.12 4" CONCRETE PIPE BOLLARD. REFER TO 14/A014
- 0.13 6" CONCRETE PIPE BOLLARD. REFER TO 10/A014
- 0.14 NEW DRIVE THRU SIGNAGE. SEE SHEET A013 FOR FURTHER INFORMATION. ALSO SEE SHOP DRAWINGS.
- 0.15 PROPOSED ACCESSIBLE PARKING STALL. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.16 ACCESSIBLE SIGNAGE. REFER TO 22/A014 FOR FURTHER INFORMATION.
- 0.17 PROPOSED PAINTED STRIPED CROSS WALK. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.18 PROPOSED RAPID PICK-UP PARKING LOCATIONS AND BOLLARD MOUNTED SIGNAGE. REFER TO 18/A014 & VENDORS SHOP DRAWINGS FOR SIGNAGE INFORMATION.
- 0.19 PROPOSED CONCRETE WHEEL STOPS. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.20 PARKING STRIPING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.21 PROPOSED DIRECTIONAL PAVEMENT PAINTING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.22 PATIO RAILING BY PANERA. COLOR: TO MATCH #AF-155 WEIMARANER. REFER TO 13/A014, BY TENANT WEIMARANER. REFER TO 13/A014, BY TENANT
- 0.23 PATIO SIDEWALK LIGHT BY PANERA. REFER TO TENANT REFLECTED CEILING PLAN FOR FURTHER INFORMATION.
- 0.24 PROVIDE DRIVE LANE STRIPING. SEE CIVIL DRAWINGS FOR FURTHER INFORMATION.
- 0.25 LINE INDICATES AREA OF EASEMENT. REFER TO CIVIL DRAWINGS FOR FURTHER INFORMATION.
- 0.26 DRIVE THRU PULL FORWARD SPACE AND SIGNAGE. REFER TO CIVIL DRAWINGS FOR FURTHER INFORMATION.
- 0.27 CONCRETE CURB. REFER TO CIVIL FOR FURTHER INFORMATION.
- 0.28 ROCK BED LANDSCAPING. REFER TO CIVIL FOR FURTHER INFORMATION.
- 0.29 CONCRETE SERVICE RAMP. REFER TO CIVIL FOR FURTHER INFORMATION.

#0715



Professional Seal:

Bakery Cafe #0715
2080 GRAND RIVER AVE
OKEMOS, MI 48864



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No.	Description	Date

ARCHITECTURAL
SITE PLAN

Project Number: 170466
 Drawn By: C.A.O. M.H.
 Issue Date: 10/24/17
 DPX: BRYAN B. DAM C. KEVIN C.

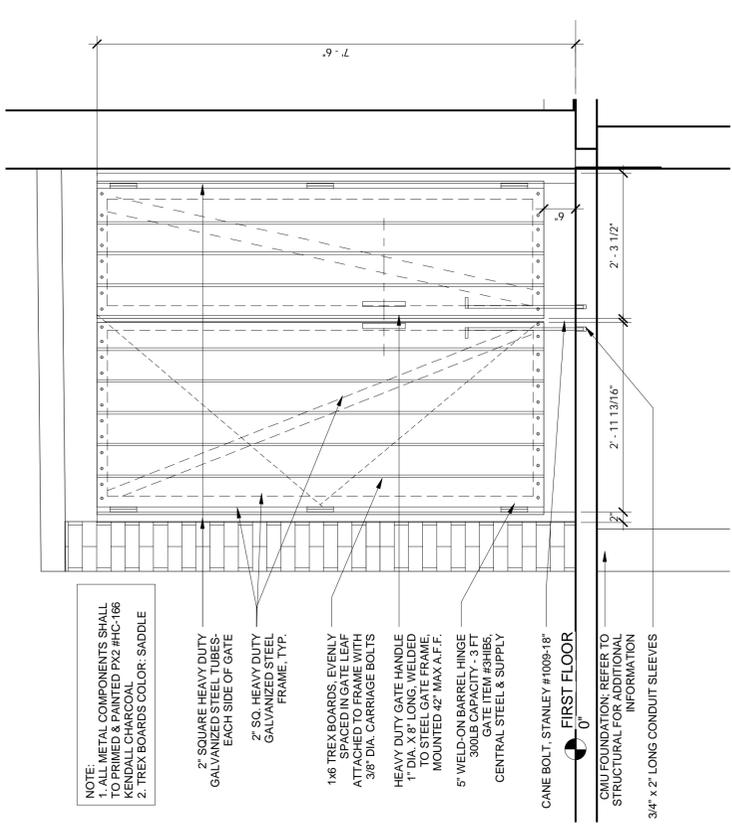
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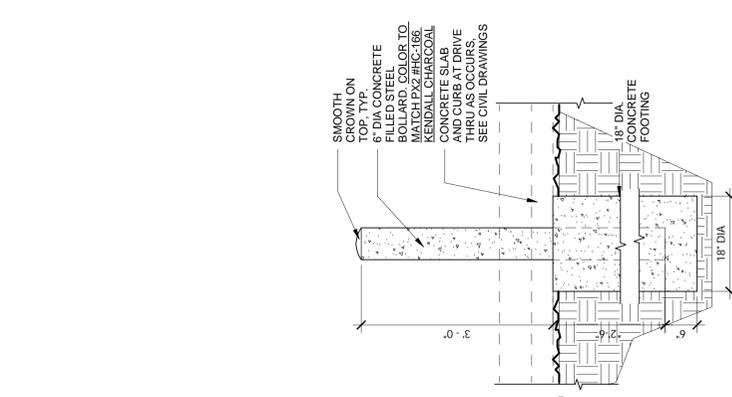
No.	Description	Date

ENLARGED PATIO PLAN

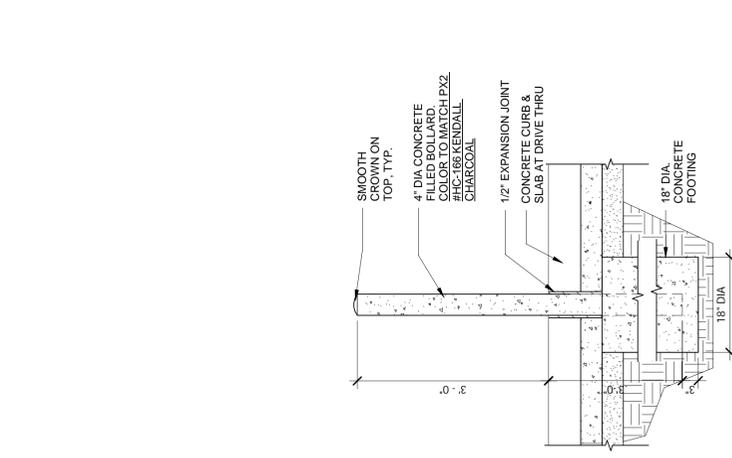
Project Number: 170464
 Drawn By: C.A.O. MH
 Issue Date: 10/24/17
 DPK: BRYAN B. DAN C. KEVIN C.
 DM: DAN C.
 CPM: KEVIN C.
A014



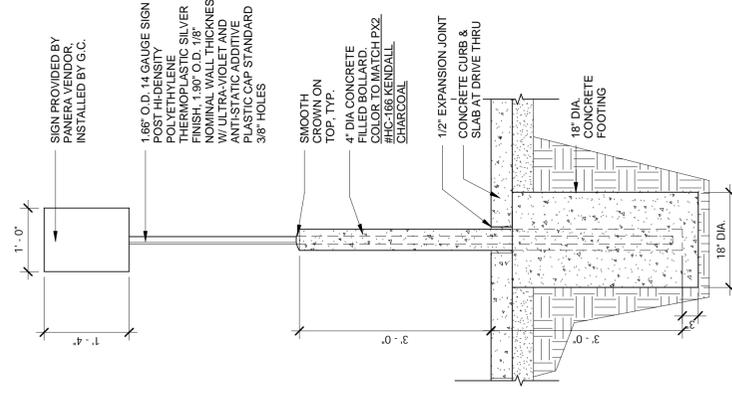
6 CART CORRAL GATE DETAIL
3/4" = 1'-0"



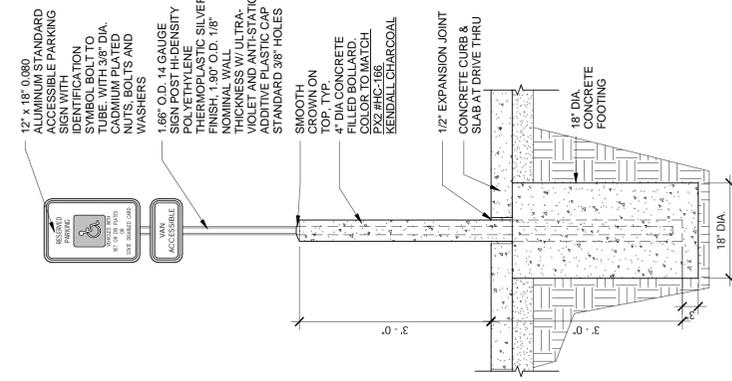
10 BOLLARD DETAIL
3/4" = 1'-0"



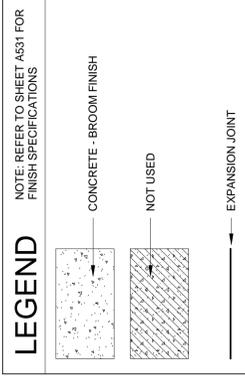
14 BOLLARD DETAIL @ DRIVE THRU WDW.
3/4" = 1'-0"



18 BOLLARD DETAIL @ SIGNAGE
3/4" = 1'-0"



22 DETAIL @ ACCESSIBLE SIGNAGE
3/4" = 1'-0"

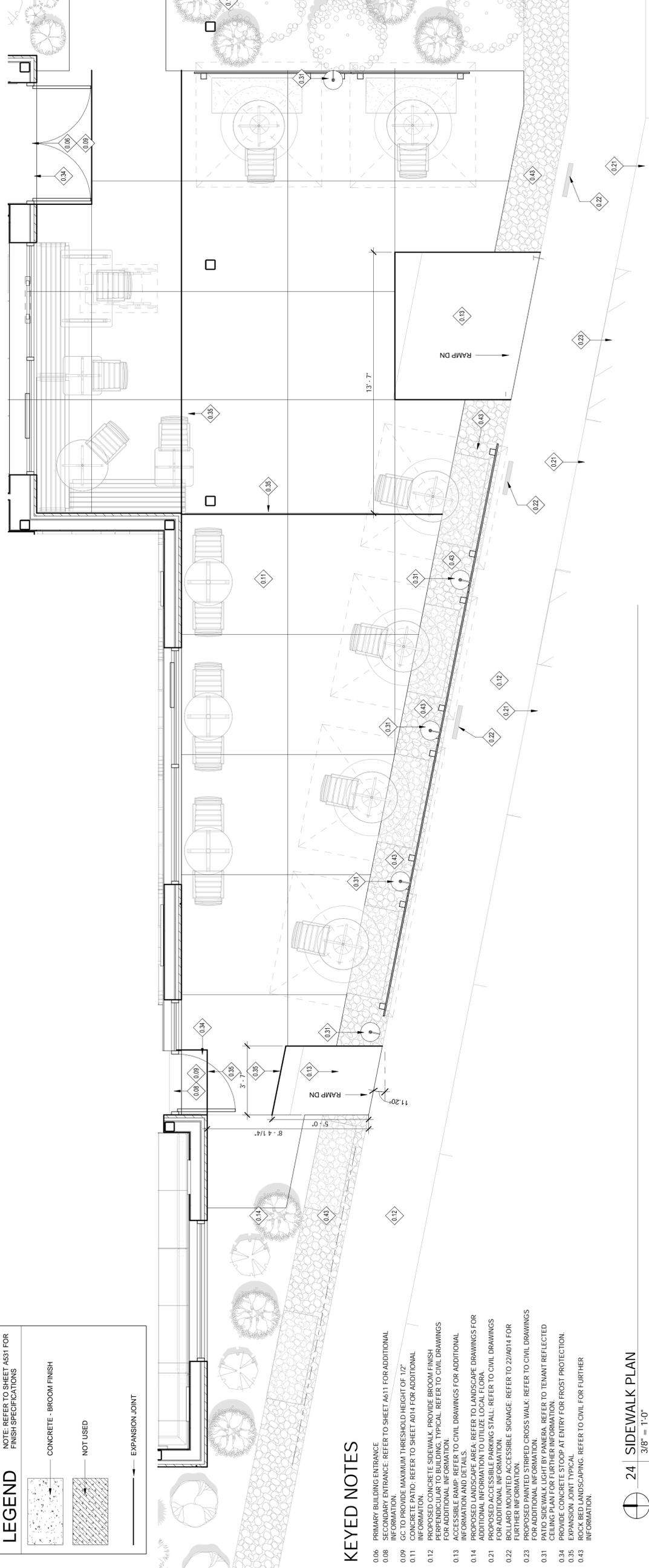


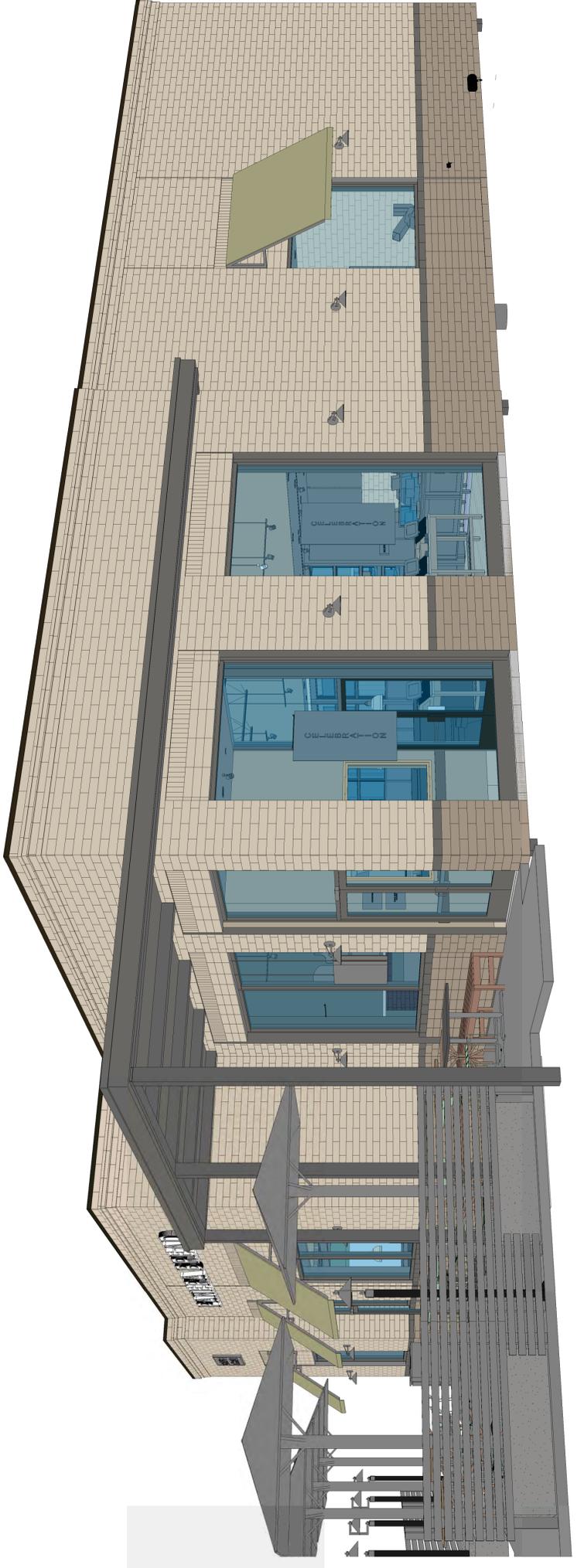
KEYED NOTES

- 0.06 PRIMARY BUILDING ENTRANCE
- 0.08 SECONDARY ENTRANCE. REFER TO SHEET A611 FOR ADDITIONAL INFORMATION.
- 0.09 GC TO PROVIDE MAXIMUM THRESHOLD HEIGHT OF 1/2"
- 0.10 CONCRETE PATIO. REFER TO SHEET A014 FOR ADDITIONAL INFORMATION.
- 0.11 CONCRETE SIDEWALK. PROVIDE BROOM FINISH PERPENDICULAR TO BUILDING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.12 ACCESSIBLE RAMP. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION AND DETAILS.
- 0.13 PROPOSED LANDSCAPE AREA. REFER TO LANDSCAPE DRAWINGS FOR ADDITIONAL INFORMATION TO UTILIZE LOCAL FLORA.
- 0.21 PROPOSED ACCESSIBLE PARKING STALL. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.22 BOLLARD MOUNTED ACCESSIBLE SIGNAGE. REFER TO 22/A014 FOR FURTHER INFORMATION.
- 0.23 BOLLARD MOUNTED ACCESSIBLE CROSS WALK. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- 0.31 PATIO SIDEWALK LIGHT BY PANERA. REFER TO TENANT REFLECTED CEILING PLAN FOR FURTHER INFORMATION.
- 0.34 PROVIDE CONCRETE STOOP AT ENTRY FOR PROTECTION.
- 0.35 EXPANSION JOINT TYPICAL
- 0.43 ROCK BED LANDSCAPING. REFER TO CIVIL FOR FURTHER INFORMATION.

24 SIDEWALK PLAN

3/8" = 1'-0"





1 | PERSPECTIVE VIEW

Bakery Cafe #0715
 2080 GRAND RIVER AVE
 OKEMOS, MI 48864

Project Title:

PERMIT / BID SET



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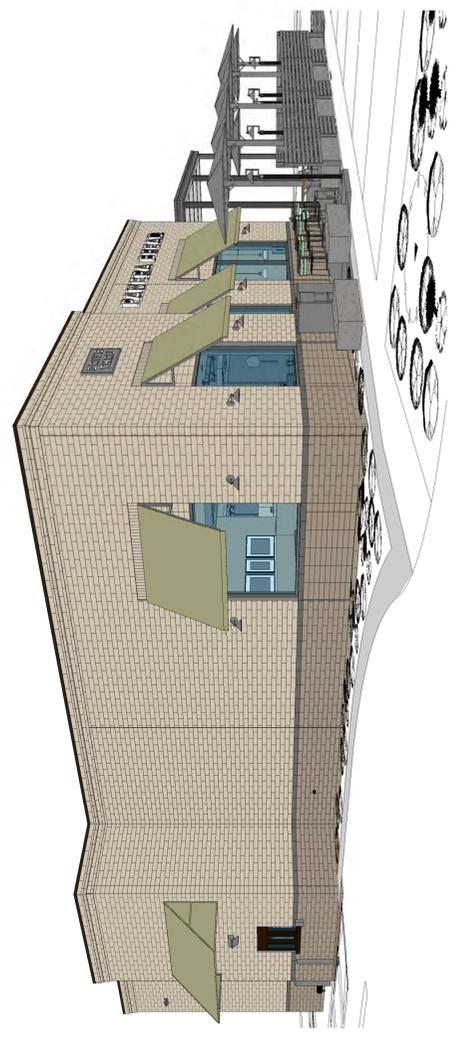
No.	Description	Date

EXTERIOR
 PERSPECTIVES
 Project Number: 170486
 Drawn By: ABCV JMH
 Issue Date: 10/24/17
 DPX: BRAN B. DAN C. KEVIN C.

A300



3 | PERSPECTIVE VIEW



2 | PERSPECTIVE VIEW

GENERAL NOTES:

- A. ALL GLAZING TO BE G1 UNLESS NOTED OTHERWISE. FOR STOREFRONT / WINDOW ELEVATIONS SEE SHEET A611.

KEYED NOTES

- 0.30 PATIO RAILING BY PANERA. COLOR: TO MATCH #AF-155 WEINMARNER. REFER TO A34014, BY TENANT
- 2.18 NEW EXTERIOR GROUND LIGHT
- 2.19 SIDEWALK POLE LIGHT FIXTURE
- 3.01 LETTERS AND SIGNAGE TO BE PROVIDED AND INSTALLED BY SIGN VENDOR UNDER SEPARATE PERMIT. GC TO PROVIDE BLOCKING IN WALL FOR SIGN AND PROVIDE ACCESS PANEL ON BACKSIDE OF PARAPET FOR ACCESS AS REQUIRED. (UNDER SEPARATE SIGNAGE PERMIT)
- 3.02 PRE-FINISHED METAL COPING | FINISH: TO MATCH HC-166 KENDALL CHARCOAL
- 3.03 WALL MOUNTED LIGHT FIXTURE. FIXTURES SHALL BE PROVIDED AND REFERRED TO BY A34014, BY TENANT. REFER TO A34014 FOR REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION
- 3.06 HOLLOW METAL SERVICE DOOR. REFER TO A601 FOR ADDITIONAL INFORMATION | PAINT TO MATCH HAC-166 KENDALL CHARCOAL
- 3.07 DRIVE-THRU WINDOW | MFR: OUKSERV | MODEL: FM2E | COLOR TO MATCH STOREFRONT.
- 3.08 ALUMINUM STOREFRONT SYSTEM WITH 1" INSULATED GLAZING. COLOR: TO MATCH HC-166 KENDALL CHARCOAL. REFER TO SHEET A611 FOR FURTHER INFORMATION.
- 3.10 CONTROL JOINT(S) WHERE INDICATED | PROVIDE SEALANT TO MATCH COLOR.
- 3.12 ADJACENT WALL MATERIALS AWNING PROVIDED AND INSTALLED BY SIGN VENDOR UNDER SEPARATE PERMIT. GC SHALL PROVIDE APPROPRIATE BLOCKING AS REQUIRED BY SIGN VENDOR. REFER TO SHOP DRAWINGS FOR ADDITIONAL INFORMATION.
- 3.13 SECURITY CAMERA INSTALLED BY TENANT | COORDINATE ROUGH-IN LOCATION(S) AND HEIGHTS WITH PANERA CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
- 3.14 4" DIA. CONCRETE BOLLARD | FINISH: PAINT TO MATCH P107 | REFER TO SHEET A601 FOR FURTHER INFORMATION
- 3.15 4" DIA. CONCRETE BOLLARD | FINISH: PAINT P107 | REFER TO SHEET A614 FOR FURTHER INFORMATION
- 3.16 FIRE DEPARTMENT ACCESS BOX. INSTALLED ADJACENT SERVICE DOOR. COORDINATE LOCATION WITH LOCAL FIRE DEPARTMENT.
- 3.17 FIRE DEPARTMENT CONNECTION (FDC) BY LANDLORD
- 3.19 HOSE BIBB | RECESSED STAINLESS STEEL BOX. REFER TO PLUMBING DRAWINGS FOR LOCATION AND ADDITIONAL INFORMATION. INSTALLED BY TENANT.
- 3.20 GATE ENCLOSURE AT CART CORRAL | MFR: TREX COMPOSITE PLANK | COLOR: SADDLE.
- 3.26 STANDING SEAM METAL ROOFING SYSTEM AND EDGE PIECE BY MFR. 12" PROJECTION | COLOR: TO MATCH #AF-155 WEINMARNER. BRICK CORNICE TO BE CONSTRUCTED USING ENDURAMAX BRICK WALL SYSTEM. REFER TO DETAIL FOR FURTHER INFORMATION.
- 3.29 GAS METER. REFER TO PLUMBING DRAWINGS FOR FURTHER INFORMATION.
- CMU1 SMOOTH FACE CONCRETE BLOCK. PAINT TO MATCH MAIN BUILDING FABRIC AWNING | OPEN ENDED SLAB | COLOR: ASPEN FABRIC. (4" PROJECTION / 5" HEIGHT AT TYPICAL & 5" PROJECTION @ DRIVE THRU)
- F2 ALUMINUM STOREFRONT | 2' x 4' 1/2" PROFILE | THERMAL BREAK | COLOR: #HC-166 KENDALL CHARCOAL | 1" CLEAR INSULATED GLAZING. FOR ADDITIONAL INFORMATION, REFER TO SHEET A611
- G1 ALUMINUM STOREFRONT | 2' x 4' 1/2" PROFILE | THERMAL BREAK | COLOR: #HC-166 KENDALL CHARCOAL | 1" CLEAR INSULATED GLAZING. FOR ADDITIONAL INFORMATION, REFER TO SHEET A611
- PX1 PAINT SYSTEM OVER BRICK MASONRY SYSTEM | MFR: ENDURAMAX. CLAY BRICK, MODULAR | COLOR: #955 BERBER WHITE
- PX2 PAINT SYSTEM OVER BRICK MASONRY SYSTEM | MFR: ENDURAMAX. CLAY BRICK, MODULAR | COLOR: #AF-155 WEINMARNER
- PX3 PAINT SYSTEM OVER BRICK MASONRY SYSTEM | MFR: ENDURAMAX. CLAY BRICK, MODULAR | COLOR: #HC-166 KENDALL CHARCOAL

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OKEMOS, MI 48864

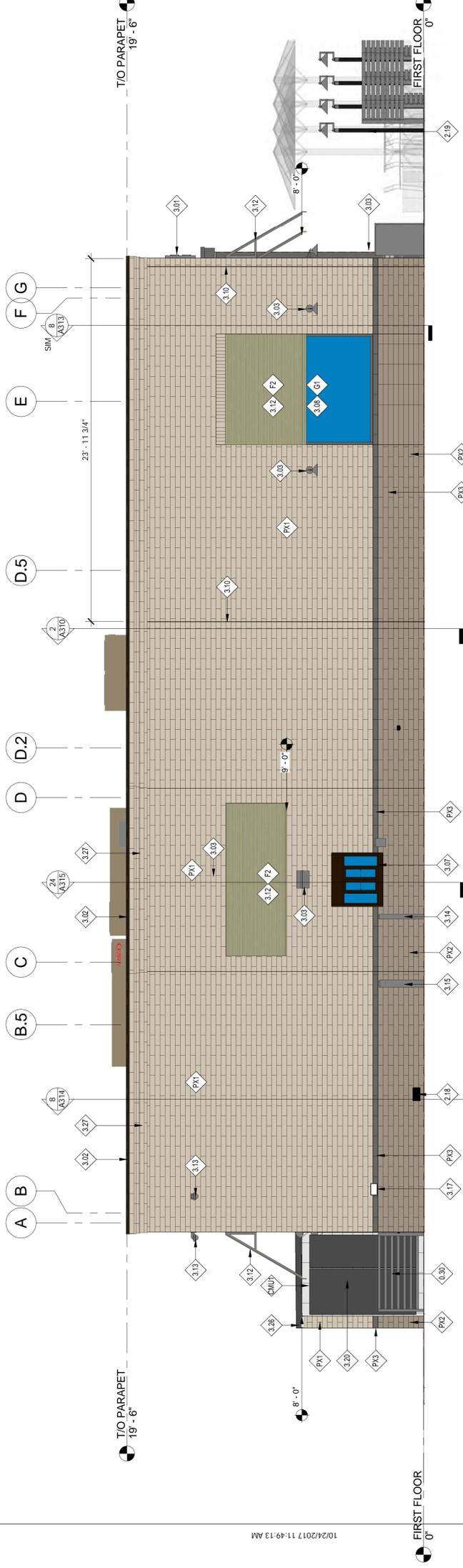


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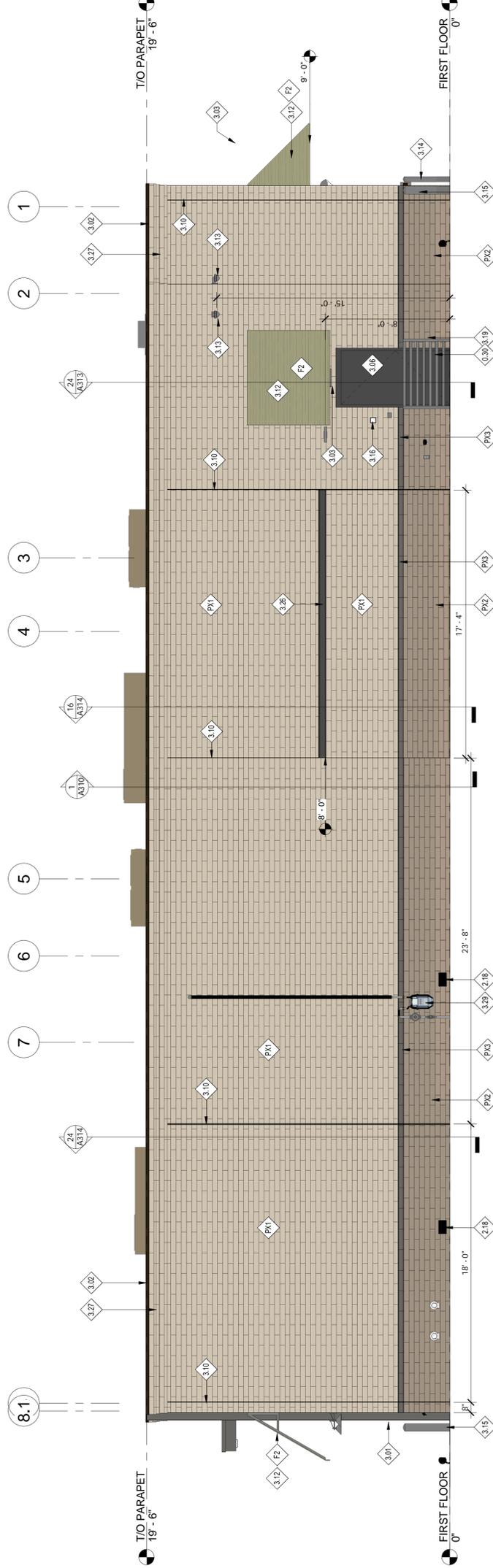
EXTERIOR ELEVATIONS

Project Number: 170566
 Drawn By: CAG, M.H.
 Issue Date: 10/24/17
 DM: BRIAN B. DAN C.
 CPM: KEVIN C.

A302



1 | WEST ELEVATION
1/4" = 1'-0"



2 | NORTH ELEVATION
1/4" = 1'-0"



No.	Description	Date
FIRST FLOOR		0"

WALL SECTIONS

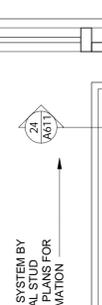
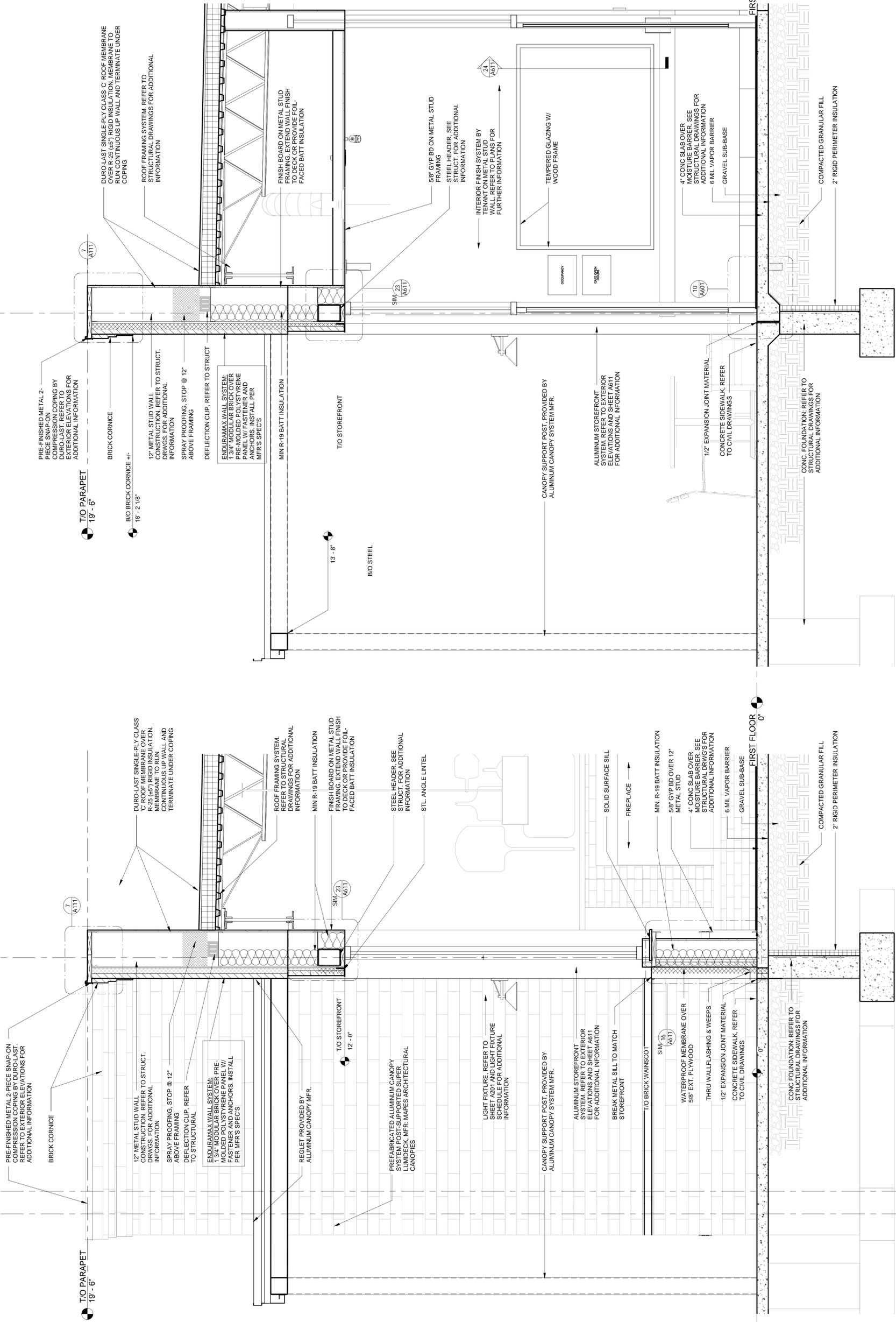
Project Number: 170466
 Drawn By: C.A.O. M.H.
 Issue Date: 10/24/17
 DPAK: BRAN B. DAN C. KEVIN C.

20 WALL SECTION
3/4" = 1'-0"

8 WALL SECTION @ ENTRY
3/4" = 1'-0"

NOTE: GENERAL CONTRACTOR TO COORDINATE MOUNTING HEIGHTS OF BLOCKING FOR SIGNAGE, SIGNAGE & LIGHT FIXTURES WITH SIGNAGE VENDOR AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION

NOTE: GENERAL CONTRACTOR TO COORDINATE MOUNTING HEIGHTS OF BLOCKING FOR SIGNAGE, SIGNAGE & LIGHT FIXTURES WITH SIGNAGE VENDOR AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION





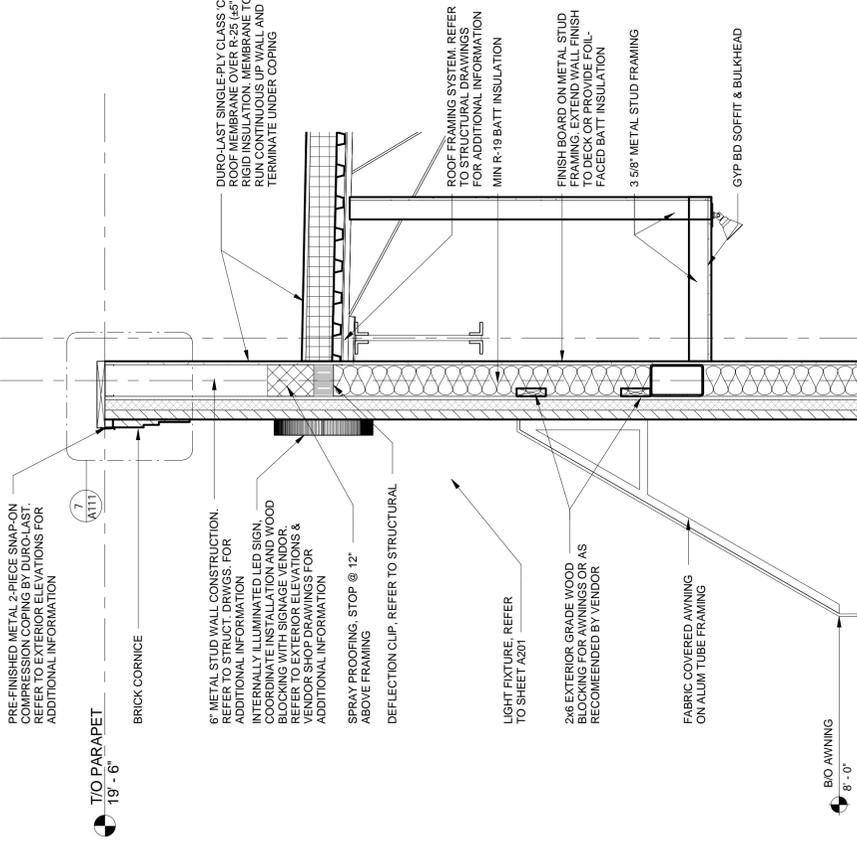
No.	Description	Date

WALL SECTIONS

Project Number: 170686
 Drawn By: C.A.O. MH
 Issue Date: 10/24/17
 DPK: BRAN B. DM: DAN C. CPM: KEVIN C.

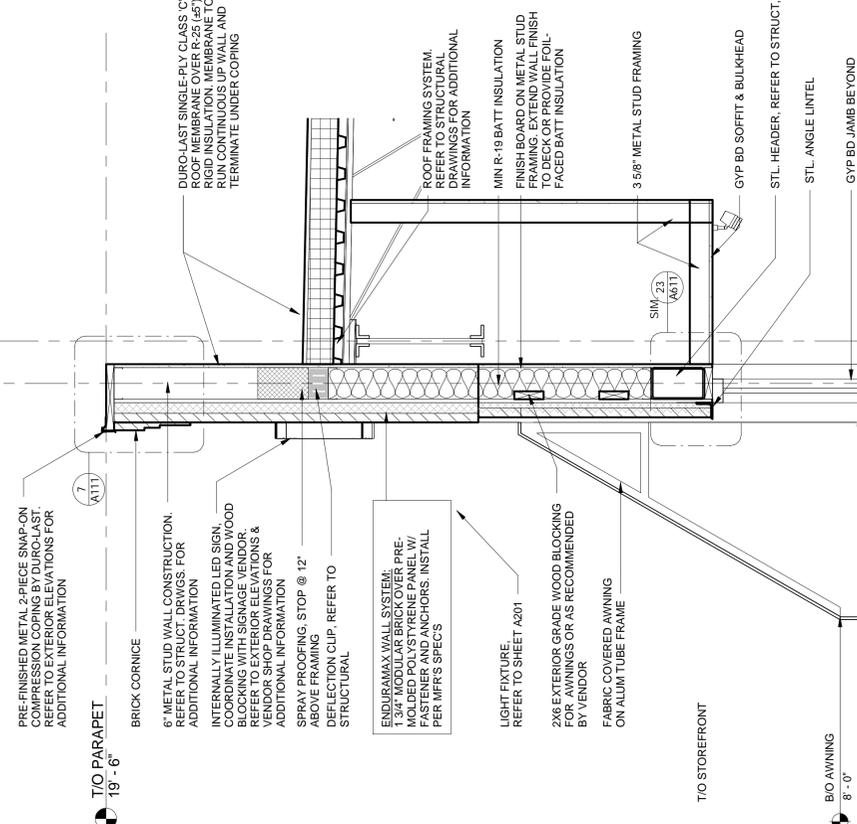
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NOTE: GENERAL CONTRACTOR TO COORDINATE MOUNTING HEIGHTS OF BLOCKING FOR AWNINGS, SIGNAGE, & LIGHT FIXTURES WITH SIGNAGE VENDOR AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION



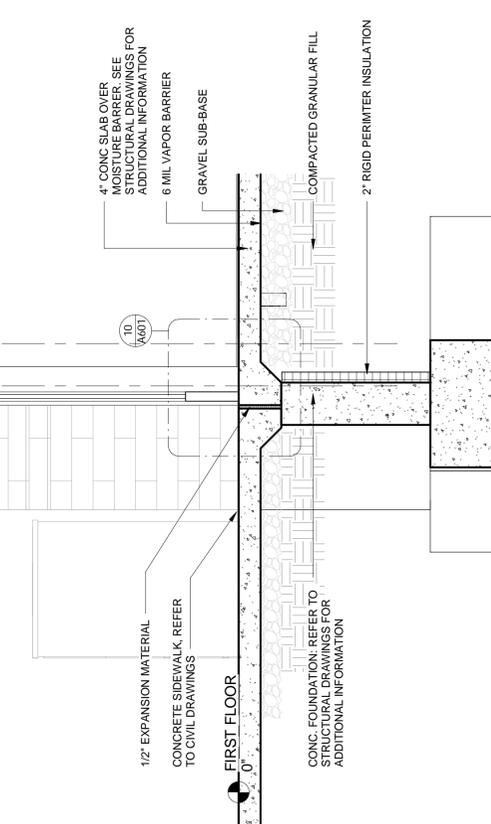
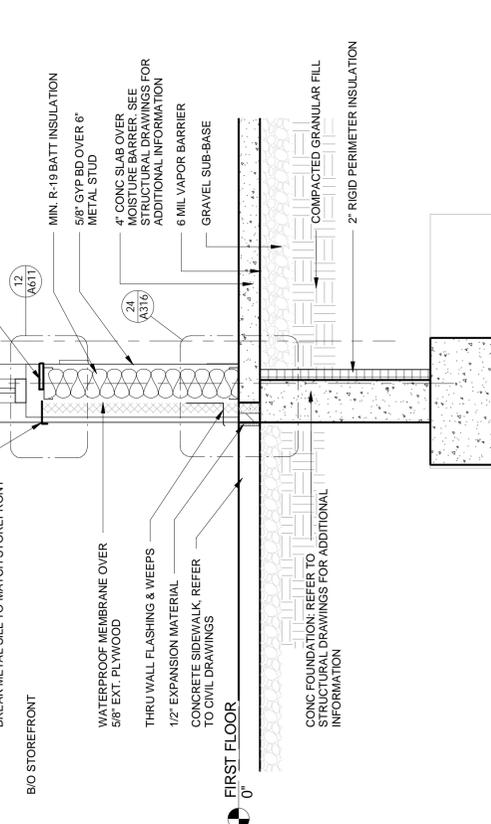
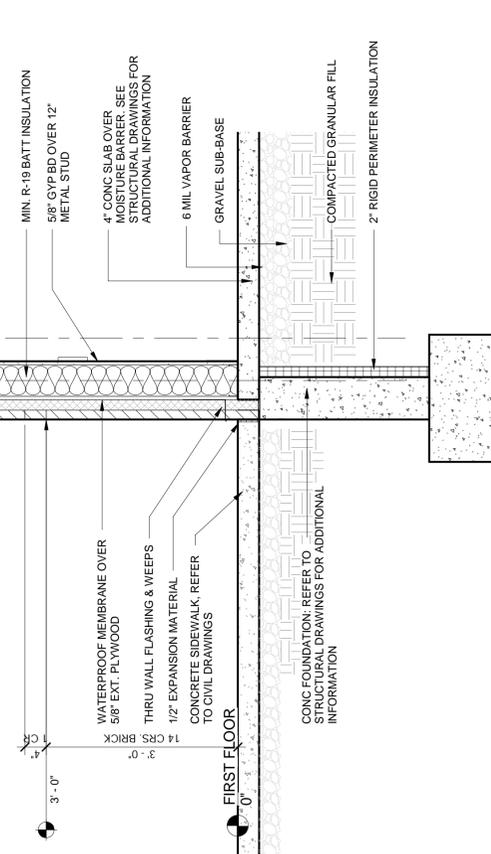
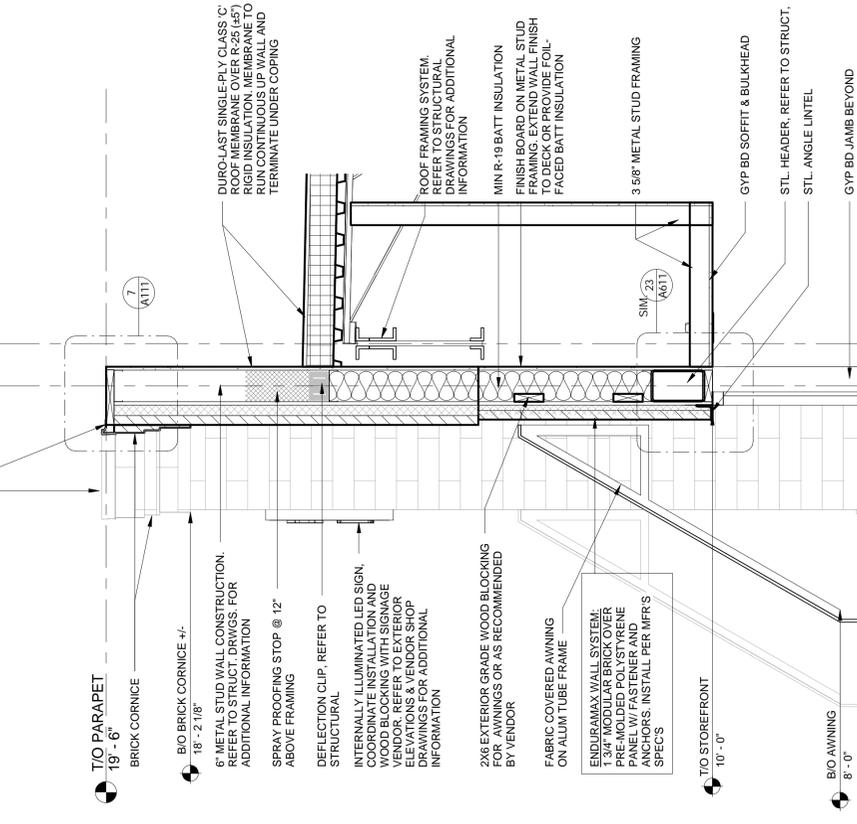
G F

NOTE: GENERAL CONTRACTOR TO COORDINATE MOUNTING HEIGHTS OF BLOCKING FOR AWNINGS, SIGNAGE, & LIGHT FIXTURES WITH SIGNAGE VENDOR AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION



G F

NOTE: GENERAL CONTRACTOR TO COORDINATE MOUNTING HEIGHTS OF BLOCKING FOR AWNINGS, SIGNAGE, & LIGHT FIXTURES WITH SIGNAGE VENDOR AND ELECTRICAL CONTRACTOR PRIOR TO INSTALLATION



16 WALL SECTION
3/4" = 1'-0"

8 WALL SECTION
3/4" = 1'-0"

24 WALL SECTION
3/4" = 1'-0"



No.	Description	Date

INTERIOR PERSPECTIVES

Project Number:

Sheet Number:

170686

Drawn By:

Author:

Issue Date:

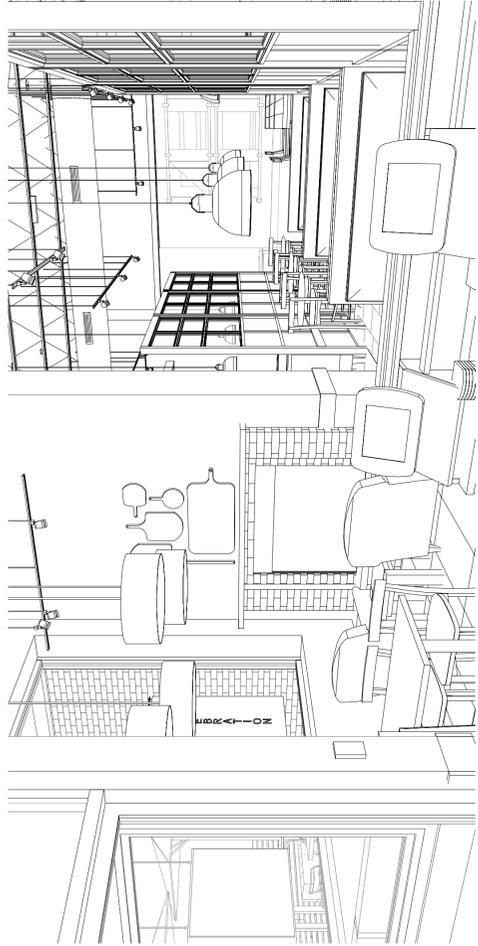
10/24/17

DPK:

DM: D. WILLIS

CPM: J. CARTER

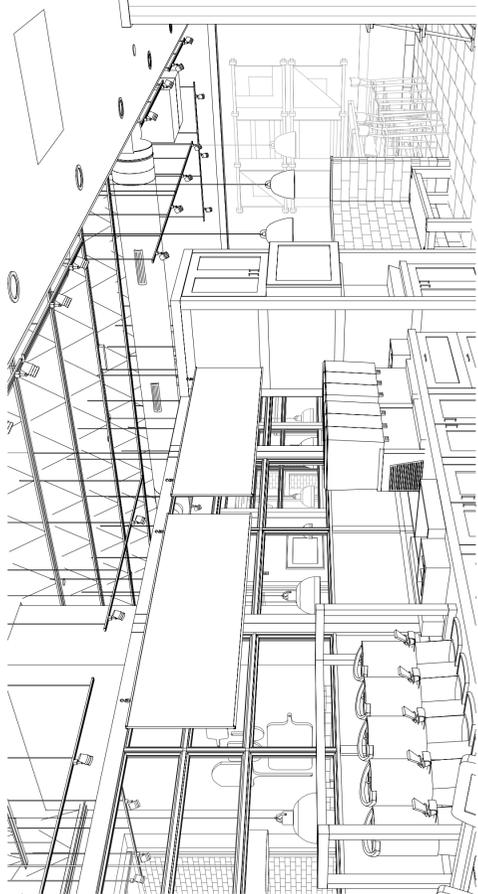
A510



2 | INTERIOR VIEW @ FIREPLACE



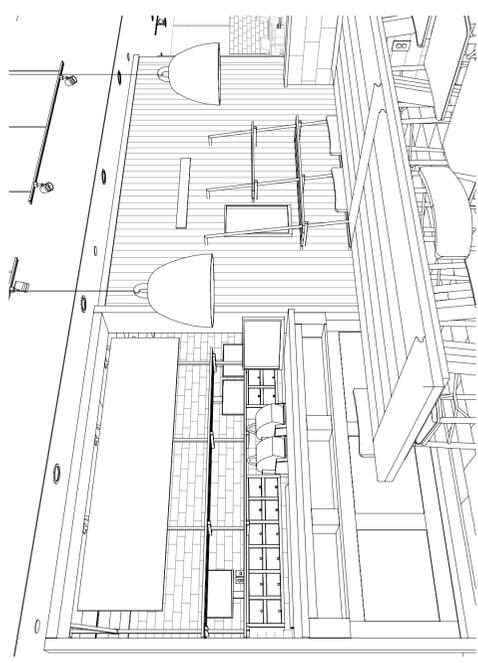
1 | INTERIOR VIEW @ KIOSK



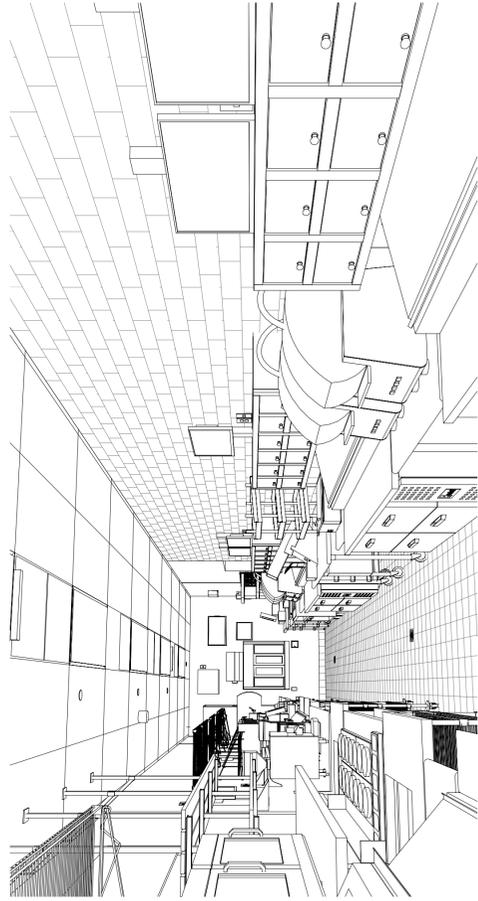
4 | INTERIOR VIEW @ HOT/COLD BEV.



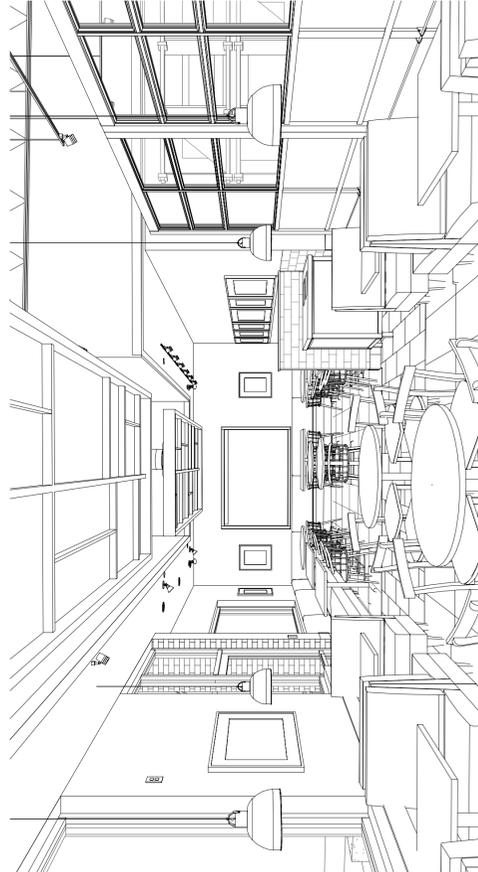
3 | INTERIOR VIEW @ GATHERING TABLE



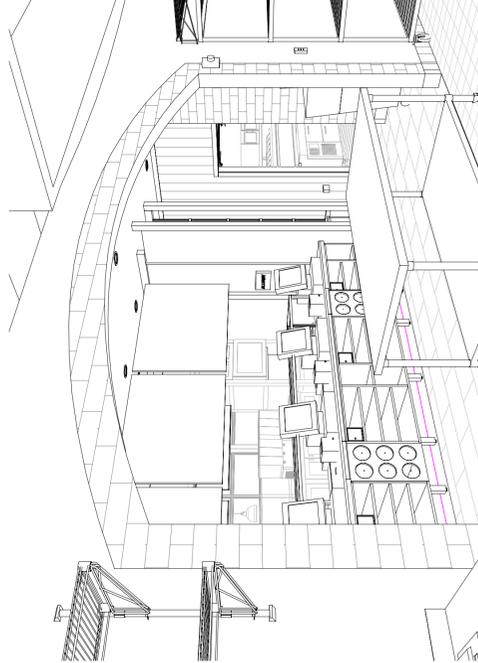
5 | INTERIOR VIEW @ EXPO



7 | INTERIOR VIEW 2 CONSOLIDATION



6 | INTERIOR VIEW @ DINING



8 | INTERIOR VIEW @ BAKERY

GENERAL NOTES:

- A G.C. TO PROVIDE MANAGER OFFICE LAMINATE TOP, ALMOND COLOR PREFERRED. WHITE ALLOWED IF ALMOND IS NOT AVAILABLE. REFER TO ELEVATIONS FOR ADDITIONAL INFORMATION.

KEYED NOTES

- 5.12 WATER HEATER LOCATION TO BE LOCATED ON STAND. SEE DETAIL 14/A523.
- 7.01 OFFICE SWIFT TO BE INSTALLED FLUSH WITH THE FRONT OF THE DESK ON THE RIGHT HAND SIDE.
- 7.02 PLACEMENT, FIRE SPRINKLER DESIGN PROVIDED BY OTHERS UNDER SEPARATE PERMIT.
- 7.03 ALUMINUM ROOF LADDER
- 7.04 CPV PANEL
- 7.06 DINING SCREEN WALL FURNITURE. REFER TO 19/A521 FOR SUPPORT TO STRUCTURE ABOVE DETAIL AND EQUIPMENT PLAN FOR SCREEN PLACEMENT LOCATION.
- 7.07 FIREPLACE | MFR: NAPOLEON, MODEL NO. HD-66-HDF46K58MKRY(2)-RAK46
- 7.11 LOCATION OF APPROVED FIRE EXTINGUISHER RATED 2A-10BC. LOCATE WITHIN 30' TRAVEL DISTANCE FROM LIKE EXTINGUISHER.

FURNITURE:	REFER TO PLAN TAGS
UPHOLSTERY:	WOOD
BOOTH TYPE:	PER PLAN
COMMUNITY TABLE:	PER PLAN
TABLE TOPS:	PER PLAN
TABLE BASE TYPE:	G4 PER PLAN
TABLE HEIGHT:	G4 PER PLAN
STOOL HEIGHT CHAIR:	
TABLE SERVICE:	YES
APPLICABLE TO THIS MARKET?	NO
CO2 MONITORING:	NO
IS THIS REQUIRED?	NO
CAL 133:	NO
IS THIS REQUIRED?	NO
MILLWORK:	WD30
BAKERY FRONT:	WD31
PANELS:	WD33
BREAD/BAGEL WALL:	WD30
CHAIR RAIL/CAP:	WD30
RPU UNIT FINISH:	WD30
P2.0 WALL FINISH:	WD33

DESIGN NOTES:

Bakery Cafe #0715
2080 GRAND RIVER AVE
OKEMOS, MI 48864



Consultant Copyright Placeholder

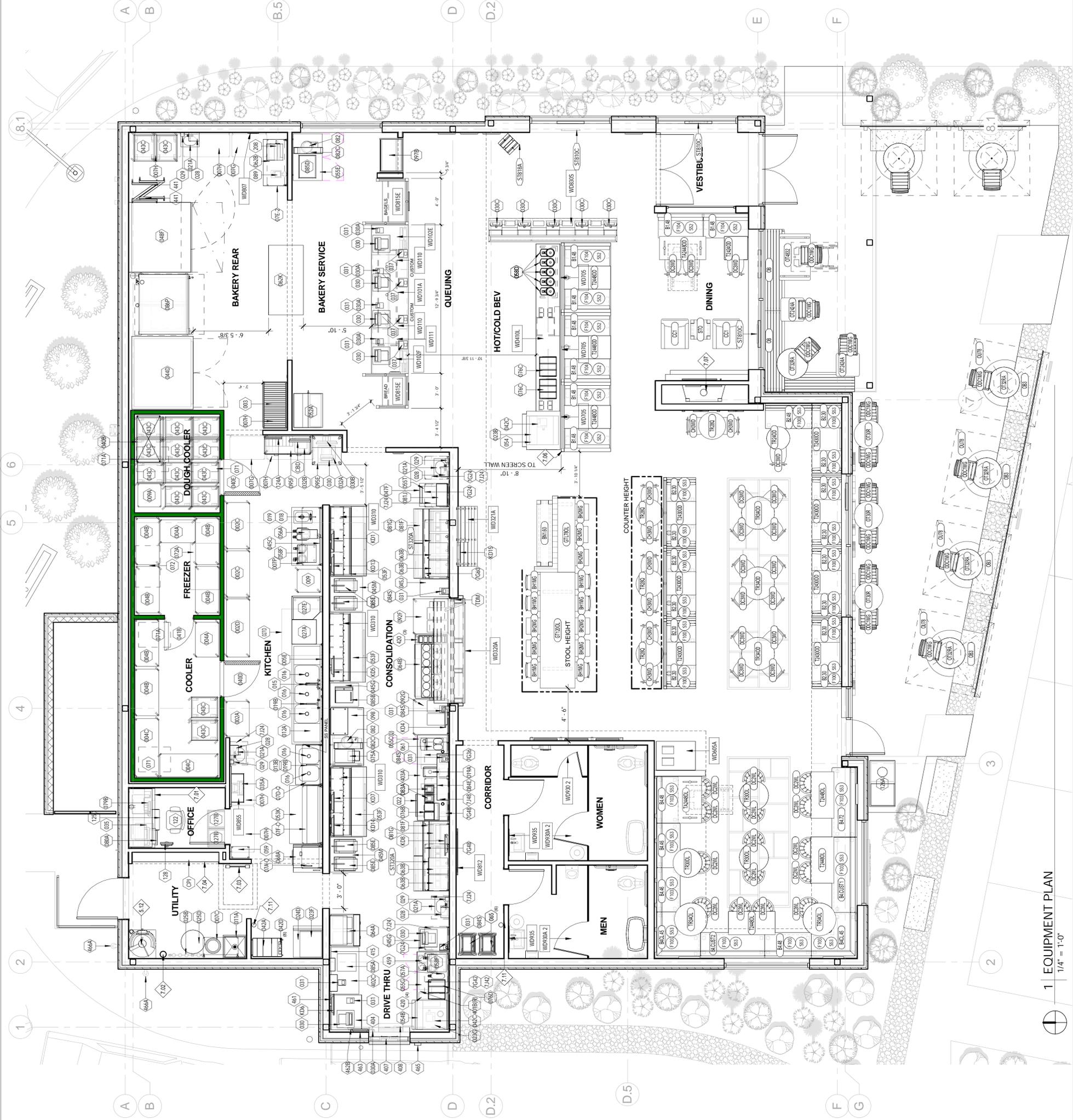
No.	Description	Date

FLOOR PLAN EQUIPMENT

Project Number: 170686
Drawn By: ABCV, JMH
Issue Date: 10/24/17
DPAK: BRAN B, DAN C, KEVIN C.
CPM: A703

EQUIPMENT PLAN LEGEND:

- XXX ROOM NUMBER SYMBOL
- XXXX SIGNAGE IDENTIFICATION SYMBOL
- XXXXX EQUIPMENT IDENTIFICATION SYMBOL
- STXXXXX STEEL IDENTIFICATION SYMBOL
- WXXXXX WOOD IDENTIFICATION SYMBOL
- REL RELOCATION INDICATION SYMBOL
- FURNID FURNITURE IDENTIFICATION SYMBOL
- DOORID DOOR NUMBER SYMBOL
- 7 FABRIC DESIGNATION SYMBOL (SEE A-4.8 SHEET)



1 | EQUIPMENT PLAN
1/4" = 1'-0"



To: Planning Commission

From: Peter Menser, Principal Planner
Justin Quagliata, Assistant Planner

Date: June 21, 2018

Re: Commercial Planned Unit Development #18024 (Affinity 9 Investments, LLC), demolish existing restaurant and construct a new restaurant with drive-through window at 2080 Grand River Avenue.

At its meeting on June 11, 2018 the Planning Commission held a public hearing for a request to establish a commercial planned unit development (C-PUD) at 2080 Grand River Avenue. The redevelopment plans include the demolition of the existing Mongolian BBQ restaurant and the construction of a new approximately 4,534 square foot Panera restaurant with drive-through window. At the meeting the Planning Commission agreed to consider a resolution to recommend approval of the C-PUD request at its next meeting.

Planning Commission Options

The Planning Commission may recommend approval, approval with conditions, or denial of the C-PUD. A resolution to recommend approval is attached.

- **Move to adopt the attached resolution to recommend approval of C-PUD #18024.**

Attachment

1. Resolution to recommend approval

RESOLUTION TO APPROVE

**Commercial Planned Unit Development #18024
(Affinity 9 Investments, LLC)**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 25th day of June, 2018, at 7:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, Jeffrey W. Kyes of Kebs, Inc., on behalf of Affinity 9 Investments, LLC, has submitted a request to establish a commercial planned unit development (C-PUD) at 2080 Grand River Avenue; and

WHEREAS, the redevelopment plan for the property includes the demolition of the existing Mongolian BBQ restaurant and the construction of a new approximately 4,534 square foot Panera restaurant with drive-through window; and

WHEREAS, the 1.16 acre subject site is appropriately zoned C-2 (Commercial), which allows for a commercial planned unit development; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 11, 2018, and has reviewed staff material forwarded under a cover memorandum dated June 7, 2018; and

WHEREAS, the commercial planned unit development serves as the special use permit review for any request requiring a special use permit, therefore the proposed work in the floodplain and drive-through window is reviewed and considered as part of this commercial planned unit development; and

WHEREAS, the Michigan Department of Environmental Quality (MDEQ) has approved a permit for the proposed project; and

WHEREAS, the commercial planned unit development ordinance is intended to provide reasonable flexibility for redevelopment of commercial sites to ensure the continuing economic viability of the Township’s commercial areas; and

WHEREAS, the proposed commercial planned unit development will be harmonious and appropriate with the existing and intended character of adjacent commercial developments surrounding the subject site; and

WHEREAS, the requested waivers for impervious surface coverage, parking lot landscape buffers, and water feature setbacks are necessary to facilitate redevelopment of the site due to constraints related to the size of the property and the nature of the proposed land use; and

**Resolution to Approve
C-PUD #18024 (Affinity 9 Investments, LLC)
Page 2**

WHEREAS, the proposed commercial planned unit development will be adequately served by public water and sanitary sewer; and

WHEREAS, the proposed project is consistent with Objectives A and D of Goal 3 of the 2017 Master Plan to upgrade commercial areas.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Commercial Planned Unit Development #18024, subject to the following conditions:

1. Approval is in accordance with the submitted site plan prepared by Kebs, Inc., dated December 1, 2017 (revision date April 16, 2018) and received by the Township on April 17, 2018.
2. Approval is in accordance with the floor plan and building elevations prepared by Arc Vision Inc., dated October 24, 2017 and received by the Township on April 17, 2018.
3. Approval of the work in the floodplain is in accordance with the Michigan Department of Environmental Quality project approval granted on May 3, 2018.
4. Approval is subject to the provision of one or more amenities. The applicant proposes the following amenities: connection to the pedestrian-bicycle pathway along Grand River Avenue and public Wi-Fi.
5. The waivers requested for impervious surface coverage, parking lot landscape buffers, and wetland setbacks are recommended for approval as depicted on the Coversheet and Amenities Plan prepared by Kebs, Inc. dated December 1, 2017 (revision date April 16, 2018) and received by the Township on April 17, 2018.
6. Site accessories such as benches, trash and recycling receptacles, exterior lighting fixtures, and bicycle racks shall be of commercial quality and complementary with the building design and style. Proposed site accessories shall be subject to approval by the Director of Community Planning and Development.
7. Site and building lighting shall comply with Article VII in Chapter 38 of the Code of Ordinances and are subject to the approval of the Director of Community Planning and Development.
8. All mechanical, heating, ventilation, air conditioning, and similar systems shall be screened from view by an opaque structure or landscape material selected to complement the building. Such screening is subject to approval by the Director of Community Planning and Development.
9. The applicant shall obtain all necessary permits, licenses, and approvals from the Michigan Department of Transportation and the Township. Copies of all permits and approval letters shall be submitted to the Department of Community Planning and Development.
10. The utility, grading, and storm drainage plans for the site are subject to the approval of the Director of Public Works and Engineering and Ingham County Drain Commissioner and shall be completed in accordance with the Township Engineering Design and Construction Standards.

**Resolution to Approve
C-PUD #18024 (Affinity 9 Investments, LLC)
Page 3**

11. Any future building addition or expansion will require a modification to Commercial Planned Unit Development #18024.

ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Chair of the Planning Commission of the Charter Township Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 25th day of June, 2018.

Dante Ianni
Planning Commission Chair

**CHARTER TOWNSHIP OF MERIDIAN
PLANNING COMMISSION
REGULAR MEETING MINUTES**

APPROVED

June 11, 2018

5151 Marsh Road, Okemos, MI 48864-1198

517-853-4560, Town Hall Room, 7:00 P.M.

PRESENT: Commissioners Richards, Cordill, Ianni, Premoe, Scott-Craig, Stivers, Trezise, Shrewsbury, and Lane

ABSENT: None

STAFF: Principal Planner Peter Menser, Assistant Planner Justin Quagliata, Planning Intern Juliana Boblitz

1. Call meeting to order

Chair Ianni called the regular meeting to order at 7:02 P.M.

2. Public Remarks - None

3. Approval of Agenda

Commissioner Richards moved to approve the agenda as written.

Supported by Vice-Chair Scott-Craig.

VOICE VOTE: Motion approved unanimously.

4. Approval of Minutes

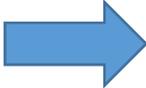
A. May 21, 2018 Regular Meeting

Commissioner Premoe moved to approve the minutes as written.

Supported by Commissioner Cordill.

VOICE VOTE: Motion approved unanimously.

5. Communications - None

 **6. Public Hearings**

A. Commercial Planned Unit Development #18024 (Affinity 9 Investments), construct a 4,534 square foot Panera restaurant with drive-through window at 2080 Grand River Avenue.

Chair Ianni opened the public hearing at 7:04 p.m.

Principal Planner Menser outlined C-PUD #18024 for discussion.

Mr. Jeff Kyes of KEBS Engineering spoke representing the applicant. He commented the existing site does not meet a number of ordinance requirements and under the proposed plan they worked hard to minimize the number of waivers required. He stated a traffic study was reviewed by the Michigan Department of Transportation and they were in agreement with the proposed plans for the time being.

There was no public comment.

Commissioner Richards asked about the quality of the existing wetland.

Principal Planner Menser replied the quality was high enough that the wetland is regulated by the Michigan Department of Environmental Quality as well as the Township.

Vice-Chair Scott-Craig asked for details about installing a right turn lane from Grand River Avenue.

Mr. Kyes stated installing a dedicated right turn lane on westbound Grand River Avenue for traffic to turn into the business can only be done if the Michigan Department of Transportation determines it's necessary.

Vice-Chair Scott-Craig asked if the compensating cut in the floodplain would remove the possibility of a secondary access road.

Mr. Kyes stated the compensating cut would not limit a secondary access drive because it is between the parking lot and sidewalk.

Vice-Chair Scott-Craig asked about the reduced parking.

Mr. Kyes explained the parking reduction was kept to the very minimum but was warranted to reduce the amount of impervious surface.

Vice-Chair Scott-Craig stated the surrounding intersections already have failing Level of Service traffic grades and while the proposed project won't help, it certainly won't make it too much worse. He said he was concerned about flooding in the area and stated the topic would have to be addressed.

Commissioner Cordill stated she was glad to see the improvement to the site that the proposed development offers but said the number of waivers is still very significant.

Principal Planner Menser explained the waivers requested based on the proposed plan and stated the C-PUD waiver process takes the place of the variance process.

Commissioner Cordill stated she was not in favor of having a drive-thru in this location as she would like to see less impact on traffic for this area.

Mr. Kyes explained the business needs the drive-thru and the proposed plan has maximized every possible area on the lot to accommodate the drive-thru.

Commissioner Stivers asked if the building could be moved closer to Grand River Avenue to conform to the possible adoption of Form Based Code.

Mr. Kyes explained with the access required for the drive-thru and any emergency vehicles that would have to get around the building it would not be possible to move the building closer to Grand River Avenue.

Commissioner Lane asked how the square footage of the proposed development compared to the applicant's existing site in the Township.

Mr. Brian Barnard, a representative of Panera Bread, stated the square footage was close to the same for the proposed and existing sites.

A straw poll indicated the Planning Commission would be in favor of recommending approval of the proposed C-PUD at the next meeting.

Chair Ianni closed the public hearing at 7:32 p.m.

B. Special Use Permit #18051 (Singh), construct a multiple family housing development with seven dwelling units at 1954 Saginaw Highway.

Chair Ianni opened the public hearing at 7:33 p.m.

Principal Planner Menser outlined Special Use Permit #18051 for discussion.

Mr. Jeff Kyes spoke representing the applicant. He gave details about the development and said the proposal was to build in phases. The existing home would remain and the detached garage would be converted into a dwelling with an attached two car garage. The revenue generated from renting those two units would be used to run water to the property so phase two construction could begin.

There was no public comment.

Commissioner Premoe asked if the existing garage and home were separate buildings.

Mr. Kyes explained the existing garage is separate from the home and is not a living unit at this time but would be converted into a dwelling with an attached garage.

Commissioner Lane asked if there was adequate parking for two dwellings.

Mr. Kyes replied the plan calls for creating two parking spaces for the existing home and the converted garage would have an attached garage for parking.

Vice-Chair Scott-Craig commented he was happy to see the plan called for leaving as many of the mature trees as possible on the lot.

Principal Planner Menser stated a RDD special use permit would be valid for one year and with the possibility of a one year extension if necessary.

Vice-Chair Scott-Craig asked about the fact that the existing structures are in the setback areas of the lot.

Mr. Kyes explained the footprint of neither structure would change under the proposed plan.

A straw poll indicated the Planning Commission would be in favor of approval of SUP #18051.

Chair Ianni closed the public hearing at 7:55 p.m.

**CHARTER TOWNSHIP OF MERIDIAN
PLANNING COMMISSION
REGULAR MEETING MINUTES**

DRAFT

June 25, 2018

5151 Marsh Road, Okemos, MI 48864-1198

517-853-4560, Town Hall Room, 7:00 P.M.

PRESENT: Commissioners Richards, Cordill, Ianni, Premoe (7:15), Scott-Craig, Stivers, Trezise, Shrewsbury, and Lane

ABSENT: None

STAFF: Principal Planner Peter Menser

1. Call meeting to order

Chair Ianni called the regular meeting to order at 7:02 P.M.

2. Public Remarks

A. Mr. B.K. Singh spoke in support of Special Use Permit #18051

3. Approval of Agenda

Vice-Chair Scott-Craig moved to approve the agenda as written.

Supported by Commissioner Richards.

VOICE VOTE: Motion approved unanimously.

4. Approval of Minutes

A. June 11, 2018 Regular Meeting

Commissioner Richards moved to approve the minutes as written.

Supported by Vice-Chair Scott-Craig.

VOICE VOTE: Motion approved unanimously.

5. Communications

A. Carolyn Beia RE: Rezoning #18070

6. Public Hearings

A. Special Use Permit #18061 (Meridian Township), replace drain structure in the floodplain of the Pine Lake Outlet Drain adjacent to the Old Raby Trail located east of Raby Road, south of Haslett Road, and west of Marsh Road.

Chair Ianni opened the public hearing at 7:04 p.m.

Principal Planner Menser outlined Special Use Permit #18061 for discussion.

Younes Ishraidi, Meridian Township Chief Engineer, commented the current bridge is a safety

hazard. He stated the project is funded entirely with funds from the Ingham County Parks Millage.

Commissioner Cordill asked why the construction of the bridge was changing.

Chief Engineer Ishraidi replied the aluminum arch bridge will increase the flow capacity and will last longer and be safer than the existing bridge.

Commissioner Cordill asked if the proposed bridge is larger than the current bridge.

Chief Engineer Ishraidi replied it will have a higher capacity and be much safer than the current bridge.

Commissioner Cordill asked if pictures were available of the proposed bridge.

Chief Engineer Ishraidi showed a rendering of the new bridge and pointed out the size increase over the existing bridge. He stated the new bridge would have a railing.

Vice-Chair John Scott-Craig asked about the life span of the proposed bridge.

Chief Engineer Ishraidi stated the life span of the proposed bridge would be at least as long as the current bridge and possibly longer.

Vice-Chair John Scott-Craig asked if the proposed bridge would increase the capacity of water flowing through the drain.

Chief Engineer Ishraidi stated it will increase the capacity. He explained the current bridge was on an angle and the proposed replacement will follow the drain better which will increase the capacity.

Vice-Chair Scott-Craig asked what was going to happen to the extra soil created by the replacement.

Chief Engineer Ishraidi replied it will be hauled away from the site.

There was no opposition from the Commissioners, Chair Ianni directed staff to prepare a resolution of approval for the next meeting.

Chair Ianni closed the public hearing at 7:17 p.m.

A straw poll indicated the Planning Commission would be in favor of recommending approval of the proposed C-PUD at the next meeting.

Chair Ianni closed the public hearing at 7:32 p.m.

7. Unfinished Business

- A. Commercial Planned Unit Development #18024 (Affinity 9 Investments), construct 4,534 square foot Panera restaurant with drive-through window at 2080 Grand River Avenue.

Principal Planner Menser outlined Commercial Planned Unit Development #18024 for discussion.

Commissioner Stivers moved to approve C-PUD #18024 as outlined in the resolution.

Supported by Commissioner Trezise.

Commissioner Cordill commented though she was in support of the C-PUD she still did not care for the drive-through aspect of the project and what it will mean in the future when the proposed form based code takes effect.

VOICE VOTE:

YEAS: Commissioners Stivers, Trezise, Premoe, Shrewsbury, Cordill, Vice-Chair Scott-Craig, Lane, Richards, and Chair Ianni

NAYS: None

MOTION CARRIED: 9-0.

- B. Special Use Permit #18051 (Singh), construct a multiple family housing development with seven dwelling units at 1954 Saginaw Highway.

Principal Planner Menser outlined Special Use Permit #18051 for discussion

Commissioner Richards moved to approve SUP #18051 as outlined in the resolution.
Supported by Commissioner Trezise.

8. Other Business-None

9. TOWNSHIP BOARD, PLANNING COMMISSION OFFICER, COMMITTEE CHAIR, AND STAFF COMMENTS OR REPORTS

Vice-Chair Scott-Craig commented about the importance of site visits in preparation for

10. PROJECT UPDATES

- A. New Applications - None
- B. Site Plan Received-None
- C. Site Plans Approved -None

11. PUBLIC REMARKS - NONE

12. ADJOURNMENT

Vice-Chair Scott-Craig moved to adjourn the meeting.
Supported by Commissioner Lane.
VOICE VOTE: Motion carried unanimously.

Chair Ianni adjourned the regular meeting at 8:20 p.m.

Respectfully Submitted,

Angela M. Ryan
Recording Secretary



To: Township Board

**From: LuAnn Maisner, CPRP, Director of Parks and Recreation
Mark Kieselbach, Director of Planning and Community Development**

Date: July 19, 2018

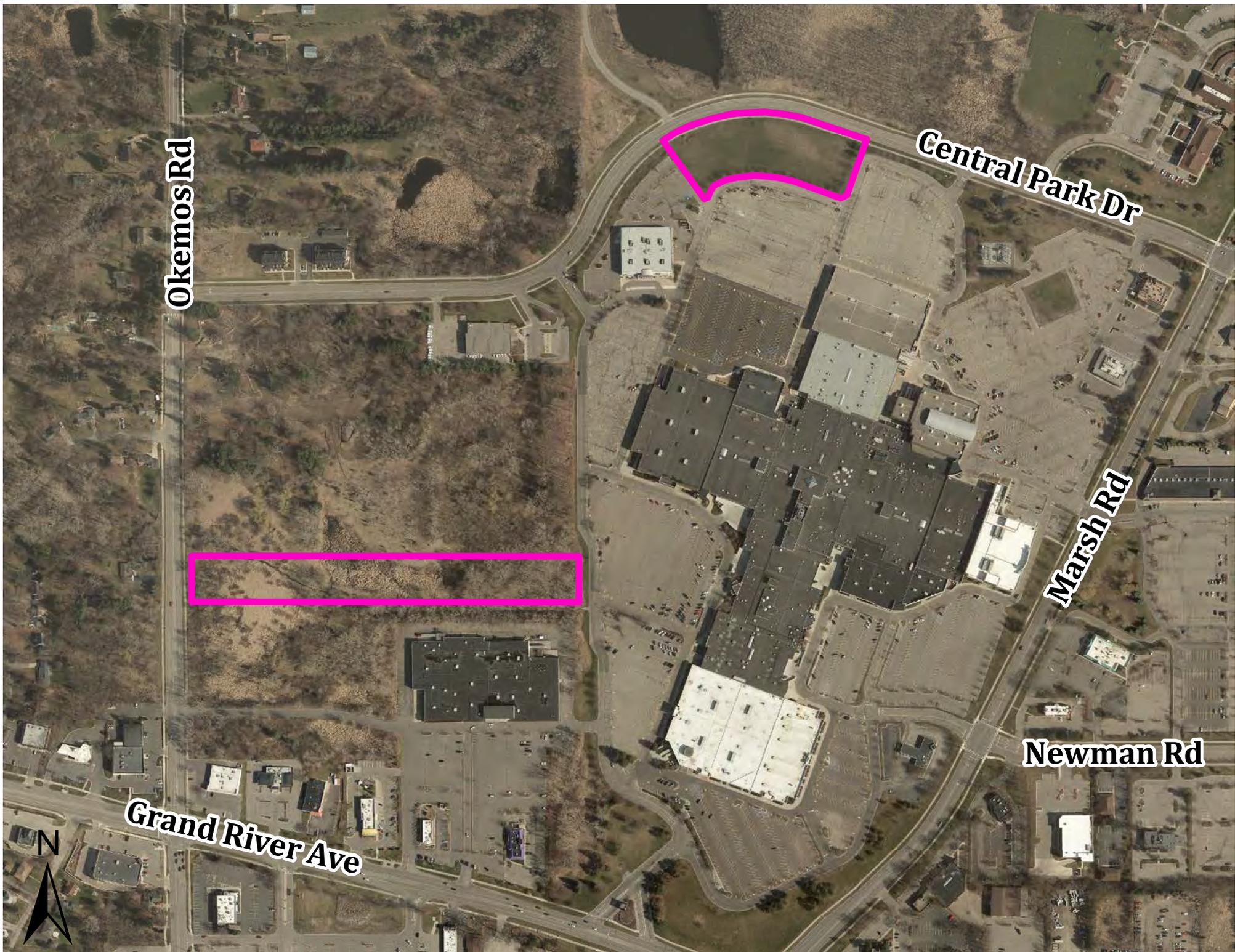
Re: Land Transfer for Farmers' Market Relocation Plan

The Park Commission completed a master plan of Central Park in 2014 that outlined park development and renovation activities for the future. It was determined through this process that the Farmers' Market should relocate to a nearby location. Through discussions with CBL Properties/Meridian Mall, they expressed strong interest in moving forward toward this end.

The benefits of relocating to the Meridian Mall property assures that the Market activity remains centrally located, provides ample parking and easy ingress/egress utilizing existing asphalt surface, and that it will bring additional traffic to the mall area that hopefully will assist in the Mall's sustainability as the economic core of our community. The continued discussions on how to best accommodate this action has resulted in a proposal of a land trade. The Township would receive 2.5 acres along Central Park Drive adjacent to Studio C, and the Mall would receive 4 acres directly to the west of the Mall (see attached maps). The 4 acres will keep the Mall consistent with the Commercial Planned Unit Development (C-PUD) approved by the Township Board.

Multiple steps will be required that include a boundary survey for the 4 acre parcel, an agreement for the transfer of the parcels, amendment to the Mall's C-PUD to remove the Farmer's Market parcel and to add the 4 acre parcel and a land division for splitting the existing parcels. If the Board is in agreement, staff will move forward with the outlined action.

G:\Parks\Farmers Market\CBL PROPERTIES\Farmers' Market Land Memo1.docx



Okemos Rd

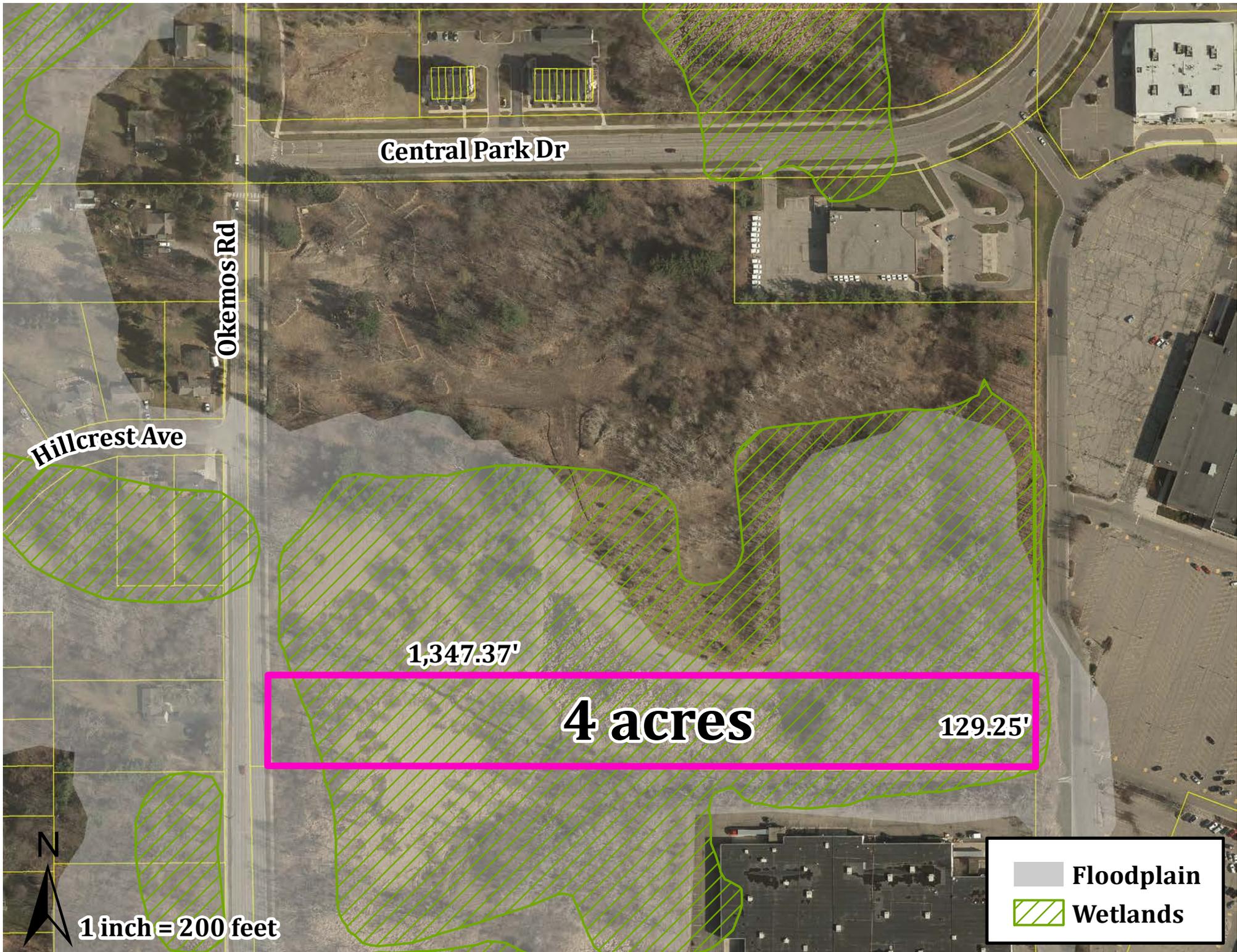
Central Park Dr

Marsh Rd

Newman Rd

Grand River Ave





Central Park Dr

Okemos Rd

Hillcrest Ave

1,347.37'

4 acres

129.25'



1 inch = 200 feet

	Floodplain
	Wetlands



“Marketplace on the Green” Proposal

CBL Properties/Meridian Township

July 18, 2018

Vibrant and re-imagined Public Gathering Space – “Marketplace on the Green” will provide not only a new location for the Meridian Township Farmers’ Market but serve as a new social and economic hub in our Township’s primary business district and gateway to the newly improved Central Park. This will be accomplished by scheduling markets and events for a variety of merchants in the new permanent shelter Monday through Saturday including, but not limited to, Arts and Crafts Markets, Antique Markets, Street Fairs for entrepreneurs, and Flea Markets. Food trucks and live music will be featured most days from 11 am – 1 pm to attract a diverse lunch crowd. The new “Marketplace on the Green”, with its connection to the Meridian Mall as well as the 279-acre Central Park, will bring new life to the area. The space will be designed to allow for public and private functions, concerts and other performances.

Vision:

This new facility with programmed and impromptu activities is intended to increase visitors to the core commercial area of our community while providing a unique venue for economic and social connectivity. Its proximity to Central Park and ample parking make this a prime location for the improved market space.

Development Proposal:

- The following amenities are planned for this space:
 - Pavilion to accommodate vendors with 60+ booth spaces
 - Pavilion to host broom ball, floor hockey for children and adults
 - Ice rink activities during the winter months
 - Restroom/office building
 - Playground
 - Music stage
 - Picnic area/sidewalks/landscaping
- Final pavilion design is still under consideration while researching the best and most appropriate design for the best price.

Proposed Development Budget:

Proposed Revenue:

Meridian Economic Development Corporation (Engineering)	\$ 10,000
Haslett and Okemos Kiwanis Clubs (Pavilion)	\$100,000
Haslett/Okemos Rotary Club (playground)	\$ 35,000
Consumers Energy Foundation (Music Stage)	\$ 25,000
Capital Region Community Foundation (Restroom/office)	\$ 75,000

Meridian Township Farm Mkt Fund and Park Millage \$320,000

TOTAL REVENUE \$570,000

Proposed Expenses:

Professional Services \$ 10,000

Pavilion \$500,000

Accessible Playground \$ 60,000

Performance Stage \$ 25,000

Picnic area and landscaping \$ 35,000

Sidewalk/plaza \$ 60,000

Utilities \$ 75,000

Restroom/Office Building \$150,000

TOTAL EXPENSE \$915,000

=====

Amount Needed for Development (\$345,000)

Programming:

- Meridian Township staff will organize, promote and manage programs to include:
 - Saturday and Wednesday Farmers’ Market (May-October)
 - Antique Market
 - Arts and Crafts Market
 - Street Fair Market for Entrepreneurs
 - Flea Market/Garage Sale
 - Music and food trucks weekdays and Saturday
 - Occasional evening programs/activities/ concerts/classes
 - Mall stores – clearance extravaganza events, sidewalk sales, special promotions. etc.
 - Pavilion Rentals for private gatherings

Proposed Timetable

Spring 2018	Confirm partners and funding; execute lease agreement
Summer 2018	Confirm land control. Prepare engineering specifications and bid documents
Fall 2018	Break Ground for restroom/office building
Spring 2019	Complete Phase I of the “Marketplace on the Green” project which includes: utilities, office/restroom, music stage, sidewalks, tree planting, picnic area, concrete pad. Organize and program activities for summer/fall 2019
Summer 2019	Ribbon Cutting and Market Open for Business!
Spring 2020	Construct Pavilion



FARMERS MARKET

MERIDIAN TOWNSHIP, MICHIGAN
SEPTEMBER 2017





To: Board Members

From: Ken Plaga, Assistant Chief of Police

Date: July 20, 2018

Re: Police Canine Unit Retirement Agreement

The Department has two canines that are trained for article searches, building searches, narcotics detection, and tracking. The Department would like to retire one of the canines. The dog, Uby, is eight years old and the canine handler is Officer Erin Linn. A change in Uby's temperament has been noticed and his age may be a factor. Uby's retirement will leave the Department with one canine team. The Department will call on other agencies for assistance when additional dogs are needed.

Officer Linn has requested to purchase Uby. Traditionally, departments do allow the canine handlers to purchase their dogs at the end of their service life. The Department is requesting authorization transfer the ownership of Uby from Meridian Township to Officer Linn for one dollar.

The Department offers the following motion.

MOVE TO AUTHORIZE THE POLICE DEPARTMENT TO RETIRE POLICE CANINE UBY, TO THE CANINE HANDLER, OFFICER ERIN LINN, FOR ONE DOLLAR.

TRANSFER OF TITLE
OF
RETIRED MERIDIAN TOWNSHIP POLICE DEPARTMENT DOG

This Agreement is made on July 24, 2018 between the Meridian Township Police Department and Erin Linn, of 7101 Cutler Road, Bath, MI 48808 ("Transferee") regarding the transfer of title of the following described Dog:

Uby, a German Shepard

The parties agree as follows:

1. For consideration, receipt of which is acknowledged, the Meridian Township Police Department and Charter Township of Meridian hereby transfer to Transferee all right, title and interest in the Dog, as well as all responsibility for its condition, health, temperament and future behavior.

2. Transferee assumes full ownership of Dog, including taking complete responsibility for its condition, health, temperament and future behavior. Transferee understands that the Dog is being retired from the Meridian Township Police Department due to age, medical matters, temperament, or other conditions.

3. The Meridian Township Police Department and the Charter Township of Meridian (along with their respective agents, representatives, officials and employees and other persons acting on their behalf), make no representations whatsoever regarding the Dog, including making no representations regarding its condition, health, temperament or future behavior. Transferee is familiar with the Dog and accepts the Dog AS IS, WHERE IS, and understands that there are NO EXPRESS OR IMPLIED WARRANTIES of any type, including no warranties of merchantability or fitness for a particular purpose.

4. Transferee shall obtain all applicable licenses or permits for the Dog within 72 hours from the date of this Agreement.

5. Transferee shall indemnify and hold harmless the Meridian Township Police Department and the Chapter Township of Meridian (along with their respective agents, representative, officials, employees and other persons acting on their behalf), from any and all demands, suits, actions, or claims of any nature arising from, or out of the ownership or the transfer of title of, the Dog. Such includes, but is not limited to, claims for personal or property damage to Transferee, Transferee's family, or to any third person, due to the Dog's condition, health, temperament or behavior.

Meridian Township Police Department

Dated: _____

By: Ken Plaga
Its: Assistant Chief of Police

Transferee

Dated: _____

Erin Linn