

OFFICE OF THE COUNCIL



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33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2251
FAX: (734) 421-4388
E-mail: citycouncil@ci.livonia.mi.us

OFFICE OF THE COUNCIL

**ELECTRONIC AGENDA PACKET FOR THE
STUDY MEETING OF
WEDNESDAY, JANUARY 6, 2021
8:00 P.M.***

**The electronic agenda is compiled, produced and distributed
by the City Council Staff. (734) 466-2250**

The official documents are on file in the City Clerk's office.

**Study Meeting of the Council of the City of Livonia
Wednesday, January 6, 2021**

8:00 PM

*** Due to COVID-19, Livonia City Council meetings will not be held in the
City Hall Auditorium**

Live broadcast: AT&T Uverse Channel 99 / Spectrum Channel 203 /

WOW Channel 10 / YouTube.com/LivoniaTV

Connect on Zoom: <https://us02web.zoom.us/j/822419226>

or phone at (312) 626-6799, ID: 822 419 226

**To participate, use the 'Raise Hand' button on Zoom
or press *9on your phone to be called on**

AUDIENCE COMMUNICATION

NEW BUSINESS

- 1) [REQUEST FOR CONSIDERATION OF PROPOSED ORDINANCE AMENDMENT: Steve Johnson, re: to require all animals be held on a leash when off the owner's property with exceptions at the City dog park, within a confined area, or a Police K-9 Unit.](#)
- 2) [TAX RATE REQUEST FOR THE WAYNE COUNTY ART INSTITUTE AUTHORITY FOR THE YEAR 2020: Office of the City Clerk, re: to set the rate of tax to be levied and requesting that it be collected as a winter tax.](#)
- 3) [TAX RATE REQUEST FOR THE WAYNE COUNTY ZOOLOGICAL AUTHORITY FOR THE YEAR 2020: Office of the City Clerk, re: to set the rate of tax to be levied and requesting that it be collected as a winter tax.](#)
- 4) [TAX RATE REQUEST FOR THE HURON CLINTON METROPOLITAN AUTHORITY FOR THE YEAR 2020: Office of the City Clerk, re: to set the rate of tax to be levied and requesting that it be collected as a winter tax.](#)
- 5) [REQUEST TO APPROVE SALARY AND FRINGE BENEFIT ADJUSTMENTS FOR THE CLASSIFICATION OF FIRE CHIEF AND DEPUTY CHIEF: Civil Service Division, re: for the period of December 1, 2018 through November 30, 2021.](#)
- 6) [REQUEST TO APPROVE LOCATION AND SCHEDULE OF DATES AND TIMES FOR THE 2021 BOARD OF REVIEW MEETINGS, AS WELL AS COMPENSATION RATES FOR MEMBERS: Department of Assessment, re: per the requirements of State of Michigan Statute MCL 211.30.](#)
- 7) [REQUEST TO APPROVE PURCHASE OF MAC GYM FLOORING THROUGH THE SOURCEWELL PURCHASING PROGRAM: Department of Parks and Recreation, re: to replace the existing MAC flooring, from budgeted funds.](#)

Agenda for the Study Meeting of January 6, 2021

- 8) [REQUEST TO AUTHORIZE PURCHASE OF A DELL POWERSTORE 1000T SAN: Information Systems Department, re: to increase storage capacity, from budgeted funds.](#)
- 9) [REQUEST TO AUTHORIZE PURCHASE OF A DELL DATA DOMAIN DD6900: Information Systems Department; re: to increase backup storage system capacity, from budgeted funds.](#)
- 10) [REQUEST TO APPROVE THE ESTABLISHMENT OF IMPROVEMENT BONDS: Engineering Division, re: to assure the installation of public improvements at Livonia Manor III Site Condominium, located on the north side of Seven Mile Road, between Canterbury Avenue and Shrewsbury Drive in the Southeast 1/4 of Section 3. \(CR 272-20\)](#)
- 11) [VACATING REQUEST: Engineering Division, re: to vacate a public utility easement within the 18th St. Development, located at 39000 Seven Mile Road. Parcel I.D. No. 46-023-99-0001-004.](#)
- 12) [WAIVER PETITION: Planning Commission, re: Petition 2020-11-02-10 submitted by LS Equity L.L.C. requesting to re-develop the commercial shopping center \(Shoppes of Livonia\), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities \(Chick-fil-A\), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road \(29250-29350 Plymouth Road\) in the Southwest 1/4 of Section 25.](#)
- 13) [SITE PLAN PETITION: Planning Commission, re: Petition 2020-11-08-07 submitted by Adams Park Development, L.L.C., requesting to develop a site condominium \(Adams Park\) consisting of thirty-nine \(39\) single-family homes on the properties located on the south side of Lyndon Avenue between Inkster and Middlebelt Roads \(14416 Harrison Avenue and 28201 Lyndon Avenue, former Adams Elementary School site\) in the Southeast 1/4 of Section 24.](#)

AUDIENCE COMMUNICATION

For the 1912th Regular Meeting of January 13, 2021

SUSAN M. NASH, CITY CLERK

In accordance with Title II of the American with Disabilities Act as it pertains to access to Public Meetings, the City Clerk's Office of the City of Livonia, upon adequate notice, will make reasonable accommodations for persons with special needs. Please call (734) 466-2236 or email xd if you need assistance. **Council agendas are available on the City's website – www.livonia.gov - under Government, City Council, Agendas.**



REPORT TO THE LIVONIA CITY COUNCIL

Council Office
December 22, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Sara Kasprowicz, Office Manager
Council Office

AGENDA ITEM

REQUEST FOR CONSIDERATION OF PROPOSED ORDINANCE AMENDMENT: Steve Johnson, re: to require all animals be held on a leash when off the owner's property with exceptions at the City dog park, within a confined area, or a Police K-9 Unit.

BACKGROUND

Rationale for this change is:

1. Public Safety.

The instinctive and unpredictable nature of animals require they be restrained in either a fenced area or by a leash. A leash is an effective safety device to keep animals from running away from owners, and possibly attacking people or other animals. The Livonia dog park, located inside the Bicentennial Park, is a fenced, contained area, where dogs are segregated by size, where strict rules are to be adhered to, and where each dog must be licensed and up to date on their shots. The dog park was opened in 2017, and it can be assumed at least part of the reasoning was to have a place where dogs could run off leash in a safe and controlled environment. With that said, there is no excuse for dogs to be allowed to run off leash in any other area of the city.

2. Animal Safety.

Having witnessed a leashed dog being attacked by an unleashed dog I can attest to the safety hazard in this situation. Not only was the leashed dog put at risk from the attack, it's owner was nearly injured when they were trying to keep their dog away from the unleashed dog. A leashed dog in the attack is more apt to get injured because they are being restrained, whereas the unleashed dog has the advantage of not being held back in any way. Another issue is the very real possibility that the animal can run away and get lost from the owner. This creates a public safety hazard with the animal roaming without any control on it.

3. Environmental Safety.

An animal being held on a leash allows it's owner to be aware of where and when the animal defecates. It is very difficult to know when or where the animal defecates if the owner is strolling ahead of the animal or the animal is out of their view. On a leash allows the owner to be more responsible for their dog's waste, a major source of pollution and a source for rats to be attracted to. In the 1990's, dog waste was classified as a "Non Point Pollutant", which means it's negative effects on the environment can be extended beyond the spot it is left.

The city of Livonia, at considerable expense, has erected a safe and clean place for dogs to run off leash. It is not unreasonable to expect those who wish to run their dogs off leash to take them there and utilize that facility, or the dog park inside of Hines Park, run by Wayne county. To allow animals to be run in other areas that do not have safety measures in place is not granting the residents near these areas the right to live with safety and peace on their own properties.

Thank you for taking up this important issue.

Regards,

Steven Johnson

RECOMMENDATION

Requesting that the Livonia City Council amend the animal leash ordinance, to require all animals be held on a leash when off the owner's property. Exceptions would be if animal is in the city dog park, in a fenced area, in a vehicle, in a cage, or a Police K-9 Unit.

FISCAL CONSIDERATION

ATTACHMENTS

1. S010621 Request to amend Livonia Leash Ordinance (Steve Johnson)

APPROVED BY

From: [steve.johnson](#)
To: [CityCouncil](#)
Subject: Amendment to Livonia Leash Ordinance
Date: Tuesday, December 22, 2020 9:08:56 AM

Requesting that the Livonia City Council amend the animal leash ordinance, to require all animals be held on a leash when off the owner's property. Exceptions would be if animal is in the city dog park, in a fenced area, in a vehicle, in a cage, or a Police K-9 Unit.

Rationale for this change is:

1. Public Safety.

The instinctive and unpredictable nature of animals require they be restrained in either a fenced area or by a leash. A leash is an effective safety device to keep animals from running away from owners, and possibly attacking people or other animals. The Livonia dog park, located inside the Bicentennial Park, is a fenced, contained area, where dogs are segregated by size, where strict rules are to be adhered to, and where each dog must be licensed and up to date on their shots. The dog park was opened in 2017, and it can be assumed at least part of the reasoning was to have a place where dogs could run off leash in a safe and controlled environment. With that said, there is no excuse for dogs to be allowed to run off leash in any other area of the city.

2. Animal Safety.

Having witnessed a leashed dog being attacked by an unleashed dog I can attest to the safety hazard in this situation. Not only was the leashed dog put at risk from the attack, it's owner was nearly injured when they were trying to keep their dog away from the unleashed dog. A leashed dog in the attack is more apt to get injured because they are being restrained, whereas the unleashed dog has the advantage of not being held back in any way. Another issue is the very real possibility that the animal can run away and get lost from the owner. This creates a public safety hazard with the animal roaming without any control on it.

3. Environmental Safety.

An animal being held on a leash allows it's owner to be aware of where and when the animal defecates. It is very difficult to know when or where the animal defecates if the owner is strolling ahead of the animal or the animal is out of their view. On a leash allows the owner to be more responsible for their dog's waste, a major source of pollution and a source for rats to be attracted

to. In the 1990's, dog waste was classified as a "Non Point Pollutant", which means it's negative effects on the environment can be extended beyond the spot it is left.

The city of Livonia, at considerable expense, has erected a safe and clean place for dogs to run off leash. It is not unreasonable to expect those who wish to run their dogs off leash to take them there and utilize that facility, or the dog park inside of Hines Park, run by Wayne county. To allow animals to be run in other areas that do not have safety measures in place is not granting the residents near these areas the right to live with safety and peace on their own properties.

Thank you for taking up this important issue.

Regards,

Steven Johnson

From: [Julie Backus](#)
To: [CityCouncil](#)
Subject: Dog leash law
Date: Tuesday, December 22, 2020 11:01:13 PM

To Whom it May Concern:

I wanted to let city council know I am in favor of the proposal to amend the city's leash ordinance to include keeping dogs on leash anywhere off the owner's property or the dog park. I agree that it is in the best interest of the safety of both people and animals. Thank you in advance for your consideration in this matter.

Sincerely,
Julie Backus

Sent from my iPhone

From: [LPSReformer](#)
To: [CityCouncil](#)
Subject: Amendment to the leash law
Date: Saturday, December 26, 2020 8:45:14 PM

Dear Council,

I heard about the proposed changes in our leash law.

I would like to express my support for the change, and hope that this will help lower the number of dog bites in the city.

Loyd Romick

From: sgolonka@mi.rr.com
To: [CityCouncil](#)
Subject: Amendment to Livonia Leash Ordinance
Date: Sunday, December 27, 2020 7:48:08 PM

I am in support of requesting the Livonia City Council amend the animal leash ordinance, to require all dogs be held on a leash when off the owner's property. Exceptions would be if dog is in the city dog park, in a fenced area, in a vehicle, in a cage, or a Police K-9 Unit.

Long time Livonia resident
Stanley Golonka



REPORT TO THE LIVONIA CITY COUNCIL

City Clerk
December 8, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Lori Miller, Deputy City Clerk
City Clerk

AGENDA ITEM

TAX RATE REQUEST FOR THE WAYNE COUNTY ART INSTITUTE AUTHORITY FOR THE YEAR 2020: Office of the City Clerk, re: to set the rate of tax to be levied and requesting that it be collected as a winter tax.

BACKGROUND

Attached is a communication from Scott T. Vandemergel, Director of Assessment & Equalization, with the appropriate 2020 Tax Rate Request Form (L-4029) requesting that the City collect the appropriate tax levy for the Wayne County Art Institute Authority (WCAIA) as a winter tax.

RECOMMENDATION

Receive and File.

FISCAL CONSIDERATION

ATTACHMENTS

1. WCAIA - L4029

APPROVED BY

A handwritten signature in blue ink, appearing to read "Susan Nash".

Susan Nash, City Clerk

Date: December 09, 2020

2020 Tax Rate Request (This form must be completed and submitted on or before September 30, 2020)

MILLAGE REQUEST REPORT TO COUNTY BOARD OF COMMISSIONERS

Carefully read the instructions on page 2.

This form is issued under authority of MCL Sections 211.24e, 211. 34 and 211.34d. Filing is mandatory. Penalty applies.

County(ies) Where the Local Government Unit Levies Taxes Wayne County	2020 Taxable Value of ALL Properties in the Unit as of 5-26-2020 \$44,212,092,105 ad valorem; \$43,917,546,387 ad valorem minus renaissance zones
Local Government Unit Requesting Millage Levy Wayne County Art Institute Authority (WCAIA)	For LOCAL School Districts: 2020 Taxable Value excluding Principal Residence, Qualified Agricultural, Qualified Forest, Industrial Personal and Commercial Personal Properties.

This form must be completed for each unit of government for which a property tax is levied. Penalty for non-filing is provided under MCL Sec 211.119. The following tax rates have been authorized for levy on the 2020 tax roll. 2020 taxable value: \$43,690,621,315 ad valorem minus renaissance zones minus MCL 211.7d housing (L-4028/L-4028 IC total)

[illegible]

Prepared by Scott T. Vandemergel, MMAO (4)	Telephone Number: (313) 224-2329	Title of Preparer Dir. of Assessment & Equalization	Date 9/1/2020
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CERTIFICATION: As the representatives for the local government unit named above, we certify that these requested tax levy rates have been reduced, if necessary to comply with the state constitution (Article 9, Section 31); and that the requested levy rates have also been reduced, if necessary, to comply with MCL Sections 211.24e, 211.34 and, for LOCAL school districts which levy a Supplemental (Hold Harmless) Millage, 380.1211(3).

☐ Clerk	Signature	Print Name	Date
☒ Secretary	Barbara Rozelle Miller	BARBARA ROZELLE MILLER	9-24-2022
☒ Chairperson	Signature	Print Name	Date
☐ President	Elizabeth A. Maurer	ELIZABETH A MAURER	9-1-2022

* Under Truth in Taxation, MGL Section 211.24e, the governing body may decide to levy a rate which will not exceed the maximum authorized rate allowed in column 9. The requirements of MGL 211.24e must be met prior to levying an operating levy which is larger than the base tax rate but not larger than the rate in column 9.

**** IMPORTANT:** See instructions on page 2 regarding where to find the millage rate used in column (5).

Local School District Use Only. Complete if requesting millage to be levied. See STC Bulletin 2 of 2020 for instructions on completing this section.

Total School District Operating Rates to be Levied (HH/Supp and NH Oper ONLY)	Rate
For Principal Residence, Qualified Ag, Qualified Forest and Industrial Personal	
For Commercial Personal	
For all Other	



REPORT TO THE LIVONIA CITY COUNCIL

City Clerk
December 8, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Lori Miller, Deputy City Clerk
City Clerk

AGENDA ITEM

TAX RATE REQUEST FOR THE WAYNE COUNTY ZOOLOGICAL AUTHORITY FOR THE YEAR 2020: Office of the City Clerk, re: to set the rate of tax to be levied and requesting that it be collected as a winter tax.

BACKGROUND

Attached is a communication from Maseer Rabbai, Treasurer for the Wayne County Zoological Authority (WCZA), with the appropriate 2020 Tax Rate Request Form (L-4029) requesting that the City collect the appropriate tax levy for the Wayne County Zoological Authority as a winter tax.

RECOMMENDATION

Receive and file.

FISCAL CONSIDERATION

ATTACHMENTS

1. Wayne Co Zoological Auth - L4029

APPROVED BY

A handwritten signature in black ink, appearing to read "Susan Nash".

Susan Nash, City Clerk

Date: December 11, 2020

2020 Tax Rate Request (This form must be completed and submitted on or before September 30, 2020)

MILLAGE REQUEST REPORT TO COUNTY BOARD OF COMMISSIONERS

This form is issued under authority of MCL Sections 211.24a, 211.34 and 211.34d. Filing is mandatory; Penalty applies.

Carefully read the instructions on page 2.

County(ies) Where the Local Government Unit Levies Taxes Wayne County	2020 Taxable Value of ALL Properties in the Unit as of 5-25-2020 \$44,212,092,105 ad valorem; \$43,917,546,387 ad valorem minus renaissance zones
Local Government Unit Requesting Millage Levy Wayne County Zoological Authority (WCZA)	For LOCAL School Districts: 2020 Taxable Value excluding Principal Residence, Qualified Agricultural, Qualified Forest, Industrial Personal and Commercial Personal Properties.

This form must be completed for each unit of government for which a property tax is levied. Penalty for non-filing is provided under MCL Sec 211.119. The following tax rates have been authorized for levy on the 2020 tax roll. 2020 taxable value: \$43,690,621,315 ad valorem minus renaissance zones minus MCL 211.7d housing (L-4028/L-4028 IC total)

(1) Source	(2) Purpose of Millage	(3) Date of Election	(4) Original Millage Authorized by Election Charter, etc.	(5) ** 2019 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(6) 2020 Current Year "Headlee" Millage Reduction Fraction	(7) 2020 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(8) Sec. 211.34 Truth in Assessing or Equalization Millage Rollback Fraction	(9) Maximum Allowable Millage Levy *	(10) Millage Requested to be Levied July 1	(11) Millage Requested to be Levied Dec. 1	(12) Expiration Date of Millage Authorized
Public Act 49 of 2008	Operating (levy year 3 of 10 authorized years)	8/2/2016	0.1000	0.1000	1.0000	0.1000	1.0000	0.1000	0.0000	0.1000	TY 2027

Prepared by: Maseer Rabbaiq	Telephone Number: 313-967-6005	Title of Preparer: Treasurer <i>Maseer Rabbaiq</i>	Date: 9/15/2020
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CERTIFICATION: As the representatives for the local government unit named above, we certify that these requested tax levy rates have been reduced, if necessary, to comply with the state constitution (Article 9, Section 31), and that the requested levy rates have also been reduced, if necessary, to comply with MCL Sections 211.24a, 211.34 and, for LOCAL school districts which levy a Supplemental (Hold Harmless) Millage, 380.1211(3).

☐ Clerk	Signature: <i>Dawn L. Cotton</i>	Print Name: Dawn Lee-Cotton	Date: 9/15/2020
☒ Secretary	Signature: <i>Alisha Bell</i>	Print Name: Alisha Bell	Date: 9/15/2020
☒ Chairperson			
☐ President			

* Under Truth in Taxation, MCL Section 211.24e, the governing body may decide to levy a rate which will not exceed the maximum authorized rate allowed in column 9. The requirements of MCL 211.24e must be met prior to levying an operating levy which is larger than the base tax rate but not larger than the rate in column 9.

**** IMPORTANT:** See instructions on page 2 regarding where to find the millage rate used in column (5).

Local School District Use Only. Complete if requesting millage to be levied. See STC Bulletin 2 of 2020 for instructions on completing this section.	
Total School District Operating Rates to be Levied (HH/Supp and NH Oper ONLY)	Rate
For Principal Residence, Qualified Ag, Qualified Forest and Industrial Personal	
For Commercial Personal	
For all Other	



REPORT TO THE LIVONIA CITY COUNCIL

City Clerk
December 8, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Lori Miller, Deputy City Clerk
City Clerk

AGENDA ITEM

TAX RATE REQUEST FOR THE HURON CLINTON METROPOLITAN AUTHORITY FOR THE YEAR 2020:
Office of the City Clerk, re: to set the rate of tax to be levied and requesting that it be collected as a winter tax.

BACKGROUND

Attached is a communication from Rebecca Franchock, Chief of Finance for Wayne County, with the appropriate 2020 Tax Rate Request Form (L-4029) requesting that the City collect the appropriate tax levy for the Wayne County Huron Clinton Metropolitan Authority as a winter tax.

RECOMMENDATION

Receive and File.

FISCAL CONSIDERATION

ATTACHMENTS

1. Huron Clinton Metro Authority - L4029

APPROVED BY

A handwritten signature in black ink, appearing to read "Susan Nash".

Date: December 29, 2020

Susan Nash, City Clerk

2020 Tax Rate Request (This form must be completed and submitted on or before September 30, 2020)

MILLAGE REQUEST REPORT TO COUNTY BOARD OF COMMISSIONERS

Carefully read the instructions on page 2.

This form is issued under authority of MCL Sections 211.24e, 211.34 and 211.34d. Filing is mandatory; Penalty applies.

County(ies) Where the Local Government Unit Levies Taxes Wayne	2020 Taxable Value of ALL Properties in the Unit as of 5-26-2020 43,690,621,315
Local Government Unit Requesting Millage Levy Huron-Clinton Metropolitan Authority	For LOCAL School Districts: 2020 Taxable Value excluding Principal Residence, Qualified Agricultural, Qualified Forest, Industrial Personal and Commercial Personal Properties.

This form must be completed for each unit of government for which a property tax is levied. Penalty for non-filing is provided under MCL Sec 211.119. The following tax rates have been authorized for levy on the 2020 tax roll.

(1) Source	(2) Purpose of Millage	(3) Date of Election	(4) Original Millage Authorized by Election Charter, etc.	(5) ** 2019 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(6) 2020 Current Year "Headlee" Millage Reduction Fraction	(7) 2020 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(8) Sec. 211.34 Truth in Assessing or Equalization Millage Rollback Fraction	(9) Maximum Allowable Millage Levy *	(10) Millage Requested to be Levied July 1	(11) Millage Requested to be Levied Dec. 1	(12) Expiration Date of Millage Authorized
Public Act 147 of 1939	Cap Improvements and Operations	11/40	0.2500	0.2117	0.9941	0.2104	1.00	0.2104		0.2104	None

Prepared by Rebecca Franchock	Telephone Number (810) 494-6047	Title of Preparer Chief of Finance	Date 07/24/2020
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CERTIFICATION: As the representatives for the local government unit named above, we certify that these requested tax levy rates have been reduced, if necessary to comply with the state constitution (Article 9, Section 31), and that the requested levy rates have also been reduced, if necessary, to comply with MCL Sections 211.24e, 211.34 and, for LOCAL school districts which levy a Supplemental (Hold Harmless) Millage, 380.1211(3).

☐ Clerk	Signature	Print Name	Date
☒ Secretary		Amy McMillan	07/24/2020
☒ Chairperson	Signature	Print Name	Date
☐ President		Robert w. Marans	07/24/2020

* Under Truth in Taxation, MCL Section 211.24e, the governing body may decide to levy a rate which will not exceed the maximum authorized rate allowed in column 9. The requirements of MCL 211.24e must be met prior to levying an operating levy which is larger than the base tax rate but not larger than the rate in column 9.

** **IMPORTANT:** See instructions on page 2 regarding where to find the millage rate used in column (5).

Local School District Use Only. Complete if requesting millage to be levied. See STC Bulletin 2 of 2020 for instructions on completing this section.

Total School District Operating Rates to be Levied (HH/Supp and NH Oper ONLY)	Rate
For Principal Residence, Qualified Ag, Qualified Forest and Industrial Personal	
For Commercial Personal	
For all Other	



REPORT TO THE LIVONIA CITY COUNCIL

Civil Service
December 2, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Jillian Emmitt, Personnel Clerk
Civil Service

AGENDA ITEM

REQUEST TO APPROVE SALARY AND FRINGE BENEFIT ADJUSTMENTS FOR THE CLASSIFICATION OF FIRE CHIEF AND DEPUTY CHIEF: Civil Service Division, re: for the period of December 1, 2018 through November 30, 2021.

BACKGROUND

November 25, 2020

Honorable Members of City Council

City of Livonia

Subject: Recommendation for Salary and Benefit Adjustments for the Classifications of Fire Chief and Deputy Fire Chief

Dear Council Members:

At the Civil Service Commission meeting of November 18, 2020, with Chairperson Roger L. Spence, Commissioners Charlotte S. Mahoney, and James Wenson being present, with minutes to be approved on December 9, 2020, the Civil Service Commission approved the following resolution:

Upon a motion by Ms. Mahoney, seconded by Mr. Wenson, and adopted, it was

20-133 RESOLVED that having reviewed the memorandum of November 12, 2020, from Denise C. Maier, Human Resources Director, approved for submission by Mayor Maureen Miller Brosnan, recommending salary and benefit adjustments for the classifications of Fire Chief and Deputy Fire Chief, the Civil Service Commission does hereby approve the recommended salary and benefit adjustments for the period December 1, 2018, through November 30, 2021, to be submitted to City Council for their

review and consideration.

A copy of the correspondence mentioned above, which outlines the recommended changes, and the draft salary table is attached.

RECOMMENDATION

To approve as submitted

FISCAL CONSIDERATION

ATTACHMENTS

1. Letter to Council Re Salary and Benefit Adjustments for Fire Chief and Deputy Fire Chief 2018-2021
2. Memo to Commission Re Salary and Benefit Adjustments for Fire Chief and Deputy Fire Chief 2018-2021

APPROVED BY

Denise Maier, Human Resources Director

Date: December 02, 2020



Michael T. Slater, Finance Director

Date: December 03, 2020



Paul Bernier, City Attorney

Date: December 04, 2020



Maureen Miller Brosnan, Mayor

Date: December 07, 2020

CIVIL SERVICE DEPARTMENT

MAUREEN MILLER BROSNAN
MAYOR

CIVIL SERVICE COMMISSION

ROGER L. SPENCE, CHAIRPERSON
CHARLOTTE S. MAHONEY, COMMISSIONER
JAMES WENSON, COMMISSIONER



MEMBER IPMA-HR /SHRM
International Public Management Association
for Human Resources
Society for Human Resources Management

DENISE C. MAIER, SPHR
HUMAN RESOURCES DIRECTOR

November 25, 2020

Honorable Members of City Council
City of Livonia

**Subject: Recommendation for Salary and Benefit Adjustments for the
Classifications of Fire Chief and Deputy Fire Chief**

Dear Council Members:

At the Civil Service Commission meeting of November 18, 2020, with Chairperson Roger L. Spence, Commissioners Charlotte S. Mahoney, and James Wenson being present, with minutes to be approved on December 9, 2020, the Civil Service Commission approved the following resolution:

Upon a motion by Ms. Mahoney, seconded by Mr. Wenson, and adopted, it was

20-133 RESOLVED that having reviewed the memorandum of November 12, 2020, from Denise C. Maier, Human Resources Director, approved for submission by Mayor Maureen Miller Brosnan, recommending salary and benefit adjustments for the classifications of Fire Chief and Deputy Fire Chief, the Civil Service Commission does hereby approve the recommended salary and benefit adjustments for the period December 1, 2018, through November 30, 2021, to be submitted to City Council for their review and consideration.

A copy of the correspondence mentioned above, which outlines the recommended changes, and the draft salary table is attached.

If you have any questions concerning this matter, please call me at (734) 466-2527.

APPROVED FOR SUBMISSION:

Sincerely,

Maureen Miller Brosnan
Mayor

Denise C. Maier
Denise C. Maier, SPHR
Human Resources Director

FUNDS AVAILABLE:

Michael T. Slater, Director of Finance

kb

Attachment

cc: Maureen Miller Brosnan, Mayor; Susan, Nash, City Clerk; Paul Bernier, City Attorney; Michael T. Slater, Director of Finance; Ted Davis, Superintendent of Parks and Recreation; Civil Service Commission

MEMORANDUM

TO: Civil Service Commission
FROM: Denise C. Maier, Human Resources Director *DCM*
DATE: November 12, 2020
SUBJECT: Salary and Benefit Adjustments for Fire Chief and Deputy Fire Chief

Historically, the salary and benefit adjustments negotiated between the City and the Livonia Fire Fighters Union are extended to the Fire Chief and Deputy Fire Chief classifications. The Civil Service Commission and City Council have approved a contract for the period of December 1, 2018 through November 30, 2021 for the LFFU. The contract includes a three (3) year salary schedule and various benefit changes.

It is recommended that the Civil Service Commission approve the updated salary schedule and associated benefit changes for the Fire Chief and Deputy Fire Chief. These changes have been reviewed with Mayor Brosnan and she agrees with extending them to the Fire Chief and Deputy Fire Chief effective 12/01/18. The adjustments are as follows:

1. Salary increases to all employees as follows:

Effective December 1, 2018:	3% increase
Effective December 1, 2019:	2% increase
Effective December 1, 2020:	2.5% increase

2. Clarification that only the spouse at the time of retirement is eligible for health care insurance upon employee's retirement.
3. New pension provisions as outlined in the Tentative Agreement.
4. Memorialization of an online health care office visit with 50% regular office visit co-pay
5. Creation of a 4th tier prescription co-pay of 10% of the cost for the drug up to a maximum of \$100 per prescription for specialty drugs.
6. Increased maximum retiree health insurance premium from \$200 to \$250 effective November 30, 2021.
7. Increased dental reimbursement from \$850 to \$900.
8. Increased alternate optical coverage from \$200 to \$300 every 2 years.
9. Increased City's contribution to RHSP participants' accounts from \$70 per

bi- weekly pay period to \$80 per bi-weekly pay period.

10. Clarified employee's right to workers compensation in presumed cancer cases.

11. Incorporation of language providing that employees who retire after the date of ratification will maintain health care provided at the time of retirement for the remainder of their life.

APPROVED FOR SUBMISSION



Mayor Maureen Miller Brosnan

FUNDS AVAILABLE



Michael T. Slater
Director of Finance

DRAFT

**CITY OF LIVONIA
FIRE DIVISION ADMINISTRATIVE PERSONNEL
12/1/2018 THRU 11/30/2021**

		3%	2%	2.5%
		12/1/2018	12/1/2019	12/1/2020
FIRE CHIEF	Step 1	\$110,739.20	\$112,944.00	\$115,772.80
		\$4,259.20	\$4,344.00	\$4,452.80
		\$53.24	\$54.30	\$55.66
	Step 1 1/2	\$112,964.80	\$115,232.00	\$118,123.20
		\$4,344.80	\$4,432.00	\$4,543.20
		\$54.31	\$55.40	\$56.79
	Step 2	\$115,128.00	\$117,436.80	\$120,369.60
		\$4,428.00	\$4,516.80	\$4,629.60
		\$55.35	\$56.46	\$57.87
	Step 3	\$119,787.20	\$122,179.20	\$125,236.80
		\$4,607.20	\$4,699.20	\$4,816.80
		\$57.59	\$58.74	\$60.21
	Step 4	\$124,571.20	\$127,067.20	\$130,249.60
		\$4,791.20	\$4,887.20	\$5,009.60
		\$59.89	\$61.09	\$62.62
	Step 5	\$129,542.40	\$132,142.40	\$135,449.60
		\$4,982.40	\$5,082.40	\$5,209.60
		\$62.28	\$63.53	\$65.12
DEPUTY CHIEF	Step 4	\$113,880.00	\$116,168.00	\$119,080.00
		\$4,380.00	\$4,468.00	\$4,580.00
		\$54.75	\$55.85	\$57.25
	Step 5	\$118,456.00	\$120,827.20	\$123,843.20
		\$4,556.00	\$4,647.20	\$4,763.20
		\$56.95	\$58.09	\$59.54



REPORT TO THE LIVONIA CITY COUNCIL

**Assessing
December 3, 2020**

MEETING DATE

January 6, 2021

PREPARED BY

Linda Gosselin, City Assessor
Assessing

AGENDA ITEM

REQUEST TO APPROVE LOCATION AND SCHEDULE OF DATES AND TIMES FOR THE 2021 BOARD OF REVIEW MEETINGS, AS WELL AS COMPENSATION RATES FOR MEMBERS: Department of Assessment, re: per the requirements of State of Michigan Statute MCL 211.30.

BACKGROUND

2021 Approval of the March Board of Review dates and times.

RECOMMENDATION

Dear Council Members:

According to Chapter VIII, Section VI of the City Charter, the Council shall designate the time and place of the Board of Review meetings. Attached find a recommended schedule of dates and compensation of the 2021 meetings, which complies with the requirements of the State of Michigan statute, MCL 211.30.

Council Resolution No. 72-86 previously determined the daily rate of compensation paid to the members of the Board to be \$120.00 for the Chairperson and \$100.00 for other members. Please incorporate these rates in this year's resolution as maximum daily rates.

For the 2021 meetings, I recommend the Council:

1. Designate the place as the Board of Review conference room, Assessor's Office 33000 Civic Center Drive.

2. Approve the attached schedule of dates and times.

3. Approve the daily rate of compensation as follows:

Chairperson \$120.00 Members \$100.00

FISCAL CONSIDERATION

ATTACHMENTS

1. 2021 March Board of Review dates and times

APPROVED BY



Linda Gosselin, City Assessor

Date: December 03, 2020



Michael T. Slater, Finance Director

Date: December 03, 2020



Maureen Miller Brosnan, Mayor

Date: December 17, 2020

PUBLIC NOTICE
TO ALL PROPERTY OWNERS IN THE
CITY OF LIVONIA
BOARD OF REVIEW MEETING – 2021

You are hereby notified pursuant to chapter VIII Section 6, of the Charter of Livonia, the Board of Review will conduct Public Hearings on the following dates in the Board of Review Conference Room of the Assessor's Office in the City Hall, 33000 Civic Center Drive, Livonia, Michigan, and such additional meetings as may be necessary for the purpose of reviewing the assessment roll for the year 2021 and hearing any taxpayers deeming themselves aggrieved by the said assessments.

The meetings of the Board of Review provide the only opportunity after March 2, 2021 for property owners to present protests or suggestions relative to the assessed valuation placed on property by the Assessor for the year 2021. Property owners deeming themselves aggrieved by the assessments will have the opportunity to be heard and may obtain further information from the Office of the City Assessor.

Tuesday	March 2, 2021	Organizational Meeting	9:00a.m.
Monday	March 8, 2021	9:00a.m. - 12:00p.m.	1:30p.m. - 4:00p.m.
Tuesday	March 9, 2021	9:00a.m. - 12:00p.m.	1:30p.m. - 4:00p.m.
Wednesday	March 10, 2021	5:00p.m. - 9:00p.m.	
Thursday	March 11, 2021	9:00a.m. - 12:00p.m.	1:30p.m. - 4:00p.m.
Friday	March 12, 2021	9:00a.m. - 12:00p.m.	1:30p.m. - 4:00p.m.
Monday	March 15, 2021	9:00a.m. - 12:00p.m.	

Pursuant to Public Act No. 165, Public Acts of 1971, we hereby give notice that the following tentative ratio and multipliers will be used to determine the State Equalized Value (S.E.V.) for the year 2021.

CLASS	RATIO	S.E.V. FACTOR (MULTIPLIER)
Agricultural	50.00	1.0000
Commercial	50.00	1.0000
Industrial	50.00	1.0000
Residential	50.00	1.0000
Personal	50.00	1.0000

Note: Appointments for the Board of Review may be made by calling the Assessor's Office at 734.466.2220.

Linda Gosselin, MMAO (4)
City Assessor



REPORT TO THE LIVONIA CITY COUNCIL

Parks and Recreation

December 21, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Ann Cox, Program Supervisor
Parks and Recreation

AGENDA ITEM

REQUEST TO APPROVE PURCHASE OF MAC GYM FLOORING THROUGH THE SOURCEWELL PURCHASING PROGRAM: Department of Parks and Recreation, re: to replace the existing MAC flooring, from budgeted funds.

BACKGROUND

The Department of Parks and Recreation is undertaking a project during 2021 to remove and replace our existing MAC Gym flooring. The current flooring is original to the facility and is limited as a real multi-sport surface. Through extensive research, we have selected Robbins Pulastic Classic 60 as the replacement flooring of choice. This is the same flooring type in the recently completed Schoolcraft College Volleyball facility.

We do not have an installation date but would prefer to install as soon as possible based on COVID-19 restrictions, taking advantage of the slower reopening period. Installation would be no later than September 1, 2021.

RECOMMENDATION

We recommend purchasing the flooring through the Sourcewell purchasing program. Sourcewell is a cooperative purchasing organization that combines the buying power of more than 50,000 government, education, and nonprofit organizations. Sourcewell holds hundreds of competitively solicited cooperative contracts ready for use. The City of Livonia is a member of this purchasing program. Foster Specialty Floors is the only authorized and qualified Robbins Sport Surfaces installer in Michigan. This program meets our Finance ordinance requiring competitive bidding.

FISCAL CONSIDERATION

We request that City Council authorize the Mayor and City Clerk to execute a contract in the amount of \$116,589.50 with Foster Specialty Floors, 30681 Wixom Road, PO Box 930382, Wixom, MI 48393. Attached is the quote, sole-source, and Sourcewell information.

We request that City Council waive the formal bidding process in accordance with the provisions set

forth in Section 3.04.140.D.4 of the Livonia Code of Ordinances, as amended, in as much as the same is based upon the Sourcewell pricing and no advantage to the City would result from competitive bidding.

Budgeted funds are available in account 208-755-976-000.

ATTACHMENTS

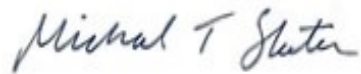
1. 2021 Mac Gym Floor Replacement

APPROVED BY



Date: December 22, 2020

Ted Davis, Directory of Parks



Date: December 22, 2020

Michael T. Slater, Finance Director



Date: December 22, 2020

Maureen Miller Brosnan, Mayor

Robbins Sports Surfaces: Authorized Robbins Dealer Pricing per NJPA Contract
Synthetic flooring systems for Gyms, Auxilliary Gyms, Indoor Running Tracks, Outdoor Running Tracks, Weight Rooms and Auxilliary Areas.

All prices in U.S. Dollars. All installations by Authorized Robbins Dealers.

Solution/Product	Std. Price	Member Ceiling Price - per SF	Thickness	Description
Multi-Purpose Synthetic Gym Floor Systems				
Pulastic Pro 165	\$ 13.89	\$ 12.08	16.5mm	Pulastic seamless resilient floor system.
Pulastic Classic 110	\$ 10.06	\$ 8.75	11mm	Pulastic seamless resilient floor system.
Pulastic Classic 90	\$ 9.59	\$ 8.34	9mm	Pulastic seamless resilient floor system.
Pulastic Classic 60	\$ 9.12	\$ 7.93	6mm	Pulastic seamless resilient floor system.
Comfort Court 50	\$ 11.50	\$ 10.00		
Pulastic "Eco" option	NA	add \$0.78/sf	na	Enhanced strength urethane option.
Pulastic FL "face-lift"	\$ 7.54	\$6.56	na	Urethane facelift to existing floor system.
Weight Room Cardio Fitness Floors				
Galaxy Classic iLock Tiles	\$ 7.13	\$ 6.20	3/8"	iLock Tile 10% color, Interlocking tile, loose lay.
Galaxy Classic Roll 10% Color	\$ 9.63	\$ 8.37	3/8"	Rolls, adhered to concrete
Galaxy Classic Roll 20% Color	\$ 10.22	\$ 8.89	3/8"	Rolls, adhered to concrete
Galaxy Classic Roll 35% Color	\$ 10.84	\$ 9.43	3/8"	Rolls, adhered to concrete
Galaxy Ultra Tiles	\$ 14.65	\$ 12.74	10mm	Square edge high color, adhered to concrete.
	\$ 15.12	\$ 13.15		
Galaxy FIT Tiles			10mm	Square edge high color, adhered to concrete.
Galaxy Extreme Tiles 10% Color	\$ 13.31	\$ 11.57	1"	Floating, with dowels, no adhesive.
Galaxy Extreme Tiles 35% Color	\$ 13.73	\$ 11.94	1"	Floating, with dowels, no adhesive.
Galaxy Extreme Tiles 95% Color	\$ 14.34	\$ 12.47	1"	Floating, with dowels, no adhesive.
Pulastic GT 100	\$ 13.18	\$ 11.46	10mm	Seamless Pulastic cardio/fitness flooring.
	\$ 16.10	\$ 14.00		
Galaxy Xtreme R			18mm	Rolled Weight Room Flooring
Indoor Running Track Surfaces				
Durathon Elite 10mm	\$ 11.70	\$ 10.17	10mm	IAAF certified, spike resistant track surface, including adhesive.
Durathon Elite 13.5mm	\$ 13.19	\$ 11.47	13.5mm	IAAF certified, spike resistant track surface, including adhesive.
	\$ 9.49	\$ 8.25		
Pulastic Classic 90			9mm	Pulastic seamless resilient floor system.
Outdoor Running Track Surfaces				
Durathon Elite	\$ 13.19	\$ 11.47	13.5mm	IAAF certified, spike resistant track surface, including standard adhesive. Does not include site work, drainage, asphalt etc. Surface work only.
Custom Solutions				
Custom System Solutions	NA	Pricing per project	Some projects may require custom solutions to best meet customer requirements.	

Modifications				
Special Labor	NA	Pricing per project	Some regions of the US and Canada may require pricing modification due to union labor agreements or specified prevailing wage requirements. Examples of these regions include; NY, NJ, HI, CA, AK, IL, DC, CT. Please allow dealer to modify price to accomodate additional labor cost.	

Ancillary Products and Services Provided by Authorized Robbins Dealer in Support of NJPA Contract			
Sales Tax, Duties, Fees	NA	Not included	Per project. International sales may require additional fees.
Freight	NA	Pricing per project.	Freight cost varies per project depending on location and project size.
Custom Logos and Graphics	NA	Pricing per project.	Basic graphics included, see description below. Extra gamelines and logos to be priced per project.
Wall Base	NA	Pricing per project.	Generally "vented cove" base. Must be calculated per project dimensions.
Thresholds	NA	Pricing per project.	Aluminium thresholds at doorways and transitions. Must be calculated on a per project basis.
Custom Colors	NA	Pricing per project.	Occasionally, customers will request custom floor colors. There may be a nominal charge for color matching and formulation.
Moisture Suppression	NA	Pricing per project.	Moisture suppression systems are occasionally required and the prescribed solution depends on the situation.
Modifications for LEED	NA	Pricing per project.	Some project being constructed per LEED guidelines may require substitute components that may require price increase.
IAAF/NCAA Surveyed and Certified Track and Field Line Markings	NA	Pricing per project.	IAAF/NCAA Surveyed and certified Track and Field Line Markings. Some indoor and outdoor track and field floors require certified line markings in order to host sanctioned events.
Demolition	NA	Pricing per project.	Some projects may require removal of existing surfaces.
Concrete Correction	NA	Pricing per project.	Some project may require concrete correction to meet floor system requirements.



How it Works

Cooperative Purchasing with Sourcewell

IN THIS SECTION

Cooperative Purchasing

Solicitation Process

Purchasing

Eligibility

Cooperative Purchasing

Save time and money by purchasing from our ready-to-use, competitively solicited contracts.

Cooperative purchasing is “Procurement conducted by, or on behalf of, one or more Public Procurement Units” as defined by the American Bar Association Model Procurement Code for State and Local Governments.

Sourcewell's analysts streamline the procurement process by developing RFPs and IFBs for national, competitive solicitations that meet or exceed local requirements. Our rigorous process is continually refined to best meet the needs of participating agencies and allows us to offer exceptional products from nationally acclaimed suppliers.

All Awarded Contracts →

Solicitation Process

Detailed RFP Solicitation Process (PDF)

Construction Contracting & IFB information

Our Procurement Team takes care of the entire competitive solicitation process—both request for proposals on general purchases and invitations to bid on construction contracting—so you don't have to. Still have questions? We've got you covered.

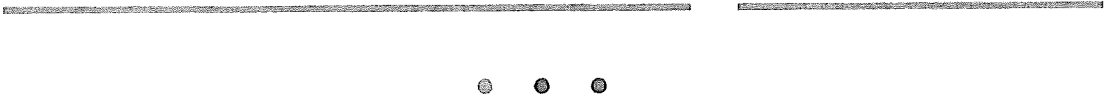
Compliance & Legal Information

Develop Request for Proposal

We study our clients' needs and conduct industry research.

Public Notice & Adverti

Advertise RFP notice, and I conference.



Purchasing

Ready to get started? Simply follow these three easy steps to begin realizing the benefits of cooperative purchasing.

1

Register

Schools, universities, nonprofits, and government agencies can quickly and easily register to participate for free. There are no fees to use our contracts, no commitment, and no obligation to purchase—and the **online registration** takes just a few minutes.

Businesses are not eligible. [Learn about becoming a supplier.](#)

Video: How Do I Register as a Participating Agency? →

2

Find a Contract

Sourcewell has hundreds of awarded supplier contracts in a wide variety of industries. You can quickly **search contracts by product type**, or browse **construction contracts** by state and county.

Video: How Do I Find a Contract? →

3

Contact the Supplier

Once you've located a contract you'd like to utilize, you can quickly **obtain a quote**, and finalize the sale with the supplier or your local dealer using the contract number and your agency's Sourcewell account number. It's that easy!

Video: How Do I Make a Purchase? →

Eligibility

Participating in Sourcewell is available to all government entities; public and private K-12 schools, colleges, and universities; and nonprofit organizations.

There is no cost, no obligation, and no liability.

Businesses, private consumers, and for-profit organizations are not eligible.

[Register as a Participating Agency](#)



[Sourcwell for Vendors](#) →

[Terms & Conditions](#)

[Privacy Policy](#)

[Sitemap](#)

[Accessibility](#)

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Robbins, Inc.
4777 Eastern Avenue
Cincinnati, OH 45226-2339
Tel: 513-871-8988
Fax: 513-871-7998



Kevin Price
Regional Manager/Sales Team Leader
kprice@robbinsfloor.com

December 10, 2020

Mr. Jordan Foster, President
Foster Specialty Floors
30681 Wixom Road
Wixom, MI 48393

RE: Robbins Qualification Letter – Foster Specialty Floors

Jordan,

This letter serves as notice that Foster Specialty Floors is a member in good standing and is the only authorized and qualified Robbins Sports Surfaces and Robbins Performing Arts dealer/installer in Michigan. In addition, Foster Specialty Floors is an authorized agent of Robbins Sports Surfaces and has been properly trained in Robbins' operational and installation procedures and procedures for the installation of our floors. Foster Specialty Floors is qualified to sell, promote and install any and all of the Robbins Sports Surfaces product line, including wood, synthetic sports and Performing Arts floor systems.

Additionally, Foster Specialty Floors, as an authorized Robbins dealer, is allowed to promote and perform work in accordance with the Sourcewell program.

I hope that this letter provides you with the information that you have requested. If I can provide you with any additional information, please feel free to let me know.

As always, thank you for your interest and support of Robbins Sport Surfaces products!

Sincerely,
ROBBINS SPORTS SURFACES AND ROBBINS PERFORMING ARTS

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

Kevin Price
Central Region Manager



REPORT TO THE LIVONIA CITY COUNCIL

Information Systems
December 1, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Casey O'Neil, Information Systems Director
Information Systems

AGENDA ITEM

REQUEST TO AUTHORIZE PURCHASE OF A DELL POWERSTORE 1000T SAN: Information Systems Department, re: to increase storage capacity, from budgeted funds

BACKGROUND

The City utilizes a VMWare environment to house 30 virtual servers for its data and systems. As we have continued to grow, our need for storage capacity that this system relies on has increased as well. The City has a 27 terabyte storage area network that is nearing capacity.

Dell has recommended replacement with a Dell Powerstore 1000T SAN to increase our capacity to over 44 terabytes. This storage system is also expandible so it will allow continued storage growth for several years to come.

RECOMMENDATION

Approve the purchase of a Dell Powerstore 1000T SAN for the City Hall Data Center in the amount of \$71,038.93 from Dell Technologies, One Dell Way, Mail Stop 8129, Round Rock, TX 78682.

FISCAL CONSIDERATION

Dell has provided a quote using state contract pricing in the amount of \$71,038.93. This price includes a 5-year warranty on the system as well as installation and support. No additional appropriation is necessary since funds are budgeted in the Information Systems Capital Outlay account for the fiscal year 2020-21 in Account Number 101-915-982-000.

ATTACHMENTS

1. Dell Power Store Quote
2. Dell PowerStore Storage Specifications

APPROVED BY



Casey O'Neil, Information Systems Director

Date: December 08, 2020



Michael T. Slater, Finance Director

Date: December 08, 2020



Maureen Miller Brosnan, Mayor

Date: December 17, 2020



A quote for your consideration.

Based on your business needs, we put the following quote together to help with your purchase decision. Below is a detailed summary of the quote we've created to help you with your purchase decision.

To proceed with this quote, you may respond to this email, order online through your [Premier page](#), or, if you do not have Premier, use this [Quote to Order](#).

Quote No.	3000073445148.2	Sales Rep	Jessica Murray
Total	\$71,038.93	Phone	(800) 456-3355, 6179055
Customer #	10250716	Email	Jessica_Murray@Dell.com
Quoted On	Nov. 18, 2020	Billing To	ACCOUNTS PAYABLE
Expires by	Dec. 18, 2020		CITY OF LIVONIA
Solution ID	13381613		33000 CIVIC CTR
Deal ID	21057168		LIVONIA, MI 48154-3060

Message from your Sales Rep

Please contact your Dell sales representative if you have any questions or when you're ready to place an order. Thank you for shopping with Dell!

Regards,
Jessica Murray

Shipping Group

Shipping To	Shipping Method	Install At
CASEY O'NEIL CITY OF LIVONIA 33000 CIVIC CTR DR LIVONIA, MI 48154-3060 (734) 466-2279	Standard Delivery	CASEY O'NEIL CITY OF LIVONIA 33000 CIVIC CTR DR LIVONIA, MI 48154-3060 (734) 466-2279

Solution Name:

Livonia Powerstore 1000T

Product	Unit Price	Qty	Subtotal
Dell EMC AppSync for PowerStore - AMER	\$0.00	1	\$0.00
Dell EMC PowerStore 1000 T - AMER	\$71,038.93	1	\$71,038.93

Subtotal:	\$71,038.93
Shipping:	\$0.00
Non-Taxable Amount:	\$71,038.93
Taxable Amount:	\$0.00
Estimated Tax:	\$0.00

Total:	\$71,038.93
---------------	--------------------

Consult your DFS rep. Special lease pricing may be available.

Shipping Group Details

Shipping To

CASEY O'NEIL
CITY OF LIVONIA
33000 CIVIC CTR DR
LIVONIA, MI 48154-3060
(734) 466-2279

Shipping Method

Standard Delivery

Install At

CASEY O'NEIL
CITY OF LIVONIA
33000 CIVIC CTR DR
LIVONIA, MI 48154-3060
(734) 466-2279

Solution Name:

Livonia Powerstore 1000T

		Qty	Subtotal
Dell EMC AppSync for PowerStore - AMER	\$0.00	1	\$0.00

Estimated delivery if purchased today:

Dec. 07, 2020

Contract # C000000181093

Customer Agreement # MHEC-07012015

Description	SKU	Unit Price	Qty	Subtotal
AppSync for PowerStore	210-ATXO	-	1	-
On-Site Installation Declined	900-9997	-	1	-
Storage Software Info	626-BBBG	-	1	-
Thank you for Your Order	929-3709	-	1	-
Thank you for Your Order	935-6720	-	1	-
ProSupport Mission Critical for AppSync Starter Pack Software Support Contract 5 Years	828-5768	-	1	-
AppSync Str Pk for PowerStore=CB	528-BYHF	-	1	-
ProSupport Mission Critical for AppSync Starter Pack Software Support Maintenance 5 Years	828-5724	-	1	-
			Qty	Subtotal
Dell EMC PowerStore 1000 T - AMER		\$71,038.93	1	\$71,038.93

Estimated delivery if purchased today:

Dec. 18, 2020

Contract # C000000181093

Customer Agreement # MHEC-07012015

Description	SKU	Unit Price	Qty	Subtotal
PowerStore 1000T BASE ENC. FLD INST	210-ASTZ	-	1	-
BASE UNIT CONFIG KIT	343-BBMR	-	1	-
384GB Appliance DIMM 192GB Per Node	370-AEZP	-	1	-
PowerStore Base SW	528-BTZK	-	1	-
25GBE OPTICAL 4 PORT CARD PAIR	406-BBOO	-	1	-
Dual 1800W (200-240V) Power Supply, includes C13/C14 Power Cords	450-AIOM	-	1	-
Thank you for buying Dell EMC	800-BBQV	-	1	-
ISG Product (info)	379-BDPD	-	1	-
Dell Hardware Limited Warranty Plus On Site Service	825-9489	-	1	-
ProSupport: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch 1 Year	825-9502	-	1	-
ProSupport: Mission Critical 4-Hour 7x24 On-Site Service with Emergency Dispatch 4 Years Extended	825-9505	-	1	-

ProSupport: Mission Critical 7x24 HW/SW Tech Support and Assistance 5 Years	825-9511	-	1	-
Dell Hardware Limited Warranty Plus On Site Service Extended Year	955-9041	-	1	-
Thank you choosing Dell ProSupport. For tech support, visit //www.dell.com/support or call 1-800- 945-3355	989-3439	-	1	-
Thank you for buying Dell EMC	800-BBQV	-	1	-
Promotional - ProDeploy for PowerStore Base Enclosure	838-0351	-	1	-
P1 25X2.5 NVME SED SSD 1.92TB	400-BGGI	-	10	-
16GB FC 4 PORT IO MODULE PAIR	565-BBJP	-	1	-
ProSupport: Mission Critical 4-Hour 7x24 On-Site Low Capacity SSD Add-On, 5 Years	828-4821	-	10	-
IDM Data Migration Virtual to Virtual Base	821-4508	-	1	-
IDM Data Migration Virtual to Virtual Add On	821-4509	-	1	-

Subtotal:	\$71,038.93
Shipping:	\$0.00
Estimated Tax:	\$0.00
Total:	\$71,038.93

Important Notes

Terms of Sale

This Quote will, if Customer issues a purchase order for the quoted items that is accepted by Supplier, constitute a contract between the entity issuing this Quote ("Supplier") and the entity to whom this Quote was issued ("Customer"). Unless otherwise stated herein, pricing is valid for thirty days from the date of this Quote. All product, pricing and other information is based on the latest information available and is subject to change. Supplier reserves the right to cancel this Quote and Customer purchase orders arising from pricing errors. Taxes and/or freight charges listed on this Quote are only estimates. The final amounts shall be stated on the relevant invoice. Additional freight charges will be applied if Customer requests expedited shipping. Please indicate any tax exemption status on your purchase order and send your tax exemption certificate to Tax_Department@dell.com or ARSalesTax@emc.com, as applicable.

Governing Terms: This Quote is subject to: (a) a separate written agreement between Customer or Customer's affiliate and Supplier or a Supplier's affiliate to the extent that it expressly applies to the products and/or services in this Quote or, to the extent there is no such agreement, to the applicable set of Dell's Terms of Sale (available at www.dell.com/terms or www.dell.com/oemterms), or for cloud/as-a-Service offerings, the applicable cloud terms of service (identified on the Offer Specific Terms referenced below); and (b) the terms referenced herein (collectively, the "Governing Terms"). Different Governing Terms may apply to different products and services on this Quote. The Governing Terms apply to the exclusion of all terms and conditions incorporated in or referred to in any documentation submitted by Customer to Supplier.

Supplier Software Licenses and Services Descriptions : Customer's use of any Supplier software is subject to the license terms accompanying the software, or in the absence of accompanying terms, the applicable terms posted on www.Dell.com/eula. Descriptions and terms for Supplier-branded standard services are stated at www.dell.com/servicecontracts/global or for certain infrastructure products at www.dell.com/en-us/customer-services/product-warranty-and-service-descriptions.htm

Offer-Specific, Third Party and Program Specific Terms: Customer's use of third-party software is subject to the license terms that accompany the software. Certain Supplier-branded and third-party products and services listed on this Quote are subject to additional, specific terms stated on www.dell.com/offeringspecificterms ("Offer Specific Terms").

In case of Resale only: Should Customer procure any products or services for resale, whether on standalone basis or as part of a solution, Customer shall include the applicable software license terms, services terms, and/or offer-specific terms in a written agreement with the end-user and provide written evidence of doing so upon receipt of request from Supplier.

In case of Financing only: If Customer intends to enter into a financing arrangement ("Financing Agreement") for the products and/or services on this Quote with Dell Financial Services LLC or other funding source pre-approved by Supplier ("FS"), Customer may issue its purchase order to Supplier or to FS. If issued to FS, Supplier will fulfill and invoice FS upon confirmation that: (a) FS intends to enter into a Financing Agreement with Customer for this order; and (b) FS agrees to procure these items from Supplier. Notwithstanding the Financing Agreement, Customer's use (and Customer's resale of and the end-user's use) of these items in the order is subject to the applicable governing agreement between Customer and Supplier, except that title shall transfer from Supplier to FS instead of to Customer. If FS notifies Supplier after shipment that Customer is no longer pursuing a Financing Agreement for these items, or if Customer fails to enter into such Financing Agreement within 120 days after shipment by Supplier, Customer shall promptly pay the Supplier invoice amounts directly to Supplier.

Customer represents that this transaction does not involve: (a) use of U.S. Government funds; (b) use by or resale to the U.S. Government; or (c) maintenance and support of the product(s) listed in this document within classified spaces. Customer further represents that this transaction does not require Supplier's compliance with any statute, regulation or information technology standard applicable to a U.S. Government procurement.

For certain products shipped to end users in California, a State Environmental Fee will be applied to Customer's invoice. Supplier encourages customers to dispose of electronic equipment properly.

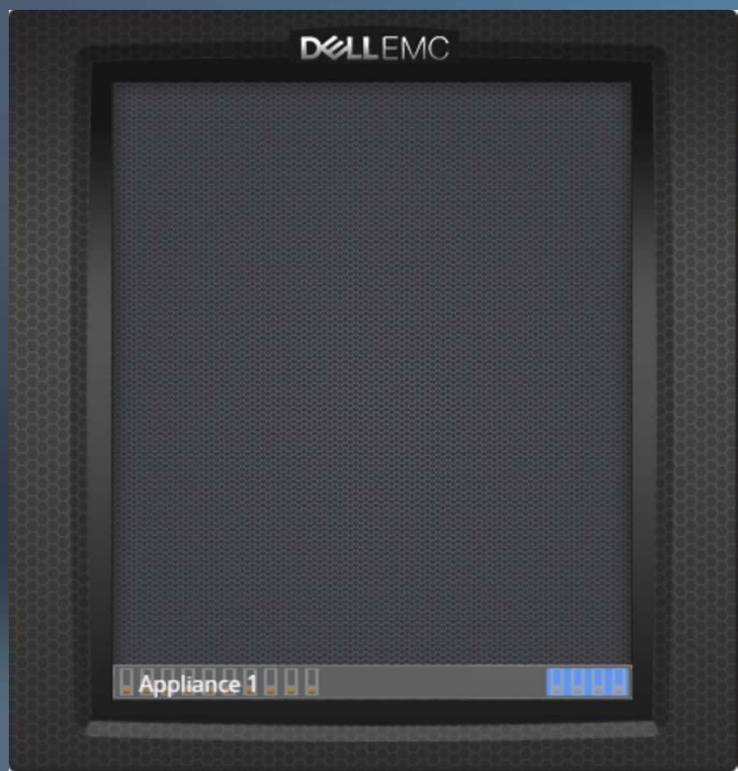
Electronically linked terms and descriptions are available in hard copy upon request.

^Dell Business Credit (DBC):

OFFER VARIES BY CREDITWORTHINESS AS DETERMINED BY LENDER. Offered by WebBank to Small and Medium Business customers with approved credit. Taxes, shipping and other charges are extra and vary. Minimum monthly payments are the greater of \$15 or 3% of account balance. Dell Business Credit is not offered to government or public entities, or business entities located and organized outside of the United States.

PowerStore

1000T 44TB



Cluster Information

Model Mode	PowerStore T	Data Reduction Ratio	4.00:1
Appliances	1	Rack Units	2U
Effective Capacity	50.84 TiB	Performance	83750.00 IOPS/654.30 MiB/s
Usable Capacity	12.71 TiB	Maximum Performance	83757.00 IOPS/654.35 MiB/s
Raw Capacity	17.46 TiB		

Workload 1

Workload Type	Block	Performance	83750.00 IOPS / 654.30 MiB/s
Block Workload Details	Seq: 0% 0K Read / 0% 0K Write Rand: 70% 8K Read / 30% 8K Write	Response Time	2.17 ms
Effective Capacity	44.00 TiB	Storage Performance Saturation	99.99 %
Data Reduction Ratio	4.00:1	Capacity Utilization	86.55 %
Growth	Cap: 0% / Perf: 0%	Connectivity	Fibre Channel



REPORT TO THE LIVONIA CITY COUNCIL

Information Systems December 1, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Casey O'Neil, Information Systems Director
Information Systems

AGENDA ITEM

REQUEST TO AUTHORIZE PURCHASE OF A DELL DATA DOMAIN DD6900: Information Systems Department;
re: to increase backup storage system capacity, from budgeted funds

BACKGROUND

One of the most important roles of Information Systems is secure City data with a quickly accessible and reliable backup system. The City utilizes Veeam with a Dell Data Domain storage platform to accomplish this. In correlation with the requested vmware storage upgrade, we also need to increase our backup storage capacity.

Dell has recommended we upgrade our backup system to a Data Domain 6900 storage system with 60 terabytes of space to increase capacity and give us room for continued growth. This system has industry leading compression and deduplication technology which will allow us to safely secure our backup data for many years.

RECOMMENDATION

Approve the purchase of a Dell Data Domain 6900 for the City Hall Data Center in the amount of \$108,675.12 from Dell Technologies, One Dell Way, Mail Stop 8129, Round Rock, TX 78682.

FISCAL CONSIDERATION

Dell has provided a quote in the amount of \$108,675.12 using state contract pricing. This price includes a 5-year warranty on the system as well as installation and support. No additional appropriation is necessary since funds are budgeted in the Information Systems Capital Outlay account for fiscal year 2020-21 in Account Number 101-915-982-000.

ATTACHMENTS

1. Dell Data Domain Quote
2. Dell Data Domain Specifications

APPROVED BY



Casey O'Neil, Information Systems Director

Date: December 08, 2020



Michael T. Slater, Finance Director

Date: December 08, 2020



Maureen Miller Brosnan, Mayor

Date: December 17, 2020



A quote for your consideration.

Based on your business needs, we put the following quote together to help with your purchase decision. Below is a detailed summary of the quote we've created to help you with your purchase decision.

To proceed with this quote, you may respond to this email, order online through your [Premier page](#), or, if you do not have Premier, use this [Quote to Order](#).

Quote No.	3000073087489.3	Sales Rep	Jessica Murray
Total	\$108,675.12	Phone	(800) 456-3355, 6179055
Customer #	10250716	Email	Jessica_Murray@Dell.com
Quoted On	Nov. 18, 2020	Billing To	ACCOUNTS PAYABLE
Expires by	Dec. 18, 2020		CITY OF LIVONIA
Solution ID	13363646		33000 CIVIC CTR
			LIVONIA, MI 48154-3060

Message from your Sales Rep

Please contact your Dell sales representative if you have any questions or when you're ready to place an order. Thank you for shopping with Dell!

Regards,
Jessica Murray

Shipping Group

Shipping To	Shipping Method	Install At
CASEY O'NEIL CITY OF LIVONIA 33000 CIVIC CTR DR LIVONIA, MI 48154-3060 (734) 466-2279	Standard Delivery	CASEY O'NEIL CITY OF LIVONIA 33000 CIVIC CTR DR LIVONIA, MI 48154-3060 (734) 466-2279

Solution Name:

DD6900 5 Year Support

Product	Unit Price	Qty	Subtotal
PowerProtect DD 4TB ES40 - 60TB AMER	\$68,573.30	1	\$68,573.30
PowerProtect DD6900 - AMER	\$40,101.82	1	\$40,101.82

Subtotal:	\$108,675.12
Shipping:	\$0.00
Non-Taxable Amount:	\$108,675.12
Taxable Amount:	\$0.00
Estimated Tax:	\$0.00

Total:	\$108,675.12
---------------	---------------------

Consult your DFS rep. Special lease pricing may be available.

Shipping Group Details

Shipping To

CASEY O'NEIL
CITY OF LIVONIA
33000 CIVIC CTR DR
LIVONIA, MI 48154-3060
(734) 466-2279

Shipping Method

Standard Delivery

Install At

CASEY O'NEIL
CITY OF LIVONIA
33000 CIVIC CTR DR
LIVONIA, MI 48154-3060
(734) 466-2279

Solution Name:

DD6900 5 Year Support

		Qty	Subtotal
PowerProtect DD 4TB ES40 - 60TB AMER	\$68,573.30	1	\$68,573.30

Estimated delivery if purchased today:

Dec. 11, 2020

Contract # C000000181093

Customer Agreement # MHEC-07012015

Description	SKU	Unit Price	Qty	Subtotal
ES40 SHELF 12G 15X4TB SAS PL ENB FLD	210-AXLJ	-	1	-
Thank you for buying Dell EMC	800-BBQV	-	1	-
FIELD INSTALLED DAE	800-BBSU	-	1	-
Parts Only Warranty 12 Months	709-BBNH	-	1	-
Prodeploy Plus for FSXX ESXX	827-5822	-	1	-
Prodeploy Plus for FSXX ESXX Deployment Verification	827-5823	-	1	-
ProSupport and 4Hr Mission Critical Initial, 12 Month(s)	199-BBBB	-	1	-
ProSupport and 4Hr Mission Critical Extension, 48 Month(s)	199-BBBC	-	1	-
Thank you for buying Dell EMC	379-BDTQ	-	1	-
DD New Software=CB	528-BYIR	-	60	-
ProSupport Mission Critical, DD New, 1TB, Software Support/Maintenance, 60 Month(s)	487-BBNG	-	60	-
ES40 4TB Act 30TB Raw=CB	528-CKZM	-	2	-
ProSupport Mission Critical DD Raw ES40 4TB Active 30TB Software Support Maint, 60 Month(s)	487-BGUW	-	2	-
DD 30TB Capacity Pack	400-BLDQ	-	2	-
DD Boost Software=CB	528-BYIS	-	60	-
ProSupport Mission Critical, DD Boost, 1TB, Software Support/Maintenance, 60 Month(s)	487-BBMX	-	60	-
DD Replication Software=CB	528-BYIT	-	60	-
ProSupport Mission Critical, DD Replication, 1TB, Software Support/Maintenance, 60 Month(s)	487-BBNC	-	60	-
			Qty	Subtotal
PowerProtect DD6900 - AMER		\$40,101.82	1	\$40,101.82

Estimated delivery if purchased today:

Dec. 11, 2020

Contract # C000000181093

Customer Agreement # MHEC-07012015

Description	SKU	Unit Price	Qty	Subtotal
Thank you for buying Dell EMC	800-BBQV	-	1	-

Controller DD6900 NFS CIFS	210-ATZK	-	1	-
SYSTEM DD6900 NFS CIFS	321-BEYX	-	1	-
DD6900 Field Install kit	750-ABNU	-	1	-
DD OS 7.3=IA	619-APJT	-	1	-
Thank you for buying Dell EMC	379-BDTQ	-	1	-
LICENSE BASE DD OE =IA	528-BYIF	-	1	-
ProSupport Mission Critical Operating Environment Software Support Maintenance, 60 Month(s)	487-BBNW	-	1	-
Parts Only Warranty 12 Months	709-BBNH	-	1	-
ProDeploy Plus Training Credits 500 Redeem at education.dellemc.com Expires 1Yr from Order Date	812-4037	-	1	-
Prodeploy Plus for PowerProtect Data Domain 6XXX 9XXX	827-4637	-	1	-
Prodeploy Plus for PowerProtect Data Domain 6XXX 9XXX Deployment Verification	827-4638	-	1	-
ProSupport and 4Hr Mission Critical Initial, 12 Month(s)	199-BBBB	-	1	-
ProSupport and 4Hr Mission Critical Extension, 48 Month(s)	199-BBBC	-	1	-
DD 1.92TB internal Cache SSD	400-BHKT	-	2	-
PDU 1M Included	800-BBSX	-	1	-
DD 10GSFP IO MODULE NDC	406-BBPE	-	1	-
DD 12G 4 port SAS HBA	406-BBPF	-	2	-
DD 3M SAS HD FLEX	470-ADZE	-	1	-

Subtotal:	\$108,675.12
Shipping:	\$0.00
Estimated Tax:	\$0.00
Total:	\$108,675.12

Important Notes

Terms of Sale

This Quote will, if Customer issues a purchase order for the quoted items that is accepted by Supplier, constitute a contract between the entity issuing this Quote ("Supplier") and the entity to whom this Quote was issued ("Customer"). Unless otherwise stated herein, pricing is valid for thirty days from the date of this Quote. All product, pricing and other information is based on the latest information available and is subject to change. Supplier reserves the right to cancel this Quote and Customer purchase orders arising from pricing errors. Taxes and/or freight charges listed on this Quote are only estimates. The final amounts shall be stated on the relevant invoice. Additional freight charges will be applied if Customer requests expedited shipping. Please indicate any tax exemption status on your purchase order and send your tax exemption certificate to Tax_Department@dell.com or ARSalesTax@emc.com, as applicable.

Governing Terms: This Quote is subject to: (a) a separate written agreement between Customer or Customer's affiliate and Supplier or a Supplier's affiliate to the extent that it expressly applies to the products and/or services in this Quote or, to the extent there is no such agreement, to the applicable set of Dell's Terms of Sale (available at www.dell.com/terms or www.dell.com/oemterms), or for cloud/as-a-Service offerings, the applicable cloud terms of service (identified on the Offer Specific Terms referenced below); and (b) the terms referenced herein (collectively, the "Governing Terms"). Different Governing Terms may apply to different products and services on this Quote. The Governing Terms apply to the exclusion of all terms and conditions incorporated in or referred to in any documentation submitted by Customer to Supplier.

Supplier Software Licenses and Services Descriptions : Customer's use of any Supplier software is subject to the license terms accompanying the software, or in the absence of accompanying terms, the applicable terms posted on www.Dell.com/eula. Descriptions and terms for Supplier-branded standard services are stated at www.dell.com/servicecontracts/global or for certain infrastructure products at www.dell.com/en-us/customer-services/product-warranty-and-service-descriptions.htm

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Data Domain Results for City of Livonia

Recommendations:

- DD OS Level: 7.2 Model: DD6900-10G Qty : 1
- Data Domain High Availability Selected: N/A
- Shelf Type Used: ES40-4TB
- Active Tier Shelves or Shelves & Packs Recommended per DD: 1
- Retention Tier Shelves or Shelves & Packs Recommended per DD: 0
- Total Backup Environment(TB): 15.43

Performance:

- Required Write Throughput(MB/sec): 609.21
- Required Read Throughput(MB/sec): 0.0

Capacity Requirement:

- Total Active Tier Capacity(TB): 39.72
- Total Physical Size Configured(TB): 43.7
- Percent of Configured Capacity Used: 90.9%
- Logical Capacity Retained(TB) : 209.15
- Overall Data Reduction Ratio: 83.86%
- Maximum Logical Capacity Possible(TB): 1783.92

* Logical Capacity represents capacity needed if data reduction technology was not used



REPORT TO THE LIVONIA CITY COUNCIL

Engineering
December 15, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Karen Worley, Secretary IV
Engineering

AGENDA ITEM

REQUEST TO APPROVE THE ESTABLISHMENT OF IMPROVEMENT BONDS: Engineering Division, re: to assure the installation of public improvements at Livonia Manor III Site Condominium, located on the north side of Seven Mile Road, between Canterbury Avenue and Shrewsbury Drive in the Southeast 1/4 of Section 3. (CR 272-20)

BACKGROUND

RECOMMENDATION

Upon review of the plans for the subject development the Engineering Division has determined that the following bonds should be established pursuant to Section 18.66 of Ordinance No. 543. The bonds in question are required at this time to assure the installation of public improvements.

General Improvement Bond	\$95,466.00 (\$9,547.00 minimum cash)
Sidewalk Bond	\$3,300.00 (\$330.00 minimum cash)
Grading & Soil Erosion Control Bond	Not Applicable
Entrance Markers/Landscaping	Not Applicable
Monuments and Markers Bond	\$250.00 (all cash)
As-Built Drawings Bond	\$4,000.00 (all cash)

An estimate of the cost of the public improvements for the purpose of establishing the improvement

bond requirement, along with the required cash payments, is shown on the attached schedule in accordance with Section 18.66 of Ordinance No. 543. In accordance with Section 16.24.310 (modification of requirements of the Livonia Code of Ordinances), it will be noted that a cash payment is being recommended herein representing a contribution in aid for possible future street lighting within the subject development. The contribution amount has been based on the number of future street lights (as determined by this office) and cost factors as estimated by the Detroit Edison Company in accordance with a ruling of the Michigan Public Service Commission in December 1990.

To facilitate the maintenance of our records, the Engineering Division will require that "as built" plans of all public improvements installed in connection with the development be submitted to this office on Mylar reproducible material. Further, appropriate utility easements and deeds will be required for future maintenance by the City.

FISCAL CONSIDERATION

ATTACHMENTS

1. 12-15-20 Schedule of Bonds & Fee Requirements

APPROVED BY



Todd Zilincik, City Engineer

Date: December 15, 2020



Donald Rohraff, Director of Public Works

Date: December 16, 2020



Maureen Miller Brosnan, Mayor

Date: December 17, 2020

To: Honorable Members of the City Council
Re: Livonia Manor III Site Condominiums
S.E. ¼ Section 3, City of Livonia
Establishment of Improvement Bonds

December 15, 2020
Page 3

SCHEDULE OF BONDS & FEE REQUIREMENTS

I. Bond Requirements

A. General Improvement Bond

Water Mains		\$13,800.00
Sanitary Sewers		\$17,070.00
Storm Sewers, including Footing Drain		
Storm Sewers		\$22,550.00
Paving (Public Street)		<u>\$37,500.00</u>
Estimated Construction Cost	\$90,920.00	
Construction Contingencies		<u>\$4,546.00</u>
(Approximately 5%)		
Total		\$95,466.00
		(\$9,547 min. cash bond)

B. Sidewalk Bond

Sidewalks		\$3,000.00
Construction Contingencies		<u>\$300.00</u>
(Approx. 10%)		
Total		\$3,300.00
		(\$330 min. cash bond)

C. Grading & Soil Erosion Control Bond

Not Required
(Less than 1 acre)

D. Entrance Markers/Landscaping

Not Applicable

E. Monuments & Markers (Ord. #951)

\$250.00 (cash)

F. As-Built Drawings Bond

\$4,000.00 (cash)

TOTAL CASH BONDS **\$14,127.00**

**TOTAL CASH BONDS
CURRENTLY DUE** **\$14,127.00**

To: Honorable Members of the City Council
Re: Livonia Manor III Site Condominiums
S.E. ¼ of Section 3, City of Livonia
Establishment of Improvement Bonds

December 15, 2020
Page 4

II. Fees (Cash Payments to the City)

A. Trees	\$1,000.00
B. Street Name Sign	N/A
C. Traffic Control Signs	N/A
D. Street Light Contribution in Aid (First Year Cost)	\$3,000.00*
E. Engineering Services Gen. Improv. & Sidewalk	
1. Plan Review & Admin. (2%)	\$1,728.00
2. Field Inspection (5%)	<u>\$4,696.00</u>
(includes Sidewalk, Drive Approaches, Storm Connection Fee and Water Connection Fee)	\$6,424.00
F. Engineering Services	Not Required
† Less \$400 Payment Received Previously for Plan Review (Received on 9.15.20 per receipt #6953)	†(\$400.00)
TOTAL CASH PAYMENTS (NON-REFUNDABLE)	<u>\$10,024.00</u>
TOTAL CURRENTLY DUE	<u>\$24,151.00</u>

*To be adjusted and/or refunded based on streetlight public hearings and the type of lighting units to be determined by the City Council.

Regular Meeting Minutes of September 21, 2020

On a motion by Bahr, supported by Donovic, and unanimously adopted, it was:

SITE PLANS

(Belaggio Homes, Inc)
Petition 2020-07-08-05
Approval to develop a
site condominium
(Livonia Manor 3),
consisting of four (4)
single-family homes,
on the north side of
Seven Mile Road
between Merriman
Road and Osmus
Avenue (31670 Seven
Mile Road), Section 3.

#272-20 RESOLVED, that having considered a communication from the City Planning Commission, dated August 19, 2020, which transmits its resolution #08-38-2020, adopted on August 18, 2020, with regard to Petition 2020-07-08-05, submitted by Belaggio Homes, Inc., requesting approval to develop a site condominium (Livonia Manor 3), consisting of four (4) single-family homes, on the north side of Seven Mile Road between Merriman Road and Osmus Avenue (31670 Seven Mile Road), in the Southeast ¼ of Section 3, the Council does hereby concur in the recommendation of the Planning Commission and Petition 2020-07-08-05 is hereby approved and granted, subject to the following conditions:

1. That the Site Plan identified as Sheet 1 dated July 20, 2020, prepared by Arpee/Donnan, Inc., is hereby approved and shall be adhered to.
2. That the condominium Master Deed and Bylaws comply with the requirements of the Subdivision Control Ordinance, Title 16, Chapter 16.04-16.40 of the Livonia Code of Ordinance, and Article XX, Section 20.01-20.06 of Zoning Ordinance #543.
3. That the brick used in the construction of each condominium unit shall be full face four-inch (4") brick.
4. In the event of a conflict between the provisions set forth in the Master Deed and bylaws, and the requirements set forth in the City of Livonia Zoning Ordinance No. 543, as amended, the Zoning Ordinance requirements shall prevail and petitioner shall comply with the Zoning Ordinance requirements.
5. That the petitioner shall include language in the Master Deed and bylaws or a separate recordable instrument wherein the condominium association shall reimburse the City of Livonia for any maintenance or repair costs incurred for the storm water detention/retention and outlet facilities, and giving the City of Livonia the right to impose liens on each lot owner's property pro rata and place said charges on their real estate tax bills in the event said charges are not paid by the condominium association (or each lot owner) within thirty (30) days of billing for the City of Livonia.
6. That all required cash deposits, certified checks, irrevocable bank letters of credit and/or surety bonds which shall be established by the City Engineer pursuant to Article XVIII of Ordinance No. 543, Section 18.66 of the ordinance, shall be deposited with the City

September 21, 2020

Regular Meeting Minutes of September 21, 2020

prior to the issuance of engineering permits for this site condominium development; and

7. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of ONE YEAR ONLY from the date of approval by City Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

UNFINISHED BUSINESS (Regular Meeting of September 21, 2020)

Motion by:	Bahr
Seconded by:	Donovic
ROLL CALL:	
Ayes:	Bahr, White, McCullough, Donovic, Jolly, Toy, McIntyre
Nays:	None
Absent:	None

September 21, 2020



REPORT TO THE LIVONIA CITY COUNCIL

Engineering
December 16, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Karen Worley, Secretary IV
Engineering

AGENDA ITEM

VACATING REQUEST: Engineering Division, re: to vacate a public utility easement within the 18th St. Development, located at 39000 Seven Mile Road. Parcel I.D. No. 46-023-99-0001-004.

BACKGROUND

Pursuant to the August 19, 2020 request from Anderson, Eckstein & Westrick, Inc., on behalf of the owner, Botsford General Hospital, the Law Department has approved the request as to form and the Engineering Division has reviewed the utilities located on the property in question and found that the request for the vacation of the public utility easement is warranted.

RECOMMENDATION

In order to proceed, the Engineering Division respectfully request that the City Council do all things necessary for the vacation of the following 20-foot wide public utility easement (previously recorded in Liber 23477, Page 043, Wayne County Records) A map with the original easement to be vacated is attached:

Part of the Southwest ¼ of Section 6, Town 1 South, Range 9 East, City of Livonia, Wayne County, Michigan, being described as:

Commencing at the southwest corner of Section 6; thence S 88°14'49" E, 946.05 feet along the south line of Section 6; thence N 03°00'56" E, 60.02 feet to the northerly right-of-way line of Seven Mile Road (120.00 feet wide); thence S 88°14'49" E, 228.95 feet along the northerly right-of-way line of Seven Mile Road to the point of beginning of the centerline of a 20.00 feet wide water main easement, as recorded in Liber 23477 of Deeds, Page 43, Wayne County Records, to be vacated, lying 10.00 feet each side of the following described centerline; thence N 01°45'11" E, 185.00 feet; thence N 61°45'11" E, 88.00 feet; thence N 39°15'11" E, 128.00 feet; thence N 08°15'11" E, 162.00 feet; thence N 24°15'11" E, 145.00 feet; thence N 35°30'11" E, 200.00 feet; thence N 15°30'11" E, 170.00 feet; thence N 43°00'11" E, 90.00 feet; thence N 15°30'11" E, 137.00 feet; thence N 43°00'11" E, 90.00 feet; thence N 15°30'11" E, 292.00 feet to the point of ending of this described centerline.

FISCAL CONSIDERATION

ATTACHMENTS

1. Request for Vacation of Water Main for 18th St. Development 8-19-20

APPROVED BY



Date: December 16, 2020

Todd Zilincik, City Engineer



Date: December 16, 2020

Donald Rohraff, Director of Public Works



Date: December 16, 2020

Paul Bernier, City Attorney



Date: December 17, 2020

Maureen Miller Brosnan, Mayor



ANDERSON, ECKSTEIN & WESTRICK, INC.

CIVIL ENGINEERS - SURVEYORS - ARCHITECTS

51301 Schoenherr Road, Shelby Township, MI 48315

586.726.1234 | www.aewinc.com

*xc: Law - Approve as to Form
Engineering
E-Agenda S*

August 19, 2020

City Council
City of Livonia
33000 Civic Center Drive
Livonia, Michigan 48154

Reference: Water Main Easement Vacation Request
18th Street Development
AEW Project No. 0496-0041

REC'D
DEC 10 2020
**CITY OF
ENGINEERING**

Dear City Council:

As part of the 18th Street Development project, located at the northwest corner of 7 Mile Road and I-275, a portion of the existing 16-inch water main, and its associated easement, is proposed to be relocated. As such it is our request that the existing 20-foot wide water main easement (Liber 23477, Page 043) be vacated from the extents shown on Exhibit A, attached.

Please note that the relocated section of water main will be granted a new easement as required.

Sincerely,

Juli Sala, PE
Licensed Civil Engineer

RECEIVED
OFFICE OF THE CITY CLERK
2020 DEC 10 PM 3:17

Enclosure: Exhibit A – Water Main Easement Vacation

M:\0496\0496-0041\Gen\Letters\LTR - 2020-08-19 - Water Main Easement Vacation.docx



CITY of LIVONIA
OFFICE OF THE CITY CLERK

33000 CIVIC CENTER DRIVE, LIVONIA, MICHIGAN 48154
TELEPHONE (734) 466-2230

Received From: Anderson, Eckstein & Westrick
Address _____
City _____ Zip _____ Date 12/10/2020

CERTIFICATES

Dollar Amount

BIRTHS ☐ LF# _____ CC _____ PARCHMENT _____

DEATHS ☐ LF# _____

PAID

DEC 10 2020

CITY OF LIVONIA

GENERAL

- ☐ Maps, Books _____
- ☐ F.O.I.A. Copies _____
- ☐ Signs _____
- ☐ Grading Bond _____
- ☒ Petition, Waiver VACATING
- ☐ Election Fees EASEMENT
- ☐ Other Water Main

NW corner of
(7-mile & I-275)

CASH ☒ CK# _____

Total Amt. >

Card# 0129

650.00

BY. mlg

No. 068994

CITIZEN'S COPY

Payment Entry Form

Result: Payment Authorized

Confirmation Number: 85560129

Your payment has been authorized successfully and payment will be processed.

The City of Livonia thanks you for your payment. For questions about your account, please call 734-466-2230 Thank you for using our bill payment services.

Please save or print a copy of this receipt for record keeping purposes.

My Bills

Description	Amount
Miscellaneous payment of \$650.00	\$650.00

Subtotal:	\$650.00
Convenience Fee:	\$0.00
Total Payment:	\$650.00

Customer Information

First Name: CHARLES

Last Name: MYSLINSKI

Address Line 1:

Address Line 2:

City:

State:

Zip Code:

Phone Number:

Email Address:

Payment Information

Payment Date: 12/10/2020

Card Type: Visa

Card Number: *****2194

Signature: _____ Date: ____/____/____

By signing this receipt you agree to the terms and conditions of this service.

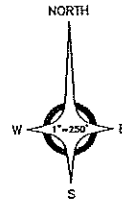
You will see one line item on your credit or debit card statement indicating the amount you paid and will be identified as *City of Livonia*. If you have any questions about the charges please call 1-888-891-6064.



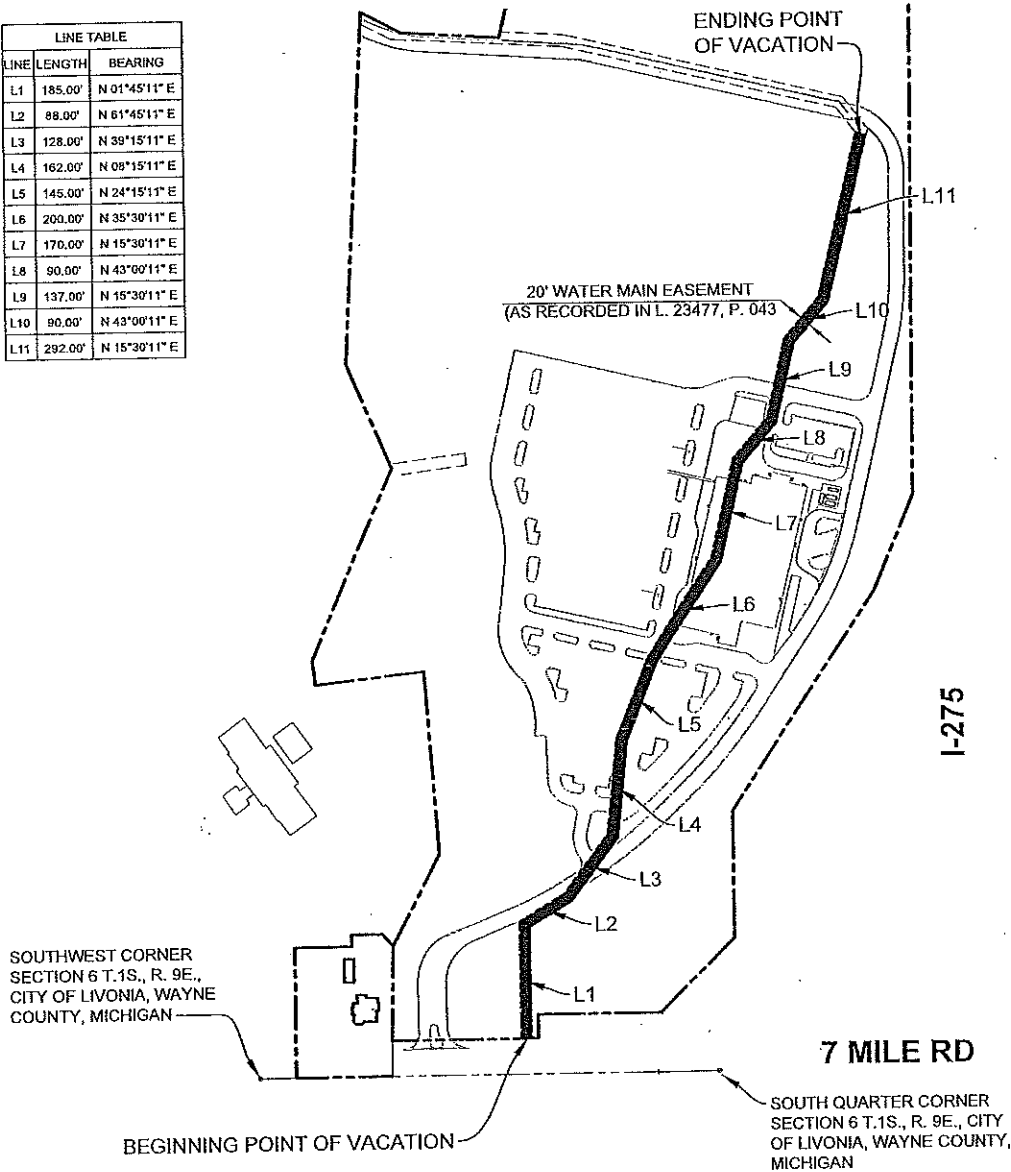
ANDERSON, ECKSTEIN AND
WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS
51301 Schoenherr Rd Phone 586 726 1234
Shelby Township Fax 586 726 8780
Michigan 48315 www.aewinc.com

EASEMENT VACATION EXHIBIT "A"



LINE TABLE		
LINE	LENGTH	BEARING
L1	185.00'	N 01°45'11" E
L2	88.00'	N 61°45'11" E
L3	128.00'	N 39°15'11" E
L4	162.00'	N 08°15'11" E
L5	145.00'	N 24°15'11" E
L6	200.00'	N 35°30'11" E
L7	170.00'	N 15°30'11" E
L8	90.00'	N 43°00'11" E
L9	137.00'	N 15°30'11" E
L10	90.00'	N 43°00'11" E
L11	292.00'	N 15°30'11" E



WATER MAIN EASEMENT VACATION DESCRIPTION

PART OF THE SOUTHWEST QUARTER OF SECTION 6, TOWN 1 SOUTH, RANGE 9 EAST, CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN, BEING DESCRIBED AS:

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 6; THENCE SOUTH 88 DEGREES 14 MINUTES 49 SECONDS EAST 946.05 FEET ALONG THE SOUTH LINE OF SECTION 6; THENCE NORTH 03 DEGREES 00 MINUTES 58 SECONDS EAST 60.02 FEET TO THE NORTHERLY RIGHT OF WAY LINE OF SEVEN MILE ROAD (120.00 FEET WIDE); THENCE SOUTH 88 DEGREES 14 MINUTES 49 SECONDS EAST 228.95 FEET ALONG THE NORTHERLY RIGHT OF WAY LINE OF SEVEN MILE ROAD TO THE POINT OF BEGINNING OF THE CENTERLINE OF A 20.00 FEET WIDE WATER MAIN EASEMENT, AS RECORDED IN LIBER 23477 OF DEEDS, PAGE 43, WAYNE COUNTY RECORDS, TO BE VACATED, LYING 10.00 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE; THENCE NORTH 01 DEGREES 45 MINUTES 11 SECONDS EAST 185.00 FEET; THENCE NORTH 61 DEGREES 45 MINUTES 11 SECONDS EAST 88.00 FEET; THENCE NORTH 39 DEGREES 15 MINUTES 11 SECONDS EAST 128.00 FEET; THENCE NORTH 08 DEGREES 15 MINUTES 11 SECONDS EAST 162.00 FEET; THENCE NORTH 24 DEGREES 15 MINUTES 11 SECONDS EAST 145.00 FEET; THENCE NORTH 35 DEGREES 30 MINUTES 11 SECONDS EAST 200.00 FEET; THENCE NORTH 15 DEGREES 30 MINUTES 11 SECONDS EAST 170.00 FEET; THENCE NORTH 43 DEGREES 00 MINUTES 11 SECONDS EAST 90.00 FEET; THENCE NORTH 15 DEGREES 30 MINUTES 11 SECONDS EAST 137.00 FEET; THENCE NORTH 43 DEGREES 00 MINUTES 11 SECONDS EAST 90.00 FEET; THENCE NORTH 15 DEGREES 30 MINUTES 11 SECONDS EAST 292.00 FEET TO THE POINT OF ENDING OF THIS DESCRIBED CENTERLINE.

FROM RECORDS ONLY. NO SURVEY PERFORMED.

SEC: 6	TWP: CITY OF LIVONIA	COUNTY: WAYNE	AEW NO.: 0496-0041	BOOK NO.:
DRAWN BY: SAK	CHECKED BY: CMA	SCALE: 1" = 250'	EASEMENT NO.:	CONST. PLAN PAGE NO.:
SHEET 1 OF 1			TITLE SEARCH:	

M:\0496\0496-0041\DWG\CIVIL\01-EASEMENT EXHIBIT A - WM VAC LAYOUT.DWG WATER MAIN VACATION.DWG B/17/2020 4:22 PM



REPORT TO THE LIVONIA CITY COUNCIL

Planning

December 21, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Stephanie Reece, Program Supervisor
Planning

AGENDA ITEM

WAIVER PETITION: Planning Commission, re: Petition 2020-11-02-10 submitted by LS Equity L.L.C. requesting to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road (29250-29350 Plymouth Road) in the Southwest ¼ of Section 25.

BACKGROUND

requesting approval of all plans required by Sections 11.03(n)(3), 18.47 and 18.58 of the City of Livonia Zoning Ordinance No. 543, as amended, in connection with a proposal to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road in the Southwest ¼ of Section 25

RECOMMENDATION

FISCAL CONSIDERATION

ATTACHMENTS

1. 2020-11-02-10_Shoppes of Livonia_E-COUNCIL Pkt

APPROVED BY

PLANNING COMMISSION

IAN WILSHAW, Chairman
GLEN W. LONG, JR., Vice Chairman
SAM CARAMAGNO, Secretary
DAVID BONGERO
ELIZABETH McCUE
CAROL A. SMILEY
PETER H. VENTURA



MAUREEN MILLER BROSNAN
MAYOR

MARK TAORMINA
PLANNING & ECONOMIC
DEVELOPMENT DIRECTOR

SCOTT O. MILLER
PLANNER IV

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2290 Fax (734) 466-2108

December 16, 2020

Honorable Members of the City Council
City of Livonia, Michigan

Re: Petition 2020-11-02-10 – Shoppes of Livonia

Dear Council Members:

At the 1,163rd Public Hearings and Regular Meeting held by the City Planning Commission on December 15, 2020, in the Livonia City Hall, the following resolution was unanimously adopted:

#12-60-2020 **RESOLVED**, That pursuant to a Public Hearing having been held by the City Planning Commission on December 15, 2020, on Petition 2020-11-02-10 submitted by LS Equity L.L.C. requesting approval of all plans required by Sections 11.03(n)(3), 18.47 and 18.58 of the City of Livonia Zoning Ordinance No. 543, as amended, in connection with a proposal to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road in the Southwest ¼ of Section 25, the Planning Commission does hereby recommend to the City Council that Petition 2020-11-02-10 be approved subject to the following conditions:

1. That the Overall Site Plan identified as Sheet No. C01, dated November 5, 2020, as revised, prepared by Atwell, is hereby approved, and shall be adhered to.

2. That the Landscape Plan identified as Sheet No. C04, dated November 5, 2020, as revised, prepared by Atwell, is hereby approved, and shall be adhered to, except that a plan for replacing the trees and other plant materials along the site's frontage on Middlebelt Road shall be incorporated as part of Phase 1 of the development and submitted to the Planning Department for review and approval, and shall be completed prior to occupancy of the Chick-fil-A restaurant.
3. That all disturbed lawn areas shall be sodded in lieu of hydroseeding.
4. That underground sprinklers are to be provided for all landscaped and sodded areas and all planted materials shall be installed to the satisfaction of the Inspection Department and thereafter permanently maintained in a healthy condition.
5. That the Exterior Elevations for the Chick-fil-A restaurant, as received by the Planning Commission and date stamped November 9, 2020, are hereby approved, and shall be adhered to.
6. That the Retail 1 – Elevations Plan identified as Drawing No. SD03, prepared by NORR, as received by the Planning Commission and date stamped November 9, 2020, is hereby approved, and shall be adhered to.
7. That the Retail 2 – Elevations Plan identified as Drawing No. SD04, prepared by NORR, as received by the Planning Commission and date stamped November 9, 2020, is hereby approved, and shall be adhered to.
8. That all rooftop mechanical equipment shall be concealed from public view on all sides by screening that shall be of a compatible character, material, and color to other exterior materials on the building.
9. That no less than six (6) weeks prior to the scheduled opening of the Chick-fil-A restaurant, the Petitioner shall submit to the Department of Public Safety Traffic Bureau for its review and approval details of how traffic will be managed, both on- and off-site, during the times when the stacking capacity of the drive-thru lanes is exceeded or when undue traffic congestion is occurring on the adjacent public thoroughfares.

10. That all traffic improvements, including additions or modifications to the traffic signals, approach geometrics, or traffic lanes, as deemed necessary by either Wayne County or the Michigan Department of Transportation (MDOT) to mitigate the traffic impacts of the project, shall be completed prior to the issuance of Certificate of Occupancy.
11. That the three walls of the trash dumpster areas shall be constructed out of building materials that shall complement that of the buildings. The enclosure gates shall be of solid panel steel construction or durable, long-lasting solid panel fiberglass.
12. That the proposed construction shall meet the Wayne County Stormwater Ordinance, including detention requirements, and the Petitioner shall secure all required permits, including soil erosion and sedimentation control.
13. That all new pole-mounted light fixtures shall not exceed a height of twenty feet (20') and shall be aimed and shielded to minimize stray light trespassing across property lines and glaring into adjacent roadways.
14. That this approval is subject to the petitioner being granted a variance from the Zoning Board of Appeals for deficient parking and any conditions related thereto.
15. That any future drive-thru restaurant in Retail 1 shall require waiver use approval.
16. That only conforming wall signage is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals.
17. That no LED lightband or exposed neon shall be permitted on this site including, but not limited to, the building or around the windows.
18. That the specific plans referenced in this approving resolution shall be submitted to the Inspection Department at the time the building permits are applied for; and
19. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of one (1) year only from the date of approval by City Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

To: Honorable Members of the Council
Re: 2020-11-02-10 – Shoppes of Livonia

December 16, 2020
Page 4

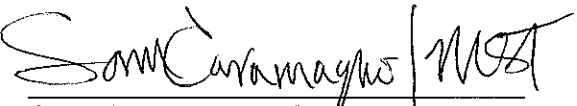
FURTHER RESOLVED, That notice of the above hearing was given in accordance with the provisions of Section 19.05 of Zoning Ordinance #543, as amended.

Very truly yours,

APPROVED FOR SUBMISSION

CITY PLANNING COMMISSION


Maureen Miller Brosnan, Mayor


Sam Caramagno, Secretary

cc: Mayor, Clerk, Law
Frank Jarbou, LS Equity, L.L.C., 4198 Orchard Lake Road, Ste 250, Orchard Lake, MI 48323
Mike McPherson, Atwell, L.L.C., 12745 23 Mile Road, Ste. 200, Shelby Twp., MI 48315

**CITY OF LIVONIA, MICHIGAN
APPLICATION FOR WAIVER USE APPROVAL**

All applications must be presented in triplicate to the City Clerk, 33000 Civic Center Drive, Livonia, MI 48154-3097. Applications must include property owner's name, address and notarized signature.

Filing fee = \$600.00 plus \$20.00 for each 1,000 sq. ft. of gross floor area of new construction.

Date Filed: 11-9-2020 Petition 2020-11-02-10

Site Address: 29320 Plymouth Road Sidwell 46-099-99-0007-009 Zoning of Property C-2

Requesting Approval To Re-develop property with the inclusion a Chick-Fil-A drive-thru

Applicant: Frank Jarbou Business/Company: LS Equity LLC

Applicant's Address: 4198 Orchard Lake Road, Suite 250 City: Orchard Lake State: MI Zip Code: 48323

Applicant's Phone # (248) 465-0200 Applicant's Email fjarbou@symmetrymgmt.com

Contact Person: Mike McPherson Business/Company: Atwell, LLC

Contact's Address: 12745 23 Mile Road, Suite 200 City: Shelby Twp. State: MI Zip Code: 48315

Contact's Phone # (586) 786-9800 Contact's Email mmcperson@atwell-group.com

Please provide the following information:

- 1) **Site Plan** showing:
 - property dimensions, including road right-of-way & building setback lines
 - foot print of building(s), including dimensions & square footage
 - all easements, protective walls, sidewalks & existing trees
 - any significant topographic features (existing or proposed)
 - parking layout, including type of surface material, sizes of spaces & aisles
 - method used in calculating parking requirement
 - location of light standards servicing parking lot & cutout showing type & height
 - location of trash receptacle, including description of screening
 - location of signs
- 2) **Detailed Landscape Plan** including:
 - listing or labeling of all planted materials as to type and size
 - areas to be fully irrigated
 - percentage of landscaping provided (15% of total site required)
- 3) **Building Elevation Plan** depicting:
 - architectural quality
 - wall section & detail plan - exterior building materials must be labeled (i.e. brick, thin brick, E.F.I.S.)
 - all visible rooftop mechanical equipment and how they will be screened
- 4) **General Floor Plan** showing:
 - floor layout
 - entrances & exits
 - restaurants are required to illustrate seating arrangement & capacity
- 5) **One (1) set of reduced plans** (i.e. site, landscape, elevation, floor), **a maximum 11" x 17" in size, or digital file in a .pdf format either on CD or emailed to smiller@ci.livonia.mi.us**
- 6) **Legal Description** of the property to be considered (Clearly Printed)
- 7) **Three (3) completed application forms & sixteen (16) sets of full-size drawings**

RECEIVED
NOV 09 2020
CITY OF LIVONIA
PLANNING COMMISSION

RECEIVED
OFFICE OF THE CITY CLERK
2020 NOV -9 PM 1:59

You are invited and encouraged to review your proposal with the Planning Department staff. Only one set of preliminary drawings will be necessary for this analysis.

FEE COMPUTATION	\$600.00
_____ sq. ft. of new construction x \$20.00 per 1,000 sq. ft.	
(NOTE: Round off to nearest 1,000) + _____	
Total Amount Due	\$ _____

Owner of Property: Frank Jarbou

Owner's Address: 4198 Orchard Lake Road, Suite 250 City: Orchard Lake State: MI Zip Code: 48323

Owner's Phone # (248) 465-0200 Owner's Email fjarbou@symmetrymgmt.com

Signature of Owner: Frank Print Name: Frank Jarbou

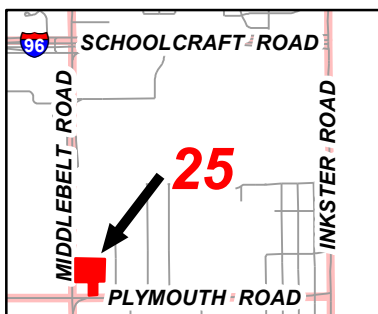
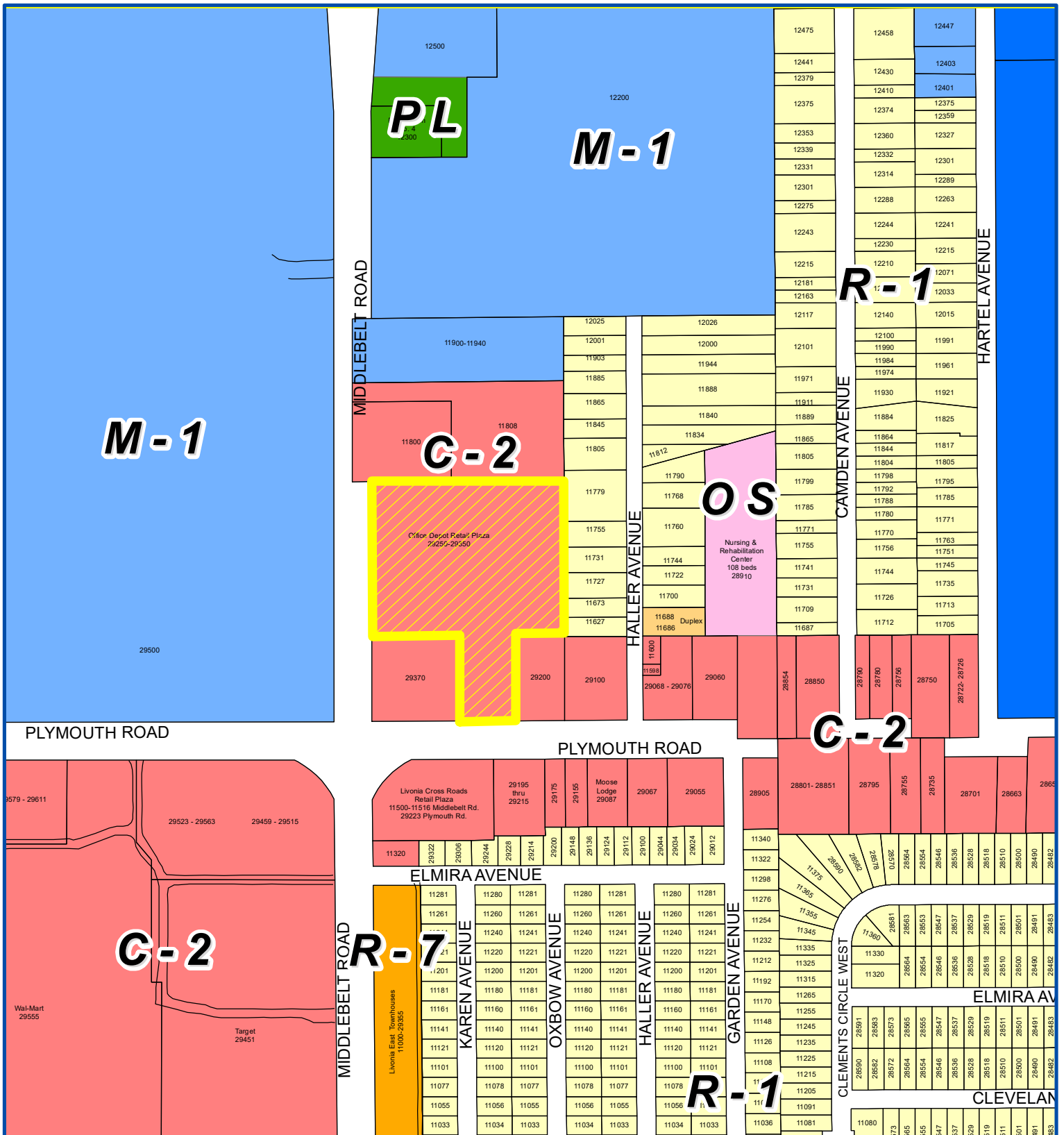
Subscribed and sworn to before me, a Notary Public in and for the County of Oakland State of Michigan

on this 14th day of October 2020

Signature of Notary Karel J Van Akin

Acting in the County of _____





Address & Zoning Map

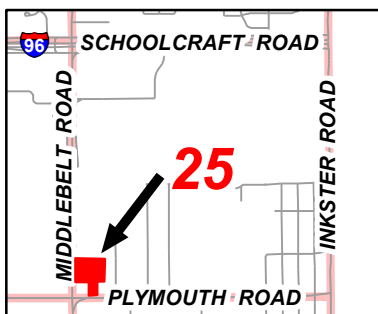
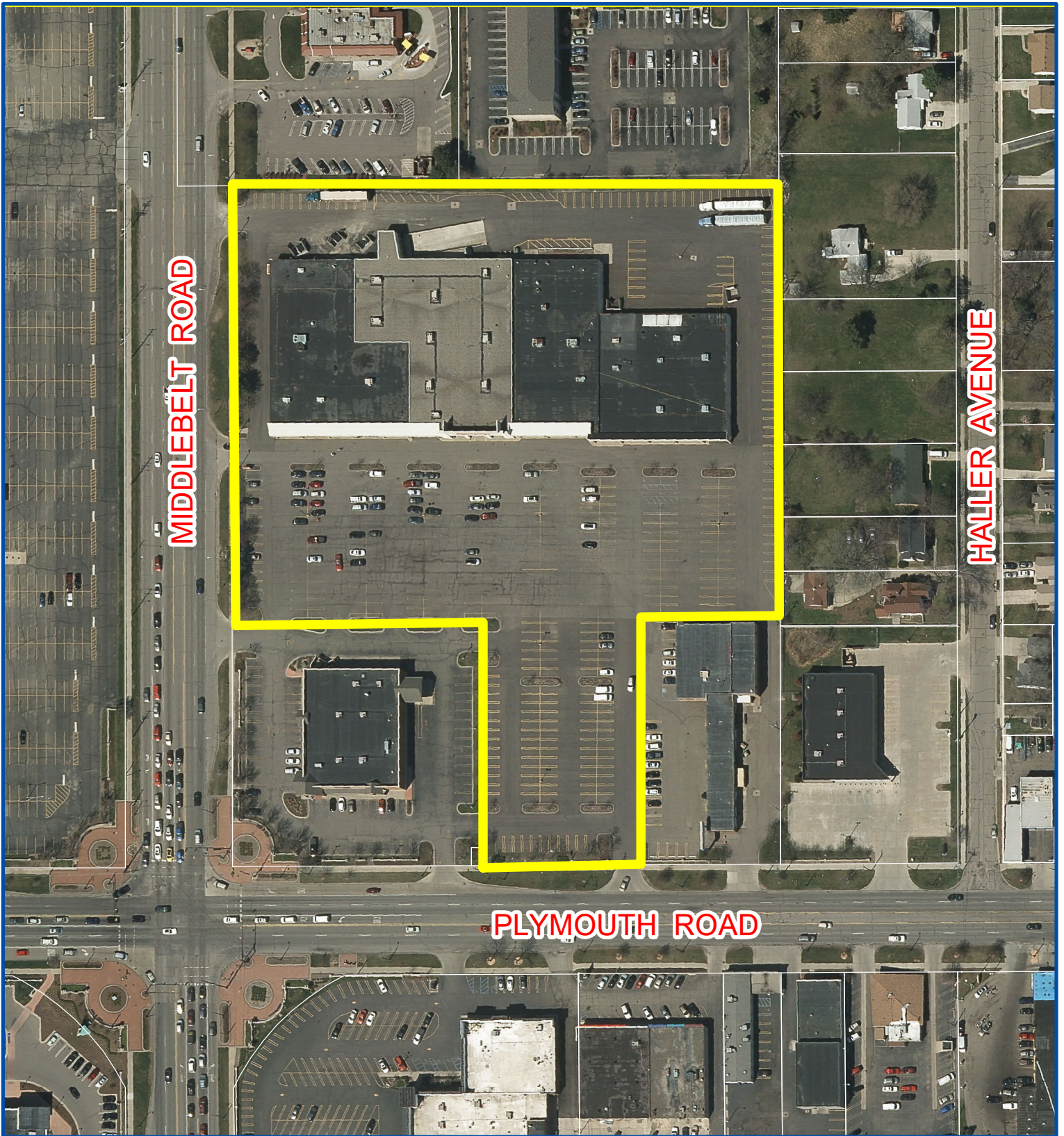
Petition 2020-11-02-10
Shoppes of Livonia
29250-29350 Plymouth Road



Not to Scale



City of Livonia
Planning Department



Aerial Map

Petition 2020-11-02-10
Shoppes of Livonia
29250-29350 Plymouth Road



Not to Scale



City of Livonia
Planning Department

PLANNING COMMISSION STAFF NOTES

PUBLIC HEARING

ITEM 1

Petition 2020-11-02-10 submitted by LS Equity L.L.C. requesting approval of all plans required by Sections 11.03(n)(3), 18.47 and 18.58 of the City of Livonia Zoning Ordinance No. 543, as amended, in connection with a proposal to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road in the Southwest ¼ of Section 25.

December 8, 2020 Study Meeting:

This is a request re-develop the commercial shopping center located at the northeast corner of Middlebelt and Plymouth Roads. The new name of the retail complex is *Shoppes of Livonia*. Presently, the site consists of a single multi-tenant retail building containing a gross floor area of approximately 84,766 square feet. For years, the main tenant of the building has been Office Depot. The subject property is 7.74 acres in total area and is zoned C-2, General Business. Closer to the intersection of Middlebelt and Plymouth Roads is a vacant commercial building that was constructed in 2003 as a Walgreens Pharmacy. Although the property at the corner that contained the former Walgreens was once a part of the subject site, it is now owned separately and not part of this redevelopment proposal. However, it is important to note that cross access agreements do exist between the two (2) properties.

According to the plans (sheet #C03), redevelopment of the site would occur in three (3) phases. In general, **Phase 1** would include demolishing portions of the existing retail building and constructing a new Chick-fil-A restaurant adjacent to Middlebelt Road. The initial phase also includes improvements to the site's utility services and infrastructure, including water, sanitary sewer, and the construction of an underground stormwater detention system. **Phase 2** involves development of a new multi-tenant retail building in an area currently used as parking located adjacent to Plymouth Road. And, **Phase 3** entails building an addition onto the existing retail building and undertaking façade and other parking lot improvements.

Phase 1

To make space available for the Chick-fil-A restaurant, the west end of the existing shopping center building (identified on the plans as *Retail 2*) consisting of approximately 26,710 square feet of retail space would be demolished and removed. The new restaurant with drive-thru facilities would be located between the downsized building and Middlebelt Road in the northwest corner of the property. The proposed Chick-fil-A would have 124 interior seats and 24 outdoor patio seats for a combined total of 148 customer seats. The building would be one-story in height and contain a gross floor area of 4,995 square feet. An outdoor seating area is shown on the south side (front) of the building facing Plymouth Road. The patio would measure approximately 50' x 25' and would be

open without any type of enclosure or fencing. In a C-2 zoning district, the minimum required building setback from the right-of-way of any major thoroughfare is sixty feet (60'). At its closest point, the restaurant would be set back sixty feet (60') from the Middlebelt Road right-of-way.

The two (2) lane drive-up operation would encapsulate three sides of the site, and—if built according to the plans—would constitute the City's largest drive-up business. The two (2) traffic lanes serving the drive-up would commence along the east side of the building, proceed north between the restaurant and Retail 2, loop around the back of the restaurant and finish at the pick-up window located on the west side of the building. Restaurants with drive-thru services are required to have a minimum of four (4) car stacking spaces for each drive-up service facility in addition to the space at the drive-up window. Both drive-up traffic lanes would accommodate well over the minimum requirement. The inside and outside lanes each have the capacity to handle 19 and 21 vehicles, respectively. Moreover, the width of any traffic lane serving a drive-up window is required to be at least ten feet (10') wide. Both lanes would measure twelve feet (12') in width. Drive-up establishments are also required to provide a by-pass lane or other suitable means of access to a public street for vehicles that do not use the drive-up window. The adjacent parking lot drive aisles would serve as a bypass route, but for the outside lane only.

The following is an explanation provided by the Petitioner as to how the drive-thru lanes would operate:

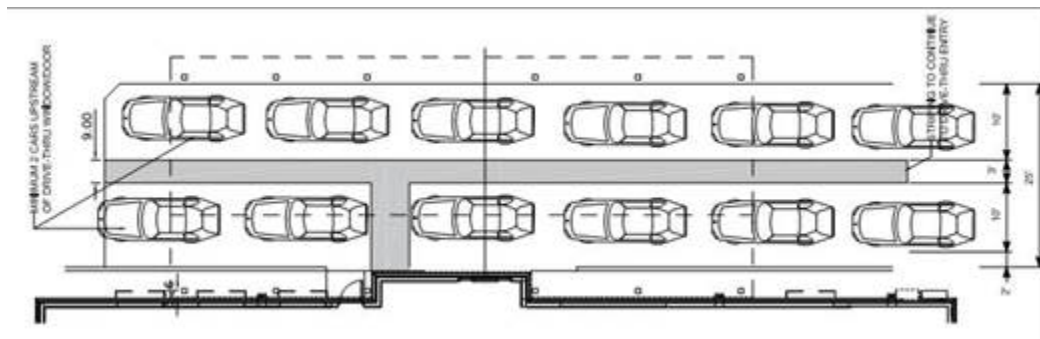
"As part of the face-to-face drive-thru ordering operation mentioned previously, Chick-fil-A (CFA) is proposing the installation of two drive-thru canopies. One canopy will be located at the order boards and the other will be located at the pick-up window. The canopies are provided as a result of the challenge CFA faced on how to increase the amount of orders that can be placed and sent to the kitchen beyond the two they were limited to with the two order points. CFA strives to ensure the food is ready by the time the guests reach the pick-up window. In order to meet this challenge, CFA began to implement face-to-face ordering in the drive-thru, which stations team members in the drive-thru lanes with iPads to personally take orders from the drive-thru guests (they can also take payment with any credit card at time of order – if you prefer to pay in cash, there is another associate to greet you face to face before you get to the pickup window/door). Typically, there will be two to three team members per lane in the ordering zone to speed up the process of placing the order, giving the kitchen more time to prepare the food so that they can move cars through the drive-thru lane more efficiently. As team members began to spend more and more time outside exposed to the elements, CFA recognized the importance of creating a more comfortable environment for them. As such, the idea of the canopy was developed to provide shelter over the ordering zone of the drive-thru lanes in order to protect the team members from rain, snow, cold, and heat. The order canopy not only shields the team members from rain and snow but also provides some temperature control through the use of fans in the summer and heaters in the winter. As an added benefit, the guest experience is also enhanced by providing customers with a protected area

PUBLIC HEARING

ITEM 1 Petition 2020-11-02-10– Shoppes of Livonia

Page 3

in which they can feel safe rolling down their car windows to place their order regardless of the weather. CFA has and will always strive to provide not only the best guest experience but also team member experience. From a materials standpoint, the canopy is metal that is painted dark bronze to tie into the dark bronze metal awnings, coping, and storefront for the building to provide a consistent look among all the site amenities. The second canopy referenced is located over the drive thru window/door and it also serves as protection for our team members and guests while the guests pull up to the window/door to retrieve their order. During busy times, team members will assemble the food inside the drive thru cockpit. This keeps team members safe and away from the elements. When an order or multiple orders are ready, the food is hand delivered by our team members directly to your car – whether you are in in lane 1 or lane 2. There is a cross walk for team members to get to lane 2 – it is located in front of the car that would be at the pickup window door in lane 1 – this is meant for a safe place to get our team members to lane 2. There is also a striped area for our team members to use between lane 1 and lane 2 to serve multiple cars at a time in lane 2 (should that need arise during busy times – please see snippet below”.



Provided above is a description of two (2) canopies used to protect employees and customers from the elements; however, the submitted plans do not contain any drawings or specifications regarding these structures.

Five (5) existing driveways provide ingress and egress to the site, and all five (5) would remain to serve the new development. Three (3) of the driveways are on Middlebelt Road and two (2) are on Plymouth. Note that two (2) of the driveways are located on the former Walgreens property—one (1) on Middlebelt and one (1) on Plymouth—and both provide access to the subject site via a cross access agreement. Each major thoroughfare contains a primary driveway to the site. In the case of Middlebelt Road, this driveway is near the center of the site, just south of the proposed Chick-fil-A restaurant. On Plymouth Road, the main entrance and accompanying drive aisle is along the east side of the property and proposed Retail 1. Neither driveway would be signalized but with the anticipated increase in traffic, both would be modified and widened, including the addition of a deceleration lane on Plymouth Road. Partial acceleration/deceleration lanes currently exist on Middlebelt Road, and Wayne County will have to determine if extending the lane between the middle and the north driveways is warranted.

The building elevation drawings for Chick-fil-A indicate that the exterior of the restaurant would consist entirely of two different shades of brown-colored brick: dark and light. The windows and entrance areas would be highlighted with structural canopies. The highest point of the building, measured from the finish ground elevation to the top of the parapet wall of the roof, is shown at 20'-4½". This complies with the C-2 District Regulations, which has a maximum height restriction of thirty-five feet (35').

Part of this Phase includes the construction of an underground detention system under the main parking lot area and behind Retail 2 near the northeast corner of the site. The petitioner would need to provide drainage and storm water treatment details to the Engineering Department prior to obtaining permits for the proposed development.

Phase 2

In addition to the Chick-fil-A, redevelopment of the site includes the construction of a second multi-tenant retail building. The new building is shown at the south end of the parking lot adjacent to Plymouth Road between the Firestone Complete Auto Care center and the former Walgreens store. This new building, identified on the plans as "*Retail 1*", would be one-story in height and 8,914 square feet in size. Access would be provided via connections with the shopping center's existing driveways and parking aisles. The building elevation drawings indicate that the exterior for this building would consist of different shades of brick. The windows and entrances would be highlighted with structural canopies. The walls of the building would vary in height from 19'-9" to 25'-9". For clarification purposes, the plans show a future restaurant in Retail 1. Under the C-2 zoning regulations, restaurants with drive-up window facilities require waiver use approval. The Petitioner understands this requirement. Once a prospective tenant is identified, a waiver use application would be submitted for the Planning Commission's consideration.

Phase 3

The third phase involves a 5,378-square foot addition to the northeast corner of the existing shopping center building (*Retail 2*). With the expansion, Retail 2 would total 63,434 square feet. Additionally, the entire storefront elevation would be transformed and modernized. The updated architectural look and building materials are intended to complement the design of Retail 1. The exterior finish would consist of different shades of brick, and the updated façade would include several dimensional parapet walls along the top half of the structure. These vertical wall sections vary in height and are shown projecting above the roofline. The main change to the other three (3) elevations of the building would consist of repainting the existing block to match the new storefront color scheme. The highest point of the buildings, measured from the finish ground elevation to the top of the highest parapet, is shown at 32 feet. This complies with the C-2 District Regulations, which has a maximum height restriction of thirty-five feet (35').

Traffic Study

Included with the application is a Traffic Impact Assessment prepared by Rowe Professional Services Company. The report analyzes existing traffic counts, trip generation, trip distribution, and Levels of Service (LOS) for both existing and future conditions, and recommends several improvements to help mitigate the traffic impacts of the proposed project. These include: 1) adding overlap right turn phases on the eastbound, westbound, and northbound approaches at the intersection of Middlebelt Road and Plymouth Road; 2) changing the pedestrian actuation signal at the intersection to run parallel to Plymouth Road (crossing Middlebelt Road) instead of running parallel to Middlebelt Road (crossing Plymouth Road); 3) expanding both the middle driveway along Middlebelt Road and the east driveway along Plymouth Road from two (2) lanes (1 inbound, 1 outbound) to three (3) lanes (1 inbound, 2 outbound); 4) increasing the signal length at the intersection of Middlebelt and Plymouth Roads to 120 seconds along with optimizing the timing splits; and 5) adding a right turn taper at the east driveway on Plymouth Road. Staff has asked that the Traffic Consultant attend the Public Hearing to summarize the report's findings.

Parking

Required parking is based on the total amount of retail floor space on the site. As a Group Commercial Center with more than four (4) establishments and where less than fifteen percent (15%) of the gross floor area of the center is devoted to places of assembly (i.e., restaurants), parking is computed at a ratio of one (1) space for every 150 square feet of useable floor area. The combined gross floor area (GFA) of all three (3) buildings totals 77,333 square feet, which translates to a net useable floor area of 61,866 square feet (based on 80% of GFA). Thus, the required minimum number of parking spaces is **413**. The site plan shows a total of **397 spaces, resulting in a deficiency of 16, or 3.8% of the total number of required spaces**. All parking spaces, except the required handicapped spaces, are required to be striped at ten feet (10') wide by twenty feet (20') in length.

Landscaping

The landscape plan provides for a variety of plant materials shown around the foundations of the Chick-fil-A and Retail 1 as well as within the parking lot islands. The landscape plan is fully detailed and indicates the type, quantity, and size of plant materials. Notes on the plan indicate that the existing landscape areas along the street frontages of Middlebelt and Plymouth Roads would remain in their present configuration and where necessary would be "*restored*" if disturbed due to construction. Any landscaping along the right-of-way of Plymouth Road should be reviewed and approved by the Plymouth Road Development Authority.

Refuse

Two (2) dumpster enclosures are shown at the rear of the Retail 1, adjacent to a drive aisle that runs along the back of the building. Another dumpster enclosure is located at the northeast corner of the site behind Retail 2. There also a double dumpster enclosure located behind the Chick-fil-A restaurant along the site's north property line. The walls surrounding the containers would be 8'-8" in height and would be constructed out of a

brick veneer. The swing gates would be constructed out of a prefinished plastic weathered wood material.

Site Lighting

For exterior site lighting, information is provided on the type of fixtures and locations, but not height. The light poles should be consistent with the guidelines of the City of Livonia Outdoor Lighting Policy for the installation of exterior lighting in all non-residential zoning districts, which specifies that pole-mounted lights should not exceed a height of twenty feet (20') above grade.

Signs

According to the provisions set forth in Section 18.50H of the sign regulations, each tenant space of the retail buildings and the restaurant would be allowed one (1) wall sign not to exceed one (1) square foot for each one (1) lineal foot of the unit frontage. The development would also be permitted two (2) ground signs because the development has over 200 feet of frontage along both Middlebelt Road and Plymouth Road. Each ground sign shall not exceed forty (40) square feet in area and eight feet (8') in height. Any amount of signage more than what the ordinance allows would require a variance from the Zoning Board of Appeals.

December 15, 2020 Public Hearing:

Issues related to traffic dominated the discussion at the Study Meeting. Foremost among them was the turn movements at the center driveway on Middlebelt Road. The improvements recommended in the Developer's traffic study are primarily intended to facilitate left turn movements at the center approach by reducing the backup of cars at the intersection and producing longer gaps between each "platoon" of vehicles created by the adjacent traffic signals. Staff has requested that the Petitioner provide a plan that addresses both on-site and off-site traffic congestion during the so-called "honeymoon" period following the opening of the restaurant. Additionally, the Developer was asked to get written feedback from Wayne County and MDOT regarding the findings of the traffic report.

Approving Resolution: That the request to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road is hereby approved, subject to City Council approval and the following conditions:

1. That the Overall Site Plan identified as Sheet No. C01, dated November 5, 2020, as revised, prepared by Atwell, is hereby approved, and shall be adhered to.
2. That the Landscape Plan identified as Sheet No. C04, dated November 5, 2020, as revised, prepared by Atwell, is hereby approved, and shall be adhered to, except

PUBLIC HEARING

ITEM 1 Petition 2020-11-02-10– Shoppes of Livonia

Page 7

that a plan for replacing the trees and other plant materials along the site's frontage on Middlebelt Road shall be incorporated as part of Phase 1 of the development and submitted to the Planning Department for review and approval, and shall be completed prior to occupancy of the Chick-fil-A restaurant.

3. That all disturbed lawn areas shall be sodded in lieu of hydroseeding.
4. That underground sprinklers are to be provided for all landscaped and sodded areas and all planted materials shall be installed to the satisfaction of the Inspection Department and thereafter permanently maintained in a healthy condition.
5. That the Exterior Building Elevation Plans for the Chick-fil-A restaurant, as received by the Planning Commission on November 9, 2020, are hereby approved, and shall be adhered to.
6. That the Retail 1 – Elevations Plan identified as Drawing No. SD03, prepared by NORR, as received by the Planning Commission on November 9, 2020, is hereby approved, and shall be adhered to.
7. That the Retail 2 – Elevations Plan identified as Drawing No. SD04, prepared by NORR, as received by the Planning Commission on November 9, 2020, is hereby approved, and shall be adhered to.
8. That all rooftop mechanical equipment shall be concealed from public view on all sides by screening that shall be of a compatible character, material, and color to other exterior materials on the building.
9. That no less than six (6) weeks prior to the scheduled opening of the Chick-fil-A restaurant, the Petitioner shall submit to the Department of Public Safety Traffic Bureau for its review and approval details of how traffic will be managed, both on- and off-site, during the times when the stacking capacity of the drive-thru lanes is exceeded or when undue traffic congestion is occurring on the adjacent public thoroughfares.
10. That all traffic improvements, including additions or modifications to the traffic signals, approach geometrics, or traffic lanes, as deemed necessary by either Wayne County or the Michigan Department of Transportation (MDOT) to mitigate the traffic impacts of the project, shall be completed prior to the opening of the restaurant.
11. That the three walls of the trash dumpster areas shall be constructed out of building materials that shall complement that of the buildings. The enclosure gates shall be of solid panel steel construction or durable, long-lasting solid panel fiberglass.

PUBLIC HEARING

ITEM 1 Petition 2020-11-02-10– Shoppes of Livonia

Page 8

12. That the proposed construction shall meet the Wayne County Stormwater Ordinance, including detention requirements, and the Petitioner shall secure all required permits, including soil erosion and sedimentation control.
13. That all new pole-mounted light fixtures shall not exceed a height of twenty feet (20') and shall be aimed and shielded to minimize stray light trespassing across property lines and glaring into adjacent roadways.
14. That this approval is subject to the petitioner being granted a variance from the Zoning Board of Appeals for deficient parking and any conditions related thereto.
15. That any future drive-thru restaurant in Retail 1 shall require waiver use approval.
16. That only conforming wall signage is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals.
17. That no LED lightband or exposed neon shall be permitted on this site including, but not limited to, the building or around the windows.
18. That the specific plans referenced in this approving resolution shall be submitted to the Inspection Department at the time the building permits are applied for; and
19. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of one (1) year only from the date of approval by City Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

Denying Resolution: That the request to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road is hereby denied for the following reasons:

1. That the petitioner has failed to affirmatively show that the proposed use complies with all the special and general waiver use standards and requirements as set forth in Sections 11.03 and 19.06 of the Zoning Ordinance #543.
2. That the proposed use and its location, intensity, site layout and periods of operation are such that the use is incompatible to and not in harmony with the surrounding uses in the area.

PUBLIC HEARING

ITEM 1 Petition 2020-11-02-10– Shoppes of Livonia

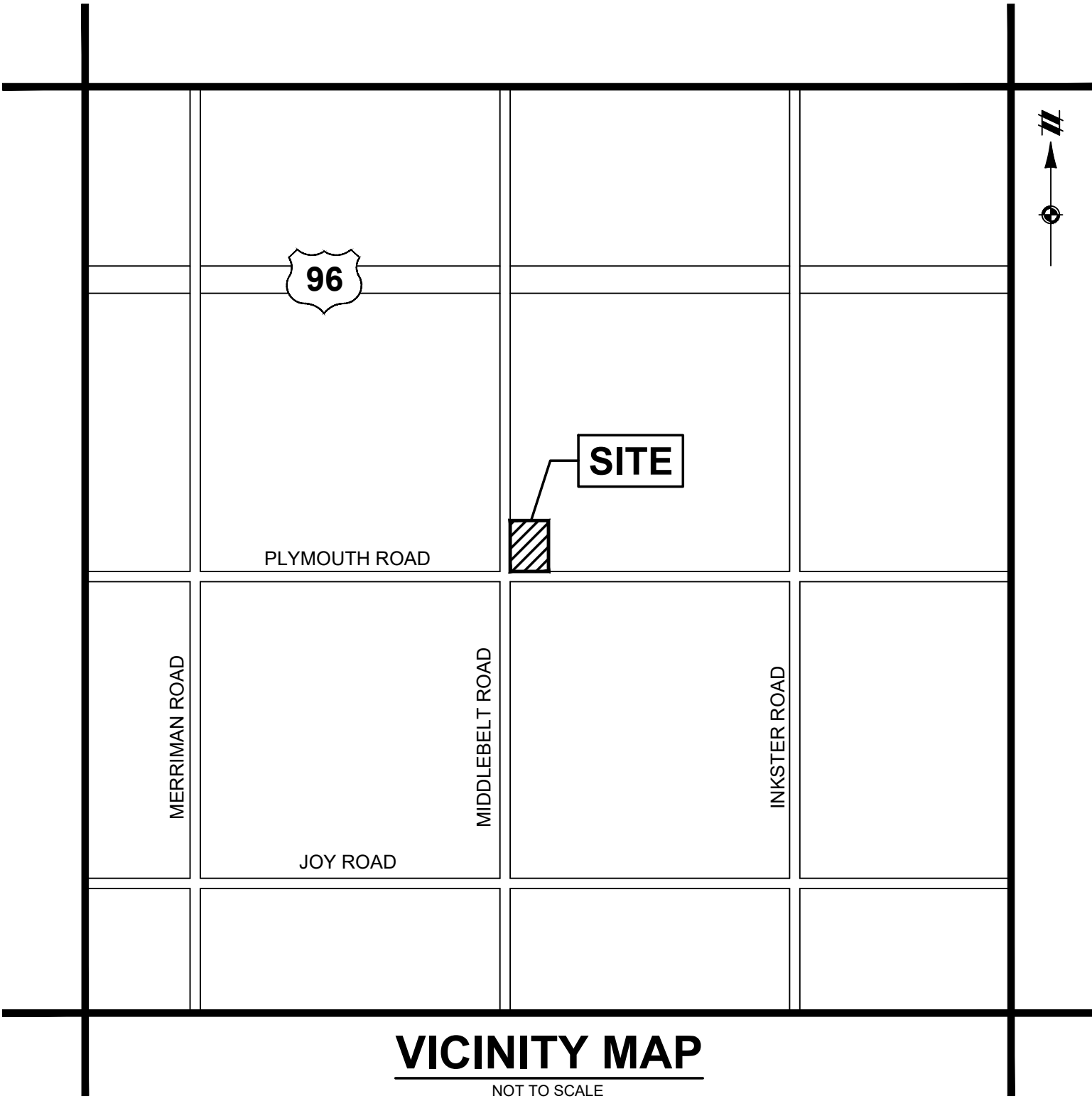
Page 9

3. That the proposed site layout and its relation to streets giving access to it, particularly with respect to vehicular turning movements in relation to routes of traffic flow and location and access of off-street parking, will be hazardous and inconvenient, and will unduly conflict with the normal traffic flow and circulation patterns in the surrounding area.
4. That the proposed use is contrary to the purposes, goals, and objectives of the Zoning Ordinance, which seek to ensure compatibility and appropriateness of uses, enhance property values, and create and promote a more favorable environment for neighborhood use and enjoyment.
5. That the petitioner has failed to sufficiently demonstrate that the site has the capacity to accommodate the proposed use; and
6. That the proposal fails to conclusively deal with all the concerns deemed necessary for the safety and welfare of the City and its residents.

SHOPPES OF LIVONIA

29320 PLYMOUTH ROAD
CITY OF LIVONIA
WAYNE COUNTY, MICHIGAN 48150

SITE PLANS



DEVELOPMENT TEAM

DEVELOPER / APPLICANT
SYMMETRY PROPERTY MANAGEMENT
4198 ORCHARD LAKE ROAD, STE 250
ORCHARD LAKE, MI 48232
CONTACT: FRANK JARBOU
PHONE: 248-465-0220

CHICK-FIL-A ARCHITECT
GPD GROUP
520 S. MAIN STREET, STE. 2531
AKRON, OH 44311
CONTACT: ELLEN SELLE
PHONE: 216-927-8650
EMAIL: eselle@gpdgroup.com

CIVIL ENGINEER

ATWELL, LLC
12745 23 MILE ROAD, STE. 200
SHELBY TWP., MI 48315
CONTACT: MICHAEL McPHERSON
EMAIL:mmcpherson@atwell-group.com
PHONE: 586-786-9800

RETAIL ARCHITECT

NORR
150 W. JEFFERSON AVE., STE 1300
DETROIT, MI 48226
CONTACT: AMY CONTI
PHONE: 313-324-3129
EMAIL: amy.conti@norr.com

GOVERNING AGENCIES / UTILITY CONTACTS

PLANNING

CITY OF LIVONIA
33000 CIVIC CENTER DRIVE
LIVONIA, MI 48154
CONTACT: MARK TAORMINA
PHONE: 734-466-2292
EMAIL: mtaormina@ci.livonia.mi.us

ENGINEERING

CITY OF LIVONIA
33000 CIVIC CENTER DRIVE
LIVONIA, MI 48154
CONTACT: LOUAI YOUKHANNA
PHONE: 734-466-2574
EMAIL: lyoukhanna@ci.livonia.us

MIDDLEBELT RD. R.O.W.

WAYNE COUNTY DPS
CONSTRUCTION PERMITS
33809 MICHIGAN AVE.
WAYNE, MI 48184
PHONE: 734-595-6504
EMAIL: hkassem@waynecounty.com

PLYMOUTH RD R.O.W.

MDOT BRIGHTON TSC
10321 E. GRAND RIVER, SUITE 500
BRIGHTON, MI 48116
LAURENT FOURNIER
PHONE: 517-243-9776
FOURNIERL@MICHIGAN.GOV

PARCEL DESCRIPTION

PART OF THE SOUTHWEST 1/4 OF SECTION 25, TOWN 1 SOUTH, RANGE 9 EAST, CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHWEST 1/4 OF SECTION 25; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 327.00 FEET; THENCE SOUTH 89 DEGREES 26 MINUTES 10 SECONDS EAST 60.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 483.18 FEET; THENCE SOUTH 89 DEGREES 39 MINUTES 37 SECONDS EAST 601.78 FEET; THENCE SOUTH 00 DEGREES 25 MINUTES 53 SECONDS WEST 476.00 FEET; THENCE NORTH 89 DEGREES 39 MINUTES 37 SECONDS WEST 153.95 FEET; THENCE SOUTH 00 DEGREES 25 MINUTES 53 SECONDS WEST 274.00 FEET; THENCE NORTH 89 DEGREES 39 MINUTES 35 SECONDS WEST 186.99 FEET; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 20.00 FEET; THENCE SOUTH 89 DEGREES 39 MINUTES 39 SECONDS EAST 10.00 FEET; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 245.70 FEET; THENCE NORTH 89 DEGREES 26 MINUTES 10 SECONDS WEST 273.00 FEET TO THE POINT OF BEGINNING.

PROJECT NARRATIVE

THIS PROJECT IS A RE-DEVELOPMENT OF AN EXISTING COMMERCIAL PROPERTY AT THE NORTHEAST CORNER OF PLYMOUTH ROAD AND MIDDLEBELT ROAD IN LIVONIA, MICHIGAN.

THE EXISTING BUILDING IS PROPOSED TO BE PARTIALLY DEMOLISHED TO MAKE ROOM FOR A NEW CHICK-FIL-A RESTAURANT WITH DRIVE-THRU CAPABILITY. THE REMAINING PORTION OF THE EXISTING BUILDING WILL BE ENCLOSED AND REMODELED INTERNALLY AND EXTERNALLY FOR NEW TENANTS. ADDITIONALLY, A NEW MULTI-TENANT OUTLOT BUILDING, WITH DRIVE-THRU CAPABILITY, IS PROPOSED NEAR THE MIDDLEBELT ROAD FRONTAGE.

THE EXISTING PARKING LOT WILL BE REFURBISHED VIA A COMBINATION OF NEW PAVEMENT SECTIONS AND MILLING & OVERLAYING EXISTING PAVEMENT.

NEW UNDERGROUND UTILITIES WILL BE PROVIDED FOR ALL BUILDINGS ON-SITE. AN UNDERGROUND STORMWATER DETENTION SYSTEM IS PROVIDED IN ACCORDANCE WITH CITY OF LIVONIA STANDARDS.

THIS PROJECT IS PROPOSED TO BE DEVELOPED IN UP TO THREE (3) PHASES. REFER TO THE INCLUDED PHASING PLAN FOR ADDITIONAL INFORMATION.

SHEET INDEX

- C00 COVER
- C01 OVERALL LAYOUT PLAN
- C02 PRELIMINARY UTILITY PLAN
- C03 PHASING PLAN
- C04 LANDSCAPE PLAN

ATTACHED PLANS
ALTA SURVEY
PHOTOMETRIC PLAN
CHICK-FIL-A FLOOR PLAN
CHICK-FIL-A ELEVATIONS
CHICK-FIL-A TRASH ENCLOSURE DETAILS
RETAIL BUILDING 1 FLOOR PLAN
RETAIL BUILDING 2 FLOOR PLAN
RETAIL BUILDING 1 ELEVATIONS
RETAIL BUILDING 2 ELEVATIONS
RETAIL BUILDING 1 COLOR RENDERINGS
RETAIL BUILDING 2 COLOR RENDERINGS



Know what's below.
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR THE SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SHELBY TOWNSHIP, MI 48315
313-778-7860



SECTION 25	TOWN 1 SOUTH, RANGE 9 EAST	CITY OF LIVONIA	WAYNE COUNTY, MICHIGAN
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SYMMETRY PROPERTY MANAGEMENT	SHOPPES OF LIVONIA SITE PLANS	COVER
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DATE	SEPTEMBER 18, 2020
REVISIONS/SUBMITTALS	11-05-2020 CITY SUBMITTAL

NO SCALE
DRAWN BY: EM
CHECKED BY: EM
PROJECT MANAGER: MM
JOB #: 18003853
SHEET NO.

C00



CAD FILE: \\18003853\DWG\PLAN SETS\SITE PLANS\18003853-C00-01

LEGEND

---	PROPERTY LINE	○	EXISTING / PROPOSED MANHOLE
---	EXISTING OVERHEAD LINES	▷	EXISTING / PROPOSED HYDRANT
---	EXISTING STORM SEWER	⊗	EXISTING / PROPOSED VALVE OR STOP BOX
---	EXISTING SANITARY SEWER	✱	EXISTING / PROPOSED LIGHT POLE
---	EXISTING WATER	•	PROPOSED CLEANOUT
---	PROPOSED SANITARY SEWER	⊗	EXISTING UTILITY POLE
---	PROPOSED WATER	⊗	TRANSFORMER
---	PROPOSED STORM SEWER		
---	PROPOSED UNDERGROUND ELECTRIC		
---	PROPOSED GAS		
---	PROPOSED UNDERGROUND TELEPHONE/DATA		

NOTES

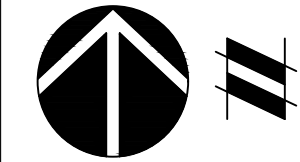
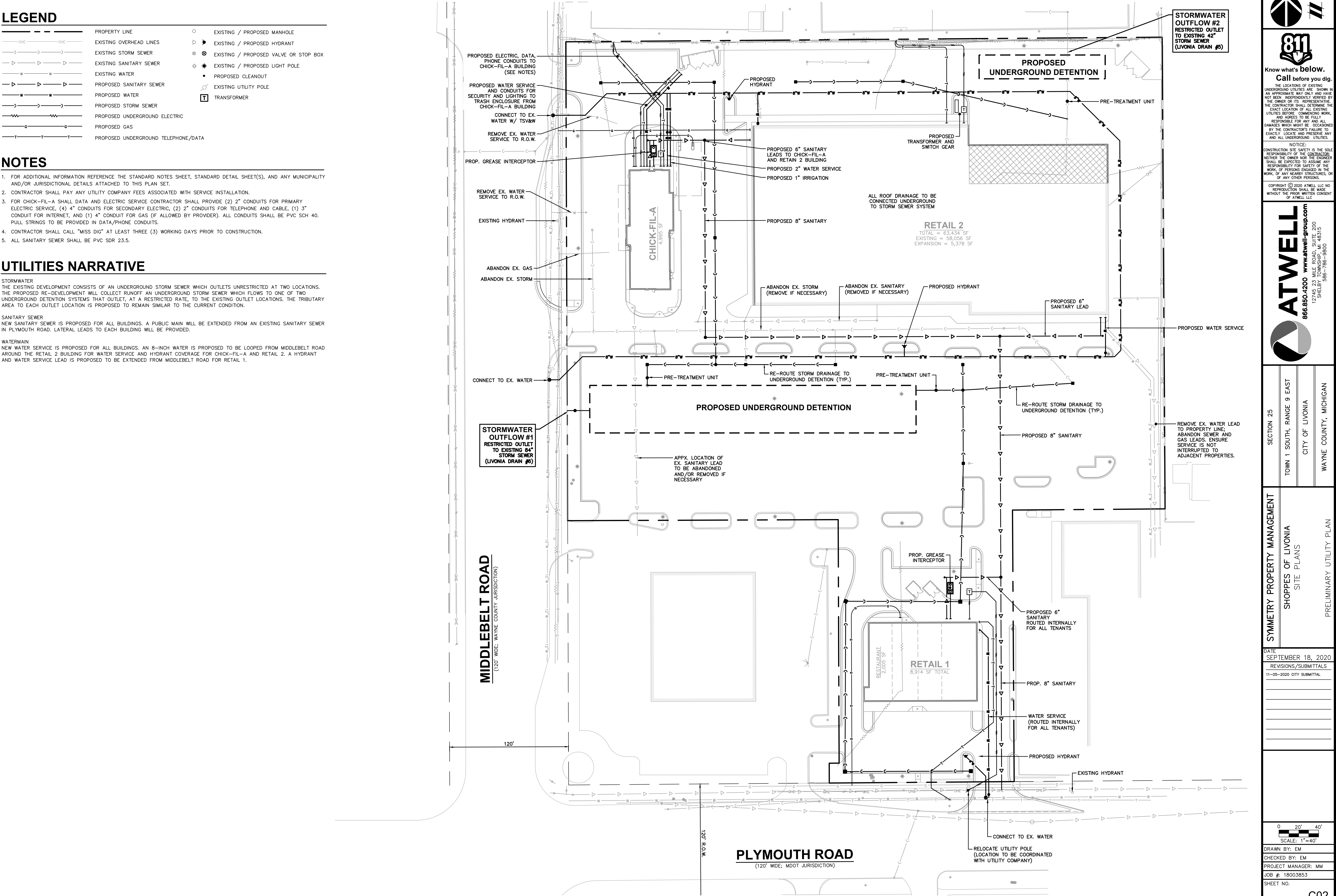
- FOR ADDITIONAL INFORMATION REFERENCE THE STANDARD NOTES SHEET, STANDARD DETAIL SHEET(S), AND ANY MUNICIPALITY AND/OR JURISDICTIONAL DETAILS ATTACHED TO THIS PLAN SET.
- CONTRACTOR SHALL PAY ANY UTILITY COMPANY FEES ASSOCIATED WITH SERVICE INSTALLATION.
- FOR CHICK-FIL-A SHALL DATA AND ELECTRIC SERVICE CONTRACTOR SHALL PROVIDE (2) 2" CONDUITS FOR PRIMARY ELECTRIC SERVICE, (4) 4" CONDUITS FOR SECONDARY ELECTRIC, (2) 2" CONDUITS FOR TELEPHONE AND CABLE, (1) 3" CONDUIT FOR INTERNET, AND (1) 4" CONDUIT FOR GAS (IF ALLOWED BY PROVIDER). ALL CONDUITS SHALL BE PVC SCH 40. PULL STRINGS TO BE PROVIDED IN DATA/PHONE CONDUITS.
- CONTRACTOR SHALL CALL "MISS DIG" AT LEAST THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION.
- ALL SANITARY SEWER SHALL BE PVC SDR 23.5.

UTILITIES NARRATIVE

STORMWATER
THE EXISTING DEVELOPMENT CONSISTS OF AN UNDERGROUND STORM SEWER WHICH OUTLETS UNRESTRICTED AT TWO LOCATIONS. THE PROPOSED RE-DEVELOPMENT WILL COLLECT RUNOFF AN UNDERGROUND STORM SEWER WHICH FLOWS TO ONE OF TWO UNDERGROUND DETENTION SYSTEMS THAT OUTLET, AT A RESTRICTED RATE, TO THE EXISTING OUTLET LOCATIONS. THE TRIBUTARY AREA TO EACH OUTLET LOCATION IS PROPOSED TO REMAIN SIMILAR TO THE CURRENT CONDITION.

SANITARY SEWER
NEW SANITARY SEWER IS PROPOSED FOR ALL BUILDINGS. A PUBLIC MAIN WILL BE EXTENDED FROM AN EXISTING SANITARY SEWER IN PLYMOUTH ROAD. LATERAL LEADS TO EACH BUILDING WILL BE PROVIDED.

WATERMAIN
NEW WATER SERVICE IS PROPOSED FOR ALL BUILDINGS. AN 8-INCH WATER IS PROPOSED TO BE LOOPED FROM MIDDLEBELT ROAD AROUND THE RETAIL 2 BUILDING FOR WATER SERVICE AND HYDRANT COVERAGE FOR CHICK-FIL-A AND RETAIL 2. A HYDRANT AND WATER SERVICE LEAD IS PROPOSED TO BE EXTENDED FROM MIDDLEBELT ROAD FOR RETAIL 1.



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SECTION 25
TOWN 1 SOUTH, RANGE 9 EAST
CITY OF LIVONIA
WAYNE COUNTY, MICHIGAN

SYMMETRY PROPERTY MANAGEMENT
SHOPPES OF LIVONIA
SITE PLANS
PRELIMINARY UTILITY PLAN

DATE
SEPTEMBER 18, 2020
REVISIONS/SUBMITTALS
11-05-2020 CITY SUBMITTAL

0 20' 40'
SCALE: 1"=40'

DRAWN BY: EM
CHECKED BY: EM
PROJECT MANAGER: MM
JOB #: 18003853
SHEET NO.

LEGEND

- PHASE 1 AREA
- PHASE 2 AREA
- PHASE 3 AREA

PHASE 1 ACTIVITY

1.

DEMOLISH PORTIONS OF EXISTING RETAIL BUILDING NECESSARY FOR CHICK-FIL-A SITE CONSTRUCTION.
2.

CONSTRUCT DEMISING WALL FOR EXISTING RETAIL BUILDING.
3.

CONSTRUCT CHICK-FIL-A BUILDING AND ASSOCIATED PARKING, AND FRANCHISE UTILITY SERVICES.
4.

CONSTRUCT SANITARY SEWER TO THE EXTENT NECESSARY TO PROVIDE SERVICE TO CHICK-FIL-A.
5.

CONSTRUCT UNDERGROUND DETENTION SYSTEM IN MAIN PARKING AREA.
6.

CONSTRUCT WATERMANS UP TO PROPOSED HYDRANTS.

PHASE 2 ACTIVITY

1.

CONSTRUCT MULTI-TENANT BUILDING, ASSOCIATED PARKING, AND SITE AMENITIES.
2.

CONSTRUCT SANITARY SERVICE CONNECTION TO PHASE 1 SANITARY SEWER.
3.

CONSTRUCT UTILITY SERVICE LEADS AND PROPOSED HYDRANT.

PHASE 3 ACTIVITY

1.

CONSTRUCT ADDITION TO THE EXISTING RETAIL BUILDING.
2.

CONSTRUCT ALL REMAINING UPGRADES TO THE EXISTING RETAIL BUILDING.
3.

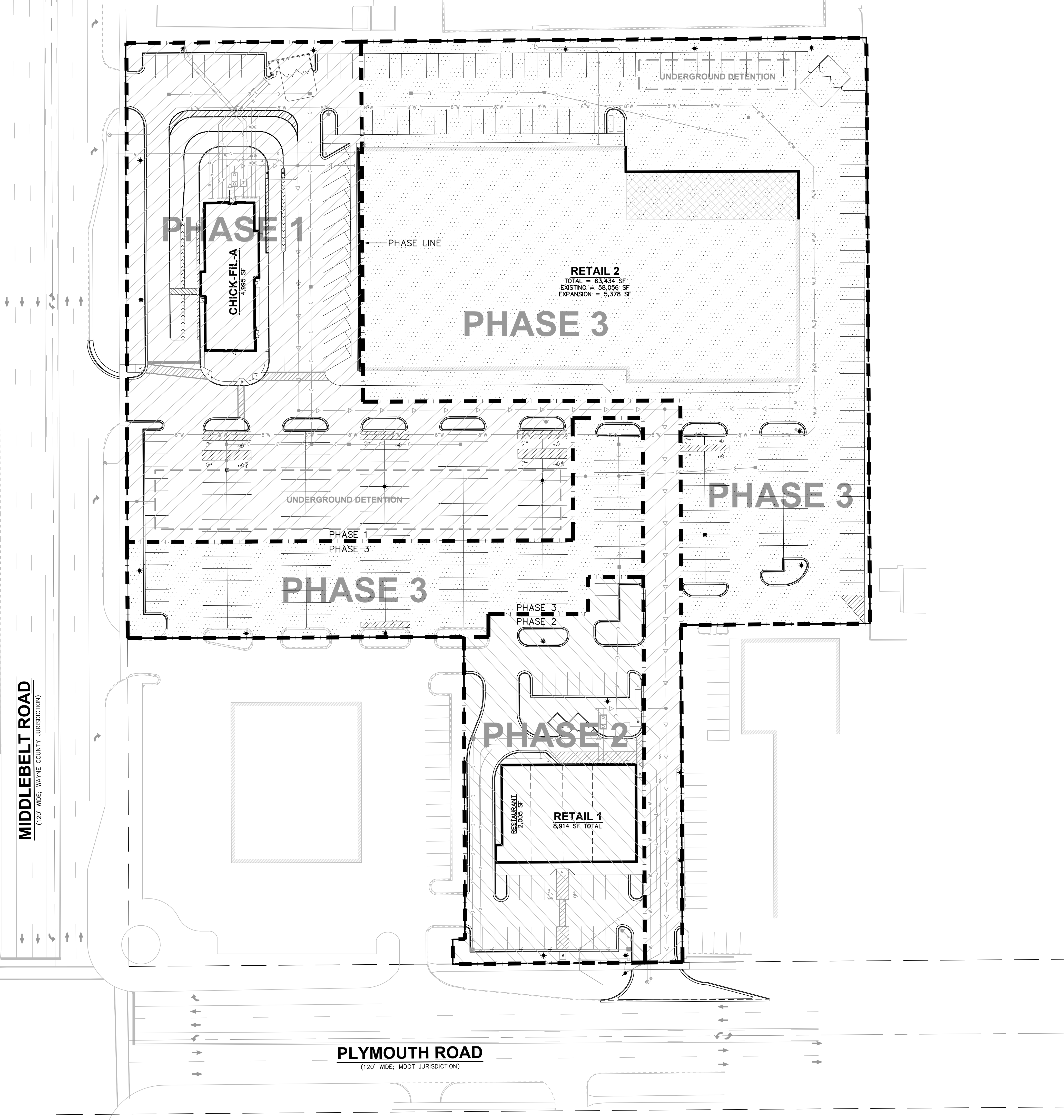
CONSTRUCT REMAINING WATERMAIN LOOP AROUND THE EXISTING BUILDING.
4.

CONSTRUCT REMAINING PAVING/STRIPING IN MAIN PARKING AREA.
5.

CONSTRUCT REMAINING STORM SEWER IN MAIN PARKING AREA; CONNECT TO UNDERGROUND DETENTION.
6.

CONSTRUCT SECONDARY UNDERGROUND DETENTION AREA AT NORTHEAST CORNER OF PROPERTY.
7.

CONSTRUCT UTILITY SERVICES TO EXISTING BUILDING.



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SECTION 25

TOWN 1 SOUTH, RANGE 9 EAST

CITY OF LIVONIA

WAYNE COUNTY, MICHIGAN

SYMMETRY PROPERTY MANAGEMENT

SHOPPES OF LIVONIA

SITE PLANS

PHASING PLAN

DATE

SEPTEMBER 18, 2020

REVISIONS/SUBMITTALS

11-05-2020 CITY SUBMITTAL

SCALE: 1"=40'

DRAWN BY: EM

CHECKED BY: EM

PROJECT MANAGER: MM

JOB #: 18003853

SHEET NO.

C03

LEGEND

	PROPERTY LINE		DECIDUOUS TREE
	SANITARY SEWER		EVERGREEN TREE
	STORM SEWER		EVERGREEN SHRUB
	WATERMAIN		DECIDUOUS SHRUB
	GAS		PERENNIAL GRASS
	UNDERGROUND ELECTRIC		EXISTING TREE
	UNDERGROUND TELEPHONE		
	FENCE		
	PROPOSED GRASS		
	DECORATIVE STONE		
	PERENNIAL FLOWERS		
	ANNUAL COLOR		

LANDSCAPE REQUIREMENTS SUMMARY

ITEM	QTY PROVIDED	QTY REQUIRED	FORMULA
OPEN SPACE	8% (0.63 AC.)	1.16 AC.	15% OF TOTAL SITE

DECIDUOUS TREE SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
CC	6	CERCIS CANADENSIS	EASTERN REDBUD	3" CAL.	B & B
CF	5	CORNUS FLORIDA	FLOWERING DOGWOOD	3" CAL.	B & B
MS	4	MAGNOLIA STELLATA	STAR MAGNOLIA	3" CAL.	B & B

SHRUB SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
TM	34	TAXUS X. MEDIA 'DENSIFORMIS'	DENSE YEW	30"*	CONT.
TO	32	THUJA OCCIDENTALIS	ARBORVITAE	5' HT.	B & B
EA	14	EUONYMUS FORTUNEI 'EMERALD N GOLD'	WINTERCREEPER	24"	CONT.

*NOTE: MUST BE 30" HEIGHT AT THE TIME OF PLANTING

PERENNIAL FLOWER SCHEDULE

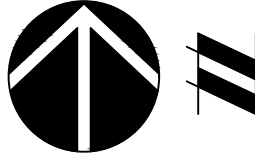
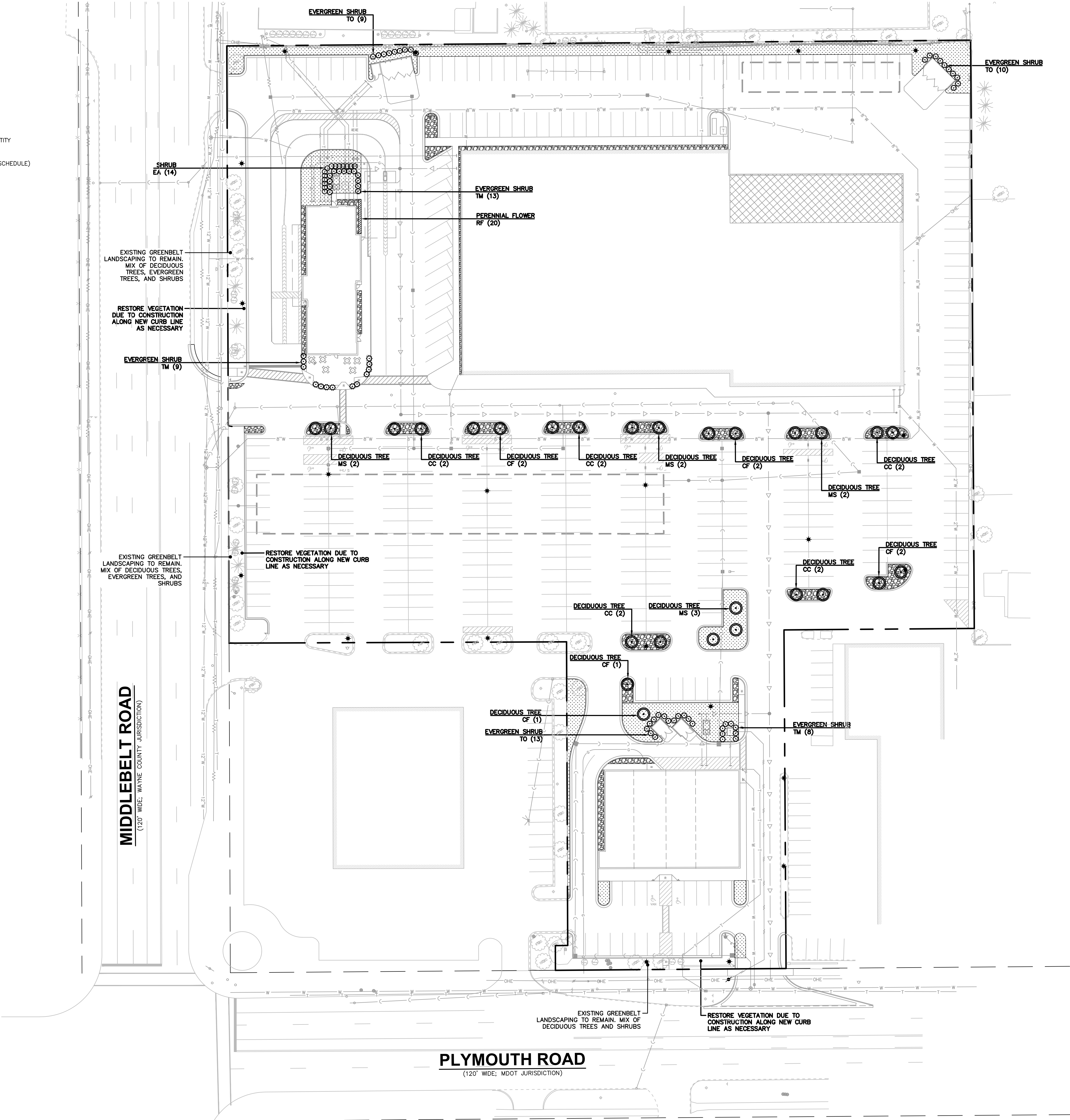
RF	20	RUDBECKIA FULGIDA 'GOLDSTRUM'	BLACK EYED SUSAN	1 GAL.	CONT.
----	----	-------------------------------	------------------	--------	-------

NOTES TO CONTRACTOR

- ALL DISEASED, DAMAGED, OR DEAD PLANTING MATERIALS SHALL BE REMOVED IN ACCORDANCE WITH STANDARDS OF THE CITY OF LIVONIA ZONING ORDINANCE.
- ALL PLANTS SHALL CONFORM TO THE CURRENT ISSUE OF THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND SHALL HAVE PASSED INSPECTIONS REQUIRED UNDER STATE REGULATIONS.
- ALL LANDSCAPED AREAS SHALL BE COVERED BY GRASS OR OTHER LIVING GROUND COVER. GRASS AREAS SHALL BE PLANTED IN SPECIES NORMALLY GROWN AS PERMANENT LAWNS IN THE CITY OF STERLING HEIGHTS.
- PROVIDE SHREDDED HARDWOOD MULCH AROUND THE BASE OF ALL TREES.
- ALL TREE STAKING IN PARKING LOT ISLANDS SHALL BE REMOVED IN AREAS OPEN TO BUSINESS.
- SITE IRRIGATION TO BE PROVIDED FOR ALL PROPOSED LANDSCAPE IMPROVEMENT AREAS AND LAWN AREAS.

PLANT KEY

PA (3) PLANT QUANTITY
PLANT KEY (REFER TO SCHEDULE)



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. WHETHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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866.850.4200 www.atwell-group.com

12745 23 MILE ROAD, SUITE 200
SHELBY TOWNSHIP, MI 48315
313-766-9800



SECTION 25
TOWN 1 SOUTH, RANGE 9 EAST
CITY OF LIVONIA
WAYNE COUNTY, MICHIGAN

SYMMETRY PROPERTY MANAGEMENT
SHOPPES OF LIVONIA
SITE PLANS
LANDSCAPE PLAN

DATE
SEPTEMBER 18, 2020
REVISIONS/SUBMITTALS
11-05-2020 CITY SUBMITTAL

0 20' 40'
SCALE: 1"=40'

DRAWN BY: EM
CHECKED BY: EM
PROJECT MANAGER: MM
JOB #: 18003853
SHEET NO.

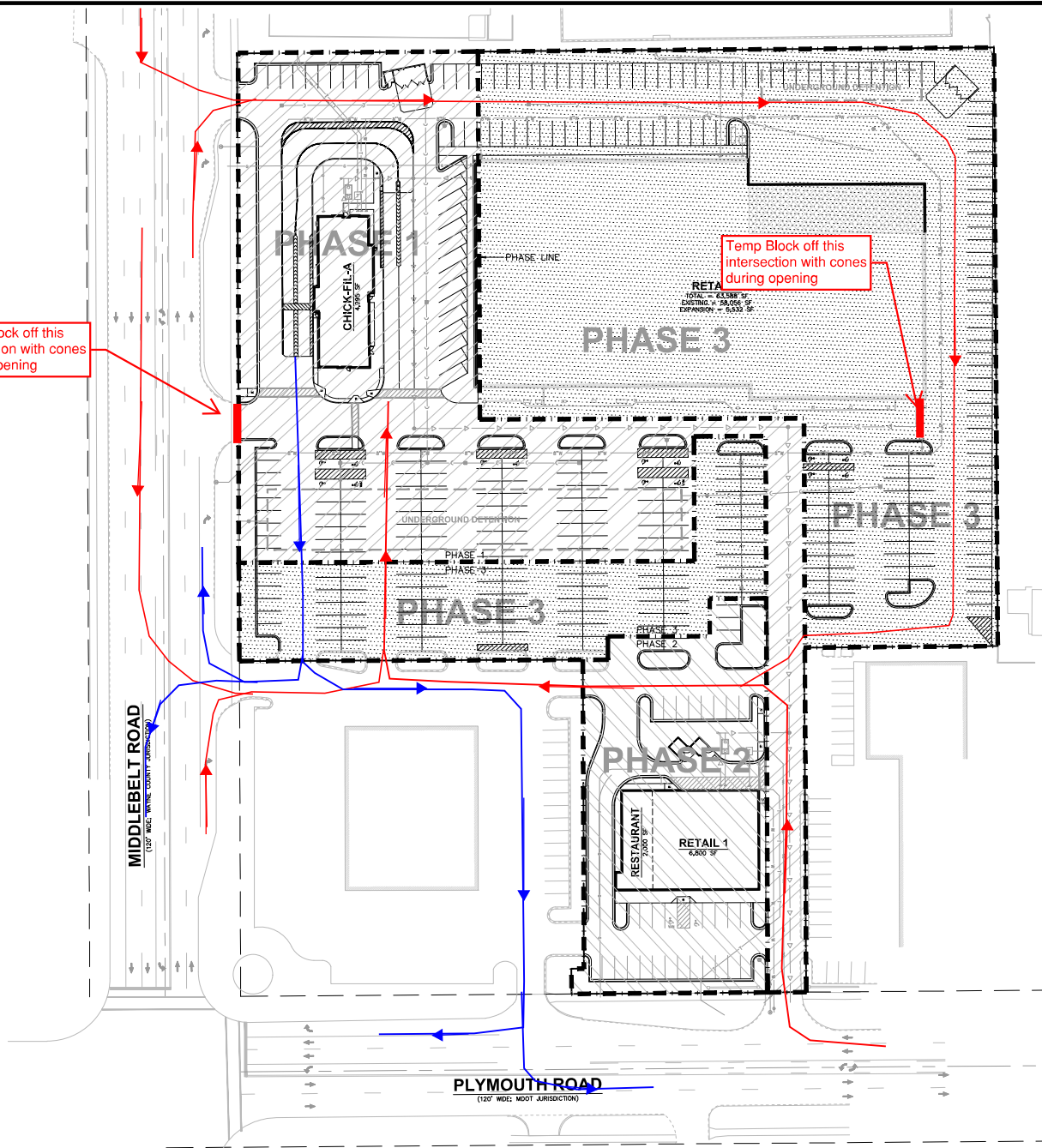
CAD FILE: \\18003853\DWG\PLAN SETS\SITE PLANS\18003853-C04-LS

C04

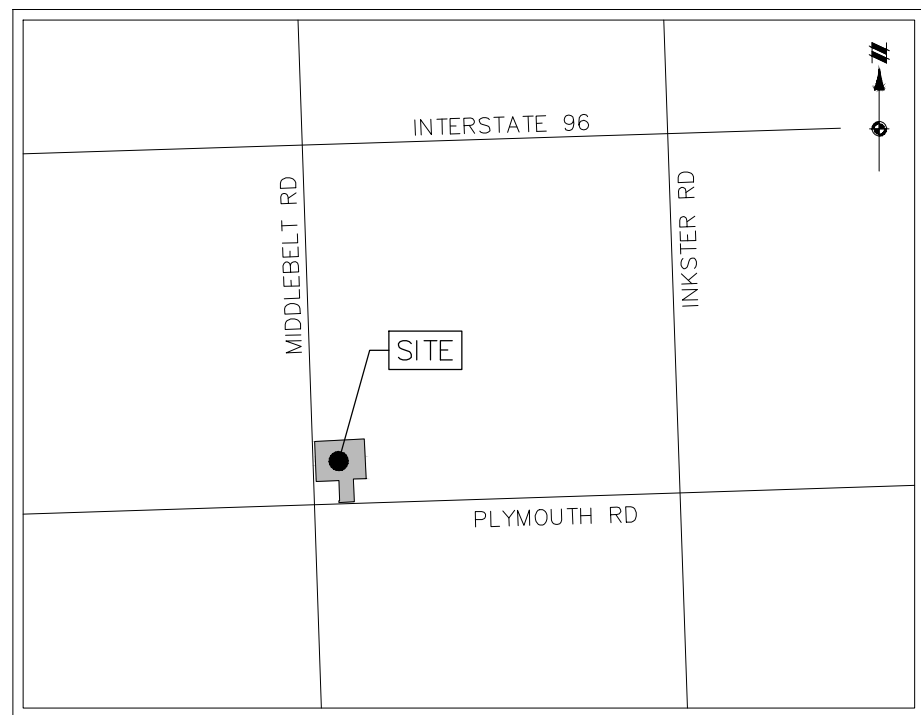
1. DEMOLISH PORTIONS OF EXISTING RETAIL BUILDING NECESSARY FOR CHICK-FIL-A SITE CONSTRUCTION.
2. CONSTRUCT DEMISING WALL FOR EXISTING RETAIL BUILDING.
3. CONSTRUCT CHICK-FIL-A BUILDING AND ASSOCIATED PARKING, AND FRANCHISE UTILITY SERVICES.
4. CONSTRUCT SANITARY SEWER TO THE EXTENT NECESSARY TO PROVIDE SERVICE TO CHICK-FIL-A.
5. CONSTRUCT UNDERGROUND DETENTION SYSTEM IN MAIN PARKING AREA.
6. CONSTRUCT WATERMANS UP TO PROPOSED HYDRANTS.

1. CONSTRUCT MULTI-TENANT BUILDING, ASSOCIATED PARKING, AND SITE AMENITIES.
2. CONSTRUCT SANITARY SERVICE CONNECTION TO PHASE 1 SANITARY SEWER.
3. CONSTRUCT UTILITY SERVICE LEADS AND PROPOSED HYDRANT.

1. CONSTRUCT ADDITION TO THE EXISTING RETAIL BUILDING.
2. CONSTRUCT ALL REMAINING UPDATES TO THE EXISTING RETAIL BUILDING.
3. CONSTRUCT REMAINING WATERMAN LOOP AROUND THE EXISTING BUILDING.
4. CONSTRUCT REMAINING PAVING/STRIPING IN MAIN PARKING AREA.
5. CONSTRUCT REMAINING STORM SEWER IN MAIN PARKING AREA; CONNECT TO UNDERGROUND DETENTION.
6. CONSTRUCT SECONDARY UNDERGROUND DETENTION AREA AT NORTHEAST CORNER OF PROPERTY.
7. CONSTRUCT UTILITY SERVICES TO EXISTING BUILDING.



ALTA/NSPS LAND TITLE SURVEY



VICINITY MAP
NOT TO SCALE

LEGEND

	SECTION CORNER
	FOUND IRON ROD
	FOUND CAPPED IRON ROD
	FOUND MAG NAIL
	EXISTING MAILBOX
	EXISTING SIGN
	EXISTING LIGHTPOLE
	EXISTING TELEPHONE RISER
	EXISTING GUY ANCHOR WITH WIRE
	EXISTING UTILITY POLE
	EXISTING WATER BOX
	EXISTING FIRE HYDRANT
	EXISTING GAS VALVE
	EXISTING MANHOLE/CATCH BASIN
	EXISTING ELECTRIC TRANSFORMER
	EXISTING BOLLARD
	EXISTING ELECTRIC RISER/BOX
	EXISTING ELECTRIC METER
	EXISTING GAS METER
	EXISTING HANDHOLE
	EXISTING SHRUB
	UNDERGROUND ELECTRIC MARKER
	UNDERGROUND WATER MARKER
	UNDERGROUND TELEPHONE MARKER
	EXISTING GROUND ELEVATION
	EXISTING CURB ELEVATION
	EXISTING GUTTER ELEVATION
	EXISTING PAVEMENT ELEVATION
	RECORD
	MEASURED
	BOUNDARY LINE
	BOUNDARY ADJACENT LINE
	EASEMENT LINE
	OVERHEAD UTILITY LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND TELEPHONE LINE
	UNDERGROUND GAS LINE
	UNDERGROUND STORM LINE
	UNDERGROUND SANITARY LINE
	UNDERGROUND WATER LINE
	EXISTING FENCE
	EXISTING GUARD RAIL
	EXISTING CURB AND GUTTER
	EXISTING GROUND CONTOUR
	EXISTING BUILDING
	POINT OF BEGINNING
	POINT OF COMMENCEMENT

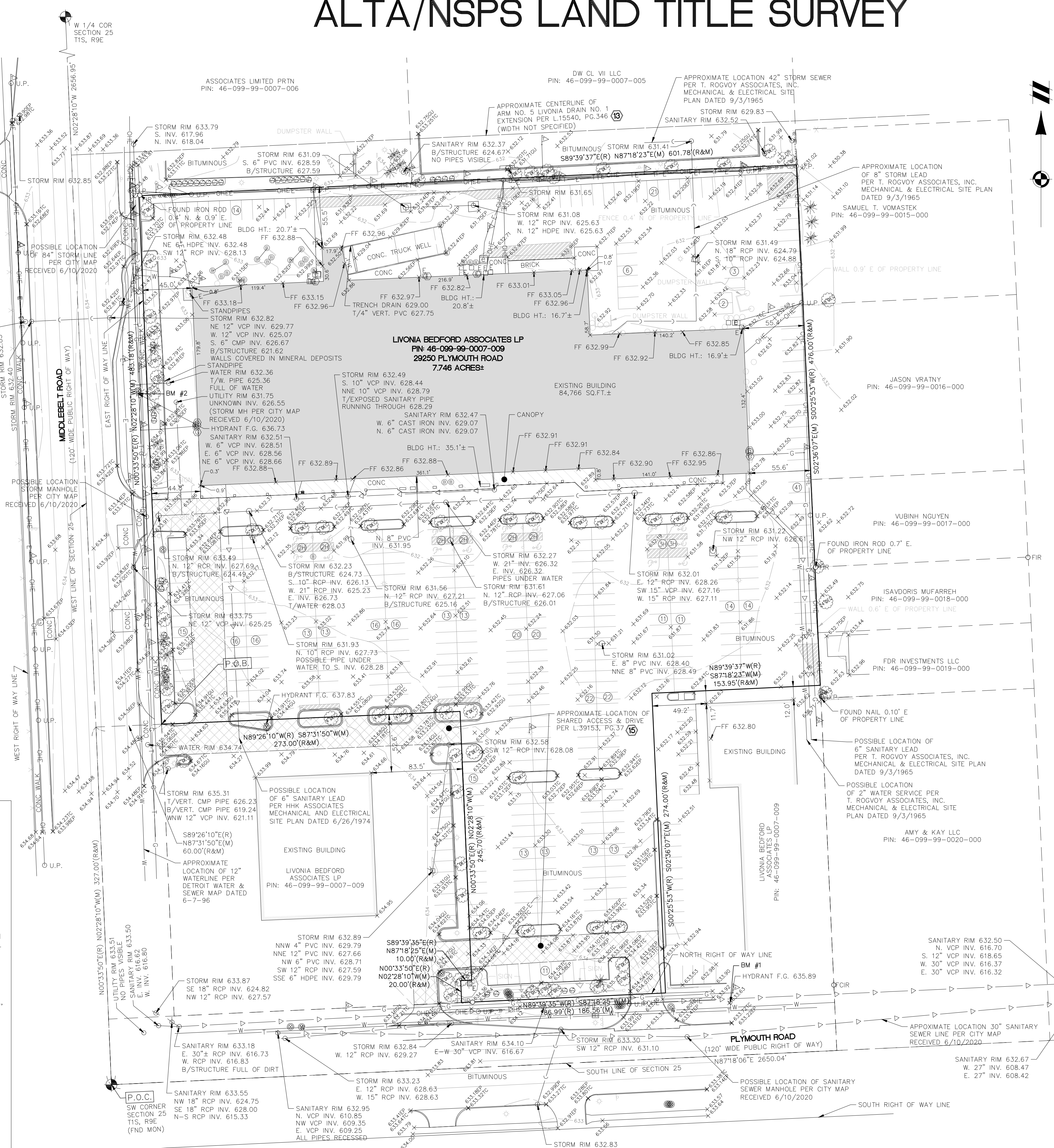
NOTES:

- BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (NAD83), SOUTH ZONE, GROUND DISTANCES, INITIAL MEASUREMENTS. VERTICAL DATUM IS BASED ON NAVD88.
- THE SUBJECT PROPERTY IS LOCATED WITHIN FLOOD ZONE "X" (AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) ACCORDING TO F.E.M.A FIRM MAP NUMBER 2616300227E, DATED 02/02/2012.
- WATER MAIN, STORM SEWER, SANITARY SEWER AND FRANCHISE UTILITY STRUCTURES HAVE BEEN FIELD LOCATED WHERE VISIBLE, UTILITY AND AS-BUILT MAPS HAVE BEEN REQUESTED AND SOME MAPS HAVE BEEN RECEIVED AT DATE OF THIS SURVEY. FRANCHISE UTILITY MAPS HAVE BEEN REQUESTED FROM THE APPROPRIATE FRANCHISE COMPANIES, BUT NOT ALL MAPS HAVE BEEN RECEIVED AT DATE OF SURVEY.

NOTE: THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED.

NOTE TO THE CLIENT, INSURER, AND LENDER - WITH REGARD TO TABLE A, ITEM 11, SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.IV. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, IN WHICH CASE THE SURVEYOR SHALL NOTE ON THE PLAT OR MAP HOW THIS AFFECTED THE SURVEYOR'S ASSESSMENT OF THE LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY.

- ZONING REPORT OR LETTER NOT PROVIDED AT THE DATE OF THE SURVEY.
- THE SUBJECT PROPERTY HAS 18 HANDICAPPED ACCESSIBLE AND 430 TRADITIONAL PARKING STALLS AS OF THE FIELDWORK DATE.
- THERE WAS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.
- REFERENCE DRAWING: ALTA/NSPS LAND TITLE SURVEY PERFORMED BY KEM-TEC, PROJECT NO.: 19-00567, DATED MARCH 12, 2019.
- SCHEDULE C DESCRIPTION PER REFERENCED COMMITMENT MATHEMATICALLY MISCLOSES BY 0.43 FEET.



SITE BENCHMARKS:

BM #1: TOP OF NUT ON FIRE HYDRANT IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD E: 635.89 (NAV88)

BM #2: TOP OF NUT ON FIRE HYDRANT IN EAST RIGHT OF WAY OF MIDDLEBELT ROAD E: 636.73 (NAV88)

SCHEDULE C DESCRIPTION PER ALTA COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO.: 839213, COMMITMENT DATE: JANUARY 22, 2019:

LAND IN THE CITY OF LIVONIA, WAYNE COUNTY, MI, DESCRIBED AS FOLLOWS:

PART OF THE SOUTHWEST 1/4 OF SECTION 25, TOWN 1 SOUTH, RANGE 9 EAST, CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHWEST 1/4 OF SECTION 25; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 327.00 FEET; THENCE SOUTH 89 DEGREES 26 MINUTES 10 SECONDS EAST 60.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 483.18 FEET; THENCE SOUTH 89 DEGREES 39 MINUTES 37 SECONDS EAST 601.78 FEET; THENCE SOUTH 00 DEGREES 25 MINUTES 53 SECONDS WEST 476.00 FEET; THENCE NORTH 89 DEGREES 39 MINUTES 37 SECONDS WEST 153.95 FEET; THENCE SOUTH 00 DEGREES 25 MINUTES 53 SECONDS WEST 274.00 FEET; THENCE NORTH 89 DEGREES 39 MINUTES 35 SECONDS WEST 186.99 FEET; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 20.00 FEET; THENCE SOUTH 89 DEGREES 39 MINUTES 35 SECONDS EAST 10.00 FEET; THENCE NORTH 00 DEGREES 33 MINUTES 50 SECONDS EAST 245.70 FEET; THENCE NORTH 89 DEGREES 26 MINUTES 10 SECONDS WEST 273.00 FEET TO THE POINT OF BEGINNING.

SCHEDULE B, PART II EXCEPTIONS PER ALTA COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO.: 839213, COMMITMENT DATE: JANUARY 22, 2019:

- INTEREST OF BEDFORD ASSOCIATES, AN ILLINOIS LIMITED PARTNERSHIP, LESSEE, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY LEASE, DATED JULY 2043, 1990, RECORDED APRIL 19, 1960, IN LIBER 14191, PAGE 455, AS ASSIGNED BY ASSIGNMENT AND ASSUMPTION OF LEASE DATED FEBRUARY 2, 1973, RECORDED FEBRUARY 28, 1973 IN LIBER 18349, PAGE 737, AS FURTHER ASSIGNED BY ASSIGNMENT AND ASSUMPTION OF LEASE DATED MAY 31, 1977, RECORDED JUNE 29, 1977 IN LIBER 19781, PAGE 126 AND ASSIGNMENT AND ASSUMPTION OF LEASE DATED MAY 15, 1986, RECORDED MAY 27, 1986 IN LIBER 22784, PAGE 313, AMENDMENT OF LEASE DATED OCTOBER 25, 2002, RECORDED MARCH 10, 2003 IN LIBER 39964, PAGE 1175, AS FURTHER ASSIGNED BY ASSIGNMENT OF LEASE DATED DECEMBER 10, 2003, RECORDED JANUARY 14, 2004 IN LIBER 39964, PAGE 1175, AS FURTHER DISCLOSED BY MORTGAGE DATED MAY 31, 1977, RECORDED JUNE 29, 1977 IN LIBER 19780, PAGE 856, SUBORDINATION AGREEMENT DATED AUGUST 1, 1983, RECORDED OCTOBER 12, 1996 IN LIBER 29034, PAGE 75, AND ASSIGNMENT OF MORTGAGE AND OTHER LOAN DOCUMENTS DATED DECEMBER 31, 2003, RECORDED JANUARY 14, 2004, IN LIBER 39964, PAGE 1187.
- RESPONSE: L14191, PG.455 COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L18349, P.737 EXHIBIT B COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L19781, PG.126 EXHIBIT A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L22784, PG.313 NOT A SURVEY MATTER; L37898, PG.175 COVERS LAND ADJACENT TO SUBJECT PROPERTY; L39964, PG.1175 COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L19780, PG.856 COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L29034, PG.75 EXHIBIT A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L39964, PG.1187 SCHEDULE A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND.
- INTEREST OF EJA LIVONIA LEASE, LLC, A MICHIGAN LIMITED LIABILITY COMPANY, LESSEE, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY MEMORANDUM OF (SUB) LEASE, DATED MAY 2, 1977, RECORDED JUNE 29, 1977, IN LIBER 19781, PAGE 115, AS ASSIGNED BY ASSIGNMENT AND ASSUMPTION OF LEASE DATED MAY 31, 1977, RECORDED JUNE 29, 1977, IN LIBER 19781, PAGE 126, AND AS FURTHER ASSIGNED BY ASSIGNMENT OF LEASE AND SUBLEASE DATED DECEMBER 10, 2003, RECORDED JANUARY 14, 2004 IN LIBER 39964, PAGE 1181.
- RESPONSE: L19781, PG.115 COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L19781, PG.126 EXHIBIT A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND; L39964, PG.1181 SCHEDULE A COVERS SUBJECT PROPERTY AND ADJACENT LAND.
- INTEREST OF SECOND MOUNT CLEMENS CORP., A MICHIGAN CORPORATION, LESSEE, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY LEASEHOLD MORTGAGE, DATED FEBRUARY 22, 1983, RECORDED MARCH 21, 1983, IN LIBER 21613, PAGE 480, AND AS ASSIGNED BY ASSIGNMENT OF MORTGAGE DATED FEBRUARY 22, 1983, RECORDED MARCH 21, 1983, IN LIBER 21613, PAGE 484, SUBORDINATION AGREEMENT DATED AUGUST 1, 1983, RECORDED OCTOBER 13, 1983, IN LIBER 21802, PAGE 564, COVERS MOUNT CLEMENS LAND, ALSO AS DISCLOSED BY LEASEHOLD MORTGAGE DATED SEPTEMBER 6, 1983, RECORDED SEPTEMBER 15, 1983, IN LIBER 21777, PAGE 555.
- RESPONSE: L21613, PG.480 COVERS SUBJECT PROPERTY AND ADJACENT LAND; L21613, PG.484 NOT A SURVEY MATTER; L21802, PG.564 NOT A SURVEY MATTER; L21773, PG.565 SCHEDULE A COVERS SUBJECT PROPERTY AND ADJACENT LAND.
- INTEREST OF OFFICE DEPOT, INC., A DELAWARE CORPORATION, LESSEE, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY MEMORANDUM OF LEASE, DATED OCTOBER 17, 1995, RECORDED DECEMBER 21, 1995, IN LIBER 28477, PAGE 1301, NON-DISTURBANCE, EASE, AND ATTORNEY AGREEMENT DATED JUNE 11, 2015, RECORDED JULY 9, 2015 IN LIBER 52344, PAGE 1301.
- RESPONSE: L28477, PG.549 EXHIBIT A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND, EXHIBIT B COVERS SUBJECT PROPERTY, L52344, PG.1301 EXHIBIT A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND.
- INTEREST OF B'S RETAIL & COMMERCIAL OPERATIONS, LLC, A DELAWARE LIMITED LIABILITY COMPANY, AS SUCCESSOR-IN-INTEREST TO BRIDGESTONE/FIRESTONE INC., LESSEE, AND TERMS, CONDITIONS AND PROVISIONS OF LEASE, AS EVIDENCED BY AMENDED AND RESTATED EVIDENCE OF LEASE, DATED MARCH 17, 2006, RECORDED MARCH 22, 2006, IN LIBER 44561, PAGE 431.
- RESPONSE: EXHIBIT B COVERS SUBJECT PROPERTY AND ADJACENT LAND.
- TERMS AND CONDITIONS CONTAINED IN AGREEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 14648, PAGE 448.
- RESPONSE: COVERS PART OF SUBJECT PARCEL AND ADJACENT LAND.
- RETURN OF SPECIAL COMMISSIONERS AS TO COMPENSATION FOR RIGHT OF WAY IN FAVOR OF THE COUNTY DRAIN COMMISSIONERS OF THE COUNTY OF WAYNE AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 15540, PAGE 346.
- RESPONSE: APPROXIMATE LOCATION OF DRAIN EXTENSION AS SHOWN HEREON, WIDTH NOT SPECIFIED.
- TERMS AND CONDITIONS CONTAINED IN EASEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 29820, PAGE 1294, AND AS RE-RECORDED IN LIBER 37375, PAGE 351.
- RESPONSE: L29820, PG.1294 COVERS SUBJECT PROPERTY AND ADDITIONAL LAND, EXHIBIT B COVERS ADJACENT LAND, EXHIBIT B SHOWS APPROXIMATE LOCATIONS OF SHARED ACCESS AND DRIVES, AS SHOWN HEREON.
- TERMS AND CONDITIONS CONTAINED IN RECIPROCAL EASEMENT AGREEMENT WITH COVENANTS, CONDITIONS AND RESTRICTIONS AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 39153, PAGE 37.
- RESPONSE: EXHIBIT A: PARCEL A COVERS SUBJECT PROPERTY AND ADJACENT LAND, PARCEL B COVERS ADJACENT LAND, EXHIBIT B SHOWS APPROXIMATE LOCATIONS OF SHARED ACCESS AND DRIVES, AS SHOWN HEREON.
- TERMS AND CONDITIONS CONTAINED IN CROSS-ACCESS AND PARKING AGREEMENT AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 53402, PAGE 374.
- RESPONSE: EXHIBIT A COVERS SUBJECT PROPERTY AND ADDITIONAL LAND, EXHIBIT B COVERS SUBJECT PROPERTY, EXHIBIT C COVERS ADJACENT LAND TO THE SOUTHEAST, EXHIBIT D COVERS SUBJECT PROPERTY AND ADDITIONAL LAND.

SURVEYOR'S CERTIFICATE

TO:
-FIRST AMERICAN TITLE INSURANCE COMPANY
-LS EQUITY LLC, A MICHIGAN LIMITED LIABILITY COMPANY
-MICHIGAN SCHOOLS & GOVERNMENT CREDIT UNION, ITS SUCCESSORS AND/OR ASSIGNS

THIS IS TO CERTIFY THAT THIS MAP OR PLAT 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, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 6(a), 6(b), 7(a), 7(b), 7(c), 8, 9, 11, 13, 16, AND 17 OF TABLE A THEREOF.

FIELD WORK WAS COMPLETED ON JUNE 26, 2020.



Know what's below.
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK OF ANY NEARBY STRUCTURES OR OF ANY OTHER PERSONS.

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SECTION 25
TOWN 1 SOUTH, RANGE 9 EAST
CITY OF LIVONIA
WAYNE COUNTY, MICHIGAN

SYMMETRY PROPERTY MANAGEMENT & REALTY, INC.
ALTA/NSPS LAND TITLE SURVEY
LOCATED IN

DATE 06/29/2020

REVISIONS
SCALE 0 25 50
1" = 50 FEET
DR. JR GH. ME
P.M. M. EMBREE
BOOK NA
JOB 18003853
SHEET NO

1 OF 1

Schedule							
Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Lumens per Lamp
	A	3	Lithonia Lighting	DSK1 LED	DSK1 LED P4 40K T5W MVOLT	LED	14943
	A-TWIN	4	Lithonia Lighting	DSK1 LED	DSK1 LED P4 40K T5W MVOLT	LED	14943
	B	8	Lithonia Lighting	DSXW LED	DSXB LED 160 350 40K SYM	LED	1674
	D	4	Lithonia Lighting	DSXW1 LED	DSXW1 LED 10C 700 40K T2M MVOLT	LED	2683
	E	9	Lithonia Lighting	DSXW2 LED	DSXW2 LED 30C 1000 40K T2TM MVOLT	LED	11120
	F	1	Lithonia Lighting	DSXO LED	DSXO LED P6 40K T2TM MVOLT with houseshield	LED	12465
	I	19	Lithonia Lighting	WDGE2 LED	WDGE2 LED P3 40K 80CRI VF	LED	3132
	J	1	Lithonia Lighting	WDGE2 LED	WDGE2 LED P5 40K 80CRI VF	LED	5996
	K	1	Lithonia Lighting	DSXO LED	DSXO LED P2 40K T5M MVOLT	LED	6236
	L	11	Lithonia Lighting	DSXO LED	DSXO LED P4 40K 80CRI MVOLT	LED	8656
	N	8	Lithonia Lighting	DSXO LED	DSXO LED P7 40K T2TM MVOLT with houseshield	LED	14332

General Note

1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.

2. CALCULATIONS ARE SHOWN IN FOOTCAULES AT: 0' - 0"

3. LIGHTING ALTERNATES REQUIRE NEW PHOTOMETRIC CALCULATION AND RESUBMISSION TO CITY FOR APPROVAL.

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIREMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

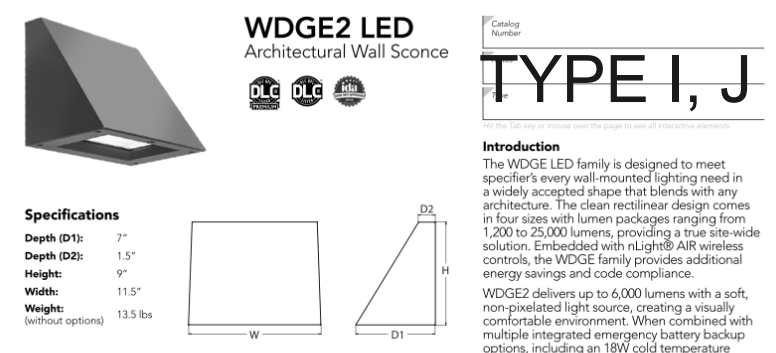
FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
CHICK FIL A PARKING AND DRIVES	✕	1.8 fc	11.2 fc	0.4 fc	28.0:1	4.5:1
E PL	+	0.3 fc	0.5 fc	0.0 fc	N/A	N/A
RETAIL 1&2 PARKING AND DRIVES	✕	1.8 fc	7.8 fc	0.3 fc	26.0:1	6.0:1
SITE	+	0.9 fc	19.5 fc	0.0 fc	N/A	N/A



WDGE2 LED
Architectural Wall Sconce

TYPE I, J

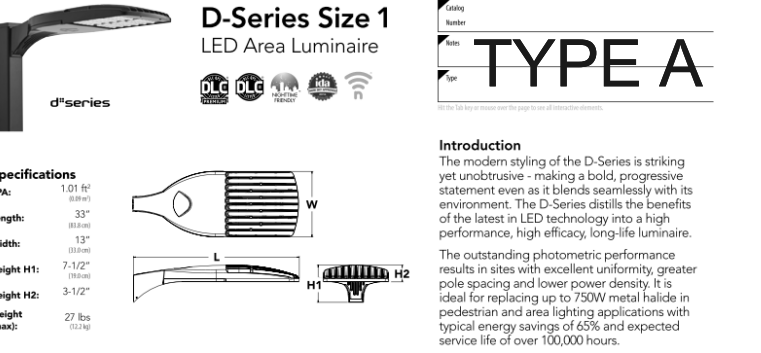
Specifications

Depth: 1.5"

Height: 1.5"

Width: 1.5"

Weight: 1.5 lb



D-Series Size 1
LED Area Luminaire

TYPE A

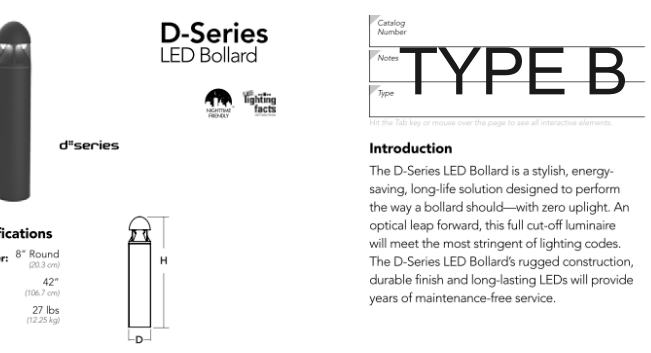
Specifications

Depth: 1.5"

Height: 1.5"

Width: 1.5"

Weight: 1.5 lb



D-Series LED Roll-in

TYPE B

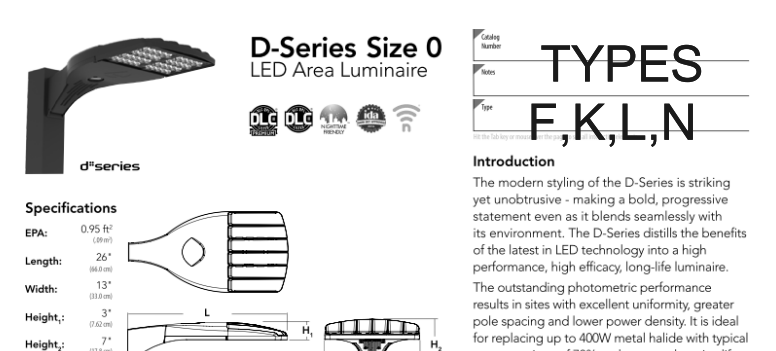
Specifications

Depth: 1.5"

Height: 1.5"

Width: 1.5"

Weight: 1.5 lb



D-Series Size 0
LED Area Luminaire

TYPES F, K, L, N

Specifications

Depth: 1.5"

Height: 1.5"

Width: 1.5"

Weight: 1.5 lb



D-Series Size 2
LED Wall Luminaire

TYPE E

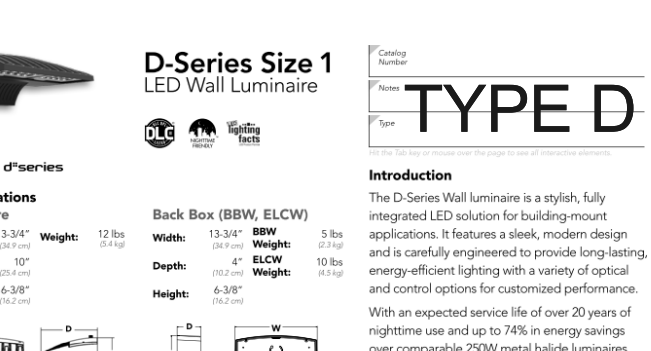
Specifications

Depth: 1.5"

Height: 1.5"

Width: 1.5"

Weight: 1.5 lb



D-Series Size 1
LED Wall Luminaire

TYPE D

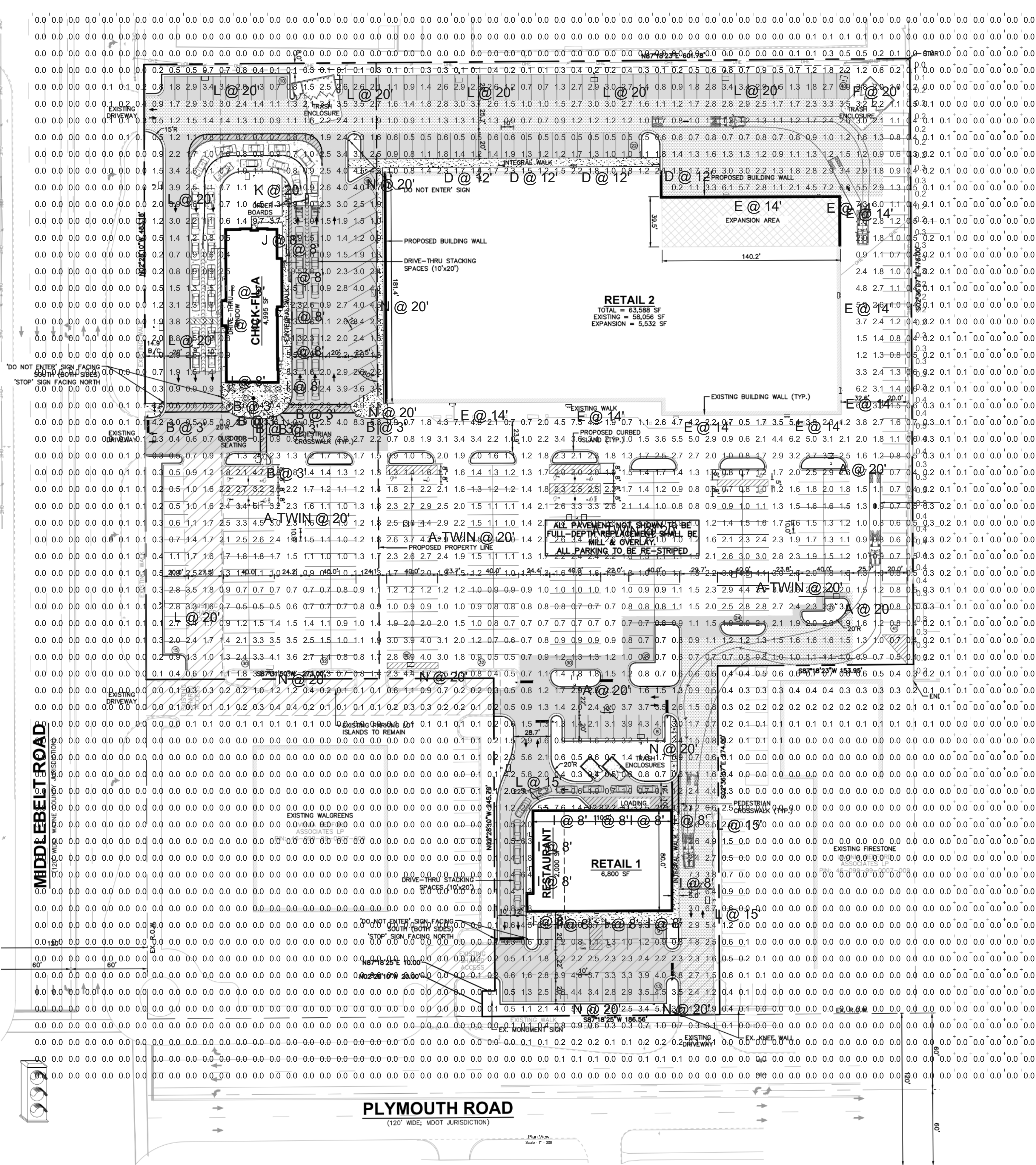
Specifications

Depth: 1.5"

Height: 1.5"

Width: 1.5"

Weight: 1.5 lb



DATE

ISSUED FOR

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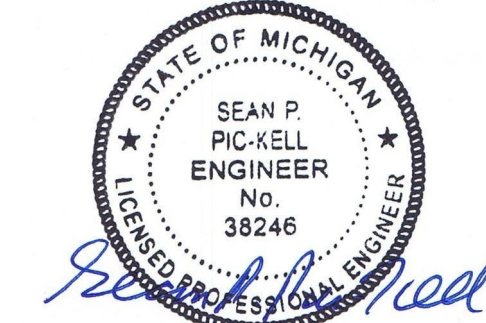
Project Component

Key Plan

Consultants

Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

Seal(s)



10-2-2020

Project Manager
DG

Design Lead

Project Leader
AC

Project Manager
BIM Lead

Drawn
Author

Checked
Checker

SYMMETRY PROPERTY
MANAGEMENT

Project
LIVONIA RETAIL
DEVELOPMENT
MIDDLEBELT RD. & PLYMOUTH RD.
LIVONIA, MI

Drawing Title
SITE PHOTOMETRIC

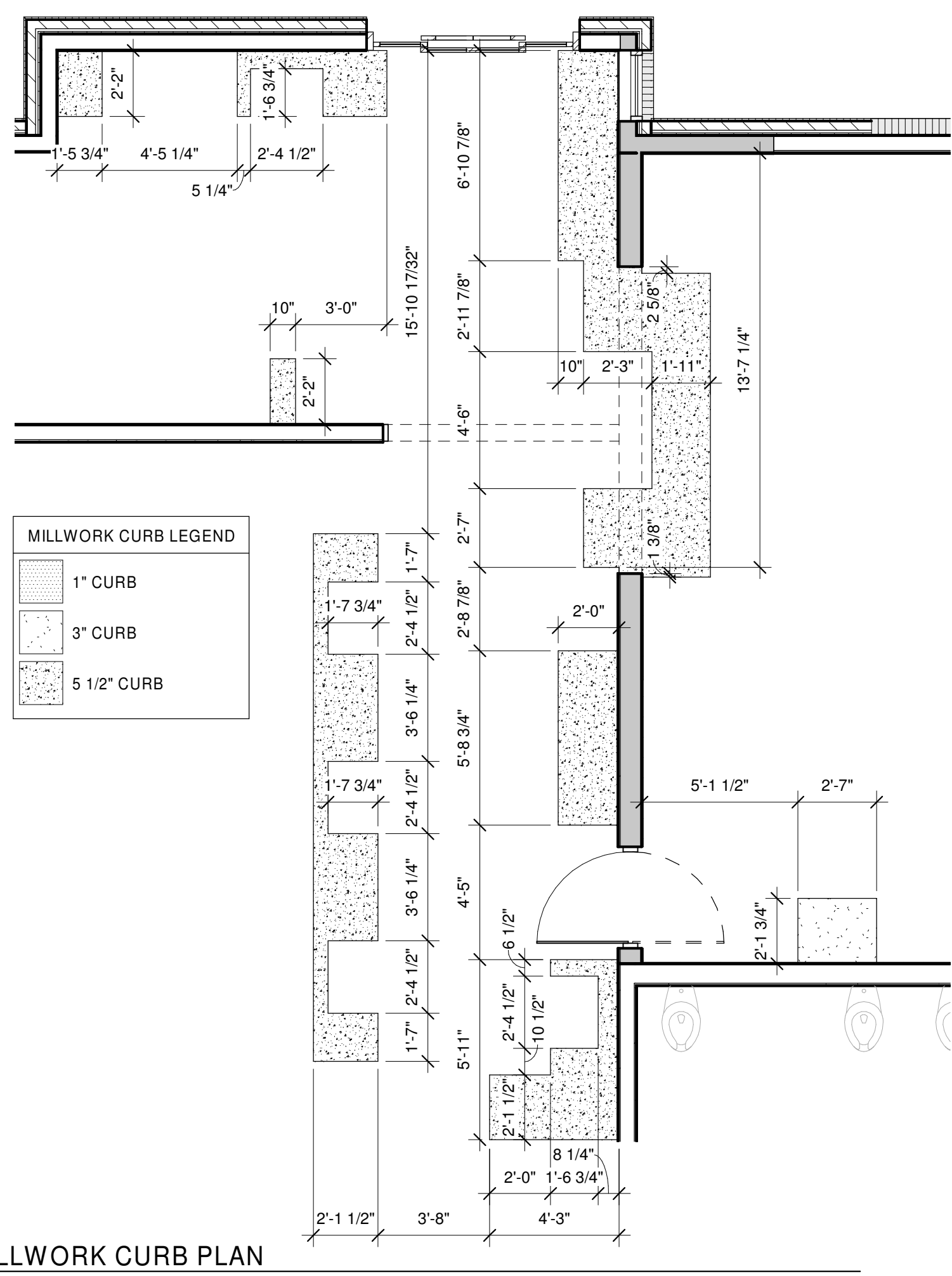
Scale: 12" = 1'-0"

Project No. JCDT19-0016

Drawing No. ES01

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8/19/2020 4:39:03 PM
10-LS-00000-A-201-FLOOR PLAN

C4 FLOOR PLAN



FLOOR PLAN WALL & PARTITION LEGEND

BATT INSULATION
WOOD STUD WALL
METAL STUD WALL

NOTE: SEE WALL & PARTITION TYPES AND SMOKE BARRIER INDICATED ON REFLECTED CEILING PLAN FOR ADDITIONAL INFORMATION

MARK	DESCRIPTION (DOES NOT INCLUDE FINISHES)
SM6	6" MTL STUD EXTERIOR WALL WITH 1/2" SHEATHING ON EXTERIOR FACES - REF STRUCT DRAWINGS AND ARCH SECTIONS/ELEVATIONS FOR CONSTRUCTION/MATERIAL INFORMATION
SW6	2X6 WD STUD EXTERIOR WALL WITH 1/2" SHEATHING EA SIDE - REF STRUCT DRAWINGS AND ARCH SECTIONS/ELEVATIONS FOR CONSTRUCTION/MATERIAL INFORMATION
SW6.1	2X6 WD STUD EXTERIOR WALL WITH ONE LAYER 1/2" SHEATHING EXTERIOR SIDE AND TWO LAYERS 1/2" SHEATHING INTERIOR SIDE - REF STRUCT DRAWINGS AND ARCH SECTIONS/ELEVATIONS FOR CONSTRUCTION/MATERIAL INFORMATION
SW6.2	2X6 WD STUD EXTERIOR FURRING WALL WITH ONE LAYER 1/2" SHEATHING EXPOSED SIDE - REF STRUCT DRAWINGS AND ARCH SECTIONS/ELEVATIONS FOR CONSTRUCTION/MATERIAL INFORMATION

STATISTICS (NET)		
Name		Area
CLOSET		11 SF
DINING		1901 SF
DRIVE THRU		279 SF
KITCHEN		1450 SF
MENS		165 SF
MULTI-PURPOSE		107 SF
OFFICE		56 SF
RISER		27 SF
RR VEST		83 SF
SERVICE		118 SF
VESTIBULE		233 SF
WOMENS		57 SF
WOMENS		181 SF
BUILDING FOOTPRINT:		4995 SF

NOTE: SQUARE FOOTAGE INDICATED IN STATISTICS IS NET SQUARE FOOTAGE AND DOES NOT INCLUDED INTERIOR OR EXTERIOR WALLS. REFER TO FOOTPRINT FOR BUILDING SQUARE FOOTAGE.

MARK	DESCRIPTION (DOES NOT INCLUDE FINISHES)
M8	8" MTL STUDS @ 24" O.C. MAX. WITH ONE LAYER 1/2" SHEATHING EA EXPOSED SIDE
W4	2x4 WD STUDS @ 24" O.C. MAX. WITH ONE LAYER 1/2" SHEATHING EA EXPOSED SIDE
W6	2x6 WD STUDS @ 24" O.C. MAX. WITH ONE LAYER 1/2" SHEATHING EA EXPOSED SIDE
W8	2x8 WD STUDS @ 24" O.C. MAX. WITH ONE LAYER 1/2" SHEATHING EA EXPOSED SIDE
W6.4	2X6 & 2X4 PAIR WD STUDS @ 24" O.C. MAX. WITH ONE LAYER OF 1/2" SHEATHING EA EXPOSED SIDE

FLOOR PLAN GENERAL NOTES

- DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD, (UNLESS OTHERWISE NOTED). FASTENERS, ANCHORS, CLIPS, STRAPS, ETC WHICH ARE IN CONTACT WITH PRESERVATIVE AND/OR FIRE TREATED WOOD SHALL BE OF G-185 HOT DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, OR AN APPROVED EQUAL.
- REFER TO CIVIL AND LANDSCAPE FOR LOCATIONS OF WALKS, BOLLARDS, LANDSCAPING AREAS, FLAG POLE, AND OTHER SITE ITEMS.
- REFER TO INTERIOR ELEVATIONS FOR LOCATIONS AND TYPES OF CORNER GUARDS.
- CONTRACTOR TO COORDINATE LOCATION OF POLE MOUNTED EXTERIOR CAMERA WITH STRONG SYSTEMS AND INSTALL UNDERGROUND CONDUIT AS REQUIRED. RE: ELECTRICAL.
- REFER TO ACCESSIBILITY PLAN AND FURNITURE DRAWINGS FOR SEATING LAYOUT & SPECIFICATIONS. CONTACT: OWNER.
- REFER TO ACCESSIBILITY PLAN AND OWNER DRAWINGS FOR CONDIMENT COUNTERS AND TRASH RECEPTACLES.
- REFER TO IT WALLBOARD USER GUIDE FOR WALLBOARD INSTALLATION, IF APPLICABLE.

FLOORPLAN KEYNOTES

- GC SHALL PROVIDE 5-1/2" HIGH CONCRETE MILLWORK CURBS. RE: OWNER SHOP DRAWINGS FOR EXACT LOCATIONS & DIMENSIONS.
- GC SHALL SECURE SAFE USING (4) HILTI-HAS-E 1/2" x 4-1/2" ANCHOR BOLTS WITH HILTI HYU ADHESIVE CAPSULE. AT EACH HOLE FASTEN THRU PNEUMOL BASE OF CABINET AND INTO CONCRETE CURB BELOW. VERIFY LOCATION WITH SAFE MANUFACTURER.
- FREEZER AND COOLER DOORS AND HARDWARE SUPPLIED BY FREEZER/ COOLER MANUFACTURER.
- DASHED LINE INDICATES SOFFIT OR BULKHEAD ABOVE. RE: REFLECTED CEILING PLAN.
- RECESSED PIN AND SLEEVE BOX. RE: A/A-620 & ELECTRICAL. 2'-1" ROUGH OPENING WIDTH AT HOOD #2. 11" ROUGH OPENING WIDTH AT HOOD #3
- STEEL WALL BY OWNER (TYP.). RE: OWNER FOR EXACT LOCATION.
- SAFE SCREEN BY OWNER.
- NETWORK CABINET. C1 / A-621
- ELECTRICAL PANEL. RE: ELECTRICAL.
- ITEM BY OWNER.
- 2-SIDED ICON. RE: OWNER DRAWINGS.
- CANOPY ABOVE BY OWNER.
- DROP SLAB IN PLAY AREA 1'-1/2". RE: STRUCTURAL.
- MDP. RE: ELECTRICAL.
- CT CABINET. RE: ELECTRICAL.
- HAND SANITIZER CENTERED UNDER PLAY RULES SIGNAGE (WITH DECAL ON OPPOSITE SIDE IF MOUNTED ON STOREFRONT). RE: SCHEDULE ON A-701 FOR MODEL INFO.

WALL NOTES

- WALL INSULATION NOTES**
- WHERE EXTERIOR METAL STUD WALL TYPE REQUIRES BATT INSULATION. USE R-19 FOIL FACED BATT INSULATION.
 - WHERE EXTERIOR WOOD STUD WALL REQUIRES BATT INSULATION. USE R-19 KRAFT FACED FIBERGLASS BATT INSULATION WITH FLAME SPREAD INDEX OF NOT MORE THAN 25 AND SMOKE DEVELOPED INDEX OF NOT MORE THAN 450.
 - WHERE EXTERIOR STUD WALLS REQUIRE BATT INSULATION, EXTEND INSULATION UP 12" ABOVE ROOFTOP RIGID INSULATION.
 - AT INTERIOR METAL STUD WALLS WHERE INSULATION IS SCHEDULED. USE 3-1/2" FOIL FACED BATT INSULATION.
 - AT INTERIOR WOOD STUD WALLS WHERE INSULATION IS SCHEDULED. USE 3-1/2" BATT INSULATION WITH MAXIMUM FLAME SPREAD INDEX OF 25.
 - NOT USED
- INTERIOR WALL FRAMING NOTES**
- UNLESS NOTED OTHERWISE, EXTEND FRAMING TO 6" ABOVE ADJACENT CEILING.
 - AT DRAFT STOPPING PARTITION INTERIOR WALLS, EXTEND FRAMING TO ROOF DECK AS REQUIRED TO ACCOMMODATE SMOKE BARRIER.
 - WHERE INTERIOR WALLS ARE NOT INSULATED AND NOT A DRAFT STOPPING PARTITION, FRAMING MAY STOP 6" ABOVE HIGHEST ABUTTING FINISH CEILING.
 - WHERE INTERIOR WALL FRAMING DOES NOT EXTEND TO STRUCTURE ABOVE, BRACE INTERIOR WALLS AS REQUIRED FOR COMPLIANCE WITH BUILDING CODE. REF BUILDING DATA ON COVER SHEET.
 - FRAMING AT NON-LOADBEARING INTERIOR WALLS SHALL MEET REQUIREMENTS OF APPLICABLE BUILDING CODES AND LOCAL AMENDMENTS.

EXTERIOR WALL FRAMING NOTES

- SEE STRUCTURAL DRAWINGS FOR STUD DIMENSIONS AND SPACING.
- AT WOOD STUD EXTERIOR WALLS, USE TREATED SILL PLATES.

EXTERIOR SHEATHING NOTES

- REFER TO STRUCTURAL FOR EXTERIOR SHEATHING TYPES.

BLOCKING NOTES

- WALL BLOCKING SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY. BLOCKING SHALL INCLUDE, BUT IS NOT LIMITED TO: AREAS INDICATED ON INTERIOR ELEVATIONS FOR GRAB BARS, SHELVING BRACKETS, MONITORS, FIXTURES, ETC. AS WELL AS BLOCKING FOR WINDOWS, CANOPIES ROOF FRAMING, ROOF TOP UNITS, ETC.

INTERIOR WALL FINISH & INTERIOR SHEATHING NOTES

- AT MATERIALS LABELED "INTERIOR SHEATHING" ON WALL TYPE DRAWINGS AND DETAILS, SHEATHING SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN AND INTERIOR ELEVATIONS FOR FINISH MATERIAL ON INTERIOR SHEATHING. DO NOT USE WOOD SHEATHING WITHIN 18" OF HOODS.
- WHERE SHEATHING IS EXPOSED: 1/2" GYPSUM BOARD. PAINTED PER INTERIOR ELEVATIONS AND FINISH PLAN.
 - BETWEEN WALL TILE AND STUDS: 1/2" CEMENTITIOUS BACKER BOARD.
 - BETWEEN FRP PANELS AND METAL STUDS: COMPOSITE GOLD 40 MIL WATERPROOF MEMBRANE AND 1/2" CEMENTITIOUS BOARD TO 1'-0" ABOVE SLAB. 1/2" CDX PLYWOOD SUBSTRATE ABOVE CEMENTITIOUS BOARD TO 1'-0" ABOVE CEILING. RE: TYPICAL WALL BASE DETAIL.
 - BETWEEN FRP PANELS AND METAL STUDS: COMPOSITE GOLD 40 MIL WATERPROOF MEMBRANE AND 1/2" CEMENTITIOUS BOARD TO 1'-0" ABOVE SLAB. 1/2" CEMENTITIOUS BOARD TO 4" ABOVE CEILING. EXCEPT AT AREAS WHERE DRAFT STOPPING IS REQUIRED. REFER TO DRAFT STOPPING DETAILS FOR THOSE AREAS.
 - BETWEEN STAINLESS STEEL PANELS AND METAL STUDS: 1/2" CEMENTITIOUS BOARD.
 - BETWEEN STAINLESS STEEL PANELS AND WOOD STUDS: 1/2" CEMENTITIOUS BOARD.
 - BETWEEN WALL COVERING AND STUDS: 1/2" GYPSUM BOARD.
 - BETWEEN WOOD WAINSCOT AND WOOD STUDS: 1/2" PLYWOOD.
 - BETWEEN WOOD WAINSCOT AND METAL STUDS: 1/2" PLYWOOD.
 - BETWEEN FREEZER/COOLER WALLS AND WOOD STUD WALLS: 1 FT TALL CEMENT BOARD BASE WITH 1/2" GYPSUM BOARD (LEVEL 1 FINISH) TO 6" ABOVE FINISH CEILING. EXTEND 40 MIL COMPOSITE GOLD WATERPROOF MEMBRANE FROM FLOOR AS INDICATED ON FINISH PLAN UP WALL AS INDICATED ON FREEZER AND COOLER SCREED DETAILS.
 - BEHIND WOOD BOARD FINISH AT ICON WALL: 3/4" PLYWOOD.
 - BEHIND WOOD BOARD FINISH AT OTHER LOCATIONS: 1/2" PLYWOOD.

INTERIOR BASE FINISH & SHEATHING NOTES

- AT MATERIALS LABELED "INTERIOR SHEATHING" ON WALL TYPE DRAWINGS AND DETAILS, MATERIALS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE. REFER TO FINISH PLAN AND INTERIOR ELEVATIONS FOR BASE FINISH MATERIAL.
- BETWEEN TILE BASE AT KITCHEN AND STUDS: 1/2" CEMENTITIOUS BACKER BOARD TO MINIMUM 1'-0" ABOVE SLAB.
 - BETWEEN TILE BASE AT NON-KITCHEN AREAS AND STUD WALLS: 1/2" CEMENT BACKER BOARD TO MINIMUM 5" ABOVE SLAB.
 - BETWEEN VINYL BASE AND WOOD STUD WALLS: 1/2" GYPSUM BOARD.



Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998



520 S. MAIN STREET, STE 2531
AKRON, OH 44311

PROTOTYPICAL SET

NOT FOR
REGULATORY
APPROVAL,
BIDDING, OR
CONSTRUCTION

Preliminary
09/30/2020 3:43:30 PM

CHICK-FIL-A
LIVONIA

29350 Plymouth Road,
Livonia, MI 48150

FSR# 04664

BUILDING TYPE / SIZE: P13 LS
RELEASE: v2_20_08

REVISION Schedule

NO. DATE DESCRIPTION

PROJECT STATUS

CONSULTANT PROJECT # 2019223.27

PRINTED FOR PROJECT STATUS

DATE 09/30/20

DRAWN BY ER

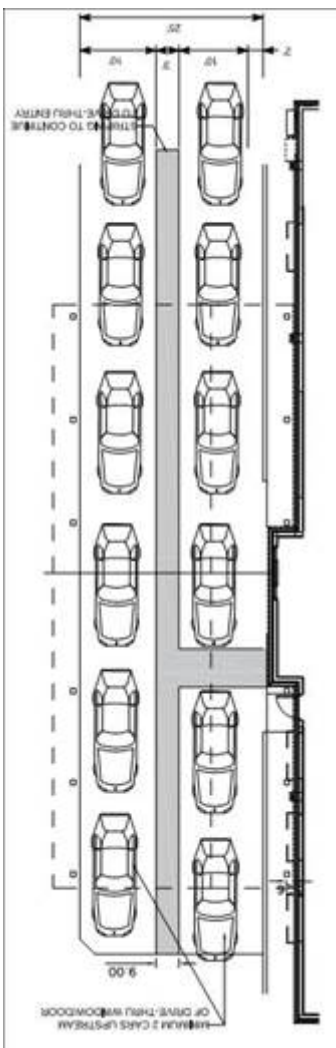
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FLOOR PLAN

SHEET

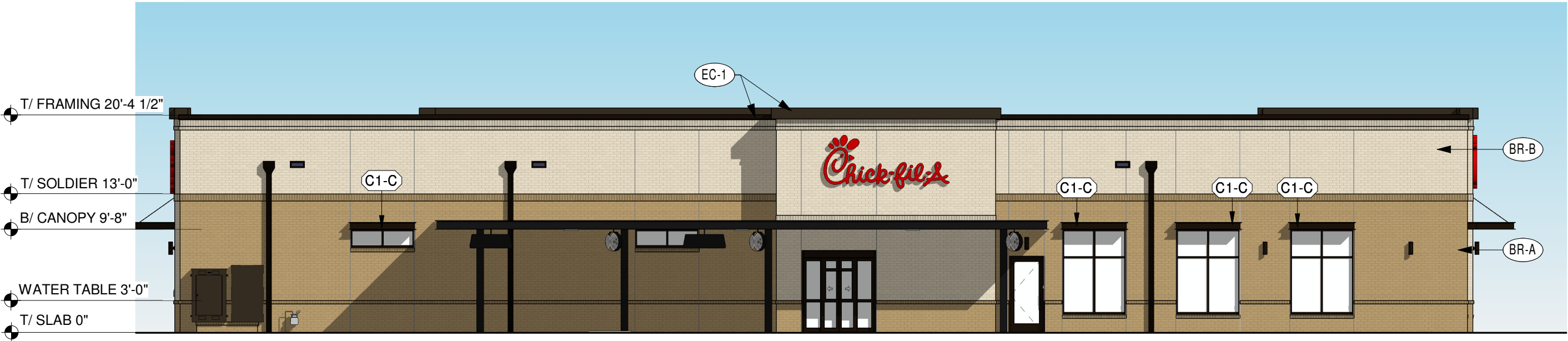
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A-201



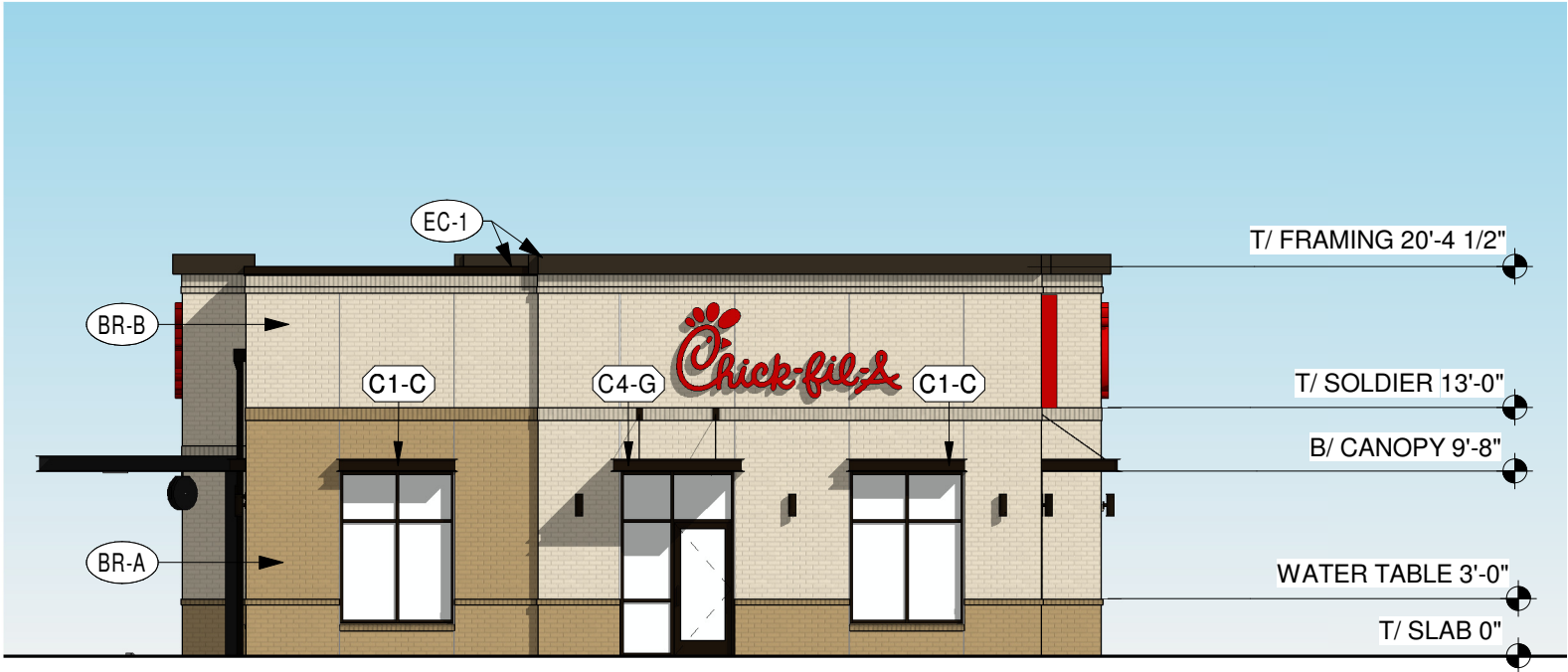


EXTERIOR ELEVATION
1" = 10'-0"



EXTERIOR ELEVATION
1" = 10'-0"

EXTERIOR ELEVATIONS



EXTERIOR ELEVATION
1" = 10'-0"



EXTERIOR ELEVATION
1" = 10'-0"

ATTACHED CANOPY SCHEDULE

Mark	Description	Count	Overall Width	Overall Depth	Tie Back Mounting (Offset From Top)	Integral Lighting
C1-A	Exterior Canopy	1	3'-8 1/2"	1'-0"	0"	Yes
C1-C	Exterior Canopy	12	6'-4"	1'-0"	0"	No
C3-B	Exterior Canopy	1	15'-0"	4'-0"	2'-4"	Yes
C4-G	Exterior Canopy	1	7'-0"	4'-0"	2'-4"	Yes
C4-M	Exterior Canopy	1	15'-0"	4'-0"	2'-4"	No
Grand total		16				

EXTERIOR FINISHES



SC-1
STUCCO SYSTEM
COLOR: WHITE
FINISH: SAND MEDIUM



SC-2
STUCCO SYSTEM
COLOR: BROWN
FINISH: SAND MEDIUM



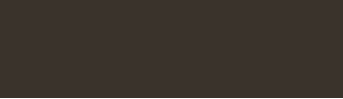
BR-A
BRICK VENEER
COLOR: DARK BROWN
SIZE: MODULAR



BR-B
BRICK VENEER
COLOR: LIGHT BROWN
SIZE: MODULAR



EC-1
PREFINISHED METAL COPING
COLOR: DARK BRONZE



PT-9
EXTERIOR PAINT
COLOR: DARK BRONZE
FINISH: SEMI-GLOSS



ST-1
STOREFRONT
COLOR: DARK BRONZE

EXTERIOR ELEVATIONS



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8/19/2020 4:44:42 PM
10-LS-00000-A-103-REFUSE ENCLOSURE

SITE ADAPT ARCHITECT TO VERIFY
DRAINAGE METHOD (THROUGH
REAR WALL IS PREFERRED
- SWAP MODEL GROUP IN REF FILE
IF FLOOR DRAIN IS TO BE USED)

C4 REFUSE ENCLOSURE ELEVATION
3/8" = 1'-0"

D3 REFUSE ENCLOSURE PLAN
1/4" = 1'-0"

B2 REFUSE ENCLOSURE BASE DETAIL
1 1/2" = 1'-0"

A2 REFUSE ENCLOSURE ELEVATION
3/8" = 1'-0"

C1 REFUSE ENCLOSURE DOOR JAMB DETAIL
1 1/2" = 1'-0"

B1 REFUSE PAD AT CONCRETE PAVING DETAIL
3/4" = 1'-0"

REFUSE ENCLOSURE NOTES

1. ** IN THE ARCHITECTURAL DRAWINGS, REFUSE ENCLOSURE AND MAIN BUILDING ARE BOTH NOTED WITH FINISH SLAB AT 0'-0". ACTUAL FINISH SLAB HEIGHTS WILL VARY BETWEEN MAIN BUILDING AND REFUSE ENCLOSURE. REFER TO CIVIL FOR ALL FINISH SLAB HEIGHTS.



Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

SITE
ADAPT
LOGO
AND
ADDRESS

PROTOTYPICAL SET

NOT FOR
REGULATORY
APPROVAL,
BIDDING, OR
CONSTRUCTION

CHICK-FIL-A
Project Name

Street Address
City, GA 00000

FSR#00000

BUILDING TYPE / SIZE: P13 LS
RELEASE: v2_20_08

REVISION SCHEDULE
NO. DATE DESCRIPTION

PROJECT STATUS

CONSULTANT PROJECT # ###
PRINTED FOR PROJECT STATUS
DATE MM/DD/YY
DRAWN BY Author

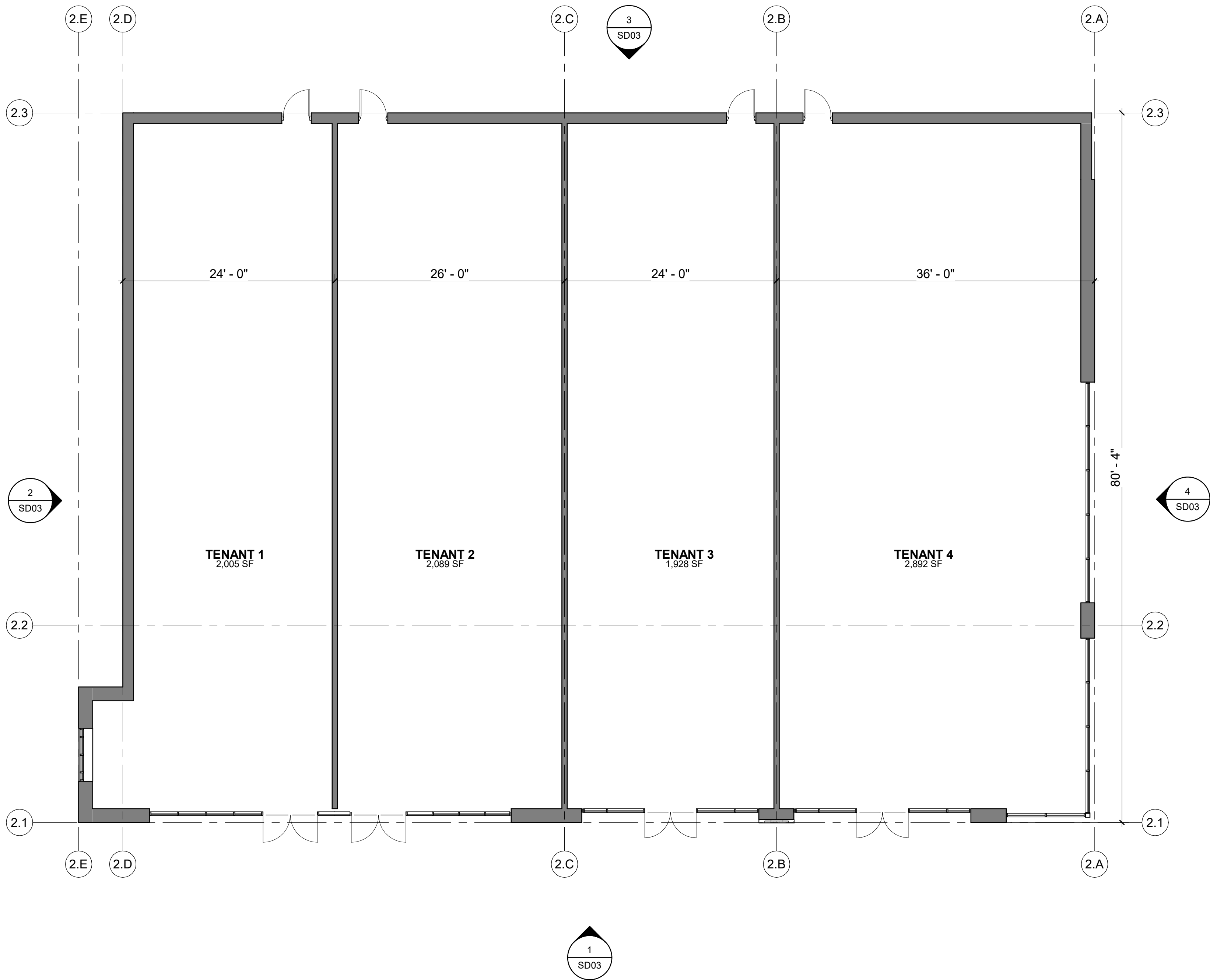
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SHEET REFUSE ENCLOSURE

SHEET NUMBER

A-103

2 RETAIL 1 FLOOR PLAN



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Project Component
Key Plan

Consultants
Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

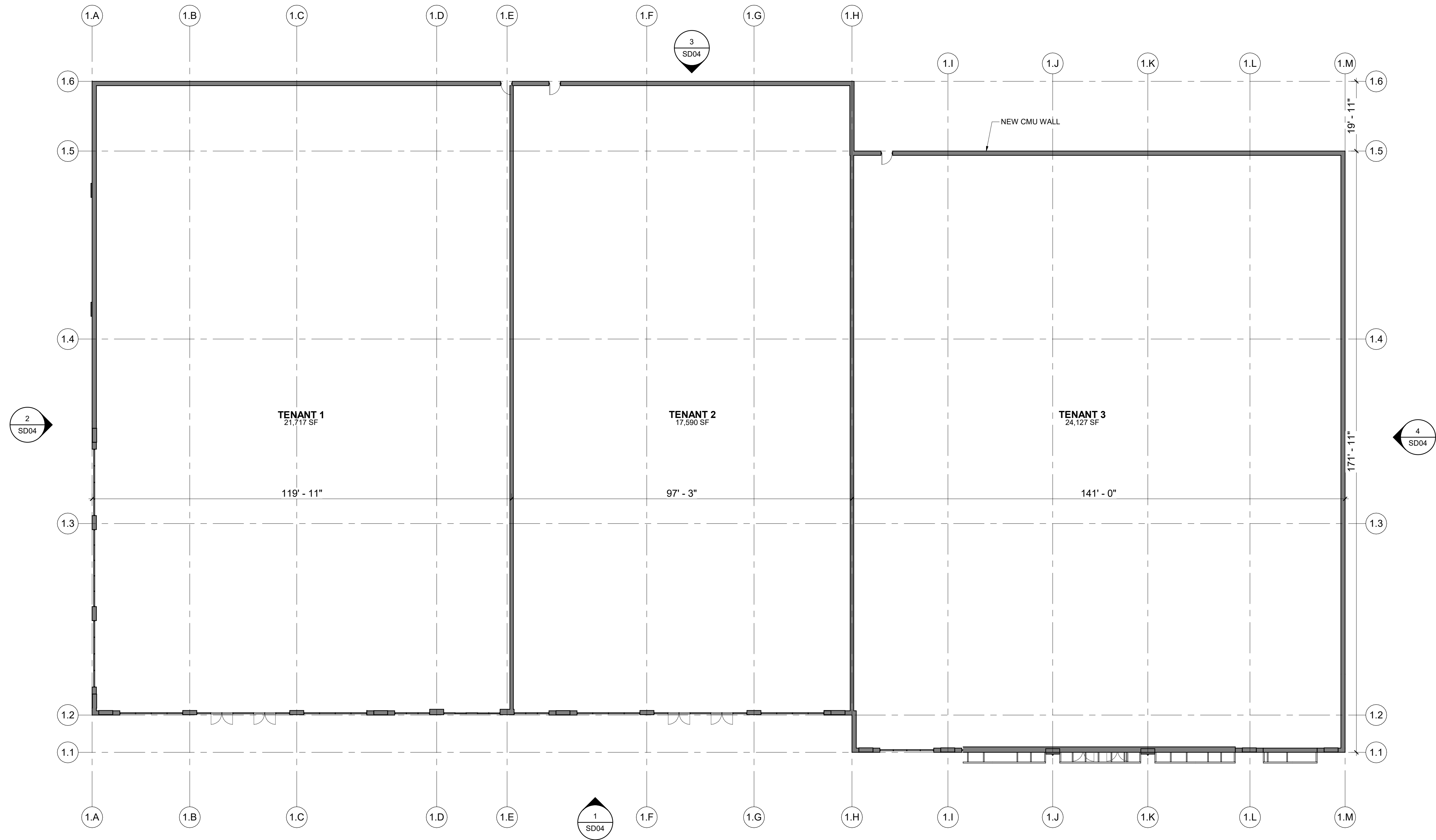
Seal(s)

STATE OF MICHIGAN
AMY LYNN CONTI
ARCHITECT
No. 1301060624
LICENSED ARCHITECT

NORR

150 W. Jefferson Avenue., Suite 1300
Detroit, MI, US 48226
norr.com

Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker
SYMMETRY PROPERTY MANAGEMENT	
Project LIVONIA RETAIL DEVELOPMENT MIDDLEBELT RD. & PLYMOUTH RD. LIVONIA, MI	
Drawing Title RETAIL 1 - LEASE PLAN	
Scale: 1/8" = 1'-0"	
Project No. JCDT19-0016	
Drawing No. SD01	



1 RETAIL 2 FLOOR PLAN

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Project Component
Key Plan

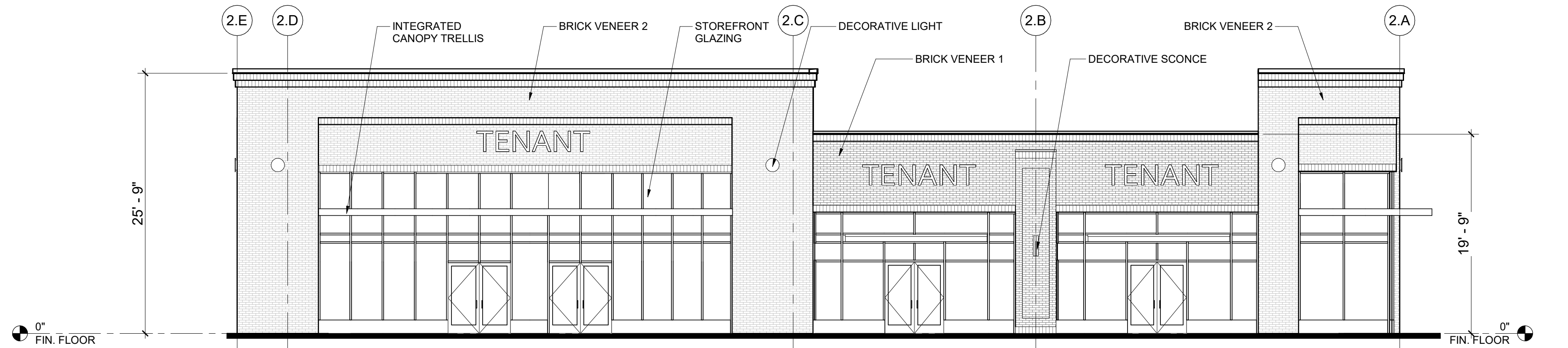
Consultants
Civil: Landscape: Architecture: Structural: Mechanical: Electrical:

Seal(s)

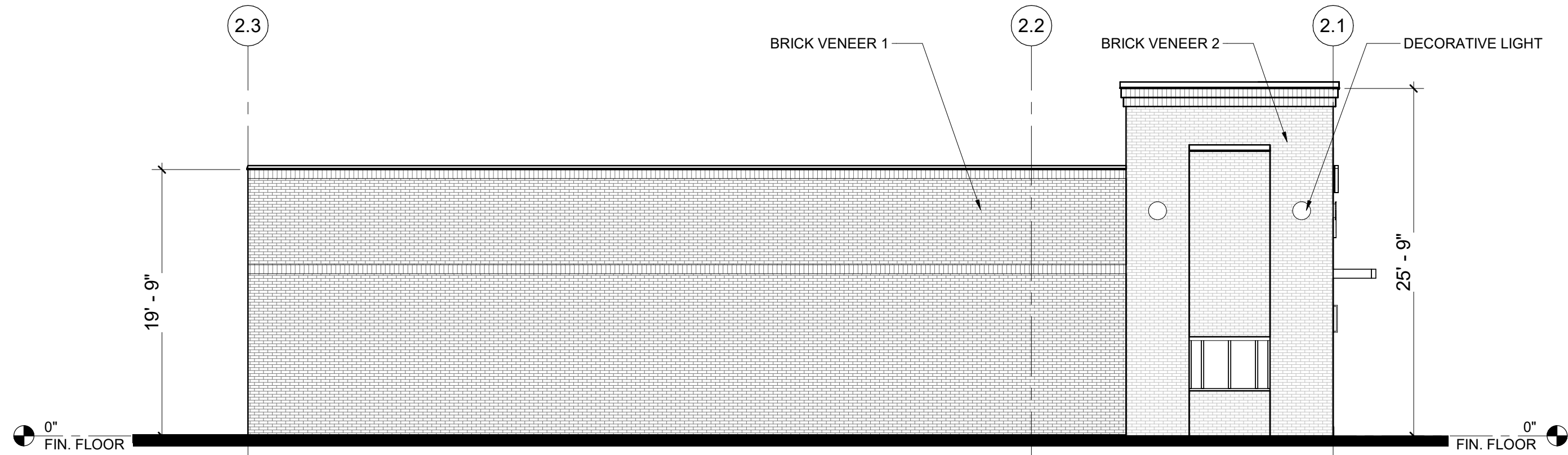
NORR

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Detroit, MI, US 48226
norr.com

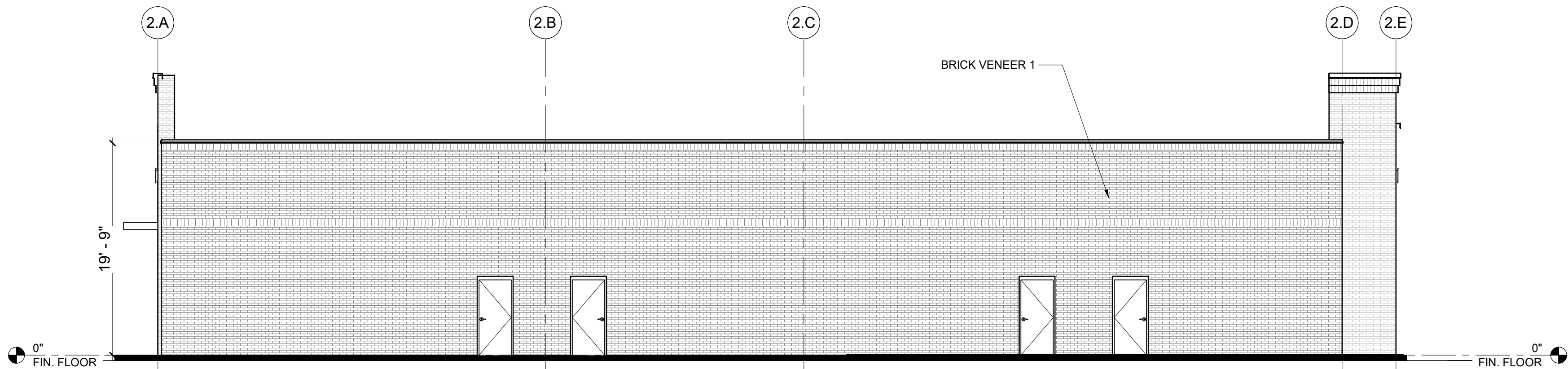
Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker
SYMMETRY PROPERTY MANAGEMENT	
Project LIVONIA RETAIL DEVELOPMENT MIDDLEBELT RD. & PLYMOUTH RD. LIVONIA, MI	
Drawing Title RETAIL 2 - LEASE PLAN	
Scale: 1/16" = 1'-0"	
Project No. JCDT19-0016	
Drawing No. SD02	



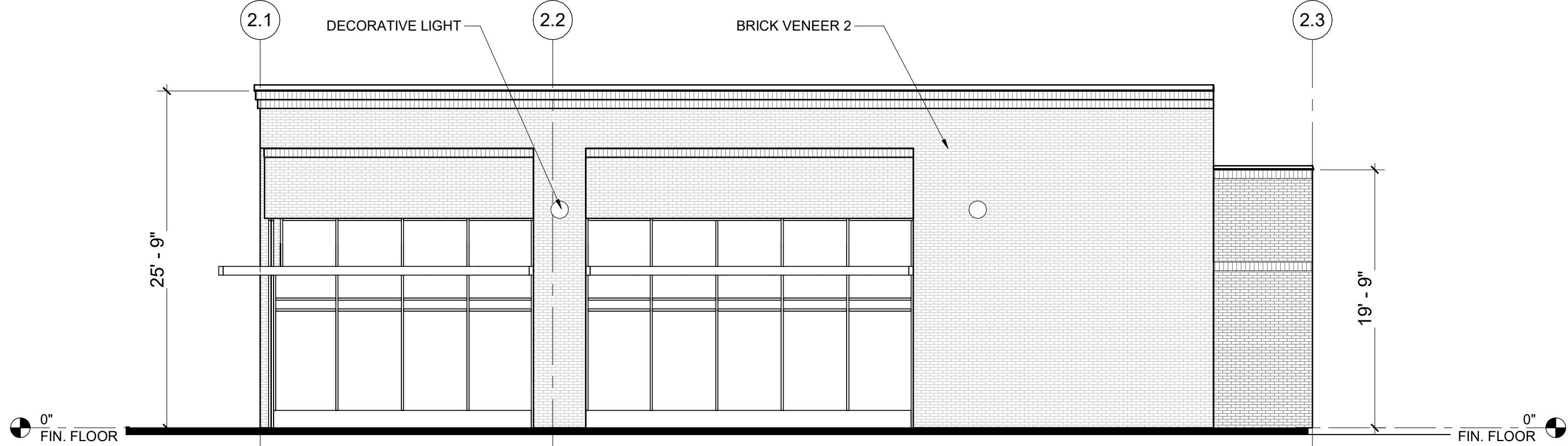
1 FRONT ELEVATION



2 LEFT ELEVATION



3 REAR ELEVATION



4 RIGHT ELEVATION

DATE	ISSUED FOR	REV
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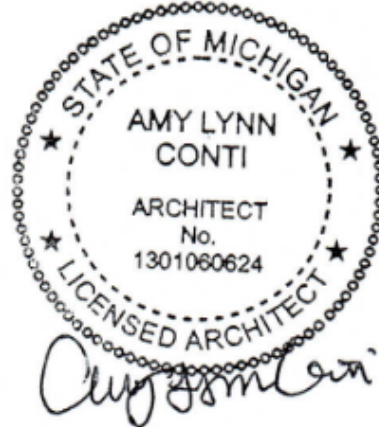
Project Component

Key Plan

Consultants

Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

Seal(s)



NORR

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Detroit, MI, US 48226
norr.com

Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker

SYMMETRY PROPERTY
MANAGEMENT

Project
LIVONIA RETAIL
DEVELOPMENT
MIDDLEBELT RD. & PLYMOUTH RD.
LIVONIA, MI

Drawing Title
RETAIL 1 - ELEVATIONS

Scale: 1/8" = 1'-0"

Project No. JCDT19-0016

Drawing No.
SD03



Seal(s)

STATE OF MICHIGAN
AMY LYNN CONTI
ARCHITECT
No.
1301080624
LICENSED ARCHITECT

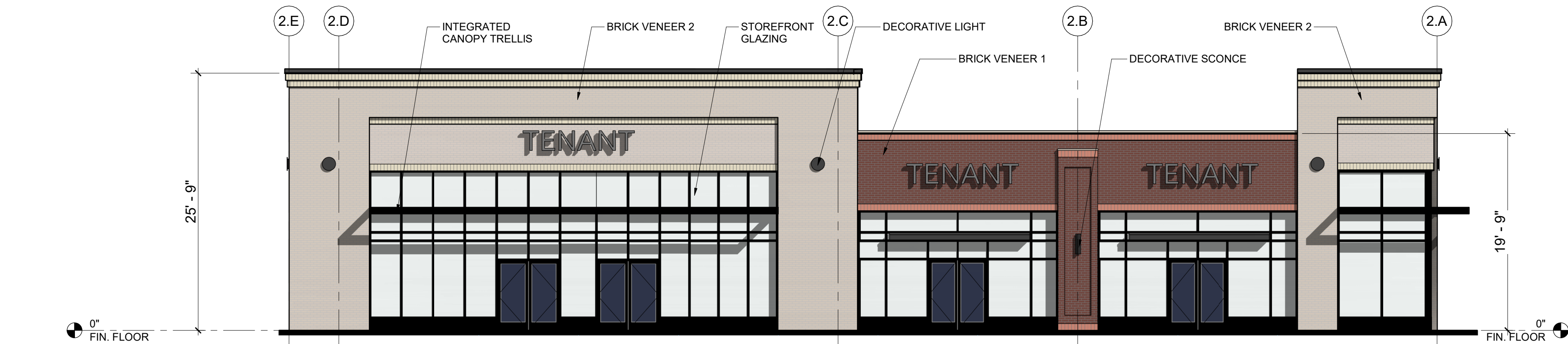
Amy Lynn Conti

NORR

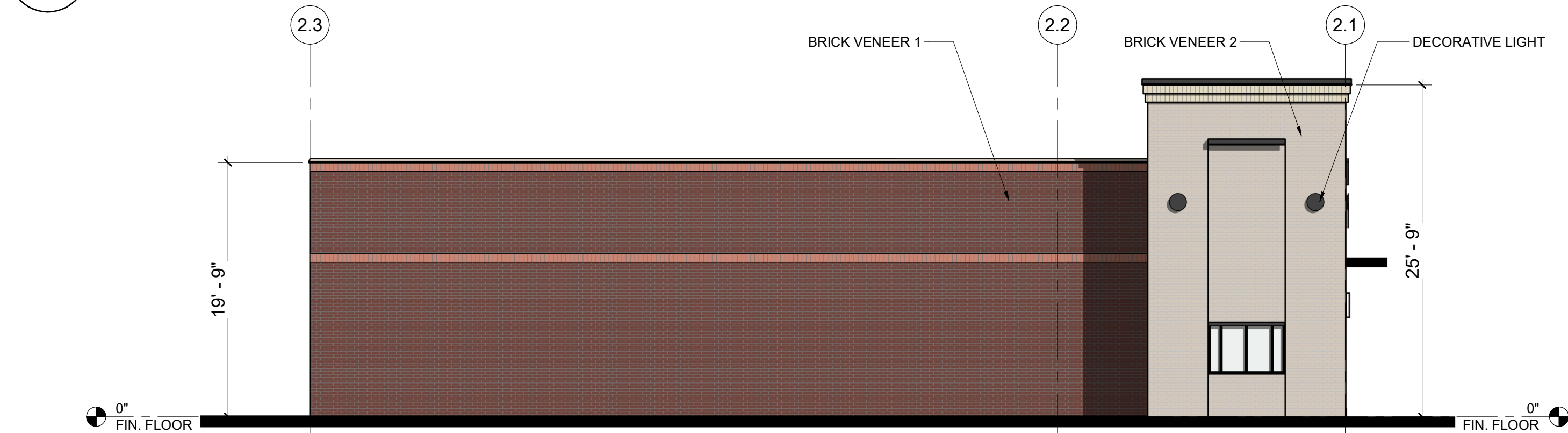
150 W. Jefferson Avenue., Suite 1300
Detroit, MI, US 48226
norr.com

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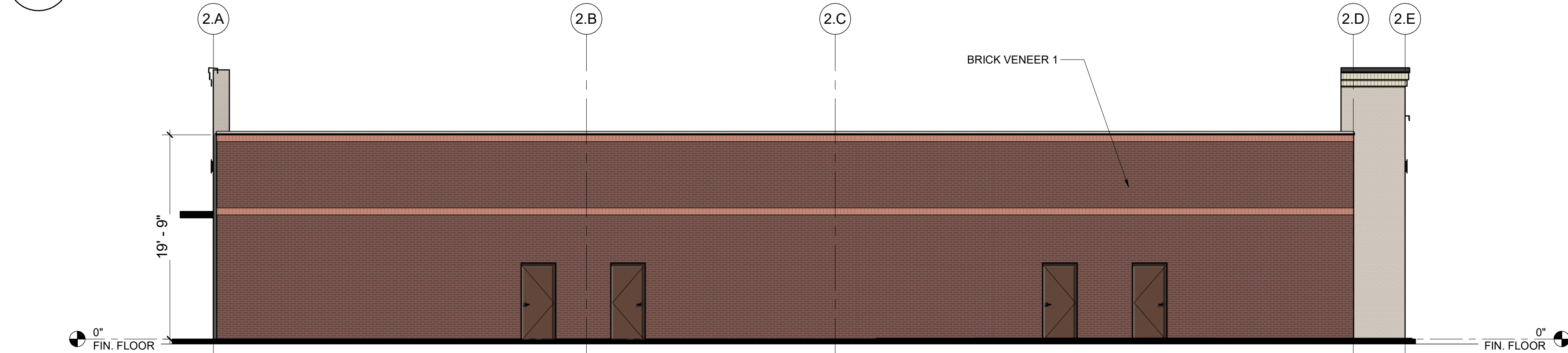
Project Manager DG	BIM Lead
Design Lead	Drawn AG
Project Leader AC	Checked
SYMMETRY PROPERTY MANAGEMENT	
Project LIVONIA RETAIL DEVELOPMENT MIDDLEBELT RD. & PLYMOUTH RD. LIVONIA, MI	
Drawing Title RETAIL 2 - ELEVATIONS	
Scale: 1/16" = 1'-0"	
Project No. JCDT19-0016	
Drawing No. SD04	



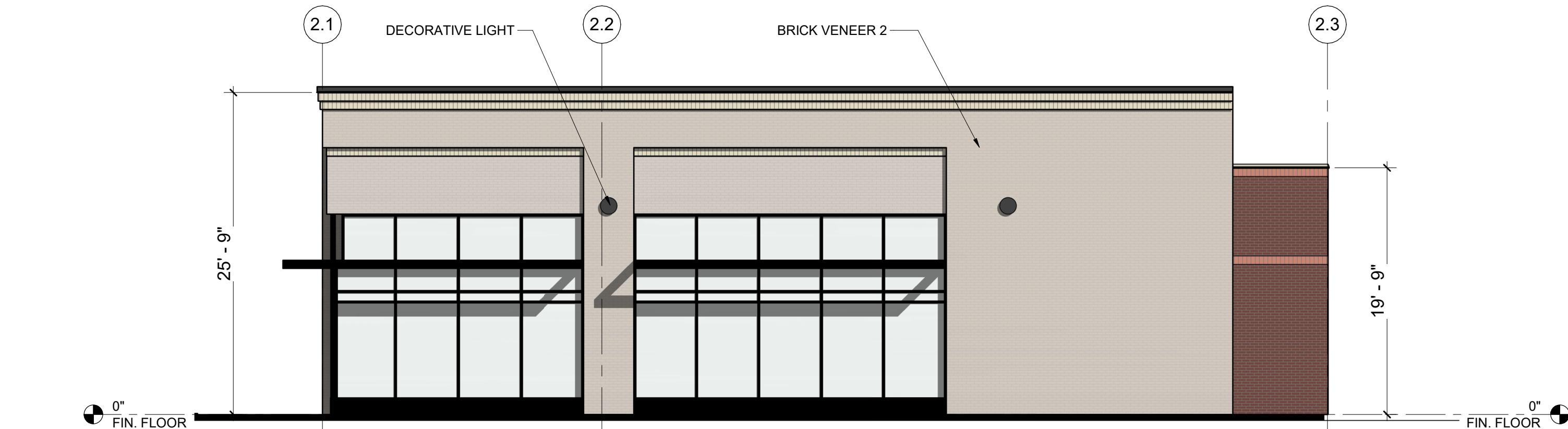
1 FRONT ELEVATION



2 LEFT ELEVATION



3 REAR ELEVATION



4 RIGHT ELEVATION

DATE	ISSUED FOR	REV
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Project Component
Key Plan

Consultants
Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

Seal(s)

NORR

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Detroit, MI, US 48226
norr.com

Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker

SYMMETRY PROPERTY
MANAGEMENT

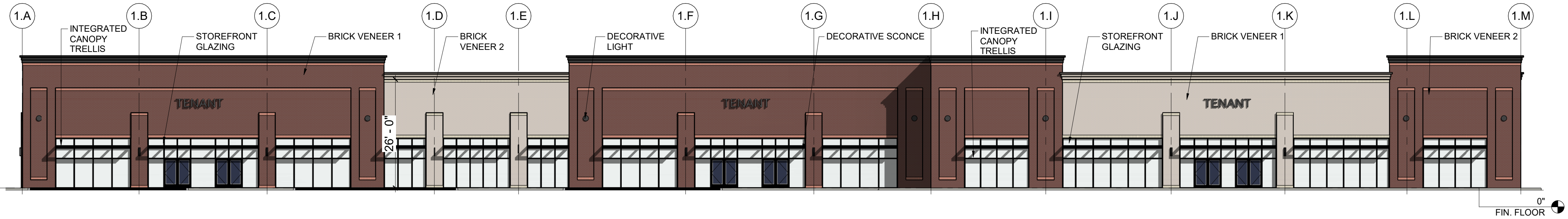
Project
LIVONIA RETAIL
DEVELOPMENT
MIDDLEBELT RD. & PLYMOUTH RD.
LIVONIA, MI

Drawing Title
RETAIL 1 - COLORED
ELEVATIONS

Scale: 1/8" = 1'-0"

Project No. JCDT19-0016

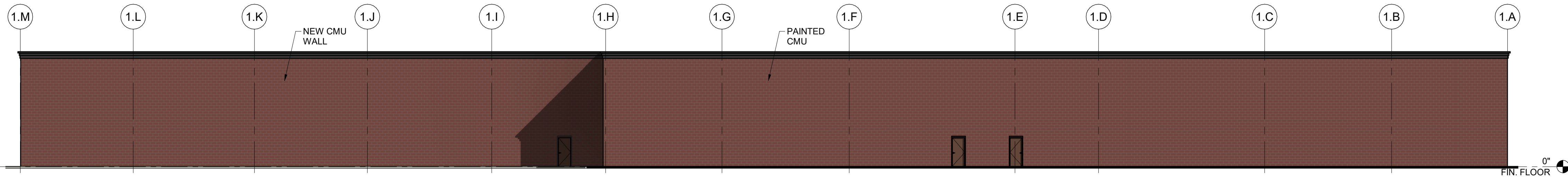
Drawing No.
SD05



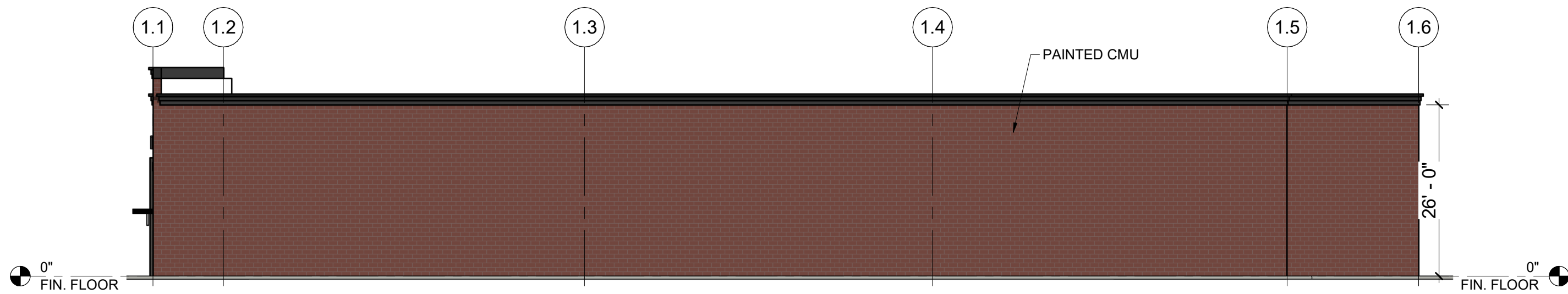
1 FRONT ELEVATION



2 LEFT ELEVATION



3 REAR ELEVATION



4 RIGHT ELEVATION

DATE	ISSUED FOR	REV
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This drawing has been prepared solely for the use of the SYMMETRY PROPERTY MANAGEMENT and there are no representations of any kind made by NORR to any party with whom NORR has not entered into a contract.

This drawing shall not be used for construction purposes until the seal appearing hereon is signed and drawn by the Architect or Engineer.

Project Component

Key Plan

Consultants

Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

Seal(s)

NORR

150 W. Jefferson Avenue., Suite 1300
Detroit, MI, US 48226
norr.com

Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker

SYMMETRY PROPERTY
MANAGEMENT

Project
LIVONIA RETAIL
DEVELOPMENT
MIDDLEBELT RD. & PLYMOUTH RD.
LIVONIA, MI

Drawing Title
RETAIL 2 - COLORED
ELEVATIONS

Scale: 1/16" = 1'-0"

Project No. JCDT19-0016

Drawing No.
SD06

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Project Component
Key Plan

Consultants
Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

Seal(s)

NORR

150 W. Jefferson Avenue., Suite 1300
Detroit, MI, US 48226
norr.com

Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker
SYMMETRY PROPERTY MANAGEMENT	
Project LIVONIA RETAIL DEVELOPMENT MIDDLEBELT RD. & PLYMOUTH RD. LIVONIA, MI	
Drawing Title RETAIL 1 - RENDERING	
Scale:	
Project No.	JCDT19-0016
Drawing No.	SD07

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Project Component
Key Plan

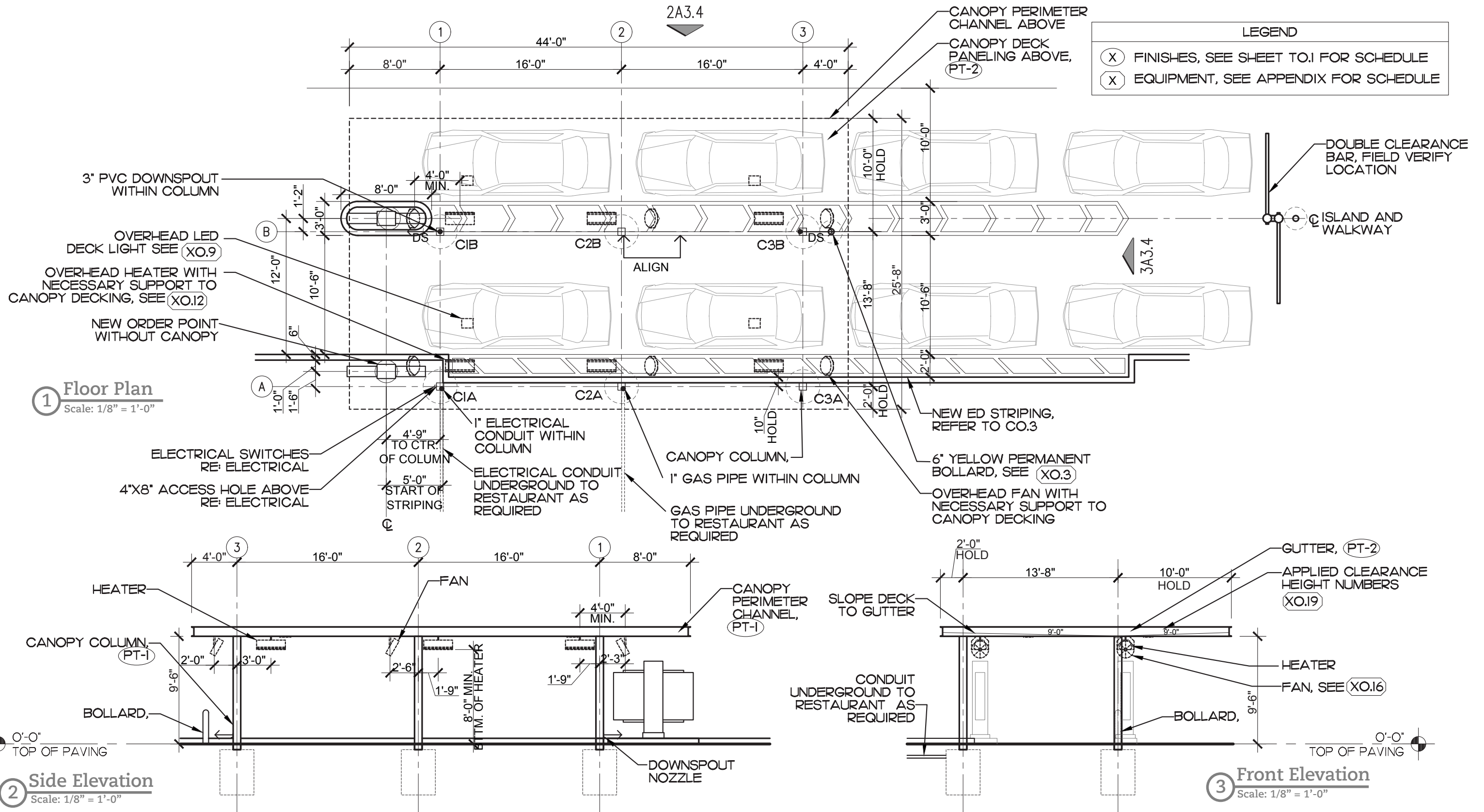
Consultants
Civil:
Landscape:
Architecture:
Structural:
Mechanical:
Electrical:

Seal(s)

NORR

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Detroit, MI, US 48226
norr.com

Project Manager DG	BIM Lead
Design Lead	Drawn Author
Project Leader AC	Checked Checker
SYMMETRY PROPERTY MANAGEMENT	
Project LIVONIA RETAIL DEVELOPMENT MIDDLEBELT RD. & PLYMOUTH RD. LIVONIA, MI	
Drawing Title RETAIL 2 - RENDERING	
Scale:	
Project No.	JCDT19-0016
Drawing No.	SD08



Tier 3 Double Lane Order Canopy with New MLOP

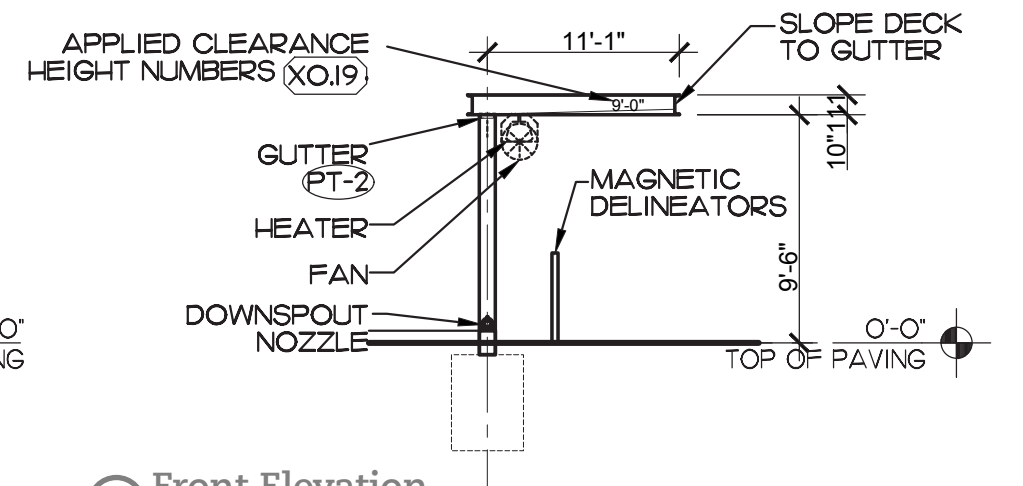
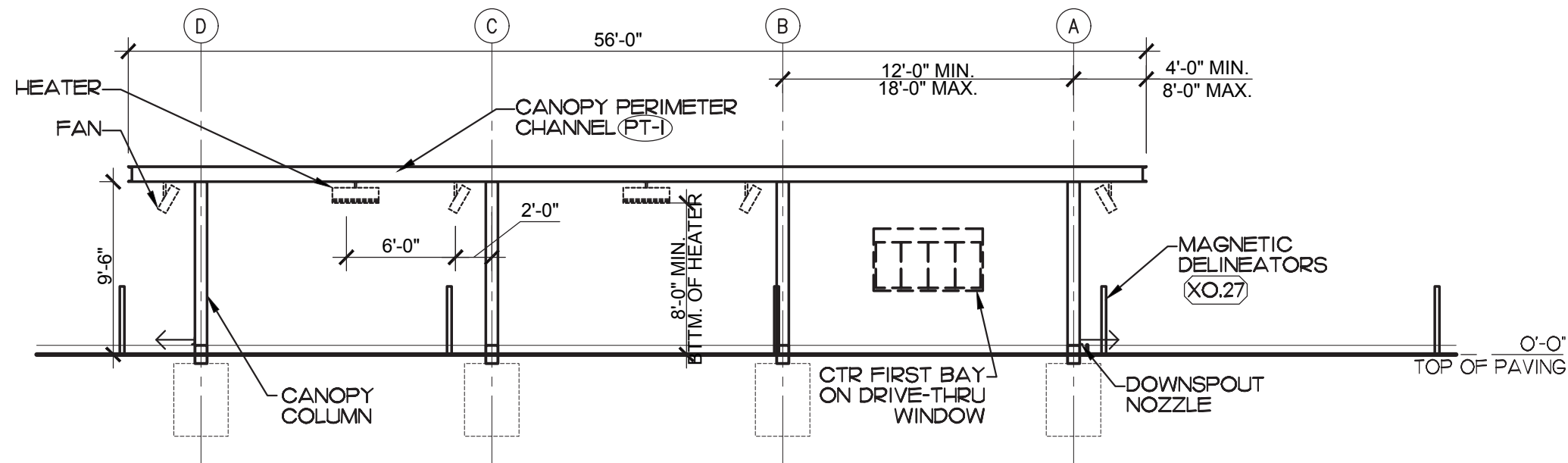
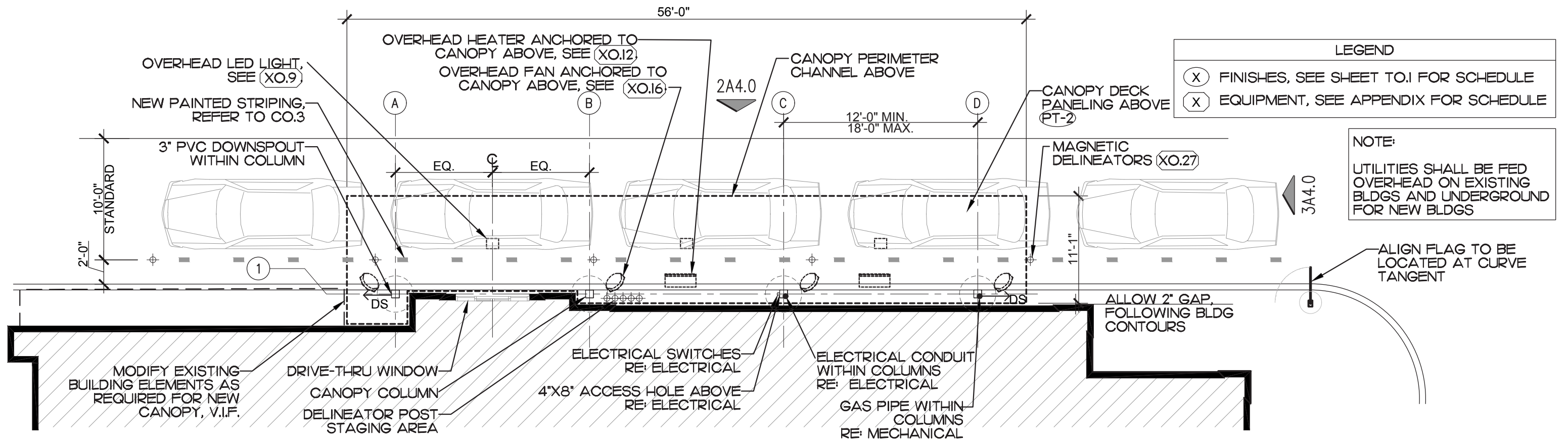
Drive-thru Face-to-Face Design & Construction Guidelines

Date: 09/26/17

Sheet: A3.4



ORDER CANOPY



Tier 3 Order Meal Delivery





OUTSIDE MEAL DELIVERY CANOPY

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

TODD J. ZILINCIK, P.E.
CITY ENGINEER

DAVID W. LEAR, P.E.
ASST. CITY ENGINEER

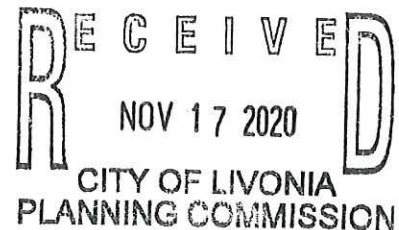


MAUREEN MILLER BROSNAN
MAYOR

DONALD R ROHRAFF
DIRECTOR OF PUBLIC WORKS

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2571
FAX: (734) 466-2195

November 17, 2020



Mr. Scott Miller
Planner IV
City of Livonia

Re: Petition 2020-11-02-10 – Shoppes of Livonia

Dear Mr. Miller:

In accordance with your request, the Engineering Division has reviewed the above referenced petition. We have no objections to the proposed project at this time. The property is assigned the address range of #29250 thru #29350 Plymouth Road, with an address of **#29250 Plymouth Road** assigned for the overall parcel. The legal description included on the plans submitted by the owner appears to be correct, and should be used to describe the parcel.

The proposed development is currently serviced by public water main and sanitary sewers. The submitted drawings indicate that new utility connections will be constructed to service the proposed building layout, but they do not indicate whether the new utilities will be private or public. Depending on the ownership of the proposed utilities, easements may need to be provided.

The drawings do indicate that underground detention for the storm water is planned, but there are no calculations for the systems at this time. The proposed construction will be required to meet the Wayne County Stormwater Ordinance, including detention requirements. A full review of the proposed development will be completed when plans are submitted for permitting.

It should be noted that although the City of Livonia will be reviewing the utility plans for the project, additional permits from Wayne County and MDOT will be required for work in the Middlebelt Road and Plymouth Road right-of-way's.

To: Mr. Scott Miller
Re: Petition 2020-11-02-10 – Shoppes of Livonia

November 17, 2020
Page 2

Should you have any additional questions on this matter, please feel free to contact myself at (734) 466-2608 or the City Engineer, Mr. Todd Zilincik at (734) 466-2561. If you would prefer, you can e-mail either of us at dlear@ci.livonia.mi.us or tzilincik@ci.livonia.mi.us.

Sincerely,



David W. Lear, P.E.
Assistant City Engineer

cc: 2020 Petition File

DEPARTMENT OF PUBLIC SAFETY
LIVONIA FIRE & RESCUE

DAVE HEAVENER
FIRE CHIEF



MAUREEN MILLER BROSNAN
MAYOR

14910 FARMINGTON ROAD
LIVONIA, MICHIGAN 48154-5419
734-466-2444
734-466-2082 fax

DATE: November 12, 2020

TO: Scott O. Miller, Planner IV

FROM: Livonia Fire Prevention Division

SUBJECT: Petition 2020-11-02-10, Shoppes of Livonia, 29250-29350 Plymouth Rd

This office has reviewed the site plan submitted in connection with a request to re-develop the commercial center (Shoppes of Livonia), including demolishing a portion of the existing building, the construction of a restaurant with drive-thru facilities in the vacated space, remodel the existing building's exterior, construct a building addition to the existing building and the construction of a stand-alone multi-tenant commercial building on property located at the above referenced address.

We have no objections to this proposal.

Sincerely,

Greg Thomas

Greg Thomas
Fire Marshal

DEPARTMENT OF PUBLIC SAFETY
DIVISION OF POLICE

CURTIS CAID
CHIEF OF POLICE



MAUREEN MILLER BROSNAN
MAYOR

15050 FARMINGTON ROAD
LIVONIA, MICHIGAN 48154-5499
(734) 466-2470
FAX: (734) 261-2265

RECEIVED
NOV 17 2020
CITY OF LIVONIA
PLANNING COMMISSION

November 11, 2020

Mr. Scott O. Miller
Planning Commission
33000 Civic Center Drive
Livonia, MI 48154

Re: **Petition 2020-11-02-10 - Shoppes of Livonia**

Dear Mr. Miller,

I have reviewed the plans in connection with the petition. I have the following objections to the proposal. I am concerned with the driveway just south of Chick-fil-A. I expect there will be a high traffic volume coming from the business and utilizing that driveway. There is a great possibility for traffic congestion and traffic crashes for vehicles attempting to exit and turn left onto southbound Middlebelt. My recommendation is to post a Right Turn Only sign at the exit.

Please feel free to contact me should you have any questions.

Sincerely,

FOR THE CHIEF OF POLICE

Sgt. Scott Szczepanski #543
Scott Szczepanski, Sergeant
Traffic Bureau
(734) 466-2107

INSPECTION DEPARTMENT

BUILDING
HEATING
PLUMBING
ELECTRICAL
ZONING
SANITATION
ENVIRONMENTAL PROTECTION
ORDINANCE ENFORCEMENT



MAUREEN BROSNAN
MAYOR

JEROME A. HANNA
DIRECTOR

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2580
FAX: (734) 466-2095

Date: December 10, 2020

To: Scott O. Miller

From: Jerome Hanna

RE: Petition 2020-11-02-10 Shoppes of Livonia 29250-29350 Plymouth Road

Pursuant to your request, the above referenced Petition has been reviewed.

1. Signage shall be installed according to the ordinance. Any excess signage will require a variance from the Zoning Board of Appeals.
2. Parking spaces are required to be 10' x 20' and double striped.

This Department has no further objections to this Petition.

I trust this provides the requested information.

Jerome Hanna
Director of Inspection

DEPARTMENT OF FINANCE

Michael T. Slater
DIRECTOR OF FINANCE

Connie Kumpula
CHIEF ACCOUNTANT



MAUREEN MILLER BROSNAN
MAYOR

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2260
FAX: (734) 421-1807

November 12, 2020

Mr. Scott O. Miller
Planning Commission
33000 Civic Center Drive
Livonia, MI 48154

Petition 2020-11-02-10 – 29250-29350 Plymouth Rd. – Shoppes of Livonia

Dear Mr. Miller,

I have reviewed the address connected with the above noted petition. As there are no outstanding amounts receivable (general or water and sewer), I have no objections to the proposal.

Please contact me if you have any further questions.

Very truly yours,

Connie Kumpula
Chief Accountant

CK: jw

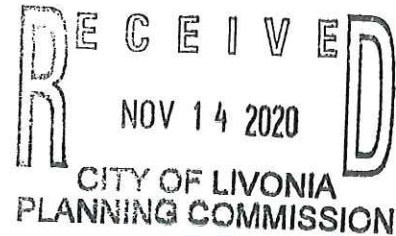
OFFICE OF THE TREASURER

LYNDA L. SCHEEL
CITY TREASURER



33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3060
(734) 466-2245
FAX: (734) 421-7230

November 12, 2020



Mr. Scott Miller – Planner IV
Planning Commission
City of Livonia

Re: Petition 2020-11-02-10

Shoppes of Livonia
29250-29350 Plymouth Road

Dear Mr. Miller,

In accordance with your request, the Treasurer's Office has reviewed the name and addresses connected with the above noted petition. At this time there are no taxes due, therefore I have no objections to the proposal.

Sincerely,


Lynda L. Scheel
Treasurer, City of Livonia

OTHER ITEMS RELATED TO THE PETITION



ROWE PROFESSIONAL SERVICES COMPANY

Large Firm Resources. Personal Attention.

Memorandum

To: Ms. Jenny Nale – Symmetry Management
From: Michael J. Labadie, PE and Brandon M. Hayes, PE, P.Eng.
Date: October 23, 2020
RE: Traffic Impact Assessment for Livonia Chick-fil-A Commercial Development

ROWE Professional Services Company has completed a Traffic Impact Assessment (TIA) related to the redevelopment of the existing shopping center located in the northeast quadrant of Middlebelt Road and Plymouth Road in Livonia, MI. The current site plan (included in the materials attached to this report) shows a Chick-fil-A restaurant (4,995 square feet [SF]) which will replace a portion of the existing Office Depot commercial development totaling approximately 28,000 SF, leaving approximately 58,000 SF of the existing commercial development (Office Depot remains operational as of the submission of this memorandum). The development will also include a 5,532 SF expansion of the existing Office Depot commercial development, and a new retail building that contains 2,000 SF of fast-food restaurant with drive-through and 6,800 SF of retail space. All components of the proposed development have an anticipated opening date in 2022. This TIA was prepared to determine if any improvements would be necessary to mitigate traffic impacts to the adjacent road network. This report has been completed in accordance with the requirements specified by the Michigan Department of Transportation (MDOT), the Wayne County Department of Public Services (WCDPS), and the City of Livonia.

TRAFFIC IMPACT ASSESSMENT

Traffic Counts

Turning movement traffic counts (TMCs) were collected during the weekday AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak periods on October 14, 2020 at the intersections of:

- Middlebelt Road and Plymouth Road;
- Middlebelt Road and North Driveway;
- Middlebelt Road and Middle Driveway;
- Middlebelt Road and South Driveway;
- Plymouth Road and West Driveway; and
- Plymouth Road and East Driveway.

Given the ongoing COVID-19 global pandemic situation at the time of submitting this report, the ability to collect stable traffic volume data representative of typical traffic conditions on Michigan roadways was limited by various commercial and institutional closures/restrictions and other public movement limitations. Therefore, the TMC data collected for this study in October of 2020 were adjusted to reflect normalized, pre-pandemic traffic conditions. A comparison between the October 2020 data and data published on the MDOT Transportation Data Management System (TDMS) was conducted.

The calculations revealed that traffic volumes collected in October of 2020 experienced a reduction of approximately 7% when compared against the historical traffic volumes. Therefore, the peak hour TMCs collected for this project in October of 2020 were increased by this adjustment factor to project vehicle volumes that more accurately represent typical traffic under existing conditions. The adjusted existing peak hour turning movement counts are shown in Figure 1 attached to this memo.

Background Traffic Scenario

Historical traffic data on the MDOT TDMS website was referenced to determine the applicable growth rate for the existing traffic volumes for the project build-out year in 2022. Based on this review, a background growth rate of 0.5 percent was utilized. The background traffic volumes are shown in Figure 2 attached to this memorandum.

Trip Generation

Using the information and methodologies specified in the latest version of Trip Generation (Trip Generation Manual, 10th Edition, 2017), ROWE forecast the weekday AM and PM peak hour trips associated with the proposed development. Trip generation for the proposed Chick-fil-A restaurant was supplied by the client. The results of the trip generation forecasts are provided below in Table 1.

Table 1
Trip Generation for Proposed Development

Land Use	Land Use Code	Units	AM Peak Hour			PM Peak Hour			Weekday
			In	Out	Total	In	Out	Total	
Shopping Center	820	50,388 SF	110	67	177	157	170	327	3,772
Fast-Food w/ Drive-Through	934	2,000 SF	41	39	80	34	31	65	942
Chick-fil-A ¹	N/A ¹	4,995 SF	51	54	105	143	137	280	-
Total	-	-	202	160	362	334	338	672	4,714
Internal Capture Reductions: 9% AM (8% In, 11% Out); 31% PM (32% In, 31% Out)			16	18	34	107	105	212	-
Total External Trips			186	142	328	227	233	460	4,714
<i>Pass-By Rates, LUC 820: 34% PM</i>			0	0	0	53	58	111	-
<i>Pass-By Rates, LUC 934: 49% AM; 50% PM</i>			20	19	39	17	16	33	-
<i>Pass-By Rates, Chick-fil-A²: 40% AM; 40% PM</i>			20	22	42	57	55	112	-
Total New Trips			146	101	247	100	104	204	4,714

¹Source: Driveway counts generated by multiplying driveway counts by AECOM at Chick-fil-A, South Bend, IN, Thursday, December 15, 2016 with a size of 4,730 SF by 106 percent to be proportional to the 4,995 SF proposed development.

²Pass-By rates are provided by AECOM from the Chick-fil-A in South Bend, IN.

In multi-use developments, not all the trips generated are from sources outside the boundaries of the development but are rather trips that are “internally captured” within the site. The methodology presented in *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments* was followed to determine an appropriate internal capture rate for the proposed development. The results of this analysis suggest a 9 percent (8% in, 11% out) AM internal capture rate and a 31 percent (32% in, 31% out) PM peak hour internal capture rate for the combination of land uses. With the inclusion of the internal capture reductions, the proposed development will generate 328 external trips during the AM peak hour (186 inbound and 142 outbound) and 460 external trips during the PM peak hour (227 inbound and 233 outbound).

Not all the traffic generated by the proposed development will be new traffic added onto the adjacent roadway network. As with most new commercial development, a significant amount of the site-generated traffic is considered “pass-by” traffic. Pass-by trips are trips already present on the adjacent roadway network, which are interrupted to visit the site. Pass-by trips are accounted for by reducing the number of forecast new trips to be added to the roadway network; however, actual driveway volumes are not reduced. Pass-by trips are normally expressed as a percentage of trips generated by the new development. These pass-by rates are published in the Trip Generation Handbook (Trip Generation Handbook, 3rd Edition, 2017).

The Trip Generation Handbook suggests a 34 percent PM peak hour pass-by rate for the Shopping Center, and a 49 percent AM peak hour and 50 percent PM peak hour pass-by rate for the Fast-Food Restaurant with Drive-Through Window. Chick-fil-A provided pass-by rates that were observed at a location in South Bend, IN. These rates suggest a 40 percent AM and 40 percent PM pass-by rate for the Chick-fil-A. With the application of the pass-by trip factors, the site-generated trips can be classified as “pass-by” and “new” trips. The proposed development is expected to generate 328 total trips during the AM peak hour and 460 total trips during the PM peak hour. However, only 247 of the AM peak hour trips and 204 of the PM peak hour trips will be new traffic not currently using the adjacent street network, whose primary purpose is to visit the new development.

Trip Distribution

The existing traffic volumes were used to develop a trip distribution model for the AM and PM peak hours for the new traffic that will be generated by the proposed development. Table 2 provides the probable distribution based on the existing traffic patterns.

Table 2
Trip Distribution

Direction	Via	AM Peak Hour		PM Peak Hour	
		To	From	To	From
North	Middlebelt Road	37%	34%	30%	40%
South	Middlebelt Road	23%	34%	29%	23%
East	Plymouth Road	13%	18%	18%	18%
West	Plymouth Road	27%	14%	23%	19%
Total		100%	100%	100%	100%

The trip distribution for the site is shown in Figure 3 attached to this memo. The background traffic volumes were combined with the site generated traffic volumes to obtain the total future traffic volumes, which are shown in Figure 4 attached to this memo.

Level of Service Analysis

Level of service (LOS) analyses for existing, background, and total future (build) conditions for the AM and PM peak hours were performed for the intersections of:

- Middlebelt Road and Plymouth Road
 - Signalized Intersection
- Middlebelt Road and North Driveway
 - Existing driveway located approximately 780' north of Plymouth Road
 - 65' offset from Ford drive – analyzed as four-legged intersection

- Middlebelt Road and Middle Driveway
 - Existing driveway located approximately 520' north of Plymouth Road
- Middlebelt Road and South Driveway
 - Existing driveway located approximately 315' north of Plymouth Road
- Plymouth Road and West Driveway
 - Existing driveway located approximately 290' east of Middlebelt Road
 - Aligned with Livonia Crossroads west drive – analyzed as four-legged intersection
- Plymouth Road and East Driveway
 - Existing driveway located approximately 500' east of Middlebelt Road
 - 75' offset from Livonia Crossroads middle drive – analyzed as four-legged intersection

According to the most recent edition of the *Highway Capacity Manual (6th Edition)*, LOS ranges from A to F, with LOS A representing desirable traffic operations characterized by low delay and LOS F representing extremely poor traffic operations characterized by excessive delays and long vehicle queues. LOS D or above is generally considered to be acceptable in an urban/suburban area. Table 3 presents the criteria for defining the various LOS for signalized and unsignalized intersections.

Table 3
LOS Criteria

LOS	Average Stopped Delay/Vehicle (seconds)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Note: LOS D is considered acceptable in urban/suburban areas.

The results of the LOS analyses for the intersections listed above are summarized in Table 4 through Table 5. Full LOS output reports are attached to this memorandum.

Existing Conditions

The results of the LOS analysis for existing conditions indicate that most approaches of the studied intersections operate at LOS D or better during the AM and PM peak hours.

The eastbound movement at the intersection of Middlebelt Road and North Driveway operates at LOS E in the AM peak hour.

The southbound movement at the intersection of Middlebelt Road and Plymouth Road operates at LOS E in the PM peak hour.

The southbound movement at the intersection of Plymouth Road and East Driveway operates at LOS E in the PM peak hour.

In order to properly model left turning traffic at the southbound approach of the Plymouth Road and Middlebelt Road intersection, adjustments were made to the number of lanes and lane assignments in the model to allow left turning traffic to enter the left turn lane before the south

driveway for the site. As a result of this adjustment, HCM analysis cannot be completed at the intersection of Middlebelt Road and South Driveway. Delay calculations for the intersection of Middlebelt Road and South Driveway were taken from SimTraffic simulations due to these limitations.

Simulations of the AM and PM peak hour were reviewed. The simulations for the AM peak hour revealed minor queue lengths that would occasionally block the intersection of Middlebelt Road and South Driveway. However, these blockages were short in duration, and all queues dissipated within one cycle length. 95th percentile queue lengths on the driveways exiting the site do not exceed 33' (1-2 vehicles). The simulations for the PM peak hour showed that queues for southbound traffic on Middlebelt Road currently block all driveways on Middlebelt Road during most of the PM peak hour. No queueing issues were observed on Plymouth Road. The current signal timing gives nearly equal amounts of green time to all bounds of traffic, while northbound and southbound volumes are much greater than eastbound and westbound volumes. 95th percentile queue lengths on the driveways exiting the site do not exceed 93' (4 vehicles) for the driveways on Middlebelt Road and 52' (2 vehicles) for the driveways on Plymouth Road. The operational results for existing conditions are presented in Table 4.

Table 4
LOS Analysis for Existing Conditions

Intersection	Control Type	Approach	AM Peak	PM Peak
Middlebelt Road and Plymouth Road	Signalized	Eastbound	C 30.5	D 52.0
		Westbound	C 27.8	D 35.3
		Northbound	D 38.5	D 41.5
		Southbound	C 34.2	E 64.6
		Overall	C 34.1	D 51.5
Middlebelt Road and North Driveway	Stop	Eastbound	E 41.9	C 23.7
		Westbound	A 0.0	C 15.6
	Free	Northbound	A 0.0	A 0.1
		Southbound	A 0.0	A 0.0
	TWSC	Overall	A 0.1	A 0.1
Middlebelt Road and Middle Driveway	Stop	Westbound	C 16.6	C 19.8
	Free	Northbound	A 0.0	A 0.0
		Southbound	A 0.1	A 0.1
	TWSC	Overall	A 0.2	A 0.3
Middlebelt Road and South Driveway ¹	Stop	Westbound	A 0.0	A 2.8
	Free	Northbound	A 3.0	A 2.9
		Southbound	A 1.0	C 21.4
	TWSC	Overall	A 2.1	B 13.3
Plymouth Road and West Driveway	Free	Eastbound	A 0.0	A 0.0
		Westbound	A 0.0	A 0.0
	Stop	Northbound	A 9.8	B 14.8
		Southbound	B 10.4	B 11.7
	TWSC	Overall	A 0.1	A 0.2
Plymouth Road and East Driveway	Free	Eastbound	A 0.0	A 0.1
		Westbound	A 0.0	A 0.1
	Stop	Northbound	A 9.7	D 31.3
		Southbound	B 12.2	E 46.2
	TWSC	Overall	A 0.1	A 0.9

XX.X Average seconds of delay per vehicle

¹Delays generated from SimTraffic.

Existing Conditions with Improvements

To improve the delays and queue lengths experienced by motorists on southbound Middlebelt Road, the following improvements were implemented at the intersection of Plymouth Road and Middlebelt Road. Overlap right turn phases were added to the eastbound, westbound, and northbound approaches. The southbound approach has an existing overlap right turn phase. The pedestrian actuation for this signal was changed from running parallel to Middlebelt Road (crossing Plymouth Road) to run parallel to Plymouth Road (crossing Middlebelt Road). This allows the Plymouth Road pedestrian phase to be skipped when there is no pedestrian actuation, allowing a reduction in minimum green time for Plymouth Road and correspondent increase in green time for Middlebelt Road. Finally, the cycle length was reduced from 110 seconds to 100 seconds, and signal timing split optimization was completed. These improvements are necessary in the Existing Condition and MDOT should consider installing them in the near term.

With these improvements, all approaches to the signalized intersection would operate at LOS D or better during the AM and PM peak hours.

Review of the simulations revealed that both the AM and PM peak hours would generate queue lengths that would occasionally block the intersection of Middlebelt Road and South Driveway. However, these blockages were short in duration, and all queues dissipated within one cycle length. 95th percentile queue lengths on the driveways exiting the site do not exceed 42' (1-2 vehicles) in the AM peak hour, 41' (1-2 vehicles) for the driveways on Middlebelt Road in the PM peak hour, and 61' (2-3 vehicles) for the driveways on Plymouth Road in the PM peak hour. This reduction in Middlebelt Road development driveway queue lengths is directly correlated to the decrease in southbound queue lengths at the intersection of Middlebelt Road and Plymouth Road.

The operational results for Existing Conditions with Improvements are presented are presented in Table 5.

Table 5
LOS Analysis for Background Conditions – With Improvements

Intersection	Control Type	Approach	AM Peak	PM Peak
Middlebelt Road and Plymouth Road	Signalized	Eastbound	D 37.6	D 52.7
		Westbound	D 38.5	D 53.2
		Northbound	C 32.5	C 33.0
		Southbound	C 28.1	D 40.3
		Overall	C 32.9	D 43.5

XX.X Average seconds of delay per vehicle

Background Conditions

The Background Conditions analysis was conducted assuming that the intersection improvements identified as being required in the Existing Condition above are all implemented by the 2022 analysis year. The results of the LOS analysis for Background Conditions indicate that most approaches of the studied intersections would continue to operate at LOS D or better during the AM and PM peak hours.

The eastbound movement at the intersection of Middlebelt Road and North Driveway would continue to operate at LOS E in the AM peak hour.

The southbound movement at the intersection of Plymouth Road and East Driveway would continue to operate at LOS E in the PM peak hour.

Review of the simulations revealed that both the AM and PM peak hours would generate queue lengths that would occasionally block the intersection of Middlebelt Road and South Driveway. However, these blockages were short in duration, and all queues dissipated within one cycle length. 95th percentile queue lengths on the driveways exiting the site do not exceed 33' (1-2 vehicles) in the AM peak hour, 41' (1-2 vehicles) for the driveways on Middlebelt Road in the PM peak hour, and 49' (2 vehicles) for the driveways on Plymouth Road in the PM peak hour.

The operational results for background conditions are presented in Table 6.

Table 6
LOS Analysis for Background Conditions

Intersection	Control Type	Approach	AM Peak	PM Peak
Middlebelt Road and Plymouth Road	Signalized	Eastbound	D 37.7	D 53.6
		Westbound	D 38.6	D 53.9
		Northbound	C 32.7	C 33.2
		Southbound	C 28.2	D 41.3
		Overall	C 33.1	D 44.2
Middlebelt Road and North Driveway	Stop	Eastbound	E 42.5	C 23.9
		Westbound	A 0.0	C 15.7
	Free	Northbound	A 0.0	A 0.1
		Southbound	A 0.0	A 0.0
	TWSC	Overall	A 0.1	A 0.1
Middlebelt Road and Middle Driveway	Stop	Westbound	C 16.7	C 20.1
	Free	Northbound	A 0.0	A 0.0
		Southbound	A 0.1	A 0.1
	TWSC	Overall	A 0.2	A 0.3
Middlebelt Road and South Driveway ¹	Stop	Westbound	A 0.0	A 2.8
	Free	Northbound	A 2.9	A 2.7
		Southbound	A 0.9	A 6.0
	TWSC	Overall	A 2.0	A 4.6
Plymouth Road and West Driveway	Free	Eastbound	A 0.0	A 0.0
		Westbound	A 0.0	A 0.0
	Stop	Northbound	A 9.8	B 14.9
		Southbound	B 10.4	B 11.7
	TWSC	Overall	A 0.1	A 0.2
Plymouth Road and East Driveway	Free	Eastbound	A 0.0	A 0.1
		Westbound	A 0.0	A 0.1
	Stop	Northbound	A 9.7	D 31.9
		Southbound	B 12.3	E 47.7
	TWSC	Overall	A 0.1	A 0.9

XX.X Average seconds of delay per vehicle

¹Delays generated from SimTraffic.

Future Conditions

The results of the LOS analysis for future conditions reveals that most approaches of the studied intersections would continue to operate at LOS D or better during the AM and PM peak hours.

The eastbound and westbound movements at the intersection of Middlebelt Road and Plymouth Road would operate at LOS E in the PM peak hour.

The eastbound movement at the intersection of Middlebelt Road and North Driveway would continue to operate at an LOS E in the AM peak hour. The westbound movement at this intersection would operate at an LOS E in the PM peak hour.

The westbound movements at the intersections of Middlebelt Road and Middle Driveway and Middlebelt Road and South Driveway would operate at an LOS F in the PM peak hour.

The northbound and southbound movements at the intersection of Plymouth Road and East Driveway would operate at an LOS E and F, respectively, in the PM peak hour.

Review of the simulations revealed that the AM peak hour would generate queue lengths that would occasionally block the intersection of Middlebelt Road and South Driveway. However, these blockages were short in duration, and all queues dissipated within one cycle length. 95th percentile queue lengths on the driveways exiting the site do not exceed 54' (2 vehicles) for driveways on Middlebelt Road and 98' (4 vehicles) for driveways on Plymouth Road.

Review of the simulations revealed that the PM peak hour would generate queue lengths that would block the intersection of Middlebelt Road and South Driveway for most of the peak hour. 95th percentile queue lengths on the driveways exiting the site can reach lengths up to 503' (20 vehicles) for driveways on Middlebelt Road (specifically, at the South Driveway) and do not exceed 199' (8 vehicles) for driveways on Plymouth Road.

The operational results for background conditions are presented in Table 7.

Table 7
LOS Analysis for Future Conditions

Intersection	Control Type	Approach	AM Peak	PM Peak
Middlebelt Road and Plymouth Road	Signalized	Eastbound	D 38.4	E 57.0
		Westbound	D 39.8	E 58.7
		Northbound	C 33.2	C 33.6
		Southbound	C 28.5	D 42.7
		Overall	C 33.7	D 46.5
Middlebelt Road and North Driveway	Stop	Eastbound	E 48.2	C 24.5
		Westbound	C 24.0	E 41.6
	Free	Northbound	A 0.0	A 0.1
		Southbound	A 0.1	A 0.0
	TWSC	Overall	A 0.2	A 0.2
Middlebelt Road and Middle Driveway	Stop	Westbound	C 20.8	F 55.1
	Free	Northbound	A 0.0	A 0.0
		Southbound	A 0.4	A 0.4
	TWSC	Overall	A 0.8	A 2.1
Middlebelt Road and South Driveway ¹	Stop	Westbound	A 7.1	F 255.5
	Free	Northbound	A 3.0	A 3.4
		Southbound	A 1.4	B 13.3
	TWSC	Overall	A 2.3	B 13.3
Plymouth Road and West Driveway	Free	Eastbound	A 0.0	A 0.0
		Westbound	A 0.0	A 0.0
	Stop	Northbound	A 9.9	C 15.2
		Southbound	B 10.8	B 12.6
	TWSC	Overall	A 0.4	A 0.5
Plymouth Road and East Driveway	Free	Eastbound	A 0.7	A 0.3
		Westbound	A 0.0	A 0.1
	Stop	Northbound	A 9.7	E 35.1
		Southbound	D 28.2	F 157.0
	TWSC	Overall	A 1.7	A 0.9

XX.X Average seconds of delay per vehicle

¹Delays generated from SimTraffic.

Future Conditions with Improvements

To reduce the delays experienced by motorists at the studied intersections, the following improvements were implemented. The middle driveway along Middlebelt Road was expanded from 2 lanes (1 inbound, 1 outbound) to three lanes (1 inbound, 2 outbound). The south driveway along Middlebelt Road was analyzed with right in, right out (RIRO) operations. The cycle length for the signalized intersection of Middlebelt Road and Plymouth Road was changed from 100 seconds to 120 seconds, and all phase splits were optimized. Finally, the east driveway along Plymouth Road was converted from 2 lanes (1 inbound, 1 outbound) to three lanes (1 inbound, 2 outbound).

With these improvements, most approaches to the studied intersections would continue to operate at an LOS D or better during the AM and PM peak hours.

The westbound movement at the intersection of Middlebelt Road and Middle Driveway would continue to operate at an LOS F in the PM peak hour.

The northbound and southbound movements at the intersection of Plymouth Road and East Driveway would continue to operate at LOS E and F, respectively, in the PM peak hour.

Review of the simulations revealed that both the AM and PM peak hours would generate queue lengths that would occasionally block the intersection of Middlebelt Road and South Driveway. However, these blockages were short in duration, and all queues dissipated within one cycle length. In the AM peak hour, 95th percentile queue lengths on the driveways exiting the site do not exceed 45' (2 vehicles) for driveways on Middlebelt Road and 82' (3-4 vehicles) for driveways on Plymouth Road. In the PM peak hour, 95th percentile queue lengths on the driveways exiting the site do not exceed 23' (1 vehicle) at the north driveway, 123' (5 vehicles) for left turning vehicles at the middle driveway, 57' (2-3 vehicles) for right turning vehicles at the middle driveway, 68' (2-3 vehicles) at the south driveway, 58' (2-3 vehicles) at the west driveway, 122' (4-5 vehicles) for left turning vehicles at the east driveway, and 61' (2-3 vehicles) for right turning vehicles at the east driveway.

The simulation shows that queues from the middle driveway will cause frequent blockages of the exiting drive-through lanes in both peak hours and will occasionally block one of the 2 entrance lanes to the drive-through during the PM peak hour. However, a majority of the vehicles utilizing this driveway are coming from the drive-through, and it is expected that the queue lengths will not cause backups of exiting vehicles upstream through the drive-through lanes; conversely, the queues at the middle site driveway are comprised primarily of exiting drive-through traffic.

The operational results for Future Conditions with Improvements are presented in Table 8.

Table 8
LOS Analysis for Future Conditions – With Improvements

Intersection	Control Type	Approach	AM Peak	PM Peak
Middlebelt Road and Plymouth Road	Signalized	Eastbound	D 40.5	D 53.5
		Westbound	D 47.3	D 49.9
		Northbound	C 35.8	C 51.9
		Southbound	C 29.8	D 44.2
		Overall	C 36.8	D 49.0
Middlebelt Road and Middle Driveway	Stop	Westbound	C 22.4	F 82.0
	Free	Northbound	A 0.0	A 0.0
		Southbound	A 0.8	A 0.8
	TWSC	Overall	A 1.2	A 4.0
Middlebelt Road and South Driveway ¹	Stop	Westbound	A 2.8	A 3.1
	Free	Northbound	A 2.9	A 3.2
		Southbound	A 1.1	B 8.0
	TWSC	Overall	A 2.1	B 5.9
Plymouth Road and East Driveway	Free	Eastbound	A 0.7	A 0.3
		Westbound	A 0.0	A 0.1
	Stop	Northbound	A 9.7	E 35.1
		Southbound	D 25.1	F 106.1
	TWSC	Overall	A 1.5	A 0.9

XX.X Average seconds of delay per vehicle

¹Delays generated from SimTraffic.

Turn Lane, Passing Lane, and Taper Warrant

All of the existing driveways have an existing two-way left turn lane (TWLTL) for entering vehicles, and the three driveways along Middlebelt Road have existing right turn lanes. The west driveway along Plymouth Road has an existing right turn taper. The east driveway does not have any right turn treatment. An evaluation was performed in accordance with MDOT requirements to determine if a right turn deceleration lane is required at the east driveway. The results of the analysis indicated that a right turn taper is warranted at the west and east driveways along Plymouth Road. All turn lane warrant charts are attached to this memorandum.

The results of the analysis are presented in Table 9.

Table 9
Turn Lane Warrants

Intersection	Movement	Result
Middlebelt Road and North Driveway	NB RT	Existing Turn Lane
	SB LT	Existing TWLTL
Middlebelt Road and Middle Driveway	NB RT	Existing Turn Lane
	SB LT	Existing TWLTL
Middlebelt Road and South Driveway	NB RT	Existing Turn Lane
	SB LT	Existing TWLTL
Plymouth Road and West Driveway	EB RT	Existing Taper – Taper Warranted
	WB LT	Existing TWLTL
Plymouth Road and East Driveway	EB RT	Taper Warranted
	WB TL	Existing TWLTL

Conclusions and Recommendations for the Traffic Impact Assessment

The proposed project consists of a Chick-fil-A restaurant (4,995 SF) which will replace a portion of the existing Office Depot commercial development totaling approximately 28,000 SF, leaving approximately 58,000 SF of the existing commercial development (Office Depot remains operational as of the submission of this memorandum). The development will also include a 5,532 SF expansion of the existing Office Depot commercial development, and a new retail building that contains 2,000 SF of fast-food restaurant with drive-through and 6,800 SF of retail space. All components of the proposed development have an anticipated opening date in 2022. The proposed development will have access to Middlebelt Road via three existing driveways (North, Middle, and South) and access to Plymouth Road via two existing driveways (West and East).

The proposed development is forecast to generate 247 new trips during the AM peak hour (146 inbound and 101 outbound from the site) and 204 new trips during the PM peak hour (100 inbound and 104 outbound from the site).

An operational analysis was performed for existing, background, and total future (build) conditions for the intersections of:

- Middlebelt Road and Plymouth Road
- Middlebelt Road and North Driveway
- Middlebelt Road and Middle Driveway
- Middlebelt Road and South Driveway
- Plymouth Road and West Driveway
- Plymouth Road and East Driveway

The operational analysis indicated that most approaches of the study intersections would operate at acceptable levels during both the AM and PM peak hours with improvements. Under existing conditions, the intersection of Middlebelt Road and Plymouth Road requires the addition of overlap right turn phases on the eastbound, westbound, and northbound approaches. The pedestrian actuation for this signal should be changed from running parallel to Middlebelt Road (crossing Plymouth Road) to run parallel to Plymouth Road (crossing Middlebelt Road). Additionally, the cycle length in the existing condition should be changed from 110 seconds to 100 seconds, and timing split optimization should be completed. These improvements are necessary at this intersection in the existing condition and MDOT should consider installing them in the near term.

Under future traffic conditions, the middle driveway along Middlebelt Road should be expanded from 2 lanes (1 inbound, 1 outbound) to three lanes (1 inbound, 2 outbound). The cycle length for the signalized intersection of Middlebelt Road and Plymouth Road should be changed from 100 seconds to 120 seconds, and all timing splits should be optimized. Finally, the east driveway along Plymouth Road should be converted from 2 lanes (1 inbound, 1 outbound) to three lanes (1 inbound, 2 outbound).

Turn lane warrant analysis at the new site driveways revealed that a right turn taper is required at the east driveway. All other driveways have existing turn lanes or right turn tapers, with no additional treatments required.

Attachments

\\fh\cad\Projects\20F0065\Docs\Design\TIA\20F0065 Livonia Chick-fil-A TIS.docx

SITE PLAN

LEGEND

	PROPERTY LINE		PAVEMENT MARKINGS
	FUTURE RIGHT-OF-WAY		PROPOSED SIGN
	PROPOSED CURB & GUTTER		ACCESSIBLE PARKING SPACE
	CONCRETE SIDEWALK		PROPOSED LIGHT POLE
	CONCRETE		PROPOSED RAMP
	STANDARD DUTY ASPHALT		EXISTING UTILITY POLE
	EXISTING OVERHEAD LINE		

NOTES

1. REFER TO DETAIL SHEETS AND ATTACHED CLINTON TOWNSHIP STANDARDS.
2. REFER TO THE ALTA/ACSM LAND TITLE SURVEY FOR ADDITIONAL EXISTING FEATURES AND PROPERTY BOUNDARY INFORMATION.
3. ALL DIMENSIONS ARE TO EDGE OF BUILDING, FACE OF CURB, OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
4. REFER TO ARCHITECTURAL / FOUNDATION PLANS FOR BUILDING DIMENSIONS.
5. ALL RADII ARE 5' UNLESS OTHERWISE NOTED.
6. LIGHT POLE LOCATIONS ARE SHOWN FOR REFERENCE ONLY, SEE LIGHTING PLAN (BY OTHERS) FOR LIGHT POLE DETAILS, LOCATION, AND INTENSITIES.

SITE DATA

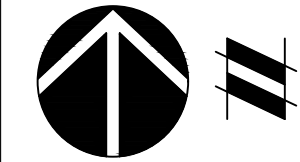
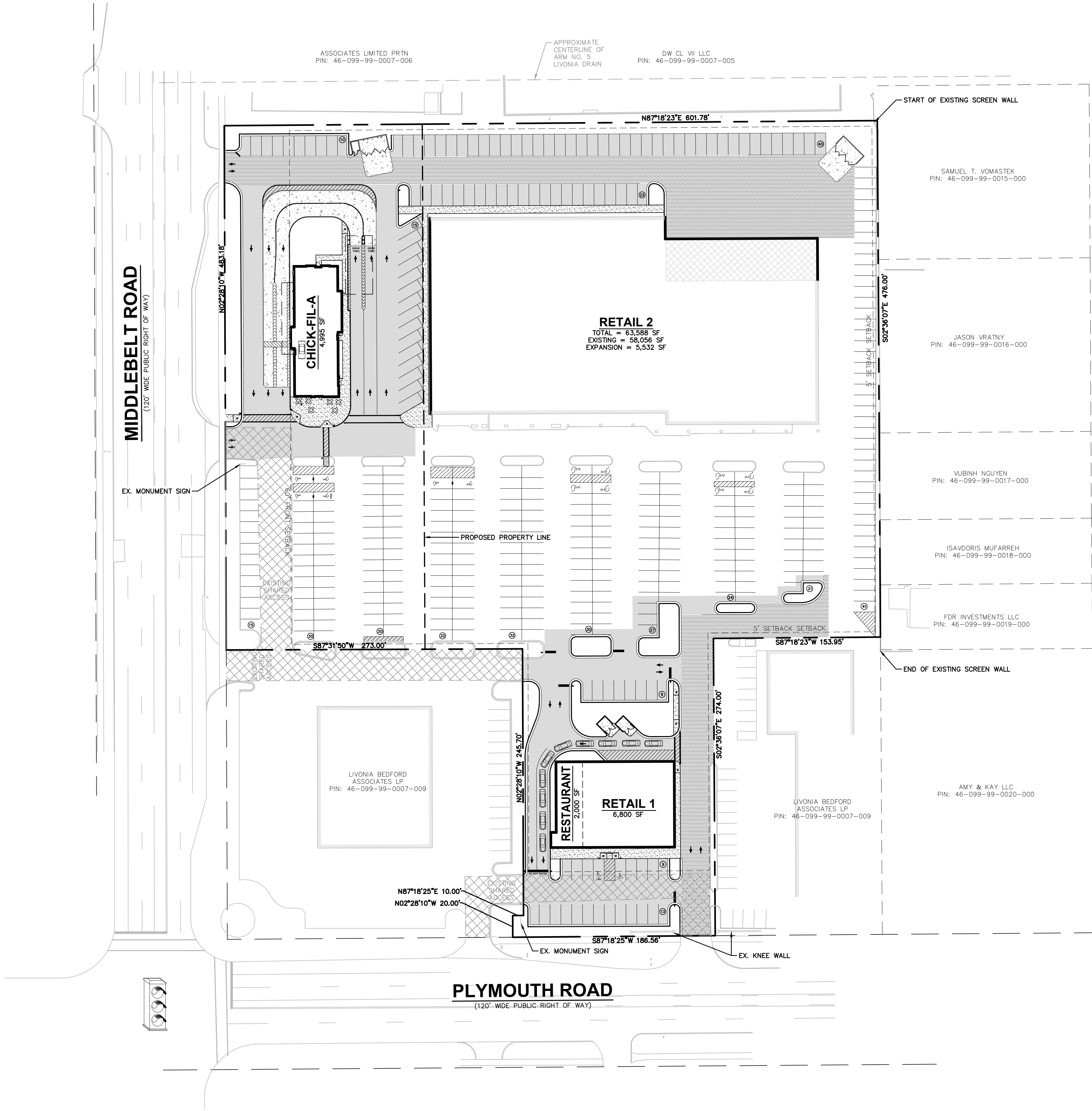
PARCEL ID#	NET AREA	ZONING
46-099-99-0007-009	7.746 ACRES	C-2 (GENERAL BUSINESS)

TENANT	EXISTING	PROPOSED	TOTAL
CHICK-FIL-A	N/A	4,995 SF	4,995 SF
RESTAURANT	N/A	2,000 SF	2,000 SF
RETAIL 1	N/A	6,800 SF	6,800 SF
RETAIL 2	58,056 SF	5,532 SF	63,588 SF
TOTAL	58,056 SF	19,327 SF	77,383 SF

TENANT	PROVIDED	REQUIRED	FORMULA
CHICK-FIL-A	SEE TOTAL	40 SPACES	1/100 UFA*
RESTAURANT	SEE TOTAL	16 SPACES	1/100 UFA*
RETAIL 1	SEE TOTAL	37 SPACES	1/150 UFA*
RETAIL 2	SEE TOTAL	340 SPACES	1/150 UFA*
TOTAL	398 SPACES	433 SPACES	

*USEABLE FLOOR AREA ASSUMED AS 80% OF GROSS FLOOR AREA

	PROPOSED	REQUIRED	FORMULA
TOTAL	16 SPACES	8 SPACES	300-400 TOTAL SPACES PROVIDED
VAN	2 SPACES	2 SPACES	1/6 ACCESSIBLE SPACES



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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313-766-7800



SECTION 25
TOWN 1 SOUTH, RANGE 9 EAST
CITY OF LIVONIA
WAYNE COUNTY, MICHIGAN

SYMMETRY PROPERTY MANAGEMENT
MIDDLEBELT & PLYMOUTH
SITE PLANS
OVERALL LAYOUT PLAN

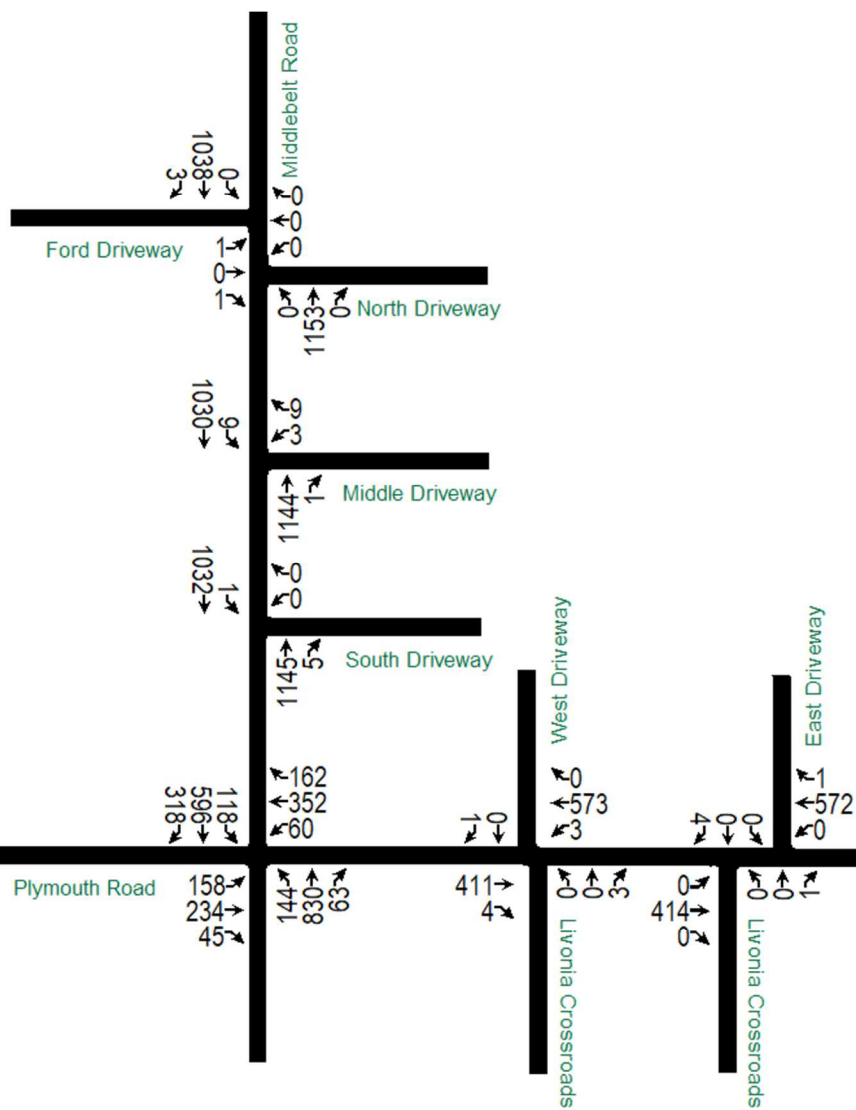
DATE: —, 2020
REVISIONS/SUBMITTALS
XX-XX-2020 CITY SUBMITTAL

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SCALE: 1"=30'

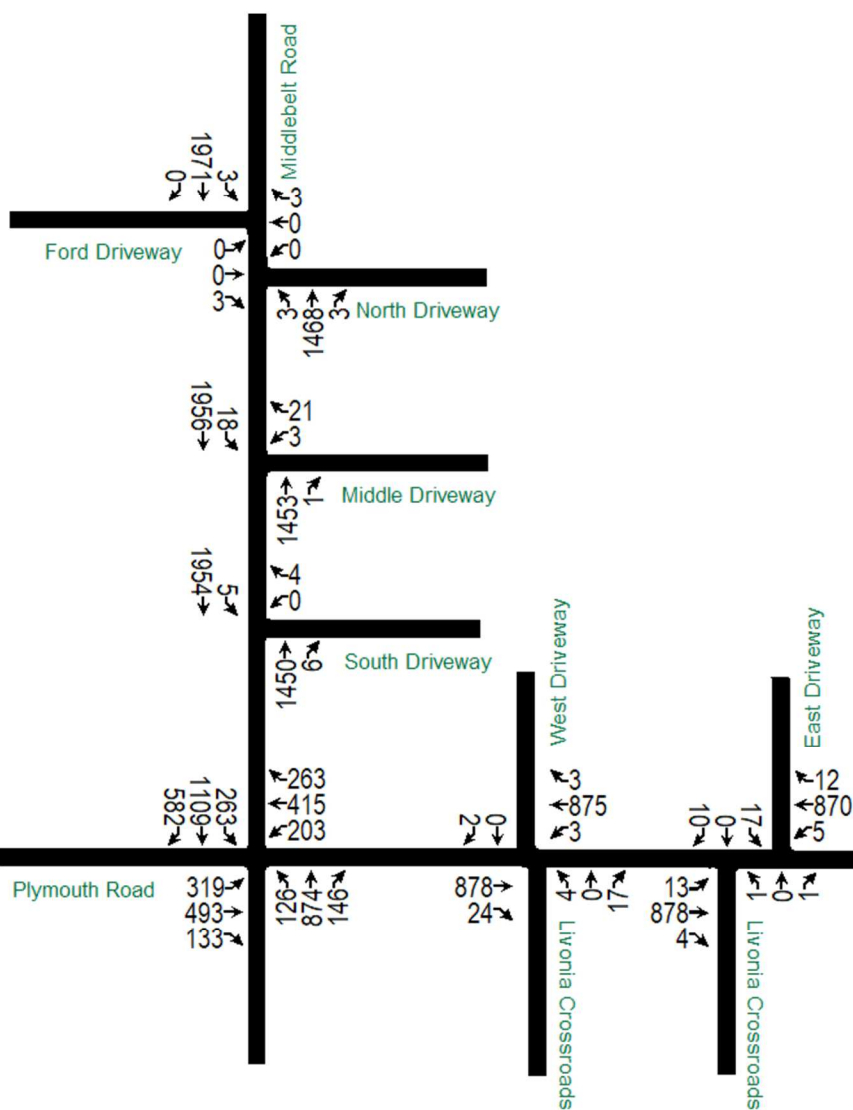
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CHECKED BY: EM
PROJECT MANAGER: MM
JOB #: 18003853
SHEET NO.

REPORT FIGURES

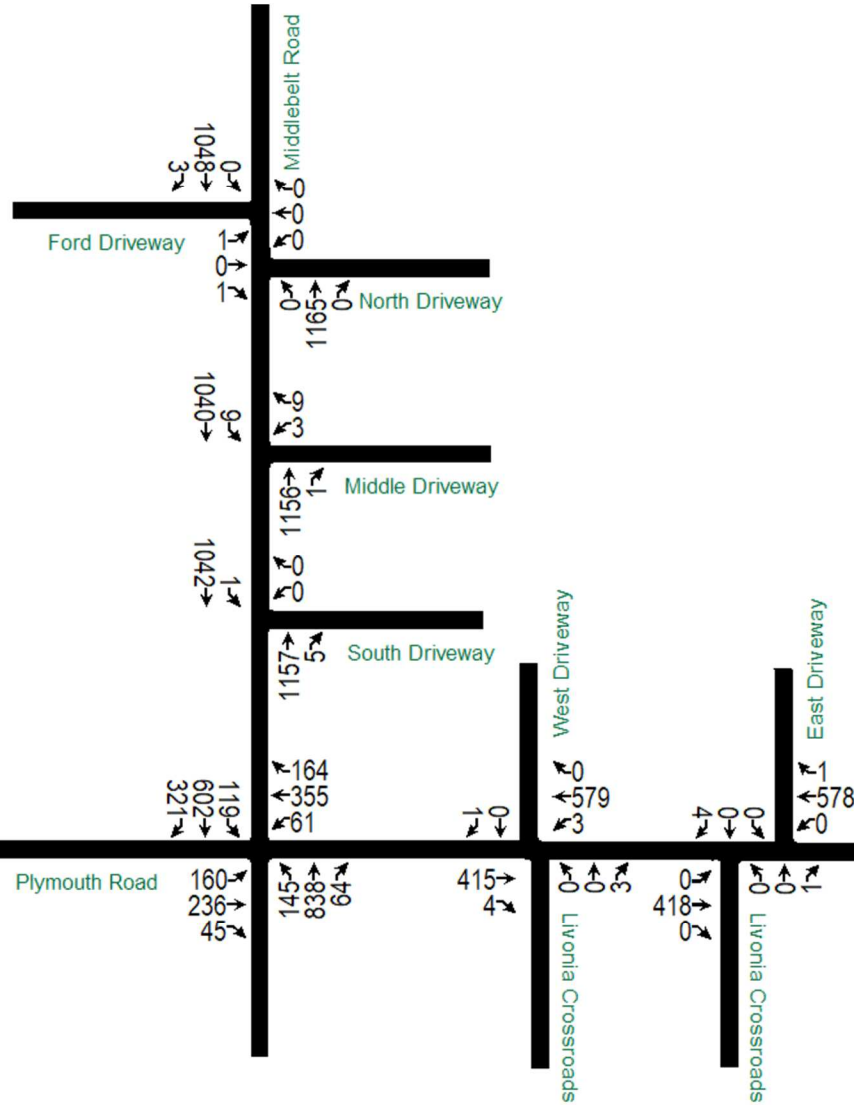
AM Peak Hour



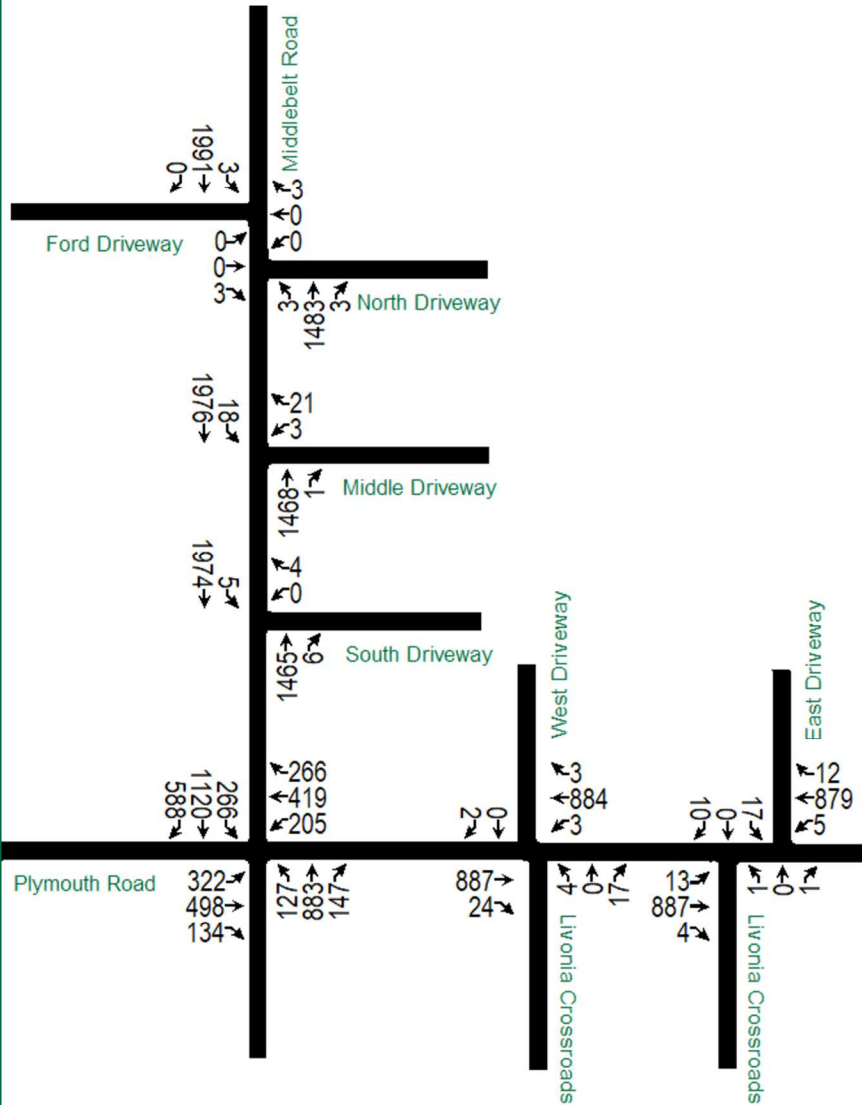
PM Peak Hour



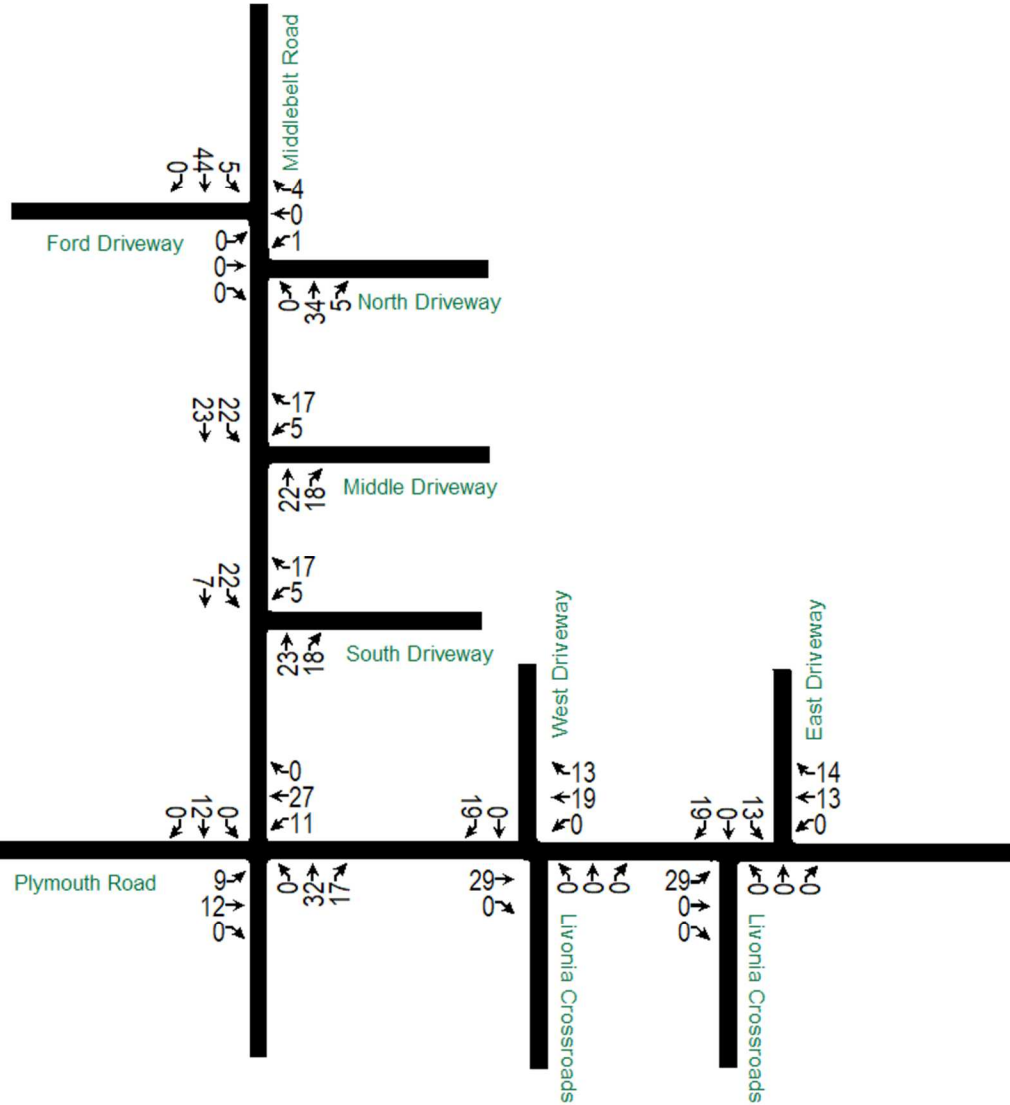
AM Peak Hour



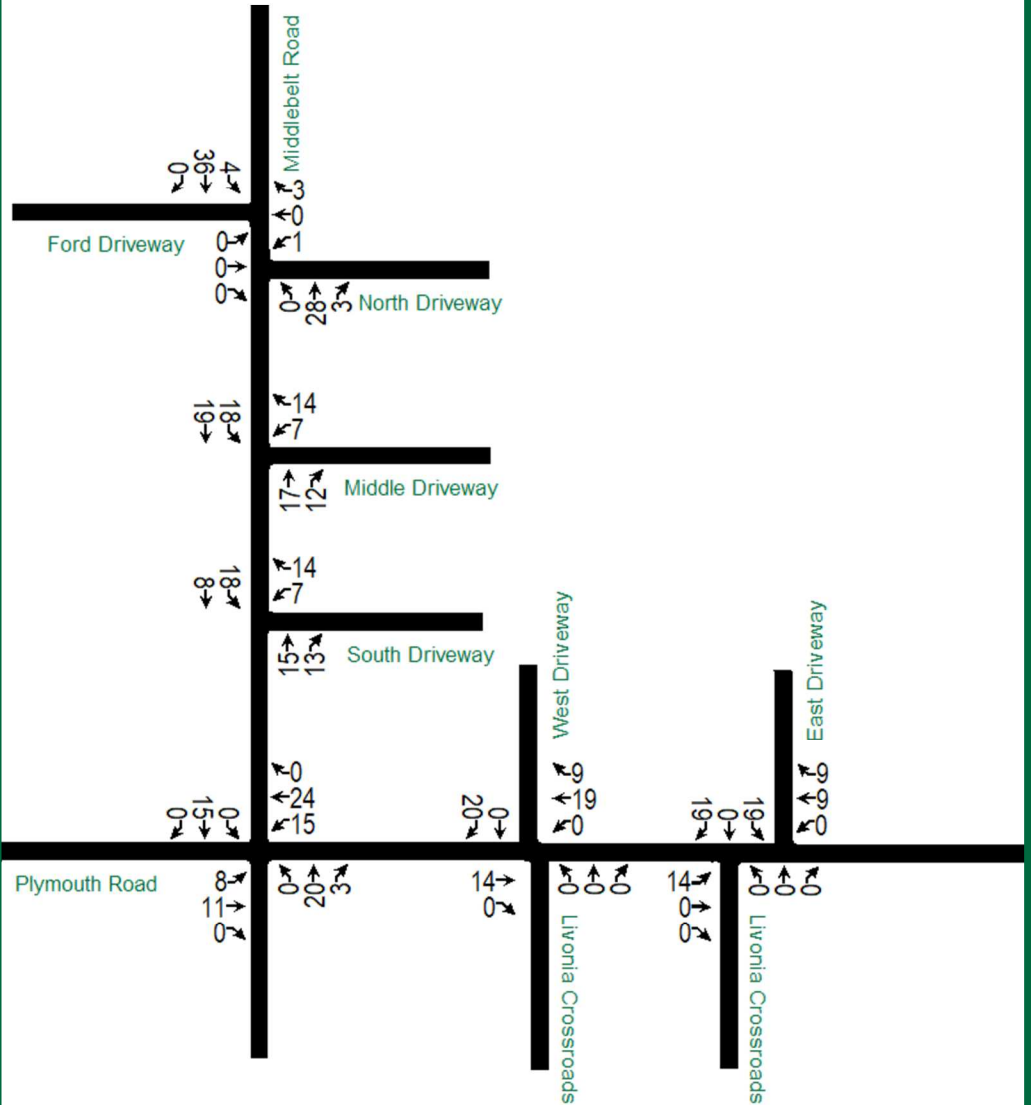
PM Peak Hour



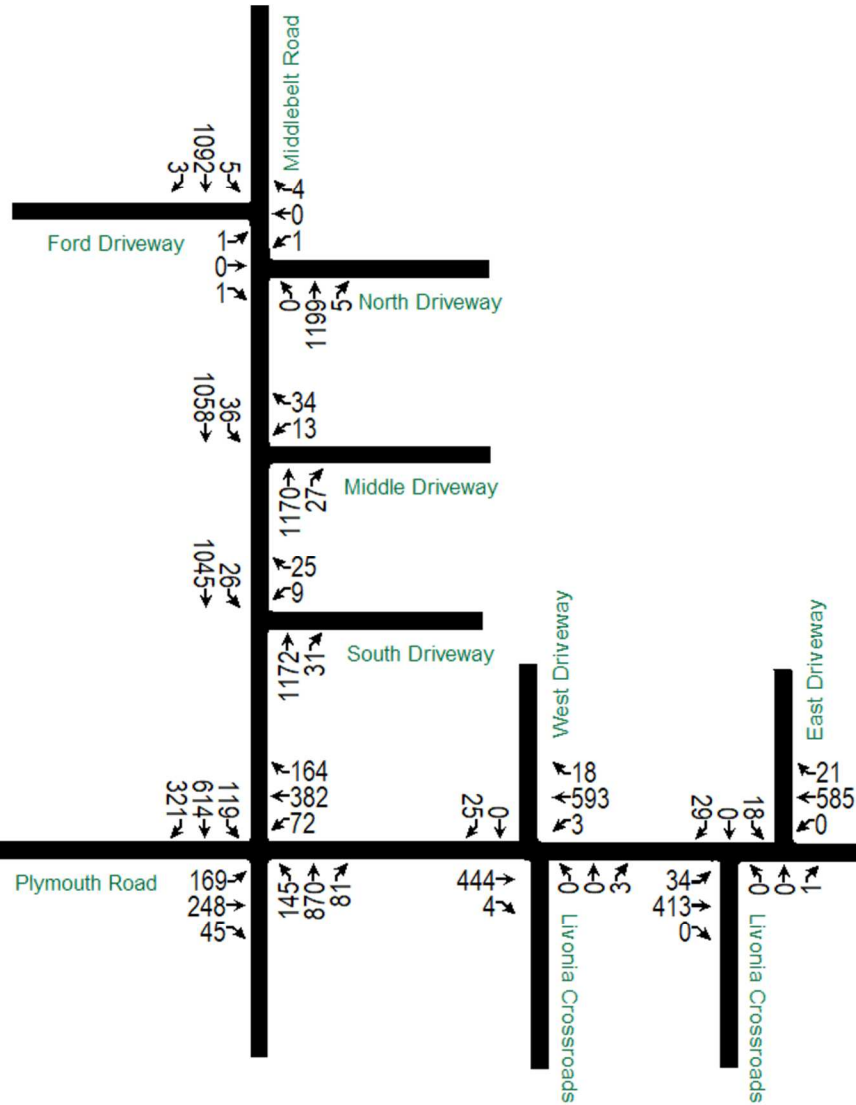
AM Peak Hour



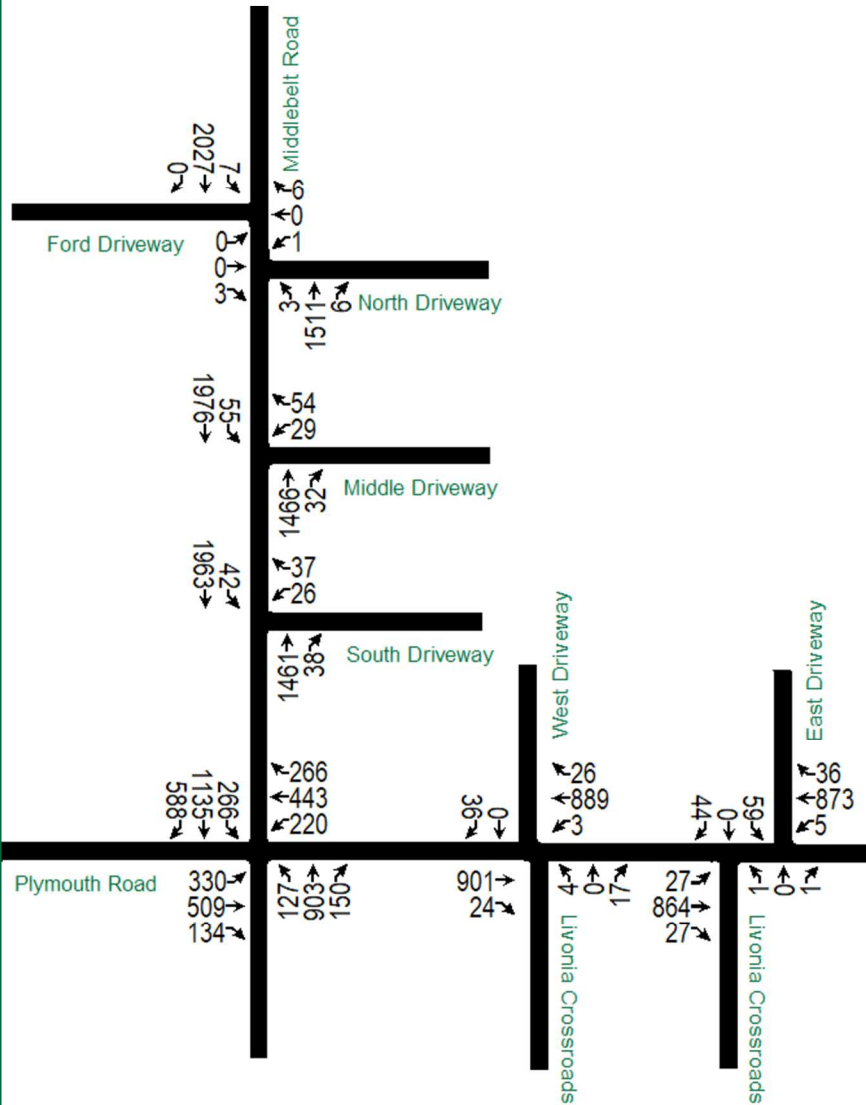
PM Peak Hour



AM Peak Hour



PM Peak Hour



TRAFFIC COUNTS

Middlebelt Road and North Driveway (unsignal... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787427, Location: 42.371374, -83.333169



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Eastbound					Access Westbound					Middlebelt Northbound					Middlebelt Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 7:00AM	1	0	0	0	1	0	0	2	0	2	1	800	0	0	801	0	713	2	0	715	1519
8:00AM	1	0	1	0	2	0	0	0	0	0	0	855	0	0	855	0	786	2	0	788	1645
4:00PM	1	0	3	0	4	0	0	0	0	0	4	1341	2	0	1347	0	1697	0	0	1697	3048
5:00PM	0	0	3	0	3	0	0	3	0	3	3	1367	3	0	1373	3	1839	0	1	1843	3222
Total	3	0	7	0	10	0	0	5	0	5	8	4363	5	0	4376	3	5035	4	1	5043	9434
% Approach	30.0%	0%	70.0%	0%	-	0%	0%	100%	0%	-	0.2%	99.7%	0.1%	0%	-	0.1%	99.8%	0.1%	0%	-	-
% Total	0%	0%	0.1%	0%	0.1%	0%	0%	0.1%	0%	0.1%	0.1%	46.2%	0.1%	0%	46.4%	0%	53.4%	0%	0%	53.5%	-
Lights	3	0	7	0	10	0	0	4	0	4	8	4281	4	0	4293	2	4865	4	1	4872	9179
% Lights	100%	0%	100%	0%	100%	0%	0%	80.0%	0%	80.0%	100%	98.1%	80.0%	0%	98.1%	66.7%	96.6%	100%	100%	96.6%	97.3%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	23	1	0	24	1	80	0	0	81	105
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.5%	20.0%	0%	0.5%	33.3%	1.6%	0%	0%	1.6%	1.1%
Motorized Vehicles	0	0	0	0	0	0	0	1	0	1	0	59	0	0	59	0	90	0	0	90	150
% Motorized Vehicles	0%	0%	0%	0%	0%	0%	0%	20.0%	0%	20.0%	0%	1.4%	0%	0%	1.3%	0%	1.8%	0%	0%	1.8%	1.6%

*L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and North Driveway (unsignal... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

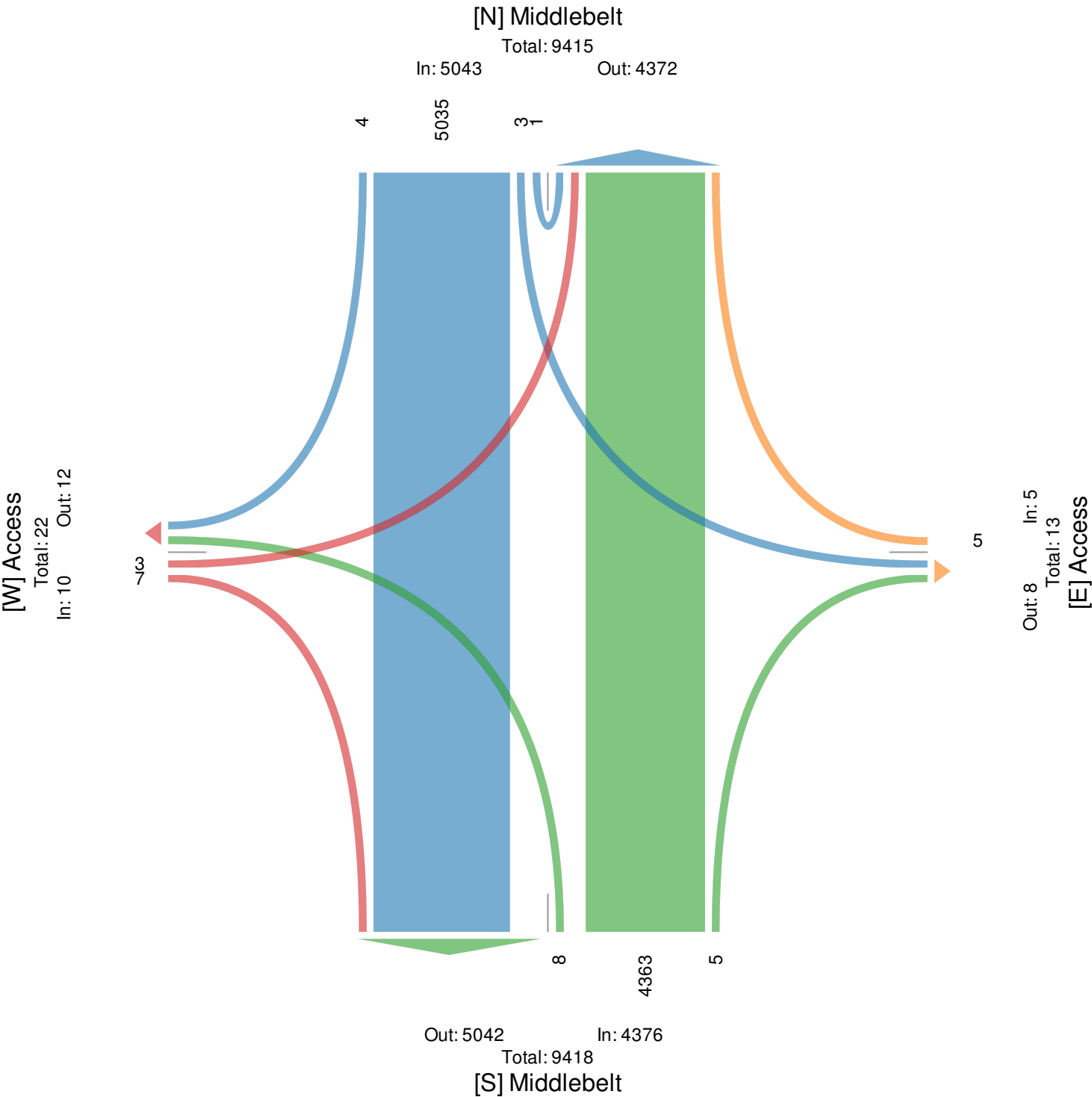
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787427, Location: 42.371374, -83.333169



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and North Driveway (unsignal... - TMC

Wed Oct 14, 2020

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787427, Location: 42.371374, -83.333169



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Eastbound					Access Westbound					Middlebelt Northbound					Middlebelt Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 8:00AM	0	0	0	0	0	0	0	0	0	0	0	203	0	0	203	0	198	0	0	198	401
8:15AM	0	0	0	0	0	0	0	0	0	0	0	200	0	0	200	0	165	0	0	165	365
8:30AM	0	0	0	0	0	0	0	0	0	0	0	227	0	0	227	0	185	0	0	185	412
8:45AM	1	0	1	0	2	0	0	0	0	0	0	225	0	0	225	0	238	2	0	240	467
Total	1	0	1	0	2	0	0	0	0	0	0	855	0	0	855	0	786	2	0	788	1645
% Approach	50.0%	0%	50.0%	0%	-	0%	0%	0%	0%	-	0%	100%	0%	0%	-	0%	99.7%	0.3%	0%	-	-
% Total	0.1%	0%	0.1%	0%	0.1%	0%	0%	0%	0%	0%	0%	52.0%	0%	0%	52.0%	0%	47.8%	0.1%	0%	47.9%	-
PHF	0.250	-	0.250	-	0.250	-	-	-	-	-	-	0.942	-	-	0.942	-	0.826	0.250	-	0.821	0.881
Lights	1	0	1	0	2	0	0	0	0	0	0	822	0	0	822	0	738	2	0	740	1564
% Lights	100%	0%	100%	0%	100%	0%	0%	0%	0%	-	0%	96.1%	0%	0%	96.1%	0%	93.9%	100%	0%	93.9%	95.1%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	0	26	0	0	26	36
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	0%	1.2%	0%	0%	1.2%	0%	3.3%	0%	0%	3.3%	2.2%
Motorized Vehicles	0	0	0	0	0	0	0	0	0	0	0	23	0	0	23	0	22	0	0	22	45
% Motorized Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	0%	2.7%	0%	0%	2.7%	0%	2.8%	0%	0%	2.8%	2.7%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and North Driveway (unsignal... - TMC

Wed Oct 14, 2020

AM Peak (8 AM - 9 AM)

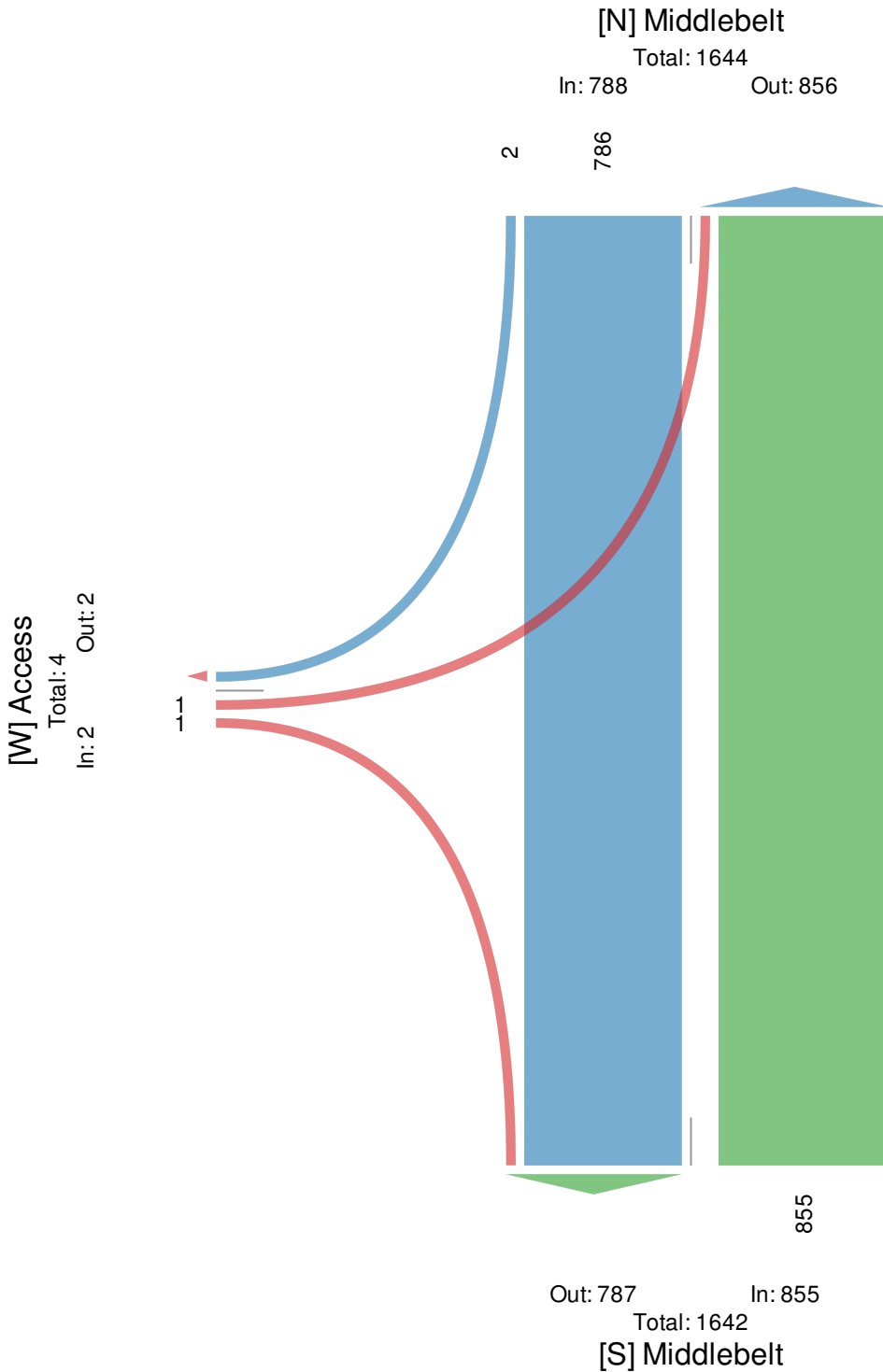
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787427, Location: 42.371374, -83.333169



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and North Driveway (unsignal... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787427, Location: 42.371374, -83.333169



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Eastbound					Access Westbound					Middlebelt Northbound					Middlebelt Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 5:00PM	0	0	0	0	0	0	0	0	0	0	0	345	1	0	346	0	451	0	0	451	797
5:15PM	0	0	1	0	1	0	0	0	0	0	1	333	0	0	334	0	473	0	0	473	808
5:30PM	0	0	0	0	0	0	0	0	0	0	1	344	0	0	345	3	449	0	1	453	798
5:45PM	0	0	2	0	2	0	0	3	0	3	1	345	2	0	348	0	466	0	0	466	819
Total	0	0	3	0	3	0	0	3	0	3	3	1367	3	0	1373	3	1839	0	1	1843	3222
% Approach	0%	0%	100%	0%	-	0%	0%	100%	0%	-	0.2%	99.6%	0.2%	0%	-	0.2%	99.8%	0%	0.1%	-	-
% Total	0%	0%	0.1%	0%	0.1%	0%	0%	0.1%	0%	0.1%	0.1%	42.4%	0.1%	0%	42.6%	0.1%	57.1%	0%	0%	57.2%	-
PHF	-	-0.375	-0.375	-	-	-	-0.250	-0.250	-	-	0.750	0.991	0.375	-	0.986	0.250	0.972	-0.250	0.974	0.984	0.984
Lights	0	0	3	0	3	0	0	3	0	3	3	1354	2	0	1359	2	1807	0	1	1810	3175
% Lights	0%	0%	100%	0%	100%	0%	0%	100%	0%	100%	100%	99.0%	66.7%	0%	99.0%	66.7%	98.3%	0%	100%	98.2%	98.5%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	13	0	0	14	16
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%	33.3%	0%	0.1%	33.3%	0.7%	0%	0%	0.8%	0.5%
Motorized Vehicles	0	0	0	0	0	0	0	0	0	0	0	12	0	0	12	0	19	0	0	19	31
% Motorized Vehicles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.9%	0%	1.0%	0%	0%	1.0%	1.0%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and North Driveway (unsignal... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

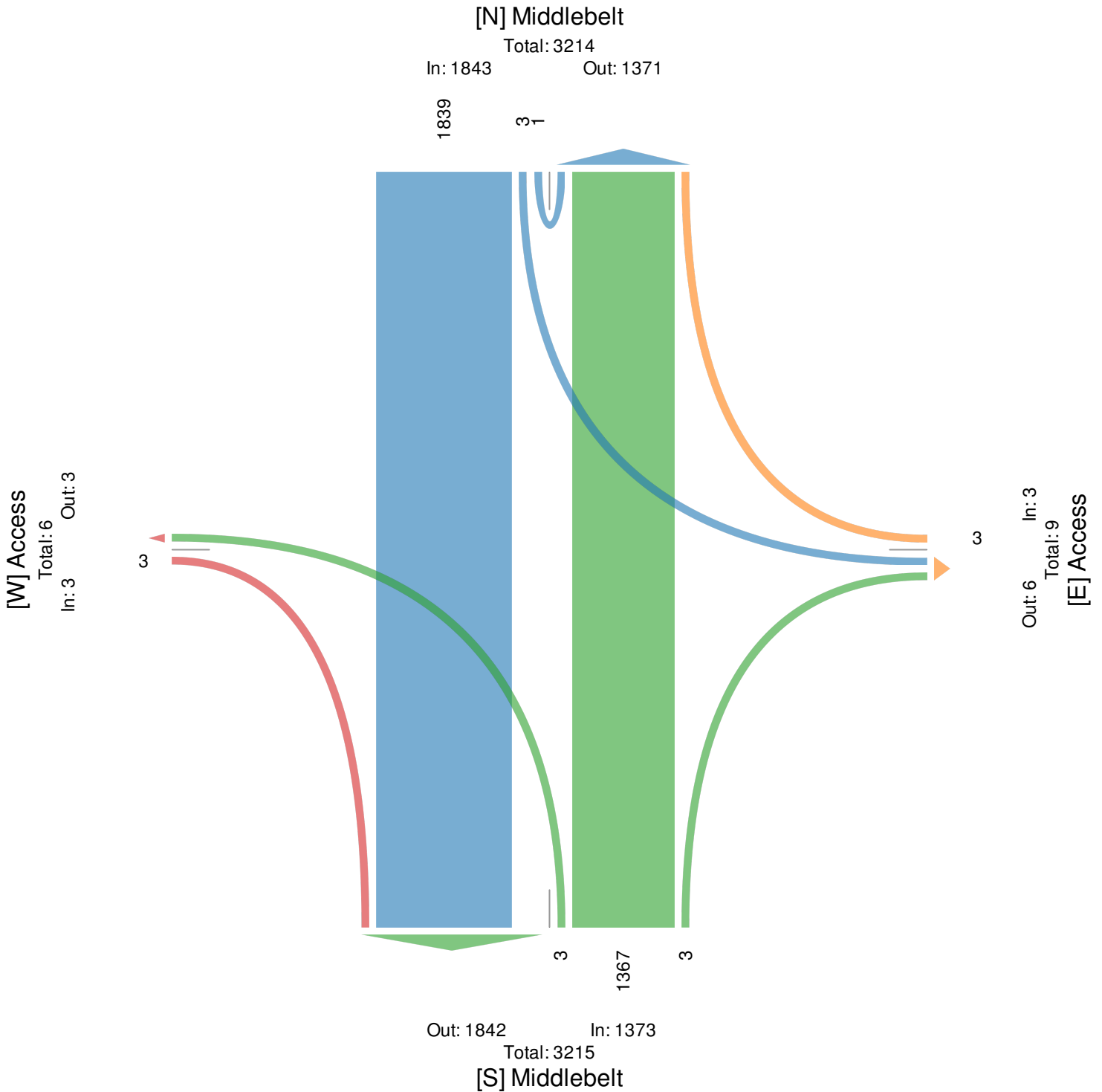
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787427, Location: 42.371374, -83.333169



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and Middle Driveway (unsigna... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787426, Location: 42.370606, -83.333144



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Westbound				Middlebelt Northbound				Middlebelt Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2020-10-14 7:00AM	0	2	0	2	794	0	0	794	3	705	0	708	1504
8:00AM	2	7	0	9	848	1	0	849	7	776	0	783	1641
4:00PM	3	25	0	28	1318	4	0	1322	15	1668	0	1683	3033
5:00PM	2	17	0	19	1374	2	0	1376	9	1821	0	1830	3225
Total	7	51	0	58	4334	7	0	4341	34	4970	0	5004	9403
% Approach	12.1%	87.9%	0%	-	99.8%	0.2%	0%	-	0.7%	99.3%	0%	-	-
% Total	0.1%	0.5%	0%	0.6%	46.1%	0.1%	0%	46.2%	0.4%	52.9%	0%	53.2%	-
Lights	7	49	0	56	4240	7	0	4247	33	4801	0	4834	9137
% Lights	100%	96.1%	0%	96.6%	97.8%	100%	0%	97.8%	97.1%	96.6%	0%	96.6%	97.2%
Articulated Trucks	0	0	0	0	31	0	0	31	0	81	0	81	112
% Articulated Trucks	0%	0%	0%	0%	0.7%	0%	0%	0.7%	0%	1.6%	0%	1.6%	1.2%
Motorized Vehicles	0	2	0	2	63	0	0	63	1	88	0	89	154
% Motorized Vehicles	0%	3.9%	0%	3.4%	1.5%	0%	0%	1.5%	2.9%	1.8%	0%	1.8%	1.6%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and Middle Driveway (unsigna... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

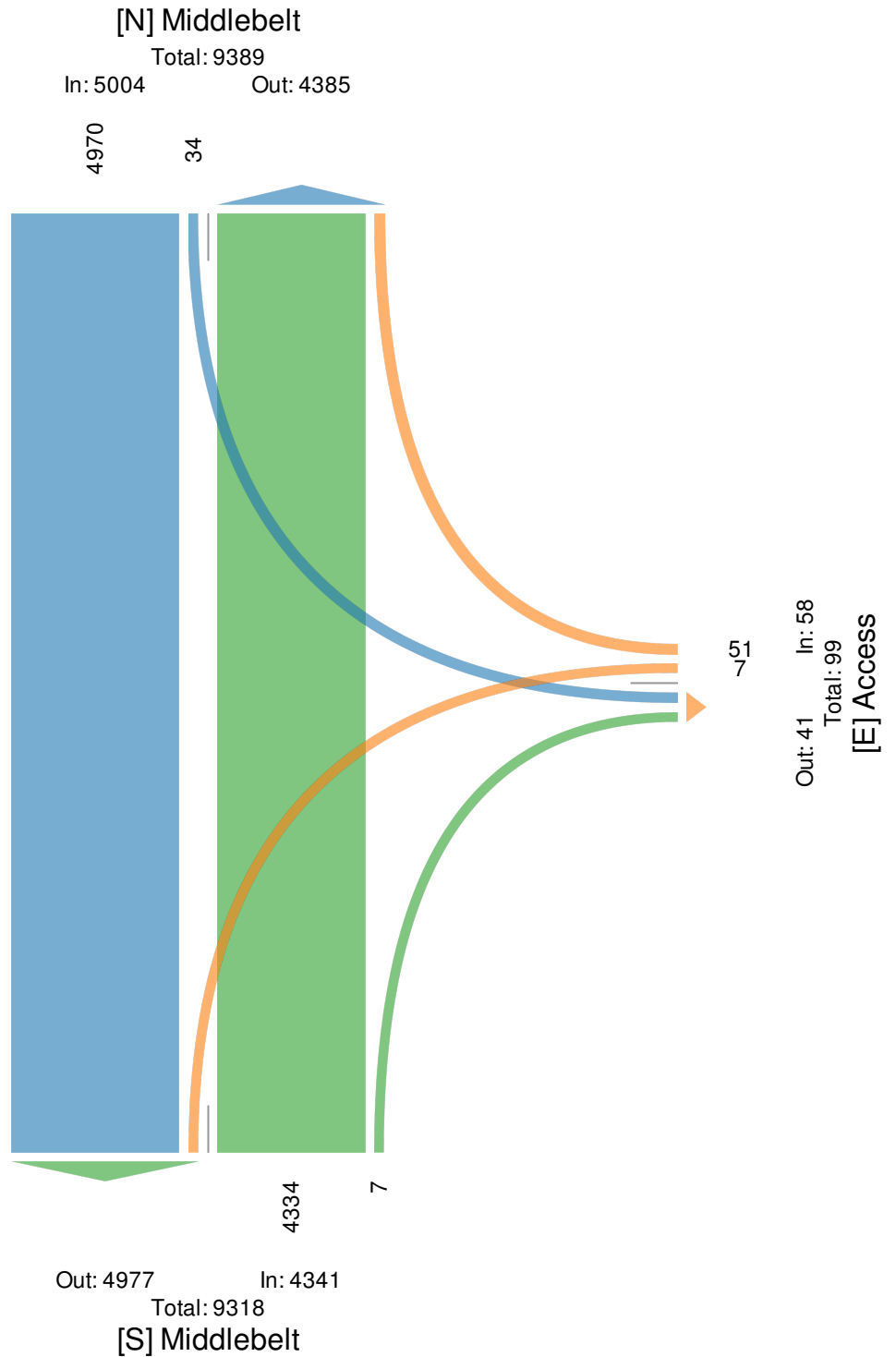
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787426, Location: 42.370606, -83.333144



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and Middle Driveway (unsigna... - TMC

Wed Oct 14, 2020

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787426, Location: 42.370606, -83.333144



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Westbound				Middlebelt Northbound				Middlebelt Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2020-10-14 8:00AM	1	0	0	1	208	0	0	208	2	193	0	195	404
8:15AM	0	2	0	2	198	1	0	199	1	165	0	166	367
8:30AM	1	3	0	4	225	0	0	225	4	180	0	184	413
8:45AM	0	2	0	2	217	0	0	217	0	238	0	238	457
Total	2	7	0	9	848	1	0	849	7	776	0	783	1641
% Approach	22.2%	77.8%	0%	-	99.9%	0.1%	0%	-	0.9%	99.1%	0%	-	-
% Total	0.1%	0.4%	0%	0.5%	51.7%	0.1%	0%	51.7%	0.4%	47.3%	0%	47.7%	-
PHF	0.500	0.583	-	0.563	0.942	0.250	-	0.943	0.438	0.815	-	0.822	0.898
Lights	2	7	0	9	813	1	0	814	7	727	0	734	1557
% Lights	100%	100%	0%	100%	95.9%	100%	0%	95.9%	100%	93.7%	0%	93.7%	94.9%
Articulated Trucks	0	0	0	0	11	0	0	11	0	25	0	25	36
% Articulated Trucks	0%	0%	0%	0%	1.3%	0%	0%	1.3%	0%	3.2%	0%	3.2%	2.2%
Motorized Vehicles	0	0	0	0	24	0	0	24	0	24	0	24	48
% Motorized Vehicles	0%	0%	0%	0%	2.8%	0%	0%	2.8%	0%	3.1%	0%	3.1%	2.9%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and Middle Driveway (unsigna... - TMC

Wed Oct 14, 2020

AM Peak (8 AM - 9 AM)

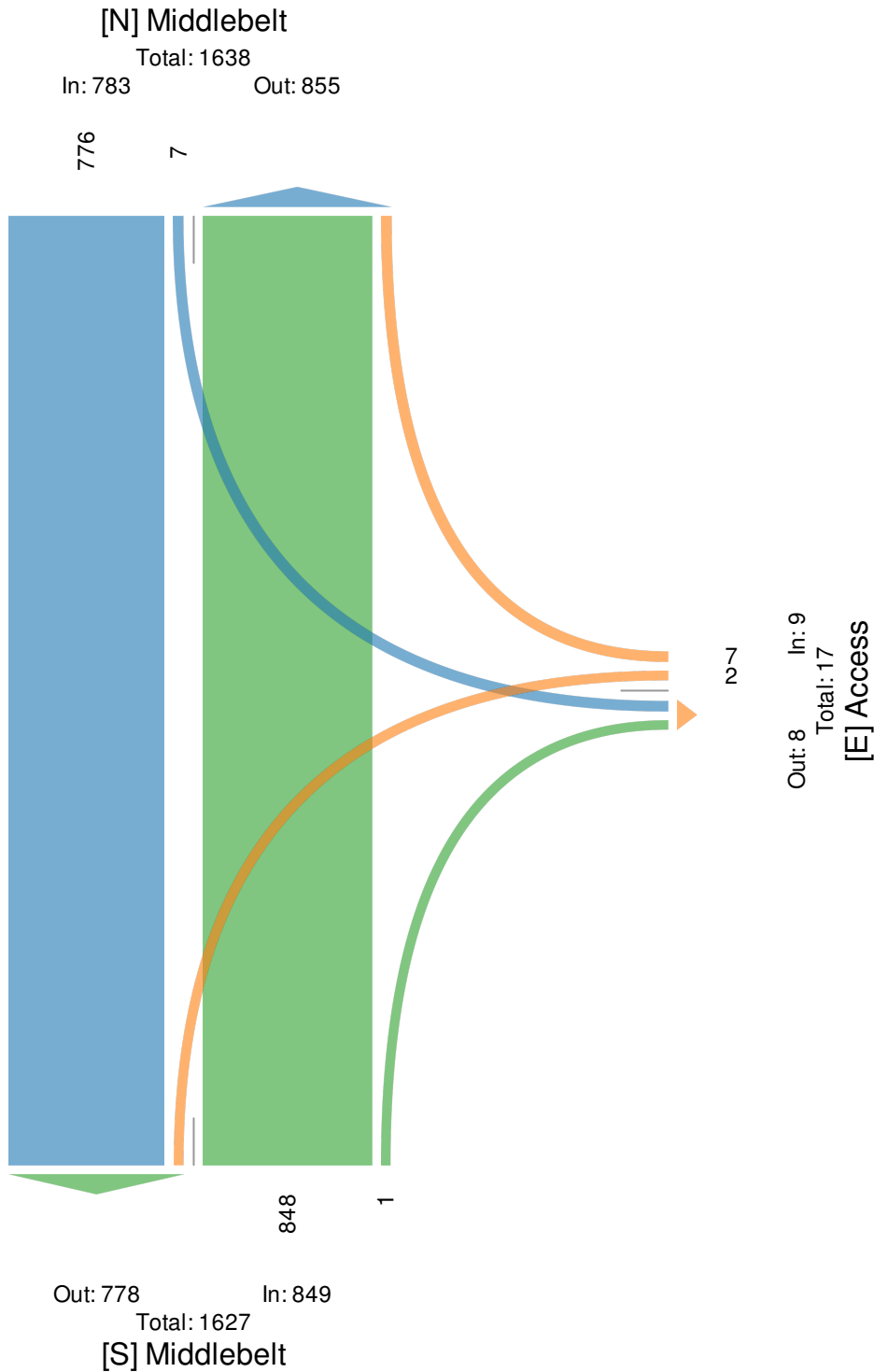
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787426, Location: 42.370606, -83.333144



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and Middle Driveway (unsigna... - TMC

Wed Oct 14, 2020

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787426, Location: 42.370606, -83.333144



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Access Westbound				Middlebelt Northbound				Middlebelt Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2020-10-14 4:45PM	2	7	0	9	328	0	0	328	8	472	0	480	817
5:00PM	0	4	0	4	346	0	0	346	1	445	0	446	796
5:15PM	1	8	0	9	335	1	0	336	3	470	0	473	818
5:30PM	0	1	0	1	349	0	0	349	5	441	0	446	796
Total	3	20	0	23	1358	1	0	1359	17	1828	0	1845	3227
% Approach	13.0%	87.0%	0%	-	99.9%	0.1%	0%	-	0.9%	99.1%	0%	-	-
% Total	0.1%	0.6%	0%	0.7%	42.1%	0%	0%	42.1%	0.5%	56.6%	0%	57.2%	-
PHF	0.375	0.625	-	0.639	0.973	0.250	-	0.973	0.531	0.968	-	0.961	0.986
Lights	3	20	0	23	1339	1	0	1340	17	1789	0	1806	3169
% Lights	100%	100%	0%	100%	98.6%	100%	0%	98.6%	100%	97.9%	0%	97.9%	98.2%
Articulated Trucks	0	0	0	0	5	0	0	5	0	20	0	20	25
% Articulated Trucks	0%	0%	0%	0%	0.4%	0%	0%	0.4%	0%	1.1%	0%	1.1%	0.8%
Motorized Vehicles	0	0	0	0	14	0	0	14	0	19	0	19	33
% Motorized Vehicles	0%	0%	0%	0%	1.0%	0%	0%	1.0%	0%	1.0%	0%	1.0%	1.0%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and Middle Driveway (unsigna... - TMC

Wed Oct 14, 2020

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

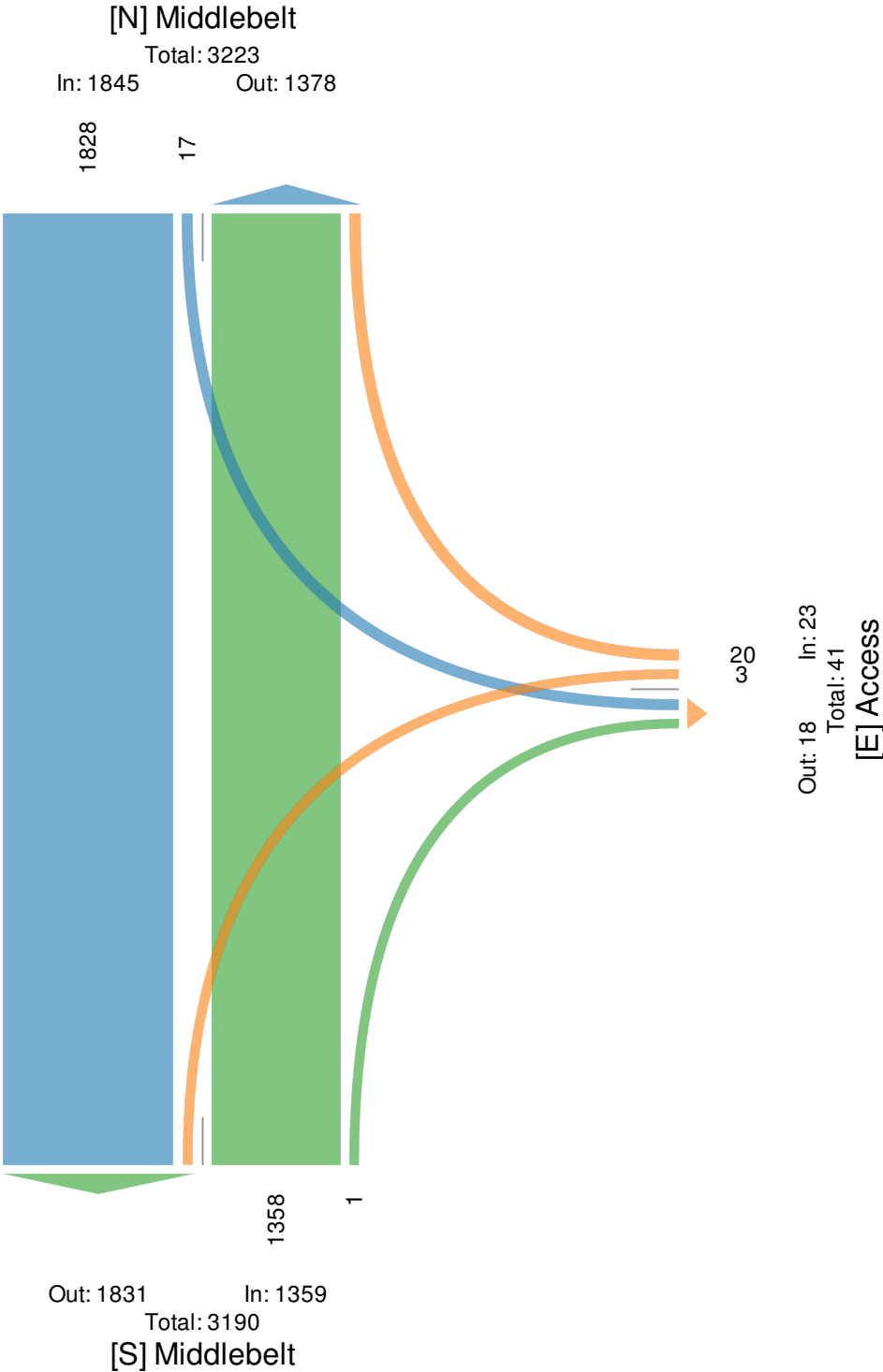
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787426, Location: 42.370606, -83.333144



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and South Driveway (unsignal... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787425, Location: 42.370033, -83.333113



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Drive way Westbound				Middlebelt Northbound				Middlebelt Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2020-10-14 7:00AM	0	0	0	0	801	3	0	804	0	703	0	703	1507
8:00AM	0	0	0	0	855	4	0	859	1	782	0	783	1642
4:00PM	3	4	0	7	1314	7	0	1321	3	1693	1	1697	3025
5:00PM	0	4	0	4	1362	6	0	1368	4	1803	0	1807	3179
Total	3	8	0	11	4332	20	0	4352	8	4981	1	4990	9353
% Approach	27.3%	72.7%	0%	-	99.5%	0.5%	0%	-	0.2%	99.8%	0%	-	-
% Total	0%	0.1%	0%	0.1%	46.3%	0.2%	0%	46.5%	0.1%	53.3%	0%	53.4%	-
Lights	3	7	0	10	4243	19	0	4262	7	4810	1	4818	9090
% Lights	100%	87.5%	0%	90.9%	97.9%	95.0%	0%	97.9%	87.5%	96.6%	100%	96.6%	97.2%
Articulated Trucks	0	0	0	0	31	0	0	31	0	84	0	84	115
% Articulated Trucks	0%	0%	0%	0%	0.7%	0%	0%	0.7%	0%	1.7%	0%	1.7%	1.2%
Motorized Vehicles	0	1	0	1	58	1	0	59	1	87	0	88	148
% Motorized Vehicles	0%	12.5%	0%	9.1%	1.3%	5.0%	0%	1.4%	12.5%	1.7%	0%	1.8%	1.6%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and South Driveway (unsignal... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

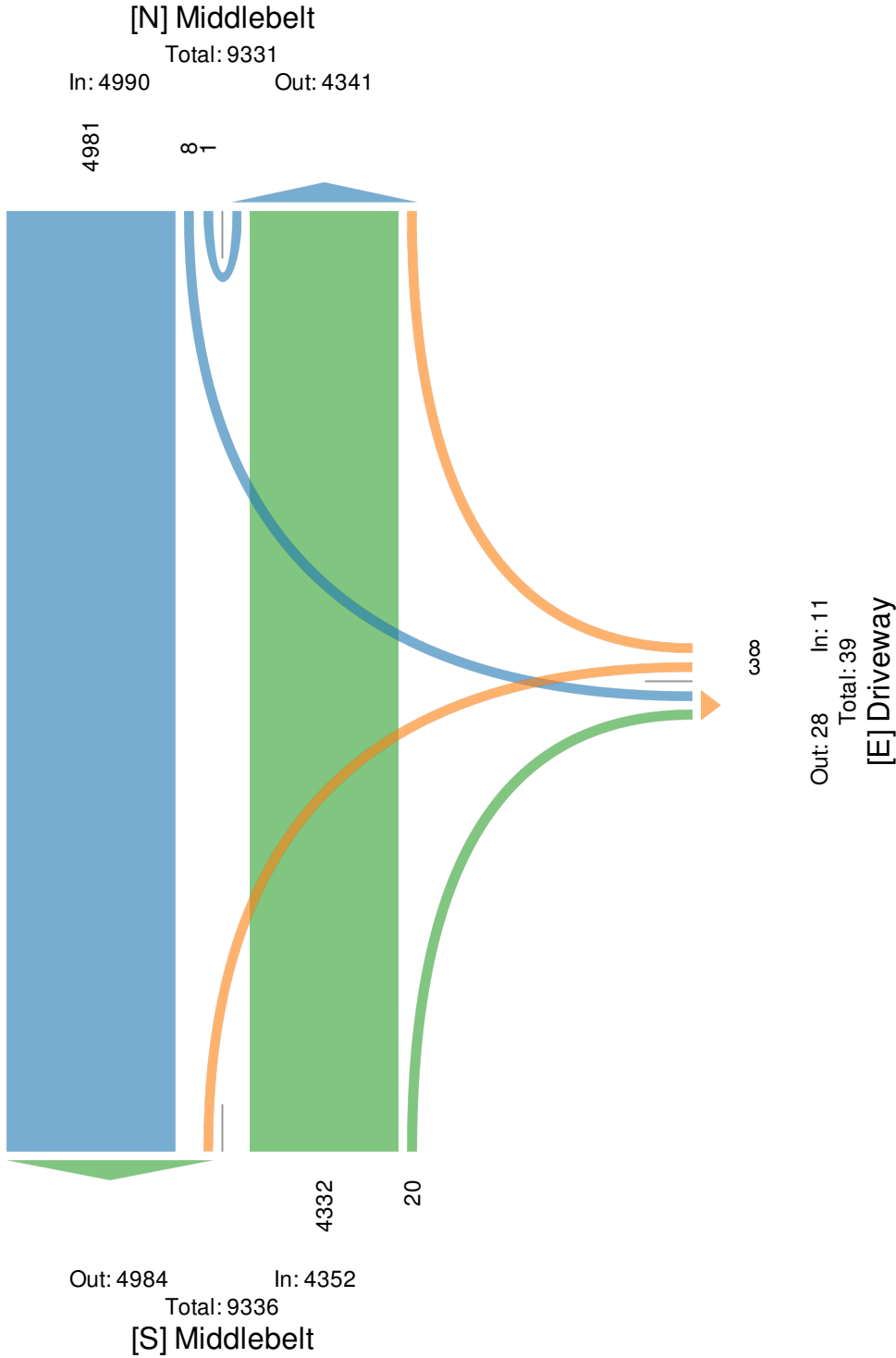
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787425, Location: 42.370033, -83.333113



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and South Driveway (unsignal... - TMC

Wed Oct 14, 2020

AM Peak (8 AM - 9 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787425, Location: 42.370033, -83.333113



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Drive way Westbound				Middlebelt Northbound				Middlebelt Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2020-10-14 8:00AM	0	0	0	0	211	2	0	213	0	193	0	193	406
8:15AM	0	0	0	0	201	1	0	202	0	167	0	167	369
8:30AM	0	0	0	0	221	0	0	221	0	183	0	183	404
8:45AM	0	0	0	0	222	1	0	223	1	239	0	240	463
Total	0	0	0	0	855	4	0	859	1	782	0	783	1642
% Approach	0%	0%	0%	-	99.5%	0.5%	0%	-	0.1%	99.9%	0%	-	-
% Total	0%	0%	0%	0%	52.1%	0.2%	0%	52.3%	0.1%	47.6%	0%	47.7%	-
PHF	-	-	-	-	0.963	0.500	-	0.963	0.250	0.818	-	0.816	0.887
Lights	0	0	0	0	820	4	0	824	1	736	0	737	1561
% Lights	0%	0%	0%	-	95.9%	100%	0%	95.9%	100%	94.1%	0%	94.1%	95.1%
Articulated Trucks	0	0	0	0	12	0	0	12	0	25	0	25	37
% Articulated Trucks	0%	0%	0%	-	1.4%	0%	0%	1.4%	0%	3.2%	0%	3.2%	2.3%
Motorized Vehicles	0	0	0	0	23	0	0	23	0	21	0	21	44
% Motorized Vehicles	0%	0%	0%	-	2.7%	0%	0%	2.7%	0%	2.7%	0%	2.7%	2.7%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and South Driveway (unsignal... - TMC

Wed Oct 14, 2020

AM Peak (8 AM - 9 AM)

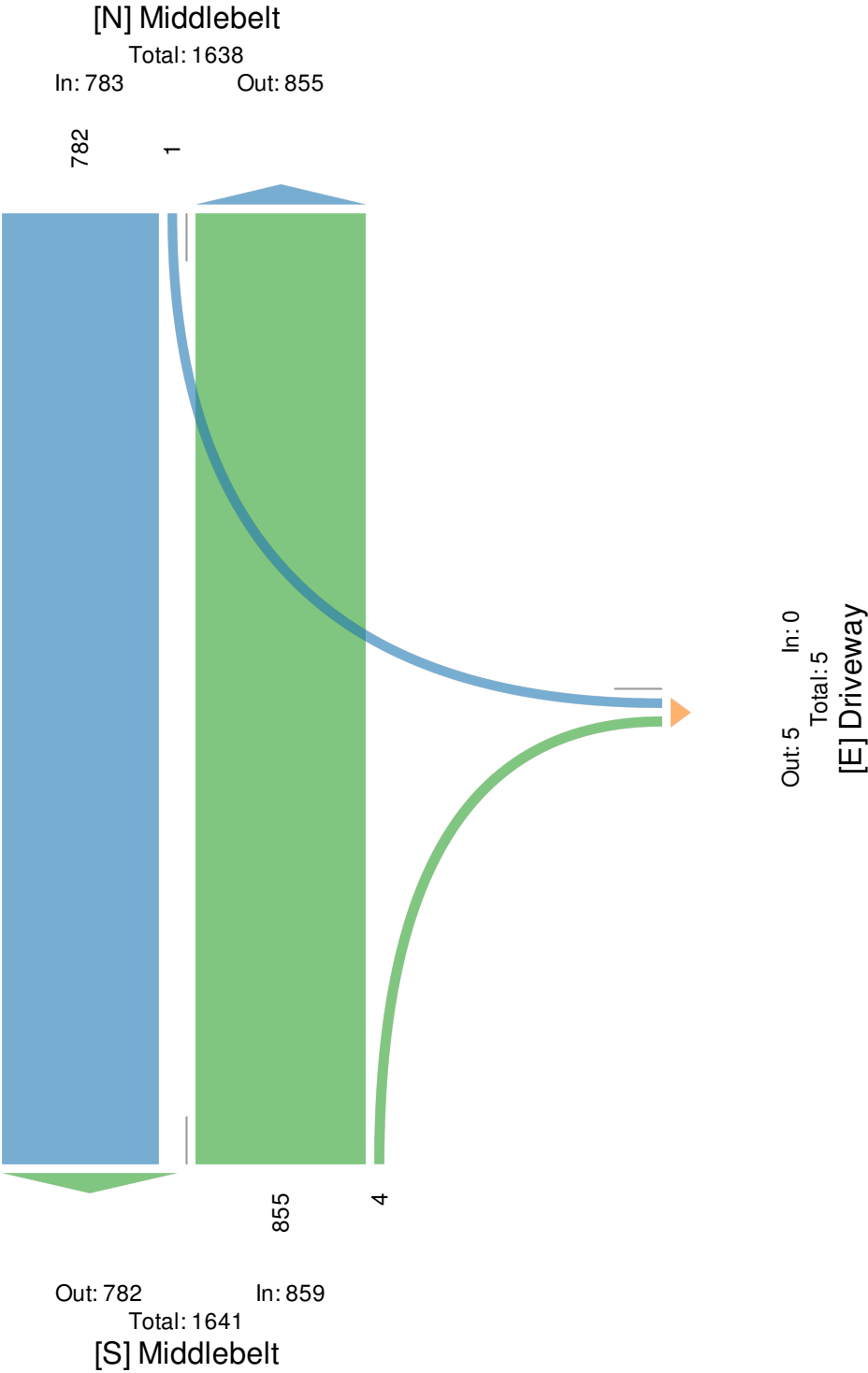
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787425, Location: 42.370033, -83.333113



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and South Driveway (unsignal... - TMC

Wed Oct 14, 2020

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787425, Location: 42.370033, -83.333113



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Driveway Westbound				Middlebelt Northbound				Middlebelt Southbound				
Time	L	R	U	App	T	R	U	App	L	T	U	App	Int
2020-10-14 4:45PM	0	2	0	2	323	1	0	324	1	474	0	475	801
5:00PM	0	2	0	2	348	2	0	350	3	434	0	437	789
5:15PM	0	0	0	0	334	1	0	335	1	459	0	460	795
5:30PM	0	0	0	0	346	2	0	348	0	447	0	447	795
Total	0	4	0	4	1351	6	0	1357	5	1814	0	1819	3180
% Approach	0%	100%	0%	-	99.6%	0.4%	0%	-	0.3%	99.7%	0%	-	-
% Total	0%	0.1%	0%	0.1%	42.5%	0.2%	0%	42.7%	0.2%	57.0%	0%	57.2%	-
PHF	-	0.500	-	0.500	0.971	0.750	-	0.969	0.417	0.957	-	0.957	0.993
Lights	0	3	0	3	1336	6	0	1342	5	1772	0	1777	3122
% Lights	0%	75.0%	0%	75.0%	98.9%	100%	0%	98.9%	100%	97.7%	0%	97.7%	98.2%
Articulated Trucks	0	0	0	0	5	0	0	5	0	20	0	20	25
% Articulated Trucks	0%	0%	0%	0%	0.4%	0%	0%	0.4%	0%	1.1%	0%	1.1%	0.8%
Motorized Vehicles	0	1	0	1	10	0	0	10	0	22	0	22	33
% Motorized Vehicles	0%	25.0%	0%	25.0%	0.7%	0%	0%	0.7%	0%	1.2%	0%	1.2%	1.0%

* L: Left, R: Right, T: Thru, U: U-Turn

Middlebelt Road and South Driveway (unsignal... - TMC

Wed Oct 14, 2020

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

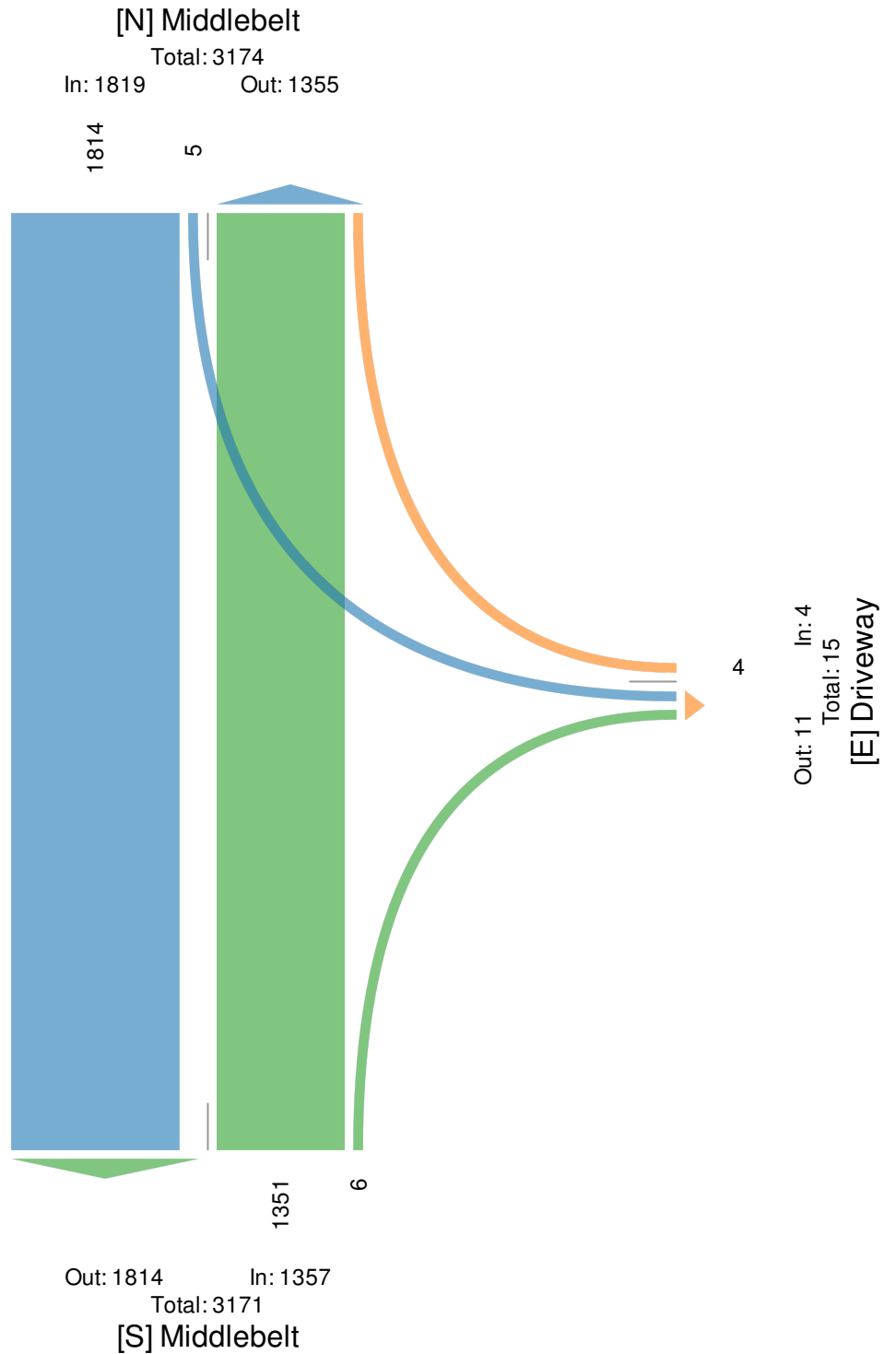
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787425, Location: 42.370033, -83.333113



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound								Plymouth Westbound							
Time	L	T	R	U	RR	App	Ped*		L	T	R	U	RR	App	Ped*	
2020-10-14 7:00AM	82	146	5	0	31	264	1		36	245	41	0	80	402	0	
8:00AM	128	174	14	0	21	337	4		52	250	43	0	85	430	1	
4:00PM	297	466	89	0	73	925	3		165	412	112	0	135	824	3	
5:00PM	298	461	67	0	57	883	1		185	378	132	0	107	802	8	
Total	805	1247	175	0	182	2409	9		438	1285	328	0	407	2458	12	
% Approach	33.4%	51.8%	7.3%	0%	7.6%	-	-		17.8%	52.3%	13.3%	0%	16.6%	-	-	
% Total	6.0%	9.3%	1.3%	0%	1.4%	18.0%	-		3.3%	9.6%	2.4%	0%	3.0%	18.3%	-	
Lights	788	1205	166	0	175	2334	-		428	1216	311	0	397	2352	-	
% Lights	97.9%	96.6%	94.9%	0%	96.2%	96.9%	-		97.7%	94.6%	94.8%	0%	97.5%	95.7%	-	
Articulated Trucks	6	16	2	0	3	27	-		4	30	9	0	2	45	-	
% Articulated Trucks	0.7%	1.3%	1.1%	0%	1.6%	1.1%	-		0.9%	2.3%	2.7%	0%	0.5%	1.8%	-	
Motorized Vehicles	11	26	7	0	4	48	-		6	39	8	0	8	61	-	
% Motorized Vehicles	1.4%	2.1%	4.0%	0%	2.2%	2.0%	-		1.4%	3.0%	2.4%	0%	2.0%	2.5%	-	
Pedestrians	-	-	-	-	-	-	8		-	-	-	-	-	-	9	
% Pedestrians	-	-	-	-	-	-	88.9%		-	-	-	-	-	-	75.0%	
Bicycles on Crosswalk	-	-	-	-	-	-	1		-	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	-	11.1%		-	-	-	-	-	-	25.0%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Middlebelt Northbound								Middlebelt Southbound								
Time	L	T	R	U	RR	App	Ped*		L	T	R	U	RR	App	Ped*		Int
2020-10-14 7:00AM	134	598	32	0	28	792	0		87	398	94	0	123	702	0		2160
8:00AM	113	590	19	0	26	748	5		73	426	132	0	142	773	3		2288
4:00PM	117	813	50	0	44	1024	11		204	949	293	0	179	1625	0		4398
5:00PM	118	815	52	0	84	1069	5		235	1022	339	0	205	1801	3		4555
Total	482	2816	153	0	182	3633	21		599	2795	858	0	649	4901	6		13401
% Approach	13.3%	77.5%	4.2%	0%	5.0%	-	-		12.2%	57.0%	17.5%	0%	13.2%	-	-		-
% Total	3.6%	21.0%	1.1%	0%	1.4%	27.1%	-		4.5%	20.9%	6.4%	0%	4.8%	36.6%	-		-
Lights	468	2771	146	0	178	3563	-		559	2746	814	0	621	4740	-		12989
% Lights	97.1%	98.4%	95.4%	0%	97.8%	98.1%	-		93.3%	98.2%	94.9%	0%	95.7%	96.7%	-		96.9%
Articulated Trucks	3	10	4	0	1	18	-		25	15	26	0	14	80	-		170
% Articulated Trucks	0.6%	0.4%	2.6%	0%	0.5%	0.5%	-		4.2%	0.5%	3.0%	0%	2.2%	1.6%	-		1.3%
Motorized Vehicles	11	35	3	0	3	52	-		15	34	18	0	14	81	-		242
% Motorized Vehicles	2.3%	1.2%	2.0%	0%	1.6%	1.4%	-		2.5%	1.2%	2.1%	0%	2.2%	1.7%	-		1.8%
Pedestrians	-	-	-	-	-	-	18		-	-	-	-	-	-	4		
% Pedestrians	-	-	-	-	-	-	85.7%		-	-	-	-	-	-	66.7%		-
Bicycles on Crosswalk	-	-	-	-	-	-	3		-	-	-	-	-	-	2		
% Bicycles on Crosswalk	-	-	-	-	-	-	14.3%		-	-	-	-	-	-	33.3%		-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

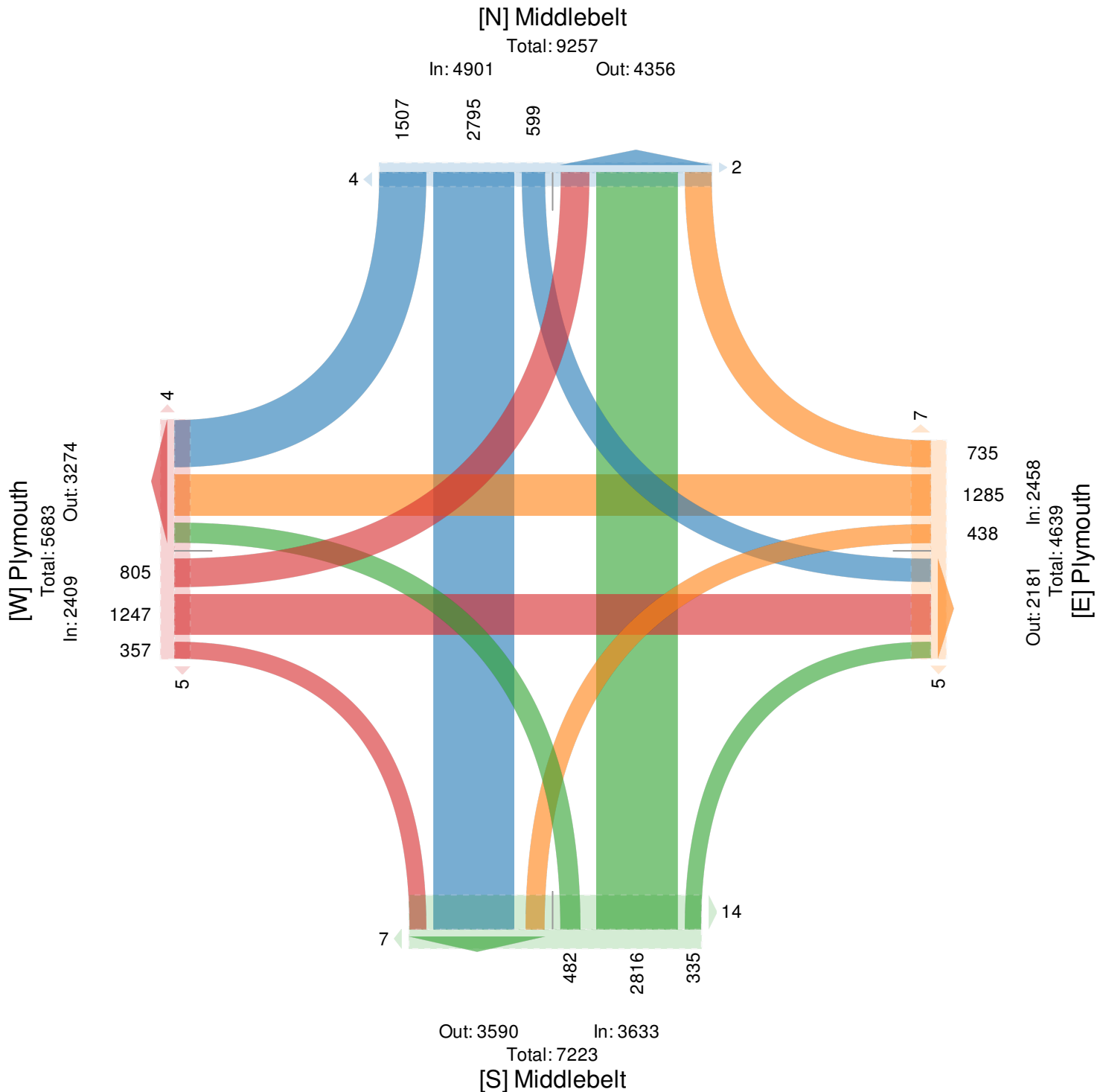
All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound								Plymouth Westbound							
Time	L	T	R	U	RR	App	Ped*		L	T	R	U	RR	App	Ped*	
2020-10-14 7:45AM	27	39	1	0	4	71	1		10	84	11	0	24	129	0	
8:00AM	32	43	5	0	4	84	0		13	64	13	0	21	111	0	
8:15AM	30	40	5	0	8	83	1		9	62	10	0	14	95	0	
8:30AM	31	45	3	0	4	83	3		13	54	9	0	20	96	1	
Total	120	167	14	0	20	321	5		45	264	43	0	79	431	1	
% Approach	37.4%	52.0%	4.4%	0%	6.2%	-	-		10.4%	61.3%	10.0%	0%	18.3%	-	-	
% Total	5.2%	7.3%	0.6%	0%	0.9%	14.0%	-		2.0%	11.5%	1.9%	0%	3.5%	18.8%	-	
PHF	0.938	0.928	0.700	-	0.625	0.955	-		0.865	0.786	0.827	-	0.823	0.835	-	
Lights	113	153	12	0	19	297	-		43	237	39	0	74	393	-	
% Lights	94.2%	91.6%	85.7%	0%	95.0%	92.5%	-		95.6%	89.8%	90.7%	0%	93.7%	91.2%	-	
Articulated Trucks	2	4	0	0	1	7	-		0	12	2	0	1	15	-	
% Articulated Trucks	1.7%	2.4%	0%	0%	5.0%	2.2%	-		0%	4.5%	4.7%	0%	1.3%	3.5%	-	
Motorized Vehicles	5	10	2	0	0	17	-		2	15	2	0	4	23	-	
% Motorized Vehicles	4.2%	6.0%	14.3%	0%	0%	5.3%	-		4.4%	5.7%	4.7%	0%	5.1%	5.3%	-	
Pedestrians	-	-	-	-	-	-	5		-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	100%		-	-	-	-	-	-	0%	
Bicycles on Crosswalk	-	-	-	-	-	-	0		-	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	0%		-	-	-	-	-	-	100%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Middlebelt Northbound								Middlebelt Southbound								
Time	L	T	R	U	RR	App	Ped*		L	T	R	U	RR	App	Ped*		Int
2020-10-14 7:45AM	23	182	7	0	4	216	0		24	134	23	0	31	212	0		628
8:00AM	22	150	3	0	9	184	1		18	100	40	0	30	188	0		567
8:15AM	31	135	5	0	4	175	0		21	96	24	0	29	170	0		523
8:30AM	33	162	5	0	8	208	2		19	108	27	0	29	183	3		570
Total	109	629	20	0	25	783	3		82	438	114	0	119	753	3		2288
% Approach	13.9%	80.3%	2.6%	0%	3.2%	-	-		10.9%	58.2%	15.1%	0%	15.8%	-	-		-
% Total	4.8%	27.5%	0.9%	0%	1.1%	34.2%	-		3.6%	19.1%	5.0%	0%	5.2%	32.9%	-		-
PHF	0.826	0.864	0.714	-	0.694	0.906	-		0.854	0.817	0.713	-	0.960	0.888	-		0.911
Lights	108	615	20	0	22	765	-		66	422	102	0	113	703	-		2158
% Lights	99.1%	97.8%	100%	0%	88.0%	97.7%	-		80.5%	96.3%	89.5%	0%	95.0%	93.4%	-		94.3%
Articulated Trucks	0	5	0	0	1	6	-		11	5	10	0	2	28	-		56
% Articulated Trucks	0%	0.8%	0%	0%	4.0%	0.8%	-		13.4%	1.1%	8.8%	0%	1.7%	3.7%	-		2.4%
Motorized Vehicles	1	9	0	0	2	12	-		5	11	2	0	4	22	-		74
% Motorized Vehicles	0.9%	1.4%	0%	0%	8.0%	1.5%	-		6.1%	2.5%	1.8%	0%	3.4%	2.9%	-		3.2%
Pedestrians	-	-	-	-	-	-	3		-	-	-	-	-	-	3		
% Pedestrians	-	-	-	-	-	-	100%		-	-	-	-	-	-	100%		-
Bicycles on Crosswalk	-	-	-	-	-	-	0		-	-	-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-	-	0%		-	-	-	-	-	-	0%		-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

AM Peak (7:45 AM - 8:45 AM)

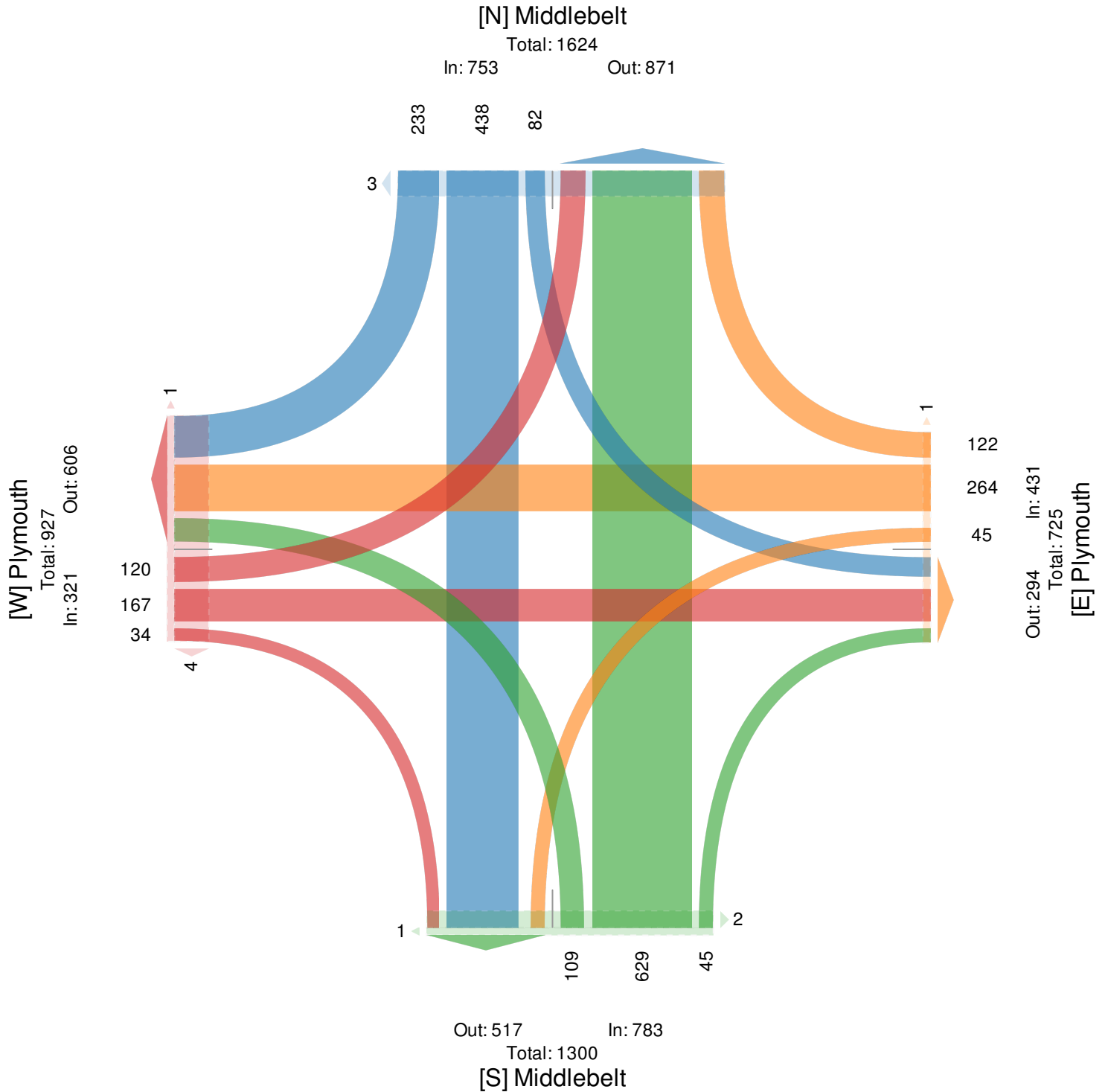
All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound								Plymouth Westbound							
Time	L	T	R	U	RR	App	Ped*		L	T	R	U	RR	App	Ped*	
2020-10-14 5:00PM	68	119	8	0	17	212	1		46	98	42	0	29	215	4	
5:15PM	76	125	24	0	9	234	0		44	104	20	0	35	203	2	
5:30PM	75	83	16	0	9	183	0		36	94	42	0	28	200	0	
5:45PM	79	134	19	0	22	254	0		59	82	28	0	15	184	2	
Total	298	461	67	0	57	883	1		185	378	132	0	107	802	8	
% Approach	33.7%	52.2%	7.6%	0%	6.5%	-	-		23.1%	47.1%	16.5%	0%	13.3%	-	-	
% Total	6.5%	10.1%	1.5%	0%	1.3%	19.4%	-		4.1%	8.3%	2.9%	0%	2.3%	17.6%	-	
PHF	0.943	0.860	0.698	-	0.648	0.869	-		0.784	0.909	0.786	-	0.764	0.933	-	
Lights	294	456	66	0	56	872	-		181	368	128	0	107	784	-	
% Lights	98.7%	98.9%	98.5%	0%	98.2%	98.8%	-		97.8%	97.4%	97.0%	0%	100%	97.8%	-	
Articulated Trucks	3	2	0	0	1	6	-		2	3	1	0	0	6	-	
% Articulated Trucks	1.0%	0.4%	0%	0%	1.8%	0.7%	-		1.1%	0.8%	0.8%	0%	0%	0.7%	-	
Motorized Vehicles	1	3	1	0	0	5	-		2	7	3	0	0	12	-	
% Motorized Vehicles	0.3%	0.7%	1.5%	0%	0%	0.6%	-		1.1%	1.9%	2.3%	0%	0%	1.5%	-	
Pedestrians	-	-	-	-	-	-	0		-	-	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	-	0%		-	-	-	-	-	-	75.0%	
Bicycles on Crosswalk	-	-	-	-	-	-	1		-	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	-	100%		-	-	-	-	-	-	25.0%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Middlebelt Northbound								Middlebelt Southbound								
Time	L	T	R	U	RR	App	Ped*		L	T	R	U	RR	App	Ped*		Int
2020-10-14 5:00PM	33	207	11	0	15	266	2		48	245	82	0	48	423	2		1116
5:15PM	28	209	16	0	12	265	1		59	262	74	0	66	461	1		1163
5:30PM	25	208	12	0	30	275	0		59	268	89	0	43	459	0		1117
5:45PM	32	191	13	0	27	263	2		69	247	94	0	48	458	0		1159
Total	118	815	52	0	84	1069	5		235	1022	339	0	205	1801	3		4555
% Approach	11.0%	76.2%	4.9%	0%	7.9%	-	-		13.0%	56.7%	18.8%	0%	11.4%	-	-		-
% Total	2.6%	17.9%	1.1%	0%	1.8%	23.5%	-		5.2%	22.4%	7.4%	0%	4.5%	39.5%	-		-
PHF	0.894	0.975	0.813	-	0.700	0.972	-		0.851	0.953	0.902	-	0.777	0.977	-		0.979
Lights	113	806	52	0	84	1055	-		227	1009	330	0	198	1764	-		4475
% Lights	95.8%	98.9%	100%	0%	100%	98.7%	-		96.6%	98.7%	97.3%	0%	96.6%	97.9%	-		98.2%
Articulated Trucks	1	0	0	0	0	1	-		5	5	3	0	3	16	-		29
% Articulated Trucks	0.8%	0%	0%	0%	0%	0.1%	-		2.1%	0.5%	0.9%	0%	1.5%	0.9%	-		0.6%
Motorized Vehicles	4	9	0	0	0	13	-		3	8	6	0	4	21	-		51
% Motorized Vehicles	3.4%	1.1%	0%	0%	0%	1.2%	-		1.3%	0.8%	1.8%	0%	2.0%	1.2%	-		1.1%
Pedestrians	-	-	-	-	-	-	5		-	-	-	-	-	-	1		
% Pedestrians	-	-	-	-	-	-	100%		-	-	-	-	-	-	33.3%		-
Bicycles on Crosswalk	-	-	-	-	-	-	0		-	-	-	-	-	-	2		
% Bicycles on Crosswalk	-	-	-	-	-	-	0%		-	-	-	-	-	-	66.7%		-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, RR: Right on red, T: Thru, U: U-Turn

Middlebelt Road and Plymouth Road (signalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

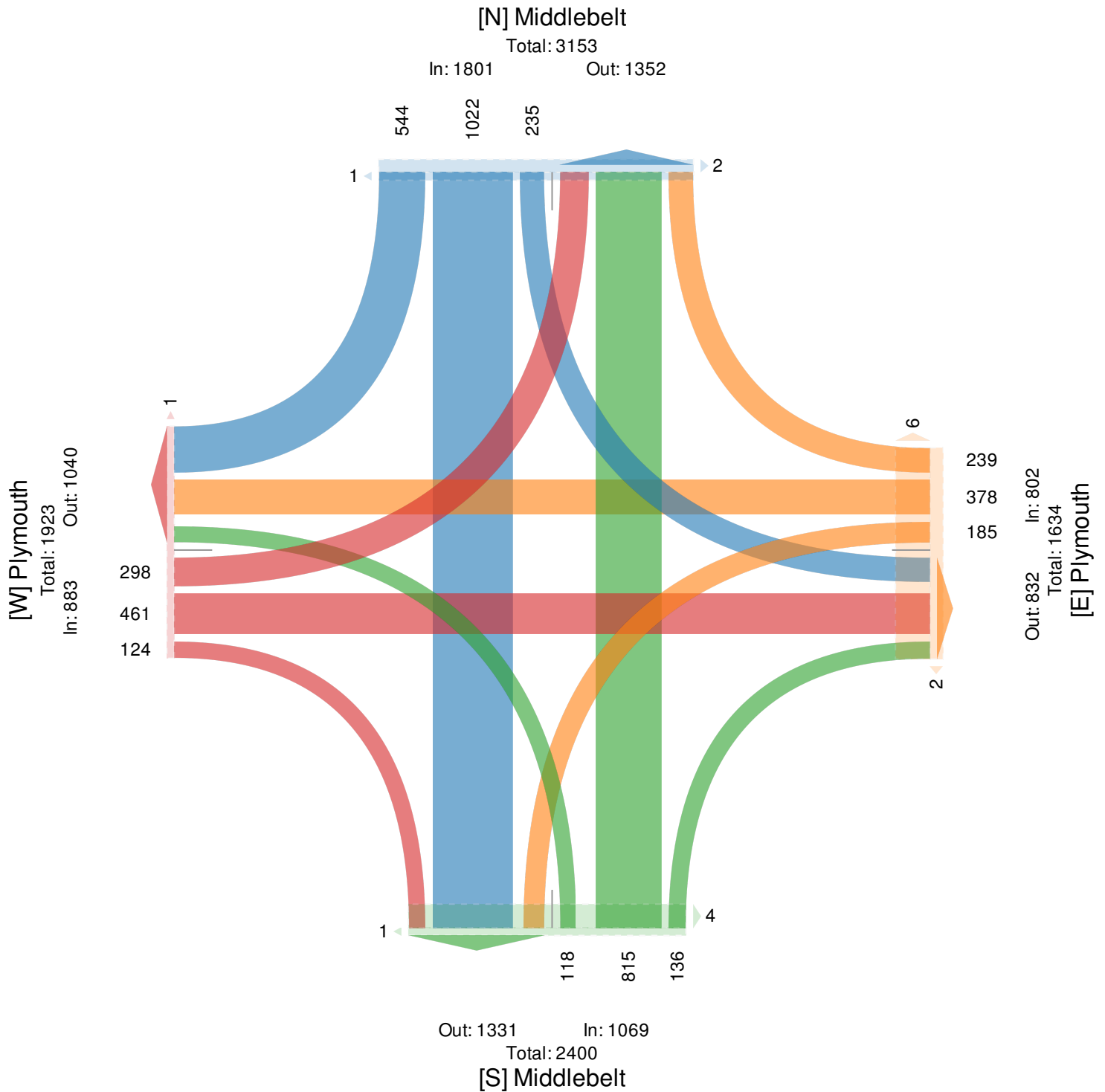
All Classes (Lights, Articulated Trucks, Motorized Vehicles,
Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 791008, Location: 42.369173, -83.333072



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Plymouth Road and West Driveway (unsignalize... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787428, Location: 42.369206, -83.331991



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound					Plymouth Westbound					Access Northbound					Access Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 7:00AM	0	288	1	0	289	1	415	1	0	417	0	0	1	0	1	0	0	1	0	1	708
8:00AM	0	283	4	0	287	2	441	1	0	444	1	0	2	0	3	0	0	2	0	2	736
4:00PM	1	775	9	0	785	6	847	5	0	858	3	0	12	0	15	1	0	6	0	7	1665
5:00PM	2	810	22	0	834	3	818	3	0	824	4	0	16	0	20	1	0	2	0	3	1681
Total	3	2156	36	0	2195	12	2521	10	0	2543	8	0	31	0	39	2	0	11	0	13	4790
% Approach	0.1%	98.2%	1.6%	0%	-	0.5%	99.1%	0.4%	0%	-	20.5%	0%	79.5%	0%	-	15.4%	0%	84.6%	0%	-	-
% Total	0.1%	45.0%	0.8%	0%	45.8%	0.3%	52.6%	0.2%	0%	53.1%	0.2%	0%	0.6%	0%	0.8%	0%	0%	0.2%	0%	0.3%	-
Lights	3	2067	36	0	2106	12	2418	10	0	2440	8	0	30	0	38	2	0	11	0	13	4597
% Lights	100%	95.9%	100%	0%	95.9%	100%	95.9%	100%	0%	95.9%	100%	0%	96.8%	0%	97.4%	100%	0%	100%	0%	100%	96.0%
Articulated Trucks	0	41	0	0	41	0	47	0	0	47	0	0	1	0	1	0	0	0	0	0	89
% Articulated Trucks	0%	1.9%	0%	0%	1.9%	0%	1.9%	0%	0%	1.8%	0%	0%	3.2%	0%	2.6%	0%	0%	0%	0%	0%	1.9%
Motorized Vehicles	0	48	0	0	48	0	56	0	0	56	0	0	0	0	0	0	0	0	0	0	104
% Motorized Vehicles	0%	2.2%	0%	0%	2.2%	0%	2.2%	0%	0%	2.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Plymouth Road and West Driveway (unsignalize... - TMC

Wed Oct 14, 2020

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787428, Location: 42.369206, -83.331991



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound					Plymouth Westbound					Access Northbound					Access Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 7:15AM	0	92	0	0	92	0	78	0	0	78	0	0	0	0	0	0	0	0	0	0	170
7:30AM	0	66	1	0	67	1	111	0	0	112	0	0	1	0	1	0	0	1	0	1	181
7:45AM	0	78	0	0	78	0	126	0	0	126	0	0	0	0	0	0	0	0	0	0	204
8:00AM	0	73	2	0	75	1	119	0	0	120	0	0	1	0	1	0	0	0	0	0	196
Total	0	309	3	0	312	2	434	0	0	436	0	0	2	0	2	0	0	1	0	1	751
% Approach	0%	99.0%	1.0%	0%	-	0.5%	99.5%	0%	0%	-	0%	0%	100%	0%	-	0%	0%	100%	0%	-	-
% Total	0%	41.1%	0.4%	0%	41.5%	0.3%	57.8%	0%	0%	58.1%	0%	0%	0.3%	0%	0.3%	0%	0%	0.1%	0%	0.1%	-
PHF	-	0.840	0.375	-	0.848	0.500	0.861	-	-	0.865	-	-	0.500	-	0.500	-	-	0.250	-	0.250	0.920
Lights	0	276	3	0	279	2	403	0	0	405	0	0	2	0	2	0	0	1	0	1	687
% Lights	0%	89.3%	100%	0%	89.4%	100%	92.9%	0%	0%	92.9%	0%	0%	100%	0%	100%	0%	0%	100%	0%	100%	91.5%
Articulated Trucks	0	15	0	0	15	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	32
% Articulated Trucks	0%	4.9%	0%	0%	4.8%	0%	3.9%	0%	0%	3.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4.3%
Motorized Vehicles	0	18	0	0	18	0	14	0	0	14	0	0	0	0	0	0	0	0	0	0	32
% Motorized Vehicles	0%	5.8%	0%	0%	5.8%	0%	3.2%	0%	0%	3.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4.3%

* L: Left, R: Right, T: Thru, U: U-Turn

Plymouth Road and West Driveway (unsignalize... - TMC

Wed Oct 14, 2020

AM Peak (7:15 AM - 8:15 AM)

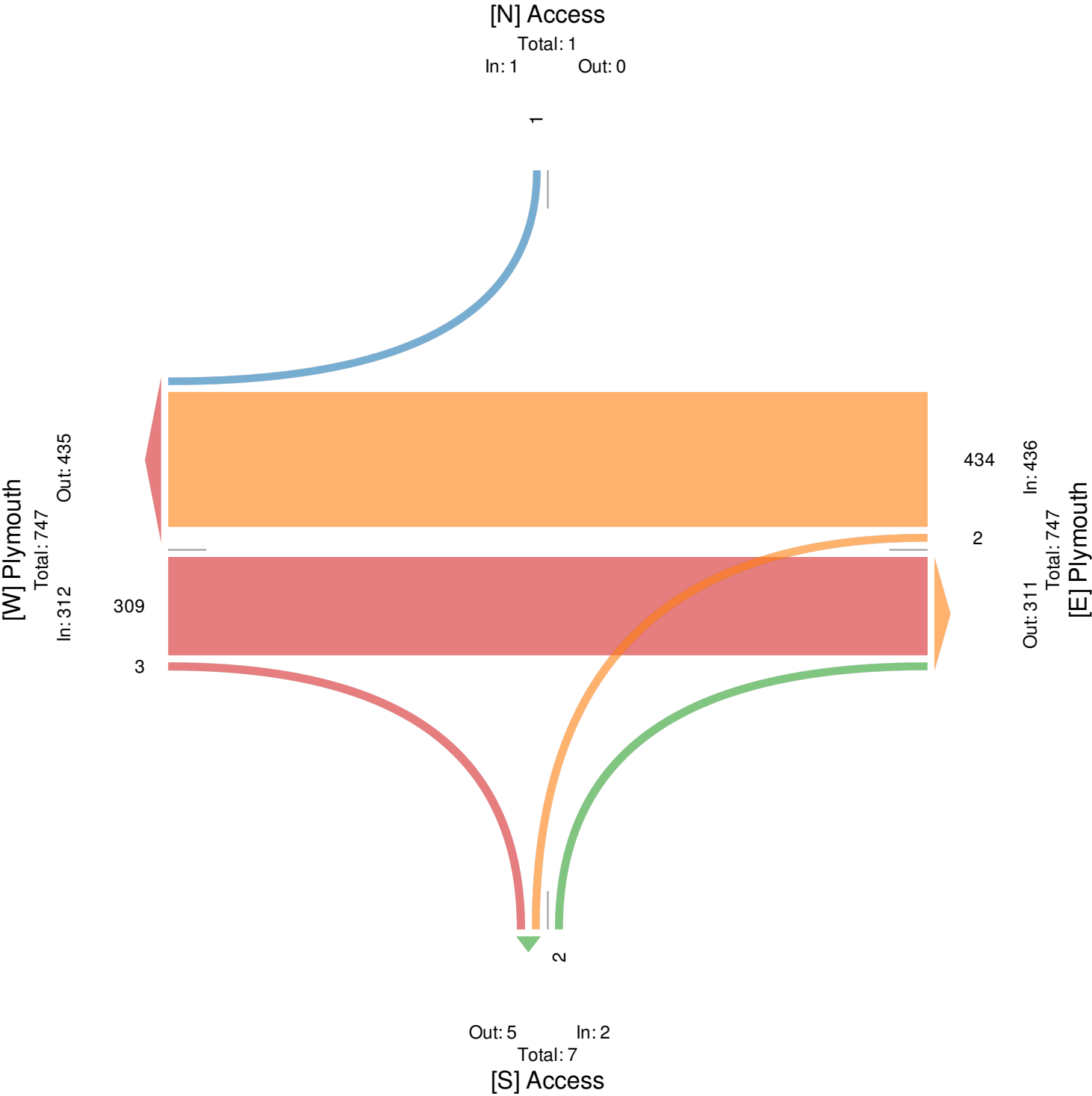
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787428, Location: 42.369206, -83.331991



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Plymouth Road and West Driveway (unsignalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787428, Location: 42.369206, -83.331991



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound					Plymouth Westbound					Access Northbound					Access Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 5:00PM	0	194	4	0	198	1	223	1	0	225	0	0	4	0	4	1	0	1	0	2	429
5:15PM	0	209	6	0	215	1	191	1	0	193	1	0	3	0	4	0	0	0	0	0	412
5:30PM	0	181	5	0	186	0	218	0	0	218	1	0	5	0	6	0	0	1	0	1	411
5:45PM	2	226	7	0	235	1	186	1	0	188	2	0	4	0	6	0	0	0	0	0	429
Total	2	810	22	0	834	3	818	3	0	824	4	0	16	0	20	1	0	2	0	3	1681
% Approach	0.2%	97.1%	2.6%	0%	-	0.4%	99.3%	0.4%	0%	-	20.0%	0%	80.0%	0%	-	33.3%	0%	66.7%	0%	-	-
% Total	0.1%	48.2%	1.3%	0%	49.6%	0.2%	48.7%	0.2%	0%	49.0%	0.2%	0%	1.0%	0%	1.2%	0.1%	0%	0.1%	0%	0.2%	-
PHF	0.250	0.896	0.786	-	0.887	0.750	0.917	0.750	-	0.916	0.500	-	0.800	-	0.833	0.250	-	0.500	-	0.375	0.980
Lights	2	802	22	0	826	3	803	3	0	809	4	0	16	0	20	1	0	2	0	3	1658
% Lights	100%	99.0%	100%	0%	99.0%	100%	98.2%	100%	0%	98.2%	100%	0%	100%	0%	100%	100%	0%	100%	0%	100%	98.6%
Articulated Trucks	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	10
% Articulated Trucks	0%	0.5%	0%	0%	0.5%	0%	0.7%	0%	0%	0.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.6%
Motorized Vehicles	0	4	0	0	4	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	13
% Motorized Vehicles	0%	0.5%	0%	0%	0.5%	0%	1.1%	0%	0%	1.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Plymouth Road and West Driveway (unsignalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

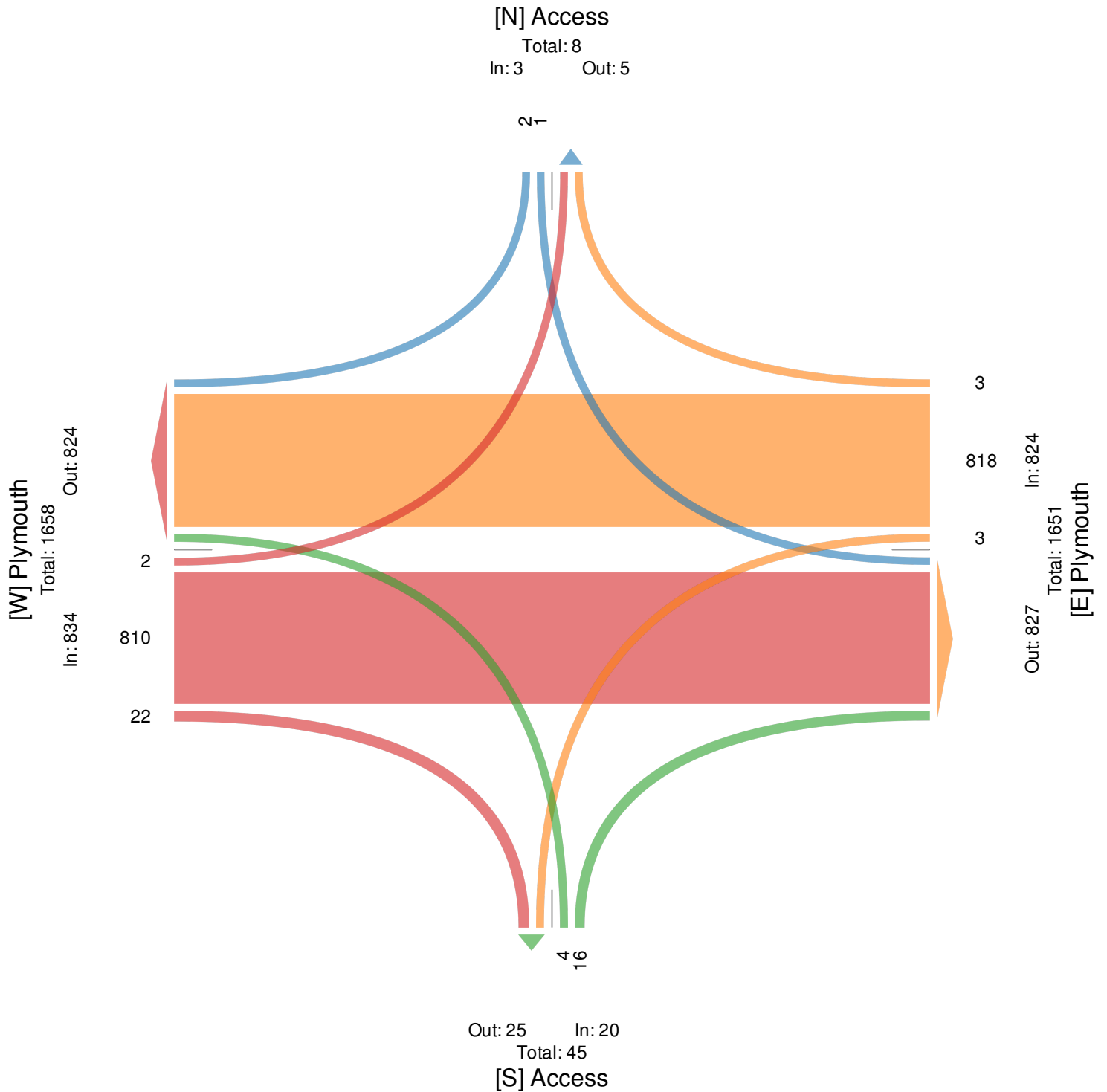
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787428, Location: 42.369206, -83.331991



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Plymouth Road and East Driveway (unsignalize... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787430, Location: 42.369219, -83.331391



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound					Plymouth Westbound					Access Northbound					Access Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14																					
7:00AM	0	288	0	1	289	0	412	1	0	413	0	0	0	0	0	1	0	2	0	3	705
8:00AM	5	281	0	0	286	0	442	2	0	444	0	0	1	0	1	3	0	4	0	7	738
4:00PM	12	756	4	0	772	3	833	12	1	849	5	0	3	0	8	18	0	12	0	30	1659
5:00PM	10	808	4	1	823	5	811	11	0	827	1	0	1	0	2	15	0	9	0	24	1676
Total	27	2133	8	2	2170	8	2498	26	1	2533	6	0	5	0	11	37	0	27	0	64	4778
% Approach	1.2%	98.3%	0.4%	0.1%	-	0.3%	98.6%	1.0%	0%	-	54.5%	0%	45.5%	0%	-	57.8%	0%	42.2%	0%	-	-
% Total	0.6%	44.6%	0.2%	0%	45.4%	0.2%	52.3%	0.5%	0%	53.0%	0.1%	0%	0.1%	0%	0.2%	0.8%	0%	0.6%	0%	1.3%	-
Lights	26	2041	8	2	2077	7	2399	25	1	2432	6	0	3	0	9	37	0	24	0	61	4579
% Lights	96.3%	95.7%	100%	100%	95.7%	87.5%	96.0%	96.2%	100%	96.0%	100%	0%	60.0%	0%	81.8%	100%	0%	88.9%	0%	95.3%	95.8%
Articulated Trucks	0	44	0	0	44	0	43	1	0	44	0	0	0	0	0	0	0	2	0	2	90
% Articulated Trucks	0%	2.1%	0%	0%	2.0%	0%	1.7%	3.8%	0%	1.7%	0%	0%	0%	0%	0%	0%	0%	7.4%	0%	3.1%	1.9%
Motorized Vehicles	1	48	0	0	49	1	56	0	0	57	0	0	2	0	2	0	0	1	0	1	109
% Motorized Vehicles	3.7%	2.3%	0%	0%	2.3%	12.5%	2.2%	0%	0%	2.3%	0%	0%	40.0%	0%	18.2%	0%	0%	3.7%	0%	1.6%	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Plymouth Road and East Driveway (unsignalize... - TMC

Wed Oct 14, 2020

Full Length (7 AM-9 AM, 4 PM-6 PM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787430, Location: 42.369219, -83.331391



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

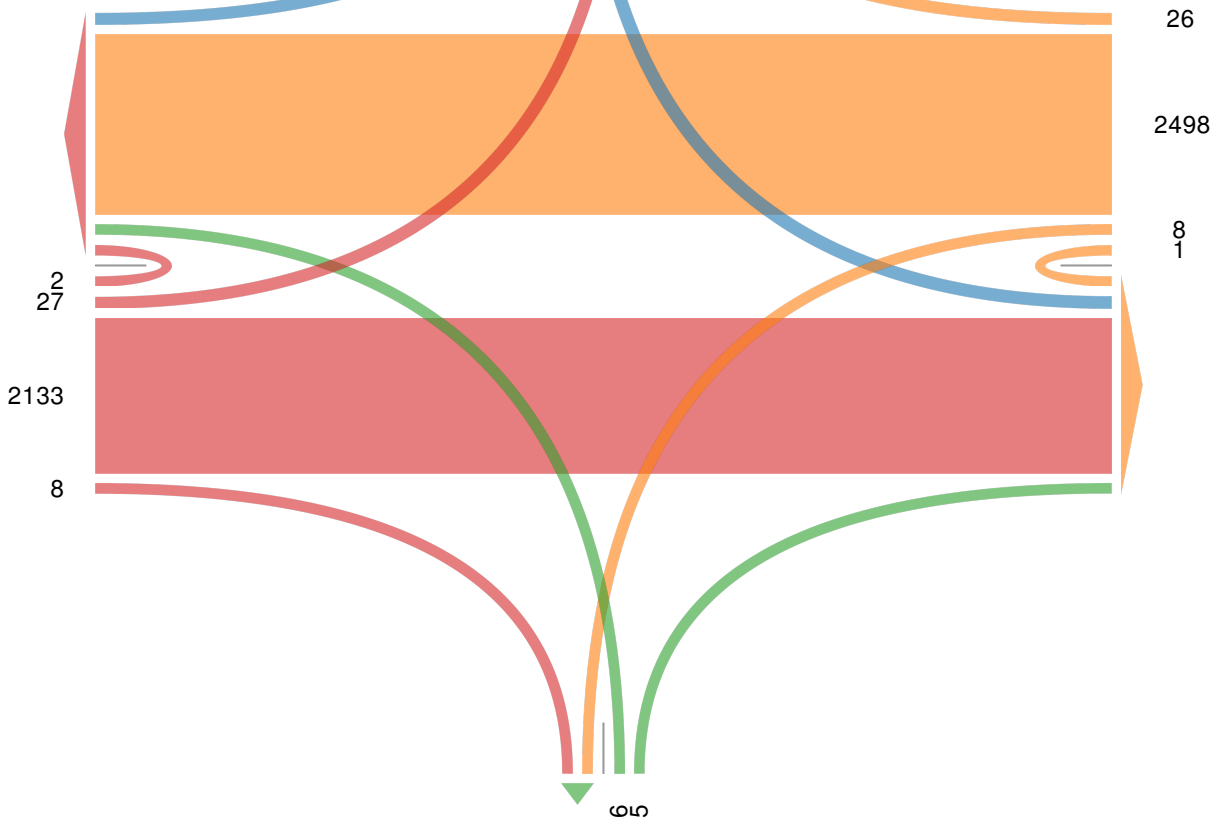
[N] Access

Total: 117

In: 64 Out: 53

27 37

[W] Plymouth
Total: 4703
In: 2170 Out: 2533



Out: 16 In: 11
Total: 27
[S] Access

Plymouth Road and East Driveway (unsignalize... - TMC

Wed Oct 14, 2020

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787430, Location: 42.369219, -83.331391



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound					Plymouth Westbound					Access Northbound					Access Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 7:15AM	0	90	0	0	90	0	77	0	0	77	0	0	0	0	0	0	0	1	0	1	168
7:30AM	0	65	0	1	66	0	110	0	0	110	0	0	0	0	0	0	0	1	0	1	177
7:45AM	0	80	0	0	80	0	127	0	0	127	0	0	0	0	0	0	0	0	0	0	207
8:00AM	0	73	0	0	73	0	119	1	0	120	0	0	1	0	1	0	0	1	0	1	195
Total	0	308	0	1	309	0	433	1	0	434	0	0	1	0	1	0	0	3	0	3	747
% Approach	0%	99.7%	0%	0.3%	-	0%	99.8%	0.2%	0%	-	0%	0%	100%	0%	-	0%	0%	100%	0%	-	-
% Total	0%	41.2%	0%	0.1%	41.4%	0%	58.0%	0.1%	0%	58.1%	0%	0%	0.1%	0%	0.1%	0%	0%	0.4%	0%	0.4%	-
PHF	-	0.856	-	0.250	0.858	-	0.852	0.250	-	0.854	-	-	0.250	-	0.250	-	-	0.750	-	0.750	0.902
Lights	0	277	0	1	278	0	405	1	0	406	0	0	1	0	1	0	0	1	0	1	686
% Lights	0%	89.9%	0%	100%	90.0%	0%	93.5%	100%	0%	93.5%	0%	0%	100%	0%	100%	0%	0%	33.3%	0%	33.3%	91.8%
Articulated Trucks	0	15	0	0	15	0	14	0	0	14	0	0	0	0	0	0	0	1	0	1	30
% Articulated Trucks	0%	4.9%	0%	0%	4.9%	0%	3.2%	0%	0%	3.2%	0%	0%	0%	0%	0%	0%	0%	33.3%	0%	33.3%	4.0%
Motorized Vehicles	0	16	0	0	16	0	14	0	0	14	0	0	0	0	0	0	0	1	0	1	31
% Motorized Vehicles	0%	5.2%	0%	0%	5.2%	0%	3.2%	0%	0%	3.2%	0%	0%	0%	0%	0%	0%	0%	33.3%	0%	33.3%	4.1%

* L: Left, R: Right, T: Thru, U: U-Turn

Plymouth Road and East Driveway (unsignalize... - TMC

Wed Oct 14, 2020

AM Peak (7:15 AM - 8:15 AM)

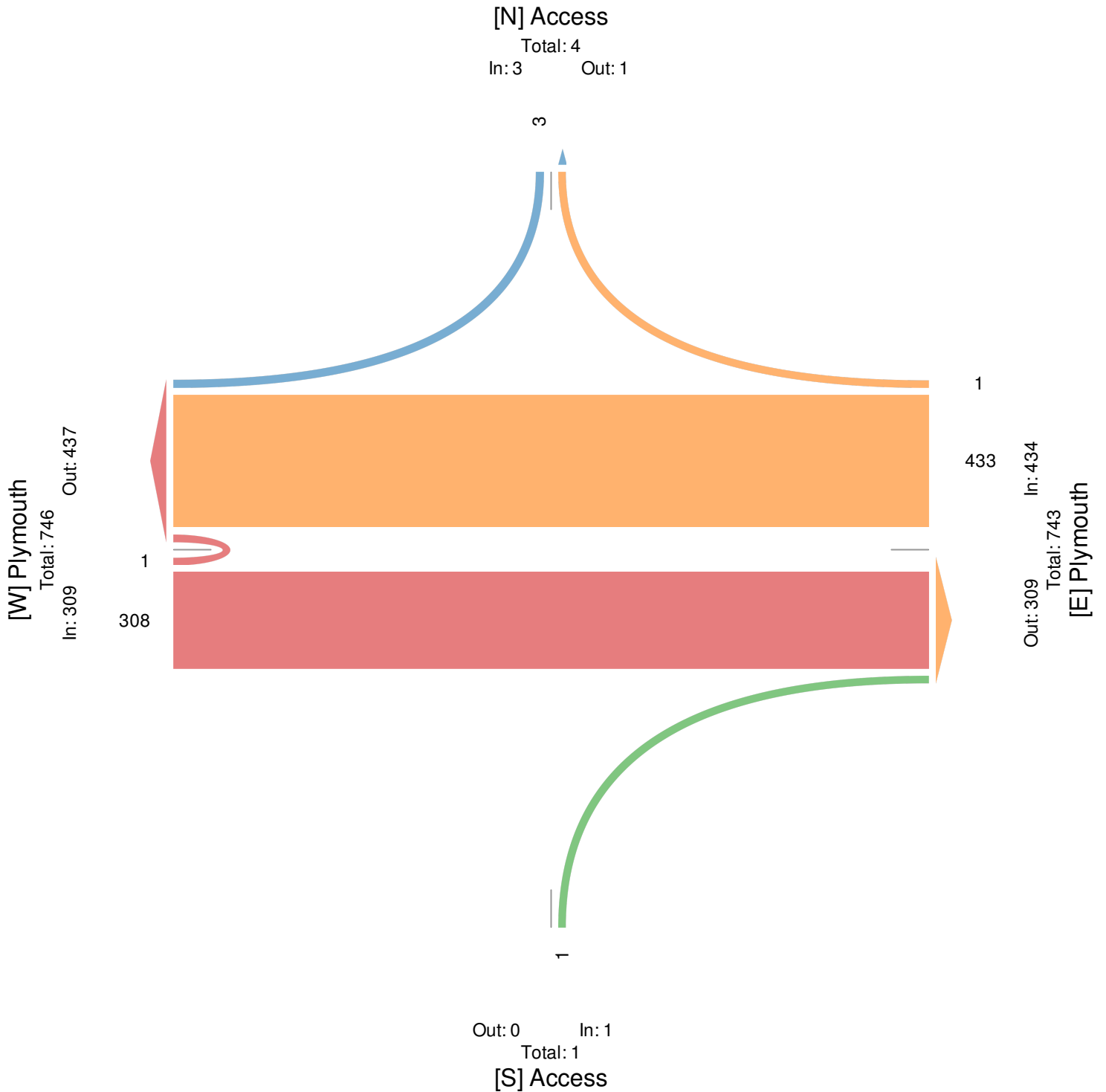
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787430, Location: 42.369219, -83.331391



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Plymouth Road and East Driveway (unsignalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787430, Location: 42.369219, -83.331391



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Plymouth Eastbound					Plymouth Westbound					Access Northbound					Access Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2020-10-14 5:00PM	2	193	3	1	199	1	221	5	0	227	0	0	0	0	0	6	0	1	0	7	433
5:15PM	2	206	0	0	208	1	190	1	0	192	0	0	1	0	1	4	0	2	0	6	407
5:30PM	1	183	0	0	184	2	214	2	0	218	0	0	0	0	0	2	0	4	0	6	408
5:45PM	5	226	1	0	232	1	186	3	0	190	1	0	0	0	1	3	0	2	0	5	428
Total	10	808	4	1	823	5	811	11	0	827	1	0	1	0	2	15	0	9	0	24	1676
% Approach	1.2%	98.2%	0.5%	0.1%	-	0.6%	98.1%	1.3%	0%	-	50.0%	0%	50.0%	0%	-	62.5%	0%	37.5%	0%	-	-
% Total	0.6%	48.2%	0.2%	0.1%	49.1%	0.3%	48.4%	0.7%	0%	49.3%	0.1%	0%	0.1%	0%	0.1%	0.9%	0%	0.5%	0%	1.4%	-
PHF	0.500	0.894	0.333	0.250	0.887	0.625	0.917	0.550	-	0.911	0.250	-	0.250	-	0.500	0.625	-	0.563	-	0.857	0.968
Lights	10	797	4	1	812	4	796	10	0	810	1	0	1	0	2	15	0	8	0	23	1647
% Lights	100%	98.6%	100%	100%	98.7%	80.0%	98.2%	90.9%	0%	97.9%	100%	0%	100%	0%	100%	100%	0%	88.9%	0%	95.8%	98.3%
Articulated Trucks	0	7	0	0	7	0	5	1	0	6	0	0	0	0	0	0	0	1	0	1	14
% Articulated Trucks	0%	0.9%	0%	0%	0.9%	0%	0.6%	9.1%	0%	0.7%	0%	0%	0%	0%	0%	0%	0%	11.1%	0%	4.2%	0.8%
Motorized Vehicles	0	4	0	0	4	1	10	0	0	11	0	0	0	0	0	0	0	0	0	0	15
% Motorized Vehicles	0%	0.5%	0%	0%	0.5%	20.0%	1.2%	0%	0%	1.3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Plymouth Road and East Driveway (unsignalize... - TMC

Wed Oct 14, 2020

PM Peak (5 PM - 6 PM) - Overall Peak Hour

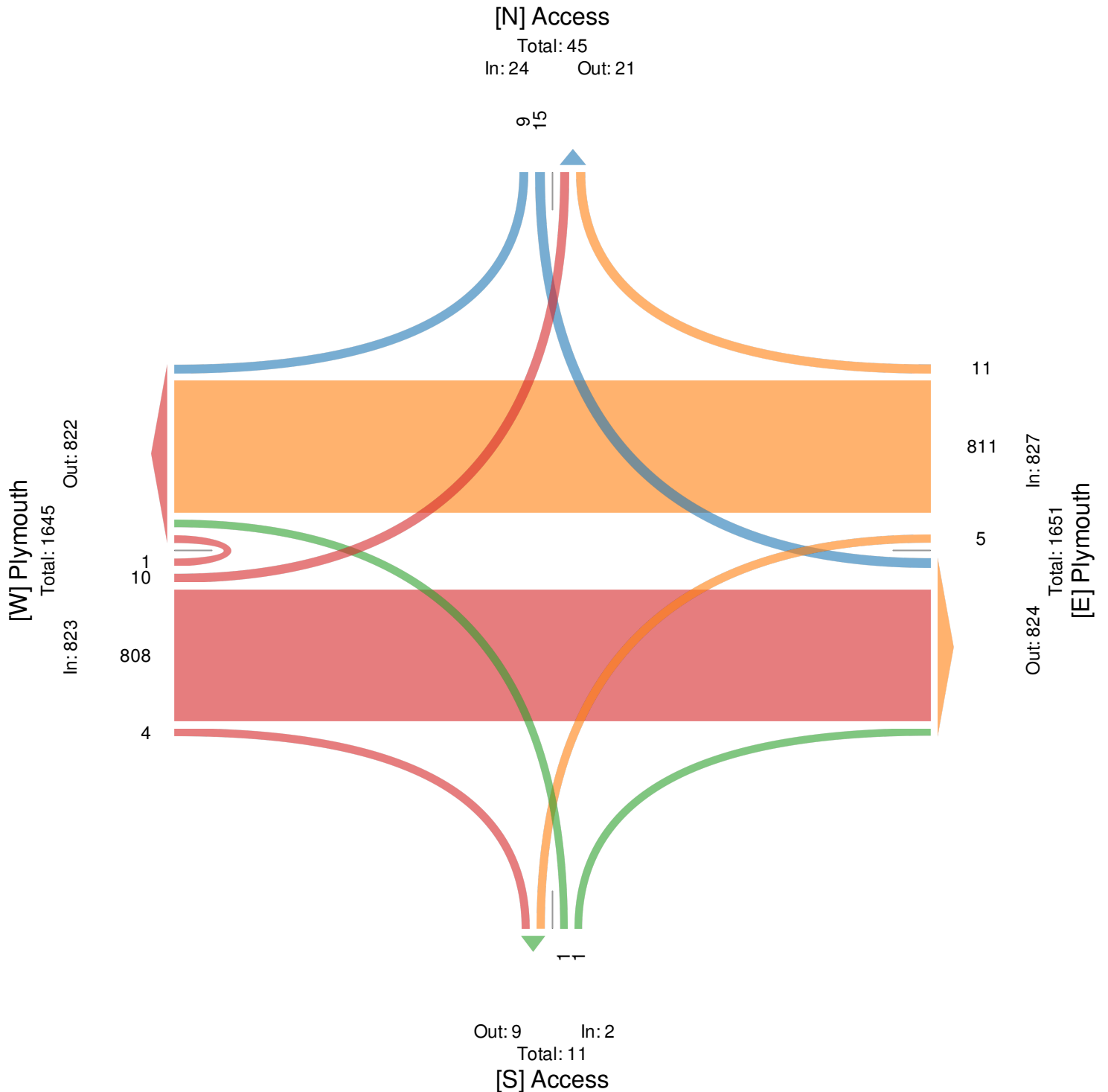
All Classes (Lights, Articulated Trucks, Motorized Vehicles)

All Movements

ID: 787430, Location: 42.369219, -83.331391



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBRR	WBRR	NBRR	SBRR
#1 - Middlebelt Road and Plymouth Road	AM Peak 10/14/20		PHF		0.95			0.84			0.91			0.89					
			% Heavy		8%			9%			2%			7%					
		2019	Existing	120	167	34	45	264	122	109	629	45	82	438	233	20	79	25	119
		2020	Existing Adj.	158	234	45	60	352	162	144	830	63	118	596	318	26	104	33	157
		2022	Background	160	236	45	61	355	164	145	838	64	119	602	321	26	105	33	159
			Bckgrd. Dev. A																
			Bckgrd. Dev. B																
			Bckgrd. Dev. C																
			Total Background	160	236	45	61	355	164	145	838	64	119	602	321	26	105	33	159
			Site Generated	9	12		11	27			32	17		12					
			Pass By																
			Total Site Gen	9	12	0	11	27	0	0	32	17	0	12	0	0	0	0	0
			Total Future	169	248	45	72	382	164	145	870	81	119	614	321	26	105	33	159

Count Date: 10/14/2020

Count Year: 2019

Existing Adj. Year: 2020

Existing Adjustment Rate: 32.0%

Growth Rate: 0.5%

Buildout Year: 2022

Bckgrd. Dev. A:

Bckgrd. Dev. B:

Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#2 - Middlebelt Road and North Driveway	AM Peak 10/14/20		PHF		0.60			0.92			0.94			0.82	
			% Heavy		0%			2%			4%			6%	
		2019	Existing	1	0	1	0	0	0	0	855	0	0	786	2
		2020	Existing Adj.	1	0	1	0	0	0	0	1153	0	0	1038	3
		2022	Background	1	0	1	0	0	0	0	1165	0	0	1048	3
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	1	0	1	0	0	0	0	1165	0	0	1048	3
			Site Generated				1		4		34	5	5	44	
			Pass By												
			Total Site Gen	0	0	0	1	0	4	0	34	5	5	44	0
			Total Future	1	0	1	1	0	4	0	1199	5	5	1092	3

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#3 - Middlebelt Road and Middle Driveway	AM Peak 10/14/20		PHF	0.60		0.94		0.82	
			% Heavy	0%		4%		6%	
		2019	Existing	2	7	848	1	7	776
		2020	Existing Adj.	3	9	1144	1	9	1030
		2022	Background	3	9	1156	1	9	1040
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	3	9	1156	1	9	1040
			Site Generated	5	17	22	18	22	23
			Pass By	5	8	-8	8	5	-5
			Total Site Gen	10	25	14	26	27	18
			Total Future	13	34	1170	27	36	1058

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#4 - Middlebelt Road and South Driveway	AM Peak 10/14/20		PHF	0.92		0.95		0.82	
			% Heavy	2%		4%		6%	
		2019	Existing	0	0	855	4	1	782
		2020	Existing Adj.	0	0	1145	5	1	1032
		2022	Background	0	0	1157	5	1	1042
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	0	0	1157	5	1	1042
			Site Generated	5	17	23	18	22	7
			Pass By	4	8	-8	8	4	-4
			Total Site Gen	9	25	15	26	26	3
			Total Future	9	25	1172	31	27	1045

Intersection	Time period	Year	Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
#5 - Plymouth Road and West Driveway	AM Peak 10/14/20		PHF		0.85			0.87		0.60		0.60	
			% Heavy		11%			7%		0%		0%	
		2019	Existing	309	3	2	434	0	0	0	2	0	1
		2020	Existing Adj.	411	4	3	573	0	0	0	3	0	1
		2022	Background	415	4	3	579	0	0	0	3	0	1
			Bckgrd. Dev. A										
			Bckgrd. Dev. B										
			Bckgrd. Dev. C										
			Total Background	415	4	3	579	0	0	0	3	0	1
			Site Generated	29			19	13				19	
			Pass By				-5	5				5	
			Total Site Gen	29	0	0	14	18	0	0	0	24	
			Total Future	444	4	3	593	18	0	0	3	25	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#6 - Plymouth Road and East Driveway	AM Peak 10/14/20		PHF		0.86			0.85			0.60			0.75	
			% Heavy		10%			7%			0%			67%	
		2019	Existing	0	308	0	0	433	1	0	0	1	0	0	3
		2020	Existing Adj.	0	414	0	0	572	1	0	0	1	0	0	4
		2022	Background	0	418	0	0	578	1	0	0	1	0	0	4
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	0	418	0	0	578	1	0	0	1	0	0	4
			Site Generated	29			13	14				13		19	
			Pass By	5	-5		-6	6				5		6	
			Total Site Gen	34	-5	0	7	20	0	0	0	18	0	25	
			Total Future	34	413	0	0	585	21	0	0	1	18	0	29

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBRR	WBRR	NBRR	SBRR
#1 - Middlebelt Road and Plymouth Road	PM Peak 10/14/20		PHF	0.87			0.93			0.95			0.95						
			% Heavy	1%			2%			1%			2%						
		2019	Existing	298	461	124	185	378	239	118	815	136	235	1022	544	57	107	84	205
		2020	Existing Adj.	319	493	133	203	415	263	126	874	146	263	1109	582	61	114	90	219
		2022	Background	322	496	134	205	419	266	127	883	147	266	1120	588	62	115	91	221
			Bckgrd. Dev. A																
			Bckgrd. Dev. B																
			Bckgrd. Dev. C																
			Total Background	322	498	134	205	419	266	127	883	147	266	1120	588	62	115	91	221
			Site Generated	8	11		15	24		20	3		15						
			Pass By																
			Total Site Gen	8	11	0	15	24	0	0	20	3	0	15	0	0	0	0	0
			Total Future	330	509	134	220	443	266	127	903	150	266	1135	588	62	115	91	221

Count Date: 10/14/2020
Count Year: 2019
Existing Adj. Year: 2020

Existing Adjustment Rate: 7.0%
Growth Rate: 0.5%
Buildout Year: 2022

Bckgrd. Dev. A:
Bckgrd. Dev. B:
Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#2 - Middlebelt Road and North Driveway	PM Peak 10/14/20		PHF	0.60			0.60			0.95			0.95		
			% Heavy	0%			0%			1%			2%		
		2019	Existing	0	0	3	0	0	3	3	1367	3	3	1839	0
		2020	Existing Adj.	0	0	3	0	0	3	3	1468	3	3	1971	0
		2022	Background	0	0	3	0	0	3	3	1483	3	3	1991	0
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	0	0	3	0	0	3	3	1483	3	3	1991	0
			Site Generated				1		3	28	3	4	36		
			Pass By												
			Total Site Gen	0	0	0	1	0	3	0	28	3	4	36	0
			Total Future	0	0	3	1	0	6	3	1511	6	7	2027	0

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#3 - Middlebelt Road and Middle Driveway	PM Peak 10/14/20		PHF	0.64		0.95		0.95	
			% Heavy	0%		1%		2%	
		2019	Existing	3	20	1358	1	17	1828
		2020	Existing Adj.	3	21	1453	1	18	1956
		2022	Background	3	21	1468	1	18	1976
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	3	21	1468	1	18	1976
			Site Generated	7	14	17	12	18	19
			Pass By	19	19	-19	19	19	-19
			Total Site Gen	26	33	-2	31	37	0
			Total Future	29	54	1466	32	55	1976

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#4 - Middlebelt Road and South Driveway	PM Peak 10/14/20		PHF	0.60		0.95		0.95	
			% Heavy	25%		1%		2%	
		2019	Existing	0	4	1351	6	5	1814
		2020	Existing Adj.	0	4	1450	6	5	1954
		2022	Background	0	4	1465	6	5	1974
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	0	4	1465	6	5	1974
			Site Generated	7	14	15	13	18	8
			Pass By	19	19	-19	19	19	-19
			Total Site Gen	26	33	-4	32	37	-11
			Total Future	26	37	1461	38	42	1963

Intersection	Time period	Year	Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
#5 - Plymouth Road and West Driveway	PM Peak 10/14/20		PHF	0.89		0.92		0.83		0.60			
			% Heavy	1%		2%		0%		0%			
		2019	Existing	810	22	3	818	3	4	0	16	0	2
		2020	Existing Adj.	878	24	3	875	3	4	0	17	0	2
		2022	Background	887	24	3	884	3	4	0	17	0	2
			Bckgrd. Dev. A										
			Bckgrd. Dev. B										
			Bckgrd. Dev. C										
			Total Background	887	24	3	884	3	4	0	17	0	2
			Site Generated	14			19	9				20	
			Pass By				-14	14				14	
			Total Site Gen	14	0	0	5	23	0	0	0	34	
			Total Future	901	24	3	889	26	4	0	17	0	36

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#6 - Plymouth Road and East Driveway	PM Peak 10/14/20		PHF	0.89			0.91			0.60			0.86		
			% Heavy	1%			2%			0%			4%		
		2019	Existing	10	808	4	5	811	11	1	0	1	15	0	9
		2020	Existing Adj.	13	878	4	5	870	12	1	0	1	17	0	10
		2022	Background	13	887	4	5	879	12	1	0	1	17	0	10
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	13	887	4	5	879	12	1	0	1	17	0	10
			Site Generated	14			9	9					19		19
			Pass By		-23	23		-15	15				23		15
			Total Site Gen	14	-23	23	0	-6	24	0	0	0	42	0	34
			Total Future	27	864	27	5	873	36	1	0	1	59	0	44

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBRR	WBRR	NBRR	SBRR
#1 - Middlebelt Road and Plymouth Road	AM Peak 10/14/20		PHF		0.95			0.84			0.91			0.89					
			% Heavy		8%			9%			2%			7%					
		2019	Existing	120	167	34	45	264	122	109	629	45	82	438	233	20	79	25	119
		2020	Existing Adj.	158	234	45	60	352	162	144	830	63	118	596	318	26	104	33	157
		2022	Background	160	236	45	61	355	164	145	838	64	119	602	321	26	105	33	159
			Bckgrd. Dev. A																
			Bckgrd. Dev. B																
			Bckgrd. Dev. C																
			Total Background	160	236	45	61	355	164	145	838	64	119	602	321	26	105	33	159
			Site Generated	9	12		11	27			32	17		12					
			Pass By																
			Total Site Gen	9	12	0	11	27	0	0	32	17	0	12	0	0	0	0	0
			Total Future	169	248	45	72	382	164	145	870	81	119	614	321	26	105	33	159

Count Date: 10/14/2020

Count Year: 2019

Existing Adj. Year: 2020

Existing Adjustment Rate: 32.0%

Growth Rate: 0.5%

Buildout Year: 2022

Bckgrd. Dev. A:

Bckgrd. Dev. B:

Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#2 - Middlebelt Road and North Driveway	AM Peak 10/14/20		PHF		0.60			0.92			0.94			0.82	
			% Heavy		0%			2%			4%			6%	
		2019	Existing	1	0	1	0	0	0	0	855	0	0	786	2
		2020	Existing Adj.	1	0	1	0	0	0	0	1153	0	0	1038	3
		2022	Background	1	0	1	0	0	0	0	1165	0	0	1048	3
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	1	0	1	0	0	0	0	1165	0	0	1048	3
			Site Generated				1		4		34	5	5	44	
			Pass By												
			Total Site Gen	0	0	0	1	0	4	0	34	5	5	44	0
			Total Future	1	0	1	1	0	4	0	1199	5	5	1092	3

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#3 - Middlebelt Road and Middle Driveway	AM Peak 10/14/20		PHF	0.60		0.94		0.82	
			% Heavy	0%		4%		6%	
		2019	Existing	2	7	848	1	7	776
		2020	Existing Adj.	3	9	1144	1	9	1030
		2022	Background	3	9	1156	1	9	1040
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	3	9	1156	1	9	1040
			Site Generated	11	17	22	18	45	0
			Pass By	9	8	-8	8	9	-9
			Total Site Gen	20	25	14	26	54	-9
			Total Future	23	34	1170	27	63	1031

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#4 - Middlebelt Road and South Driveway	AM Peak 10/14/20		PHF	0.92		0.95		0.82	
			% Heavy	2%		4%		6%	
		2019	Existing	0	0	855	4	1	782
		2020	Existing Adj.	0	0	1145	5	1	1032
		2022	Background	0	0	1157	5	1	1042
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	0	0	1157	5	1	1042
			Site Generated		17	23	18	-1	12
			Pass By		8	-8	8		
			Total Site Gen	0	25	15	26	-1	12
			Total Future	0	25	1172	31	0	1054

Intersection	Time period	Year	Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
#5 - Plymouth Road and West Driveway	AM Peak 10/14/20		PHF		0.85			0.87		0.60		0.60	
			% Heavy		11%			7%		0%		0%	
		2019	Existing	309	3	2	434	0	0	0	2	0	1
		2020	Existing Adj.	411	4	3	573	0	0	0	3	0	1
		2022	Background	415	4	3	579	0	0	0	3	0	1
			Bckgrd. Dev. A										
			Bckgrd. Dev. B										
			Bckgrd. Dev. C										
			Total Background	415	4	3	579	0	0	0	3	0	1
			Site Generated	29			19	13				19	
			Pass By				-5	5				5	
			Total Site Gen	29	0	0	14	18	0	0	0	24	
			Total Future	444	4	3	593	18	0	0	3	23	1

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#6 - Plymouth Road and East Driveway	AM Peak 10/14/20		PHF		0.86			0.85			0.60			0.75	
			% Heavy		10%			7%			0%			67%	
		2019	Existing	0	308	0	0	433	1	0	0	1	0	0	3
		2020	Existing Adj.	0	414	0	0	572	1	0	0	1	0	0	4
		2022	Background	0	418	0	0	578	1	0	0	1	0	0	4
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	0	418	0	0	578	1	0	0	1	0	0	4
			Site Generated	29			13	14				13		19	
			Pass By	5	-5		-6	6				5		6	
			Total Site Gen	34	-5	0	0	7	20	0	0	0	18	0	25
			Total Future	34	413	0	0	585	21	0	0	1	18	0	29

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBRR	WBRR	NBRR	SBRR
#1 - Middlebelt Road and Plymouth Road	PM Peak 10/14/20		PHF	0.87			0.93			0.95			0.95						
			% Heavy	1%			2%			1%			2%						
		2019	Existing	298	461	124	185	378	239	118	815	136	235	1022	544	57	107	84	205
		2020	Existing Adj.	319	493	133	203	415	263	126	874	146	263	1109	582	61	114	90	219
		2022	Background	322	496	134	205	419	266	127	883	147	266	1120	588	62	115	91	221
			Bckgrd. Dev. A																
			Bckgrd. Dev. B																
			Bckgrd. Dev. C																
			Total Background	322	498	134	205	419	266	127	883	147	266	1120	588	62	115	91	221
			Site Generated	8	11		15	24		20	3		15						
			Pass By																
			Total Site Gen	8	11	0	15	24	0	20	3	0	15	0	0	0	0	0	0
			Total Future	330	509	134	220	443	266	127	903	150	266	1135	588	62	115	91	221

Count Date: 10/14/2020
Count Year: 2019
Existing Adj. Year: 2020

Existing Adjustment Rate: 7.0%
Growth Rate: 0.5%
Buildout Year: 2022

Bckgrd. Dev. A:
Bckgrd. Dev. B:
Bckgrd. Dev. C:

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#2 - Middlebelt Road and North Driveway	PM Peak 10/14/20		PHF	0.60			0.60			0.95			0.95		
			% Heavy	0%			0%			1%			2%		
		2019	Existing	0	0	3	0	0	3	3	1367	3	3	1839	0
		2020	Existing Adj.	0	0	3	0	0	3	3	1468	3	3	1971	0
		2022	Background	0	0	3	0	0	3	3	1483	3	3	1991	0
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	0	0	3	0	0	3	3	1483	3	3	1991	0
			Site Generated				1		3	28	3	4	36		
			Pass By												
			Total Site Gen	0	0	0	1	0	3	0	28	3	4	36	0
			Total Future	0	0	3	1	0	6	3	1511	6	7	2027	0

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#3 - Middlebelt Road and Middle Driveway	PM Peak 10/14/20		PHF	0.64		0.95		0.95	
			% Heavy	0%		1%		2%	
		2019	Existing	3	20	1358	1	17	1828
		2020	Existing Adj.	3	21	1453	1	18	1956
		2022	Background	3	21	1468	1	18	1976
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	3	21	1468	1	18	1976
			Site Generated	14	14	17	12	41	-4
			Pass By	38	19	-19	19	38	-38
			Total Site Gen	52	33	-2	31	79	-42
			Total Future	55	54	1466	32	97	1934

Intersection	Time period	Year	Movement	WBL	WBR	NBT	NBR	SBL	SBT
#4 - Middlebelt Road and South Driveway	PM Peak 10/14/20		PHF	0.60		0.95		0.95	
			% Heavy	25%		1%		2%	
		2019	Existing	0	4	1351	6	5	1814
		2020	Existing Adj.	0	4	1450	6	5	1954
		2022	Background	0	4	1465	6	5	1974
			Bckgrd. Dev. A						
			Bckgrd. Dev. B						
			Bckgrd. Dev. C						
			Total Background	0	4	1465	6	5	1974
			Site Generated	14	15	13	-5	15	
			Pass By		19	-19	19		
			Total Site Gen	0	33	-4	32	-5	15
			Total Future	0	37	1461	38	0	1989

Intersection	Time period	Year	Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
#5 - Plymouth Road and West Driveway	PM Peak 10/14/20		PHF	0.89		0.92		0.83		0.60			
			% Heavy	1%		2%		0%		0%			
		2019	Existing	810	22	3	818	3	4	0	16	0	2
		2020	Existing Adj.	878	24	3	875	3	4	0	17	0	2
		2022	Background	887	24	3	884	3	4	0	17	0	2
			Bckgrd. Dev. A										
			Bckgrd. Dev. B										
			Bckgrd. Dev. C										
			Total Background	887	24	3	884	3	4	0	17	0	2
			Site Generated	14			19	9				20	
			Pass By				-14	14				14	
			Total Site Gen	14	0	0	5	23	0	0	0	34	
			Total Future	901	24	3	889	26	4	0	17	0	36

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#6 - Plymouth Road and East Driveway	PM Peak 10/14/20		PHF	0.89			0.91			0.60			0.86		
			% Heavy	1%			2%			0%			4%		
		2019	Existing	10	808	4	5	811	11	1	0	1	15	0	9
		2020	Existing Adj.	13	878	4	5	870	12	1	0	1	17	0	10
		2022	Background	13	887	4	5	879	12	1	0	1	17	0	10
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	13	887	4	5	879	12	1	0	1	17	0	10
			Site Generated	14			9	9					19		19
			Pass By		-23	23		-15	15				23		15
			Total Site Gen	14	-23	23	0	-6	24	0	0	0	42	0	34
			Total Future	27	864	27	5	873	36	1	0	1	59	0	44

LOS OUTPUT REPORTS

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2020 Existing AM
10/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	234	45	60	352	162	144	830	63	118	596	318
Future Volume (veh/h)	158	234	45	60	352	162	144	830	63	118	596	318
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		0.98	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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1875	1875	1875	1860	1860	1860	1969	1969	1969	1891	1891	1891
Adj Flow Rate, veh/h	166	246	20	71	419	69	158	912	33	133	670	181
Peak Hour Factor	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	7	7	7
Cap, veh/h	374	1195	532	461	1185	527	294	1221	535	241	1172	606
Arrive On Green	0.05	0.34	0.34	0.05	0.34	0.34	0.06	0.33	0.33	0.06	0.33	0.33
Sat Flow, veh/h	1786	3563	1585	1771	3533	1572	1875	3741	1640	1801	3593	1595
Grp Volume(v), veh/h	166	246	20	71	419	69	158	912	33	133	670	181
Grp Sat Flow(s),veh/h/ln	1786	1781	1585	1771	1767	1572	1875	1870	1640	1801	1796	1595
Q Serve(g_s), s	0.0	5.4	0.9	0.0	9.8	3.4	0.0	23.9	1.5	0.0	17.0	2.8
Cycle Q Clear(g_c), s	0.0	5.4	0.9	0.0	9.8	3.4	0.0	23.9	1.5	0.0	17.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	374	1195	532	461	1185	527	294	1221	535	241	1172	606
V/C Ratio(X)	0.44	0.21	0.04	0.15	0.35	0.13	0.54	0.75	0.06	0.55	0.57	0.30
Avail Cap(c_a), veh/h	374	1195	532	461	1185	527	294	1221	535	241	1172	606
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	33.4	26.1	24.6	25.7	27.6	25.4	41.7	33.0	25.5	45.5	30.7	23.8
Incr Delay (d2), s/veh	3.8	0.4	0.1	0.7	0.8	0.5	6.9	4.2	0.2	8.9	2.0	1.3
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	4.1	2.3	0.4	1.4	4.2	1.3	4.6	11.1	0.6	4.0	7.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	26.5	24.7	26.4	28.4	25.9	48.5	37.2	25.7	54.4	32.7	25.1
LnGrp LOS	D	C	C	C	C	C	D	D	C	D	C	C
Approach Vol, veh/h	432			559			1103			984		
Approach Delay, s/veh	30.5			27.8			38.5			34.2		
Approach LOS	C			C			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	42.0	12.0	43.0	13.0	42.0	12.0	43.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 6.9	* 36	* 5.9	* 37	* 6.9	* 36	* 5.9	* 37				
Max Q Clear Time (g_c+I1), s	2.0	25.9	2.0	7.4	2.0	19.0	2.0	11.8				
Green Ext Time (p_c), s	0.1	4.3	0.0	1.6	0.2	4.6	0.1	2.9				

Intersection Summary

HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2020 Existing AM
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↕	↗	↗	↕↕↕	
Traffic Vol, veh/h	1	0	1	0	0	0	0	1153	0	0	1038	3
Future Vol, veh/h	1	0	1	0	0	0	0	1153	0	0	1038	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	92	92	92	94	94	94	82	82	82
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	6	6	6
Mvmt Flow	2	0	2	0	0	0	0	1227	0	0	1266	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1882	2495	635	1733	2497	614	1270	0	0	1227	0	0
Stage 1	1268	1268	-	1227	1227	-	-	-	-	-	-	-
Stage 2	614	1227	-	506	1270	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.99	6.54	6.94	5.38	-	-	4.22	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.67	4.02	3.32	3.14	-	-	2.26	-	-
Pot Cap-1 Maneuver	58	29	365	72	29	435	284	-	-	542	-	-
Stage 1	134	242	-	185	249	-	-	-	-	-	-	-
Stage 2	437	253	-	487	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	58	29	365	72	29	435	284	-	-	542	-	-
Mov Cap-2 Maneuver	58	29	-	72	29	-	-	-	-	-	-	-
Stage 1	134	242	-	185	249	-	-	-	-	-	-	-
Stage 2	437	253	-	485	237	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	41.9		0		0		0					
HCM LOS	E		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	284	-	-	58	365	-	542	-	-			
HCM Lane V/C Ratio	-	-	-	0.029	0.005	-	-	-	-			
HCM Control Delay (s)	0	-	-	68.9	14.9	0	0	-	-			
HCM Lane LOS	A	-	-	F	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2020 Existing AM
10/21/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	9	1144	1	9	1030
Future Vol, veh/h	3	9	1144	1	9	1030
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	94	94	82	82
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	5	15	1217	1	11	1256
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1741	609	0	0	1218	0
Stage 1	1217	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.22	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.26	-
Pot Cap-1 Maneuver	102	443	-	-	547	-
Stage 1	242	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	100	443	-	-	547	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	242	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.6	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	331	547	-	
HCM Lane V/C Ratio	-	-	0.06	0.02	-	
HCM Control Delay (s)	-	-	16.6	11.7	-	
HCM Lane LOS	-	-	C	B	-	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	

4: Middlebelt Road & South Driveway Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	3.0	1.0	2.1

HCM 6th TWSC
5: West Driveway & Plymouth Road

2020 Existing AM
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑	↗		↕			↖	
Traffic Vol, veh/h	0	411	4	3	573	0	0	0	3	0	0	1
Future Vol, veh/h	0	411	4	3	573	0	0	0	3	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	87	87	60	60	60	60	60	60
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	0	484	5	3	659	0	0	0	5	0	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	489	0	0	823	1152	245	-	1154	330
Stage 1	-	-	-	-	-	-	487	487	-	-	665	-
Stage 2	-	-	-	-	-	-	336	665	-	-	489	-
Critical Hdwy	-	-	-	4.24	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	1036	-	-	269	199	762	0	199	672
Stage 1	0	-	-	-	-	-	536	554	-	0	461	-
Stage 2	0	-	-	-	-	-	657	461	-	0	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1036	-	-	268	198	762	-	198	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	318	-	-	318	-
Stage 1	-	-	-	-	-	-	536	554	-	-	460	-
Stage 2	-	-	-	-	-	-	653	460	-	-	553	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.8			10.4		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	762	-	-	1036	-	-	672					
HCM Lane V/C Ratio	0.007	-	-	0.003	-	-	0.002					
HCM Control Delay (s)	9.8	-	-	8.5	-	-	10.4					
HCM Lane LOS	A	-	-	A	-	-	B					
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2020 Existing AM
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	414	0	0	572	1	0	0	1	0	0	4
Future Vol, veh/h	0	414	0	0	572	1	0	0	1	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	85	85	85	60	60	60	75	75	75
Heavy Vehicles, %	10	10	10	7	7	7	0	0	0	67	67	67
Mvmt Flow	0	481	0	0	673	1	0	0	2	0	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	674	0	0	481	0	0	818	1155	241	915	1155	337
Stage 1	-	-	-	-	-	-	481	481	-	674	674	-
Stage 2	-	-	-	-	-	-	337	674	-	241	481	-
Critical Hdwy	4.3	-	-	4.24	-	-	7.5	6.5	6.9	8.84	7.84	8.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Follow-up Hdwy	2.3	-	-	2.27	-	-	3.5	4	3.3	4.17	4.67	3.97
Pot Cap-1 Maneuver	861	-	-	1043	-	-	271	199	766	148	120	502
Stage 1	-	-	-	-	-	-	540	557	-	287	321	-
Stage 2	-	-	-	-	-	-	656	457	-	585	415	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	861	-	-	1043	-	-	268	199	766	148	120	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	199	-	148	120	-
Stage 1	-	-	-	-	-	-	540	557	-	287	321	-
Stage 2	-	-	-	-	-	-	649	457	-	584	415	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.7			12.2		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	766	861	-	-	1043	-	-	502				
HCM Lane V/C Ratio	0.002	-	-	-	-	-	-	0.011				
HCM Control Delay (s)	9.7	0	-	-	0	-	-	12.2				
HCM Lane LOS	A	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	190	158	138	59	131	184	169	115	225	451	374	42
Average Queue (ft)	92	70	39	13	38	97	89	47	120	243	203	14
95th Queue (ft)	167	129	97	38	94	162	152	98	233	369	307	32
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					0	0	0			0		
Queuing Penalty (veh)					0	0	0			0		
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)					0	1			1	14		
Queuing Penalty (veh)					0	1			5	20		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	224	256	233	177
Average Queue (ft)	95	174	148	72
95th Queue (ft)	185	242	220	135
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	2	3	1	0
Queuing Penalty (veh)	4	9	4	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	EB
Directions Served	LT	R
Maximum Queue (ft)	5	20
Average Queue (ft)	0	2
95th Queue (ft)	0	13
Link Distance (ft)	664	664
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	35	39	13
Average Queue (ft)	9	4	0
95th Queue (ft)	31	23	10
Link Distance (ft)	755		198
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)		0	0
Queuing Penalty (veh)		1	0

Intersection: 4: Middlebelt Road & South Driveway

Movement	NB	SB	SB	SB
Directions Served	T	LT	T	T
Maximum Queue (ft)	6	22	51	17
Average Queue (ft)	0	1	2	1
95th Queue (ft)	5	13	21	9
Link Distance (ft)	205	148	148	148
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: West Driveway & Plymouth Road

Movement	EB	WB	NB	SB
Directions Served	T	L	LTR	TR
Maximum Queue (ft)	4	16	31	10
Average Queue (ft)	0	0	3	1
95th Queue (ft)	3	6	16	8
Link Distance (ft)	186		362	152
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		25		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	NB	SB
Directions Served	TR	LTR	LTR
Maximum Queue (ft)	6	16	53
Average Queue (ft)	0	1	7
95th Queue (ft)	5	9	33
Link Distance (ft)	51	365	200
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 44

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2020 Existing PM

10/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	493	133	203	415	263	126	874	146	263	1109	582
Future Volume (veh/h)	319	493	133	203	415	263	126	874	146	263	1109	582
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		0.98	1.00		0.98	1.00		0.98
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1984	1984	1984	1969	1969	1969	1984	1984	1984	1969	1969	1969
Adj Flow Rate, veh/h	367	567	83	218	446	160	133	920	59	277	1167	382
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	368	1196	531	336	1187	520	236	1162	508	283	1153	609
Arrive On Green	0.06	0.32	0.32	0.06	0.32	0.32	0.09	0.31	0.31	0.09	0.31	0.31
Sat Flow, veh/h	1890	3770	1674	1875	3741	1638	1890	3770	1649	1875	3741	1638
Grp Volume(v), veh/h	367	567	83	218	446	160	133	920	59	277	1167	382
Grp Sat Flow(s),veh/h/ln	1890	1885	1674	1875	1870	1638	1890	1885	1649	1875	1870	1638
Q Serve(g_s), s	6.8	13.3	3.9	0.0	10.2	8.1	3.5	24.6	2.8	9.5	33.9	14.0
Cycle Q Clear(g_c), s	6.8	13.3	3.9	0.0	10.2	8.1	3.5	24.6	2.8	9.5	33.9	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	1196	531	336	1187	520	236	1162	508	283	1153	609
V/C Ratio(X)	1.00	0.47	0.16	0.65	0.38	0.31	0.56	0.79	0.12	0.98	1.01	0.63
Avail Cap(c_a), veh/h	368	1196	531	336	1187	520	236	1162	508	283	1153	609
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	43.0	30.2	27.0	40.7	29.1	28.4	46.3	34.8	27.3	47.1	38.0	28.3
Incr Delay (d2), s/veh	46.1	1.3	0.6	9.3	0.9	1.5	9.5	5.6	0.5	48.4	29.6	4.8
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	14.0	6.1	1.6	6.4	4.6	3.3	3.9	11.7	1.2	10.8	19.5	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.1	31.5	27.6	50.0	30.0	29.9	55.7	40.4	27.8	95.5	67.6	33.1
LnGrp LOS	F	C	C	D	C	C	E	D	C	F	F	C
Approach Vol, veh/h	1017			824			1112			1826		
Approach Delay, s/veh	52.0			35.3			41.5			64.6		
Approach LOS	D			D			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	40.0	13.0	41.0	16.0	40.0	13.0	41.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 9.9	* 34	* 6.9	* 35	* 9.9	* 34	* 6.9	* 35				
Max Q Clear Time (g_c+I1), s	11.5	26.6	2.0	15.3	5.5	35.9	8.8	12.2				
Green Ext Time (p_c), s	0.0	3.5	0.3	3.7	0.1	0.0	0.0	3.3				

Intersection Summary

HCM 6th Ctrl Delay 51.5

HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2020 Existing PM
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕↕	↕	↕	↕↕↕	
Traffic Vol, veh/h	0	0	3	0	0	3	3	1468	3	3	1971	0
Future Vol, veh/h	0	0	3	0	0	3	3	1468	3	3	1971	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	60	60	60	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	2	2	2
Mvmt Flow	0	0	5	0	0	5	3	1545	3	3	2075	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2860	3635	1038	2387	3632	773	2075	0	0	1548	0	0
Stage 1	2081	2081	-	1551	1551	-	-	-	-	-	-	-
Stage 2	779	1554	-	836	2081	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.95	6.5	6.9	5.32	-	-	4.14	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.65	4	3.3	3.11	-	-	2.22	-	-
Pot Cap-1 Maneuver	12	5	198	26	5	346	116	-	-	424	-	-
Stage 1	35	96	-	119	177	-	-	-	-	-	-	-
Stage 2	349	176	-	309	96	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	5	198	25	5	346	116	-	-	424	-	-
Mov Cap-2 Maneuver	12	5	-	25	5	-	-	-	-	-	-	-
Stage 1	34	95	-	116	172	-	-	-	-	-	-	-
Stage 2	335	171	-	299	95	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	23.7		15.6		0.1		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	116	-	-	-	198	346	424	-	-			
HCM Lane V/C Ratio	0.027	-	-	-	0.025	0.014	0.007	-	-			
HCM Control Delay (s)	36.9	-	-	0	23.7	15.6	13.6	-	-			
HCM Lane LOS	E	-	-	A	C	C	B	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2020 Existing PM
10/21/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑	↗	↗	↑↑↑
Traffic Vol, veh/h	3	21	1453	1	18	1956
Future Vol, veh/h	3	21	1453	1	18	1956
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	5	33	1529	1	19	2059
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2391	765	0	0	1530	0
Stage 1	1529	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	41	350	-	-	431	-
Stage 1	165	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	39	350	-	-	431	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	165	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	19.8	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	280	431	-
HCM Lane V/C Ratio		-	-	0.134	0.044	-
HCM Control Delay (s)		-	-	19.8	13.7	-
HCM Lane LOS		-	-	C	B	-
HCM 95th %tile Q(veh)		-	-	0.5	0.1	-

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.8	2.9	21.4	13.3

HCM 6th TWSC
5: West Driveway & Plymouth Road

2020 Existing PM
10/21/2020

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↕		↕	↑↑	↕		↕↕			↕	
Traffic Vol, veh/h	0	878	24	3	875	3	4	0	17	0	0	2
Future Vol, veh/h	0	878	24	3	875	3	4	0	17	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	92	92	92	83	83	83	60	60	60
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	987	27	3	951	3	5	0	20	0	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1014	0	0	1483	1961	507	-	1971	476
Stage 1	-	-	-	-	-	-	1001	1001	-	-	957	-
Stage 2	-	-	-	-	-	-	482	960	-	-	1014	-
Critical Hdwy	-	-	-	4.14	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	680	-	-	88	64	516	0	63	541
Stage 1	0	-	-	-	-	-	264	323	-	0	339	-
Stage 2	0	-	-	-	-	-	540	338	-	0	319	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	680	-	-	87	64	516	-	63	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	180	-	-	178	-
Stage 1	-	-	-	-	-	-	264	323	-	-	338	-
Stage 2	-	-	-	-	-	-	534	337	-	-	319	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			14.8			11.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	393	-	-	680	-	-	541					
HCM Lane V/C Ratio	0.064	-	-	0.005	-	-	0.006					
HCM Control Delay (s)	14.8	-	-	10.3	-	-	11.7					
HCM Lane LOS	B	-	-	B	-	-	B					
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2020 Existing PM
10/21/2020

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	878	4	5	870	12	1	0	1	17	0	10
Future Vol, veh/h	13	878	4	5	870	12	1	0	1	17	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	91	91	91	60	60	60	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	4	4	4
Mvmt Flow	15	987	4	5	956	13	2	0	2	20	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	969	0	0	991	0	0	1507	1998	496	1497	1994	485
Stage 1	-	-	-	-	-	-	1019	1019	-	973	973	-
Stage 2	-	-	-	-	-	-	488	979	-	524	1021	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.54	4.04	3.34
Pot Cap-1 Maneuver	713	-	-	693	-	-	85	61	525	83	58	523
Stage 1	-	-	-	-	-	-	257	317	-	267	324	-
Stage 2	-	-	-	-	-	-	535	331	-	499	308	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	713	-	-	693	-	-	81	59	525	81	56	523
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	59	-	81	56	-
Stage 1	-	-	-	-	-	-	252	310	-	261	322	-
Stage 2	-	-	-	-	-	-	519	329	-	487	302	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			31.3			46.2		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	140	713	-	-	693	-	-	118
HCM Lane V/C Ratio	0.024	0.02	-	-	0.008	-	-	0.266
HCM Control Delay (s)	31.3	10.2	-	-	10.2	-	-	46.2
HCM Lane LOS	D	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	524	871	764	115	174	255	194	179	225	446	397	84
Average Queue (ft)	403	345	265	42	133	151	116	82	133	270	223	33
95th Queue (ft)	619	838	718	90	197	253	185	154	258	395	338	67
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)		0	0		2	11	0	0		0		
Queuing Penalty (veh)		0	0		0	32	1	1		0		
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)	25	0	0		21	4			0	20		
Queuing Penalty (veh)	62	1	0		45	7			1	26		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	283	274	304	263
Average Queue (ft)	231	249	257	153
95th Queue (ft)	308	285	284	263
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	60	50	54	6
Queuing Penalty (veh)	295	246	262	31
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	WB	NB	SB	SB	SB	SB
Directions Served	R	LTR	L	L	T	T	TR
Maximum Queue (ft)	26	22	22	62	462	443	342
Average Queue (ft)	4	3	3	2	234	200	114
95th Queue (ft)	20	14	16	29	585	544	425
Link Distance (ft)	664	751			482	482	482
Upstream Blk Time (%)					15	5	3
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)			100	100			
Storage Blk Time (%)					37		
Queuing Penalty (veh)					1		

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	NB	SB	SB	SB	SB
Directions Served	LR	T	L	T	T	T
Maximum Queue (ft)	82	4	74	284	273	152
Average Queue (ft)	26	0	17	192	148	45
95th Queue (ft)	93	3	59	357	326	201
Link Distance (ft)	755	148		198	198	198
Upstream Blk Time (%)				43	18	4
Queuing Penalty (veh)				283	117	27
Storage Bay Dist (ft)			50			
Storage Blk Time (%)			0	50		
Queuing Penalty (veh)			2	9		

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	NB	NB	SB	SB	SB	SB
Directions Served	LR	T	T	LT	T	T	T
Maximum Queue (ft)	56	34	44	222	231	230	138
Average Queue (ft)	7	1	2	119	156	165	20
95th Queue (ft)	33	27	29	268	264	267	99
Link Distance (ft)	750	205	205	148	148	148	148
Upstream Blk Time (%)		0	0	37	26	29	1
Queuing Penalty (veh)		0	1	180	129	143	4
Storage Bay Dist (ft)							
Storage Blk Time (%)			0				
Queuing Penalty (veh)			0				

Intersection: 5: West Driveway & Plymouth Road

Movement	EB	WB	WB	NB	SB
Directions Served	TR	L	T	LTR	TR
Maximum Queue (ft)	4	20	113	60	30
Average Queue (ft)	0	1	22	19	3
95th Queue (ft)	3	10	103	51	16
Link Distance (ft)	186		51	362	152
Upstream Blk Time (%)		0	7		
Queuing Penalty (veh)		0	34		
Storage Bay Dist (ft)		25			
Storage Blk Time (%)		0	8		
Queuing Penalty (veh)		1	0		

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	8	8	28	70	19	26	63
Average Queue (ft)	0	0	3	11	1	3	22
95th Queue (ft)	4	4	17	78	21	17	52
Link Distance (ft)		51		1932	1932	365	200
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		50				
Storage Blk Time (%)	0			3			
Queuing Penalty (veh)	0			0			

Network Summary

Network wide Queuing Penalty: 1941

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2020 Existing AM Imp
10/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	158	234	45	60	352	162	144	830	63	118	596	318
Future Volume (veh/h)	158	234	45	60	352	162	144	830	63	118	596	318
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		0.98	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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1875	1875	1875	1860	1860	1860	1969	1969	1969	1891	1891	1891
Adj Flow Rate, veh/h	166	246	20	71	419	69	158	912	33	133	670	181
Peak Hour Factor	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	7	7	7
Cap, veh/h	371	673	456	436	668	452	379	1268	771	322	1218	748
Arrive On Green	0.13	0.19	0.19	0.13	0.19	0.19	0.10	0.34	0.34	0.10	0.34	0.34
Sat Flow, veh/h	1786	3563	1582	1771	3533	1568	1875	3741	1640	1801	3593	1595
Grp Volume(v), veh/h	166	246	20	71	419	69	158	912	33	133	670	181
Grp Sat Flow(s),veh/h/ln	1786	1781	1582	1771	1767	1568	1875	1870	1640	1801	1796	1595
Q Serve(g_s), s	0.2	6.0	0.0	0.0	10.9	0.0	0.0	21.3	0.0	0.0	15.2	0.0
Cycle Q Clear(g_c), s	0.2	6.0	0.0	0.0	10.9	0.0	0.0	21.3	0.0	0.0	15.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	673	456	436	668	452	379	1268	771	322	1218	748
V/C Ratio(X)	0.45	0.37	0.04	0.16	0.63	0.15	0.42	0.72	0.04	0.41	0.55	0.24
Avail Cap(c_a), veh/h	371	673	456	436	668	452	379	1268	771	322	1218	748
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	36.3	35.3	25.7	29.5	37.3	26.5	33.4	28.9	14.4	37.2	26.9	16.0
Incr Delay (d2), s/veh	3.9	1.5	0.2	0.8	4.4	0.7	3.4	3.5	0.1	3.9	1.8	0.8
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	3.9	2.7	0.4	1.4	5.0	1.3	3.8	9.7	0.4	3.2	6.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	36.9	25.9	30.3	41.7	27.2	36.7	32.4	14.5	41.1	28.6	16.7
LnGrp LOS	D	D	C	C	D	C	D	C	B	D	C	B
Approach Vol, veh/h	432			559			1103			984		
Approach Delay, s/veh	37.6			38.5			32.5			28.1		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	40.0	19.0	25.0	16.0	40.0	19.0	25.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 9.9	* 34	* 13	* 19	* 9.9	* 34	* 13	* 19				
Max Q Clear Time (g_c+I1), s	2.0	23.3	2.0	8.0	2.0	17.2	2.2	12.9				
Green Ext Time (p_c), s	0.2	4.4	0.1	1.0	0.2	4.6	0.3	1.4				

Intersection Summary

HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2020 Existing AM Imp
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕↕	↕	↕	↕↕↕	
Traffic Vol, veh/h	1	0	1	0	0	0	0	1153	0	0	1038	3
Future Vol, veh/h	1	0	1	0	0	0	0	1153	0	0	1038	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	92	92	92	94	94	94	82	82	82
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	6	6	6
Mvmt Flow	2	0	2	0	0	0	0	1227	0	0	1266	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1882	2495	635	1733	2497	614	1270	0	0	1227	0	0
Stage 1	1268	1268	-	1227	1227	-	-	-	-	-	-	-
Stage 2	614	1227	-	506	1270	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.99	6.54	6.94	5.38	-	-	4.22	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.67	4.02	3.32	3.14	-	-	2.26	-	-
Pot Cap-1 Maneuver	58	29	365	72	29	435	284	-	-	542	-	-
Stage 1	134	242	-	185	249	-	-	-	-	-	-	-
Stage 2	437	253	-	487	237	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	58	29	365	72	29	435	284	-	-	542	-	-
Mov Cap-2 Maneuver	58	29	-	72	29	-	-	-	-	-	-	-
Stage 1	134	242	-	185	249	-	-	-	-	-	-	-
Stage 2	437	253	-	485	237	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	41.9		0		0		0					
HCM LOS	E		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	284	-	-	58	365	-	542	-	-			
HCM Lane V/C Ratio	-	-	-	0.029	0.005	-	-	-	-			
HCM Control Delay (s)	0	-	-	68.9	14.9	0	0	-	-			
HCM Lane LOS	A	-	-	F	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2020 Existing AM Imp
10/21/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	9	1144	1	9	1030
Future Vol, veh/h	3	9	1144	1	9	1030
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	94	94	82	82
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	5	15	1217	1	11	1256
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1741	609	0	0	1218	0
Stage 1	1217	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.22	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.26	-
Pot Cap-1 Maneuver	102	443	-	-	547	-
Stage 1	242	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	100	443	-	-	547	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	242	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.6	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	331	547	-	
HCM Lane V/C Ratio	-	-	0.06	0.02	-	
HCM Control Delay (s)	-	-	16.6	11.7	-	
HCM Lane LOS	-	-	C	B	-	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	

4: Middlebelt Road & South Driveway Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.9	0.9	2.0

HCM 6th TWSC
5: West Driveway & Plymouth Road

2020 Existing AM Imp
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↱↲			↱	
Traffic Vol, veh/h	0	411	4	3	573	0	0	0	3	0	0	1
Future Vol, veh/h	0	411	4	3	573	0	0	0	3	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	87	87	60	60	60	60	60	60
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	0	484	5	3	659	0	0	0	5	0	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	489	0	0	823	1152	245	-	1154	330
Stage 1	-	-	-	-	-	-	487	487	-	-	665	-
Stage 2	-	-	-	-	-	-	336	665	-	-	489	-
Critical Hdwy	-	-	-	4.24	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	1036	-	-	269	199	762	0	199	672
Stage 1	0	-	-	-	-	-	536	554	-	0	461	-
Stage 2	0	-	-	-	-	-	657	461	-	0	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1036	-	-	268	198	762	-	198	672
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	318	-	-	318	-
Stage 1	-	-	-	-	-	-	536	554	-	-	460	-
Stage 2	-	-	-	-	-	-	653	460	-	-	553	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.8			10.4		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	762	-	-	1036	-	-	672					
HCM Lane V/C Ratio	0.007	-	-	0.003	-	-	0.002					
HCM Control Delay (s)	9.8	-	-	8.5	-	-	10.4					
HCM Lane LOS	A	-	-	A	-	-	B					
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2020 Existing AM Imp
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	414	0	0	572	1	0	0	1	0	0	4
Future Vol, veh/h	0	414	0	0	572	1	0	0	1	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	85	85	85	60	60	60	75	75	75
Heavy Vehicles, %	10	10	10	7	7	7	0	0	0	67	67	67
Mvmt Flow	0	481	0	0	673	1	0	0	2	0	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	674	0	0	481	0	0	818	1155	241	915	1155	337
Stage 1	-	-	-	-	-	-	481	481	-	674	674	-
Stage 2	-	-	-	-	-	-	337	674	-	241	481	-
Critical Hdwy	4.3	-	-	4.24	-	-	7.5	6.5	6.9	8.84	7.84	8.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Follow-up Hdwy	2.3	-	-	2.27	-	-	3.5	4	3.3	4.17	4.67	3.97
Pot Cap-1 Maneuver	861	-	-	1043	-	-	271	199	766	148	120	502
Stage 1	-	-	-	-	-	-	540	557	-	287	321	-
Stage 2	-	-	-	-	-	-	656	457	-	585	415	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	861	-	-	1043	-	-	268	199	766	148	120	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	199	-	148	120	-
Stage 1	-	-	-	-	-	-	540	557	-	287	321	-
Stage 2	-	-	-	-	-	-	649	457	-	584	415	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.7			12.2		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	766	861	-	-	1043	-	-	502				
HCM Lane V/C Ratio	0.002	-	-	-	-	-	-	0.011				
HCM Control Delay (s)	9.7	0	-	-	0	-	-	12.2				
HCM Lane LOS	A	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	197	166	142	52	141	226	181	130	224	358	320	44
Average Queue (ft)	93	85	54	13	38	114	100	45	98	215	172	12
95th Queue (ft)	169	147	119	35	96	186	167	94	200	321	279	30
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					0	1	0	0				
Queuing Penalty (veh)					0	2	1	0				
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)					0	3			0	9		
Queuing Penalty (veh)					0	2			0	13		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	160	259	223	147
Average Queue (ft)	74	157	133	60
95th Queue (ft)	133	232	214	123
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)		2	0	0
Queuing Penalty (veh)		5	1	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	EB
Directions Served	LT	R
Maximum Queue (ft)	10	25
Average Queue (ft)	0	1
95th Queue (ft)	6	10
Link Distance (ft)	664	664
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	31	36
Average Queue (ft)	9	5
95th Queue (ft)	29	24
Link Distance (ft)	755	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Intersection: 4: Middlebelt Road & South Driveway

Movement	SB	SB	SB
Directions Served	LT	T	T
Maximum Queue (ft)	5	30	14
Average Queue (ft)	0	1	0
95th Queue (ft)	4	16	11
Link Distance (ft)	148	148	148
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: West Driveway & Plymouth Road

Movement	WB	WB	NB	SB
Directions Served	L	T	LTR	TR
Maximum Queue (ft)	8	26	31	15
Average Queue (ft)	0	1	2	1
95th Queue (ft)	5	14	15	10
Link Distance (ft)		51	362	152
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	25			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	NB	SB
Directions Served	T	LTR	LTR
Maximum Queue (ft)	4	26	67
Average Queue (ft)	0	2	9
95th Queue (ft)	3	14	42
Link Distance (ft)	51	365	200
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 24

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2020 Existing PM Imp
10/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	493	133	203	415	263	126	874	146	263	1109	582
Future Volume (veh/h)	319	493	133	203	415	263	126	874	146	263	1109	582
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		0.97	1.00		0.98	1.00		0.98
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1984	1984	1984	1969	1969	1969	1984	1984	1984	1969	1969	1969
Adj Flow Rate, veh/h	367	567	83	218	446	160	133	920	59	277	1167	382
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	402	713	499	295	520	408	291	1278	760	349	1268	837
Arrive On Green	0.17	0.19	0.19	0.12	0.14	0.14	0.11	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	1890	3770	1668	1875	3741	1626	1890	3770	1651	1875	3741	1639
Grp Volume(v), veh/h	367	567	83	218	446	160	133	920	59	277	1167	382
Grp Sat Flow(s),veh/h/ln	1890	1885	1668	1875	1870	1626	1890	1885	1651	1875	1870	1639
Q Serve(g_s), s	14.6	14.4	0.0	7.2	11.7	0.0	1.9	21.3	0.0	6.4	30.0	0.0
Cycle Q Clear(g_c), s	14.6	14.4	0.0	7.2	11.7	0.0	1.9	21.3	0.0	6.4	30.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	402	713	499	295	520	408	291	1278	760	349	1268	837
V/C Ratio(X)	0.91	0.80	0.17	0.74	0.86	0.39	0.46	0.72	0.08	0.79	0.92	0.46
Avail Cap(c_a), veh/h	402	713	499	295	520	408	291	1278	760	349	1268	837
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	38.9	38.7	25.9	40.8	42.1	31.3	39.7	28.9	15.2	39.2	31.8	15.7
Incr Delay (d2), s/veh	27.4	9.0	0.7	15.3	16.6	2.8	5.1	3.5	0.2	16.9	12.2	1.8
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	11.0	7.3	1.5	5.9	6.4	3.4	3.3	9.7	0.8	7.6	14.9	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	47.7	26.6	56.1	58.7	34.1	44.8	32.4	15.4	56.2	44.0	17.5
LnGrp LOS	E	D	C	E	E	C	D	C	B	E	D	B
Approach Vol, veh/h	1017			824			1112			1826		
Approach Delay, s/veh	52.7			53.2			33.0			40.3		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	40.0	18.0	25.0	17.0	40.0	23.0	20.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 11	* 34	* 12	* 19	* 11	* 34	* 17	* 14				
Max Q Clear Time (g_c+I1), s	8.4	23.3	9.2	16.4	3.9	32.0	16.6	13.7				
Green Ext Time (p_c), s	0.2	4.5	0.2	1.0	0.2	1.5	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	43.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2020 Existing PM Imp
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↕	↗	↗	↕↕↕	
Traffic Vol, veh/h	0	0	3	0	0	3	3	1468	3	3	1971	0
Future Vol, veh/h	0	0	3	0	0	3	3	1468	3	3	1971	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	60	60	60	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	2	2	2
Mvmt Flow	0	0	5	0	0	5	3	1545	3	3	2075	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2860	3635	1038	2387	3632	773	2075	0	0	1548	0	0
Stage 1	2081	2081	-	1551	1551	-	-	-	-	-	-	-
Stage 2	779	1554	-	836	2081	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.95	6.5	6.9	5.32	-	-	4.14	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.65	4	3.3	3.11	-	-	2.22	-	-
Pot Cap-1 Maneuver	12	5	198	26	5	346	116	-	-	424	-	-
Stage 1	35	96	-	119	177	-	-	-	-	-	-	-
Stage 2	349	176	-	309	96	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	5	198	25	5	346	116	-	-	424	-	-
Mov Cap-2 Maneuver	12	5	-	25	5	-	-	-	-	-	-	-
Stage 1	34	95	-	116	172	-	-	-	-	-	-	-
Stage 2	335	171	-	299	95	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	23.7		15.6		0.1		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	116	-	-	-	-	198	346	424	-	-		
HCM Lane V/C Ratio	0.027	-	-	-	-	0.025	0.014	0.007	-	-		
HCM Control Delay (s)	36.9	-	-	0	23.7	15.6	13.6	-	-			
HCM Lane LOS	E	-	-	A	C	C	B	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2020 Existing PM Imp
10/21/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	21	1453	1	18	1956
Future Vol, veh/h	3	21	1453	1	18	1956
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	5	33	1529	1	19	2059
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2391	765	0	0	1530	0
Stage 1	1529	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	41	350	-	-	431	-
Stage 1	165	-	-	-	-	-
Stage 2	352	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	39	350	-	-	431	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	165	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	19.8	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	280	431	-	
HCM Lane V/C Ratio	-	-	0.134	0.044	-	
HCM Control Delay (s)	-	-	19.8	13.7	-	
HCM Lane LOS	-	-	C	B	-	
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-	

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.1	2.7	4.9	3.9

HCM 6th TWSC
5: West Driveway & Plymouth Road

2020 Existing PM Imp
10/21/2020

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↱↱			↱	
Traffic Vol, veh/h	0	878	24	3	875	3	4	0	17	0	0	2
Future Vol, veh/h	0	878	24	3	875	3	4	0	17	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	92	92	92	83	83	83	60	60	60
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	987	27	3	951	3	5	0	20	0	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1014	0	0	1483	1961	507	-	1971	476
Stage 1	-	-	-	-	-	-	1001	1001	-	-	957	-
Stage 2	-	-	-	-	-	-	482	960	-	-	1014	-
Critical Hdwy	-	-	-	4.14	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	680	-	-	88	64	516	0	63	541
Stage 1	0	-	-	-	-	-	264	323	-	0	339	-
Stage 2	0	-	-	-	-	-	540	338	-	0	319	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	680	-	-	87	64	516	-	63	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	195	180	-	-	178	-
Stage 1	-	-	-	-	-	-	264	323	-	-	338	-
Stage 2	-	-	-	-	-	-	534	337	-	-	319	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			14.8			11.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	393	-	-	680	-	-	541					
HCM Lane V/C Ratio	0.064	-	-	0.005	-	-	0.006					
HCM Control Delay (s)	14.8	-	-	10.3	-	-	11.7					
HCM Lane LOS	B	-	-	B	-	-	B					
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2020 Existing PM Imp
10/21/2020

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	878	4	5	870	12	1	0	1	17	0	10
Future Vol, veh/h	13	878	4	5	870	12	1	0	1	17	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	91	91	91	60	60	60	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	4	4	4
Mvmt Flow	15	987	4	5	956	13	2	0	2	20	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	969	0	0	991	0	0	1507	1998	496	1497	1994	485
Stage 1	-	-	-	-	-	-	1019	1019	-	973	973	-
Stage 2	-	-	-	-	-	-	488	979	-	524	1021	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.54	4.04	3.34
Pot Cap-1 Maneuver	713	-	-	693	-	-	85	61	525	83	58	523
Stage 1	-	-	-	-	-	-	257	317	-	267	324	-
Stage 2	-	-	-	-	-	-	535	331	-	499	308	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	713	-	-	693	-	-	81	59	525	81	56	523
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	59	-	81	56	-
Stage 1	-	-	-	-	-	-	252	310	-	261	322	-
Stage 2	-	-	-	-	-	-	519	329	-	487	302	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			31.3			46.2		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	140	713	-	-	693	-	-	118
HCM Lane V/C Ratio	0.024	0.02	-	-	0.008	-	-	0.266
HCM Control Delay (s)	31.3	10.2	-	-	10.2	-	-	46.2
HCM Lane LOS	D	B	-	-	B	-	-	E
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	373	294	283	93	175	257	227	201	225	353	319	98
Average Queue (ft)	214	158	133	38	129	160	137	88	105	224	185	32
95th Queue (ft)	373	322	259	79	195	254	218	164	213	319	281	70
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					1	10	4	0				
Queuing Penalty (veh)					0	29	11	1				
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)	2	0	0		12	11			0	11		
Queuing Penalty (veh)	6	0	0		25	23			0	14		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	266	273	292	250
Average Queue (ft)	193	243	238	117
95th Queue (ft)	282	289	296	209
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	21	28	23	1
Queuing Penalty (veh)	102	137	113	5
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	WB	NB	SB
Directions Served	R	LTR	L	T
Maximum Queue (ft)	31	22	34	7
Average Queue (ft)	2	3	4	0
95th Queue (ft)	15	14	21	5
Link Distance (ft)	664	751		482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	NB	SB	SB	SB
Directions Served	LR	T	L	T	T
Maximum Queue (ft)	45	5	36	137	82
Average Queue (ft)	15	0	11	15	7
95th Queue (ft)	41	4	35	93	57
Link Distance (ft)	755	148		198	198
Upstream Blk Time (%)				0	0
Queuing Penalty (veh)				2	0
Storage Bay Dist (ft)			50		
Storage Blk Time (%)			0	2	
Queuing Penalty (veh)			1	0	

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	NB	SB	SB	SB	SB
Directions Served	LR	T	LT	T	T	T
Maximum Queue (ft)	58	4	161	208	178	38
Average Queue (ft)	6	0	33	70	54	1
95th Queue (ft)	32	3	125	182	159	18
Link Distance (ft)	750	205	148	148	148	148
Upstream Blk Time (%)			2	4	3	
Queuing Penalty (veh)			9	18	13	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: West Driveway & Plymouth Road

Movement	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	LTR	TR
Maximum Queue (ft)	8	110	37	6	40	30
Average Queue (ft)	0	14	3	0	16	3
95th Queue (ft)	6	75	36	5	42	19
Link Distance (ft)		51	51		362	152
Upstream Blk Time (%)		4	0	0		
Queuing Penalty (veh)		20	2	0		
Storage Bay Dist (ft)	25			1		
Storage Blk Time (%)	0	5	0			
Queuing Penalty (veh)	1	0	0			

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	9	8	19	22	18	26	82
Average Queue (ft)	0	0	2	3	1	2	26
95th Queue (ft)	4	4	13	28	16	14	61
Link Distance (ft)		51		1932	1932	365	200
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		50				
Storage Blk Time (%)	0			0			
Queuing Penalty (veh)	0			0			

Network Summary

Network wide Queuing Penalty: 534

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2022 Background AM

10/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	236	45	61	355	164	145	838	64	119	602	321
Future Volume (veh/h)	160	236	45	61	355	164	145	838	64	119	602	321
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		0.98	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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1875	1875	1875	1860	1860	1860	1969	1969	1969	1891	1891	1891
Adj Flow Rate, veh/h	168	248	20	73	423	70	159	921	34	134	676	182
Peak Hour Factor	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	7	7	7
Cap, veh/h	370	673	456	435	668	452	377	1268	771	320	1218	748
Arrive On Green	0.13	0.19	0.19	0.13	0.19	0.19	0.10	0.34	0.34	0.10	0.34	0.34
Sat Flow, veh/h	1786	3563	1582	1771	3533	1568	1875	3741	1640	1801	3593	1595
Grp Volume(v), veh/h	168	248	20	73	423	70	159	921	34	134	676	182
Grp Sat Flow(s),veh/h/ln	1786	1781	1582	1771	1767	1568	1875	1870	1640	1801	1796	1595
Q Serve(g_s), s	0.4	6.1	0.0	0.0	11.0	0.0	0.0	21.6	0.0	0.0	15.3	0.0
Cycle Q Clear(g_c), s	0.4	6.1	0.0	0.0	11.0	0.0	0.0	21.6	0.0	0.0	15.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	370	673	456	435	668	452	377	1268	771	320	1218	748
V/C Ratio(X)	0.45	0.37	0.04	0.17	0.63	0.15	0.42	0.73	0.04	0.42	0.56	0.24
Avail Cap(c_a), veh/h	370	673	456	435	668	452	377	1268	771	320	1218	748
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	36.4	35.3	25.7	29.6	37.4	26.5	33.6	29.0	14.4	37.4	26.9	16.0
Incr Delay (d2), s/veh	4.0	1.5	0.2	0.8	4.5	0.7	3.4	3.7	0.1	4.0	1.8	0.8
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	3.9	2.7	0.4	1.5	5.0	1.3	3.8	9.8	0.4	3.3	6.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	36.9	25.9	30.5	41.9	27.3	37.0	32.6	14.6	41.4	28.7	16.7
LnGrp LOS	D	D	C	C	D	C	D	C	B	D	C	B
Approach Vol, veh/h	436			566			1114			992		
Approach Delay, s/veh	37.7			38.6			32.7			28.2		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	40.0	19.0	25.0	16.0	40.0	19.0	25.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 9.9	* 34	* 13	* 19	* 9.9	* 34	* 13	* 19				
Max Q Clear Time (g_c+I1), s	2.0	23.6	2.0	8.1	2.0	17.3	2.4	13.0				
Green Ext Time (p_c), s	0.2	4.4	0.1	1.1	0.2	4.6	0.3	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				33.1								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2022 Background AM

10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↕	↗	↗↕↕↕		
Traffic Vol, veh/h	1	0	1	0	0	0	0	1165	0	0	1048	3
Future Vol, veh/h	1	0	1	0	0	0	0	1165	0	0	1048	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	92	92	92	94	94	94	82	82	82
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	6	6	6
Mvmt Flow	2	0	2	0	0	0	0	1239	0	0	1278	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1900	2519	641	1750	2521	620	1282	0	0	1239	0	0
Stage 1	1280	1280	-	1239	1239	-	-	-	-	-	-	-
Stage 2	620	1239	-	511	1282	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.99	6.54	6.94	5.38	-	-	4.22	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.67	4.02	3.32	3.14	-	-	2.26	-	-
Pot Cap-1 Maneuver	57	28	362	70	28	431	280	-	-	536	-	-
Stage 1	131	239	-	182	246	-	-	-	-	-	-	-
Stage 2	434	250	-	483	234	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	57	28	362	70	28	431	280	-	-	536	-	-
Mov Cap-2 Maneuver	57	28	-	70	28	-	-	-	-	-	-	-
Stage 1	131	239	-	182	246	-	-	-	-	-	-	-
Stage 2	434	250	-	481	234	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	42.5		0		0		0					
HCM LOS	E		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	280	-	-	57	362	-	536	-	-			
HCM Lane V/C Ratio	-	-	-	0.029	0.005	-	-	-	-			
HCM Control Delay (s)	0	-	-	70.1	15	0	0	-	-			
HCM Lane LOS	A	-	-	F	C	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0	-	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2022 Background AM
10/21/2020

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	9	1156	1	9	1040
Future Vol, veh/h	3	9	1156	1	9	1040
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	94	94	82	82
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	5	15	1230	1	11	1268
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1759	615	0	0	1231	0
Stage 1	1230	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.22	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.26	-
Pot Cap-1 Maneuver	100	439	-	-	540	-
Stage 1	238	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	98	439	-	-	540	-
Mov Cap-2 Maneuver	185	-	-	-	-	-
Stage 1	238	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16.7	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	327	540	-	
HCM Lane V/C Ratio	-	-	0.061	0.02	-	
HCM Control Delay (s)	-	-	16.7	11.8	-	
HCM Lane LOS	-	-	C	B	-	
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-	

4: Middlebelt Road & South Driveway Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.9	0.9	2.0

HCM 6th TWSC
5: West Driveway & Plymouth Road

2022 Background AM

10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↱↲			↱	
Traffic Vol, veh/h	0	415	4	3	579	0	0	0	3	0	0	1
Future Vol, veh/h	0	415	4	3	579	0	0	0	3	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	87	87	60	60	60	60	60	60
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	0	488	5	3	666	0	0	0	5	0	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	493	0	0	830	1163	247	-	1165	333
Stage 1	-	-	-	-	-	-	491	491	-	-	672	-
Stage 2	-	-	-	-	-	-	339	672	-	-	493	-
Critical Hdwy	-	-	-	4.24	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	1032	-	-	266	196	759	0	196	669
Stage 1	0	-	-	-	-	-	533	552	-	0	458	-
Stage 2	0	-	-	-	-	-	655	458	-	0	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1032	-	-	265	195	759	-	195	669
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	316	-	-	315	-
Stage 1	-	-	-	-	-	-	533	552	-	-	457	-
Stage 2	-	-	-	-	-	-	651	457	-	-	550	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.8			10.4		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	759	-	-	1032	-	-	669					
HCM Lane V/C Ratio	0.007	-	-	0.003	-	-	0.002					
HCM Control Delay (s)	9.8	-	-	8.5	-	-	10.4					
HCM Lane LOS	A	-	-	A	-	-	B					
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2022 Background AM

10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	418	0	0	578	1	0	0	1	0	0	4
Future Vol, veh/h	0	418	0	0	578	1	0	0	1	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	85	85	85	60	60	60	75	75	75
Heavy Vehicles, %	10	10	10	7	7	7	0	0	0	67	67	67
Mvmt Flow	0	486	0	0	680	1	0	0	2	0	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	681	0	0	486	0	0	826	1167	243	924	1167	341
Stage 1	-	-	-	-	-	-	486	486	-	681	681	-
Stage 2	-	-	-	-	-	-	340	681	-	243	486	-
Critical Hdwy	4.3	-	-	4.24	-	-	7.5	6.5	6.9	8.84	7.84	8.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Follow-up Hdwy	2.3	-	-	2.27	-	-	3.5	4	3.3	4.17	4.67	3.97
Pot Cap-1 Maneuver	856	-	-	1039	-	-	268	195	764	145	118	498
Stage 1	-	-	-	-	-	-	537	554	-	283	318	-
Stage 2	-	-	-	-	-	-	654	453	-	583	413	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	1039	-	-	265	195	764	145	118	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	195	-	145	118	-
Stage 1	-	-	-	-	-	-	537	554	-	283	318	-
Stage 2	-	-	-	-	-	-	647	453	-	582	413	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.7			12.3		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	764	856	-	-	1039	-	-	498				
HCM Lane V/C Ratio	0.002	-	-	-	-	-	-	0.011				
HCM Control Delay (s)	9.7	0	-	-	0	-	-	12.3				
HCM Lane LOS	A	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0				

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	207	160	144	63	139	207	184	126	224	361	339	45
Average Queue (ft)	97	82	53	15	38	112	101	48	107	223	180	13
95th Queue (ft)	174	139	111	44	93	178	163	98	217	322	284	32
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					0	1	0					
Queuing Penalty (veh)					0	1	0					
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)						2			0	11		
Queuing Penalty (veh)						1			1	15		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	186	251	225	166
Average Queue (ft)	81	155	129	66
95th Queue (ft)	155	232	206	125
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	0	2	1	0
Queuing Penalty (veh)	1	5	2	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	EB
Directions Served	LT	R
Maximum Queue (ft)	23	20
Average Queue (ft)	1	1
95th Queue (ft)	10	10
Link Distance (ft)	664	664
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	30	30
Average Queue (ft)	10	5
95th Queue (ft)	31	23
Link Distance (ft)	755	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Intersection: 4: Middlebelt Road & South Driveway

Movement	SB
Directions Served	T
Maximum Queue (ft)	23
Average Queue (ft)	1
95th Queue (ft)	13
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: West Driveway & Plymouth Road

Movement	WB	WB	NB	SB
Directions Served	L	T	LTR	TR
Maximum Queue (ft)	8	10	26	25
Average Queue (ft)	0	0	3	2
95th Queue (ft)	4	0	17	13
Link Distance (ft)		51	362	152
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)	25			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 6: East Driveway & Plymouth Road

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	30	59
Average Queue (ft)	1	6
95th Queue (ft)	12	33
Link Distance (ft)	365	200
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 27

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2022 Background PM

10/21/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	322	498	134	205	419	266	127	883	147	266	1120	588
Future Volume (veh/h)	322	498	134	205	419	266	127	883	147	266	1120	588
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		0.97	1.00		0.98	1.00		0.98
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1984	1984	1984	1969	1969	1969	1984	1984	1984	1969	1969	1969
Adj Flow Rate, veh/h	370	572	83	220	451	162	134	929	59	280	1179	386
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	401	713	499	295	520	408	290	1278	760	346	1268	837
Arrive On Green	0.17	0.19	0.19	0.12	0.14	0.14	0.11	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	1890	3770	1668	1875	3741	1626	1890	3770	1651	1875	3741	1639
Grp Volume(v), veh/h	370	572	83	220	451	162	134	929	59	280	1179	386
Grp Sat Flow(s),veh/h/ln	1890	1885	1668	1875	1870	1626	1890	1885	1651	1875	1870	1639
Q Serve(g_s), s	14.9	14.5	0.0	7.4	11.8	0.0	2.0	21.6	0.0	6.7	30.4	0.0
Cycle Q Clear(g_c), s	14.9	14.5	0.0	7.4	11.8	0.0	2.0	21.6	0.0	6.7	30.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	713	499	295	520	408	290	1278	760	346	1268	837
V/C Ratio(X)	0.92	0.80	0.17	0.75	0.87	0.40	0.46	0.73	0.08	0.81	0.93	0.46
Avail Cap(c_a), veh/h	401	713	499	295	520	408	290	1278	760	346	1268	837
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	39.0	38.8	25.9	40.8	42.1	31.3	39.8	29.0	15.2	39.5	31.9	15.7
Incr Delay (d2), s/veh	29.1	9.3	0.7	15.7	17.5	2.9	5.2	3.6	0.2	18.1	13.2	1.8
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	11.3	7.4	1.5	6.0	6.5	3.5	3.3	9.9	0.8	7.7	15.2	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.1	48.1	26.6	56.6	59.7	34.2	45.1	32.6	15.4	57.6	45.1	17.6
LnGrp LOS	E	D	C	E	E	C	D	C	B	E	D	B
Approach Vol, veh/h	1025			833			1122			1845		
Approach Delay, s/veh	53.6			53.9			33.2			41.3		
Approach LOS	D			D			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	40.0	18.0	25.0	17.0	40.0	23.0	20.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 11	* 34	* 12	* 19	* 11	* 34	* 17	* 14				
Max Q Clear Time (g_c+I1), s	8.7	23.6	9.4	16.5	4.0	32.4	16.9	13.8				
Green Ext Time (p_c), s	0.2	4.5	0.1	0.9	0.2	1.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	44.2											
HCM 6th LOS	D											
Notes												

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2022 Background PM
10/21/2020

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↕	↗	↗	↕↕↕	
Traffic Vol, veh/h	0	0	3	0	0	3	3	1483	3	3	1991	0
Future Vol, veh/h	0	0	3	0	0	3	3	1483	3	3	1991	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	60	60	60	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	2	2	2
Mvmt Flow	0	0	5	0	0	5	3	1561	3	3	2096	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2889	3672	1048	2411	3669	781	2096	0	0	1564	0	0
Stage 1	2102	2102	-	1567	1567	-	-	-	-	-	-	-
Stage 2	787	1570	-	844	2102	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.95	6.5	6.9	5.32	-	-	4.14	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.65	4	3.3	3.11	-	-	2.22	-	-
Pot Cap-1 Maneuver	12	5	195	25	5	342	113	-	-	418	-	-
Stage 1	34	94	-	116	173	-	-	-	-	-	-	-
Stage 2	346	173	-	305	94	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	5	195	24	5	342	113	-	-	418	-	-
Mov Cap-2 Maneuver	12	5	-	24	5	-	-	-	-	-	-	-
Stage 1	33	93	-	113	168	-	-	-	-	-	-	-
Stage 2	332	168	-	295	93	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	23.9		15.7		0.1		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	113	-	-	-	195	342	418	-	-			
HCM Lane V/C Ratio	0.028	-	-	-	0.026	0.015	0.008	-	-			
HCM Control Delay (s)	37.8	-	-	0	23.9	15.7	13.7	-	-			
HCM Lane LOS	E	-	-	A	C	C	B	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2022 Background PM

10/21/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	21	1468	1	18	1976
Future Vol, veh/h	3	21	1468	1	18	1976
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	5	33	1545	1	19	2080
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2415	773	0	0	1546	0
Stage 1	1545	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	40	346	-	-	425	-
Stage 1	162	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	38	346	-	-	425	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	20.1	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	276	425	-	
HCM Lane V/C Ratio	-	-	0.136	0.045	-	
HCM Control Delay (s)	-	-	20.1	13.9	-	
HCM Lane LOS	-	-	C	B	-	
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-	

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.8	2.7	6.0	4.6

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕↕	↕		↕↕			↕	
Traffic Vol, veh/h	0	887	24	3	884	3	4	0	17	0	0	2
Future Vol, veh/h	0	887	24	3	884	3	4	0	17	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	92	92	92	83	83	83	60	60	60
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	997	27	3	961	3	5	0	20	0	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1024	0	0	1498	1981	512	-	1991	481
Stage 1	-	-	-	-	-	-	1011	1011	-	-	967	-
Stage 2	-	-	-	-	-	-	487	970	-	-	1024	-
Critical Hdwy	-	-	-	4.14	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	674	-	-	86	62	512	0	61	537
Stage 1	0	-	-	-	-	-	260	320	-	0	335	-
Stage 2	0	-	-	-	-	-	536	334	-	0	315	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	674	-	-	85	62	512	-	61	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	192	177	-	-	175	-
Stage 1	-	-	-	-	-	-	260	320	-	-	334	-
Stage 2	-	-	-	-	-	-	530	333	-	-	315	-
Approach	EB		WB				NB			SB		
HCM Control Delay, s	0		0				14.9			11.7		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	389	-	-	674	-	-	537					
HCM Lane V/C Ratio	0.065	-	-	0.005	-	-	0.006					
HCM Control Delay (s)	14.9	-	-	10.4	-	-	11.7					
HCM Lane LOS	B	-	-	B	-	-	B					
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2022 Background PM

10/21/2020

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	887	4	5	879	12	1	0	1	17	0	10
Future Vol, veh/h	13	887	4	5	879	12	1	0	1	17	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	91	91	91	60	60	60	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	4	4	4
Mvmt Flow	15	997	4	5	966	13	2	0	2	20	0	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	979	0	0	1001	0	0	1522	2018	501	1512	2014	490
Stage 1	-	-	-	-	-	-	1029	1029	-	983	983	-
Stage 2	-	-	-	-	-	-	493	989	-	529	1031	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.54	4.04	3.34
Pot Cap-1 Maneuver	707	-	-	687	-	-	83	59	521	81	57	519
Stage 1	-	-	-	-	-	-	254	314	-	263	321	-
Stage 2	-	-	-	-	-	-	532	327	-	496	304	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	707	-	-	687	-	-	79	57	521	79	55	519
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	57	-	79	55	-
Stage 1	-	-	-	-	-	-	249	307	-	257	319	-
Stage 2	-	-	-	-	-	-	516	325	-	484	298	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			31.9			47.7		
HCM LOS							D			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	137	707	-	-	687	-	-	115				
HCM Lane V/C Ratio	0.024	0.021	-	-	0.008	-	-	0.273				
HCM Control Delay (s)	31.9	10.2	-	-	10.3	-	-	47.7				
HCM Lane LOS	D	B	-	-	B	-	-	E				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1				

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	390	296	226	124	175	250	218	188	224	383	321	105
Average Queue (ft)	199	150	132	40	127	159	132	86	107	230	189	34
95th Queue (ft)	361	247	203	90	194	257	209	163	211	334	286	77
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					1	10	2	1				
Queuing Penalty (veh)					0	31	7	3				
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)	0				12	10			0	12		
Queuing Penalty (veh)	1				26	21			1	16		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	268	284	286	252
Average Queue (ft)	202	246	240	131
95th Queue (ft)	296	285	288	225
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	28	29	24	1
Queuing Penalty (veh)	139	141	118	6
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	WB	NB	NB	SB	SB
Directions Served	R	LTR	L	T	T	T
Maximum Queue (ft)	30	25	27	8	50	39
Average Queue (ft)	3	2	3	0	3	1
95th Queue (ft)	17	13	16	6	38	31
Link Distance (ft)	664	751		198	482	482
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			100			
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	SB	SB	SB
Directions Served	LR	L	T	T
Maximum Queue (ft)	49	49	124	87
Average Queue (ft)	15	15	25	13
95th Queue (ft)	41	42	126	77
Link Distance (ft)	755		198	198
Upstream Blk Time (%)			1	0
Queuing Penalty (veh)			6	1
Storage Bay Dist (ft)		50		
Storage Blk Time (%)		0	4	
Queuing Penalty (veh)		3	1	

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	NB	NB	SB	SB	SB	SB
Directions Served	LR	T	T	LT	T	T	T
Maximum Queue (ft)	55	34	39	194	192	179	27
Average Queue (ft)	5	2	3	53	76	57	1
95th Queue (ft)	28	39	39	175	194	172	16
Link Distance (ft)	750	205	205	148	148	148	148
Upstream Blk Time (%)		0	0	7	4	3	
Queuing Penalty (veh)		0	0	33	21	14	
Storage Bay Dist (ft)							
Storage Blk Time (%)			0				
Queuing Penalty (veh)			0				

Intersection: 5: West Driveway & Plymouth Road

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	T	TR	L	T	T	LTR	TR
Maximum Queue (ft)	8	8	19	112	25	61	34
Average Queue (ft)	0	0	1	17	1	21	5
95th Queue (ft)	6	5	9	85	14	64	23
Link Distance (ft)	186	186		51	51	362	152
Upstream Blk Time (%)				4	0		
Queuing Penalty (veh)				19	1		
Storage Bay Dist (ft)			25				
Storage Blk Time (%)			0	6	0		
Queuing Penalty (veh)			1	0	0		

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	10	4	23	38	19	38	56
Average Queue (ft)	0	0	2	5	1	4	20
95th Queue (ft)	4	3	12	42	15	20	49
Link Distance (ft)		51		1932	1932	365	200
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	25		50				
Storage Blk Time (%)	0			1			
Queuing Penalty (veh)	0			0			

Network Summary

Network wide Queuing Penalty: 609

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2022 Future AM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	248	45	72	382	164	145	870	81	119	614	321
Future Volume (veh/h)	169	248	45	72	382	164	145	870	81	119	614	321
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		0.98	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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1875	1875	1875	1860	1860	1860	1969	1969	1969	1891	1891	1891
Adj Flow Rate, veh/h	178	261	20	86	455	70	159	956	53	134	690	182
Peak Hour Factor	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	7	7	7
Cap, veh/h	360	673	456	430	668	452	373	1268	771	310	1218	748
Arrive On Green	0.13	0.19	0.19	0.13	0.19	0.19	0.10	0.34	0.34	0.10	0.34	0.34
Sat Flow, veh/h	1786	3563	1582	1771	3533	1568	1875	3741	1640	1801	3593	1595
Grp Volume(v), veh/h	178	261	20	86	455	70	159	956	53	134	690	182
Grp Sat Flow(s),veh/h/ln	1786	1781	1582	1771	1767	1568	1875	1870	1640	1801	1796	1595
Q Serve(g_s), s	1.6	6.4	0.0	0.0	12.0	0.0	0.0	22.7	0.0	0.0	15.7	0.0
Cycle Q Clear(g_c), s	1.6	6.4	0.0	0.0	12.0	0.0	0.0	22.7	0.0	0.0	15.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	360	673	456	430	668	452	373	1268	771	310	1218	748
V/C Ratio(X)	0.49	0.39	0.04	0.20	0.68	0.15	0.43	0.75	0.07	0.43	0.57	0.24
Avail Cap(c_a), veh/h	360	673	456	430	668	452	373	1268	771	310	1218	748
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	36.9	35.5	25.7	30.4	37.7	26.5	34.0	29.3	14.6	38.1	27.0	16.0
Incr Delay (d2), s/veh	4.8	1.7	0.2	1.0	5.5	0.7	3.5	4.2	0.2	4.3	1.9	0.8
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	4.2	2.9	0.4	1.8	5.5	1.3	3.8	10.4	0.7	3.3	6.7	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	37.2	25.9	31.4	43.3	27.3	37.5	33.5	14.8	42.4	29.0	16.7
LnGrp LOS	D	D	C	C	D	C	D	C	B	D	C	B
Approach Vol, veh/h	459			611			1168			1006		
Approach Delay, s/veh	38.4			39.8			33.2			28.5		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	40.0	19.0	25.0	16.0	40.0	19.0	25.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 9.9	* 34	* 13	* 19	* 9.9	* 34	* 13	* 19				
Max Q Clear Time (g_c+I1), s	2.0	24.7	2.0	8.4	2.0	17.7	3.6	14.0				
Green Ext Time (p_c), s	0.2	4.3	0.1	1.1	0.2	4.6	0.3	1.3				

Intersection Summary

HCM 6th Ctrl Delay 33.7
HCM 6th LOS C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2022 Future AM
10/22/2020

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↕	↗	↗↕↕↕		
Traffic Vol, veh/h	1	0	1	1	0	4	0	1199	5	5	1092	3
Future Vol, veh/h	1	0	1	1	0	4	0	1199	5	5	1092	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	92	92	92	94	94	94	82	82	82
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	6	6	6
Mvmt Flow	2	0	2	1	0	4	0	1276	5	6	1332	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1984	2627	668	1821	2624	638	1336	0	0	1281	0	0
Stage 1	1346	1346	-	1276	1276	-	-	-	-	-	-	-
Stage 2	638	1281	-	545	1348	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.99	6.54	6.94	5.38	-	-	4.22	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.67	4.02	3.32	3.14	-	-	2.26	-	-
Pot Cap-1 Maneuver	50	24	347	63	24	419	264	-	-	516	-	-
Stage 1	118	222	-	173	236	-	-	-	-	-	-	-
Stage 2	423	238	-	461	218	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	24	347	62	24	419	264	-	-	516	-	-
Mov Cap-2 Maneuver	49	24	-	62	24	-	-	-	-	-	-	-
Stage 1	118	219	-	173	236	-	-	-	-	-	-	-
Stage 2	419	238	-	453	215	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	48.2		24		0		0.1					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	264	-	-	49	347	195	516	-	-			
HCM Lane V/C Ratio	-	-	-	0.034	0.005	0.028	0.012	-	-			
HCM Control Delay (s)	0	-	-	81	15.4	24	12.1	-	-			
HCM Lane LOS	A	-	-	F	C	C	B	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	0	-	-			

HCM 6th TWSC

3: Middlebelt Road & Middle Driveway

2022 Future AM
10/22/2020

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑	↑	Y	↑↑↑
Traffic Vol, veh/h	13	34	1170	27	36	1058
Future Vol, veh/h	13	34	1170	27	36	1058
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	94	94	82	82
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	22	57	1245	29	44	1290
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1849	623	0	0	1274	0
Stage 1	1245	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.22	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.26	-
Pot Cap-1 Maneuver	88	434	-	-	520	-
Stage 1	234	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	81	434	-	-	520	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	234	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	20.8	0	0.4			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	305	520	-	
HCM Lane V/C Ratio	-	-	0.257	0.084	-	
HCM Control Delay (s)	-	-	20.8	12.6	-	
HCM Lane LOS	-	-	C	B	-	
HCM 95th %tile Q(veh)	-	-	1	0.3	-	

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.1	3.0	1.4	2.3

HCM 6th TWSC
5: West Driveway & Plymouth Road

2022 Future AM
10/22/2020

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↱↲			↱	
Traffic Vol, veh/h	0	444	4	3	593	18	0	0	3	0	0	25
Future Vol, veh/h	0	444	4	3	593	18	0	0	3	0	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	87	87	60	60	60	60	60	60
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	0	522	5	3	682	21	0	0	5	0	0	42
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	527	0	0	872	1234	264	-	1215	341
Stage 1	-	-	-	-	-	-	525	525	-	-	688	-
Stage 2	-	-	-	-	-	-	347	709	-	-	527	-
Critical Hdwy	-	-	-	4.24	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	1002	-	-	248	178	741	0	183	661
Stage 1	0	-	-	-	-	-	509	533	-	0	450	-
Stage 2	0	-	-	-	-	-	648	440	-	0	532	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1002	-	-	232	177	741	-	182	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	299	-	-	304	-
Stage 1	-	-	-	-	-	-	509	533	-	-	449	-
Stage 2	-	-	-	-	-	-	605	439	-	-	532	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.9			10.8		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	741	-	-	1002	-	-	661					
HCM Lane V/C Ratio	0.007	-	-	0.003	-	-	0.063					
HCM Control Delay (s)	9.9	-	-	8.6	-	-	10.8					
HCM Lane LOS	A	-	-	A	-	-	B					
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2022 Future AM
10/22/2020

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	413	0	0	585	21	0	0	1	18	0	29
Future Vol, veh/h	34	413	0	0	585	21	0	0	1	18	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	85	85	85	60	60	60	75	75	75
Heavy Vehicles, %	10	10	10	7	7	7	0	0	0	67	67	67
Mvmt Flow	40	480	0	0	688	25	0	0	2	24	0	39
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	480	0	0	904	1273	240	1021	1261	357
Stage 1	-	-	-	-	-	-	560	560	-	701	701	-
Stage 2	-	-	-	-	-	-	344	713	-	320	560	-
Critical Hdwy	4.3	-	-	4.24	-	-	7.5	6.5	6.9	8.84	7.84	8.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	7.84	6.84	-
Follow-up Hdwy	2.3	-	-	2.27	-	-	3.5	4	3.3	4.17	4.67	3.97
Pot Cap-1 Maneuver	832	-	-	1044	-	-	235	169	767	120	100	485
Stage 1	-	-	-	-	-	-	485	514	-	274	310	-
Stage 2	-	-	-	-	-	-	650	438	-	515	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	832	-	-	1044	-	-	208	161	767	115	95	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	161	-	115	95	-
Stage 1	-	-	-	-	-	-	462	489	-	261	310	-
Stage 2	-	-	-	-	-	-	598	438	-	489	356	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0			9.7			28.2		
HCM LOS							A			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	767	832	-	-	1044	-	-	217				
HCM Lane V/C Ratio	0.002	0.048	-	-	-	-	-	0.289				
HCM Control Delay (s)	9.7	9.5	-	-	0	-	-	28.2				
HCM Lane LOS	A	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.1				

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	201	179	153	65	150	210	198	116	224	394	358	48
Average Queue (ft)	94	92	58	15	48	117	112	46	102	223	188	15
95th Queue (ft)	171	150	118	42	108	183	177	92	207	337	298	36
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)						1	1					
Queuing Penalty (veh)						2	2					
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)					0	4			0	10		
Queuing Penalty (veh)					0	3			1	15		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	153	258	237	165
Average Queue (ft)	75	160	137	67
95th Queue (ft)	135	237	213	128
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)		2	1	0
Queuing Penalty (veh)		5	2	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	EB	WB
Directions Served	LT	R	LTR
Maximum Queue (ft)	34	15	26
Average Queue (ft)	2	1	4
95th Queue (ft)	15	10	19
Link Distance (ft)	664	664	751
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	NB	SB	SB
Directions Served	LR	T	L	T
Maximum Queue (ft)	67	8	56	13
Average Queue (ft)	26	0	17	0
95th Queue (ft)	54	5	47	10
Link Distance (ft)	755	148		198
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			50	
Storage Blk Time (%)			1	0
Queuing Penalty (veh)			5	0

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	NB	NB	SB	SB	SB
Directions Served	LR	T	R	LT	T	T
Maximum Queue (ft)	53	8	7	73	60	9
Average Queue (ft)	23	0	0	21	5	0
95th Queue (ft)	49	6	5	58	29	7
Link Distance (ft)	750	205		148	148	148
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			85			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: West Driveway & Plymouth Road

Movement	WB	WB	WB	NB	SB
Directions Served	L	T	R	LTR	TR
Maximum Queue (ft)	12	3	22	31	51
Average Queue (ft)	1	0	2	3	17
95th Queue (ft)	8	2	13	18	45
Link Distance (ft)		51		362	152
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)	25		1		
Storage Blk Time (%)	0		0		
Queuing Penalty (veh)	0		0		

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	EB	WB	NB	SB
Directions Served	L	T	TR	LTR	LTR
Maximum Queue (ft)	37	15	10	26	123
Average Queue (ft)	3	1	0	1	47
95th Queue (ft)	17	9	6	11	98
Link Distance (ft)		51	1932	365	200
Upstream Blk Time (%)	0	0			0
Queuing Penalty (veh)	0	0			0
Storage Bay Dist (ft)	25				
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	1	0			

Network Summary

Network wide Queuing Penalty: 35

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2022 Future PM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	509	134	220	443	266	127	903	150	266	1135	588
Future Volume (veh/h)	330	509	134	220	443	266	127	903	150	266	1135	588
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		0.97	1.00		0.98	1.00		0.98
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1984	1984	1984	1969	1969	1969	1984	1984	1984	1969	1969	1969
Adj Flow Rate, veh/h	379	585	83	237	476	162	134	951	62	280	1195	386
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	395	713	499	295	520	408	287	1278	760	341	1268	837
Arrive On Green	0.17	0.19	0.19	0.12	0.14	0.14	0.11	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	1890	3770	1668	1875	3741	1626	1890	3770	1651	1875	3741	1639
Grp Volume(v), veh/h	379	585	83	237	476	162	134	951	62	280	1195	386
Grp Sat Flow(s),veh/h/ln	1890	1885	1668	1875	1870	1626	1890	1885	1651	1875	1870	1639
Q Serve(g_s), s	15.8	14.9	0.0	8.4	12.6	0.0	2.2	22.3	0.0	7.1	31.0	0.0
Cycle Q Clear(g_c), s	15.8	14.9	0.0	8.4	12.6	0.0	2.2	22.3	0.0	7.1	31.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	713	499	295	520	408	287	1278	760	341	1268	837
V/C Ratio(X)	0.96	0.82	0.17	0.80	0.92	0.40	0.47	0.74	0.08	0.82	0.94	0.46
Avail Cap(c_a), veh/h	395	713	499	295	520	408	287	1278	760	341	1268	837
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	39.5	38.9	25.9	41.2	42.5	31.3	39.9	29.2	15.3	39.8	32.1	15.7
Incr Delay (d2), s/veh	36.2	10.3	0.7	20.2	23.3	2.9	5.4	4.0	0.2	19.5	14.8	1.8
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	12.3	7.6	1.5	6.8	7.3	3.5	3.3	10.3	0.8	7.9	15.8	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.7	49.2	26.6	61.5	65.7	34.2	45.3	33.2	15.5	59.3	46.9	17.6
LnGrp LOS	E	D	C	E	E	C	D	C	B	E	D	B
Approach Vol, veh/h	1047			875			1147			1861		
Approach Delay, s/veh	57.0			58.7			33.6			42.7		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	40.0	18.0	25.0	17.0	40.0	23.0	20.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 11	* 34	* 12	* 19	* 11	* 34	* 17	* 14				
Max Q Clear Time (g_c+I1), s	9.1	24.3	10.4	16.9	4.2	33.0	17.8	14.6				
Green Ext Time (p_c), s	0.2	4.4	0.1	0.8	0.2	0.7	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	46.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2022 Future PM
10/22/2020

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	1	0	6	3	1511	6	7	2027	0
Future Vol, veh/h	0	0	3	1	0	6	3	1511	6	7	2027	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	60	60	60	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	2	2	2
Mvmt Flow	0	0	5	2	0	10	3	1591	6	7	2134	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2950	3751	1067	2465	3745	796	2134	0	0	1597	0	0
Stage 1	2148	2148	-	1597	1597	-	-	-	-	-	-	-
Stage 2	802	1603	-	868	2148	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.95	6.5	6.9	5.32	-	-	4.14	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.65	4	3.3	3.11	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	4	190	23	4	334	108	-	-	406	-	-
Stage 1	31	89	-	111	168	-	-	-	-	-	-	-
Stage 2	339	167	-	295	89	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	9	4	190	22	4	334	108	-	-	406	-	-
Mov Cap-2 Maneuver	9	4	-	22	4	-	-	-	-	-	-	-
Stage 1	30	87	-	108	163	-	-	-	-	-	-	-
Stage 2	320	162	-	282	87	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	24.5		41.6		0.1		0					
HCM LOS	C		E									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	108	-	-	-	-	190	110	406	-	-		
HCM Lane V/C Ratio	0.029	-	-	-	-	0.026	0.106	0.018	-	-		
HCM Control Delay (s)	39.3	-	-	0	24.5	41.6	14	-	-			
HCM Lane LOS	E	-	-	A	C	E	B	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.3	0.1	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2022 Future PM
10/22/2020

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	54	1466	32	55	1976
Future Vol, veh/h	29	54	1466	32	55	1976
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	45	84	1543	34	58	2080
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2491	772	0	0	1577	0
Stage 1	1543	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	~ 36	347	-	-	414	-
Stage 1	162	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 31	347	-	-	414	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	272	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	55.1	0		0.4		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	193	414	-	
HCM Lane V/C Ratio	-	-	0.672	0.14	-	
HCM Control Delay (s)	-	-	55.1	15.1	-	
HCM Lane LOS	-	-	F	C	-	
HCM 95th %tile Q(veh)	-	-	4.1	0.5	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	17.7	0.0	0.0	0.3
Total Del/Veh (s)	255.5	3.4	13.3	13.3

HCM 6th TWSC
5: West Driveway & Plymouth Road

2022 Future PM
10/22/2020

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↕			↱	
Traffic Vol, veh/h	0	901	24	3	889	26	4	0	17	0	0	36
Future Vol, veh/h	0	901	24	3	889	26	4	0	17	0	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	92	92	92	83	83	83	60	60	60
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	1012	27	3	966	28	5	0	20	0	0	60
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1039	0	0	1515	2026	520	-	2011	483
Stage 1	-	-	-	-	-	-	1026	1026	-	-	972	-
Stage 2	-	-	-	-	-	-	489	1000	-	-	1039	-
Critical Hdwy	-	-	-	4.14	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	665	-	-	84	58	506	0	60	535
Stage 1	0	-	-	-	-	-	255	315	-	0	333	-
Stage 2	0	-	-	-	-	-	534	324	-	0	310	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	665	-	-	74	58	506	-	60	535
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	172	-	-	173	-
Stage 1	-	-	-	-	-	-	255	315	-	-	331	-
Stage 2	-	-	-	-	-	-	472	322	-	-	310	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			15.2			12.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	377	-	-	665	-	-	535					
HCM Lane V/C Ratio	0.067	-	-	0.005	-	-	0.112					
HCM Control Delay (s)	15.2	-	-	10.4	-	-	12.6					
HCM Lane LOS	C	-	-	B	-	-	B					
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0.4					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2022 Future PM
10/22/2020

Intersection												
Int Delay, s/veh	9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	864	27	5	873	36	1	0	1	59	0	44
Future Vol, veh/h	27	864	27	5	873	36	1	0	1	59	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	91	91	91	60	60	60	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	4	4	4
Mvmt Flow	30	971	30	5	959	40	2	0	2	69	0	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	999	0	0	1001	0	0	1536	2055	501	1535	2050	500
Stage 1	-	-	-	-	-	-	1046	1046	-	989	989	-
Stage 2	-	-	-	-	-	-	490	1009	-	546	1061	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.58	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.54	4.04	3.34
Pot Cap-1 Maneuver	695	-	-	687	-	-	81	56	521	78	54	511
Stage 1	-	-	-	-	-	-	248	308	-	261	319	-
Stage 2	-	-	-	-	-	-	534	320	-	484	294	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	695	-	-	687	-	-	70	53	521	75	51	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	53	-	75	51	-
Stage 1	-	-	-	-	-	-	237	295	-	250	317	-
Stage 2	-	-	-	-	-	-	477	318	-	462	281	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	35.1	157
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	695	-	-	687	-	-	118
HCM Lane V/C Ratio	0.027	0.044	-	-	0.008	-	-	1.015
HCM Control Delay (s)	35.1	10.4	-	-	10.3	-	-	157
HCM Lane LOS	E	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	6.8

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	401	302	296	110	175	258	226	187	225	380	354	100
Average Queue (ft)	217	150	133	42	150	193	150	86	112	237	198	32
95th Queue (ft)	382	273	228	87	207	288	223	157	226	346	308	70
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					2	23	4	0				
Queuing Penalty (veh)					0	70	13	1				
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)	1		0		29	13			0	15		
Queuing Penalty (veh)	3		0		65	29			0	19		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	281	289	292	253
Average Queue (ft)	211	253	249	133
95th Queue (ft)	304	287	292	237
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	33	44	42	2
Queuing Penalty (veh)	161	222	208	10
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	WB	NB	SB	SB	SB	SB
Directions Served	R	LTR	L	L	T	T	TR
Maximum Queue (ft)	30	40	19	62	361	279	104
Average Queue (ft)	3	8	2	3	79	56	22
95th Queue (ft)	16	34	11	33	318	264	180
Link Distance (ft)	664	751			482	482	482
Upstream Blk Time (%)					2	1	1
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)			100	100			
Storage Blk Time (%)					9		
Queuing Penalty (veh)					1		

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LR	T	T	R	L	T	T	T
Maximum Queue (ft)	311	34	46	11	74	271	242	83
Average Queue (ft)	113	1	3	1	33	113	88	14
95th Queue (ft)	307	26	37	7	74	304	258	110
Link Distance (ft)	755	148	148	148		198	198	198
Upstream Blk Time (%)		0	0			14	7	1
Queuing Penalty (veh)		0	1			95	50	10
Storage Bay Dist (ft)					50			
Storage Blk Time (%)					4	22		
Queuing Penalty (veh)					26	12		

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LR	T	T	R	LT	T	T	T
Maximum Queue (ft)	383	203	205	29	206	215	217	114
Average Queue (ft)	165	18	17	1	94	129	124	11
95th Queue (ft)	503	109	106	17	216	257	259	62
Link Distance (ft)	750	205	205		148	148	148	148
Upstream Blk Time (%)	7	0	0		13	21	20	0
Queuing Penalty (veh)	0	3	3		65	104	100	1
Storage Bay Dist (ft)				85				
Storage Blk Time (%)			1					
Queuing Penalty (veh)			1					

Intersection: 5: West Driveway & Plymouth Road

Movement	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	T	TR	L	T	T	R	LTR	TR
Maximum Queue (ft)	10	9	25	143	25	28	73	108
Average Queue (ft)	0	0	2	37	1	2	25	36
95th Queue (ft)	6	7	13	130	11	13	81	101
Link Distance (ft)	186	186		51	51		362	152
Upstream Blk Time (%)			0	11	0	0		4
Queuing Penalty (veh)			0	51	1	0		0
Storage Bay Dist (ft)			25			1		
Storage Blk Time (%)			1	15	0	0		
Queuing Penalty (veh)			3	0	0	0		

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	L	T	TR	LTR	LTR
Maximum Queue (ft)	16	10	15	24	101	92	26	220
Average Queue (ft)	1	0	1	2	16	6	2	92
95th Queue (ft)	9	6	6	14	96	58	15	199
Link Distance (ft)		51	51		1932	1932	365	200
Upstream Blk Time (%)								10
Queuing Penalty (veh)								0
Storage Bay Dist (ft)	25			50				
Storage Blk Time (%)	0	0			3			
Queuing Penalty (veh)	1	0			0			

Network Summary

Network wide Queuing Penalty: 1329

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2022 Future AM Imp
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	248	45	72	382	164	145	870	81	119	614	321
Future Volume (veh/h)	169	248	45	72	382	164	145	870	81	119	614	321
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		0.98	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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1875	1875	1875	1860	1860	1860	1969	1969	1969	1891	1891	1891
Adj Flow Rate, veh/h	178	261	20	86	455	70	159	956	53	134	690	182
Peak Hour Factor	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91	0.89	0.89	0.89
Percent Heavy Veh, %	8	8	8	9	9	9	2	2	2	7	7	7
Cap, veh/h	344	968	579	294	680	471	372	1362	686	332	1359	816
Arrive On Green	0.13	0.27	0.27	0.05	0.19	0.19	0.09	0.36	0.36	0.11	0.38	0.38
Sat Flow, veh/h	1786	3563	1584	1771	3533	1569	1875	3741	1641	1801	3593	1596
Grp Volume(v), veh/h	178	261	20	86	455	70	159	956	53	134	690	182
Grp Sat Flow(s),veh/h/ln	1786	1781	1584	1771	1767	1569	1875	1870	1641	1801	1796	1596
Q Serve(g_s), s	3.5	6.9	0.0	0.0	14.3	0.0	0.0	26.2	0.0	0.0	17.7	0.0
Cycle Q Clear(g_c), s	3.5	6.9	0.0	0.0	14.3	0.0	0.0	26.2	0.0	0.0	17.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	968	579	294	680	471	372	1362	686	332	1359	816
V/C Ratio(X)	0.52	0.27	0.03	0.29	0.67	0.15	0.43	0.70	0.08	0.40	0.51	0.22
Avail Cap(c_a), veh/h	344	968	579	294	680	471	372	1362	686	332	1359	816
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	44.7	34.3	24.5	43.1	44.9	30.8	38.1	32.6	21.0	42.7	28.7	16.2
Incr Delay (d2), s/veh	5.5	0.7	0.1	2.5	5.2	0.7	3.6	3.0	0.2	3.6	1.4	0.6
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	5.1	3.0	0.4	2.4	6.6	1.6	4.5	12.0	0.9	3.9	7.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	35.0	24.6	45.6	50.1	31.4	41.7	35.6	21.2	46.3	30.1	16.8
LnGrp LOS	D	D	C	D	D	C	D	D	C	D	C	B
Approach Vol, veh/h	459			611			1168			1006		
Approach Delay, s/veh	40.5			47.3			35.8			29.8		
Approach LOS	D			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	49.8	12.5	38.7	17.3	51.5	22.0	29.2				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 13	* 44	* 6.4	* 33	* 11	* 45	* 16	* 23				
Max Q Clear Time (g_c+I1), s	2.0	28.2	2.0	8.9	2.0	19.7	5.5	16.3				
Green Ext Time (p_c), s	0.2	5.9	0.1	1.6	0.3	5.4	0.3	1.7				

Intersection Summary

HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2022 Future AM Imp
10/22/2020

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↕	↗	↗	↕↕↕	
Traffic Vol, veh/h	1	0	1	1	0	4	0	1199	5	5	1092	3
Future Vol, veh/h	1	0	1	1	0	4	0	1199	5	5	1092	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	100	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	92	92	92	94	94	94	82	82	82
Heavy Vehicles, %	0	0	0	2	2	2	4	4	4	6	6	6
Mvmt Flow	2	0	2	1	0	4	0	1276	5	6	1332	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1984	2627	668	1821	2624	638	1336	0	0	1281	0	0
Stage 1	1346	1346	-	1276	1276	-	-	-	-	-	-	-
Stage 2	638	1281	-	545	1348	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.99	6.54	6.94	5.38	-	-	4.22	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.67	4.02	3.32	3.14	-	-	2.26	-	-
Pot Cap-1 Maneuver	50	24	347	63	24	419	264	-	-	516	-	-
Stage 1	118	222	-	173	236	-	-	-	-	-	-	-
Stage 2	423	238	-	461	218	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	49	24	347	62	24	419	264	-	-	516	-	-
Mov Cap-2 Maneuver	49	24	-	62	24	-	-	-	-	-	-	-
Stage 1	118	219	-	173	236	-	-	-	-	-	-	-
Stage 2	419	238	-	453	215	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	48.2		24		0		0.1					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	264	-	-	49	347	195	516	-	-			
HCM Lane V/C Ratio	-	-	-	0.034	0.005	0.028	0.012	-	-			
HCM Control Delay (s)	0	-	-	81	15.4	24	12.1	-	-			
HCM Lane LOS	A	-	-	F	C	C	B	-	-			
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	0	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2022 Future AM Imp
10/22/2020

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	34	1170	27	63	1031
Future Vol, veh/h	23	34	1170	27	63	1031
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	94	94	82	82
Heavy Vehicles, %	0	0	4	4	6	6
Mvmt Flow	38	57	1245	29	77	1257
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1902	623	0	0	1274	0
Stage 1	1245	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.22	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.26	-
Pot Cap-1 Maneuver	82	434	-	-	520	-
Stage 1	234	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	70	434	-	-	520	-
Mov Cap-2 Maneuver	162	-	-	-	-	-
Stage 1	234	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	22.4	0	0.8			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 162 434	520	-		
HCM Lane V/C Ratio	-	- 0.237 0.131 0.148		-		
HCM Control Delay (s)	-	- 34 14.5 13.1		-		
HCM Lane LOS	-	- D B B		-		
HCM 95th %tile Q(veh)	-	- 0.9 0.4 0.5		-		

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.8	2.9	1.1	2.1

HCM 6th TWSC
5: West Driveway & Plymouth Road

2022 Future AM Imp
10/22/2020

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↱↲			↱	
Traffic Vol, veh/h	0	444	4	3	593	18	0	0	3	0	0	25
Future Vol, veh/h	0	444	4	3	593	18	0	0	3	0	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	87	87	87	60	60	60	60	60	60
Heavy Vehicles, %	11	11	11	7	7	7	0	0	0	0	0	0
Mvmt Flow	0	522	5	3	682	21	0	0	5	0	0	42
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	527	0	0	872	1234	264	-	1215	341
Stage 1	-	-	-	-	-	-	525	525	-	-	688	-
Stage 2	-	-	-	-	-	-	347	709	-	-	527	-
Critical Hdwy	-	-	-	4.24	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	1002	-	-	248	178	741	0	183	661
Stage 1	0	-	-	-	-	-	509	533	-	0	450	-
Stage 2	0	-	-	-	-	-	648	440	-	0	532	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1002	-	-	232	177	741	-	182	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	299	-	-	304	-
Stage 1	-	-	-	-	-	-	509	533	-	-	449	-
Stage 2	-	-	-	-	-	-	605	439	-	-	532	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.9			10.8		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	741	-	-	1002	-	-	661					
HCM Lane V/C Ratio	0.007	-	-	0.003	-	-	0.063					
HCM Control Delay (s)	9.9	-	-	8.6	-	-	10.8					
HCM Lane LOS	A	-	-	A	-	-	B					
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2					

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	413	0	0	585	21	0	0	1	18	0	29
Future Vol, veh/h	34	413	0	0	585	21	0	0	1	18	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	85	85	85	60	60	60	75	75	75
Heavy Vehicles, %	10	10	10	7	7	7	0	0	0	67	67	67
Mvmt Flow	40	480	0	0	688	25	0	0	2	24	0	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	713	0	0	480	0	0	904	1273	240	1021	-	357
Stage 1	-	-	-	-	-	-	560	560	-	701	-	-
Stage 2	-	-	-	-	-	-	344	713	-	320	-	-
Critical Hdwy	4.3	-	-	4.24	-	-	7.5	6.5	6.9	8.84	-	8.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	7.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	7.84	-	-
Follow-up Hdwy	2.3	-	-	2.27	-	-	3.5	4	3.3	4.17	-	3.97
Pot Cap-1 Maneuver	832	-	-	1044	-	-	235	169	767	120	0	485
Stage 1	-	-	-	-	-	-	485	514	-	274	0	-
Stage 2	-	-	-	-	-	-	650	438	-	515	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	832	-	-	1044	-	-	208	161	767	115	-	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	161	-	115	-	-
Stage 1	-	-	-	-	-	-	462	489	-	261	-	-
Stage 2	-	-	-	-	-	-	598	438	-	489	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	9.7	25.1
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	767	832	-	-	1044	-	-	115	485
HCM Lane V/C Ratio	0.002	0.048	-	-	-	-	-	0.209	0.08
HCM Control Delay (s)	9.7	9.5	-	-	0	-	-	44.4	13.1
HCM Lane LOS	A	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.7	0.3

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	240	169	134	42	174	246	208	161	225	375	331	49
Average Queue (ft)	106	86	49	11	62	141	124	51	124	261	218	17
95th Queue (ft)	199	149	110	32	147	222	199	117	246	357	303	39
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					0	3	2	0				
Queuing Penalty (veh)					0	6	4	0				
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)					1	7			0	15		
Queuing Penalty (veh)					2	5			0	21		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	192	278	248	175
Average Queue (ft)	88	177	151	65
95th Queue (ft)	165	257	221	131
Link Distance (ft)	205	205	205	205
Upstream Blk Time (%)	0	4	1	0
Queuing Penalty (veh)	1	11	4	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	EB	WB	NB
Directions Served	LT	R	LTR	T
Maximum Queue (ft)	20	26	26	3
Average Queue (ft)	1	2	4	0
95th Queue (ft)	11	15	19	3
Link Distance (ft)	664	664	751	186
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	R	L	T
Maximum Queue (ft)	54	53	4	67	67
Average Queue (ft)	16	19	0	25	3
95th Queue (ft)	43	43	3	56	31
Link Distance (ft)	755	755	148		186
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				50	
Storage Blk Time (%)				3	0
Queuing Penalty (veh)				12	0

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	SB	SB
Directions Served	LR	T	T
Maximum Queue (ft)	49	67	32
Average Queue (ft)	19	5	1
95th Queue (ft)	45	37	18
Link Distance (ft)	750	148	148
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: West Driveway & Plymouth Road

Movement	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	R	LTR	TR
Maximum Queue (ft)	17	42	15	20	31	58
Average Queue (ft)	1	1	1	1	3	16
95th Queue (ft)	9	14	10	11	19	45
Link Distance (ft)		46	46		362	152
Upstream Blk Time (%)		0	0	0		
Queuing Penalty (veh)		1	0	0		
Storage Bay Dist (ft)	25			1		
Storage Blk Time (%)	0	0	0			
Queuing Penalty (veh)	1	0	0			

Intersection: 6: East Driveway & Plymouth Road

Movement	EB	EB	NB	SB	SB
Directions Served	L	T	LTR	L	R
Maximum Queue (ft)	35	26	20	88	96
Average Queue (ft)	3	1	1	25	35
95th Queue (ft)	18	12	8	72	82
Link Distance (ft)		46	365	200	200
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)	25				
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	1	0			

Network Summary

Network wide Queuing Penalty: 69

HCM 6th Signalized Intersection Summary

1: Middlebelt Road & Plymouth Road

2022 Future PM Imp
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	330	509	134	220	443	266	127	903	150	266	1135	588
Future Volume (veh/h)	330	509	134	220	443	266	127	903	150	266	1135	588
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		0.98	1.00		0.98	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1984	1984	1984	1969	1969	1969	1984	1984	1984	1969	1969	1969
Adj Flow Rate, veh/h	379	585	83	237	476	162	134	951	62	280	1195	386
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	448	782	499	362	652	547	232	1065	717	369	1306	877
Arrive On Green	0.18	0.21	0.21	0.15	0.17	0.17	0.09	0.28	0.28	0.16	0.35	0.35
Sat Flow, veh/h	1890	3770	1670	1875	3741	1630	1890	3770	1648	1875	3741	1639
Grp Volume(v), veh/h	379	585	83	237	476	162	134	951	62	280	1195	386
Grp Sat Flow(s),veh/h/ln	1890	1885	1670	1875	1870	1630	1890	1885	1648	1875	1870	1639
Q Serve(g_s), s	16.4	17.5	0.0	8.8	14.4	0.0	4.2	29.0	0.0	12.2	36.7	0.0
Cycle Q Clear(g_c), s	16.4	17.5	0.0	8.8	14.4	0.0	4.2	29.0	0.0	12.2	36.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	448	782	499	362	652	547	232	1065	717	369	1306	877
V/C Ratio(X)	0.85	0.75	0.17	0.66	0.73	0.30	0.58	0.89	0.09	0.76	0.91	0.44
Avail Cap(c_a), veh/h	448	782	499	362	652	547	232	1065	717	369	1306	877
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	44.2	44.6	31.1	45.5	46.9	29.7	50.6	41.3	20.1	46.1	37.3	17.1
Incr Delay (d2), s/veh	17.7	6.5	0.7	8.9	7.1	1.4	10.1	11.4	0.2	13.7	11.4	1.6
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	12.2	8.7	1.8	7.0	7.2	3.6	4.3	14.8	1.1	8.8	18.2	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	51.1	31.8	54.4	54.0	31.1	60.7	52.7	20.4	59.8	48.8	18.7
LnGrp LOS	E	D	C	D	D	C	E	D	C	E	D	B
Approach Vol, veh/h		1047			875			1147			1861	
Approach Delay, s/veh		53.5			49.9			51.9			44.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.0	40.0	24.0	31.0	17.0	48.0	28.0	27.0				
Change Period (Y+Rc), s	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s	* 19	* 34	* 18	* 25	* 11	* 42	* 22	* 21				
Max Q Clear Time (g_c+I1), s	14.2	31.0	10.8	19.5	6.2	38.7	18.4	16.4				
Green Ext Time (p_c), s	0.3	1.7	0.4	1.9	0.1	2.4	0.4	1.4				

Intersection Summary

HCM 6th Ctrl Delay	49.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th TWSC
2: Middlebelt Road & North Driveway

2022 Future PM Imp
10/22/2020

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕		↕	↕↕	↕	↕	↕↕↕	
Traffic Vol, veh/h	0	0	3	1	0	6	3	1511	6	7	2027	0
Future Vol, veh/h	0	0	3	1	0	6	3	1511	6	7	2027	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	50	-	40	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	60	60	60	60	60	60	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	2	2	2
Mvmt Flow	0	0	5	2	0	10	3	1591	6	7	2134	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2950	3751	1067	2465	3745	796	2134	0	0	1597	0	0
Stage 1	2148	2148	-	1597	1597	-	-	-	-	-	-	-
Stage 2	802	1603	-	868	2148	-	-	-	-	-	-	-
Critical Hdwy	6.95	6.5	7.1	6.95	6.5	6.9	5.32	-	-	4.14	-	-
Critical Hdwy Stg 1	7.3	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.7	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.65	4	3.9	3.65	4	3.3	3.11	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	4	190	23	4	334	108	-	-	406	-	-
Stage 1	31	89	-	111	168	-	-	-	-	-	-	-
Stage 2	339	167	-	295	89	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	9	4	190	22	4	334	108	-	-	406	-	-
Mov Cap-2 Maneuver	9	4	-	22	4	-	-	-	-	-	-	-
Stage 1	30	87	-	108	163	-	-	-	-	-	-	-
Stage 2	320	162	-	282	87	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	24.5		41.6		0.1		0					
HCM LOS	C		E									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	108	-	-	-	-	190	110	406	-	-		
HCM Lane V/C Ratio	0.029	-	-	-	-	0.026	0.106	0.018	-	-		
HCM Control Delay (s)	39.3	-	-	0	24.5	41.6	14	-	-			
HCM Lane LOS	E	-	-	A	C	E	B	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.3	0.1	-	-			

HCM 6th TWSC
3: Middlebelt Road & Middle Driveway

2022 Future PM Imp
10/22/2020

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	54	1466	32	97	1934
Future Vol, veh/h	55	54	1466	32	97	1934
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	0	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	95	95	95	95
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	86	84	1543	34	102	2036
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2561	772	0	0	1577	0
Stage 1	1543	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Critical Hdwy	6.25	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.65	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	~ 32	347	-	-	414	-
Stage 1	162	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 24	347	-	-	414	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	162	-	-	-	-	-
Stage 2	219	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	82	0		0.8		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	96	347	414	-
HCM Lane V/C Ratio	-	-	0.895	0.243	0.247	-
HCM Control Delay (s)	-	-	144.1	18.7	16.5	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	5.1	0.9	1	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

4: Middlebelt Road & South Driveway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.1	3.2	8.0	5.9

HCM 6th TWSC
5: West Driveway & Plymouth Road

2022 Future PM Imp
10/22/2020

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑	↱		↱↲			↱	
Traffic Vol, veh/h	0	901	24	3	889	26	4	0	17	0	0	36
Future Vol, veh/h	0	901	24	3	889	26	4	0	17	0	0	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	25	-	1	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	92	92	92	83	83	83	60	60	60
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	0	1012	27	3	966	28	5	0	20	0	0	60
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1039	0	0	1515	2026	520	-	2011	483
Stage 1	-	-	-	-	-	-	1026	1026	-	-	972	-
Stage 2	-	-	-	-	-	-	489	1000	-	-	1039	-
Critical Hdwy	-	-	-	4.14	-	-	7.5	6.5	6.9	-	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	5.5	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.5	4	3.3	-	4	3.3
Pot Cap-1 Maneuver	0	-	-	665	-	-	84	58	506	0	60	535
Stage 1	0	-	-	-	-	-	255	315	-	0	333	-
Stage 2	0	-	-	-	-	-	534	324	-	0	310	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	665	-	-	74	58	506	-	60	535
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	172	-	-	173	-
Stage 1	-	-	-	-	-	-	255	315	-	-	331	-
Stage 2	-	-	-	-	-	-	472	322	-	-	310	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			15.2			12.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	377	-	-	665	-	-	535					
HCM Lane V/C Ratio	0.067	-	-	0.005	-	-	0.112					
HCM Control Delay (s)	15.2	-	-	10.4	-	-	12.6					
HCM Lane LOS	C	-	-	B	-	-	B					
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0.4					

HCM 6th TWSC
6: East Driveway & Plymouth Road

2022 Future PM Imp
10/22/2020

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	864	27	5	873	36	1	0	1	59	0	44
Future Vol, veh/h	27	864	27	5	873	36	1	0	1	59	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	50	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	91	91	91	60	60	60	86	86	86
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	4	4	4
Mvmt Flow	30	971	30	5	959	40	2	0	2	69	0	51
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	999	0	0	1001	0	0	1536	2055	501	1535	-	500
Stage 1	-	-	-	-	-	-	1046	1046	-	989	-	-
Stage 2	-	-	-	-	-	-	490	1009	-	546	-	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.5	6.5	6.9	7.58	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	-	-
Follow-up Hdwy	2.21	-	-	2.22	-	-	3.5	4	3.3	3.54	-	3.34
Pot Cap-1 Maneuver	695	-	-	687	-	-	81	56	521	78	0	511
Stage 1	-	-	-	-	-	-	248	308	-	261	0	-
Stage 2	-	-	-	-	-	-	534	320	-	484	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	695	-	-	687	-	-	70	53	521	75	-	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	53	-	75	-	-
Stage 1	-	-	-	-	-	-	237	295	-	250	-	-
Stage 2	-	-	-	-	-	-	477	318	-	462	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.1			35.1			106.1		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	123	695	-	-	687	-	-	75	511			
HCM Lane V/C Ratio	0.027	0.044	-	-	0.008	-	-	0.915	0.1			
HCM Control Delay (s)	35.1	10.4	-	-	10.3	-	-	175.7	12.8			
HCM Lane LOS	E	B	-	-	B	-	-	F	B			
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	4.7	0.3			

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	402	252	242	117	175	255	239	187	225	528	474	108
Average Queue (ft)	216	162	149	36	140	175	153	78	142	355	299	35
95th Queue (ft)	358	238	229	81	200	264	229	145	268	501	427	82
Link Distance (ft)		1096	1096			186	186	186		542	542	542
Upstream Blk Time (%)					1	9	4	0		1	0	
Queuing Penalty (veh)					0	30	12	1		0	0	
Storage Bay Dist (ft)	500			550	150				200			
Storage Blk Time (%)					13	13			2	35		
Queuing Penalty (veh)					30	30			9	44		

Intersection: 1: Middlebelt Road & Plymouth Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	267	289	300	264
Average Queue (ft)	163	258	256	132
95th Queue (ft)	266	290	297	234
Link Distance (ft)	211	211	211	211
Upstream Blk Time (%)	7	36	34	2
Queuing Penalty (veh)	37	181	168	11
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Middlebelt Road & North Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	R	LTR	L	T	T	T	TR
Maximum Queue (ft)	31	29	27	12	174	110	41
Average Queue (ft)	3	6	3	0	33	22	1
95th Queue (ft)	18	23	15	7	186	142	32
Link Distance (ft)	664	751		186	482	482	482
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			50				
Storage Blk Time (%)			0	0	3		
Queuing Penalty (veh)			0	0	0		

Intersection: 3: Middlebelt Road & Middle Driveway

Movement	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	R	T	T	R	L	T	T	T
Maximum Queue (ft)	156	74	44	42	7	124	234	195	42
Average Queue (ft)	48	28	3	3	0	57	68	50	1
95th Queue (ft)	123	57	37	37	6	112	230	189	25
Link Distance (ft)	755	755	142	142	142		186	186	186
Upstream Blk Time (%)			0	0			6	3	0
Queuing Penalty (veh)			1	1			42	23	0
Storage Bay Dist (ft)						100			
Storage Blk Time (%)						2	9		
Queuing Penalty (veh)						12	9		

Intersection: 4: Middlebelt Road & South Driveway

Movement	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	R	T	T	R	LT	T	T	T
Maximum Queue (ft)	74	23	32	22	160	212	211	106
Average Queue (ft)	30	1	1	1	53	121	108	10
95th Queue (ft)	68	16	19	18	165	238	228	55
Link Distance (ft)	750	211	211		142	142	142	142
Upstream Blk Time (%)					3	14	12	0
Queuing Penalty (veh)					17	70	61	0
Storage Bay Dist (ft)				85				
Storage Blk Time (%)			0					
Queuing Penalty (veh)			0					

Intersection: 5: West Driveway & Plymouth Road

Movement	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	T	TR	L	T	T	R	LTR	TR
Maximum Queue (ft)	5	12	20	124	28	28	42	73
Average Queue (ft)	0	0	1	14	2	1	17	26
95th Queue (ft)	4	7	9	70	15	10	45	58
Link Distance (ft)	186	186		46	46		362	152
Upstream Blk Time (%)				3	0	0		
Queuing Penalty (veh)				14	0	0		
Storage Bay Dist (ft)			25			1		
Storage Blk Time (%)			0	4	0	0		
Queuing Penalty (veh)			2	0	0	0		

Intersection: 6: East Driveway & Plymouth Road

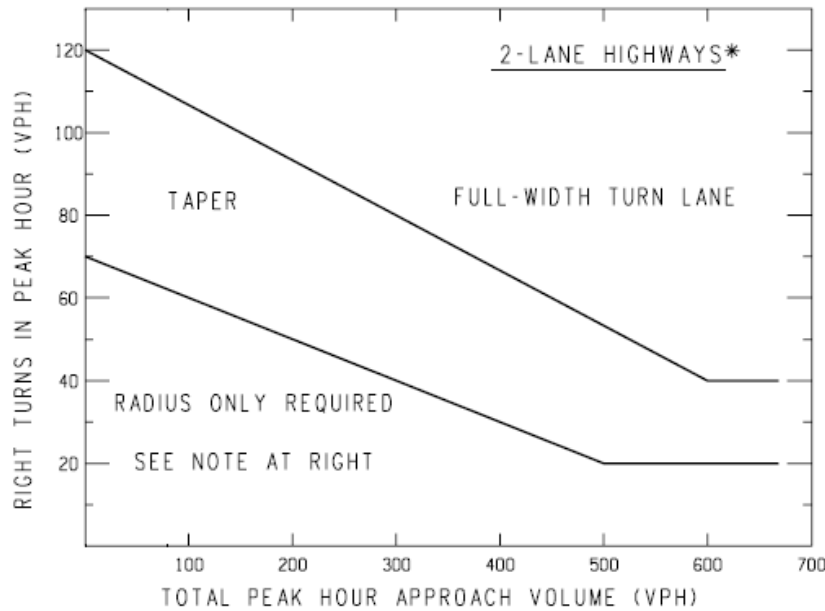
Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	LTR	L	R
Maximum Queue (ft)	17	14	12	21	40	12	20	146	75
Average Queue (ft)	2	0	0	2	2	0	1	53	30
95th Queue (ft)	10	8	5	11	22	7	11	122	61
Link Distance (ft)		46	46		1927	1927	365	200	200
Upstream Blk Time (%)		0						1	
Queuing Penalty (veh)		0						0	
Storage Bay Dist (ft)	25			50					
Storage Blk Time (%)	0	0			0				
Queuing Penalty (veh)	2	0			0				

Network Summary

Network wide Queuing Penalty: 807

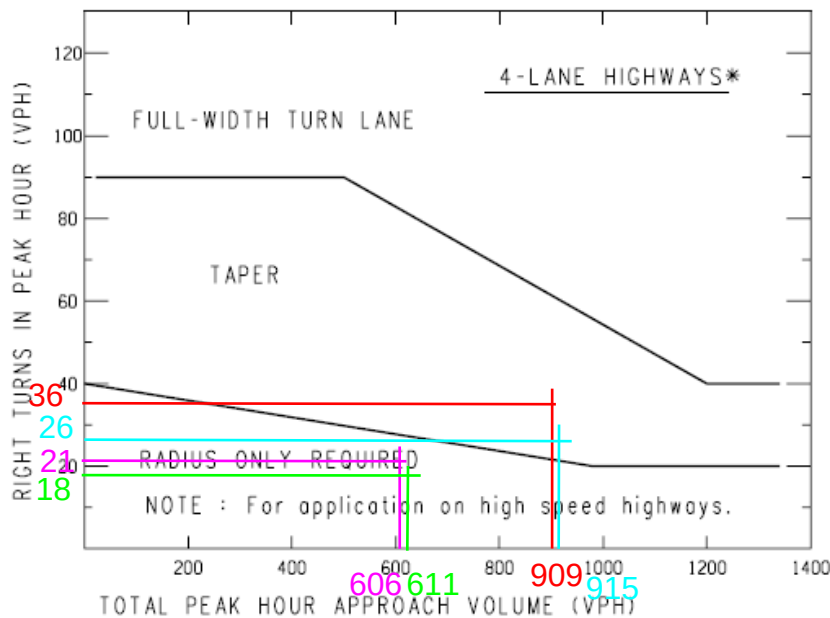
TURN LANE WARRANTS

AM Peak Hour West DW
 AM Peak Hour East DW
 PM Peak Hour West DW
 PM Peak Hour East DW



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 Hous 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.

From: [Simmons, Jennifer](#)
To: [Planning](#)
Subject: FW: Online Form Submittal: City Council Inquiries
Date: Wednesday, December 16, 2020 4:09:55 PM

Good afternoon,

Below is an email that we received moments ago regarding concern over the development of a business due to traffic issues.

Thanks,

Jennifer Simmons

Clerk Typist
City of Livonia | Mayor's Office
(734) 466-2204
jsimmons@livonia.gov

From: noreply@civicplus.com <noreply@civicplus.com>
Sent: Wednesday, December 16, 2020 4:04 PM
To: support <support@livonia.gov>
Subject: Online Form Submittal: City Council Inquiries

City Council Inquiries

This form is for any questions, comments, or concerns you may have for the City in regards to city council meetings or other city council inquiries. If you leave contact information, the City will reply within 2 business days. If this is an emergency, please dial 9-1-1.

First Name	Matthew
Last Name	Knopsnider
Email Address	chopsnider@gmail.com
Phone Number	7347163887
Topic	City Council Meetings
Date of Issue	12/16/2020
Attachment (Optional)	<i>Field not completed.</i>

Comments

Hello City Council,

I am new to this process, so I'm not sure if this is the correct place to state my concern. I apologize if it isn't. With that being said, I read an article about a new Chick-fil-a being proposed for development at the northeast corner of Plymouth and Middlebelt roads. I live on Karen Street just south of that intersection and I am very concerned with my family's ability to use that intersection going forward if that restaurant is built. It is a very busy intersection as it stands with recurring difficulties being able to safely pull out onto Middlebelt from Elmira. I'm hoping that another discussion will be had regarding this issue because local residents were not notified this was being proposed. If given the opportunity, I would like to attend this discussion to voice my concerns. Thank you for your service to our community and I wish you all a happy holidays.

Sincerely,
Matt Knopsnider

Email not displaying correctly? [View it in your browser.](#)

From: [Simmons, Jennifer](#)
To: [Planning](#)
Cc: [CityCouncil](#)
Subject: FW: Online Form Submittal: Planning Inquires
Date: Monday, December 21, 2020 8:56:41 AM

Good morning,

The following message was sent Friday evening via the website.

Thanks,

Jennifer Simmons
Clerk Typist
City of Livonia | Mayor's Office
(734) 466-2204
jsimmons@livonia.gov

From: noreply@civicplus.com <noreply@civicplus.com>
Sent: Friday, December 18, 2020 7:15 PM
To: [support](mailto:support@livonia.gov) <support@livonia.gov>
Subject: Online Form Submittal: Planning Inquires

Planning Inquires

This form is for any questions, comments, or concerns you may have for the City in regards to planning. If you leave contact information, the City will reply within 2 business days. If this is an emergency, please dial 9-1-1.

First Name	Mary
Last Name	Fedoronko
Email Address	mafedko@sbcglobal.net
Phone Number	734-502-6648
Describe your issue, concern, or question.	My husband and I have lived here for 41 years. The traffic at Plymouth Rd. and Middlebelt Rd. has increasingly become horrendous just about any time of day. Just try to get out of subdivisions in SE corner. The condition of Middlebelt is terrible between Plymouth Rd. and I-96. Now you're allowing a Chik-fil-a to be built at that corner. Why? Use the Kmart location on Seven Mile Rd. and Farmington

Rd. It is a large property. Traffic is not as congested in that area. I would ask you all to observe the traffic around a newly opened Chik-fil-a before approving it in our neighborhood. Please do some due diligence for your citizens.
Thank you!

Date of Concern	12/18/2020
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Attachment (Optional)	<i>Field not completed.</i>
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Email not displaying correctly? [View it in your browser.](#)

From: [Simmons, Jennifer](#)
To: [Planning](#)
Cc: [CityCouncil](#)
Subject: Against Chik-Fil-A
Date: Monday, December 21, 2020 9:20:40 AM

Good morning,

We received another email via the website (Facebook messenger) from Mr. James Easterly:

Recent articles that have been circulating suggest a Chick-fil-a is coming to Middlebelt and Plymouth rd. What needs to be done to stop this from happening? This is a HIGH RISK location for accidents if this kind of establishment is made. Locations like Culvers and Popeyes already produce a outrageous amount of traffic problems on non-major roads with long lines that extend outside the location's property. Will it take legal action to prevent this project from happening or can the community of Livonia prevent possible injuries to Livonia citizens? This location is already in terrible shape with how the roads are set up. Throwing in a wild card like Chick-fil-a will be catastrophic. What can I do?

Jennifer Simmons

Clerk Typist
City of Livonia | Mayor's Office
(734) 466-2204
jsimmons@livonia.gov

UNAPPROVED MINUTES

1

MINUTES OF THE 1,163rd PUBLIC HEARINGS AND REGULAR MEETING HELD BY THE CITY PLANNING COMMISSION OF THE CITY OF LIVONIA

On Tuesday, December 15, 2020, the City Planning Commission of the City of Livonia held its 1,163rd Public Hearings and Regular Meeting via Zoom Meeting Software.

Mr. Ian Wilshaw, Chairman, called the meeting to order at 7:02 p.m.

Members present: David Bongero Sam Caramagno Glen Long
 Betsy McCue Carol Smiley Peter Ventura
 Ian Wilshaw

Members absent: None

Mr. Mark Taormina, Planning Director, Scott Miller, Planner IV, Debra Walter, Clerk-Typist II and Stephanie Reece, Program Supervisor, were also present.

Chairman Wilshaw informed the audience that if a petition on tonight's agenda involves a rezoning request, this Commission makes a recommendation to the City Council who, in turn, will hold its own public hearing and make the final determination as to whether a petition is approved or denied. The Planning Commission holds the only public hearing on a request for preliminary plat and/or vacating petition. The Commission's recommendation is forwarded to the City Council for the final determination as to whether a plat is accepted or rejected. If a petition requesting a waiver of use or site plan approval is denied tonight, the petitioner has ten days in which to appeal the decision, in writing, to the City Council. Resolutions adopted by the City Planning Commission become effective seven (7) days after the date of adoption. The Planning Commission and the professional staff have reviewed each of these petitions upon their filing. The staff has furnished the Commission with both approving and denying resolutions, which the Commission may, or may not, use depending on the outcome of the proceedings tonight.

ITEM #1 PETITION 2020-11-02-10

Shoppes of Livonia

Mr. Caramagno, Secretary, announced the first item on the agenda, Petition 2020-11-02-10 submitted by LS Equity L.L.C. requesting approval of all plans required by Sections 11.03(n)(3), 18.47 and 18.58 of the City of Livonia Zoning Ordinance No. 543, as amended, in connection with a proposal to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-

service restaurant with drive-thru facilities (Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road in the Southwest ¼ of Section 25.

Mr. Taormina: This is a request to redevelop the commercial site at the northeast corner of Middlebelt and Plymouth roads. The property in question totals 7.75 acres with roughly 480 feet of frontage on Middlebelt Road and 185 of frontage on Plymouth Road. The site contains a multi-tenant retail building with a gross floor area of roughly 85,000 square feet. The property is zoned C-2 (General Business). Located closer to the intersection at Middlebelt and Plymouth is a vacant commercial building that was constructed in 2003 as a Walgreens Pharmacy. That building is not a part of the site. Nor is the Firestone Compete Auto Care Center facility located immediately to the east of this site along Plymouth Road. Both properties were once a part of a larger single site that included the subject parcel but were split-off and sold separately. The subject property would be redeveloped in three phases. Phase I includes demolishing portions of the existing retail building and constructing a new Chick-Fil-A restaurant, which would be adjacent to Middlebelt Road. Phase II, as you can see on this diagram, involves the redevelopment of the area along Plymouth Road and the construction of a new multi-tenant retail building in an area that is currently used for parking. Lastly, Phase III involves expanding the existing retail building and undertaking façade and other parking lot improvements. We will talk about Phase I first. Demolition on the existing building would occur first to make room for the Chick-Fil-A restaurant. About 26,000 square feet of the existing 84,000+ square foot building would be removed. The new free-standing restaurant would be located between the downsized building and Middlebelt Road in the northwest corner of the property. The proposed Chick-Fil-A would have 124 interior seats along with 24 outdoor patio seats, for a total of 148 customer seats. The building would be one-story in height and have a gross floor area of 4,995 square feet. The outdoor seating area would be on the south side facing Plymouth Road. A major component of this is the drive-thru facility. There will be two drive-thru lanes that would commence at the southeast corner of the building and then proceed north where they would wrap around the back of the building and finish at the pick-up window on the west side.

The menu and ordering area are shown in the northeast corner just before the turn at the back of the building. The inside and outside lanes would each have the capacity for 19 and 21 vehicles, respectively. Both lanes will be 12 feet in width which complies with the ordinance. The adjacent drive aisle would serve as the by-pass route but for the outside lane only. Note that a drive aisle is immediately adjacent to this outside drive lane and would be available for circulation. If any of the cars in the outside lane wanted to prematurely exit the drive-thru, they would have the opportunity to do so. Overhead canopies are shown at two locations along the drive thru. One is at the menu and ordering area and the other one is at the pick-up window. These photographs provide an example of what the canopy would look like at the menu and ordering area. These next photographs indicate what the canopy would look like at the pick-up window. Striped crosswalks would be provided for safety and to effectively space the queued vehicles. There are five existing driveways that provide access to the site and all five would remain to serve the new development. Three of the driveways are on Middlebelt Road and two are on Plymouth. Two of the driveways are on the former Walgreens property: one on Middlebelt and one on Plymouth. Both provide access to the subject property via cross access agreements. Looking at the overall site plan, Middlebelt Road is on the left-hand side and here are the three existing driveways. The one at the north end is referred to as the north driveway. There is also a middle driveway and south driveway, which one of those driveways that is on the former Walgreens property. The hatched areas show the cross access that exists between the two properties. On Plymouth Road, there are two driveways. One is referred to as the east driveway and the other as the west driveway, also located on the Walgreens property subject to a cross access agreement. None of the driveways are signalized. As part of the development, the two main approaches, the middle driveway on Middlebelt Road and the east driveway on Plymouth Road, would each be widened. Looking at the exterior of the Chick-Fil-A restaurant, it would entirely consist of brick. The canopies are shown here, above the windows and entrance areas. The height of the building is about 20 feet, 4-1/2 inches. These are the renderings showing the north and south elevations of the building. This would be the side facing Plymouth Road and this one is the back of the building facing north. Underground detention is part of Phase I. It includes the construction of the basin that would be beneath the main parking lot in an area behind the main retail building. The main retail building is referred to as Retail 2. The smaller retail

building that is proposed adjacent to Plymouth Road is referred to as Retail 1 and is part of Phase II. This building is located at the south end of the parking lot between the Firestone and the former Walgreens store. This building would be one-story in height with a gross floor area of roughly 8,900 square feet. As you can see here, access would be provided via connections to the shopping center's existing driveways and parking aisles. The exterior of this building would contain different shades of brick. It is a full-brick building. The height varies from 20 feet to 26 feet. The west end cap is shown as a restaurant with a drive-up window facility. The site plan shows a single drive-thru lane along the north and west sides of the building with the capacity to accommodate roughly nine vehicles. Phase III involves a 5,378 square foot addition to the northeast corner of Retail 2, which is the existing building. That addition would measure 39-½ feet by 140 feet. With the expansion, Retail 2 would total of 63,434 square feet. The existing building is over 84,000 square feet in size. With the demolition along the west side of the property and then with the addition, it brings the total back up to about 63,400 square feet. Besides the expansion, the entire store front elevation would be renovated. The architecture and materials are intended to compliment the design of Retail 1. The exterior finish would contain brick with new parapet wall sections that would vary in height. As you can see here, they would project above the existing roofline. The changes to the other three elevations of the building would consist primarily of CMU. The top rendering shows the main storefront façade facing Plymouth Road. The next rendering is the west side of the building and includes the same brick finish on roughly half of the west elevation. The balance would be a decorative CMU. Next is the rear of the building facing the commercial to the north, and finally the west side facing the residential area and the Firestone property, both of which would also be finished with CMU. Required parking for the new development would be based on the total amount retail floor space. For a group commercial center with more than four establishments and where less than 15% of the gross floor area is devoted to restaurants, the parking is computed at a ratio of 1 parking space for every 150 square feet of usable floor area. When we combine the square footage of all three buildings, the Chick-fil-A, Retail 1 and Retail 2, there is a total of 77,330 square feet used for determining the parking. This results in a requirement of 413 parking spaces. The site plan presented to you this evening shows 397 parking spaces resulting in a deficiency of 16 spaces, which is roughly 3.8% of the total number of required spaces. A fully detailed landscape plan was

submitted with the application. This is a blow up of the area around the Chick-Fil-A restaurant and this is the area around Retail 1. All existing landscape islands would be replanted. Staff is recommending that the landscaping along Middlebelt Road also be replanted. Details are provided on all the trash enclosures on the site. Regarding site lighting, staff is recommending that all the poles not exceed a height of 20 feet to be consistent with the existing parking lot lighting. With that, Mr. Chairman, I can read out the departmental correspondence.

Mr. Wilshaw: Yes, please.

Mr. Taormina: The first item is from the Engineering Division, dated November 17, 2020, which reads as follows: *"In accordance with your request, the Engineering Division has reviewed the above referenced petition. We have no objections to the proposed project at this time. The property is assigned the address range of #29250 thru #29350 Plymouth Road, with an address of #29250 Plymouth Road assigned for the overall parcel. The legal description included on the plans submitted by the owner appears to be correct, and should be used to describe the parcel. The proposed development is currently serviced by public water main and sanitary sewers. The submitted drawings indicate that new utility connections will be constructed to service the proposed building layout, but they do not indicate whether the new utilities will be private or public. Depending on the ownership of the proposed utilities, easements may need to be provided. The drawings do indicate that underground detention for the storm water is planned, but there are no calculations for the systems at this time. The proposed construction will be required to meet the Wayne County Stormwater Ordinance, including detention requirements. A full review of the proposed development will be completed when plans are submitted for permitting. It should be noted that although the City of Livonia will be reviewing the utility plans for the project, additional permits from Wayne County and MDOT will be required for work in the Middlebelt Road and Plymouth Road right-of-way's."* The letter is signed by David W. Lear, P.E., Assistant City Engineer. The next letter is from the Livonia Fire & Rescue Division, dated November 12, 2020, which reads as follows: *"This office has reviewed the site plan submitted in connection with a request to re-develop the commercial center (Shoppes of Livonia), including demolishing a portion of the existing building, the construction of a restaurant with drive-thru facilities in the vacated space, remodel the existing building's exterior, construct a building addition to the*

existing building and the construction of a stand-alone multi-tenant commercial building on property located at the above referenced address. We have no objections to this proposal.” The letter is signed by Greg Thomas, Fire Marshal. The next letter is from the Division of Police, dated November 11, 2020, which reads as follows: *“I have reviewed the plans in connection with the petition. I have the following objections to the proposal. I am concerned with the driveway just south of Chick-fil-A. I expect there will be a high traffic volume coming from the business and utilizing that driveway. There is a great possibility for traffic congestion and traffic crashes for vehicles attempting to exit and turn left onto southbound Middlebelt. My recommendation is to post a Right Turn Only sign at the exit.”* The letter is signed by Scott Sczepanski, Sergeant, Traffic Bureau. The next letter is from the Inspection Department, dated December 10, 2020, which reads as follows: *“Pursuant to your request, the above referenced Petition has been reviewed. 1. Signage shall be installed according to the ordinance. Any excess signage will require a variance from the Zoning Board of Appeals. 2. Parking spaces are required to be 10' x 20' and double striped. This Department has no further objections to this Petition.”* The letter is signed by Jerome Hanna, Director of Inspection. The next letter is from the Finance Department, dated November 12, 2020, which reads as follows: *“I have reviewed the address connected with the above noted petition. As there are no outstanding amounts receivable (general or water and sewer), I have no objections to the proposal.”* The letter is signed by Connie Kumpula, Chief Accountant. The next letter is from the Treasurer’s Department, dated November 12, 2020, which reads as follows: *“In accordance with your request, the Treasurer’s Office has reviewed the name and addresses connected with the above noted petition. At this time there are no taxes due, therefore I have no objections to the proposal.”* The letter is signed by Lynda Scheel, Treasurer. That is the extent of the correspondence.

Mr. Wilshaw: Are there any questions of the Planning Director? I have a quick question. The only deficiency on this plan is parking, correct? That is the only reason they would have to go to Zoning Board of Appeals?

Mr. Taormina: The signage for the Chick-Fil-A is clearly beyond what the ordinance allows. If you look at these renderings...and we don’t have details on the signs, but in this case, two signs would be allowed since this would be considered a corner lot. One facing Middlebelt and the other facing Plymouth Road. The plans

show signs on all four sides of the building, which would require a variance.

Mr. Wilshaw: Okay.

Ms. McCue: I apologize. May I ask a question, Mr. Chairman?

Mr. Wilshaw: Of course, Ms. McCue.

Ms. McCue: I was just wondering...not a ton of frontage on Plymouth Road, but will the PRDA be seeing this as well?

Mr. Taormina: We will bring it to the PRDA the next time the Board meets. This project does not involve much in the way of streetscape improvements, since these already exist on the subject property. Unless the PRDA wanted to see some modifications. We would intend to submit this to either the full Board or the Executive Committee sometime in the next month.

Ms. McCue: I agree there isn't a whole lot in that space, but consistency I guess is always what we want to take a look at.

Mr. Taormina: Thank you.

Ms. McCue: Thank you.

Mr. Wilshaw: Any other questions for our Planning staff? If not, our petitioner is here in the audience. If you could just use the raise hand button to indicate who you are. Mr. Jarbou and Mr. McPherson. I think there are a few representatives on this item. Very good, thank you. We will start with Mr. Jarbou. Good evening. You can unmute yourselves.

Frank Jarbou, 4198 Orchard Lake Road, Ste 250, Orchard Lake, MI 48323, I know that we are in different times now meeting via Zoom. Normally I like to be in front of the Planning Commission and discuss this great project that we do have. I just want to introduce everyone that we have on our team. We have Jenny that is our Project Manager, Mike McPherson from Atwell Hicks, which is the Site Engineer, we have Justin from Chick-Fil-A, and we have Michael from the traffic study that we did on the site. I know that last week when we went through the study session, we had a lot of concerns and some questions about traffic. We went back to Justin and Chick-Fil-A staff, which has done a phenomenal job I have to say with other store openings, and they plan to do the same thing here. They have developed a

plan to work on the traffic...adjust the traffic, and I think that was provided to the Planning Commission staff on how we have a plan in place already even though the store is probably another 18 months from opening up. We want to be transparent with that plan and we want to have the Planning Commission look at it and have the City look at it and see if we can adjust in any way. We have given Chick-Fil-A the authority to do this plan and to work inside our vast parking field that we do have in order to accomplish a successful opening. I do have to remind everybody that we know that Novi opened up during COVID conditions and there were no interior seating allowed. That created a little more influx on the drive-thru obviously. We all hope that it goes away and we are allowed to sit in restaurants again. Hopefully, when that does go away and by the time that happens and Northville will be opening soon, so we will have two stores in the area. Northville is supposed to open up next month. Hopefully, it will drive some of the honeymoon period over there and get that out of the way so when this opens up it is not as busy as the other one to begin with. We have another store hopefully opening up in Canton. We don't know the timeline on that. But hopefully getting there soon and deviate from this traffic as well. I know that after the meeting last week we talked to Mark and he said that the Planning Commission did have some concerns about the phasing process and how long this would take, ultimately for the whole project. Our full intention is to get this done as soon as possible. Meaning, Phase I with the Chick-Fil-A, Phase II with the out lot and Phase III with the rehabbing the existing building with all four facades on it. Timeline...I would say...with construction being a part of it and winter conditions...we would love to get this done between 18 months, which is a realistic timeline, and possibly two years. It depends on tenants and what we have going on, but we are hoping to have this thing completely wrapped up within that 18-month timeline. So, it's not as if we want to go in there and construct the Chick-Fil-A, and then sit with our arms crossed and wait for the next tenant. We are aggressively marketing this development. We have a lot of interest in that out lot. That out lot could potentially turn into a single-tenant use. We do have a credit union that is taking a look at it right now. We are coming in to get the retail approved, but in retail and everything else we do and everything you are seeing out there is constantly changing. When our group first purchased the property over a year and half ago, we put multiple plans in place and let the market dictate to us what we would ultimately see here. We had a couple different variations. Thankfully we have come to an agreement with Chick-Fil-A and hope you all welcome them

as we have. We think it is a good plan. I am here to answer any questions or concerns and whatever else you guys need.

Mr. Wilshaw: Thank you, Mr. Jarbou. With you tonight you have Mr. Lurk who is from Chick-Fil-A, correct?

Mr. Jarbou: Yes, sir.

Mr. Wilshaw: Good evening, Mr. Lurk.

Justin Lurk, Chick-Fil-A, 5200 Buffington, Atlanta, GA 30349. Thank you having me again. As Mr. Jarbou stated, I would love to be there in person, but this will have to do for now. As Mr. Jarbou stated, we regrouped as a team after our call last week. We came up with a proposed traffic plan. Typically, our grand opening team would put that together, but upon your request we certainly understand this was an item of importance. I think we are faced with a pretty unique situation here. I wish all of our sites were seven acres to where we could utilize the majority of that property for our openings. This will certainly be unique to this property. I certainly appreciate Mr. Jarbou and team for allowing us to do that. What you are seeing on the screen now is just a proposed draft of what a traffic plan could look like. I will try to walk you through that. So, let's start down on Plymouth Road. If you are heading westbound on Plymouth Road, all of the red arrows represent how you could potentially enter into the property or what we think the traffic plan would be to enter in to the property. We would try and drive the traffic in to the east Plymouth Road entrance. We would hope they would pass by the west entrance and accomplish that with some signage to not allow them to enter into the second curb cut off of Plymouth Road, but rather direct them north on Middlebelt Road and then entering in to one of the two entrances off of Middlebelt Road to queue into our drive-thru lane. As discussed last week, we would propose temporarily close off the middle access point off of Middlebelt Road as you are seeing there. Then if you are heading north on Middlebelt Road and you missed the first entrance and the middle one is closed off, you can go all the way to the north entrance and enter there. We would propose to route traffic all the way around the existing retail building. Then you can see we would propose to block off the drive aisle in front of the retail building just so people...to consolidate the flow of traffic and not have so many points of ingress/egress to get into the drive-thru and direct traffic into one main route to get into the drive-thru. As you pick up your food, the blue arrows would represent the path that you would

take leaving the drive thru. We would propose to direct all traffic to the south towards the vacant Walgreen's parcel. Then you have choices to go north or south off of Middlebelt Road, as you can see with the blue arrows there, or route around the vacant Walgreens parcel on that cross access and get down to Plymouth Road and either head westbound or eastbound on Plymouth Road. We feel this accomplishes the concern around traffic. We would provide this draft traffic plan to our grand opening team so when they do get on site, they got a running start on how to potentially direct traffic on site. I wanted to go through that. As was mentioned, that was the main item of importance that we talked about last week and we are certainly here to answer any and all questions that either the Commission or the public would have. Thank you.

Mr. Wilshaw: Thank you, Mr. Lurk. Mr. Jarbou, did you want to add an additional comment?

Mr. Jarbou: Yes. We have with us Mr. Labadie also. He is the traffic consultant that was hired to perform a traffic study, piggybacking off what Mr. Lurk said I would love for him to jump in and explain...I think he gave you guys a bullet point of that comprehensive traffic study that he did.

Mr. Wilshaw: Thank you. Welcome Mr. Labadie to our meeting tonight.

Michael Labadie, 27280 Haggerty Rd., Ste C-2, Farmington Hills, MI 48331. Haven't been there for a while. If you would like, I can go through the study. I don't know if any of you tried to struggle through it or not. I think the study in itself is one that we started where you have to get a scope of work for what...in this case, we had to go to MDOT, and we had to go to the city. Middlebelt is owned by the county, so we had to go to the county and asked them for a scope what they wanted to see in the study. We have reflected that in what we did. As far as the power point goes, the first slide that you are seeing are the existing conditions. The existing conditions are...how is it working today and what kind of things are challenges that...if there are any, and operationally there are a couple things that we found looking at that. I don't know if you can see it very well, but there is a kind of a challenge that is there. If you look at the aerial view and you look at the traffic queues on Middlebelt Road versus the traffic queues on Plymouth Road, it is kind of a typical thing that is going on out there. There is a lot more traffic that we nearly double the traffic on Middlebelt Road than there is on Plymouth Road. That is a little thing that shouldn't be

going on but is. Anyway, as we went through this you might wonder how we do traffic counts and do a traffic study now when hardly anybody at the time is out on the road. We had to get historical counts. We went out and counted the turning movements and then we upped the counts based on historical information. That was something that was accepted by MDOT and county. Can we scroll to the next...the way these traffic studies work, there is an analysis that is put together by the Federal Highway Administration and it comes up with something that is called Level of Service. Level of Service has grades, A through F. A being good and F not being so good. You can see the...those are seconds of delay. Those little categories in the boxes there, and they are a little bit different for signalized intersection versus an unsignalized intersection. Suffice it to say the Level of Service D is considered acceptable. There are an awful lot of intersections like driveways and unsignalized intersections that come out on to public high-volume roads that operating at a poor level of service. If you think about...say you are in one of the drives or establishments on Middlebelt and you try to pull out, you are there 20 seconds to a minute easily depending on the time of day. Can we go to the next slide? So, today you have Middlebelt Road and Plymouth Road intersection operating poorly, relatively speaking. You have the southbound approach operating at a Level of Service of E. In a lot of cases, that isn't a bad thing in an urban area with a lot of traffic on it, but overall, the intersection is operating at a C in the morning and D in the afternoon. That is a calculation of the four approaches to come up with a number or a letter for the intersection as a whole. The others are all stop signs and controlled driveway types and to have a 40 second delay in the morning at Middlebelt in the north driveway is...and there are no gaps in the Middlebelt traffic is probably what that is telling you. Down on the bottom, the same thing on Plymouth Road in the evening. In the evening these are...sometime in the morning between seven and nine and in the evening between four and six. So, we have some challenges getting out on to Plymouth Road in the evening with the Level of Service E. Can we go to the next slide? One of the things that we found as we looked at this intersection, and to be honest here, we don't have any explanation for this yet, but I can...I don't even want to speculate, but the intersection right now, if you have left turn phases, in other words you get a green arrow to turn left, on the opposite direction it is usually when that green arrow is on, the opposite direction right turns are able to be made without any conflicts either. In this intersection, what we are proposing is that this intersection could stand to have that, and it doesn't.

We are saying that that is something good to add. It reduces the delay and people get a green indication and can make a right turn and the opposite direction of the left turns. Another important thing that is not there but should be it seems is that push buttons are there for people crossing Plymouth Road but not crossing Middlebelt. Middlebelt is the one that needs more green time. Right now, Plymouth is getting more green time than it should and not only that, but it can't give any to Middlebelt because there is no pedestrian buttons. The idea of the pedestrian push button is that it gives some minimum green time, but it doesn't give all the green time that would be necessary for a pedestrian to walk all the way across the five or six lanes. So, if there were push buttons there the intersection would be able reallocate green time and give it to Middlebelt and those queues that you see in the aerial wouldn't be there, or certainly wouldn't be as long. We are...those two things are existing items that we are not sure why they are there because it wasn't that long ago the intersection was modernized. I am not real sure about that, but it needs to get dealt with. It is an MDOT and Wayne County coordination thing, I think. None the less, somebody is going to have to go back out there and do it. Next slide. Well, you already learned about that. Next slide. So, in the future, if you notice there are two tables here. One with improvements and one with no improvements. If you don't fix the challenges that I have pointed out at Middlebelt and Plymouth, you end up with some new challenges when you add our site development traffic to it and you grow the background traffic. As far as the other driveway approaches, the delays go up because there are again, especially coming out on to Middlebelt, it is going to get worse until we get it fixed...getting the signal fixed...with better traffic flow and more gaps to get out. That is where...this one shows that there is an awful lot of information that says we need to get that intersection timed better. Future improvements show that the Middlebelt and Plymouth intersection get better with those changes as we talked about. The middle driveway has some challenges in the PM peak hour and the Plymouth Road east driveway has some challenges during the PM peak hour. For the most part, the site can accommodate the traffic, but there is some changes that need to be made at the intersection. Can we go to the next slide? I kind of already explained some of this. To save some time, but not only does it add the green arrows and the pedestrian push buttons but we are talking about changing the cycling on the traffic signal as well. We are also recommending that there be one lane inbound and two lanes...so each approach would be three lanes instead of two coming out of the

site. Next slide. Any questions? I mean it is kind of a big report and I tried to gloss over it a little bit, but does anyone have any questions that I can help with?

Mr. Wilshaw: I agree, Mr. Labadie, it is difficult to go through an entire traffic report in a short time, but you did a good job. Do we have any questions for staff at this point? I see Mr. Taormina has his hand up.

Mr. Taormina: Mr. Labadie, could you please explain something? When you identify westbound traffic at the north driveway, what exactly are you referring to? I am guessing northbound and southbound are the vehicles turning out of the north driveway heading either north or south on Middlebelt. And maybe eastbound is the traffic turning from Middlebelt Road into the site, but what is westbound?

Mr. Labadie: There is a challenge...can you see...move your arrow up a bit. There is a driveway that is offset. You see that? It is on the west side of the road.

Mr. Taormina: Maybe if I go to the aerial photograph it will show it?

Mr. Labadie: You can't quite see it. Right there, yeah. Traffic actually uses that. We counted that as an adjacent street. It makes it a little difficult if they happen to go out of there because there is a lot more cars and there is an offset kind of conflict.

Mr. Taormina: Okay, so to just clarify, when you say westbound you are talking about traffic that would exit this north driveway and cross over Middlebelt Road and enter...

Mr. Labadie: No, they are just going westbound out of that approach.

Mr. Taormina: They are going westbound from here?

Mr. Labadie: Out of that approach, whether they turn left or right, I assume not too many go straight through.

Mr. Taormina: Okay, so westbound refers to vehicles exiting the site?

Mr. Labadie: Correct. It will have a right, a thru, and a left out of there.

Mr. Taormina: So, the Level of Service relates then to all the turning movements at Middlebelt at the north driveway.

- Mr. Labadie: Correct.
- Mr. Taormina: But, then northbound itself are referring specifically to through traffic on Middlebelt Road or turning vehicles?
- Mr. Labadie: Through traffic on Middlebelt.
- Mr. Taormina: Through traffic?
- Mr. Labadie: Middlebelt doesn't have to stop so it is free.
- Mr. Taormina: Thank you, that helps. It helps me to better understand the structure of the report.
- Mr. Labadie: I tried to make it easy, but it is what it is.
- Mr. Wilshaw: Any other questions from the Commissioners?
- Mr. Caramagno: I do agree it is hard to lay this out in a short period of time, but there was a lot of discussion about the changes that need to occur at the intersection. Wayne County and DOT. Whose responsibility is that and what would be the time frame in coordination with a Chick-Fil-A here?
- Mr. Labadie: That is a problem. There is no Chick-Fil-A out there and those queues and the poor operation that is happening today...who is responsible for that? It seems to me that Wayne County should have complained, and they may not be aware of it. I don't know. They should have complained to MDOT when they did this. It is an existing problem, and it is something that should be worked out because when you have a signalized intersection with an MDOT road...MDOT actually owns the signal, so the participation in the cost and design of the changes should have been coordinated through Wayne County. I don't really have a good explanation why it works the way it does.
- Mr. Caramagno: I understand that, but in putting a Chick-Fil-A on this corner and rehabbing the corner, which it needs, it further contributes to the problem. What gets MDOT on the ball here? Or Wayne County on the ball? Does the developer put a request in that he has a problem with the intersection that he shares? Or who gets this thing cooking?
- Mr. Labadie: Hopefully the city now knows about it, and the city gets a hold of Wayne County and the State and they point out that Mike Labadie came up with this problem in this study at this

intersection, can we meet about it. I think that is what you should do. It is a strange unique problem, but I think it is something that the city should run with because you know about it. Wayne County and MDOT do not know about it right now. Unless you want the developer to contact them, but it would have more clout to get done is the city did it.

Mr. Jarbou: We are more than willing to work with Mr. Taormina and also Wayne County and MDOT to try figure out how to get this thing resolved. Mr. Labadie said that this is an existing issue...Mike with making the corrections there it obviously existing the way it is it would help it tremendously, but with the refinement that you are proposing and having the Chick-Fil-A there, it could still work in your opinion I am assuming.

Mr. Labadie; Yes.

Mr. Jarbou: We have done this in other areas where we have gone into redevelop. We would be more than happy to work with whoever it is on the city staff, but we would need some support from them to carry more clout with Wayne County and MDOT, but we are more than willing to step up and get that done. Hopefully, with the timeframe that we do have which we have done in the past. Wayne County has been a bit difficult to get a hold of, but MDOT has been great to work with, but we are more than willing to interject and try to get that resolved.

Mr. Wilshaw; Perhaps our City Engineer can help facilitate that as our official in the city that is responsible for engineering and traffic engineering to that extent.

Mr. Jarbou: That would be a great thing if we could get him involved. Mr. Labadie, your engineer and us, we can show a good force and get this thing done.

Mr. Wilshaw; it is interesting that you pointed out that the right turn lane signal, the arrows, aren't there and that is a recommendation to improve those because I have noticed in the last several years many intersections as they have been upgraded, being this one and Farmington and others, have been removing those arrows. I don't know if that is a change in the Michigan Manual of Traffic Control Devices or why these right turn arrows are being removed, but it is something I have noticed at many intersections around the city.

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- Mr. Labadie: I don't know if they are for the same reason, I am not sure. It might just be...you would have to check it out as to why they are taking those out. This is a popular thing to do. It helps.
- Mr. Wilshaw: Yeah. There are a lot of people that will sit at the intersection and wait because they aren't sure if they can go or not.
- Mr. Labadie: Correct.
- Mr. Wilshaw: Interesting. I didn't know as a traffic engineer if you were aware of any changes of rules that would justify why they are taking these out.
- Mr. Labadie: Sometimes...I don't want to speak for...make it too generic, but sometimes they are up for the wrong reasons when they are making improvements. You don't see too many of them with this doghouse kind of configuration.
- Mr. Wilshaw: Thank you. Good Point. Any other questions for the petitioner?
- Mr. Bongero: Going back on Sam's point, so right now it needs to be adjusted the way it is right now. So, right now you are saying this intersection, whether Chick-Fil-A goes in or not, should have these timing adjustments and modifications done, correct/
- Mr. Labadie: Correct.
- Mr. Bongero: Okay, so with Chick-Fil-A there, we know it is going to increase the volume tremendously. At least through the honeymoon period it is going to be a lot of people trying to figure out the entire entrance and exit...so, if the city doesn't step in, to me this would have to be resolved before that Chick-Fil-A opens or we are going to have chaos. That would be my thought. Would you agree with that?
- Mr. Labadie: I don't know about chaos; I don't know about that. I do know it sure would make things a lot better if it was. Either with or without the Chick-Fil-A it would be a good thing to do. It is important. I don't know that...certainly if you put a Chick-Fil-A in without making the improvements we are going to have to look at retiming that signal to make it at least a little more optimal than it is now. Some of it...a couple of the things...although I am 99% sure it is not 100% right thing to do, but you could set it up so you just had the pedestrian crossings the opposite of what they have there now. That would help a lot to reassign green times for pedestrian crossings. As far as the arrows and that,

that could take a little bit longer, but there are some short-term things that you could do real quick that I don't think would take very much to do. I still think you are right. It would be great to have this done before Chick-Fil-A and the sites operate. It's not that hard to get it done, it's just a matter of getting everyone to agree to it and unfortunately there are three parties here.

Mr. Bongero: Thank you.

Mr. Wilshaw: Thank you, Mr. Bongero. Any other questions for our petitioners?

Ms. McCue: I think at one point you had mentioned that the middle entrance off of Middlebelt would be temporarily blocked. Am I correct? During the opening phase, did I hear right?

Mr. Lurk: That was a recommendation that we had.

Ms. McCue: Okay. How long, just hypothetically, because I agree with you, I think the honeymoon phase is going to be critical in there, but what was your thought process when you created this flow? How long would you think this would be closed or blocked off? Would it always be blocked off? During peak time?

Mr. Lurk: I think it would be blocked off...instead of just cones, because we have all seen that people don't adhere to cones, that you might need some more permanent barricades for a week or two starting off while everyone gets used to it. That would be my initial feel. I think that is up to...once we get open, we would certainly have to play that by ear.

Ms. McCue: Okay, the other thing is that the traffic bureau had indicated that they would like to have a right turn only indication at that exit as well. What is, I am not sure who that question is geared toward, but what are your thoughts for that? Trying to get out of that particular exit and turn left on to Middlebelt during peak times is going to be challenging.

Mr. Labadie: If we get the signal retimed and the modifications implemented that we talked about you won't have the queues that you have there now, so whether or not you are trying to relate to the existing condition, just know that the existing condition could be quite a bit improved. Again though, it is the operation of a stop sign controlled access on to a high-volume road is the function of gaps. There are fewer gaps on the higher volumes, so it is going to be more of a challenge getting in and out. Not to the

level though where we would agree that a right turn only needs to be there. We are going to have to get some kind of approval from Wayne County too because they control the permit. It would be probably a call by Wayne County, and they would probably allow it the way it is the way we are recommending it with three lanes. Two out and one in. If some sort of problem manifested itself, they may resort to a right turn only.

Ms. McCue: Okay.

Mr. Jarbou: Just to clarify, the gaps you speak of in your traffic study would indicate that at Middlebelt there would be a stop and at that point it would create the gap to allow someone to make a left turn lane and that is what you are talking about adjusting the timing on the particular light to allow that gap to happen.

Mr. Labadie: The intersection traffic would clear more regularly and completely. Right now, it doesn't do that. That's the point

Mr. Jarbou: If you were to time those more efficiently, even now, that would help our tremendously. With having the Chick-Fil-A there it would create the gap that is needed, and the honeymoon period is done someone could make a left turn successfully out of there, correct?

Mr. Labadie: Correct.

Mr. Jarbou: One more thing. With your experience and with what you have done here, I am sure that not all of us have had the experience that you have, how difficult of a process is it to work with Wayne County and MDOT to get these changes implemented and would we...if we are talking...with the blessing of the Planning Commission and having this be a fall opening, is that timeline appropriate to get these changes done?

Mr. Labadie: If we get moving, yeah. We are going to need the city on this, so it seems that the city would be committed to getting this to work better. It is not a problem if we can get help with the city.

Mr. Jarbou: I just wanted to clarify that.

Mr. Wilshaw: Ms. McCue, are you all set?

Ms. McCue: Yes, I am all set.

Mr. Wilshaw: Any other commissioners with questions for our petitioner?

- Mr. Long: I am just echoing Ms. McCue's concern about the left turn on to Middlebelt Road. I also see the suggested path of the exit on to Plymouth with a right and left turn option. I think you are going to have the same problems turning left. Again, not necessarily a question for anybody, but as this is all looked at it has to include thoughts about that as well.
- Mr. Wilshaw: That is a good point Mr. Long. In regard to gaps in the southbound traffic on Middlebelt, which seems to be the bigger concern that we have. The thing creating those gaps will be the traffic light probably up by Costco and Millennium Park because that is the next most northern light that would create those gaps for the southbound cars.
- Mr. Long: I know you are going to have that light at Middlebelt to stop the eastbound traffic...I mean, that intersection stacks up pretty good with westbound traffic. I know people can sometimes be polite and sometimes they can't be, but you know...I think that will be a challenge. I don't know how you solve that unless you do left turns out of the eastern most driveway, or at least try to direct people down that way.
- Mr. Wilshaw: Right.
- Mr. Long: Not really a question, more of a comment. Thank you.
- Mr. Wilshaw: Any other questions or comments?
- Mr. Ventura: I guess this is for Mr. Labadie. I am looking at your report. Trip generation for proposed development and I have never really read a traffic report before so I am going to say that I am interpreting this, but my question is, is that an estimate of added traffic that you think Chick-Fil-A is going to add to this area?
- Mr. Labadie: Are you looking at Table 1 in the report?
- Mr. Ventura: I am.
- Mr. Labadie: Okay, good. That is not just Chick-Fil-A. It is other parts of the development as well. The Chick-Fil-A numbers, the third list down talks about the type of land use and it talks about the size. It says am in, am out, and total. That will be the total number of inbound in the morning during that peak hour. 51 and then 54 out for a total of 105. The peak hour in the morning is sometime between seven and nine. In the afternoon, sometime between

four and six. The reason that those times are there, is because those are the times that traffic peaks on Middlebelt and Plymouth. Yes, that is the numbers that will be for just the Chick-Fil-A during those hours.

Mr. Ventura: If I read the footnote under the chart correctly, these are all based on a Chick-Fil-A down in South Bend, Indiana. Is that correct?

Mr. Labadie: Correct. They have...

Mr. Ventura: Why did you not use the store in Novi?

Mr. Labadie: Well, the store in Novi...nobody collected that data. These are studies that were done by other firms before the data was published. It is pretty much accepted practice to use the similar uses generating similar trips. That is not an uncommon thing. If I were to...if you were to look at the shopping center numbers for example. If you go into the IT trip generation manual, you will probably find out that there are hundreds of offices from all over the country, not just from around here. That is kind of how it is done.

Mr. Ventura: I will take your word for that. My only experience is with Novi and the volume that I think that Mr. Lurk used, is honeymoon period that they had out there. It has been literally hundreds of cars in the parking lot waiting to get into the line to get on site and once they are on site, based on my count when I drove through about a week ago, there were between 70 and 80 cars in line. I am imagining that during the honeymoon period here, we could see 200 or 300 cars waiting to get on this site.

Mr. Labadie: That is possible.

Mr. Ventura: I don't know where you put them.

Mr. Jarbou: Mr. Ventura, that is also because there are no restaurants open right now. You are very limited on food. That has something to do with it I would say. Also, I don't know if Novi is a good indication of what is maybe...they don't have the parking field that we do. I would be more than happy to pick you up and we can go to Allen Park and they have the parking field. We can talk it over with a chicken sandwich. I am just trying to compare apples to apples. It is unfortunate that COVID is...what is happening, but a tremendous amount of restaurants are closed and the...obviously, choices are very limited when you want to

go out now. I am not trying to deter and say that it won't bring traffic, it definitely will.

Mr. Labadie: Frank, there is another point for Mr. Ventura that we have to keep in mind here too. That there is not a lot of competition for the Novi site yet. The popularity is going to wane as you get more Chick-Fil-A's constructed. There are a few more coming online soon. That will influence the outcome of the traffic that is going to be too. That is why the traffic numbers that we put into the study from Indiana was because that is a steady state before COVID.

Mr. Ventura: I guess, first of all, Mr. Lurk said you don't put these restaurants close together. The closest he said you put them together is five miles. So, when I went to a source that provides me with demographic information, I discovered that the population within five miles of Novi is half of the population within five miles of this restaurant. I don't see Northville and Canton relieving pressure on Livonia. I think we are going to have tremendous response to this restaurant. It is all good for everybody, but I am not convinced that we have a plan that is going to accommodate the kind of the traffic that this thing is going to generate during the honeymoon period. I am not sure that we have a plan that is going to accommodate traffic on a continuous basis. I was talking about this in my office and one of the people that works with me sent me a FOX news article that talked about Chick-Fil-A in Ohio being sued by the adjacent businesses because the Chick-Fil-A traffic was using their parking lot and blocking entrance to their businesses. We have a McDonald's immediately to the north of this. We have a huge shopping center southwest of it and shopping south of it. We have all kinds of neighbors around here and the last thing we want to do is choke off the circulation in this area to the extent that it damages their businesses and creates an ongoing problem. I guess that is a thought. I agree with Ms. McCue and other commissioners making a left turn out of this site, either to Middlebelt or Plymouth Road, is going to be not impossible. I understand, Mr. Labadie, that you are doing a lot of projections here, which is what you do for a living and I respect that, but in your presentation, you made reference to Wayne County and MDOT many many times and urged that we need their help to resolve this, which I certainly am not arguing with, but I am uncomfortable approving this without having some response from them to say yeah. Your traffic study makes sense, and we agree with this and let's get this done, or no we don't agree with this and we have some other plans that need to be

accommodated and some other solutions that we you to consider. At this point, you are asking us to approve this on faith. Having seen what has happened in Novi, I have to tell you that I am not a believer at this point. I apologize for that, but that is just exactly the way that I feel. I have to be honest with you. One other point was that at our study meeting we talked about how we regulate traffic in the roadways. Out in Novi they have private security people because the ring road around the shopping center is a private road. They are not (inaudible) to Mr. Taormina and others able to private security people and not be able to regulate traffic and on the state and county roads you need police officers. I believe Mr. Jarbou, or somebody said that we will hire police officers. Who determines when they are needed? Who pays for them? I understand that this restaurant is going to be owned by an individual. I don't see him at this meeting, and I don't hear him making a promise to us that yeah, he is going to spend the money to hire these police officers, or to pay the city back for the expense that it incurs when we have a couple hundred cars trying to get into this site and people trying to turn left and turn right and go all over the place and try to figure this out. After the restaurant is there for a couple years, I am sure it will get figured out, but we don't want to do a lot of damage in the period of time that we are waiting for everybody to figure out how to navigate this site and to enjoy a Chick-Fil-A sandwich. Personally, I feel like we are a little bit ahead of the curve here because I don't feel that we have the honeymoon period traffic, that I feel certain is going to be generated, based on the surrounding population and the lack of adjacent restaurants figured out. I have a bunch of other notes, but I have taken up enough time and I think I have made it plain how I feel. I would be much happier and feel much more confident in approving this if we had more answers that somebody was saying that yeah this has been approved by MDOT and it has been approved by the county and here is how this is all going to work and with some degree of certainty that everybody kind of bought in to. Thank you.

Mr. Wilshaw: Thank you, Mr. Ventura. What I am hearing from you is, and I think it is a very good point, is you would definitely feel more comfortable if you had folks like the City Engineer and MDOT and Wayne County kind of signing off on this in advance and saying yes, we have looked at this and we know what the plan is. We are going to do this; we are going to do that. We know that this is not going to crater the entire traffic flow in the area, correct?

- Mr. Ventura: Mr. Chairman, you stated it better than I did. Thank you.
- Mr. Wilshaw: That is what I heard. You said it very eloquently and it is an excellent point, so thank you. We have Mr. Taormina next and we will see if anyone else wants to speak.
- Mr. Taormina: Thank you. To Frank and maybe Justin, I have questions regarding this graphic and the grand opening period, which refers to comments that Mr. Ventura made relative to the impact of adjacent commercial properties. I am looking at this plan and wondering how it might impact the expected occupancy of the building in the southwest corner, the former Walgreens. I understand that you may have cross access agreements in place to utilize these driveways, but am wondering, and this is something to explore as we move forward through this process, whether the incoming drive-thru traffic could be rerouted further to the north through the parking lot, to the extent that the site will be under construction have extra capacity. It would have far less impact on the corner property, realizing that it could be occupied or under construction by then, and there would not be much traffic demand for the other retail uses, except maybe the Office Depot. You would also have the flexibility of adding a second westbound lane somewhere in the middle of the parking lot that could then turn north to the driveway. I throw that out as a suggestion, because I really see a lot of potential conflicts here, especially if the corner property is under development or occupied by the time the Chick-Fil-A is open.
- Mr. Jarbou: We have no problem with that. No problem at all. We can definitely get that done. Justin, can you speak to and help Mr. Ventura understand that when new stores do open up and how far they are away, how much it impacts the...if Northville opens up next month and where Novi is right now and hopefully, we are in a COVID free, not COVID free but restaurants are back open with sit down seating, what do you feel that is going to pull away from a Chick-Fil-A in Livonia?
- Mr. Lurk: So, there were quite a few comments brought up and I do agree with you Frank. We looked at putting that drive or temporary drive a little bit further north to try and get that merge point as far away from the Chick-Fil-A building and we chose the south, but again this is a draft, and this could be a fluid plan. The good news here is it is over seven acres. I can't think of another Chick-Fil-A in our portfolio where we had seven acres to work with. I think that should give us a little more peace of mind. Some of the other locations that we are talking about are an

acre, less than an acre or an acre and a half, right? So, I think that is one advantage to this location. With that and the fact that there is multiple ingress and egress points that gives customers choices...helps here as well. To go off of facts and figures and again to reference the west side of the state when we opened up in Grand Rapids, we opened up Grand Rapids South as our first location and saw similar demand that you are seeing in Novi right now under COVID, pre-COVID conditions. Then we opened up our second location in Wyoming, Michigan, which was about six or seven miles away and the staff there was concerned as well, but at that opening they only saw the honeymoon phase filling out of our site just that first weekend. We have a letter of support from a city official over there to another city stating the same thing. I think you are overestimating the honeymoon period. We only saw that during the opening weekend. I think that is a good example of what we could be faced with here. I wanted to bring that up again as well. One point was you're not hearing from our local owner/operator. That is for a reason. They haven't been selected yet. The way our model works is that corporately we find the sites and we work with developers like Mr. Jarbou. We go through the city process because this is a sole source of income. This is their only source of income. We bring the franchise owner/operator on right before the store would open. They have to terminate any previous employment, so they are without a check for a while. We can't ask them to be doing that for a year. Sometimes it is a year or 18 months is we go through a city process with construction and development. The local franchisee owner/operator would be working with the city and again we would typically hire private security to help with traffic, but a lot of municipalities will just put cops out there to be proactive. They don't always charge us back, but when they do, we are happy to oblige and help out because that is a service they are providing. I wanted to answer those questions as well. Does that help?

Mr. Wilshaw: It does. Thank you, Mr. Lurk. Let me see if there is anyone else on the commission...we have spent a fair amount of time on this already, and I don't want to let anyone get missed. Is there anyone else on the commission wishing to address this development with the Chick-Fil-A, traffic, or any of the other buildings on this site?

Ms. Smiley: I am having a lot of technical difficulties and I lost you for a little bit there, but did they do a traffic survey on Haggerty? Was there any traffic survey prepared for that?

- Mr. Lurk: Yes, there was a traffic study done on Northville. I think that is what you are referring to, the Haggerty Road location in Northville. Yes ma'am. There was a traffic study done there and there were no improvements recommended based on that traffic study, but there was a previous pending improvement from Target. They added the traffic signal at one of our entrances. Again, that was an improvement that Target had put up there. So, if you go there now you will see a traffic signal to get into the Kohl's development that is across from the Target development as well.
- Ms. Smiley: Okay.
- Mr. Lurk: There was not a signal there when we first started looking.
- Ms. Smiley: There are now currently a lot of signals on Haggerty Road. That Haggerty and Seven Mile Road area. I know there was some building going on there and they are supposed to synchronize all the lights because there are so many and there is another building going up on Seven Mile or another development right on Seven Mile just by the I-275 exit, so I just wondered if there was any...there were no recommendations is what you are saying?
- Mr. Lurk: That is correct.
- Ms. Smiley: Okay, thank you.
- Mr. Wilshaw: Thank you, Ms. Smiley. Any other questions from any of the commissioners?
- Mr. Bongero: For Mr. Jarbou. Phase I sequence...just so I am trying to get a handle on what you would accomplish with Phase I would be come in, tear up the west end of that existing strip mall, rebuild that end, and do partial façade coming around the front and side, build the Chick-Fil-A, do the underground detention front and back, right, and then resurface the whole parking lot? Is that what you plan is? Like all the way up the drive up off of Plymouth Road all the way over to Middlebelt. That is all going to be done in Phase I?
- Mr. Jarbou: So, we can definitely work in those parameters. What we normally do is on a situation like this is, like you said, we come in there, demo the building, reconstruct that west wall, and wrap around the front to where the Office Depot is and hopefully by

then we would have a tenant for that last bay over there and do that as well and then all four sides would be done. There would be new pavement around the entire site and even if we didn't have tenants for maybe Phase II. At that point, we would still build that out and make it an at ready condition so we wouldn't have to go back in there with heavy equipment so that...make the pads at ready condition. Maybe leave it dirt but leave the parking field intact and create more parking and just also redo the landscape beds and redo the lighting with brand new LED lighting. We want to get as much done as possible. It costs more money to continue to come back and do Phase I, Phase II, Phase III. I would love to just come in and just do all of it at once.

Mr. Bongero: That is what my thought was too. I mean if you're going to do all that it is going to be pretty much restored and it is going to look pretty good until you do any of the other phases. It will pretty much be ready to go, right? I mean everything is going to be new...

Mr. Jarbou: Any additional work would be interior fit outs for each individual tenants. To just come back here and just do this long-drawn-out process over a three-year period doesn't make sense or economic sense. It doesn't make sense to the community. It's always under construction. We want to get as much as possibly done...again, I would love to do it all at once. That is what our goal is, to get it all done at once. Even if we were to leave the interior bays on the inside vacant, we do build these a little bit...the storefronts are interchangeable, so if we did get a tenant in and wanted a door in a certain place, we can do that. It costs a little bit more money, but it is easier to do that than to do full blown construction on a site like this.

Mr. Bongero: Okay. That answers my question.

Mr. Wilshaw: Thank you, Mr. Bongero. Any other questions from any of the commissioners? If not, let me check with our audience. First, before I go to the audience, there are some other folks, Mr. Jarbou, on your team that are in our audience. Is there anyone else on your team that is wishing to speak regarding what we have heard so far? If so, you can always click raise hand so we can recognize you and let you speak. If not, I do want to go to the audience and give them a chance to speak for or against this petition since this is a public hearing. Is there anyone in the audience who would like to speak for or against this item? If so, you can click raise hand. I don't see anybody raising their hand,

so I will go back to the commission and see if anyone else on the commission wishing to ask any questions or make any comments. I don't see anyone, so then I will take one last shot to the petitioner, Mr. Jarbou. Is there anything else you would like to say before we close the public hearing and make our decision?

Mr. Jarbou: Yes. I would just like to add that this is maybe looked at as heavy traffic, intensive development. I think if you look at the overall plan and what we are planning on here is enhancing a very dilapidated development that sat vacant for a very long time. As I indicated in the first meeting, this was an out of state owner I bugged for years to sell it to me so that we could go in there and redevelop it. This is what our specialty is. We go into sites like this that have been absentee owners that don't care about it and revitalize it. We have done numerous developments around town. Mr. Taormina, if you want to reach out to Plymouth or Canton, I am sure the Planning Commission or the planning guys out there would give you a thumbs up on what we have done. We hold true to what we do. We follow-thru. We work hand in hand with the city to make sure that our plan works for them and for everyone in the community. I want to add too that Justin has done a tremendous job in a lot of store openings. I can't tell you how many store openings he had done. He has done quite a bit. With him and his team, they are very committed when it comes to a situation like this and the ability to develop a site like this and work with the municipality and work with the local operator and try to execute correctly. I think that we have an advantage on our site that aren't always there for Chick-Fil-A. If you look at the Seven and Haggerty location, it probably sits on an acre and a half. Again, we are sitting on seven acres, which we are basically vacant, and we can accommodate and stack and help with the traffic flow. When we look at Novi over there, you are looking at one point of ingress and egress, where we have five multiple points of ingress and egress. We have identified the signals that can be changed and help. I really feel that Wayne County and MDOT, with the city's help, we can get definitely get them to agree that this is a better format of what Mr. Labadie recommends. We can definitely get that done in the timeframe for this Chick-Fil-A to open, if it is approved. I just hope that everyone recognizes the amount of effort and work that we have put into this. A lot of thought. We didn't just slap a plan together and say hey can we get this approved? No. We put a lot of time and effort in understanding and working with Mark. He has been tremendous to work with and the feedback that we have gotten

from you guys. I think we...within a week Justin got us back a plan of opening when normally they don't even have those plans in place except maybe a couple months prior to opening. We wanted to make sure that you had all the information and data that you do have. We have spent a lot of time and money and effort to consult with Mr. Labadie to understand and what needs to be done with those lights. Can the site accommodate a Chick-Fil-A? He addressed that it can by making those adjustments to the lights. As developers, we are fully committed to getting that done and working with the city and county and MDOT to work on that. I would appreciate and hope that we get this plan approved and can move forward. Again, we are not absentee owners, and we are not out of state. Our offices are just down the street. Mr. Taormina and I will become good friends, whether he likes it or not and understand how to get this thing done and get it executed. Thank you for your time.

Mr. Wilshaw: Thank you, Mr. Jarbou. I'll just let you know that Mr. Taormina is a very easy to make friends with. You're in good shape there. If there are no other comments, I am going to close the public hearing at this time and a motion would be in order.

Mr. Ventura: I just want to compliment Mr. Jarbou and Mr. Lurk and Mr. Labadie on their presentation today and ensure them, at least personally, that I am in favor of the Chick-Fil-A being here and I want to compliment them on their preparation and presentation tonight. Certainly Mr. Jarbou makes a great case, but that said I am still not comfortable with the traffic solutions and the many open questions that surround what MDOT and Wayne County may or may not do.

Tabling motion made by Ventura.
The motion failed due to lack of support.

Mr. Wilshaw: Another motion would be in order.

Mr. Caramagno: In looking at the approving resolution, #9 and #10, and speak to having traffic agreement with the county and with MDOT prior to opening. Can that language be stiffened up in any way that deems proper to accomplish what Pete wanted to do and what we need to do to make sure this thing is right?

Mr. Wilshaw: Mr. Taormina, do you have any thoughts on that?

Mr. Taormina: Well, one thought that comes to mind is between the time this item finds its way to City Council that every effort be made to

accomplish exactly what Mr. Ventura suggested. That is, to get some level of comfort from the other governmental agencies, Wayne County and MDOT, regarding the proposed traffic improvements. Maybe Mr. Caramagno could read aloud each of the conditions.

Mr. Caramagno: I can do that. Number 9 - that not less than six (6) weeks prior to the scheduled opening of the Chick-fil-A restaurant, the Petitioner shall submit to the Department of Public Safety Traffic Bureau for its review and approval details of how traffic will be managed, both on- and off-site, during the times when the stacking capacity of the drive-thru lanes is exceeded or when undue traffic congestion is occurring on the adjacent public thoroughfares. And number 10 – that all traffic improvements, including additions or modifications to the traffic signals, approach geometrics, or traffic lanes, as deemed necessary by either Wayne County or the Michigan Department of Transportation (MDOT) to mitigate the traffic impacts of the project, shall be completed prior to the opening of the restaurant. I think that is what some of us find necessary. Is it binding enough to say that yeah, we need something from the MDOT and the county in writing or an agreement prior to this thing opening, even after all your work is done?

Mr. Taormina: My comment is really related to number ten. We can add or modify the language as the commission sees fit. The other thing I would maybe change is the term “traffic impacts of this project” by just stating “traffic impacts”. After listening to the traffic consultant talk about the improvements needed for the existing conditions and other improvements recommended to mitigate the project impacts, we should make sure all the improvements are undertaken. That cost really must be borne by the developer. I don’t know what that would be...clearly the approach modifications are something the developer has in the plans. The other improvements, the signal timing and the pedestrian signals, I am guessing are not significant cost, but they are something that needs to be coordinated between the City, the County, and the State.

Mr. Caramagno: So, does that come back to be within the timeframe of this project? Or does anybody know that?

Mr. Taormina: They would certainly have to be completed before the restaurant opens. Was that your question, Mr. Caramagno?

Mr. Caramagno: Yeah. Is it realistic that those things can be done, and if we are talking about the fall for this to open...with COVID and who knows what 2021 is going to hold?

Mr. Taormina: Yes. These are not very capital intense projects, and I will let Mr. Labadie respond further to this, but we are not adding or replacing signals. While there may be some additional cost and time for modifying and upgrading the signals, I do not think these items are out of the realm of possibilities and could all be completed prior to the opening of the restaurant. Mr. Labadie?

Mr. Labadie: You are right about that. I don't know if it is insignificant. I don't want to write the check, but I am going to guess that you have to add some signal heads and hopefully all of the spans work out. The push buttons have to have their little pedestals and have them be in the right places. I don't know. It is probably less than \$50,000 but I am not 100% sure. We didn't really sit down to figure that out. I could have, but I didn't do that. It is also not just a matter of having to put in something that is going to take a long lead time to...for example, the signal poles. It is roughly 18 months to get a steel signal pole. This can be done and designed. The question is to get it approved and someone committed to doing it. That is the question. It can get done in the time this is going to open up. That is for sure.

Mr. Wilshaw: I think that is the main thing we are hearing from our commissioners. That we realize that this is going to cause a traffic impact. We want to try and minimize that traffic impact in the area as much as possible so that we don't want to get into the situation where the development moves forward and there is a traffic nightmare and then we are trying to wedge in fixes for that after the fact. We want to see those come online before.

Mr. Labadie: I understand. The folks from Chick-Fil-A want the same thing. I would guess thought that...I shouldn't guess. I don't know why the intersection is the way it is. It seems as though it shouldn't be. There is nothing really...it doesn't make sense to me, but a lot of things sometimes don't. Working with MDOT and the city and the county, I don't think it is going to be a big problem. We can get it done.

Mr. Jarbou: In one breath I told you that we are committed to the city and we are here to work with you and in the next breath I am going to tell you that if there is a cost to bear on this, we are more than willing to take that on. We can definitely. We will take on the project of getting this approved. I think we can get approved

prior to Chick-Fil-A opening if you want to make that part of your conditions. If there is a cost to bear with that, we want to make this improvement to the city and we will do that and we will bear that cost.

Mr. Wilshaw: Those are usually words to Wayne County's ears.

Mr. Jarbou: I am sure it is.

Mr. Bongero: I have a question.

Mr. Jarbou: Plus, I have a chicken sandwich to buy for Mr. Ventura.

Mr. Wilshaw: Go ahead Mr. Bongero.

Mr. Bongero: Mr. Labadie, would you propose these changes to the county and to MDOT and then their traffic experts either agree or disagree. You kind of go back around and somehow you guys agree to what is going to fix this. Who enforces it? Mark, is that the Building Department that enforces it before it opens? Who is out there watching it be adjusted and then stood up and that's it? It's perfect, let's go. Do you know what I am saying?

Mr. Taormina: That would be coordinated between the different agencies and city departments to make sure that the project was completed as agreed upon. The Inspection Department ultimately would take direction from either Planning or Engineering and maybe even MDOT to make sure everything is working out appropriately before issuing the occupancy permit.

Mr. Bongero: Thank you.

Mr. Wilshaw: Thank you, Mr. Bongero. So, we are back looking for a motion.

Mr. Ventura: Mr. Chairman, just a point of clarification before we move forward. Mr. Taormina, item ten in the approving resolution,...so this thing gets approved and they get a building permit, and they build the building, who or what entity makes sure that all of the traffic recommendations, as they are worked out between MDOT the county, are done prior to the issuance of Certificate of Occupancy?

Mr. Taormina: I am going to suggest that it be the role of our Engineering Department and MDOT and Wayne County. I am not sure about where the coordination and responsibilities lie. Maybe Mr. Labadie knows. I believe most of that is Wayne County.

Mr. Labadie: I can help you with this a little bit. The changes to the signal are going to be...let's just say that the developer is going to get taken up on his offer and they are going to do it. They would mean that he would pay for the design of the changes and he would come up with the plans. He would hire a contractor and there would be a permit from MDOT to make those changes. It would be really good if that coordinates with the opening of the restaurant. It will be close I would hope, especially because the developer will be able to control the schedule. I don't think that is going to be a big issue. But it is going to be a permit from MDOT. There will be some back and forth on plan review about what you are going to do. Frank can hire a contractor that is approved by MDOT and he is off and running. The MDOT permit will be inspected by MDOT or maybe MDOT would ask Wayne County to do it, but I doubt it. Did that help or make it worse?

Mr. Wilshaw: We appreciate the honesty.

Mr. Ventura: I would like to go back to Mark one more time. So, are you comfortable as number 10 is written that it requires that this work be done prior to the issuance of the Certificate of Occupancy?

Mr. Taormina: Yes. I am happy with that.

Mr. Ventura: Thank you.

Mr. Wilshaw: It is kind of the question I thought I was hearing. Basically, who is the final arbiter of who says yes all of these conditions have been met and you can now open. It seems like it is the Building Inspection Departments. Okay, again let's look for a motion.

On a motion by Caramagno, seconded by Smiley, and unanimously adopted, it was

#12-60-2020 RESOLVED, That pursuant to a Public Hearing having been held by the City Planning Commission on December 15, 2020, on Petition 2020-11-02-10 submitted by LS Equity L.L.C. requesting approval of all plans required by Sections 11.03(n)(3), 18.47 and 18.58 of the City of Livonia Zoning Ordinance No. 543, as amended, in connection with a proposal to re-develop the commercial shopping center (Shoppes of Livonia), including demolishing a portion of the existing building, constructing a full-service restaurant with drive-thru facilities

(Chick-fil-A), constructing an addition and renovating the exterior façade of the existing building, and constructing a multi-tenant retail building with drive-thru facilities, at 29250-29350 Plymouth Road, located on the north side of Plymouth Road between Haller Avenue and Middlebelt Road in the Southwest ¼ of Section 25, the Planning Commission does hereby recommend to the City Council that Petition 2020-11-02-10 be approved subject to the following conditions:

1. That the Overall Site Plan identified as Sheet No. C01, dated November 5, 2020, as revised, prepared by Atwell, is hereby approved, and shall be adhered to.
2. That the Landscape Plan identified as Sheet No. C04, dated November 5, 2020, as revised, prepared by Atwell, is hereby approved, and shall be adhered to, except that a plan for replacing the trees and other plant materials along the site's frontage on Middlebelt Road shall be incorporated as part of Phase 1 of the development and submitted to the Planning Department for review and approval, and shall be completed prior to occupancy of the Chick-fil-A restaurant.
3. That all disturbed lawn areas shall be sodded in lieu of hydroseeding.
4. That underground sprinklers are to be provided for all landscaped and sodded areas and all planted materials shall be installed to the satisfaction of the Inspection Department and thereafter permanently maintained in a healthy condition.
5. That the Exterior Elevations for the Chick-fil-A restaurant, as received by the Planning Commission and date stamped November 9, 2020, are hereby approved, and shall be adhered to.
6. That the Retail 1 – Elevations Plan identified as Drawing No. SD03, prepared by NORR, as received by the Planning Commission and date stamped November 9, 2020, is hereby approved, and shall be adhered to.
7. That the Retail 2 – Elevations Plan identified as Drawing No. SD04, prepared by NORR, as received by the Planning Commission and date stamped November 9, 2020, is hereby approved, and shall be adhered to.

8. That all rooftop mechanical equipment shall be concealed from public view on all sides by screening that shall be of a compatible character, material, and color to other exterior materials on the building.
9. That no less than six (6) weeks prior to the scheduled opening of the Chick-fil-A restaurant, the Petitioner shall submit to the Department of Public Safety Traffic Bureau for its review and approval details of how traffic will be managed, both on- and off-site, during the times when the stacking capacity of the drive-thru lanes is exceeded or when undue traffic congestion is occurring on the adjacent public thoroughfares.
10. That all traffic improvements, including additions or modifications to the traffic signals, approach geometrics, or traffic lanes, as deemed necessary by either Wayne County or the Michigan Department of Transportation (MDOT) to mitigate the traffic impacts of the project, shall be completed prior to the issuance of Certificate of Occupancy.
11. That the three walls of the trash dumpster areas shall be constructed out of building materials that shall complement that of the buildings. The enclosure gates shall be of solid panel steel construction or durable, long-lasting solid panel fiberglass.
12. That the proposed construction shall meet the Wayne County Stormwater Ordinance, including detention requirements, and the Petitioner shall secure all required permits, including soil erosion and sedimentation control.
13. That all new pole-mounted light fixtures shall not exceed a height of twenty feet (20') and shall be aimed and shielded to minimize stray light trespassing across property lines and glaring into adjacent roadways.
14. That this approval is subject to the petitioner being granted a variance from the Zoning Board of Appeals for deficient parking and any conditions related thereto.
15. That any future drive-thru restaurant in Retail 1 shall require waiver use approval.

16. That only conforming wall signage is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals.
17. That no LED light band or exposed neon shall be permitted on this site including, but not limited to, the building or around the windows.
18. That the specific plans referenced in this approving resolution shall be submitted to the Inspection Department at the time the building permits are applied for; and
19. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of one (1) year only from the date of approval by City Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

FURTHER RESOLVED, That notice of the above hearing was given in accordance with the provisions of Section 19.05 of Zoning Ordinance #543, as amended.

Mr. Wilshaw: Is there any discussion?

Mr. Wilshaw, Chairman, declared the motion is carried and the foregoing resolution adopted. It will go on to City Council with an approving resolution.



REPORT TO THE LIVONIA CITY COUNCIL

Planning

December 21, 2020

MEETING DATE

January 6, 2021

PREPARED BY

Stephanie Reece, Program Supervisor
Planning

AGENDA ITEM

SITE PLAN PETITION: Planning Commission, re: Petition 2020-11-08-07 submitted by Adams Park Development, L.L.C., requesting to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties located on the south side of Lyndon Avenue between Inkster and Middlebelt Roads (14416 Harrison Avenue and 28201 Lyndon Avenue, former Adams Elementary School site) in the Southeast ¼ of Section 24.

BACKGROUND

requesting approval of the Master Deed, Bylaws and site plan pursuant to Section 18.62 of the City of Livonia Zoning Ordinance #543, as amended, to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) located on the south side of Lyndon Avenue between Inkster and Middlebelt Roads in the Southeast ¼ of Section 24.

RECOMMENDATION

FISCAL CONSIDERATION

ATTACHMENTS

1. 2020-11-08-07_Adams Park_E-COUNCIL Pkt

APPROVED BY

PLANNING COMMISSION

IAN WILSHAW, Chairman
GLEN W. LONG, JR., Vice Chairman
SAM CARAMAGNO, Secretary
DAVID BONGERO
ELIZABETH McCUE
CAROL A. SMILEY
PETER H. VENTURA



MAUREEN MILLER BROSNAN
MAYOR

MARK TAORMINA
PLANNING & ECONOMIC
DEVELOPMENT DIRECTOR

SCOTT O. MILLER
PLANNER IV

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2290 Fax (734) 466-2108

December 16, 2020

Honorable Members of the City Council
City of Livonia, Michigan

Re: Petition 2020-11-08-07 – Adams Park Condominium Subdivision

Dear Council Members:

At the 1,163rd Public Hearings and Regular Meeting held by the City Planning Commission on December 15, 2020, in the Livonia City Hall, the following resolution was unanimously adopted:

#12-61-2020 **RESOLVED**, That the City Planning Commission does hereby recommend to City Council that Petition 2020-11-08-07 submitted by Adams Park Development, L.L.C. requesting approval of the Master Deed, Bylaws and site plan pursuant to Section 18.62 of the City of Livonia Zoning Ordinance #543, as amended, to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) located on the south side of Lyndon Avenue between Inkster and Middlebelt Roads in the Southeast ¼ of Section 24, be approved, and the Public Open Space requirement of the Subdivision Rules and Regulations is hereby waived, subject to the following conditions:

1. That the Site Plan identified as Sheet 03, dated November 17, 2020, prepared by Michael L. Priest & Associates, Inc., is hereby approved and shall be adhered to.
2. That the issues as outlined in the correspondence dated December 7, 2020, from the Fire Marshal shall be resolved to the satisfaction of the Livonia Fire and Rescue Division.

2020-11-08-07- Adams Park Development, L.L.C

3. That the Landscape Planting Plan identified as L-1 and the Landscape Notes & Details identified as L-2, both dated November 19, 2020 as revised, prepared by Nagy Devlin Land Design., are hereby approved and shall be adhered to.
4. That streetlights and sidewalks shall be installed throughout the development to the satisfaction of the Engineering Department.
5. That the condominium Master Deed and Bylaws comply with the requirements of the Subdivision Control Ordinance, Title 16, Chapter 16.04-16.40 of the Livonia Code of Ordinance, and Article XX, Section 20.01-20.06 of Zoning Ordinance #543.
6. That Section 6.7 Garages of the Bylaws shall be modified to include front entries where applicable.
7. That the brick used in the construction of each condominium unit shall be full face four-inch (4") brick.
8. In the event of a conflict between the provisions set forth in the Master Deed and bylaws, and the requirements set forth in the City of Livonia Zoning Ordinance No. 543, as amended, the Zoning Ordinance requirements shall prevail, and petitioner shall comply with the Zoning Ordinance requirements.
9. That the petitioner shall include language in the Master Deed and bylaws or a separate recordable instrument wherein the condominium association shall reimburse the City of Livonia for any maintenance or repair costs incurred for the storm water detention/retention and outlet facilities, and giving the City of Livonia the right to impose liens on each lot owner's property pro rata and place said charges on their real estate tax bills in the event said charges are not paid by the condominium association (or each lot owner) within thirty (30) days of billing for the City of Livonia.
10. That all required cash deposits, certified checks, irrevocable bank letters of credit and/or surety bonds which shall be established by the City Engineer pursuant to Article XVIII of Ordinance No. 543, Section 18.66 of the ordinance, shall be deposited with the City prior to the issuance of engineering permits for this site condominium development.
11. That only a conforming entrance marker is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals; and

To: Honorable Members of the Council
Re: ~~2020-11-02-10 Shoppes of Livonia~~

December 16, 2020
Page 3

2020-11-08-07- Adams Park Development, L.L.C

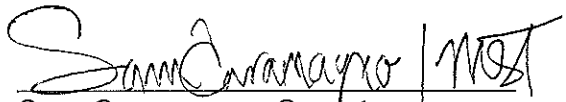
12. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of one year only from the date of approval by City Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

Very truly yours,

APPROVED FOR SUBMISSION

CITY PLANNING COMMISSION


Maureen Miller Brosnan, Mayor


Sam Caramagno, Secretary

cc: Mayor, Clerk, Law
Stuart Michaelson, Adam's Park Development, L.L.C., 31333 W. 13 Mile Road,
Farmington Hills, MI 48334

CITY OF LIVONIA, MICHIGAN
APPLICATION FOR SITE PLAN REVIEW & APPROVAL

All petitions for Site Plan Approval shall be filed with the City Planning Commission, 33000 Civic Center Drive, Livonia, MI 48154-3097. **Filing fee = \$600.00 plus \$20.00 for each 1,000 square feet of gross floor area of new construction, not to exceed a total of \$1,500.00.**

2020-11-08-07

Date Filed: NOVEMBER 19, 2020 Petition 2020-07-01-04
14416 HARRISON AVE. 46-095-99-0011-000
Site Address: 28201 LYNDON AVE. Sidwell 46-096-99-0004-000

Requesting Approval to CONSTRUCTION RESIDENTIAL SITE CONDOMINIUM

Applicant: STUART MICHAELSON Business/Company: ADAMS PARK DEVELOPMENT LLC

Applicant's Address: 31333 W. 13 MILE RD. City: FARMINGTON HILLS State: MI Zip Code: 48334

Applicant's Phone # (248) 538-7000 Applicant's Email STUART@WINDMILLHOMES.COM

Contact Person: STUART MICHAELSON Business/Company: ADAMS PARK DEVELOPMENT LLC

Contact's Address: 31333 W. 13 MILE RD. City: FARMINGTON HILLS State: MI Zip Code: 48334

Contact's Phone # (248) 538-7000 Contact's Email STUART@WINDMILLHOMES.COM

Please provide the following information:

1) **Site Plan** showing:

- property dimensions, including road right-of-way & building setback lines
- foot print of building(s), including dimensions & square footage
- all easements, protective walls, sidewalks & existing trees
- any significant topographic features (existing or proposed)
- parking layout, including type of surface material, sizes of spaces & aisles
- method used in calculating parking requirement
- location of light standards servicing parking lot & cutout showing type & height
- location of trash receptacle, including description of screening
- location of signs (if proposed must submit separate sign application)

2) **Detailed Landscape Plan** including:

- listing or labeling of all planted materials as to type and size
- areas to be fully irrigated
- percentage of landscaping provided (15% of total site required)

3) **Building Elevation Plan** depicting:

- architectural quality
- wall section & detail plan - exterior building materials must be labeled (i.e. brick, thin brick, E.F.I.S.)
- all visible rooftop mechanical equipment and how they will be screened

4) **General Floor Plan** showing:

- floor layout
- entrances & exits
- restaurants are required to illustrate seating arrangement & capacity

5) **One (1) set of reduced plans** (i.e. site, landscape, elevation, floor), **a maximum 11" x 17" in size, or digital file in a .pdf format either on CD or emailed to smiller@ci.livonia.mi.us**

6) **Legal Description** of the property to be considered (Clearly Printed)

7) One (1) completed application form & **sixteen (16)** sets of full-size drawings



You are invited and encouraged to review your proposal with the Planning Department staff. Only one set of preliminary drawings will be necessary for this analysis.

WWW.WINDMILLHOMES.COM



BUILDING TRADITION SINCE 1971

Our Award Winning History

Windmill Group was founded in 1998, but that really isn't when the story begins. It actually begins much earlier with the career experiences and life lessons learned along the way by its leadership team of Stuart Michelson and George Mager.

Stuart's grandfather was a plumber and the inspiration to begin his career as a plumber's apprentice after graduation from Mumford High and then the prestigious Detroit Institute of Technology. A proud member of the Plumbers Union Local 98, Stuart worked on new homes. It was there that he found his true passion. By 1983, he had amassed enough knowledge about residential construction to set off on his own to found Stewart Homes.

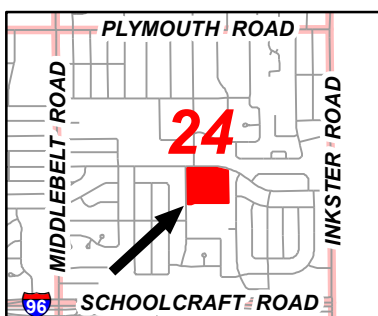
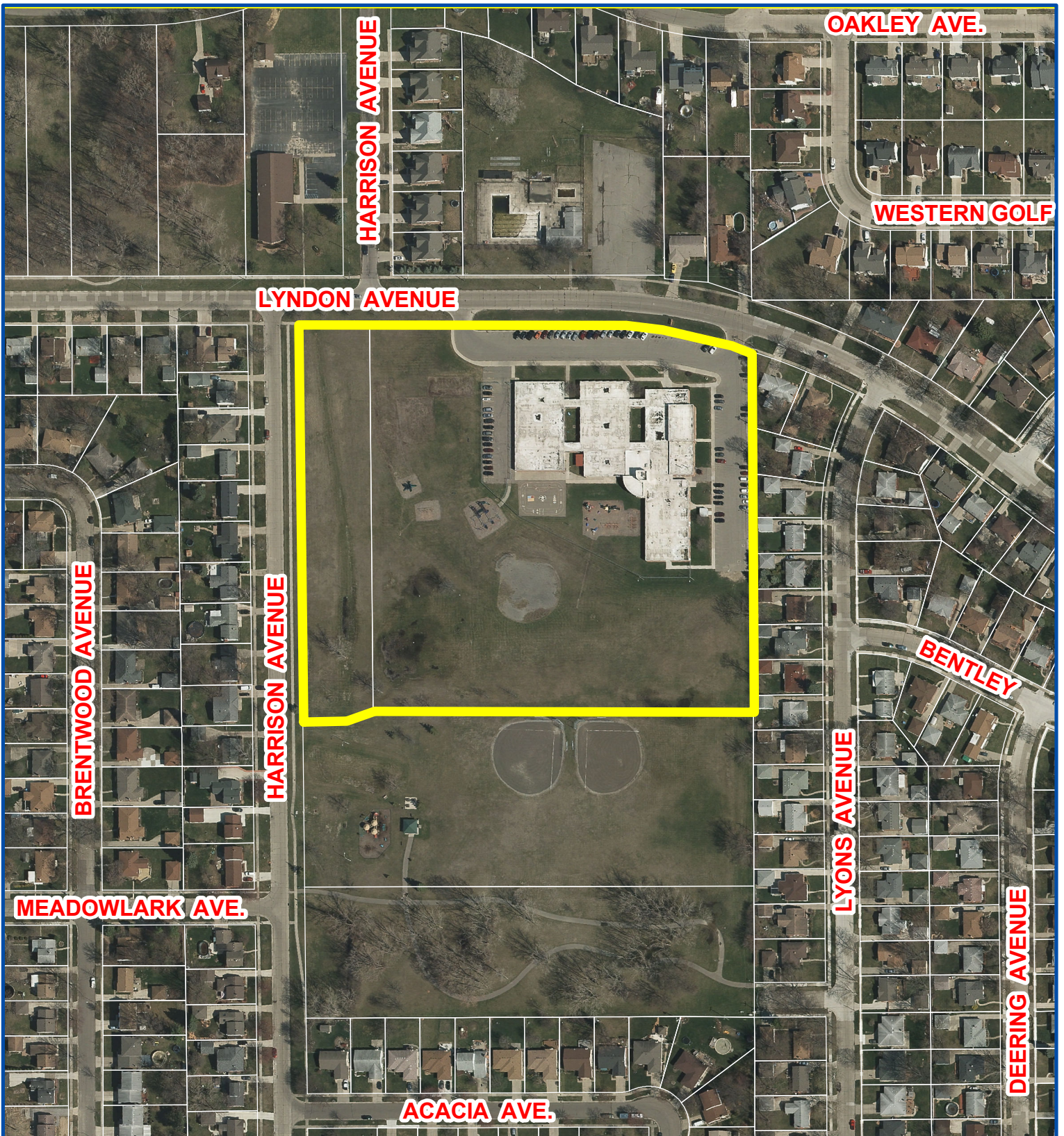


Fast forward several years as George Mager joins Windmill Group. A lawyer since 1974, George focused on real estate and banking from his early career. In 1979, he formed his own firm specializing in federal and state housing and urban development programs. This firm grew to 20 attorneys and was merged into Cox, Hodgman & Giarmarco in 2001. After retiring from private practice in 2004, George joined the Windmill team as a partner with responsibility for the legal, financial and operational aspects of the Windmill Group.

The Windmill Group flourished from its inception and quickly became known for visionary land development and innovative home construction. Windmill Group developed over 600 residential sites in southeast Michigan, including subdivisions, site condominiums, traditional condominiums and multiuse residential and commercial projects. The company has built more than 1000 homes over the years, ranging in price from \$150,000 to over \$1.2 million.

Their work has won accolades from their building industry peers. Honored as Developer of the Year by the Home Builders Association (HBA) of Southeastern Michigan in 2002, they created an impressive site encompassing 300 single-family homes, 200 multi-family residences and a retail shopping center, Walden Woods in Van Buren Township. The company was also awarded Development of the Year in 2007 for Riverwalk of Farmington Hills. More recently, the first new residential development in Farmington in 40 years, Riverwalk of Farmington, was named Development of the Year in 2015. That same year, Stuart, who served as president of the 2004 HBA and has been a member of the organizations' Board of Directors continually since 1995, received the highest HBA honor - induction into the Association's prestigious Hall of Fame. While industry honors are gratifying, the team derives immense satisfaction from building communities where families thrive.

Stuart and George - "We feel a terrific sense of pride creating lasting value for our clients by building quality homes in our great communities."



Aerial Map

Petition 2020-11-08-07
Adams Park Site Condominium
14416 Harrison Avenue & 28201 Lyndon Avenue



Not to Scale



City of Livonia
Planning Department

PLANNING COMMISSION STAFF NOTES

MISCELLANEOUS

ITEM 2

Petition 2020-11-08-07 submitted by Adams Park Development, L.L.C. requesting approval of the Master Deed, Bylaws and site plan pursuant to Section 18.62 of the City of Livonia Zoning Ordinance #543, as amended, to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) located on the south side of Lyndon Avenue between Inkster and Middlebelt Roads in the Southeast ¼ of Section 24.

December 8, 2020 Study Meeting:

This petition involves the development of a condominium subdivision consisting of thirty-nine (39) lots located at the site of the former Adams Elementary School. The subject 11.83-acre property is currently in the process of being rezoned, from PL (Public Lands) to R-1 (One Family Residential). City Council gave First Reading to the rezoning on November 4th. Second Reading and Roll Call, the final steps in the rezoning process, are on hold pending a review of the site plan. R-1 conventional lot size requirements are expressed as minimums, with 7,200 square feet being the minimum for lot area, sixty feet (60') for lot width, and one-hundred-twenty feet (120') for lot depth.

The subject site is surrounded by residential. To the east, south and west, the adjacent subdivisions are all zoned R-1, One Family Residential, with single-family lots that measure a minimum of sixty feet (60') in width by one-hundred-twenty feet (120') in depth. Lying directly to the north of the site, across Lyndon, is Bishop Estates, an eight (8)-unit attached cluster housing development. Adjacent to Bishop Estates is Western Golf Estates, zoned R-2 and developed with conventional-sized lots that measure a minimum of seventy feet (70') in width by one-hundred-twenty feet (120') in depth.

The submitted site plan shows a total of thirty-nine (39) condominium lots. Most of the lots are shown having frontage on two (2) new streets, designed in a "U"-shaped configuration. Both new streets would have access to Lyndon Avenue. They would extend approximately 300 feet in a north/south direction and then turn 90 degrees in an east/west direction forming a connection. Included in the design is a short cul-de-sac that would extend south from the road along the west side of the development. Access to Lots 11 through 39 would be from this new interior road system. Lots 1 through 10 would have direct frontage and access along Harrison Avenue which borders the site along its west side.

All thirty-nine (39) condominium lots would meet or exceed the R-1 lot size requirements. The subdivision includes several lots that measure seventy feet (70') in width. These lots are located throughout the project site in areas selected to be more compatible with the lots bordering the development.

The condominium subdivision would have three (3) open space areas including a large park in the southeast corner of the site. This general common element would include a detention pond that would collect and manage the site's stormwater runoff. Access to the park would be provided at the end of the cul-de-sac between Lots 21 and 22. The design includes a paved pedestrian walkway that would connect with and extend from the sidewalk in the right-of-way to a sitting area near the edge of the basin. For maintenance equipment to be able to access the basin, a grass paver access path would be built behind Lots 22 thru 26 with access to the cul-de-sac.

The total land area of the southeast open space park is 47,687 square feet, or roughly 1.1 acres. Subtracting the area of the detention basin leaves approximately 20,187 square feet of upland open space. For all new plats and condominium subdivisions, the City requires the dedication of public open space at a ratio of 720 square feet per lot, which in this case equates to 28,080 square feet, or 0.64 acre. Including the two (2) other areas, the total amount of open space equals 52,819 square feet. The Petitioner is seeking approval to waive the requirement of providing the open space in the form of a public park, and instead proposes to dedicate these areas as a general common element on the master deed of the condominium subdivision. In exchange, the Developer is offering a \$15,000 contribution towards the construction of additional parking at Dooley Park.

The following excerpts are from the submitted Master Deed Bylaws pertaining to the size and type of homes proposed for Adams Park.

Section 6.3 Character and Size of Buildings. No Dwelling shall be permitted on any Unit unless, in the case of a 1-story building, the living area thereof shall be not less than 1,300 square feet; in the case of 1½-story building, the living area thereof shall not be less than 1,600 square feet; in the case of a 2-story building, the living area thereof shall not be less than 1,600 square feet. No Building greater than 2½-stories or taller than 35 feet to the midpoint of the roof shall be constructed (a walkout basement shall not be considered as a story). All computations of square footage for determination of the permissibility of erection of residences under this section shall be exclusive of basements, attics, garages, porches, or similar areas. No Dwelling shall be less than 39 feet in width. All plans are subject to be reviewed and approved by the Developer prior to the commencement of construction during the Development and Sales Period and thereafter by the Association. Each Dwelling shall be constructed with brick on all 4 sides of the 1st floor.

Section 6.4 Exterior Surface of Dwellings. The visible exterior walls of all Dwelling structures shall be made of brick, wood, cement fiberboard, cut stone, fieldstone, LP Smart Siding, ledge rock or stucco. The use of asphalt, cement block, cinder, slag, plywood, panel brick is prohibited, except that panel brick (matching the brick used to construct the Dwelling) may be used to finish an interior chimney chase. A minimum

of 65% of the exterior shall be finished in brick or stone for multi-story residences and 80% of the exterior shall be finished in brick or stone for 1-story residences. The color of windows, doors, siding, screens, and roof material shall be subject to the approval of the Architectural Control Committee.

Section 6.5 Roof Design. Primary roofs with less than 6½ pitch are prohibited, unless approved in writing by the Architectural Control Committee. Roofs must be of shingle construction using fiberglass or asphalt shingles.

Section 6.7 Garages. All garages must be attached to the dwelling and must be side entry. No garage shall provide space for less than 2 automobiles.

Section 6.8 Driveways. All driveways, aprons and parking areas must be paved with concrete or asphalt or may be constructed with brick pavers. The driveway must be completed within 6 months of the date of issuance of the temporary certificated of occupancy.

The submitted landscape plan shows street trees along the new road in front of each lot and plantings within and around the stormwater pond and detention area. Street trees would also be planted in front of each lot along Harrison Avenue. The landscape plan indicates the type, quantities, and size of plant materials.

With respect to the entry details, residential subdivisions are allowed one (1) identification sign measuring no more than twenty (20) square feet in sign area and five feet (5') in height. The sign must be located at least ten feet (10') from any right-of-way line and erected on private subdivision property only in yards adjacent to streets at the entrance to the subdivision. The landscape plan shows a cut-out illustration of a conforming ground sign for the development. The sign would be installed in the northwest corner of Unit 31.

The Petitioner has not submitted any drawings or floor plans of the potential homes of the development.

December 15, 2020 Regular Meeting:

As requested, the Petitioner has provided examples of the homes the company has developed in nearby communities as a representation of the homes that will be built at Adams Park.

Approving Resolution: That the request to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) is hereby approved, subject to City Council approval and the following conditions:

1. That the Site Plan identified as Sheet 03, dated November 17, 2020, prepared by Michael L. Priest & Associates, Inc., is hereby approved and shall be adhered to.
2. That the issues as outlined in the correspondence dated December 7, 2020, from the Fire Marshal shall be resolved to the satisfaction of the Livonia Fire and Rescue Division.
3. That the Landscape Planting Plan identified as L-1 and the Landscape Notes & Details identified as L-2, both dated November 19, 2020 as revised, prepared by Nagy Devlin Land Design., are hereby approved and shall be adhered to.
4. That streetlights and sidewalks shall be installed throughout the development to the satisfaction of the Engineering Department.
5. That the condominium Master Deed and Bylaws comply with the requirements of the Subdivision Control Ordinance, Title 16, Chapter 16.04-16.40 of the Livonia Code of Ordinance, and Article XX, Section 20.01-20.06 of Zoning Ordinance #543.
6. That Section 6.7 Garages of the Bylaws shall be modified to include front entries where applicable.
7. That the brick used in the construction of each condominium unit shall be full face four-inch (4") brick.
8. In the event of a conflict between the provisions set forth in the Master Deed and bylaws, and the requirements set forth in the City of Livonia Zoning Ordinance No. 543, as amended, the Zoning Ordinance requirements shall prevail, and petitioner shall comply with the Zoning Ordinance requirements.
9. That the petitioner shall include language in the Master Deed and bylaws or a separate recordable instrument wherein the condominium association shall reimburse the City of Livonia for any maintenance or repair costs incurred for the storm water detention/retention and outlet facilities, and giving the City of Livonia the right to impose liens on each lot owner's property pro rata and place said charges on their real estate tax bills in the

event said charges are not paid by the condominium association (or each lot owner) within thirty (30) days of billing for the City of Livonia.

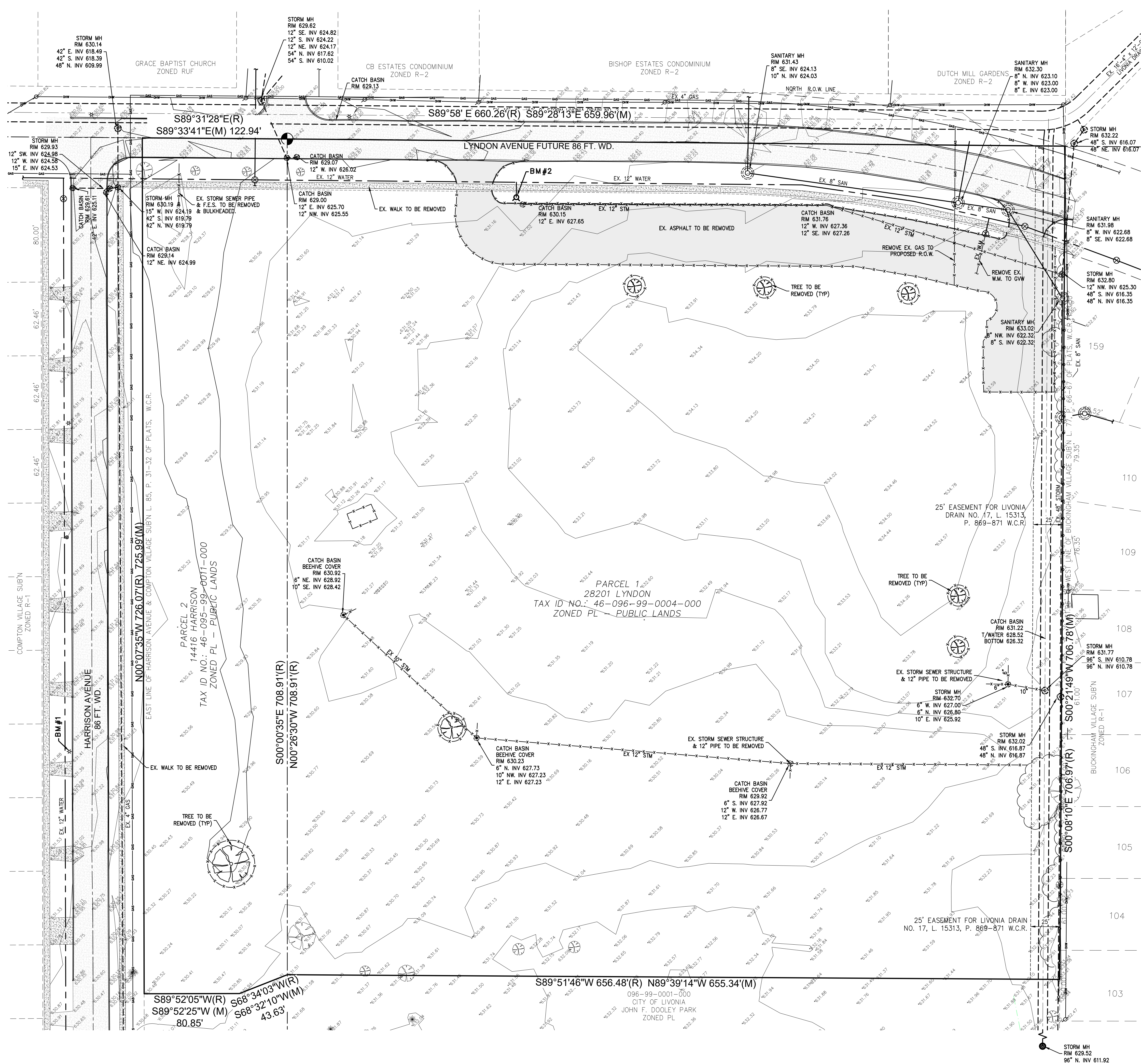
10. That all required cash deposits, certified checks, irrevocable bank letters of credit and/or surety bonds which shall be established by the City Engineer pursuant to Article XVIII of Ordinance No. 543, Section 18.66 of the ordinance, shall be deposited with the City prior to the issuance of engineering permits for this site condominium development.
11. That only a conforming entrance marker is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals; and
12. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of one year only from the date of approval by City Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

Denying Reasons: That the request to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) is hereby denied for the following reasons:

1. That the petitioner has failed to comply with all general standards and requirements as set forth in Sections 18.58 and 19.06 of the Zoning Ordinance.
2. That the layout and number of site condominiums proposed for the development would have a detrimental effect upon the adjacent properties.
3. That the proposal creates significant adverse impacts on adjoining parcels, public services, and community planning efforts, and
4. That the petitioner has failed to comply with all the concerns deemed necessary for the safety and welfare of the City and its residents.



Know what's **below**.
Call before you dig



TOPOGRAPHIC AND/OR BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY OTHERS TO THE SELLER/OWNER.

NOWAK & FRAUSS ENGINEERS
NFE JOB NO. L254, OCTOBER 31, 2019

NOTE REGARDING EXISTING UTILITIES:

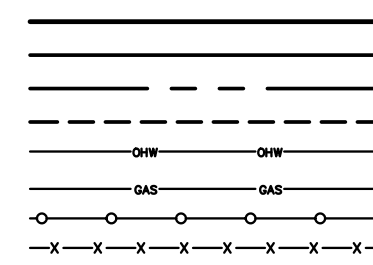
THE FOLLOWING UTILITY COMPANIES WERE CONTACTED VIA THE MISS DIG DESIGN TICKET SYSTEM TO REQUEST RECORD MAPS OF THEIR UTILITIES IN THE AREA. THE STATUS OF THEIR RESPONSES ARE NOTED. NO GUARANTEE CAN BE MADE TO THE COMPLETENESS OF EXACTNESS OF THEIR LOCATION.

AT&T
BRIGHT HOUSE NETWORKS
CHARTER COMMUNICATIONS
DETROIT EDISON
LIVONIA CITY
LIVONIA PUBLIC SCHOOLS
WIDE OPEN WEST

PENDING
PENDING
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PENDING

LEGEND:

PROPERTY BOUNDARY
EXISTING SANITARY SEWER
EXISTING WATER MAIN
EXISTING STORM SEWER
EXISTING OVERHEAD WIRES
EXISTING GAS
EXISTING FENCE
TO BE REMOVED



EXISTING WALKS
EXISTING CONCR

MANHOLE
CATCH BASIN
END SECTION
GATE VALVE
FIRE HYDRANT
UTILITY POLE
LAMP POST

TREE

EXISTING CONDITIONS & REMOVAL PLAN

ADAMS PARK

A RESIDENTIAL SITE CONDOMINIUM

PART OF THE SOUTH 1/2 OF SECTION 24, T.1S., R.9E.
CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN

OF THE SOUTH 1/2 OF SECTION 24, T.1S.,
CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN

ENGINEERS, SURVEYORS

MLP

AND ASSOCIATES, INC.

Michael L. Priest & Associates, Inc.
40655 Koppernick Road, Canton, MI 48187

MICHAEL L. FLEISCH & ASSOCIATES, INC.
40655 Koppnick Road, Canton, MI 48187

phone: (734) 459-8560

fax: (734) 459-2585

STATUS: SITE PLAN

DATE: 11-17-2020

PROPRIETOR

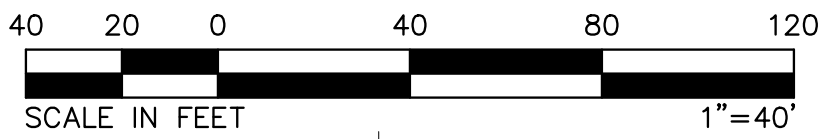
NAME:	ADAMS PARK DEVELOPMENT, LLC
ADDRESS:	31333 W 13 MILE ROAD SUITE 200
CITY:	
STATE:	
ZIP:	
PHONE:	
FAX:	
EMAIL:	
CONTACT:	
DATE:	
BY:	
FOR:	
REMARKS:	

AD: ADB

DATE: MAY 28, 2008
 DATUM: NAVD88
 SCALE: 1"=40'
 ATT'N: STUART MICHAELSON
 PARKINGTON HILLS, MI 48334
 (248) 538-7000

ET

SHEET
02



GRACE BAPTIST CHURCH
ZONED RUF

CB ESTATES CONDOMINIUM
ZONED R-2

BISHOP ESTATES CONDOMINIUM
ZONED R-2

DUTCH MILL GARDENS
ZONED R-2

PROPOSED PROPERTY DESCRIPTION:

PART OF THE SOUTH 1/2 OF SECTION 24, TOWN 1 SOUTH, RANGE 9 EAST, CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER 1/4 CORNER OF SAID SECTION 24 AS RECORDED IN L.C.R.C. L. 47230, P. 445-446 W.C.R.; THENCE ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION S00°00'35"E 43.00 FEET TO THE POINT OF BEGINNING AND THE SOUTH LINE OF LYNDON AVENUE, 86 FEET WIDE; THENCE S89°28'13"E 358.71 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTH HAVING A RADIUS OF 990.52 FEET; THENCE EASTERLY 306.34 FEET ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 17°43'12" (THE CHORD OF SAID CURVE BEARS S80°36'37"E 305.12 FEET) TO THE WEST LINE OF BUCKINGHAM VILLAGE SUBDIVISION AS RECORDED IN L. 77, P. 66-67 OF PLATS, W.C.R.; THENCE ALONG SAID LINE S00°21'49"W 616.78 FEET; THENCE N89°39'14"W 655.34 FEET; THENCE S68°32'09"W 43.63 FEET; THENCE S89°52'23"W 80.85 FEET TO THE EAST LINE OF HARRISON AVENUE, 86 FEET WIDE, ALSO THE EAST LINE OF COMPTON VILLAGE SUB'N AS RECORDED IN L. 85, P. 31-32 OF PLATS, W.C.R.; THENCE ALONG SAID LINE N00°07'35"W 682.99 FEET TO THE SOUTH LINE OF LYNDON AVENUE, 86 FEET WIDE; THENCE ALONG SAID LINE S89°33'41"E 122.48 FEET; THENCE S89°28'13"E 0.37 FEET TO THE POINT OF BEGINNING. CONTAINING 11.8341 ACRES.

SITE DATA

ZONING: PL PUBLIC LANDS
PROPOSED ZONING: R-1 SINGLE FAMILY RES.
SITE AREA: 11.83 ACRES
MINIMUM LOT SIZE: 60' X 120'
MINIMUM LOT AREA: 7,200 S.F.
PROPOSED LOTS: 39
DENSITY: 3.30 D.U./AC.
REQUIRED SETBACKS:
FRONT: 25'
SIDE: LEAST 5'
TOTAL 14'
REAR: 30'
OPEN SPACE REQUIRED: 720 S.F. / LOT
28,080 S.F.
OPEN SPACE PROVIDED: 52,819 S.F.

BENCHMARKS NAVD88:

B.M. #1: NORTH EAST BOLT ON POLE BASE
WEST SIDE OF HARRISON, NORTH PL OF #14365
ELEVATION: 632.37

B.M. #2: HYDRANT ARROW, SOUTH SIDE OF
LYNDON, ACROSS STREET FROM #28190
ELEVATION: 633.68

LEGEND:

PROPERTY BOUNDARY
SETBACK LINE
LOT LINES

PROPOSED CONCRETE

EXISTING CONCRETE

SITE PLAN

ADAMS PARK
A RESIDENTIAL SITE CONDOMINIUM
PART OF THE SOUTH 1/2 OF SECTION 24, T.1S., R.9E.
CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN

SHEET
03

ENGINEERS, SURVEYORS
MLP
AND ASSOCIATES, INC.

Michael L. Priest & Associates, Inc.
40665 Koppernick Road, Canton, MI 48187
phone: (734) 459-8560
fax: (734) 459-2585

SITE PLAN

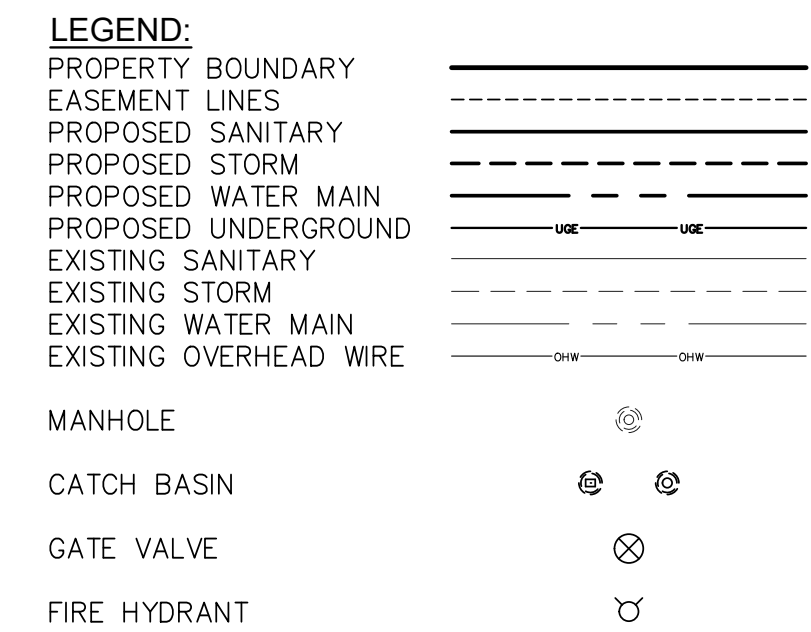
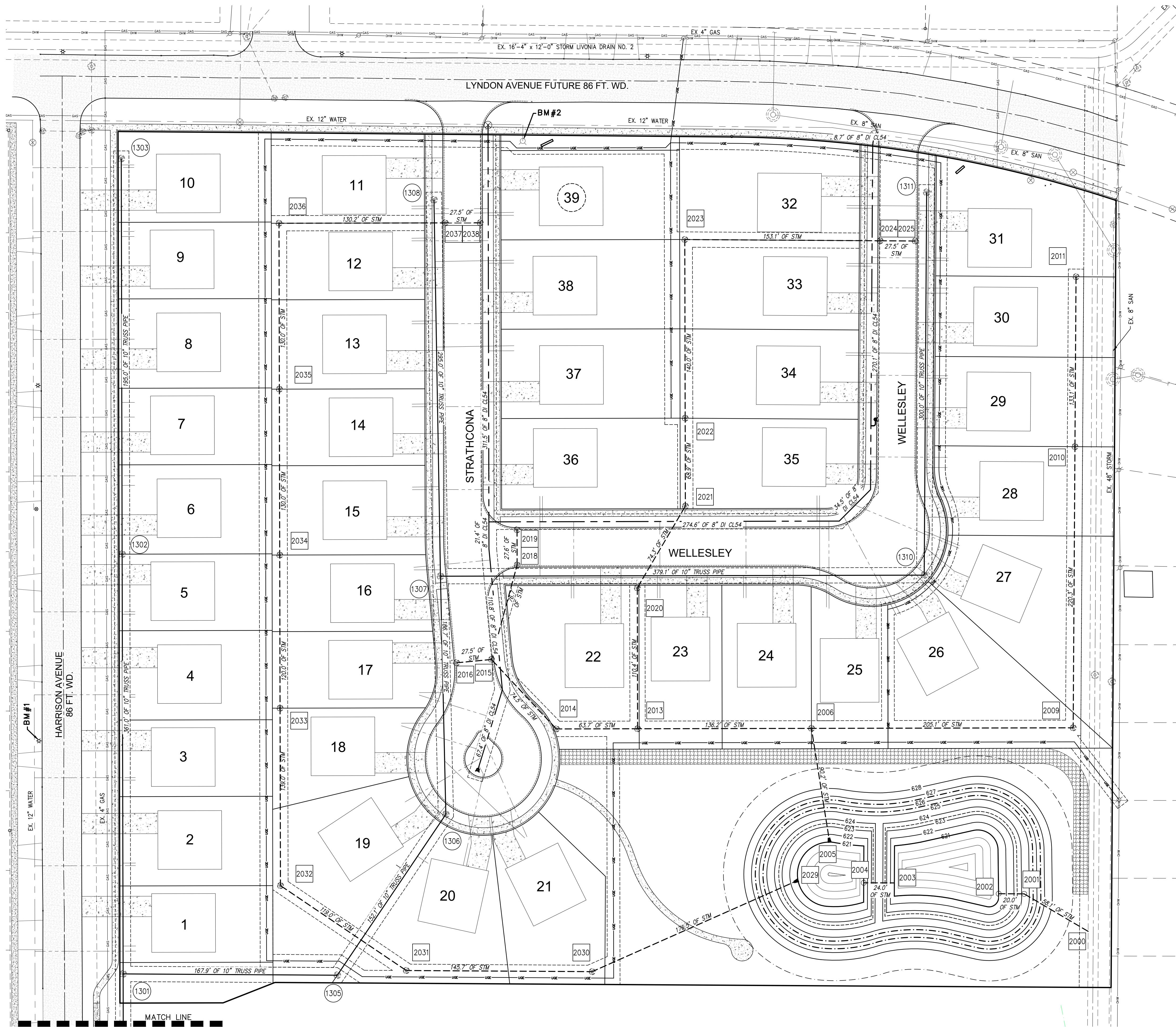
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JOB NO. 2020.14

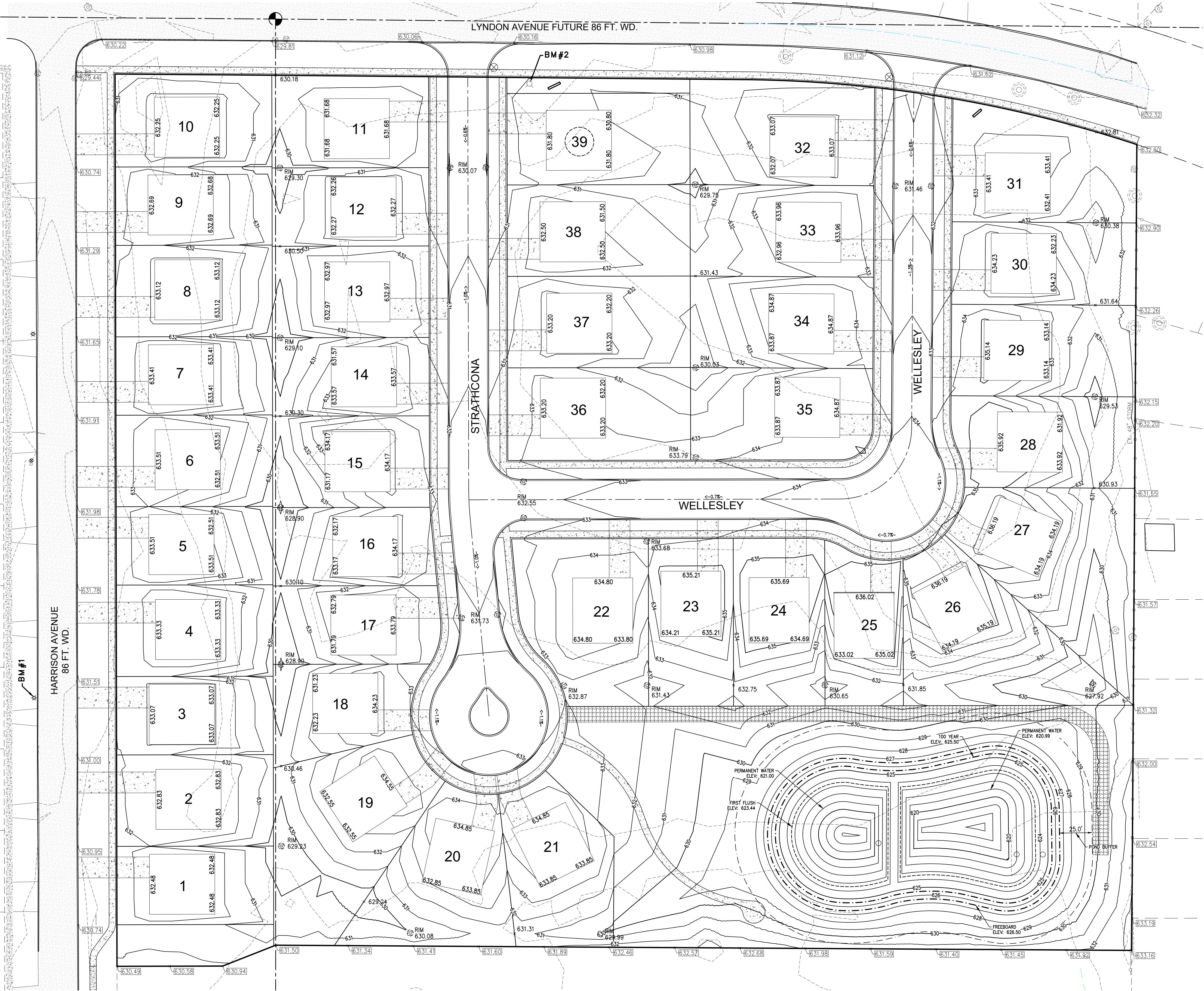
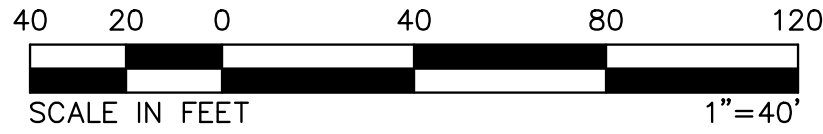
PROPRIETOR

DATE: 11-17-2020
EMP. ADAMS PARK DEVELOPMENT, LLC
SURV. 31333 W. 13 MILE ROAD, SUITE 200
CAD: ADB FARMINGTON HILLS, MI 48334
JOB: NAVD88 (248) 538-7000
SCALE: 1"=40' ATTN: STUART MICHAELSON



Know what's below.
Call before you dig.

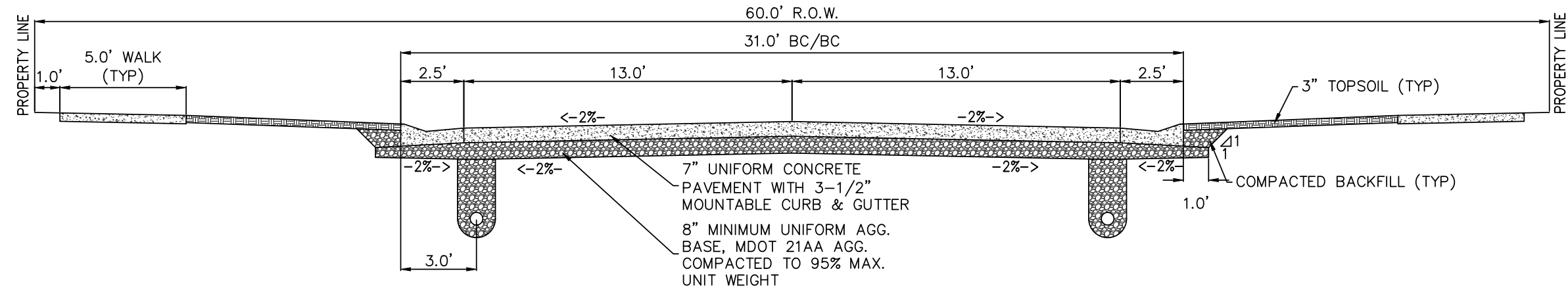




BENCHMARKS NAVD88:
B.M. #1: NORTH EAST BOLT ON POLE BASE
WEST SIDE OF HARRISON, NORTH PL OF #14365
ELEVATION: 632.37

B.M. #2: HYDRANT ARROW, SOUTH SIDE OF
LYNDON, ACROSS STREET FROM #28190
ELEVATION: 633.68

LEGEND:
PROPERTY BOUNDARY
SETBACK LINE
LOT LINES
EXISTING FENCE



CONCEPTUAL GRADING PLAN

ADAMS PARK
A RESIDENTIAL SITE CONDOMINIUM
PART OF THE SOUTH 1/2 OF SECTION 24, T.1S., R.9E.
CITY OF LIVONIA, WAYNE COUNTY, MICHIGAN

ENGINEERS - SURVEYORS
MLP
AND ASSOCIATES, INC.

Michael L. Priest & Associates, Inc.
40665 Koppernick Road, Canton, MI 48187
phone: (734) 459-8560
fax: (734) 459-2585

STATUS: SITE PLAN

REVISIONS:
JOB NO. 2020.14

DATE: 11-17-2020

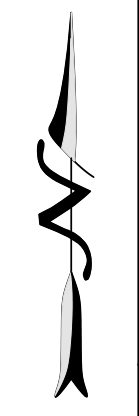
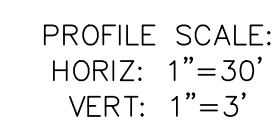
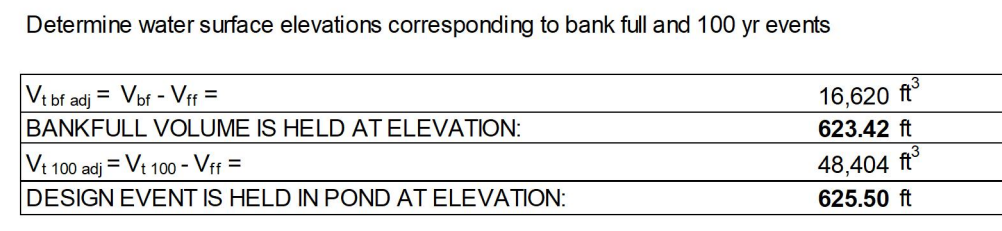
PROPRIETOR

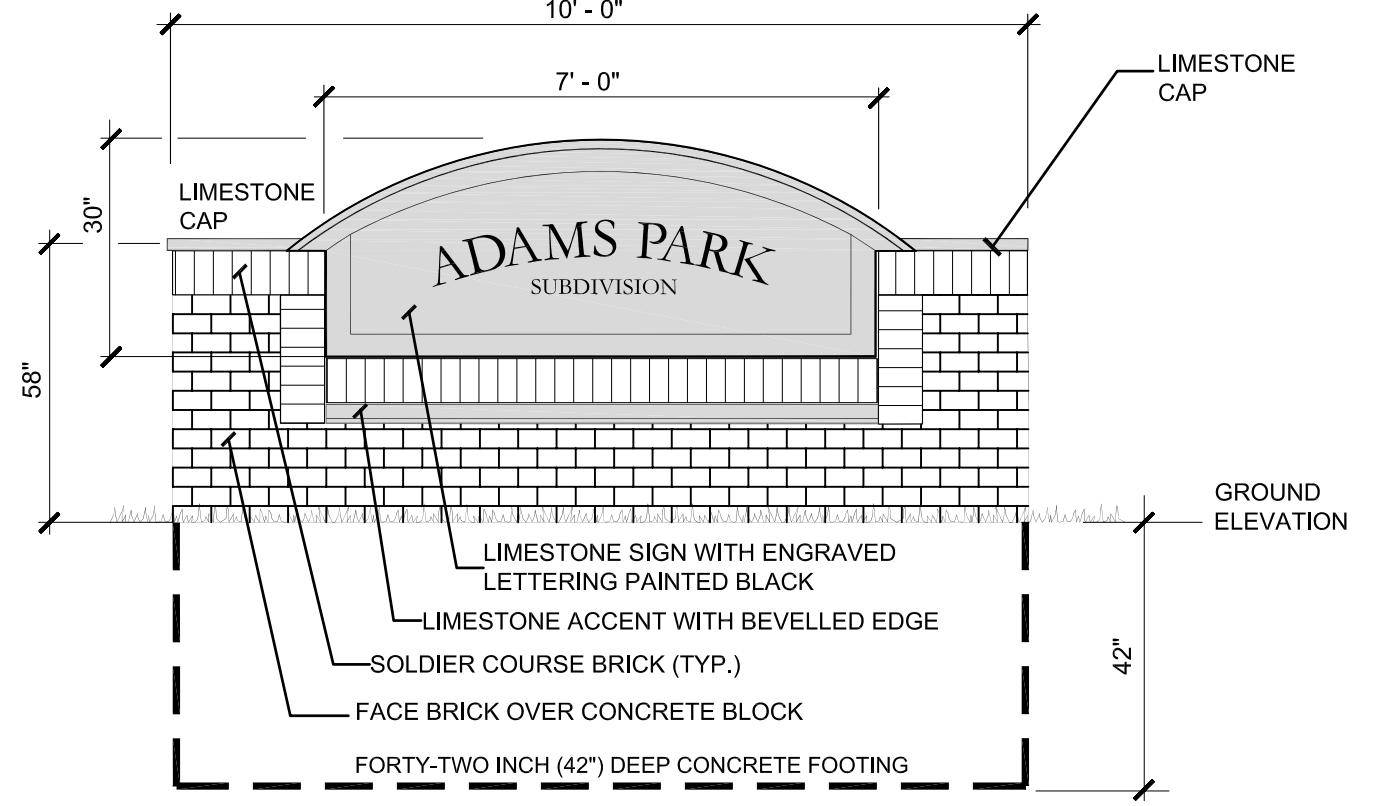
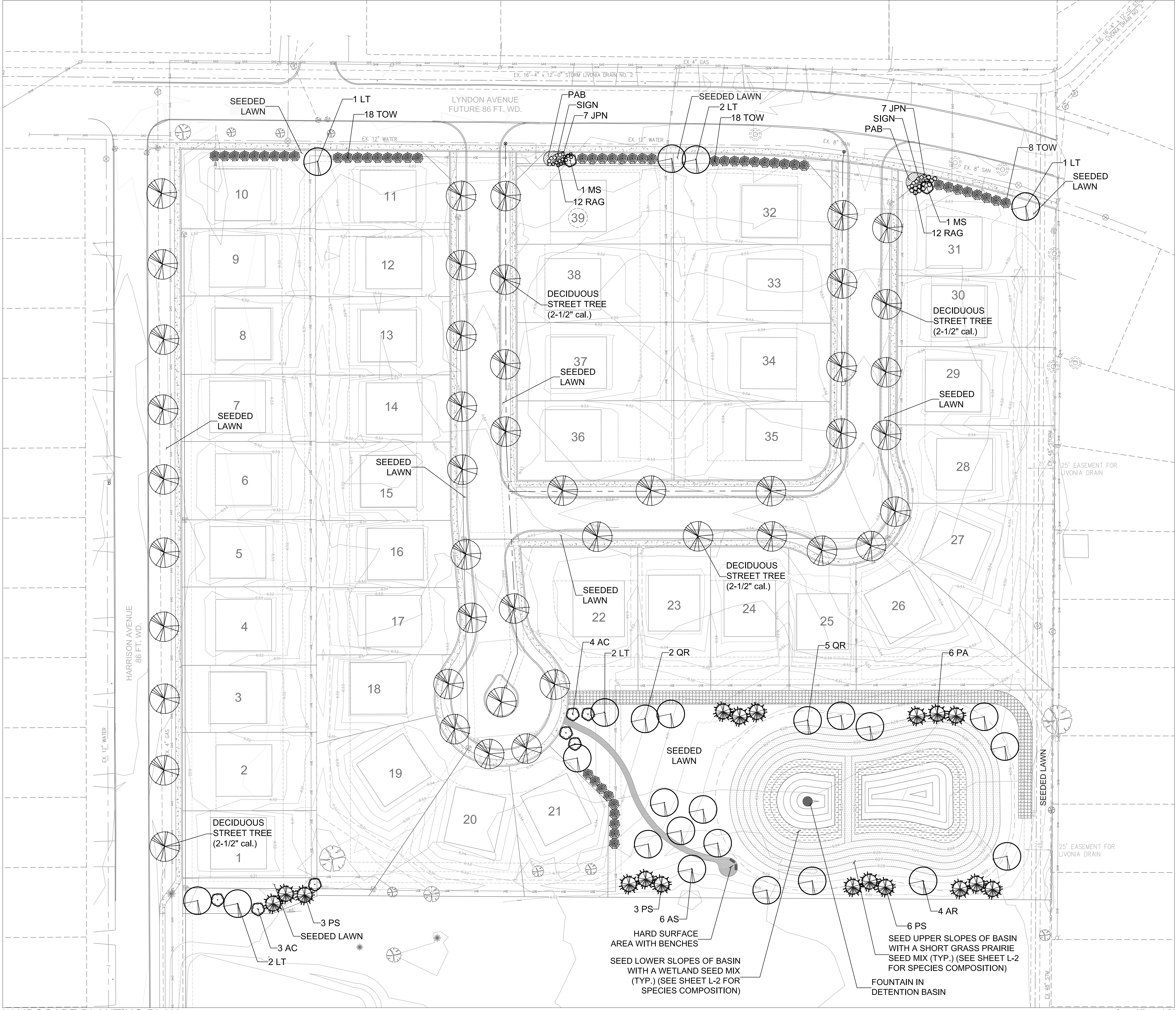
ADAMS PARK DEVELOPMENT, LLC
31333 W. 13 MILE ROAD, SUITE 200
FARMINGTON HILLS, MI 48334
(248) 538-7000
ATTN: STUART MICHAELSON

SHEET
05

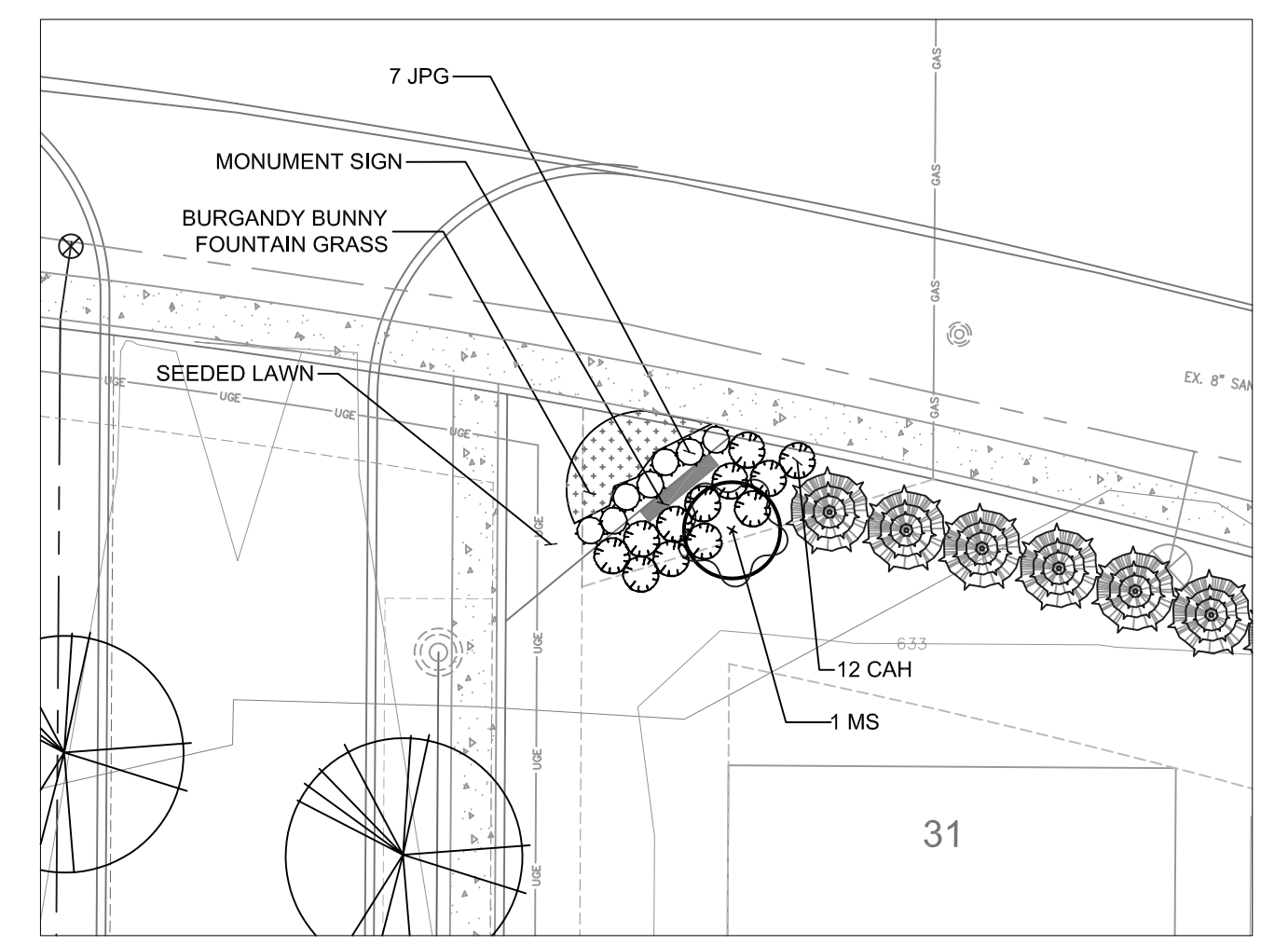


Know what's below.
Call before you dig.





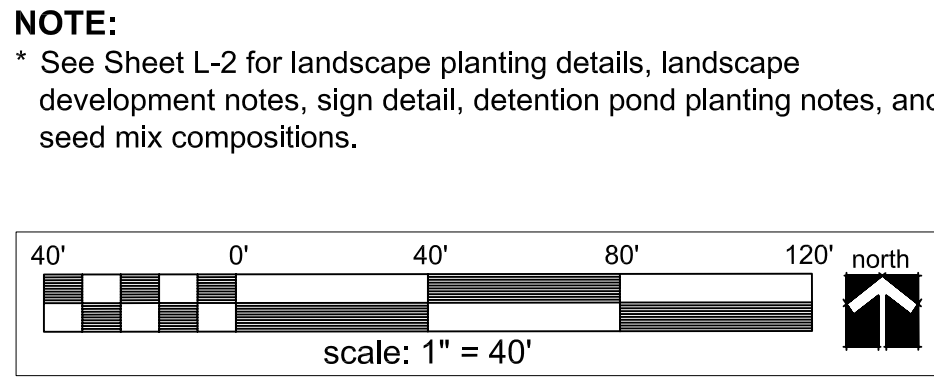
ENTRY SIGN DETAIL not to scale



ENTRY PLANTING ENLARGEMENT not to scale

PLANT LIST				
KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
AC	7	<i>Amelanchier canadensis</i>	Clump Serviceberry	8' - 10' ht. B&B
AS	6	<i>Acer saccharum</i>	Sugar Maple	2-1/2" cal. B&B
AR	10	<i>Acer rubrum</i> 'Red Sunset'	Red Sunset Red Maple	2-1/2" cal. B&B
JPG	14	<i>Juniperus procumbens</i> 'Greenmound'	Greenmound Creeping Juniper	24" ht. B&B
LT	8	<i>Liriodendron tulipifera</i>	Tuliptree	2-1/2" cal. B&B
MS	2	<i>Magnolia stellata</i> 'Royal Star'	Royal Star Magnolia	2" cal. B&B
PA	6	<i>Picea abies</i>	Norway Spruce	8' ht. B&B
PSR	12	<i>Pinus strobus</i>	Eastern White Pine	8' ht. B&B
QR	7	<i>Quercus rubra</i>	Red Oak	2-1/2" cal. B&B
RAG	24	<i>Rhus aromatica</i> 'Gro-Low'	Gro-Low Fragrant Sumac	24" ht., 3 gal. pot
PAB	*	<i>Pennisetum alopecuroides</i> 'Burgandy Bunny'	Burgandy Bunny Dwarf Fountain Grass	1 gal. pot, 24" o.c.

* Landscape Contractor to determine the quantity in the field.



date: November 17, 2020
revised:
11-19-2020 Add maintenance path for pond.

811 Know what's below. Call before you dig.

LANDSCAPE PLAN FOR:
Michael L. Priest & Associates, Inc.
40655 Koppernick
Canton, Michigan 48187
(734) 459-8560

PROJECT LOCATION:
Adams Park Subdivision
Southeast Corner of
Harrison Avenue &
Lyndon Avenue
Livonia, Michigan

LANDSCAPE PLAN BY:
Nagy Devlin Land Design
31736 West Chicago Ave.
Livonia, Michigan 48150
(734) 634 9208

J. BRIAN DEVLIN
NO. 1260
REGISTERED LANDSCAPE ARCHITECT

J. Brian Devlin
AUTOCAD SIGNATURE
ORIGINAL IN BLUE

LANDSCAPE PLANTING NOTES:

PLANTING

- Installation of all plant material shall be in accordance with the latest edition of the *American Association of Nurserymen Standards for Nursery Stock* and with the specifications set forth by the City of Livonia, Michigan.
 - The plant materials shall conform to the type stated on the plant list. Sizes shall be the minimum stated on the plant list or larger. All measurements shall be in accordance with the latest edition of the *American Association of Nurserymen Standards for Nursery Stock*.
 - The plant material shall be nursery grown and inspected by the Owner's representative before planting. The Owner's representative reserves the right to reject any plant material at any time.
 - Plants designated "B&B" shall be balled and burlapped with firm balls of earth.
 - Dig shrub pits one foot (1') larger than the shrub rootball, tree pits three (3) times the width of the tree rootball and backfill with one (1) part topsoil and one (1) part soil from excavated pit. Plant trees and shrubs at the same grade level at which they were planted at the nursery. If wet, clay soils are evident, plant trees and shrubs slightly higher.
 - The Contractor is responsible for planting the materials at the correct grades and spacing. The plants shall be oriented to give the best appearance.
 - When the plant has been properly set, the pit shall be backfilled with the topsoil mixture, gradually filling, patting, and settling with water.
 - Trees in lawn areas to have a four foot (4') circle of mulch, four inches (4") deep, and three inches (3") away from the trunk. Shrub beds are to be mulched with shredded bark mulch to a minimum depth of three inches (3"). Perennial beds are to be mulched with shredded bark mulch to a minimum depth of two inches (2"). Only natural color, finely shredded hardwood bark mulch will be accepted.
 - Remove all twine, wire, and burlap from the top one third (1/3) of tree and shrub root balls and from tree trunks. Remove all non-biodegradable material such as plastic or nylon completely from branches and stems. All tree wrap, stakes, and guys are to be removed after one (1) winter season.
 - All plant materials shall be pruned and injuries repaired. The amount of pruning shall be limited to the removal of dead or injured limbs and to compensate for the loss of roots from transplanting. Cuts should be flush, leaving no stubs. Cuts over three quarters of an inch (3/4") shall be painted with tree paint. Shrubs along the site perimeter shall be allowed to grow together in a natural form.
 - Organic, friable topsoil shall be evenly distributed and fine graded over all areas to receive lawns at uniform depth of four inches (4") after settlement.
 - All lawn areas shall be sodded with a Grade A Kentucky Blue Grass blend over the topsoil.
 - All plantings shall be completed no later than November 30 in the fall season. The date of intended installation for landscape plant materials is approximately Fall, 2019.
 - Backfill directly behind all curbs and along sidewalks and compact to the top of curbs or walk to support vehicle and pedestrian weight without settling.
 - Conversion of all asphalt and gravel areas to landscape planting beds shall be done in the following manner: a. Remove all asphalt, gravel, and compacted earth to a depth of six inches to eighteen inches (6"-18") depending on the depth of the sub base and dispose of off site; b. Call the City for an inspection prior to backfilling; c. Replace excavated material with good, medium-textured planting soil (loam or light yellow clay loam) to a minimum of two inches (2") above the top of the curb and sidewalk, add four inches to six inches (4"-6") of topsoil and crown to a minimum of six inches (6") above the adjacent curb and walk after earth settling, unless otherwise noted on the landscape plan.
- If conversion from asphalt to landscape occurs in or between an existing landscape area(s), replace excavated material from four inches to six inches (4"-6") below adjacent existing grade with good, medium-textured planting soil (loam or light yellow clay loam) and add four inches to six inches (4"-6") of topsoil to meet existing grades after earth settling.

MATERIALS

- Required landscape material shall satisfy the criteria of the American Association of Nurserymen Standards for Nursery Stock and be: a.) Northern nursery grown; b.) State Department of Agriculture inspected; c.) No. 1 grade material with a straight, unscarred trunk, and well-developed uniform crown (park grade trees will not be accepted); d.) Staked, wrapped, watered, and mulched according to the details provided; and e.) Guaranteed for one (1) year.
- Topsoil shall be friable, fertile soil of clayloam character containing at least five percent (5%) but not more than twenty percent (20%) by weight of organic matter with a pH range between 6.0 and 7.0. The topsoil shall be free from clay lumps, coarse sand, plant roots, sticks, and other foreign materials.
- The seed mixture for the lawn areas in the street rights-of-way shall consist of a Kentucky Blue Grass blend and mulched with clean straw free of noxious weed seeds. Maintenance of the right-of-way lawn area shall consist of a regular cuttings as needed. Weed content of the seed mixture shall not exceed one percent (1%). The mix shall be applied at a rate of 200 pounds per acre.
- Sod, if specified, shall be two (2) year old "Baron/Sheri/Adelphi" Kentucky Blue Grass blend grown in a sod nursery on loam soil.
- Proposed perennials shall be full, well-rooted plants.

GENERAL

- Do not plant deciduous or evergreen trees directly over utility lines or under overhead wires. Maintain a six foot (6') distance from the centerline of utilities and twenty feet (20') from the centerline of overhead wires for planting holes. Call MISS DIG forty-eight (48) hours prior to landscape construction for field location of utility lines.
- The Contractor agrees to guarantee all plant material for a period of one (1) year. At that time, the Owner's representative reserves the right for a final inspection. Plant material with twenty-five percent (25%) die back, as determined by the Owner's representative shall be replaced. This guarantee includes the furnishing of new plants, labor, and materials. These new plants shall also be guaranteed for a period of one (1) year.
- The work shall consist of providing all necessary materials, labor, equipment, tools, and supervision required for the completion as indicated on the drawings.
- Landscape areas shall be irrigated by an automatic underground irrigation system. Lawns and shrub/landscape areas shall be watered by separate zones to minimize overwatering.
- All written dimensions override scale dimensions on the plans.
- All substitutions or deviations from the landscape plan must be approved by the City of Livonia prior to installation.
- All bidders must inspect the site and report any discrepancies to the Owner's representative.
- All specifications are subject to change due to existing conditions.
- The Owner's representative reserves the right to approve all plant material.

MAINTENANCE

- The Owner of the landscaping shall perpetually maintain such landscaping in good condition so as to present a healthy, neat, and orderly appearance, free from refuse and debris.
- The Owner shall conduct a seasonal landscape maintenance program including regular lawn cutting (at least once per week during the growing season), pruning at appropriate times, watering, and snow removal during winter.
- The Contractor is responsible for watering and maintenance of all seed areas until a minimum of ninety percent (90%) coverage, as determined by the Owner's representative.
- All diseased and/or dead material shall be removed within sixty (60) days following notification and shall be replaced within the next appropriate planting season or within one (1) year, whichever comes first.
- Any debris such as lawn clippings, fallen leaves, fallen limbs, and litter shall be removed from the site on a weekly basis at the appropriate season.
- All planting beds shall be maintained by removing weeds, fertilizing, and replenishing mulch as needed.

DETENTION POND LANDSCAPE DEVELOPMENT NOTES:

PLANTING:

- Follow the Supplier's recommended procedures for bed preparation, installation, and soil erosion control measures of the proposed seeded areas. After the plants germinate and begin to grow follow the maintenance guidelines included on this sheet.
- Rototill four inches (4") of compost or topsoil into the top six inches (6") of the surface of the basin. (Compost may be obtained from the municipal facility at Six Mile and Ridge Roads. Call Onyx Environmental at 248 305-8377 or 248 349-7230 for hours of operation and general information.)
- Provide a cover crop of annual rye at a rate of ten pounds (10#) per acre and seed oats at a rate of thirty pounds (30#) per acre over the entire area to be seeded.

MAINTENANCE OF THE DETENTION AREA

- ESTABLISHMENT:** During the first growing season, the native seed areas should be mowed two (2) to four (4) times to a height of four inches to six inches (4"-6") when the plants reach a height of ten inches to twelve inches (10"-12"). Hand pulling may be needed to control unwanted weed populations. If a mower cannot be set high enough, a string trimmer can be used. During the second growing season, the native seed areas should be mowed a few times to a height of about eight inches (8"), when the plants reach a height of ten inches to eighteen inches (10"-18"). Hand pulling may be needed to control unwanted weed populations. By the second growing season it should be apparent if some areas need reseeding. Long term management includes mowing and hand pulling of weeds. The native planting may be mowed to a short height and the clippings removed in the early Spring before birds begin nesting.
- WATERING:** Watering should be performed as needed. During the establishment period after the initial planting, watering is very important and should be conducted every two to three (2-3) days. The initial planting should be checked regularly for appropriate moisture availability. Two (2) methods for determining adequate moisture levels include the following: a.) if the plants wilt during the day when the temperature is at its highest, but revive during the night, then watering is not necessary, and b.) by testing the soil moisture at a depth of four inches (4") by inserting a small rod into the soil. If the rod is wet, then the soil is moist at a depth of four inches (4") and watering is not necessary.
- EROSION CONTROL:** Provide an erosion control blanket on the side slopes of the seeded areas detention area. The erosion control blanket shall be pegged in place.
- EDGING:** The edge of the detention area should be maintained to avoid grass growing into the detention area. The edge can be maintained with a V-notch cut edge. The channel should be maintained at four inches (4") or greater and renewed every six to eight (6-8) weeks.
- CUTTING BACK:** Tall wildflowers should be cut back by one-third. Early flowering plants can be cut back in late June or early July and late flowering plants in late October.
- THINNING:** After the detention area has become established and thriving, it may be necessary to thin perennials by dividing individual plants in Spring or Fall.
- REPLACEMENT:** Any plants that die or become diseased should be replaced. Plant health should be checked regularly with replanted material occurring in the Spring or Fall.
- REMOVAL OF LITTER AND DEBRIS:** Litter, trash, and debris should be removed on a regular basis to insure that inlets remain free flowing and to keep the area in a neat and attractive appearance.
- INORGANIC APPLICATIONS:** In general, detention areas do not need fertilization as nutrients from surrounding areas is usually at an elevated level. If soil fertility appears to be an issue, the soil should be tested and appropriate actions taken based on the results. Insecticides, herbicides, fungicides, and rodenticides should not be used in the detention area. If a plant is diseased or infested with insects, it should simply be removed and replaced.

SEED MIX COMPOSITIONS

WETLAND SEED MIX

MICHIGAN WILDFLOWER FARM

A composition of wildflowers, sedges, and grasses.
Application rate: 3 oz. per 1000 sq. ft. or
7 lbs. per acre

BOTANICAL NAME	COMMON NAME
Wildflowers	
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Aster novae-anglae</i>	New England Aster
<i>Aster puniceus</i>	Swamp Aster
<i>Aster umbellatus</i>	Flat-Top Aster
<i>Eupatorium maculatum</i>	Joe-Pye Weed
<i>Eupatorium perfoliatum</i>	Boneset
<i>Euthamia graminifolia</i>	Grassleaved Goldenrod
<i>Liatris spicata</i>	Marsh Blazing Star
<i>Pedicularis lanceolata</i>	Swamp Betony
<i>Rudbeckia subtomentosa</i>	Black-Eyed Susan
<i>Silphium perfoliatum</i>	Cupplant
<i>Silphium terebinthinaceum</i>	Prairie Dock
<i>Solidago patula</i>	Swamp Goldenrod
<i>Solidago riddellii</i>	Ridell's Goldenrod
<i>Verbena hastata</i>	Blue Vervain
<i>Vernonia missurica</i>	Ironweed
<i>Veronicastrum virginicum</i>	Culver's Root
Sedges/Grasses	
<i>Andropogon scoparius</i>	Little Bluestem
<i>Carex crinita</i>	Fringed Sedge
<i>Carex stricta</i>	Tussock Sedge
<i>Scirpus cyperinus</i>	Wool Grass



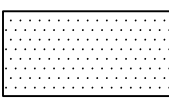
WETLAND SEED MIX

CUSTOM SHORT GRASS SEED MIX

Fifty percent (50%) Forbs/Fifty percent (50%) Grass.
Application rate: 5 oz. per 1000 sq. ft. or
10 lbs. per acre

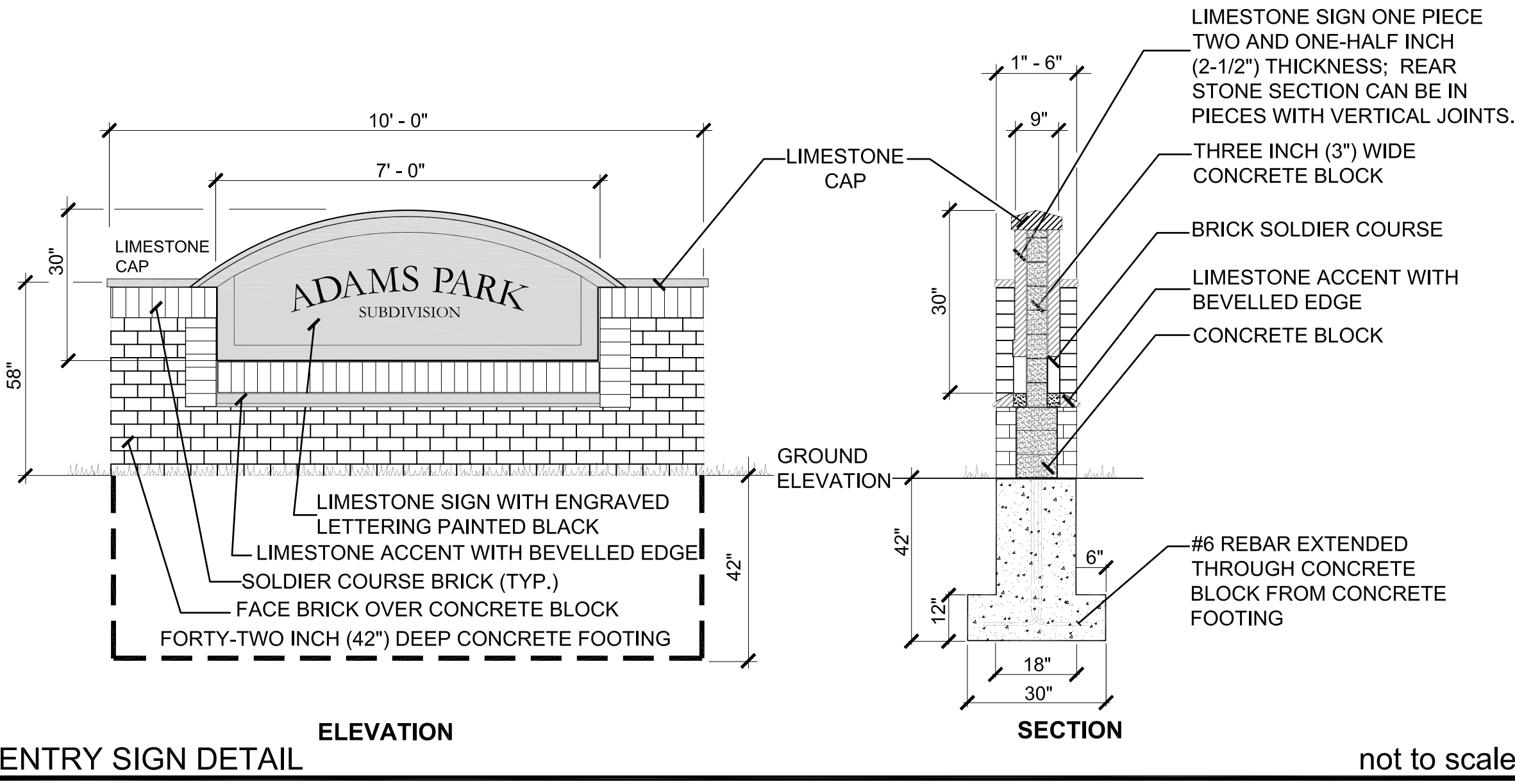
BOTANICAL NAME	COMMON NAME
Wildflowers	
<i>Achillea millefolium</i>	Yarrow
<i>Aquilegia canadensis</i>	Wild Columbine
<i>Asclepias tuberosa</i>	Butterflyweed
<i>Aster laevis</i>	Smooth Aster
<i>Coreopsis lanceolata</i>	Sand Tickseed
<i>Echinacea purpurea</i>	Purple Coneflower
<i>Kuhnia eupatorioides</i>	False Boneset
<i>Monarda fistulosa</i>	Bergamot
<i>Penstemon digitalis</i>	Fockglove Beardstongue
<i>Rudbeckia hirta</i>	Black-Eyed Susan
<i>Solidago speciosa</i>	Showy Goldenrod

Sedges/Grasses	
<i>Schizachyrium scoparius</i>	Little Bluestem
<i>Bouteloua curtipendula</i>	Side Oats Grama
<i>Koeleria pyramidata</i>	June Grass
<i>Sporobolus heterolepis</i>	Prairie Dropseed
* Supplier to add these species to the mix.	



CUSTOM SHORT GRASS SEED MIX

MICHIGAN WILDFLOWER FARM
11770 Cutler Road
Portland, Michigan 48875-9452
Phone: (517) 647 6010
Fax: (517) 647 6072



ELEVATION

ENTRY SIGN DETAIL

not to scale

NOTES:

- * STAKE TREES UNDER FOUR INCH (4") CALIPER.
- * CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.
- * SET TOP OF BALL THREE INCHES (3") ABOVE FINISH GRADE.
- * SET STAKES VERTICAL & EVENLY SPACED.
- * STAKES OR GUYS TO BE SECURED ABOVE THE FIRST BRANCH.
- * DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
- * REMOVE ALL TAGS, STRING, PLASTICS, AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE DAMAGE.

NOTES:

- * STAKE ALL EVERGREEN TREES UNDER TWELVE FEET (12') HIGH. GUY ALL EVERGREEN TREES TWELVE FEET (12') HIGH AND OVER.
- * CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.
- * NEVER CUT CENTRAL LEADER. PRUNE ONLY TO REMOVE DEAD OR BROKEN BRANCHES.
- * SET STAKES VERTICAL AND EVENLY SPACED.
- * REMOVE ALL TAGS, STRING, PLASTICS, AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.

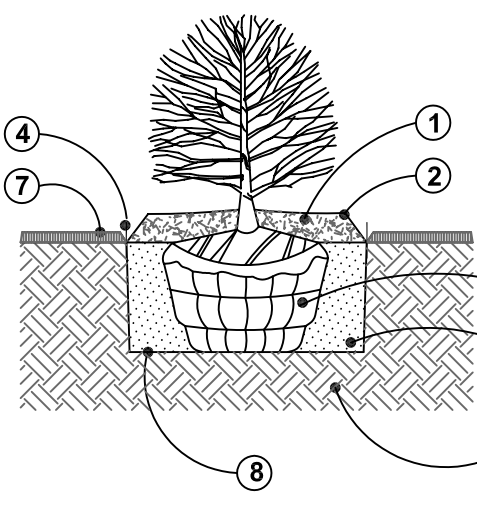
GENERAL NOTES FOR ALL PLANTINGS:

- * DO NOT CUT CENTRAL LEADER.
- * REMOVE ALL TAGS, STRINGS, PLASTICS, AND ANY OTHER NON-BIODEGRADABLE MATERIALS (EXCEPT LABEL FOR PLANT NAME) FROM PLANT STEMS OR CROWN WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
- * PLANTS SHALL BEAR THE SAME RELATION TO FINISH GRADE AS IT BORE TO THE PREVIOUS GRADE IN THE NURSERY. SET THE BASE OF THE PLANT SLIGHTLY HIGHER THAN EXISTING GRADE IF PLANTING IN CLAY SOILS.
- * CENTER THE ROOTBALL IN THE PLANTING HOLE. LEAVE THE BOTTOM OF THE PLANTING HOLE FIRM. USE WATER TO SETTLE THE PLANTING MIX AND REMOVE ANY AIR POCKETS AND FIRMLY SET THE TREE OR SHRUB. GENTLY TAMP IF NEEDED.

NOTE:

- * CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.

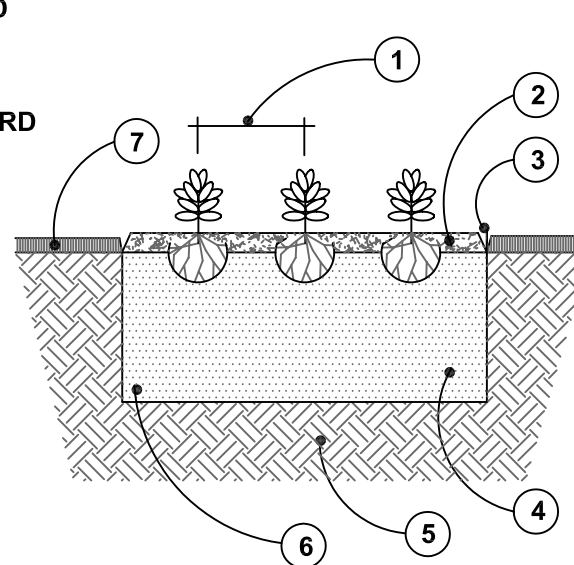
- SHREDDED BARK MULCH AT FOUR INCH (4") MINIMUM DEPTH. MULCH SHALL BE NATURAL IN COLOR.
- FORM A SAUCER WITH MULCH AND SOIL AROUND SHRUB BED.
- CUT AND REMOVE BURLAP AND BINDINGS FROM THE TOP ONE-THIRD (1/3) OF THE ROOTBALL.
- 3/16" x 4" ALUMINUM EDGING (OR APPROVED EQUIVALENT) OR SPADED EDGE.
- EXCAVATE PLANTING HOLE AND BACKFILL WITH PREPARED PLANTING MIX.
- UNDISTURBED SUBGRADE.
- LAWN.
- SCARIFY SUBGRADE.



SHRUB

NOTE:

- * CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.
- * PERENNIALS TO BE PLANTED UP TO THE EDGE OF THE SAUCER AROUND A TREE OR SHRUB BED.



ANNUAL / PERENNIAL / GROUNDCOVER

not to scale

NOTE:

- * See Sheet L - 1: LANDSCAPE PLANTING PLAN for proposed plantings, plant list, and sign elevation.

date: November 17, 2020

revised:

11-19-2020 Add maintenance path for pond.



Know what's below.
Call before you dig.

LANDSCAPE PLAN FOR:

Michael L. Priest
& Associates, Inc.
40655 Koppemick
Canton, Michigan 48187
(734) 459-8560

PROJECT LOCATION:

Adams Park Subdivision
Southeast Corner of
Harrison Avenue &
Lyndon Avenue
Livonia, Michigan

LANDSCAPE PLAN BY:

Nagy Devlin Land Design
31736 West Chicago Ave.
Livonia, Michigan 48150
(734) 634 9208



J. Brian Devlin
AUTOCAD SIGNATURE
ORIGINAL IN BLUE

L - 2: LANDSCAPE NOTES & DETAILS

PLANTING DETAILS

DECIDUOUS TREE

EVERGREEN TREE



THE KINGSWOOD

Alternate Elevations



Elevation A



Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction.

Elevation B

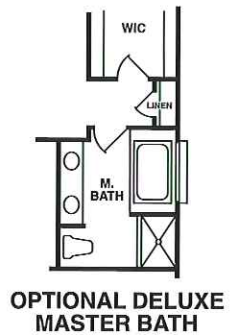
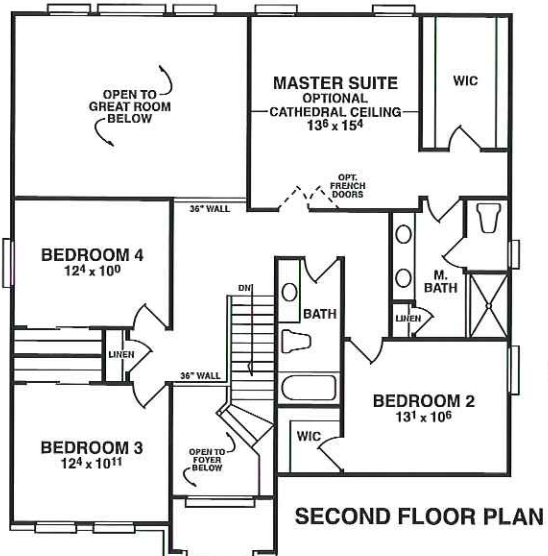
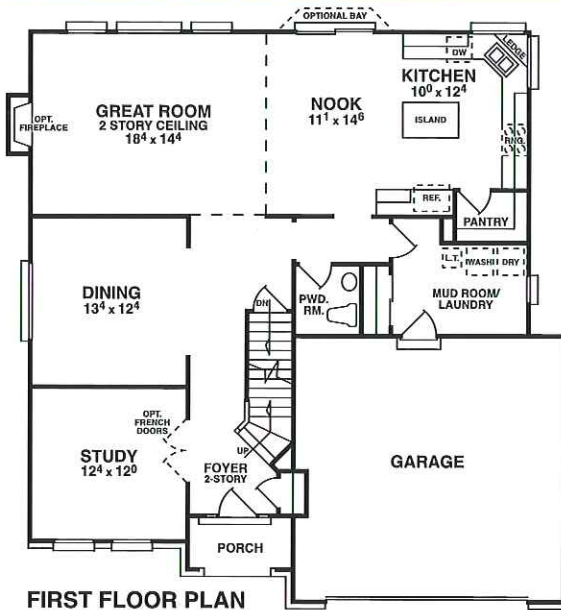


THE KINGSWOOD

4 or 5 Bedroom • 2 1/2 or 3 1/2 Bath • Colonial • Approx. 2539 sq. ft.



Elevation C



BUILDING TRADITION SINCE 1971

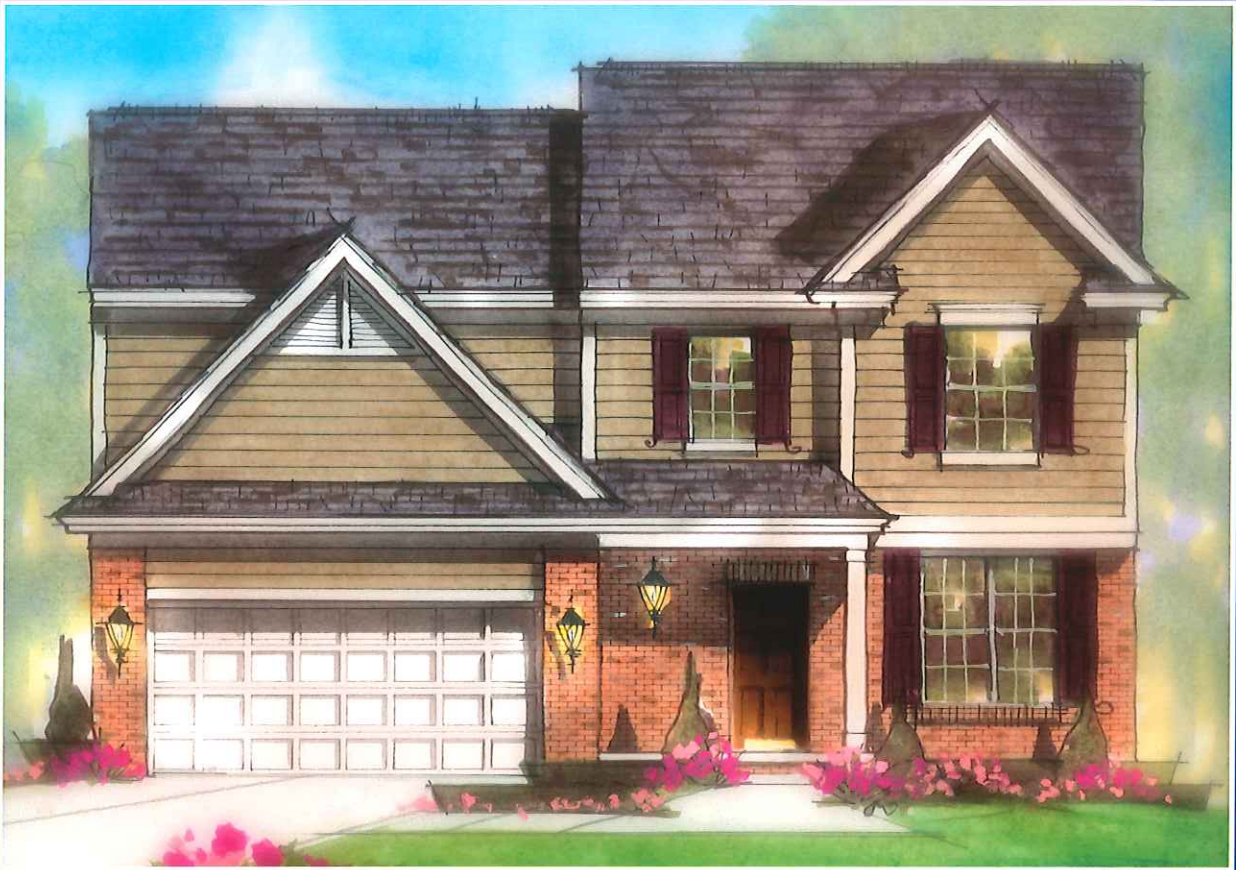
WWW.WINDMILLHOMES.COM

Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction. Floor plan dimensions are approximate. ©2018



THE WOODSIDE

Alternate Elevations



Elevation A



Elevation B

Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction.

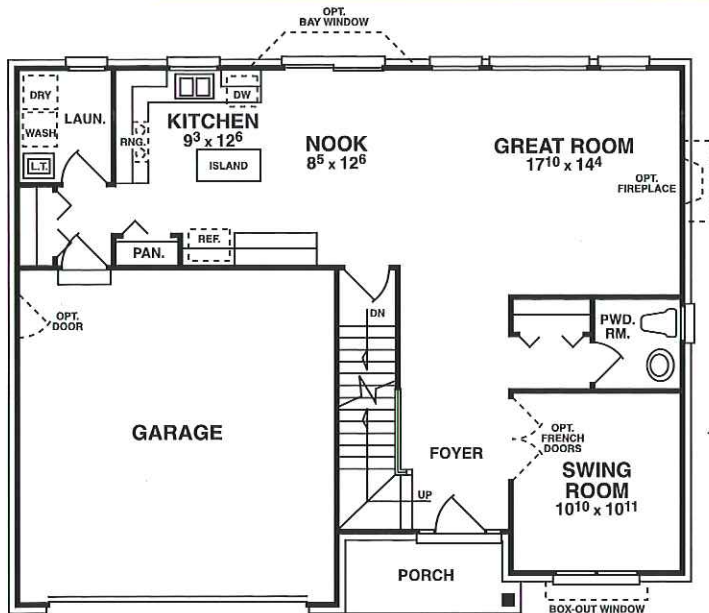


THE WOODSIDE

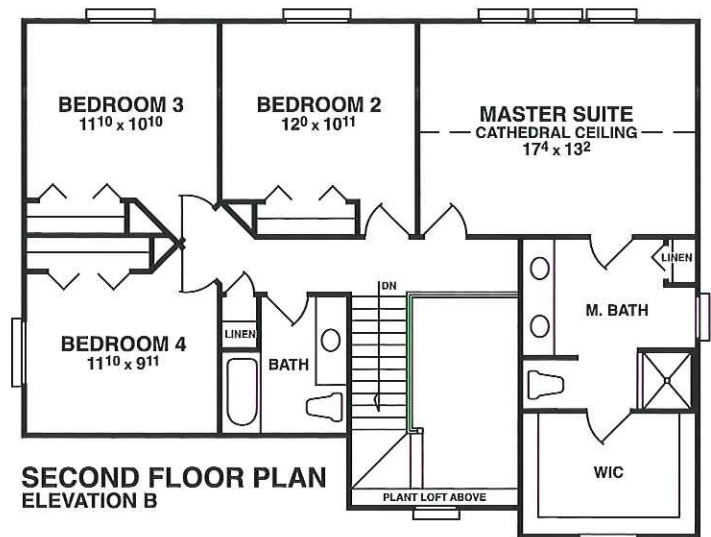
4 Bedroom • 2 1/2 Bath • Colonial • Approx. 2380 sq. ft.



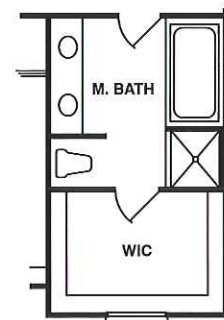
Elevation C



FIRST FLOOR PLAN
ELEVATION B



SECOND FLOOR PLAN
ELEVATION B



OPTIONAL BATH



BUILDING TRADITION SINCE 1971

WWW.WINDMILLHOMES.COM

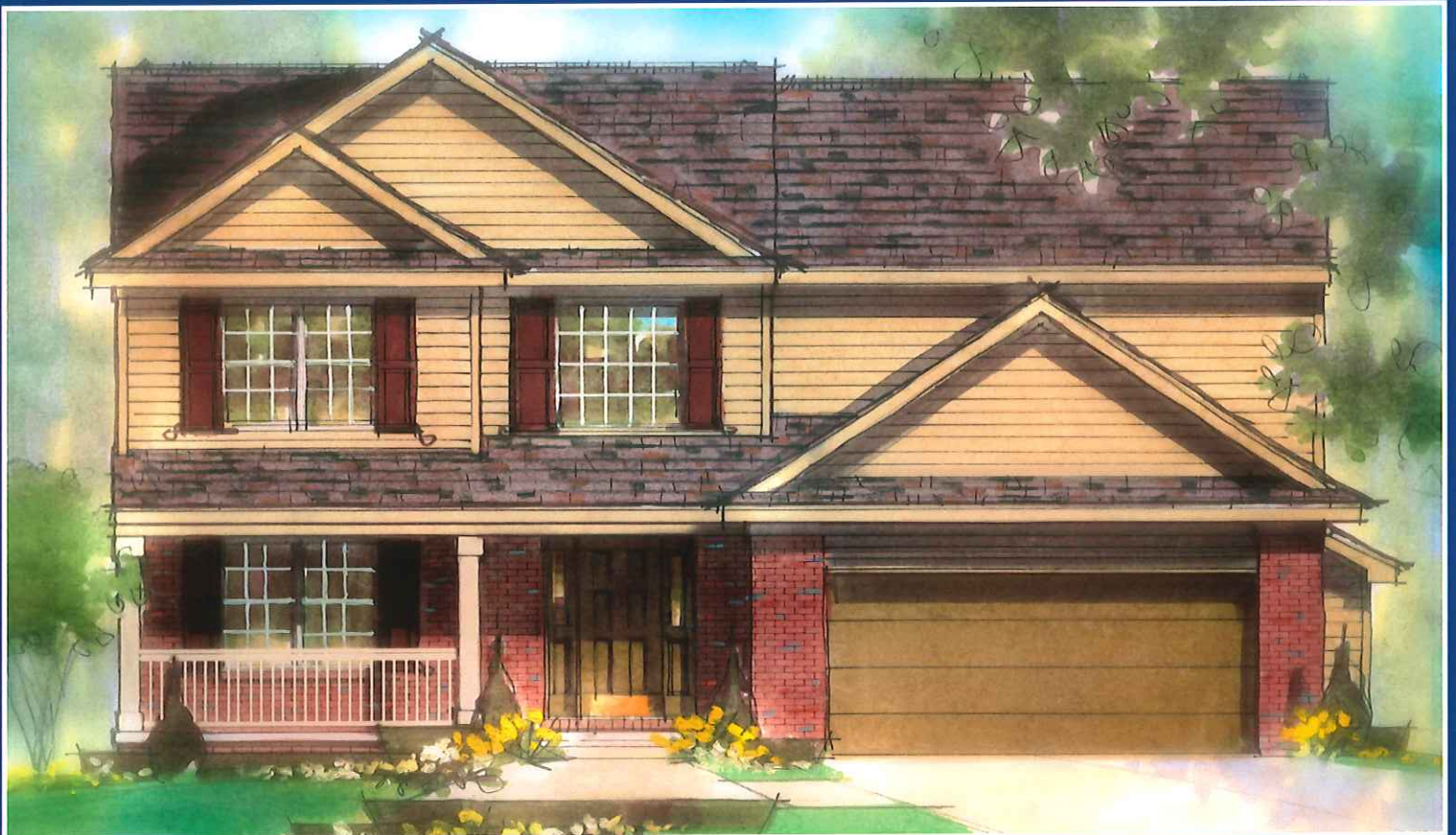


THE BAYPORT

Alternate Elevations



Elevation A



Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction.

Elevation B

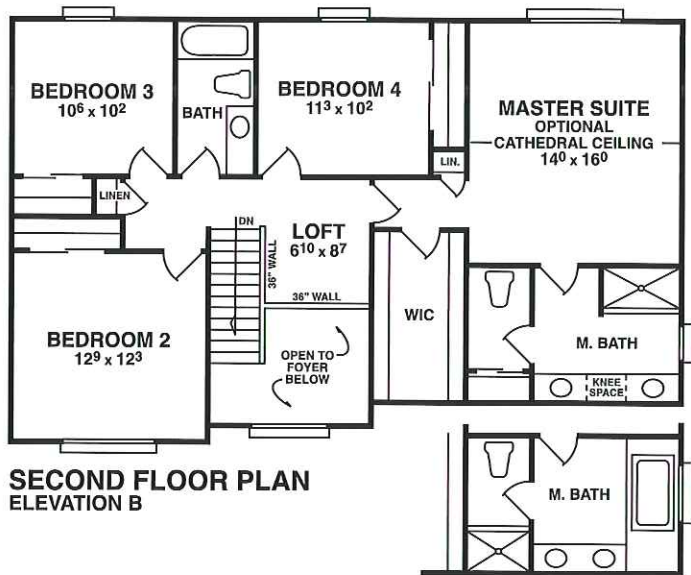


THE BAYPORT

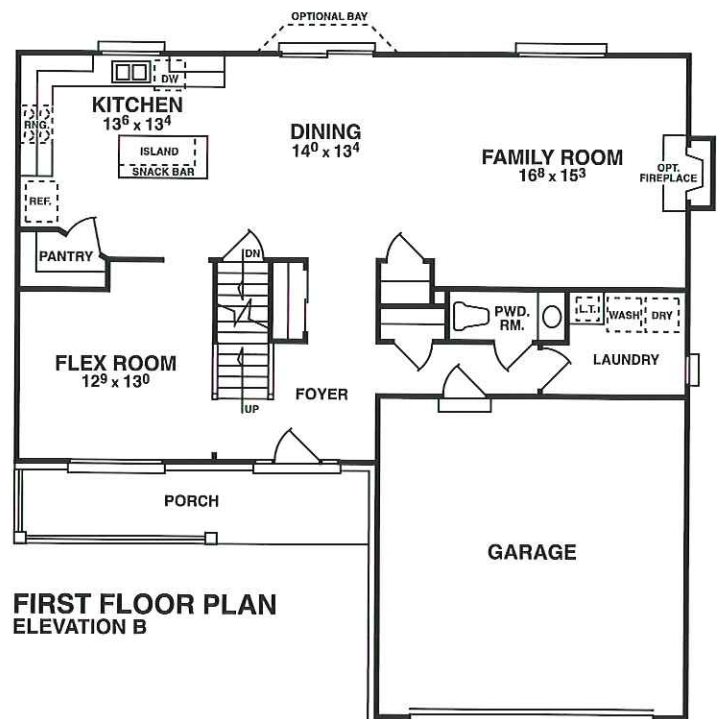
4 Bedroom • 2 1/2 Bath • Colonial • Approx. 2469 sq. ft.



Elevation C



**OPTIONAL MASTER
BATH PLAN**



BUILDING TRADITION SINCE 1971

WWW.WINDMILLHOMES.COM

Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction. Floor plan dimensions are approximate. ©2018



THE BARRINGTON

Alternate Elevations



Elevation A



Elevation B

Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction.

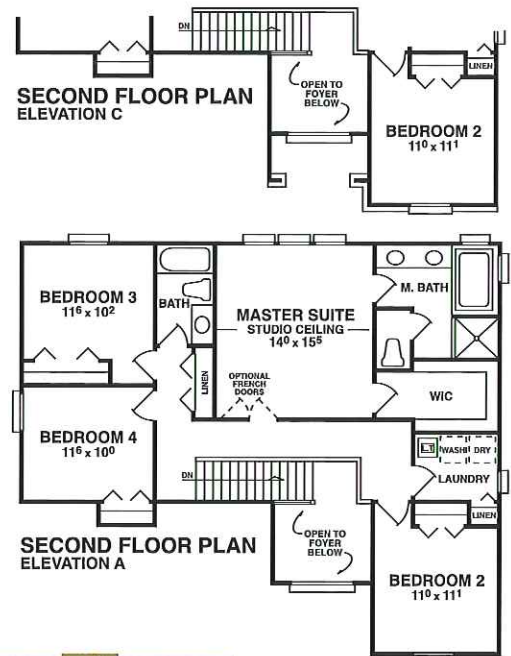
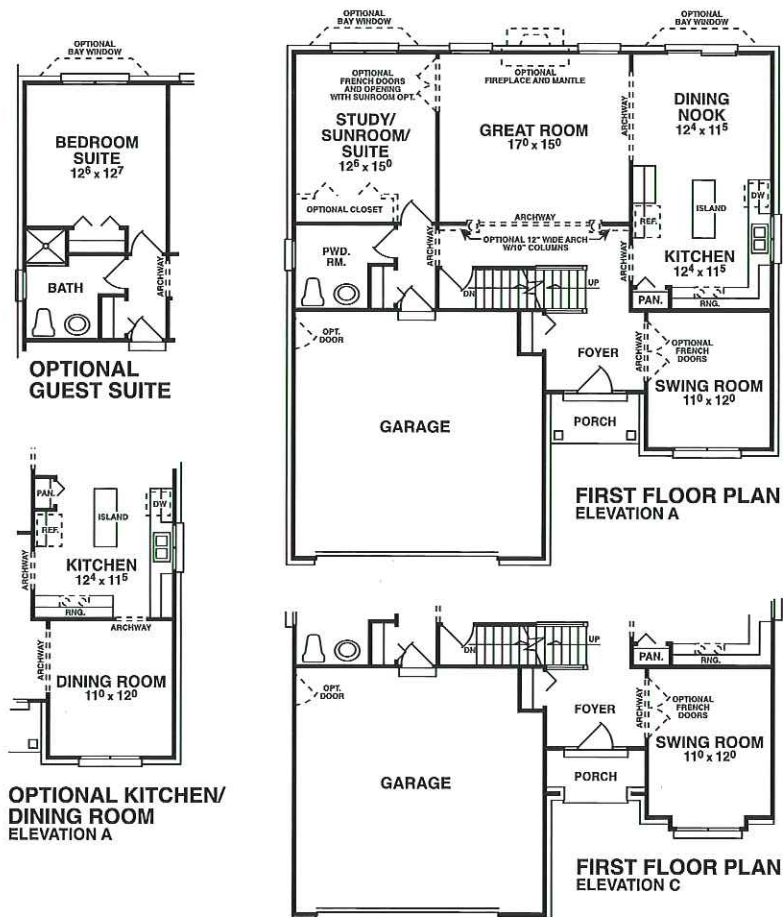


THE BARRINGTON

4 Bedroom • 2 1/2 Bath • Colonial • Approx. 2353 sq. ft.



Elevation C



BUILDING TRADITION SINCE 1971

WWW.WINDMILLHOMES.COM



THE BRIDGEPORT

Alternate Elevations



Elevation A



BUILDING TRADITION SINCE 1971

WWW.WINDMILLHOMES.COM

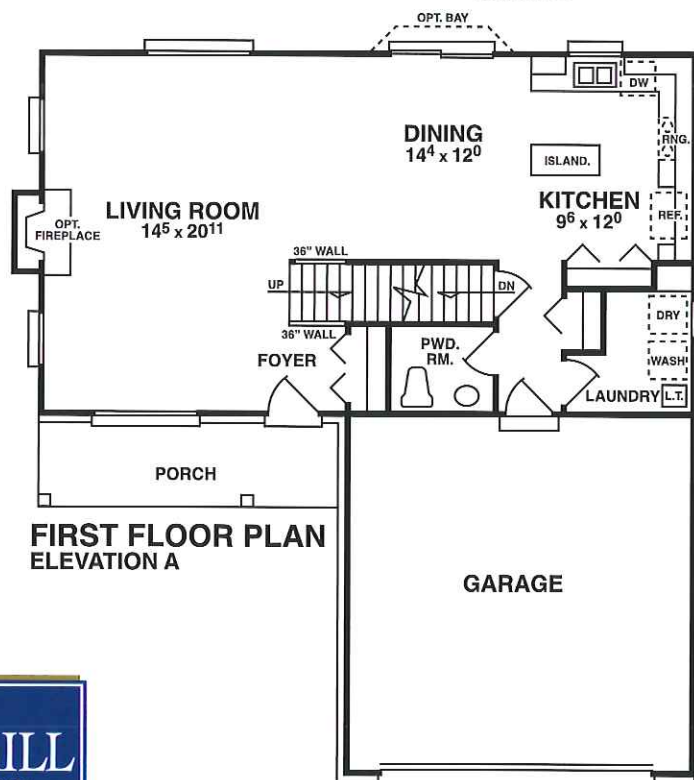
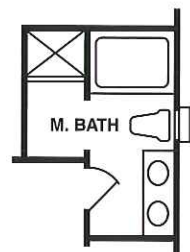
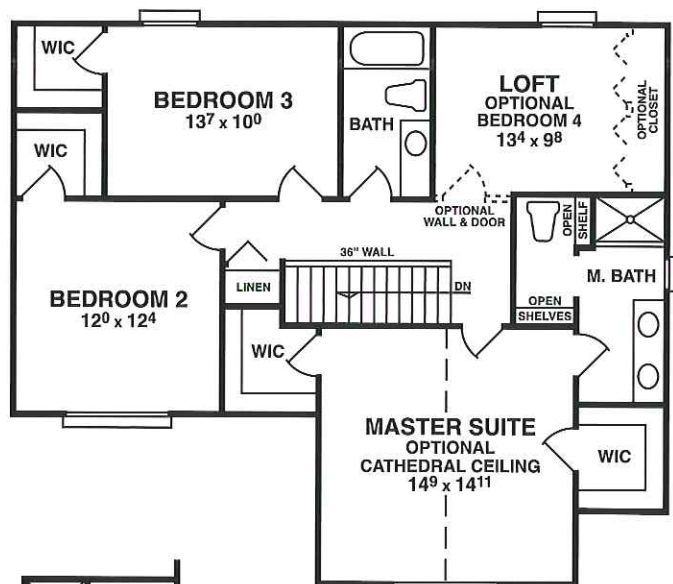


THE BRIDGEPORT

3 Bedroom • 2 1/2 Bath • Colonial • Approx. 1915 sq. ft.



Elevation B

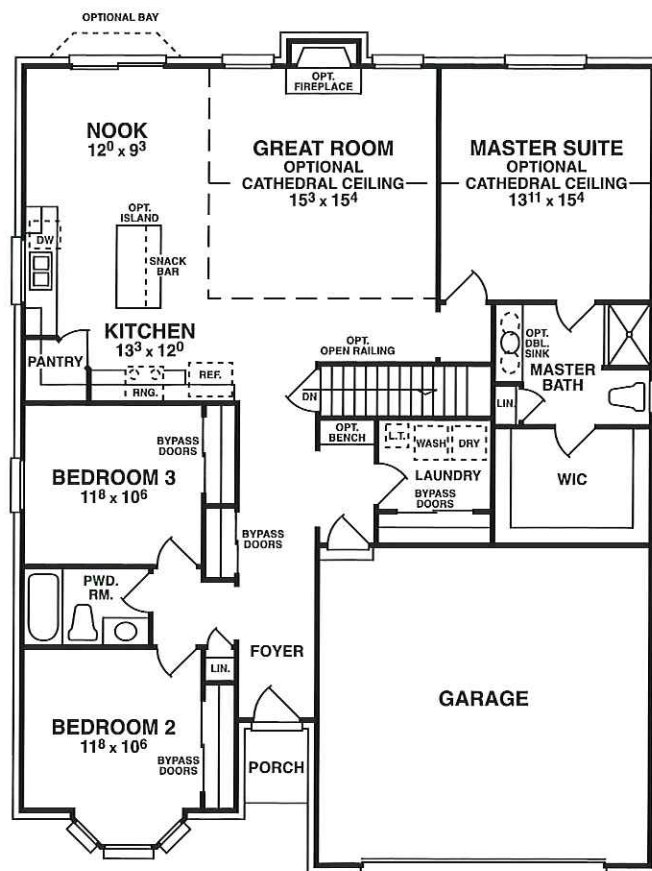


BUILDING TRADITION SINCE 1971

WWW.WINDMILLHOMES.COM



Elevation C



FIRST FLOOR PLAN
ELEVATION B



**OPTIONAL
DELUXE
BATH PLAN
ELEVATION B**



BUILDING TRADITION SINCE 1971

WWW.WINDMILLHOMES.COM



THE MAPLE

Alternate Elevations



Elevation A



Elevation B

Prices, plans and specifications are subject to change without notice or obligation. Renderings are an artist's conception, may vary in construction.



MAPLE WOODS

Site Plan



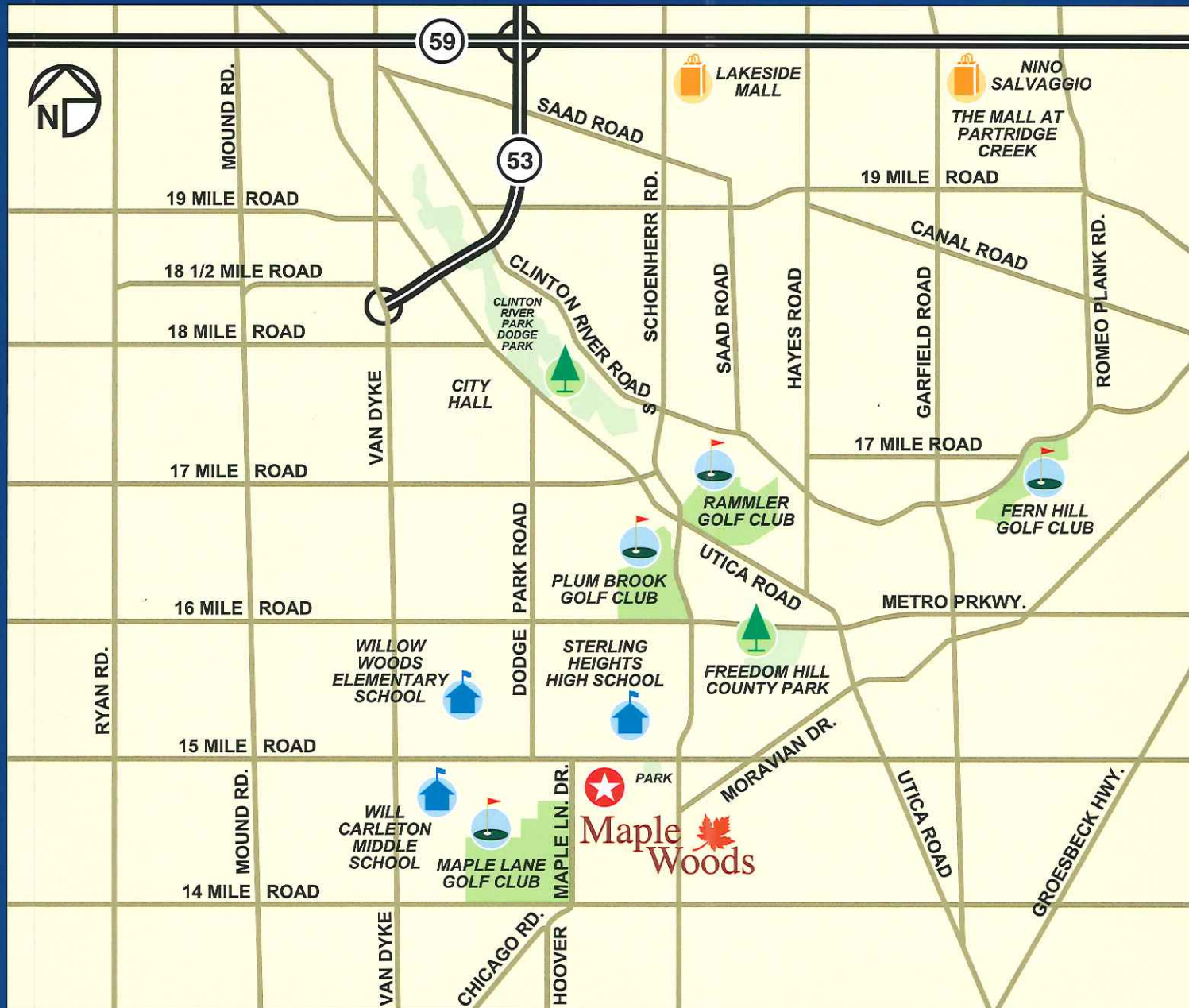
WWW.WINDMILLHOMES.COM

BUILDING TRADITION SINCE 1971



MAPLE WOODS

Location and Area Amenities



DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION

TODD J. ZILINCIK, P.E.
CITY ENGINEER

DAVID W. LEAR, P.E.
ASST. CITY ENGINEER



MAUREEN MILLER BROSNAN
MAYOR

DONALD R ROHRAFF
DIRECTOR OF PUBLIC WORKS

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2571
FAX: (734) 466-2195

November 17, 2020

Mr. Scott Miller
Planner IV
City of Livonia

Re: Petition 2020-11-08-07 – Adams Park Site Condominium

Dear Mr. Miller:

In accordance with your request, the Engineering Division has reviewed the above referenced petition. We have no objections to the proposed project at this time. The properties associated with the project are assigned the addresses of **#28201 Lyndon Avenue and #14416 Harrison Avenue**. The legal description included on the plans submitted by the owner appears to be correct, and should be used to describe the parcels.

The proposed development is currently serviced by public water main, storm and sanitary sewers, and the submitted drawings indicate that new utility connections will be constructed to service the proposed parcel layout. Easements will need to be provided for the new water and sanitary sewers, as well as portions of the storm sewer that are to be maintained by the City. At this time, Exhibit "B" drawings have not been provided to show proposed easements, so we cannot determine if the proposed easements are correct.

The proposed construction will be required to meet the Wayne County Stormwater Ordinance, including detention requirements. Detention is shown on the preliminary plans, and a full review of the proposed development will be completed when plans are submitted for permitting. It should be noted that the proposed outlet for the development is owned by Wayne County, and therefore storm water permitting will be through the Wayne County Department of Public Service.

The submitted drawings indicate that the proposed roadways are to be 27' wide, but the current Engineering Department standards require roadways to be 31' wide. Access to the detention pond and accessory structures will need to be hardscaped (either

To: Mr. Scott Miller
Re: Petition 2020-11-08-07 – Adams Park Site Condominium

November 17, 2020
Page 2

sidewalk or pavers) to be able to drive equipment on for any future maintenance, as well as for residents to access the proposed open areas.

The submitted drawings do not indicate roadway names for any of the proposed streets, but it should be noted that “Adams” will not be allowed for any of the roadways in this development as that name is already in use by roadways on the west side of the City.

Should you have any additional questions on this matter, please feel free to contact myself at (734) 466-2608 or the City Engineer, Mr. Todd Zilincik at (734) 466-2561. If you would prefer, you can e-mail either of us at dlear@ci.livonia.mi.us or tzilincik@ci.livonia.mi.us.

Sincerely,



David W. Lear, P.E.
Assistant City Engineer

cc: 2020 Petition File

DEPARTMENT OF PUBLIC SAFETY
LIVONIA FIRE & RESCUE

DAVE HEAVENER
FIRE CHIEF



MAUREEN MILLER BROSNAN
MAYOR

14910 FARMINGTON ROAD
LIVONIA, MICHIGAN 48154-5419
734-466-2444
734-466-2082 fax

DATE: December 7, 2020
TO: Scott O. Miller, Planner IV
FROM: Livonia Fire Prevention Division

SUBJECT: Petition 2020-11-08-07, Adams Park Site Condominium, 14416 Harrison Avenue and 28201 Lyndon Avenue

This office has reviewed the site plan submitted in connection with a request to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on properties located at the above referenced addresses.

We have no objections to this proposal with the following stipulations:

1. Any curves or corner of streets shall accommodate emergency vehicles with a turning radius of fifty-three feet wall to wall and an inside turning radius of twenty-nine feet six inches.
2. Standard for residential cul-de-sacs is 50' with a minimum right-of-way radius of 60' to provide for sidewalks and utilities.

Sincerely,

Greg Thomas

Greg Thomas
Fire Marshal

DEPARTMENT OF PUBLIC SAFETY
DIVISION OF POLICE

CURTIS CAID
CHIEF OF POLICE



MAUREEN MILLER BROSNAN
MAYOR

15050 FARMINGTON ROAD
LIVONIA, MICHIGAN 48154-5499
(734) 466-2470
FAX: (734) 261-2265

RECEIVED
NOV 24 2020
CITY OF LIVONIA
PLANNING COMMISSION

November 23, 2020

Mr. Scott O. Miller
Planning Commission
33000 Civic Center Drive
Livonia, MI 48154

Re: Petition 2020-11-08-07 - Adams Park Site Condominium

Dear Mr. Miller,

I have reviewed the plans in connection with the petitions. I have no objections to the proposals.

Please feel free to contact me should you have any questions.

Sincerely,

FOR THE CHIEF OF POLICE

Sgt. Scott Szczepanski #543
Scott Szczepanski, Sergeant
Traffic Bureau
(734) 466-2107

INSPECTION DEPARTMENT

BUILDING
HEATING
PLUMBING
ELECTRICAL
ZONING
SANITATION
ENVIRONMENTAL PROTECTION
ORDINANCE ENFORCEMENT



MAUREEN BROSNAN
MAYOR

JEROME A. HANNA
DIRECTOR

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2580
FAX: (734) 466-2095

Date: December 10, 2020

To: Scott O. Miller

From: Jerome Hanna

RE: Petition 2020-11-08-07 Adams Park Site Condominium

Pursuant to your request, the above referenced Petition has been reviewed.

This Department has no objections to this Petition.

I trust this provides the requested information.

Jerome Hanna
Director of Inspection

DEPARTMENT OF FINANCE

Michael T. Slater
DIRECTOR OF FINANCE

Connie Kumpula
CHIEF ACCOUNTANT



MAUREEN MILLER BROSAN
MAYOR

33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3097
(734) 466-2260
FAX: (734) 421-1807

November 20, 2020

Mr. Scott O. Miller
Planning Commission
33000 Civic Center Drive
Livonia, MI 48154

Petition 2020-11-08-07 – 14416 Harrison Ave and 28201 Lyndon Ave – Adams Park Site Condominium

Dear Mr. Miller,

I have reviewed the addresses connected with the above noted petition. As there are no outstanding amounts receivable (general or water and sewer), I have no objections to the proposal.

Please contact me if you have any further questions.

Very truly yours,

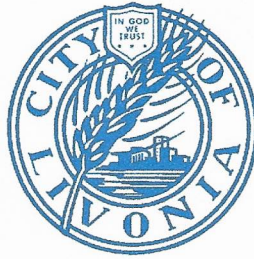
A handwritten signature in blue ink, which appears to read "Connie Kumpula".

Connie Kumpula
Chief Accountant

CK: jw

OFFICE OF THE TREASURER

LYNDA L. SCHEEL
CITY TREASURER



33000 CIVIC CENTER DRIVE
LIVONIA, MICHIGAN 48154-3060
(734) 466-2245
FAX: (734) 421-7230

December 2, 2020

Mr. Scott Miller – Planner IV
Planning Commission
City of Livonia

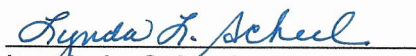
Re: Petition 2020-11-08-07

Adams Park Site Condominium
14416 Harrison Ave & 28201 Lyndon Ave
(former Adams Elementary School)

Dear Mr. Miller,

In accordance with your request, the Treasurer's Office has reviewed the name and addresses connected with the above noted petition. At this time there are taxes due, but they are not delinquent, therefore I have no objections to the proposal.

Sincerely,


Lynda L. Scheel
Treasurer, City of Livonia

**OTHER ITEMS
RELATED TO THE
PETITION**

MASTER DEED

ADAMS PARK

THIS MASTER DEED is made and executed on this 1st day of December, 2020, by **ADAMS PARK DEVELOPMENT LLC**, a Michigan limited liability company (hereinafter referred to as "Developer"), whose address is 31333 W. Thirteen Mile Road, Suite 200, Farmington Hills, Michigan 48334, pursuant to the provisions of the Michigan Condominium Act (Act 59 of the Public Acts of 1978, as amended).

WHEREAS, Developer desires by recording this Master Deed, together with the Bylaws attached hereto as Exhibit A and the Condominium Subdivision Plan attached hereto as Exhibit B (both of which are hereby incorporated herein by reference and made a part hereof), to establish the real property described in Article II below, together with the improvements located and to be located thereon, and the appurtenances thereto, as a residential condominium project under the provisions of the Act.

NOW, THEREFORE, Developer, by recording this Master Deed, hereby establishes Adams Park as a residential condominium project under the Act and declares that Adams Park shall be held, conveyed, hypothecated, encumbered, leased, rented, occupied, improved, and otherwise utilized, subject to the provisions of the Act, and the covenants, conditions, restrictions, uses, limitations and affirmative obligations set forth in this Master Deed and Exhibits A and B hereto, all of which shall be deemed to run with the land and be a burden and a benefit to Developer, its successors and assigns, and any persons acquiring or owning an interest in the Condominium Premises, and their grantees, successors, heirs, personal representatives and assigns.

ARTICLE I

TITLE AND NATURE

The Condominium Project shall be known as Adams Park, Wayne County Condominium Subdivision Plan No. _____. The Condominium Project is established in accordance with the Act. The Units contained in the Condominium, including the number, boundaries, dimensions, and area of each Unit, are set forth completely in the Condominium Subdivision Plan attached to this Master Deed as Exhibit B. Each Unit is capable of individual utilization by virtue of having its own entrance from and exit to a Common Element within the Condominium Project. Each Co-owner in the Condominium Project shall have an exclusive right to his Unit and shall have an undivided and inseparable right to share with other Co-owners the Common Elements of the Condominium Project.

ARTICLE II

LEGAL DESCRIPTION

The land which is subject to the Condominium Project established by this Master Deed is described as follows:

Land situated in the City of Livonia, Wayne County, Michigan, and described as follows:

Parcel 1:

A parcel of land of part of the South ½ of Section 24, Town 1 South, Range 9 East, City of Livonia, Wayne County, Michigan being more particularly described as follows: Beginning at the center of said Section 24, thence South 89 degrees 58 minutes East, a distance of 660.26 feet along the East and West ¼ line; thence South 0 degrees 08 minutes 10 seconds East, along the West line of Buckingham Gardens Sub., a distance of 706.97 feet to a point; thence South 89 degrees 51 minutes 46 seconds West, a distance of 656.48 feet to a point; thence North 0 degrees 26 minutes 30 seconds West 708.91 feet, to a point of beginning.

Parcel 2:

A parcel of land in the South ½ of Section 24, Town 1 South, Range 9 East, City of Livonia, Wayne County, Michigan, being described as follows: Beginning at the center ¼ corner of Section 24, Town 1 South, Range 9 East, and proceeding thence along the North and South ¼ line of said Section 24, South 0 degrees 00 minutes 35 seconds East 708.91 feet, thence South 68 degrees 32 minutes 10 seconds West, 43.63 feet, thence South 89 degrees 52 minutes 25 seconds West 80.85 feet, thence along the East line of Harrison Avenue, 86 feet wide, coincident with the East line of Compton Village Subdivision, as recorded in Liber 85 of Plats, Page 31, Wayne County Records, North 0 degrees 07 minutes 35 seconds West 726.07 feet, thence along the East and West ¼ line of said Section 24, South 89 degrees 31 minutes 28 seconds East 122.94 feet to the point of beginning.

Sidwell Nos: 46-096-99-0004-000 and 46-095-99-0011-000

Commonly known as: 28201 Lyndon Street, Livonia, Michigan

ARTICLE III

DEFINITIONS

Certain terms are utilized in this Master Deed and Exhibits A and B, and are or may be used in various other instruments such as, by way of example and not limitation, the Articles of Incorporation and rules and regulations of the Adams Park Association, a Michigan nonprofit corporation, and deeds, mortgages, liens, land contracts, easements and other instruments affecting the establishment of, or transfer of, interests in Adams Park. Wherever used in such documents or any other pertinent instruments, the terms set forth below shall be defined as follows:

Section 3.1 **"Act"** means the Michigan Condominium Act, Act 59 of the Public Acts of 1978, as amended.

Section 3.2 **"Association"** means the Adams Park Association, which is the nonprofit corporation organized under Michigan law of which all Co-owners shall be members, and which shall administer, operate, manage and maintain the Condominium. Any action which the Association is required or entitled to take shall be exercisable by its Board of Directors unless specifically reserved to its members by the Condominium Documents or the laws of the State of Michigan.

Section 3.3 **"Bylaws"** means Exhibit A attached to this Master Deed, which sets forth the substantive rights and obligations of the Co-owners and which is required by Section 3(8) of the Act to be recorded as part of the Master Deed. The Bylaws shall also constitute the corporate bylaws of the Association as allowed under the Michigan Nonprofit Corporation Act, as amended.

Section 3.4 **"City"** means the City of Livonia, a Michigan municipal corporation.

Section 3.5 **"Common Elements"**, where used without modification, means both the General and Limited Common Elements described in Article IV below.

Section 3.6 **"Condominium Documents"** means this Master Deed and Exhibits A and B hereto, and the Articles of Incorporation, and rules and regulations, if any, of the Association, as any or all of the foregoing may be amended from time to time.

Section 3.7 **"Condominium Premises"** means the land described in Article II above, all improvements and structures thereon, and all easements, rights and appurtenances belonging to Adams Park.

Section 3.8 **"Condominium Project," "Condominium" or "Project"** are used synonymously to refer to Adams Park.

Section 3.9 **"Condominium Subdivision Plan"** means Exhibit B to this Master Deed.

Section 3.10 **"Co-owner"** means an individual, firm, corporation, partnership, limited liability company, association, trust or other legal entity (or any combination thereof) who or which owns or is purchasing by land contract one or more Units in the Condominium Project. Unless the context indicates otherwise, the term "Owner", wherever used, shall be synonymous with the term "Co-owner".

Section 3.11 **"Developer"** means Adams Park Development LLC, a Michigan limited liability company, which has made and executed this Master Deed, and its successors and assigns. Both successors and assigns shall always be deemed to be included within the term "Developer" whenever, however and wherever such terms are used in the Condominium Documents. However, the word "successor" as used in this Section 3.11 shall not be interpreted to mean a "Successor Developer" as defined in Section 135 of the Act.

Section 3.12 **"Development and Sales Period"** means the period commencing with the recordation of this Master Deed and continuing during the period that Developer owns (in fee simple, as a land contract purchaser or as an optionee) any Unit in the Project.

Section 3.13 **"Dwelling"** means a home constructed within the boundaries of a Unit.

Section 3.14 "First Annual Meeting" means the initial meeting at which non-Developer Co-owners are permitted to vote for the election of all Directors and upon all other matters which properly may be brought before the meeting. Such meeting is to be held (a) in Developer's sole discretion after fifty (50%) percent of the Units which may be created are sold, or (b) mandatorily after the elapse of fifty-four (54) months from the date of the first Unit conveyance, or (c) mandatorily within one hundred twenty (120) days after seventy-five (75%) percent of all Units which may be created are sold, whichever first occurs.

Section 3.15 "Telecommunications System" means a system or videotext, broad band cable, a satellite dish serving the entire Project, if any, or earth antenna and similar telecommunication services.

Section 3.16 "Transitional Control Date" means the date on which a Board of Directors of the Association takes office pursuant to an election in which the votes which may be cast by eligible Co-owners unaffiliated with Developer exceed the votes which may be cast by Developer.

Section 3.17 "Unit or Condominium Unit" each means a single building site in Adams Park as described in Section 5.1 of this Master Deed and on Exhibit B hereto, and shall have the same meaning as the term "Condominium Unit" as defined under the Act. All structures and improvements now or hereafter located within the boundaries of a Unit shall be owned in their entirety by the Co-owner of the Unit within which they are located and shall not, unless otherwise expressly provided in the Condominium Documents, constitute Common Elements.

Wherever any reference is made to one gender, the reference shall include a reference to any and all genders where the same would be appropriate; similarly, whenever a reference is made to the singular, a reference shall also be included to the plural where that reference would be appropriate, and vice versa.

ARTICLE IV

COMMON ELEMENTS

The Common Elements of the Project described in Exhibit B to this Master Deed, and the respective responsibilities for their maintenance, repair and replacement, are as follows:

Section 4.1 General Common Elements. The General Common Elements are as follows:

(a) Land. The land not contained within a Unit designated in Exhibit B as a General Common Element.

(b) Sanitary Sewer System. The sanitary sewer system located throughout the Project, including the sanitary sewer mains located within the easements identified as "_____ " as shown on the Easement Plan which is on page ___ of the Condominium Subdivision Plan, Exhibit B to this Master Deed (hereafter known as the "Sanitary Sewer System"). The Sanitary Sewer System will be dedicated to the public and once accepted by the public by recordation of appropriate instruments of conveyance, the Sanitary Sewer System will no longer be a General Common Element.

(c) Water Distribution System. The water distribution system located throughout the Project, including the water mains located within the easements identified as

“ _____ ” as shown on the Easement Plan which is on page ____ of the Condominium Subdivision Plan, Exhibit B to this Master Deed (hereafter known as the “Water Distribution System”). The Water Distribution System will be dedicated to the public and, once accepted by the public by recordation of appropriate instruments of conveyance, the Water Distribution System will no longer be a General Common Element.

(d) **Storm Sewer and Surface Water Drainage System.** The storm sewer and surface water drainage system that serves the Condominium. The storm sewer and surface water drainage system is located within the easements identified as “ _____ ”, as shown on the Easement Plan which is on page ____ of the Condominium Subdivision Plan, Exhibit B to this Master Deed (hereafter known as the “Storm Sewer and Surface Water Drainage System”). Any portion of the Storm Sewer and Surface Water Drainage System which is dedicated to and accepted by the public in the future, as confirmed by recordation of appropriate instruments of conveyance, will no longer be a General Common Element.

(e) **Storm Water Detention Basin.** The storm water detention basin, the 12’ wide grass paver access path and the fountain located within the storm water detention basin. The storm water detention basin and fountain are located within the easement identified as “ _____ ” as shown on the Easement Plan which is on page ____ of the Condominium Subdivision Plan, Exhibit B to this Master Deed (hereafter collectively referred to as the “Storm Water Detention Basin”). Any portion of the storm water detention basin which is dedicated to and accepted by the public in the future, as confirmed by recordation of appropriate instruments of conveyance, will no longer be a General Common Element.

(f) **Adams Park.** The land, landscaping and improvements including the walking path and benches that are located in the area identified as “Adams Park” on the Site Plan which is on page ____ of the Condominium Subdivision Plan, Exhibit B to this Master Deed (hereinafter known as “Adams Park”).

(g) **Landscaped Open Space Areas.** All landscaping, berms, trees, shrubs and other plantings and any other structures and improvements, if any, located within the open space areas, along Lyndon Street at the two entrances to the Condominium, in the cul de sac of Strathcona Drive and in the open space area at the southwest corner of the Condominium (collectively referred to in this Master Deed as the “Landscaped Open Space Areas”).

(h) **Irrigation System.** The sprinkler system, if any, including but not limited to, all sprinkling system fixtures, pipes and connections as well as all sprinkling system controls and the water meters and electrical meters connected to the system, if any, which provides irrigation to landscaping throughout the General Common Elements (hereafter known as the “Irrigation System”).

(i) **Entrance Monuments, Entrance Signs and Other Signage.** The entrance monuments and entrance signs located on Lyndon Street at the two entrances to the Condominium, park signs in Adams Park and the electrical fixtures and electric meter, if any, that illuminate the entrance signs and the park sign(s), if any.

(j) **Road Right of Way and Roads.** The road right of way and road improvements within the Project identified as Strathcona Drive and Wellesley Drive, as shown on the Site Plan which is on pages ____ and ____ of the Condominium Subdivision Plan, Exhibit B to this Master Deed, unless and until the road right of way and roads have been

dedicated to and accepted by the public pursuant to Section 7.7 below (said road right of way and improvements are collectively referred to in this Master Deed as the "Roads").

(k) **Mailboxes.** The mailboxes and mailbox stands located throughout the Project and the area in which the mailbox post is located within the Road Right of Way.

(l) **Easements.** All easements that are appurtenant to and that benefit the Condominium Premises pursuant to recorded easement agreements, reciprocal or otherwise.

(m) **Other.** Such other elements of the Project not designated in this Article IV as General or Limited Common Elements which are not within the boundaries of a Unit, and which are intended for common use or are necessary for the existence, upkeep and safety of the Project.

Some or all of the utility systems (including mains and service leads), lines and equipment, and the telecommunications system may be owned by, or dedicated by the Developer to, the local public authority or the company that is providing the pertinent service. Accordingly, such utility lines, systems and equipment, and the telecommunications system, if and when constructed, shall be General Common Elements only to the extent of the Co-owners' interest therein, if any, and the Developer makes no warranty whatsoever with respect to the nature or extent of such interest, if any.

Section 4.2 Limited Common Elements. Limited Common Elements are those portions of the Common Elements that are reserved for the exclusive use and enjoyment of one or more but not all Co-owners. Developer and/or the Association may amend this Master Deed and the Condominium Subdivision Plan attached as Exhibit B to create additional Limited Common Elements within those portions of the Condominium Premises designated as General Common Elements in the Condominium Subdivision Plan. Following are the Limited Common Elements which are assigned as indicated:

(a) **Airspace and Subsurface Rights.** The airspace located above the Unit and the subsurface which is located below the Unit as shown on the Site Plan which is page 3 of the Condominium Subdivision Plan, Exhibit B to this Master Deed, which are assigned to and limited in use to the Co-Owner of the Unit situated between them.

(b) **Sanitary Sewer Leads.** The portion of any Sanitary Sewer Lead which is serving a dwelling located within a Unit that is within a Common Element shall be a Limited Common Element assigned to the Unit which it serves.

(c) **Water Service Lines.** The portion of any Water Service Line Which is serving a dwelling located within a Unit that is within a Common Element shall be a Limited Common Element assigned to the Unit which it serves.

(d) **Other Utility Service Leads.** Any other utility service leads, if any, which connect any other utility lines of any sort located within the Common Elements of the Project to any dwelling shall be Limited Common Elements limited in use to the Unit(s) which they serve.

(e) **Driveways.** The portion of any driveway located within a Common Element shall be a Limited Common Element serving the Unit which that driveway serves.

(f) **Landscaping.** Certain landscaping installed by a Co-owner at its own expense on the Common Elements subject to the prior approval of the Board of Directors of the Association in accordance Section 4.3(e) below and the Bylaws, which is assigned to the Unit which it benefits.

Section 4.3 Responsibilities for Maintenance, Repair and Replacement. The respective responsibilities for the maintenance, repair and replacement of the Common Elements and Units are as follows:

(a) **Co-owner Responsibility for Units.** Developer anticipates that a separate residential dwelling (including attached garage and porches) will be constructed within each of the Units depicted on Exhibit B, together with various improvements and structures that are appurtenant to such dwelling. Except as otherwise expressly provided in this Master Deed or Bylaws, the responsibility for the cost of installing, maintaining, decorating, repairing and replacing any dwelling and other improvements, structures or Co-owner installed landscaping located within a Unit (including driveways, walks, utility leads, decks, patios, and air conditioner compressors and pads), shall be borne by the Co-owner of such Unit. All improvements constructed or installed within a Unit, including but not limited to landscaping, decks and patios, if any, shall be subject to the Architectural Controls described in the Bylaws. Each Co-owner shall also maintain, repair and replace the sanitary sewer lead from the sanitary sewer main to the point of entry into the Dwelling. Each Co-Owner shall also maintain, repair and replace the water service line and stop box from the water main up to the water meter within a Unit. All costs of water and sanitary sewer, electricity, natural gas, cable television, telephone and any other utility services furnished to the Dwelling shall be borne by the Co-owner of the Unit to which the services are furnished. In connection with any amendment made by Developer pursuant to Article VI of this Master Deed, Developer may designate Limited Common Elements that are to be installed, maintained, decorated, repaired and replaced at Co-owner expense or, in appropriate cases, at Association expense.

(b) **Association Responsibility for Units.** Pursuant to Section 18.3 of the Bylaws, the Association, acting through its Board of Directors, may (but has no obligation to) undertake any maintenance, repair or replacement obligation of the Co-owner of a Unit under this Master Deed and Bylaws, to the extent that the Co-owner has not performed such obligation, and the cost thereof shall be assessed against such Co-owner. The Association shall not be responsible for any damage to a Unit or the dwelling or appurtenances contained therein that occurs as a result of the Association performing the unperformed obligations of the Co-owner of the Unit. The Association shall be responsible for maintaining the Storm Sewer and Surface Water Drainage System within the Unit and throughout the Project, unless and until dedication of those systems to, and acceptance of such dedication by, the City or other appropriate authority having jurisdiction.

(c) **Responsibility for General Common Elements.**

(i) **Sanitary Sewer System.** The Association shall maintain the Sanitary Sewer System until the Sanitary Sewer System is dedicated to and accepted by the public.

(ii) **Water Distribution System.** The Association shall maintain the Water Distribution System until the Water Distribution System is dedicated to and accepted by the public.

(iii) ***Storm Sewer and Surface Water Drainage System.*** The Association shall maintain the Storm Sewer and Surface Water Drainage System, except any portion of the Storm Sewer and Surface Water Drainage System which is dedicated to and accepted by the public.

(iv) ***Storm Water Detention Basin.*** The Association shall maintain the Storm Water Detention Basin, including but not limited to the storm water detention basin, the 12' wide grass paver access path and the fountain located within the storm water detention basin, unless and until it is dedicated to the public, if ever.

(v) ***Adams Park.*** The Association shall be responsible for maintaining Adams Park, including but not limited to, the landscaping, walking path, benches, fountain, and electric meter that services the fountain, if any, located within Adams Park. The Association shall also be responsible for the cost of the electricity to operate the fountain.

(vi) ***Landscaped Open Space Areas.*** The Association shall maintain the the Landscaped Open Space Areas as more particularly identified in Section 4.1(g) above.

(vii) ***Irrigation System.*** The Association shall maintain the Irrigation System, if any, as more particularly identified in Section 4.1(h) above.

(viii) ***Entrance Monuments, Entrance Signs and Other Signage.*** The Association shall maintain the Entrance Monuments, Entrance Signs and Other Signage including but not limited to, the entrance signs located along Lyndon Street, the park sign(s), if any, and the electrical fixtures and electric meter, if any, that illuminate the entrance signs and the park sign(s), if any. The Association shall also pay the cost of electricity related to all such electrical fixtures.

(ix) ***Roads.*** The Roads will be maintained, repaired, replaced and resurfaced as necessary by the Association, until such Roads are dedicated to and accepted by the public and acceptance is confirmed by the recording of a deed to the City.

(x) ***Mailboxes.*** The Association shall install, maintain, repair and replace the Mailboxes as provided in Section 6.30 of the Condominium Bylaws.

(xi) ***Easements.*** The Association shall be responsible for satisfying any obligation of the Co-owners under any easement that benefits the Co-owners of the Condominium Premises.

(xii) ***Other Elements.*** Unless otherwise expressly provided in the Condominium Documents, the cost of maintaining, repairing and replacing all General Common Elements shall be borne by the Association.

(d) **Responsibility for Limited Common Elements.** Each Co-owner shall be responsible for the maintenance, repair and replacement of the Limited Common Elements which are assigned to the Unit of that Co-owner.

(e) **Rights of City of Livonia.** In the event the Co-owners of the property and/or the Association shall at any time fail to carry out one or more of the responsibilities or obligations relative to maintenance or repair referred to in Article IV, Sections 4.3 (c) above, the City shall have the right to serve written notice upon the Co-owners (through the Association),

setting forth the deficiencies in maintenance and repair. The notice may also set forth a demand that such deficiencies be cured within sixty (60) days thereof, and further state a date, time and place of a hearing before the City Council or other board, body or official delegated by the City Council, for the purpose of allowing the Co-owners or the Association to be heard as to why the City should not proceed with the maintenance and repairs necessary to cure the deficiencies. At the hearing, the City may take action to modify the terms of the original notice of deficiencies, extend the time for curing the deficiencies, and the date of the hearing may itself be extended and/or continued to a date certain. If, following the hearing, the City shall determine that the maintenance and repairs have not been completed within the time specified in the notice, as such time may have been extended by the City, the City shall thereupon have the power and authority, but not the obligation, to enter upon the Project, or cause its agents and/or contractors to enter upon the Project, and perform such maintenance and repairs as found by the City to be appropriate. The cost and expense of making and financing such maintenance, repairs and/or preservation, including the cost of all notices and hearing(s), including reasonable attorneys' fees, shall be paid by the Co-owners or the Association, and such amounts shall constitute a lien on all taxable portions of the Project. The City may require the payment of such monies prior to the commencement of any work.

If such costs and expenses have not been paid within thirty (30) days of a billing to the Co-owners, through the Association, or the Association, as appropriate, all unpaid amounts may be placed on the delinquent tax roll of the City as regards the taxable portions of the Project (allocated among the several units), and shall accrue interest and penalties, and be collected in the manner made and provided for the collection of delinquent real property taxes in the City. In the discretion of the City, such costs and expenses may also be collected by suit initiated against the Co-owners and/or the Association, and in such event, the Co-owners and/or the Association, as the case may be, shall pay all court costs and reasonable attorneys' fees incurred by the City in connection with such suit if the City obtains relief in such action.

Any failure or delay by the City to enforce this provision of the Master Deed shall in no event be deemed or construed, or otherwise relied upon, as a waiver or estoppel of the right to eventually pursue and insist upon strict enforcement.

In all instances in which the City is authorized to pursue maintenance and repairs, as provided above, the City, and its agents and contractors, shall be permitted, and are hereby granted authority, to enter upon all portions of the property reasonably necessary or appropriate for the purpose of inspecting and/or completing the respective work.

Section 4.4 Use of Units and Common Elements. No Co-owner shall use his Unit or the Common Elements in any manner which is inconsistent with the purposes of the Condominium or in any manner which will interfere with or impair the rights of any other Co-owner in the use and enjoyment of his Unit or the Common Elements. In addition, no Co-owner shall be entitled to construct or install any improvements, fixtures or other structures on, in or to any General Common Elements or Limited Common Elements, including, without limitation, basketball backboards, other recreational structures, or landscaping, without the prior written approval of the Developer during the Development and Sales Period and the Association thereafter.

ARTICLE V

UNIT DESCRIPTION AND PERCENTAGE OF VALUE

Section 5.1 **Description of Units.** Each Unit in the Condominium Project is described in the Condominium Subdivision Plan attached to this Master Deed as Exhibit B. Each Unit shall consist of the area contained within the Unit boundaries as shown on Exhibit B and delineated with heavy outlines and includes the airspace area from the finished grade elevation to 50 feet above the finished grade elevation, and the subsurface area from the finished grade elevation to 15 feet below the finished grade elevation. There are thirty-nine (39) Units, numbered consecutively 1 through 39.

Section 5.2 **Percentage of Value.** The percentage of value for each Unit shall be equal. The determination that the percentages of value should be equal was made after reviewing the comparative characteristics of each Unit in the Project and concluding that there are no material differences among the Units that affect the allocation of percentages of value. The percentage of value assigned to each Unit shall determine each Co-owner's respective share of the Common Elements of the Condominium Project, each Co-Owner's respective proportionate share in the proceeds and expenses of the Association's administration and the value of such Co-owner's vote at meetings of the Association of Co-owners with respect to matters that require votes to be cast on a percentage of value basis. The total value of the Project is one hundred (100%) percent.

ARTICLE VI

CONSOLIDATION AND OTHER MODIFICATION OF UNITS AND LIMITED COMMON ELEMENTS

Notwithstanding anything to the contrary contained in this Master Deed or the Bylaws, the Units and Common Elements in the Project may be consolidated, modified and the boundaries relocated, in accordance with Section 48 of the Act and this Article VIII, subject to any applicable City ordinances and/or required City approvals. Such changes in the affected Unit or Units shall be promptly reflected in a duly recorded Amendment or Amendments to this Master Deed.

Section 6.1 **Modification of Units.** Developer may, in its sole discretion, and without obtaining the consent of any person whatsoever (including Co-owners and mortgagees of Units), during the Development and Sales Period, modify the size, boundaries, location, and configuration of Units and/or General or Limited Common Elements appurtenant or geographically proximate to any Units as described in the Condominium Subdivision Plan attached hereto as Exhibit B or any recorded amendment or amendments thereof, subject to the requirements of any governmental authority having jurisdiction over the Project, and further subject to Section 8.1 of this Master Deed. Any modifications by Developer in accordance with the terms of this Section 6.1 shall take effect upon the recordation of an amendment to the Master Deed. In addition, Developer may, in connection with any such amendment, re-adjust percentages of value for all or some Units to reflect the Unit modifications or Limited Common Element modifications, based upon the method by which percentages of value were originally determined for the Project. All of the Co-owners and mortgagees of Units and all other persons now or hereafter interested in the Project from time to time shall be deemed to have irrevocably and unanimously consented to any amendment or amendments to this Master Deed recorded by Developer to effectuate the purposes of this Section 6.1 and, subject to the limitations set forth herein, to any proportionate reallocation of percentages of value of existing Units which Developer determines are necessary in conjunction with any such amendments, subject to Section 8.1 of this Master Deed. Subject to the foregoing, all such interested persons irrevocably appoint

Developer as agent and attorney-in-fact for the purpose of executing such amendments to the Master Deed and all other documents necessary to effectuate the foregoing.

Section 6.2 Consolidation or Relocation of Units. During the Development and Sales Period, Developer may, in its sole discretion, and without the consent of any other person whatsoever (including Co-owners and mortgagees of Units), consolidate under single ownership two (2) or more Units which are located adjacent to one another, and/or relocate any boundaries between adjoining Units, subject to the requirements of any governmental authority having jurisdiction over the Project and further subject to Section 8.1 of this Master Deed. Developer shall give effect to the consolidation of Units and/or the relocation of Unit boundaries by amending this Master Deed with one or more amendments prepared by and at the sole discretion of Developer in the manner provided by law. Any amendment that consolidates or relocates the boundaries between Units shall identify the consolidated or relocated Unit(s) by number and, when appropriate, the percentage of value as set forth herein for the consolidated or relocated Unit(s) shall be proportionately allocated among the adjusted Condominium Units in order to preserve a total value of one hundred (100%) percent for the entire Project following such amendment or amendments to this Master Deed. Developer shall determine, in its sole discretion, any such re-adjustment of the percentages of value, provided that such readjustments shall reflect a continuing reasonable relationship among percentages of value based upon the original method of determining percentages of value for the Project. Any such amendment or amendments to the Master Deed shall also contain such further definitions of Common Elements as may be necessary to adequately describe the Units in the Condominium Project as modified. All of the Co-owners and mortgagees of Units and all other persons now or hereafter interested in the Project from time to time shall be deemed to have irrevocably and unanimously consented to any amendment or amendments to this Master Deed recorded by Developer to effectuate the purposes of this Section 6.2, subject to the limitations set forth herein, and to any proportionate reallocation of percentages of value of units which Developer determines are necessary in connection with any such amendments. All such interested persons irrevocably appoint Developer as agent and attorney-in-fact for the purpose of executing such amendments to the Master Deed and all other documents necessary to effectuate the foregoing. Any such amendments may be accomplished without re-recording the entire Master Deed or its exhibits.

Section 6.3 Limited Common Elements. Limited Common Elements shall be subject to assignment and re-assignment in accordance with Section 39 of the Act, to accomplish the rights to consolidate or relocate boundaries described in this Article VIII or for other purposes.

Section 6.4 Right to Construct Amenities. Developer reserves the right to construct various amenities, including, by way of example, walking paths, nature trails, detention basin areas, storm water drainage facilities, landscaping features, fences, walls, benches, tables, and other structures and improvements anywhere within the General Common Elements (the foregoing amenities shall be collectively referred to as the "Amenities"). If any such Amenities are included in the Condominium Project, all Co-owners shall be obligated to contribute to the maintenance, repair and replacement of the Amenities as an Association expense of administering the Project. However, Developer has no obligation to construct any Amenities or to include them in the Condominium Project. The final determination of the design, layout and location of such Amenities, if and when constructed, shall be at Developer's sole discretion.

ARTICLE VII

EASEMENTS

Section 7.1 Easement For Maintenance of Encroachments. In the event any portion of a structure located within a Unit or Common Element encroaches upon another Unit or Common Element due to shifting, settling or moving of a building, or due to survey errors, or construction deviations, reciprocal easements shall exist for such encroachment, and for the maintenance, repair and restoration of the encroaching structure.

Section 7.2 Easement For Utilities and Storm Water Drainage Facilities. Developer reserves for itself, its successors and assigns, and the Association perpetual easements to, through and over those portions of the land in the Project (including all Units) necessary or useful for the continuing maintenance, repair and restoration of all driveways, lawns, and the Irrigation System within a Unit, and for all utilities in the Condominium, including, without limitation, a perpetual easement for the installation, maintenance, repair and replacement of the Sanitary Sewer System, Water Distribution System and storm water drainage facilities over, across and under certain portions of Units, as depicted on Exhibit B to this Master Deed. Developer reserves the right, without being required to obtain the consent of any Co-owner, mortgagee or other person who now or hereafter has any interest in the Condominium, to assign all or any portion of such easements for utilities and the maintenance, repair and replacement, thereof to governmental units and to enter into maintenance agreements with respect thereto by the recordation of an appropriate amendment to this Master Deed and Exhibit B. All of the Co-owners and mortgagees of Units and other persons now or hereafter interested in the Condominium Project from time to time shall be deemed to have unanimously consented to any amendments to this Master Deed to effectuate the foregoing easements, assignment of easements or execution of any related maintenance agreements. All such interested persons irrevocably appoint Developer as agent and attorney-in-fact to execute such amendments to this Master Deed and all other documents necessary to effectuate the foregoing.

Section 7.3 Easements Retained or Granted by Developer.

(a) ***Utility Easements.*** Developer reserves for itself and its agents, employees, representatives, guests, invitees, independent contractors, successors and assigns perpetual easements to utilize, operate, tap, tie into, extend and enlarge all utility improvements located within the Condominium Premises, including, but not limited to, water, sanitary sewer, storm sewer, gas, telephone, electrical, and telecommunications improvements. If any portion of the Condominium Premises shall be disturbed by reason of the exercise of any of the rights granted to Developer, its successors or assigns under this Section 7.3(a), Developer shall restore the disturbed portion of the Condominium Premises to substantially the condition that existed prior to the disturbance. At Developer's discretion, the cost of operating, maintaining, repairing and replacing any utility improvements referred to in this Section 7.3(a) may be shared by the Co-owners of this Condominium and the owners of adjacent properties. The Co-owners of this Condominium may be responsible from time to time for the payment of a proportionate share of said expense (to the extent said expenses are not paid by a governmental agency or public utility), which shall be determined by Developer in its reasonable discretion.

(b) ***Additional Easements.*** Developer reserves for itself and its agents, employees, representatives, guests, invitees, independent contractors, successors and assigns, the right, at any time prior to the expiration of the Development and Sales Period to reserve, dedicate and/or grant public or private easements over, under and across the Condominium

Premises for the construction, installation, repair, maintenance and replacement of rights-of-way, roads, walkways, sidewalks, water mains, sanitary sewers, storm drains, detention basins, electric lines, telephone lines, gas mains, cable television and other telecommunication lines and other public and private utilities, including all equipment, facilities and appurtenances relating thereto. Developer reserves the right to assign any such easements to governmental units or public/private utilities, and to enter into maintenance agreements with respect thereto. Specifically, Developer reserves the right to grant easements to the City for the maintenance, repair, and replacement of street lighting within the Project and for snow-plowing the roads, and the right to grant an easement to the Co-owners, their successors and assigns, for use of the detention basins and storm water drainage facilities in the Project. Any of the foregoing easements or transfers of title may be conveyed by Developer without the consent of any Co-owner, mortgagee or other person who now or hereafter shall have any interest in the Condominium, by the recordation of an appropriate amendment to this Master Deed and Exhibit B hereto. All of the Co-owners and mortgagees of Units and other persons now or hereafter interested in the Condominium Project from time to time shall be deemed to have unanimously consented to any amendments of this Master Deed to effectuate the foregoing easements or transfers of title. All such interested persons irrevocably appoint Developer as agent and attorney-in-fact to execute such amendments to the Master Deed and all other documents necessary to effectuate the foregoing.

(c) **Road Easements.** The Developer reserves for itself, its successors and assigns, an easement for the unrestricted use of all Roads and walkways in the Project for the purpose of ingress and egress to and from each and every portion of the Project, and the right to permit its agents, contractors, subcontractors and employees to go over and across, any portion of the General Common Elements from time to time as Developer may deem necessary for the construction, development and sales activities on the Condominium.

Section 7.4 Grant of Easements by Association. The Association, acting through its lawfully constituted Board of Directors (including any Board of Directors acting prior to the Transitional Control Date) shall be empowered and obligated to grant such easements, licenses, rights-of-entry and rights-of-way over, under and across the Condominium Premises, as are reasonably necessary or advisable for utility purposes, access purposes or other lawful purposes, including but not limited to, the right to grant easements to the City for the installation, maintenance and replacement of street lighting within the Project and for snow-plowing the roads, subject however, to the approval of Developer during the Development and Sales Period. No easements created under the Condominium Documents may be modified, nor may any of the obligations with respect to such easements be varied, without the consent of each person benefited or burdened thereby.

Section 7.5 Easements for Maintenance, Repair and Replacement. Developer, the Association and all public and private utilities shall have such easements over, under and across the Condominium Project, including all Units and Common Elements, as may be necessary to fulfill any installation, maintenance, repair, or replacement responsibilities, which any of them are required or permitted to perform under the Condominium Documents, by law or as may be necessary to respond to any emergency. The foregoing easements include, without limitation, the right of the Association to obtain access to a Unit during reasonable hours and upon reasonable notice to inspect the dwelling and any improvements constructed within a Unit to ascertain that they have been designed and constructed in conformity with the standards imposed and/or specific approvals granted by Developer (during the Development and Sales Period) and thereafter by the Association.

Section 7.6 Telecommunications Agreements. The Association, acting through its duly constituted Board of Directors and subject to Developer's approval during the Development and Sales

period, shall have the power to grant such easements, licenses and other rights of entry, use and access and to enter into any contract or agreement, including wiring agreements, right-of-way agreements, access agreements and multi-unit agreements and, to the extent allowed by law, contracts for sharing of any installation or periodic subscriber service fees, as may be necessary, convenient or desirable to provide for telecommunications, videotext, broad band cable, satellite dish, earth antenna and similar services to the Project or any Unit therein. Notwithstanding the foregoing, in no event shall the Association enter into any contract or agreement or grant any easement, license or right of entry or do any other act which will violate any provision of any federal, state or local law or ordinance. Any and all sums paid by any telecommunications or other company or entity in connection with such service, including fees, if any, for the privilege of installing any telecommunications related equipment or improvements or sharing periodic subscriber service fees, shall be receipts affecting the administration of the Condominium Project within the meaning of the Act and shall be paid over to and shall be the property of the Association.

Section 7.7 Dedication of Roads. Developer reserves for itself and its successors and assigns, the right to dedicate all of the roads in the Project to public use. Developer further reserves the right to enter into maintenance agreements with respect thereto. The foregoing dedication may be conveyed by Developer without the consent of any Co-owner, mortgagee or other person who now or hereafter shall have any interest in the Condominium. All of the Co-owners and mortgagees of Units and other persons now or hereafter interested in the Condominium Project from time to time shall be deemed to have unanimously consented to such dedication. All such interested persons irrevocably appoint Developer as agent and attorney-in-fact to make such dedication and to act on behalf of all Co-owners and their mortgagees in any statutory or special assessment proceedings with respect to such dedicated roads and to take such further actions necessary to effectuate the foregoing. After certificates of occupancy have been issued for residences on one hundred (100%) percent of the Units in the Project, the foregoing rights may be exercised by the Association.

Section 7.8 Association Assumption of Obligations. The Association, on behalf of the Co-owners, shall assume and perform all of Developer's obligations under any easement pertaining to the Condominium Project or General Common Elements.

Section 7.9 Sidewalk Easement. Developer reserves for the benefit of itself and all Co-owners an exclusive, perpetual easement for the purpose of installing, maintaining, repairing and replacing the 5' concrete sidewalk in the sidewalk easement.

Section 7.10 Termination of Easements. Developer reserves the right, during the Development and Sales Period, to terminate and revoke any utility or other easement granted in or pursuant to this Master Deed at such time as the particular easement has become unnecessary. (This may occur, by way of illustration only, when a utility easement is relocated to coordinate development of property adjacent to the Condominium Project.) No easement for a utility may be terminated or revoked unless and until all Units served by it are adequately served by an appropriate substitute or replacement utility. Any termination or relocation of any such easement shall be effected by the recordation of an appropriate termination instrument, or, where applicable, amendment to this Master Deed in accordance with the requirements of the Act.

Section 7.11 Park Access and Drainage Facility Easements to the Benefit of the City.

(a) ***Park Access.*** In connection with its rights set forth in Article IV of this Master Deed, there shall exist for the benefit of the City an access easement to Adams Park for the purpose of maintaining said area if the Association fails to do so and the City deems it necessary

or desirable. The easement granted herein may not be amended without the express written consent of the City. Nothing in this section shall be interpreted as providing general public access to Adams Park.

(b) **Drainage Facility Easement.** There also exists for the benefit of the City, easements for the maintenance, repair and replacement of the storm sewer and storm water drainage facilities, including easements across Unit boundaries, all as set forth on the Condominium Subdivision Plan.

Section 7.12 Emergency Vehicle and Public Services Access Easement. There shall exist for the benefit of the City, any emergency service agency and the United States Postal Service ("USPS"), an easement over all roads in the Condominium for use by City service providers, garbage collection vehicles, emergency vehicles and USPS vehicles. Said easement shall be for purposes of ingress and egress to provide, without limitation, fire and police protection, ambulance and rescue services and other lawful governmental or private emergency services to the Condominium Project and Co-owners thereof. This grant of easement shall in no way be construed as a dedication of any streets, roads or driveways to the public. This easement shall automatically terminate upon acceptance by the City of the dedication of the roads to the public.

Section 7.13 Entrance Monuments and Landscape Easement. Developer dedicates to the benefit of all Co-owners, an easement for the construction, maintenance, repair and replacement of the entrance monuments, entrance signs, park sign(s), if any, and landscaping in Adams Park.

Developer, for itself, its successors and assigns, grants to the Association, to any successor developer, and to the City a non-exclusive easement to enter upon the premises of the Condominium Project to do any maintenance and to take any action reasonably necessary to ensure that the improvements located within Adams Park are maintained and used in accordance with the conditions and restrictions set forth in this Master Deed.

All of the covenants, restrictions, reservations, easements and servitudes set forth in this section shall run with the land. Any successor, assignee or grantee, by accepting the deed to any Unit, accepts the same subject to the covenants, restrictions, reservations, easements and servitudes and agrees for himself/herself and his/her heirs, administrators and assigns to be bound by each of the covenants, restrictions, reservations, easements and servitudes jointly, separately and severally.

Each covenant, restriction, reservation, easement and servitude contained herein shall be considered to be an independent and separate covenant and agreement and in the event one or more of the covenants, conditions, reservations, easements and servitudes shall for any reason be held to be invalid or unenforceable by a court of competent jurisdiction, all remaining covenants, restrictions, reservations, easements and servitudes shall nevertheless remain in full force and effect.

ARTICLE VIII

AMENDMENT

This Master Deed, the Bylaws (Exhibit A to this Master Deed) and the Condominium Subdivision Plan (Exhibit B to this Master Deed) may be amended with the consent of two-thirds (2/3) of the Co-owners, except as hereinafter set forth:

Section 8.1 Co-owner Consent. Except as otherwise specifically provided in this Master Deed or Bylaws, no Unit dimension may be modified in any material respect without the consent of the Co-owner and mortgagee of such Unit, nor may the nature or extent of any Limited Common Elements or the responsibility for maintenance, repair or replacement thereof be modified in any material respect without the written consent of the Co-owner and mortgagee of any Unit to which such Limited Common Elements are appurtenant.

Section 8.2 By Developer. In addition to the rights of amendment provided to Developer in the various Articles of this Master Deed, Developer may, prior to the expiration of the Development and Sales Period, and without the consent of any Co-owner, mortgagee or any other person, amend this Master Deed and the Condominium Subdivision Plan attached as Exhibit B in order to correct survey or other errors made in such documents and to make such other amendments to such instruments and to the Bylaws attached hereto as Exhibit A that do not materially affect the rights of any Co-owners or mortgagees in the Project, including, but not limited to, amendments required by governmental authorities, or for the purpose of facilitating conventional mortgage loan financing for existing or prospective Co-owners and to enable the purchase or insurance of such mortgage loans by the Federal Home Loan Mortgage Corporation, the Federal National Mortgage Association, the Government National Mortgage Association, the Veterans Administration or the Department of Housing and Urban Veterans Administration or the Department of Housing and Urban Development, or by any other public or private mortgage insurer or any institutional participant in the secondary mortgage market.

Section 8.3 Change in Value of Vote and Percentages of Value. The value of the vote of any Co-owner and the corresponding proportion of common expenses assessed against such Co-owner shall not be modified without the written consent of such Co-owner and his mortgagee, nor shall the percentage of value assigned to any Unit be modified without such consent, except as provided in Article V, Article VI, Article VII or Article VIII of this Master Deed.

Section 8.4 Mortgagee Approval. Pursuant to Section 90(1) of the Act, Developer hereby reserves the right, on behalf of itself and on behalf of the Association, to amend this Master Deed and the Condominium Documents without the approval of any mortgagee, unless the amendment would materially alter or change the rights of a mortgagee, in which event the approval of two-thirds (2/3) of the votes of mortgagees of Units shall be required for such amendment. Each mortgage shall have one (1) vote for each Unit subject to a mortgage.

Section 8.5 Termination, Vacation, Revocation or Abandonment. The Condominium Project may not be terminated, vacated, revoked or abandoned without the written consent of eighty (80%) percent of all Co-owners.

Section 8.6 Developer Approval. During the Development and Sales Period, the Condominium Documents shall not be amended nor shall the provisions thereof be modified in any way without the prior written consent of Developer. If the Association amends the Condominium

Documents on its own initiative, with Developer approval, the Association shall pay for the cost of amending such Condominium Document(s), including reasonable attorneys' fees.

Section 8.7 Amendments Requiring City Approval. Notwithstanding anything in this Master Deed or Bylaws, there shall be no amendment to or termination of Article IV, Section 4.3(e), Article VII, Section 7.11 or 7.13, or any other provision which affects or limits the rights of the City of Livonia, as provided within the Master Deed, Exhibit B or Bylaws, without first obtaining City review and approval of any such amendment.

ARTICLE IX

DEVELOPER'S RIGHT TO USE FACILITIES

Developer, its successors and assigns, agents and employees may maintain offices, model dwellings within Units, parking, storage areas and other facilities within the Condominium Project as it deems necessary to facilitate the development and sale of the Project. Developer shall have such access to, from and over the Project as may be reasonable to enable the development and sale of the Condominium Project. Developer shall reasonably restore the facilities utilized by Developer upon termination of such use.

ARTICLE X

ASSIGNMENT

Any or all of the rights and powers granted or reserved to Developer in the Condominium Documents or by law, including the power to approve or disapprove any act, use or proposed action or any other matter or thing, may be assigned by Developer to and assumed by any other entity or to the Association. Any such assignment or transfer shall be made by appropriate instrument in writing duly recorded in the office of the Oakland County Register of Deeds.

Intentionally left blank; signatures on the following page

ADAMS PARK DEVELOPMENT LLC,
a Michigan limited liability company

By: Windmill Adams Park LLC,
a Michigan limited liability company
Its: Manager and Member

By: MM LLC,
a Michigan limited liability company
Its: Manager

By: _____
Stuart L. Michaelson
Its: Manager

And By: SDC Ventures, LLC,
a Michigan limited liability company
Its: Manager and Member

By: _____
Roger Sherr
Its: Manager

Acknowledged before me in Oakland County, Michigan, on December 1, 2020, by Stuart L. Michaelson, Manager of MM LLC, a Michigan limited liability company, which is the Manager of Windmill Adams Park LLC, a Michigan limited liability company, which is a Manager of **ADAMS PARK LLC**, a Michigan limited liability company, on behalf of the company.

Notary's Stamp

Notary's Signature
Notary Public, _____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

Acknowledged before me in Oakland County, Michigan, on December 1, 2020, by Roger Sherr, Manager of SDC Ventures LLC, a Michigan limited liability company, which is the Manager of **ADAMS PARK LLC**, a Michigan limited liability company, on behalf of the company.

Notary's Stamp

Notary's Signature
Notary Public, _____ County, Michigan
Acting in _____ County, Michigan
My Commission Expires: _____

Drafted By and When Recorded Return To:

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EXHIBIT "A"

CONDOMINIUM BYLAWS

ADAMS PARK

ARTICLE I

ASSOCIATION OF CO-OWNERS

Section 1.1 **Formation; Membership.** Adams Park, a residential Condominium Project located in the City of Livonia, Wayne County, Michigan, shall be administered by the Adams Park Association, a Michigan non-profit corporation (the "Association"). The Association shall be responsible for the management, maintenance, operation and administration of the Common Elements, easements and affairs of the Condominium Project in accordance with the Condominium Documents and the laws of the State of Michigan. These Bylaws shall constitute both the Condominium Bylaws referred to in the Master Deed and required by Section 53 of the Act and the Association Bylaws provided for under the Michigan Non-profit Corporation Act, as amended. Each Co-owner shall be a member in the Association and no other person or entity shall be entitled to membership. Co-owners are sometimes referred to as "Members" in these Bylaws. A Co-owner's share of the Association's funds and assets cannot be assigned, pledged or transferred in any manner except as an appurtenance to his Unit. The Association shall keep current copies of the Master Deed, all amendments to the Master Deed, and other Condominium Documents for the Condominium Project, all of which shall be available at reasonable hours to Co-owners, prospective purchasers and prospective mortgagees of Units in the Condominium Project. All Co-owners in the Condominium Project and all persons using or entering upon or acquiring any interest in any Unit or the Common Elements shall be subject to the provisions and terms set forth in the Condominium Documents.

Section 1.2 **Definitions.** Capitalized terms used in these Bylaws without further definition shall have the meanings given to such terms in the Master Deed or the Act, unless the context dictates otherwise.

Section 1.3 **Conflicts of Terms and Provisions.** In the event there is any conflict among the terms and provisions contained within the Master Deed or these Bylaws, the terms and provisions of the Master Deed shall control.

ARTICLE II

ASSESSMENTS

Section 2.1 **Assessments Against Units and Co-owners.** All expenses arising from the management, administration and operation of the Association in accordance with the authorizations and responsibilities prescribed in the Condominium Documents and the Act shall be levied by the Association against the Units and the Co-owners thereof, in accordance with the provisions of this Article II.

Section 2.2 **Assessments For Common Elements.** All costs incurred by the Association to satisfy any liability or obligation arising from, caused by, or connected with the Common Elements or the administration of the Condominium Project shall constitute expenditures affecting the administration of the Project, and all sums received as the proceeds of, or pursuant to, any policy of insurance securing the

interest of the Co-owners against liabilities or losses arising within, caused by, or connected with the Common Elements or the administration of the Condominium Project shall constitute receipts affecting the administration of the Condominium Project, within the meaning of Section 54(4) of the Act.

Section 2.3 Determination of Assessments. Assessments shall be determined in accordance with the following provisions:

(a) **Budget.** The Board of Directors of the Association shall establish an annual budget ("Budget") in advance for each fiscal year and such Budget shall project all expenses for the ensuing year which may be required for the proper operation, management and maintenance of the Condominium Project, including a reasonable allowance for contingencies and reserves. An adequate reserve fund for maintenance, repairs and replacement of the Common Elements that must be replaced on a periodic basis shall be established in the budget and must be funded by regular annual assessments, as set forth in Section 2.4 below, rather than by special assessments. At a minimum, the reserve fund shall be equal to ten (10%) percent of the Association's current annual Budget on a non-cumulative basis. Since the minimum standard required by this subparagraph may prove to be inadequate for the Project, the Association should carefully analyze the Condominium Project to determine if a greater amount should be set aside, or if additional reserves should be established for other purposes from time to time. Upon adoption of a Budget by the Board of Directors, copies of the Budget shall be delivered to each Co-owner and the assessment for said year shall be established based upon said Budget. The applicable annual assessments, as levied, shall constitute a lien against all Units as of the first day of the fiscal year in which the assessments relate. Failure to deliver a copy of the Budget to each Co-owner shall not affect or in any way diminish such lien or the liability of any Co-owner for any existing or future assessments. Should the Board of Directors at any time determine, in its sole discretion: (1) that the assessments levied are or may prove to be insufficient to pay the actual costs of the Condominium Project's operation and management, (2) to provide for repairs or replacements of existing Common Elements, (3) to provide additions to the Common Elements, or (4) in the event of emergencies, the Board of Directors shall have the authority to increase the general assessments and to levy such additional assessment or assessments as it shall deem to be necessary. The Board of Directors shall also have the authority, without Co-owner or mortgagee consent, to levy assessments for repair and reconstruction in the event of casualty pursuant to the provisions of Section 5.2 below. The discretionary authority of the Board of Directors to levy assessments pursuant to this subparagraph shall rest solely with the Board of Directors for the benefit of the Association and its Members, and shall not be enforceable by any creditors of the Association or its Members.

(b) **Special Assessments.** Special assessments, in addition to the general assessments required in Section 2.3(a) above, may be made by the Board of Directors from time to time, subject to Co-owner approval as hereinafter provided, to meet other needs or requirements of the Association, including, but not limited to: (1) assessments for additions to the Common Elements, (2) assessments to purchase a Unit upon foreclosure of the lien for assessments described in Section 2.6 below, or (3) assessments for any other appropriate purpose that could not be covered by the annual assessment. Special assessments referred to in this subparagraph (b) shall not be levied without the prior approval of the Co-owners representing sixty (60%) percent or more of the combined percentage of value of all Units within the Condominium Project. The authority to levy assessments pursuant to this subparagraph is solely for the benefit of the

Association and its Members and shall not be enforceable by any creditors of the Association or its Members.

(c) **Remedial Assessments.** If any Co-owner fails to properly maintain, repair or replace his Unit in accordance with the provisions of Article VI below, which failure, in the opinion of the Board of Directors adversely affects the appearance of the Condominium Project as a whole, or the safety, health or welfare of the other Co-owners of the Condominium Project, the Association may, following notice to such Co-owner, take any actions reasonably necessary to maintain, repair or replace the Co-owner's Unit, and an amount equal to one hundred fifty (150%) percent of the cost thereof shall be assessed against the Co-owner of such Unit.

Section 2.4 Apportionment of Assessments and Penalty for Default. Unless otherwise provided in these Bylaws or in the Master Deed, all assessments levied against the Co-owners to cover administration expenses shall be apportioned among and paid by the Co-owners in accordance with the respective percentages of value allocated to each Co-owner's Unit in Article V of the Master Deed, without adjustment for the use or non-use of any Limited Common Element appurtenant to a Unit. Annual assessments determined in accordance with Section 2.3(a) above shall be paid by Co-owners in advance in one (1) annual payment, two (2) semi-annual payments, four (4) quarterly installments or in twelve (12) monthly installments, as determined by the Association's Board of Directors. A Co-owner's payment obligations will commence with the acceptance of a deed to or a land contract vendee's interest in a Unit, or with the acquisition of fee simple title to a Unit by any other means. A Co-owner shall be in default of his assessment obligations if he fails to pay any assessment installment when due. A late charge not to exceed Twenty-Five and 00/100 (\$25.00) Dollars per month, together with interest at a rate established by the Association's Board of Directors which shall not exceed the maximum rate allowed by law, shall be assessed automatically by the Association upon any assessments in default for ten (10) or more days until the assessment installment together with the applicable late charges and accrued interest are paid in full. Each Co-owner (whether one or more persons) shall be, and remain, personally liable for the payment of all assessments (including fines for late payment and costs of collection and enforcement of payment) relating to his Unit, which may be levied while such Co-owner owns the Unit. Payments to satisfy assessment installments in default shall be applied as follows: first, to the costs of collection and enforcement of payment, including reasonable attorneys' fees; second, to any interest charges and fines for late payment on such assessment installments; and third, to the assessment installments in default in the order of their due dates.

Section 2.5 Waiver of Use or Abandonment of Units. No Co-owner may exempt himself from liability for his assessment obligations by waiving the use or enjoyment of any of the Common Elements or by abandoning his Unit.

Section 2.6 Liens for Unpaid Assessments. The sums assessed by the Association which remain unpaid, including but not limited to regular assessments, special assessments, fines and late charges, shall constitute a lien upon the Unit or Units in the Project owned by the Co-owner at the time of the assessment and upon the proceeds of sale of such Unit or Units. Any such unpaid sum shall constitute a lien against the Unit as of the first day of the fiscal year in which the assessment, fine or late charge relates and shall be a lien prior to all claims except real property taxes and first mortgages of record. All charges, which the Association may levy against any Co-owner, shall be deemed to be assessments for purposes of this Section 2.6 and Section 108 of the Act.

Section 2.7 Enforcement.

(a) **Remedies.** In addition to any other remedies available to the Association, the Association may enforce the collection of delinquent assessments by a suit at law or by foreclosure on the statutory lien that secures payment of assessments. In the event any Co-owner defaults in the payment of any annual assessment installment levied against his Unit, the Association shall have the right to declare all unpaid installments of the annual, special or other assessments for the pertinent fiscal year to be immediately due and payable. A Co-owner in default shall not be entitled to utilize any of the General Common Elements of the Project and shall not be entitled to vote at any meeting of the Association until the default is cured; provided, however, this provision shall not operate to deprive any Co-owner of ingress or egress to and from his Unit or the dwelling or other improvements constructed thereon. In a judicial foreclosure action, a receiver may be appointed to collect a reasonable rental for the Unit from the Co-owner thereof or any persons claiming under him. The Association may also assess fines for late payment or non-payment of assessments in accordance with the provisions of Section 18.4 of these Bylaws. All of these remedies shall be cumulative and not alternative.

(b) **Foreclosure Proceedings.** Each Co-owner, and every other person who from time to time has any interest in the Project, shall be deemed to have granted to the Association the unqualified right to elect to foreclose the lien securing payment of assessments either by judicial action or by advertisement. The provisions of Michigan law pertaining to foreclosure of mortgages by judicial action and by advertisement, as the same may be amended from time to time, are incorporated herein by reference for the purposes of establishing the alternative procedures to be followed in lien foreclosure actions and the rights and obligations of the parties to such actions. In addition, each Co-owner and every other person who from time to time has any interest in the Project, shall be deemed to have authorized and empowered the Association to sell or to cause to be sold the Unit with respect to which the assessment(s) is or are delinquent and to receive, hold and distribute the proceeds of such sale in accordance with the priorities established by applicable law. Each Co-owner of a Unit in the Project acknowledges that at the time of acquiring title to such Unit, he reviewed the provisions of this subparagraph and he voluntarily, intelligently and knowingly waived notice of any proceedings brought by the Association to foreclose any assessment liens by advertisement and waived the right to a hearing prior to the sale of the applicable Unit.

(c) **Notices of Action.** Notwithstanding the provisions of Section 2.7(b), the Association shall not commence a judicial foreclosure action or a suit for a money judgment or publish any notice of foreclosure by advertisement, until the Association has provided the delinquent Co-owner with written notice, sent by first class mail, postage prepaid, addressed to the delinquent Co-owner at his last known address, that one or more assessment installments levied against the pertinent Unit is or are delinquent and that the Association may invoke any of its remedies under these Bylaws if the default is not cured within ten (10) days from the date of the notice. Such written notice shall be accompanied by a written affidavit of an authorized representative of the Association that sets forth (i) the affiant's capacity to make the affidavit, (ii) the statutory and other authority for the lien, (iii) the amount outstanding (exclusive of interest, costs, attorney fees and future assessments), (iv) the legal description of the subject Unit(s) and (v) the name(s) of the Co-owner(s) of record. Such affidavit shall be recorded in the office of the Macomb County Register of Deeds prior to the commencement of any foreclosure proceeding. If the delinquency is not cured within the ten (10) day period, the Association may take such remedial action as may be available to it under these Bylaws and under Michigan law. In the event the Association elects to foreclose the lien by advertisement, the Association shall notify

the delinquent Co-owner of the Association's election and shall inform him that he may request a judicial hearing by bringing suit against the Association.

(d) **Expenses of Collection.** The expenses incurred by the Association in collecting unpaid assessments, including interest, costs, actual attorneys' fees (not limited to statutory fees) and advances for taxes or other liens paid by the Association to protect its lien, shall be chargeable to the defaulting Co-owner and shall be secured by a lien on his Unit.

Section 2.8 Liability of Mortgagees. Notwithstanding any other provisions of the Condominium Documents, the holder of any first mortgage covering any Unit in the Project which comes into possession of the Unit pursuant to the remedies provided in the mortgage or by deed (or assignment) in lieu of foreclosure, and any purchaser at a foreclosure sale, shall take the property free of any claims for unpaid assessments or charges against the mortgaged Unit which accrued prior to the time such holder comes into possession of the Unit (except for claims for a pro rata share of assessments or charges resulting from a pro rata reallocation of assessments or charges to all Units including the mortgaged Unit).

Section 2.9 Developer's Responsibility for Assessments. Developer, although a Member of the Association, shall not be responsible at any time for the payment of Association assessments, except with respect to Units owned by Developer that contain a completed and occupied residential dwelling. A residential dwelling is complete when it has received a certificate of occupancy from the City and is occupied if it is occupied as a residence. In addition, in the event Developer is selling a Unit with a completed residential dwelling thereon by land contract to a Co-owner, the Co-owner shall be liable for all assessments and Developer shall not be liable for any assessments levied up to and including the date, if any, upon which Developer actually retakes possession of the Unit following extinguishment of all rights of the land contract purchaser in the Unit. However, Developer shall at all times pay expenses of maintaining the Units that it owns, together with a proportionate share of all current maintenance expenses actually incurred by the Association from time to time (excluding reserves) for roadway and utility maintenance, landscaping, sign lighting and snow removal, but excluding management fees and expenses related to the maintenance, repair and use of Units in the Project that are not owned by Developer. For purposes of the foregoing sentence, Developer's proportionate share of such expenses shall be based upon the ratio of all Units owned by Developer at the time the expense is incurred to the total number of Units in the Project. In no event shall Developer be responsible for assessments for deferred maintenance, reserves for replacements, capital improvements or other special assessments, except with respect to Units that are owned by Developer that contain completed and occupied residential dwellings. Any assessments levied by the Association against Developer for other purposes, without Developer's prior written consent, shall be void and of no effect. In addition, Developer shall not be liable for any assessment levied in whole or in part to purchase any Unit from Developer or to finance any litigation or claims against Developer, any cost of investigating or preparing such litigation or claim or any similar or related costs.

Section 2.10 Property Taxes and Special Assessments. All property taxes and special assessments levied by any public taxing authority shall be assessed in accordance with Section 131 of the Act.

Section 2.11 Personal Property Tax Assessment of Association Property. The Association shall be assessed as the entity in possession of any tangible personal property of the Condominium owned or possessed in common by the Co-owners, and personal property taxes based thereon shall be treated as expenses of administration.

Section 2.12 Construction Liens. A construction lien otherwise arising under Act No. 497 of the Michigan Public Acts of 1980, as amended, shall be subject to Section 132 of the Act.

Section 2.13 Statement as to Unpaid Assessments. The purchaser of any Unit may request a statement from the Association identifying the amount of any unpaid Association regular or special assessments relating to such Unit. Upon written request to the Association accompanied by a copy of the executed purchase agreement pursuant to which the purchaser holds the right to acquire a Unit, the Association shall provide a written statement identifying any existing unpaid assessments or a written statement that none exist, which statement shall be binding upon the Association for the period stated therein. Upon the payment of the sum identified in the statement within the period identified in the statement, the Association's lien for assessments as to such Unit shall be deemed satisfied; provided, however, if a purchaser fails to request such statement at least five (5) days prior to the closing of the purchase of such Unit, any unpaid assessments and the lien securing them shall be fully enforceable against such purchaser and the Unit itself, to the extent provided by the Act. Under the Act, unpaid assessments constitute a lien upon the Unit and the sale proceeds thereof which has priority over all claims except tax liens in favor of any state or federal taxing authority and sums unpaid on a first mortgage of record, except that past due assessments which are evidenced by a notice of lien recorded pursuant to Section 2.7, have priority over a first mortgage recorded subsequent to the recording of the notice of the lien.

ARTICLE III

JUDICIAL ACTIONS AND CLAIMS

Actions on behalf of and against the Co-owners shall be brought in the name of the Association. Subject to the express limitations on actions in these Bylaws and in the Association's Articles of Incorporation, the Association may assert, defend or settle claims on behalf of all Co-owners in connection with the Common Elements of the Condominium. The commencement of any civil action (other than one to enforce these Bylaws or collect delinquent assessments) shall require the approval of a majority in number and in value of the Co-owners, and shall be governed by the requirements of this Article III. The requirements of this Article III will ensure that the Co-owners are fully informed regarding the prospects and likely costs of any civil action the Association proposes to engage in, as well as the ongoing status of any civil actions actually filed by the Association. These requirements are imposed in order to reduce both the cost of litigation and the risk of improvident litigation, and in order to avoid the waste of the Association's assets in litigation where reasonable and prudent alternatives to the litigation exist. Each Co-owner shall have standing to sue to enforce the requirements of this Article III. The following procedures and requirements apply to the Association's commencement of any civil action other than an action to enforce these Bylaws or to collect delinquent assessments:

Section 3.1 Board of Directors' Recommendation to Co-owners. The Association's Board of Directors shall be responsible in the first instance for recommending to the Co-owners that a civil action be filed, and supervising and directing any civil actions that are filed.

Section 3.2. Litigation Evaluation Meeting. Before an attorney is engaged for purposes of filing a civil action on behalf of the Association, the Board of Directors shall call a special meeting of the Co-owners ("litigation evaluation meeting") for the express purpose of evaluating the merits of the proposed civil action. The written notice to the Co-owners of the date, time and place of the litigation evaluation meeting shall be sent to all Co-owners not less than twenty (20) days before the date of the meeting and shall include the following information copied onto 8-1/2" x 11" paper:

(a) A certified resolution of the Board of Directors setting forth in detail the concerns of the Board of Directors giving rise to the need to file a civil action and further certifying that:

(1) it is in the best interests of the Association to file a lawsuit;

(2) that at least one (1) member of the Board of Directors has personally made a good faith effort to negotiate a settlement with the putative defendant(s) on behalf of the Association, without success;

(3) litigation is the only prudent, feasible and reasonable alternative;
and

(4) the Board of Directors' proposed attorney for the civil action is of the written opinion that litigation is the Association's most reasonable and prudent alternative.

(b) A written summary of the relevant experience of the attorney ("litigation attorney") the Board of Directors recommends be retained to represent the Association in the proposed civil action, including the following information:

(1) the number of years the litigation attorney has practiced law; and

(2) the name and address of every condominium and homeowner association for which the attorney has filed a civil action in any court, together with the case number, county and court in which each civil action was filed.

(c) The litigation attorney's written estimate of the amount of the Association's likely recovery in the proposed lawsuit, net of legal fees, court costs, expert witness fees and all other expenses expected to be incurred in the litigation.

(d) The litigation attorney's written estimate of the cost of the civil action through a trial on the merits of the case ("total estimated cost"). The total estimated cost of the civil action shall include the litigation attorney's expected fees, court costs, expert witness fees, and all other expenses expected to be incurred in the civil action.

(e) The litigation attorney's proposed written fee agreement.

(f) The amount to be specially assessed against each Unit in the Condominium to fund the estimated cost of the civil action both in total and on a monthly per Unit basis, as required by Section 3.6 of this Article III.

Section 3.3 Independent Expert Opinion. If the lawsuit relates to the condition of any of the Common Elements of the Condominium, the Board of Directors shall obtain a written independent expert opinion as to reasonable and practical alternative approaches to repairing the problems with the Common Elements, which shall set forth the estimated costs and expected viability of each alternative. In obtaining the independent expert opinion required by the preceding sentence, the Board of Directors shall conduct its own investigation as to the qualifications of any expert and shall not retain any expert recommended by the litigation attorney or any other attorney with whom the Board of Directors consults. The purpose of the independent expert opinion is to avoid any potential confusion regarding the condition of the Common Elements that might be created by a report prepared as an instrument of advocacy for use in a

civil action. The independent expert opinion will ensure that the Co-owners have a realistic appraisal of the condition of the Common Elements, the likely cost of repairs to or replacement of the same, and the reasonable and prudent repair and replacement alternatives. The independent expert opinion shall be sent to all Co-owners with the written notice of the litigation evaluation meeting.

Section 3.4 Fee Agreement with Litigation Attorney. The Association shall have a written fee agreement with the litigation attorney, and any other attorney retained to handle the proposed civil action. The Association shall not enter into any fee agreement that is a combination of the retained attorney's hourly rate and a contingent fee arrangement unless the existence of the agreement is disclosed to the Co-owners in the text of the Association's written notice to the Co-owners of the litigation evaluation meeting.

Section 3.5 Co-Owner Vote Required. At the litigation evaluation meeting the Co-owners shall vote on whether to authorize the Board of Directors to proceed with the proposed civil action and whether the matter should be handled by the litigation attorney. The commencement of any civil action by the Association (other than a suit to enforce these Bylaws or collect delinquent assessments) shall require the approval of a majority in number and in value of the Co-owners. Any proxies to be voted at the litigation evaluation meeting must be signed at least seven (7) days prior to the litigation evaluation meeting.

Section 3.6 Litigation Special Assessment. All legal fees incurred in pursuit of any civil action that is subject to this Article III shall be paid by special assessment of the Co-owners ("litigation special assessment"). The litigation special assessment shall be approved at the litigation evaluation meeting (or at any subsequent duly called and noticed meeting) by a majority in number and in value of all Co-owners in the amount of the estimated total cost of the civil action. If the litigation attorney proposed by the Board of Directors is not retained, the litigation special assessment shall be in an amount equal to the estimated total cost of the civil action, as estimated by the attorney actually retained by the Association. The litigation special assessment shall be apportioned to the Co-owners in accordance with their respective percentage of value interests in the Condominium and shall be collected from the Co-owners on a monthly basis. The total amount of the litigation special assessment shall be collected monthly over a period not to exceed twenty-four (24) months.

Section 3.7 Attorney's Written Report. During the course of any civil action authorized by the Co-owners pursuant to this Article III, the retained attorney shall submit a written report ("attorney's written report") to the Board of Directors every thirty (30) days setting forth:

(a) The attorney's fees, the fees of any experts retained by the attorney, and all other costs of the litigation during the thirty (30) day period immediately preceding the date of the attorney's written report ("reporting period").

(b) All actions taken in the civil action during the reporting period, together with copies of all pleadings, court papers and correspondence filed with the court or sent to opposing counsel during the reporting period.

(c) A detailed description of all discussions with opposing counsel during the reporting period, written and oral, including, but not limited to, settlement discussions.

(d) The costs incurred in the civil action through the date of the written report, as compared to the attorney's estimated total cost of the civil action.

(e) Whether the originally estimated total cost of the civil action remains accurate.

Section 3.8 Monthly Board Meetings. The Board of Directors shall meet monthly during the course of any civil action to discuss and review:

- (a) the status of the litigation;
- (b) the status of settlement efforts, if any; and
- (c) the attorney's written report.

Section 3.9 Changes in the Litigation Special Assessment. If, at any time during the course of a civil action, the Board of Directors determines that the originally estimated total cost of the civil action or any revision thereof is inaccurate, the Board of Directors shall immediately prepare a revised estimate of the total cost of the civil action. If the revised estimate exceeds the litigation special assessment previously approved by the Co-owners, the Board of Directors shall call a special meeting of the Co-owners to review the status of the litigation, and to allow the Co-owners to vote on whether to continue the civil action and increase the litigation special assessment. The meeting shall have the same quorum and voting requirements as a litigation evaluation meeting.

Section 3.10 Disclosure of Litigation Expenses. The attorneys' fees, court costs, expert witness fees and all other expenses of any civil action filed by the Association ("litigation expenses") shall be fully disclosed to Co-owners in the Association's annual budget. The litigation expenses for each civil action filed by the Association shall be listed as a separate line item captioned "litigation expenses" in the Association's annual budget.

Section 3.11 Co-owner Approval for Civil Actions Against Developer and First Board of Directors. Notwithstanding anything to the contrary contained in this Article III, any civil action proposed by the Board of Directors on behalf of the Association to be initiated against Developer, its agents or assigns, and/or the First Board of Directors of the Association or other Developer-appointed Directors, for any reason, shall be subject to approval by a vote of sixty-six and two-thirds (66-2/3%) percent of all Co-owners and notice of such proposed action must be given in writing to all Co-owners in accordance with Article VII. Such vote may only be taken in a meeting of the Co-owners and no proxies or absentee ballots shall be permitted to be used, notwithstanding the provisions of Article VII.

ARTICLE IV

INSURANCE

Section 4.1 Extent of Coverage. The Association shall, to the extent appropriate in light of the nature of the General Common Elements of the Project, carry fire and extended coverage, vandalism and malicious mischief and liability insurance (in a minimum amount to be determined by Developer or the Association in its discretion), officers' and directors' liability insurance and workmen's compensation insurance, if applicable, and other insurance the Association may deem applicable, desirable or necessary pertinent to the ownership, use and maintenance of the General Common Elements and such insurance, shall be carried and administered in accordance with the following provisions:

(a) **Responsibilities of the Association and the Co-owners.** All of the insurance referenced in this Section 4.1 shall be purchased by the Association for the benefit of the Association, and the Co-owners and their mortgagees, as their interests may appear, and

provision shall be made for the issuance of mortgagee endorsements to the mortgagees of Co-owners.

(b) **Insurance of Common Elements.** If applicable and appropriate, General Common Elements of the Condominium Project shall be insured against fire and other perils covered by a standard extended coverage endorsement, in an amount equal to the current insurable replacement value, excluding foundation and excavation costs, if any, as determined annually by the Board of Directors of the Association in consultation with the Association's insurance carrier and/or its representatives, utilizing commonly employed methods for the reasonable determination of replacement costs.

(c) **Premium Expenses.** All premiums on insurance purchased by the Association pursuant to these Bylaws shall be expenses of administration.

(d) **Proceeds of Insurance Policies.** Proceeds of all insurance policies owned by the Association shall be received by the Association, held in a separate account and distributed to the Association, and the Co-owners and their mortgagees, as their interest may appear, provided, however, whenever repair or reconstruction of the Condominium shall be required as provided in Article V of these Bylaws, the proceeds of any insurance received by the Association as a result of any loss requiring repair or reconstruction shall be retained by the Association and applied for such repair or reconstruction.

Section 4.2 Authority of Association to Settle Insurance Claims. Each Co-owner, by ownership of a Unit in the Condominium Project, shall be deemed to appoint the Association as his true and lawful attorney-in-fact to act in connection with all matters concerning the maintenance of fire and extended coverage, vandalism and malicious mischief, liability insurance and workmen's compensation insurance, if applicable, pertinent to the Condominium Project and the Common Elements appurtenant thereto. Without limiting the foregoing, the Association shall have full power and authority to purchase and maintain such insurance, to collect and remit premiums therefore, to collect insurance proceeds and to distribute the same to the Association, the Co-owners and their respective mortgagees, as their interests may appear (subject always to the Condominium Documents), and/or to utilize said proceeds for required repairs or reconstruction, to execute releases of liability and to execute all documents and to do all things on behalf of such Co-owner and the Condominium as shall be necessary or convenient to accomplish the foregoing purposes. The Association shall pay all costs and/or fees due and owing to any insurance agent or management agent representing the Association with respect to any insurance claim.

Section 4.3 Co-owner Responsibilities. Each Co-owner shall be responsible for obtaining fire and extended coverage and vandalism and malicious mischief with respect to the dwelling and all other improvements constructed or to be constructed within the perimeter of his Unit, any Limited Common Elements appurtenant thereto and for his personal property located therein or thereon or elsewhere in the Condominium Project. The Association shall have no responsibility whatsoever to insure any such improvements. In addition, each Co-owner shall be obligated to obtain insurance coverage for personal liability for occurrences within the perimeter of the Unit and any appurtenant Limited Common Elements, naming the Association and Developer as additional insureds, and also for any other personal insurance coverage that the Co-owner wishes to carry. Each Co-owner shall deliver certificates of insurance to the Association from time to time to evidence the continued existence of all insurance required to be maintained by the Co-owner under this Section 4.3. If a Co-owner fails to obtain such insurance or to provide evidence of such insurance to the Association, the Association may, but is not obligated to, obtain such insurance on behalf of the Co-owner and the premiums for such insurance shall constitute a lien against the Co-owner's Unit, which may be collected in the same manner that assessments may be collected under Article II of these Bylaws.

Section 4.4 **Waiver of Subrogation.** The Association, as to all policies which it obtains, and all Co-owners, as to all policies which they obtain, shall use their best efforts to see that all property and liability insurance carried by the Association and any Co-owner shall contain appropriate provisions whereby the insurer waives its right of subrogation as to any claims against any Co-owner or the Association.

Section 4.5 **Indemnification.** Each individual Co-owner shall indemnify and hold harmless every other Co-owner, Developer and the Association for all damages and costs, including attorney's fees, which the other Co-owners, Developer or the Association may suffer as a result of defending any claim arising out of an occurrence on or within an individual Co-owner's Unit, Dwelling or appurtenant Limited Common Elements. Each Co-owner shall carry insurance to secure the indemnity obligations under this Section 4.5, if required by the Association, or if required by Developer during the Development and Sales Period. This Section 4.5 is not intended to give any insurer any subrogation right or any other right or claim against any individual Co-owner.

ARTICLE V

RECONSTRUCTION OR REPAIR

Section 5.1 **Co-owner Responsibility for Repair.** Each Co-owner shall be responsible for all reconstruction, repair and maintenance of the Dwelling and other improvements, fixtures and personal property within his Unit, and all Limited Common Elements appurtenant to the Unit. If any damage to the dwelling or other improvements constructed within a Co-owner's Unit adversely affects the appearance of the Project, the Co-owner shall proceed to remove, repair or replace the damaged property without delay.

Section 5.2 **Association Responsibility for Repair.** The Association shall be responsible for the reconstruction, repair and maintenance of the General Common Elements. Immediately following a casualty to property, which the Association is responsible for maintaining and repairing, the Association shall obtain reliable and detailed cost estimates to repair or replace the damaged property to a condition comparable to that existing before the damage. If the proceeds of insurance are not sufficient to defray the estimated costs of reconstruction or repair, or if at any time during such reconstruction or repair, or upon completion of such reconstruction or repair, there are insufficient funds for the payment of the reconstruction or repair, the Association shall make an assessment against all Co-owners for an amount, which when combined with available insurance proceeds, shall be sufficient to fully pay for the cost of repair or reconstruction of the damaged property. Any such assessment made by the Board of Directors of the Association shall be governed by Section 2.3(a) of these Bylaws. Nothing contained in this Section 5.2 is intended to require Developer or the Association to replace mature trees and vegetation with equivalent trees or vegetation.

Section 5.3 **Timely Reconstruction and Repair.** If any damage to Common Elements or a Unit adversely affects the appearance of the Project, the Association or Co-owner responsible for the reconstruction, repair and maintenance thereof shall proceed to replace the damaged property without delay, and shall use its best efforts to complete such replacement within six (6) months from the date upon which the property damage occurred.

Section 5.4 **Eminent Domain.** Section 133 of the Act and the following provisions shall control in the event all or a portion of the Project is subject to eminent domain:

(a) **Taking of a Unit or Related Improvements.** In the event all or a portion of a Unit or any improvement thereon is taken by eminent domain, the award for such taking shall be paid to the Co-owner of such Unit and the mortgagee thereof, as their interest may appear. If the entire Unit is taken by eminent domain, on the acceptance of such award by the Co-owner and his mortgagee, they shall be divested of all interest in the Condominium Project.

(b) **Taking of Common Elements.** If there is a taking of any portion of the General Common Elements, the condemnation proceeds relative to such taking shall be paid to the Co-owners and their mortgagees in proportion to their respective undivided interest in the General Common Elements unless pursuant to the affirmative vote of Co-owners representing greater than fifty (50%) percent in percentage of value of the total votes of all Co-owners qualified to vote, at a meeting duly called for such purpose, the Association is directed to rebuild, repair or replace the portion so taken or to take such other action as authorized by a vote of the Co-owners who hold a majority in percentage of value. If the Association is directed by the requisite number of Co-owners to rebuild, repair or replace all or any portion of the General Common Elements taken, the Association shall be entitled to retain the portion of the condemnation proceeds necessary to accomplish the reconstruction, repair or replacement of the applicable General Common Elements. The Association, acting through its Board of Directors, may negotiate on behalf of all Co-owners for any condemnation award for Common Elements and any negotiated settlement approved by the Co-owners representing sixty-six and two-thirds (66-2/3%) percent or more of the total percentages of value of all Co-owners qualified to vote shall be binding on all Co-owners.

(c) **Continuation of Condominium After Taking.** In the event the Condominium Project continues after a taking by eminent domain, then the remaining portion of the Condominium Project shall be resurveyed and the Master Deed amended accordingly, and, if any Unit shall have been taken, then Article V of the Master Deed shall also be amended to reflect such taking and to proportionately readjust the percentages of value of the remaining Units, based upon the continuing value of the Condominium being one hundred (100%) percent. Such amendment may be effected by an officer of the Association duly authorized by the Board of Directors without the necessity of obtaining the signature or specific approval of any Co-owner, mortgagee or other person.

(d) **Notification of Mortgagees.** In the event all or any portion of a Unit in the Condominium, or all or any portion of the Common Elements is made the subject matter of any condemnation of eminent domain proceeding or is otherwise sought to be acquired by a condemning authority, the Association shall notify each institutional holder of a first mortgage lien on any of the Units in the Condominium that is registered in the Association's book of "Mortgagees of Units" pursuant to Section 7.1 of these Bylaws.

Section 5.7 Notification of FHLMC. In the event any mortgage in the Condominium is held by the Federal Home Loan Mortgage Corporation ("FHLMC") then, upon request therefore by FHLMC, the Association shall give FHLMC written notice, at such address as it may from time to time direct, of any loss to or taking of the Common Elements of the Condominium, if the loss or taking exceeds Ten Thousand and 00/100 (\$10,000.00) Dollars in amount or if the damage or taking relates to a Unit covered by a mortgage purchased in whole or in part by FHLMC exceeds One Thousand and 00/100 (\$1,000.00) Dollars.

Section 5.8 Priority of Mortgagee Interests. Nothing contained in the Condominium Documents shall be construed to give a Co-owner, or any other party, priority over any rights of first

mortgagees of Units pursuant to their mortgages with respect to any distribution to Co-owners of insurance proceeds or condemnation awards for losses to or a taking of Units and/or Common Elements.

ARTICLE VI

RESTRICTIONS

All of the Units in the Condominium shall be held, used and enjoyed subject to the following limitations and restrictions which do not constitute variances or approved deviations from requirements of applicable City ordinances which apply and must be adhered to notwithstanding these provisions and, in some instances, these limitations and restrictions may be more restrictive than applicable City ordinances and agreements:

Section 6.1 Use of Units. No Condominium Unit shall be used for other than single-family residential purposes and the Common Elements shall be used only for purposes consistent with single family residential use. No building of any kind whatsoever shall be erected, re-erected, moved or maintained on any Unit, except one single-family dwelling and appurtenant attached structures. Each Dwelling shall be designed and erected for occupation as a single-family residence and shall have an attached garage for the sole use of the occupants of the Dwelling within the Unit.

Section 6.2 Use of General Common Elements. No member shall alter or change any of the General Common Elements from the way they were originally installed or constructed by the Developer without the express written approval of the Board of Directors. The Board of Directors, in its sole discretion, may disapprove any such request. Even after approval, a member shall be responsible for all damages to any other Units and the improvement thereon or to the Common Elements, resulting from any such alteration. The Board of Directors may appoint an Architectural Control Committee and may delegate to it responsibility for establishing additional rules relating to the use and appearance of Units, the Dwellings constructed thereon, Common Elements and the approval of the construction, maintenance and repair thereof not herein provided.

Section 6.3 Character and Size of Buildings. No Dwelling shall be permitted on any Unit unless, in the case of a one-story building, the living area thereof shall be not less than One Thousand Three Hundred (1,300) square feet; in the case of one and one half story building, the living area thereof shall not be less than One Thousand Six Hundred (1,600) square feet; in the case of a two story building, the living area thereof shall not be less than One Thousand Six Hundred (1,600) square feet. No building greater than two and one-half (2 1/2) stories or taller than thirty-five (35) feet to the midpoint of the roof shall be constructed (a walkout basement shall not be considered as a story). All computations of square footage for determination of the permissibility of erection of residences under this section shall be exclusive of basements, attics, garages, porches or similar areas. No Dwelling shall be less than thirty-nine (39) feet in width. All plans are subject to be reviewed and approved by the Developer prior to the commencement of construction during the Development and Sales Period and thereafter by the Association. Each Dwelling shall be constructed with brick on all four sides of the first floor.

Section 6.4 Exterior Surface of Dwellings. The visible exterior walls of all Dwelling structures shall be made of brick, wood, cement fiberboard, cut stone, fieldstone, LP Smart Siding, ledge rock or stucco. The use of asphalt, cement block, cinder, slag, plywood, panel brick is prohibited, except that panel brick (matching the brick used to construct the Dwelling) may be used to finish an interior chimney chase. A minimum of 65% of the exterior shall be finished in brick or stone for multi-story residences and 80% of the exterior shall be finished in brick or stone for one story residences. Windows and doors made of unpainted aluminum or non-factory painted aluminum are prohibited. The color of

windows, doors, sidings, screens and roof material shall be subject to the approval of the Architectural Control Committee.

Section 6.5 Roof Design. Primary roofs with less than a six-twelfths (6/12) pitch are prohibited, unless approved in writing by the Architectural Control Committee. Roofs must be of shingle construction using fiberglass or asphalt shingles.

Section 6.6 Grade. The grade and topography of any Unit in the Project may not be changed after original construction without the written consent of the Municipality and the Developer during the Development and Sales Period, and thereafter the Association.

Section 6.7 Garages. All garages must be attached to the dwelling. No garage shall provide space for less than two (2) automobiles.

Section 6.8 Driveways. All driveways, aprons and parking areas must be paved with concrete or asphalt or may be constructed with brick pavers. The driveways must be completed within six (6) months of the date of issuance of the temporary certificate of occupancy.

Section 6.9 Antennas, Cable Television Dish. No radio, television or other communication antennas or satellite dishes of any type shall be installed on or outside of any home or other structure located on a Unit that is visible from the street directly in front of the residential structure, unless such placement is necessary for the reception of an acceptable quality signal, and in such event, the Co-owner must first apply to the Board of Directors of the Association to confirm the necessity for such placement. The Board of Directors may impose reasonable rules and regulations on the use of any Units or Limited Common Elements for the placement of telecommunications equipment, including antennae and satellite dishes, that do not unreasonably delay a Co-owner's access to telecommunications services and otherwise complies with the then-applicable Federal Communications Commission's (or its successors) rules with respect to telecommunications equipment installation on commonly owned property. The Developer and the Association shall also comply with other applicable federal and state laws when enforcing this restriction. Any Co-owner installing or having telecommunications equipment installed shall provide written notice to the Association not less than 48 hours prior to installation so that the Association has an opportunity to assure it is not installed on General Common Elements or in violation of applicable rules. The Co-owner shall provide the name of the service provider and the name of the owner of the telecommunications equipment to the Association so that the Association will know who to contact in the event telecommunications equipment is damaged, installed in an unsafe manner, or is maintained in an unsafe or unsightly manner. Co-Owners may install any antenna or satellite dish designed to receive direct broadcast satellite service, including direct-to-home satellite services, that is one meter or less in diameter; or, an antenna designed to receive video programming services via multipoint distribution services, including multi-channel, multipoint distribution services, instructional television fixed services and local multipoint distribution services, that is one meter or less in diameter or two meters or less in diagonal measurement; or an antenna that is designed to receive television broadcast signals that is one meter or less in diameter or two meters or less in diagonal measurement. However, no telecommunications equipment of any type, may be placed on the General Common Elements unless both of the following conditions have been met:

- (a) The telecommunications equipment has been approved by the Developer (during the Development and Sales Period), or the Association thereafter; and
- (b) The proposed telecommunications equipment is for the benefit of the members of the Association at large and not limited in availability to the Co-owners of specific Units.

The placement of radio, television or other communication antenna or satellite dish shall also comply with City ordinances.

Section 6.10 Exterior Lighting. No exterior lighting shall be installed so as to disturb the occupants of neighboring Units or impair the vision of traffic on any street.

Section 6.11 Sump Pumps. All sump pumps shall be connected to the storm sewer system, in locations as approved by the Developer during the Development and Sales Period, and thereafter by the Association.

Section 6.12 Utility Lines. All utility lines, including electric, gas, telephone and cable television, must be installed underground, unless a utility company requires an overhead line as a result of a condition which is particular to that site.

Section 6.13 Porches, Decks or Patios. No unsightly condition shall be maintained upon any porches, decks or patios and only furniture and equipment consistent with ordinary yard, porch, deck or patio use shall be permitted. All decks and patios erected on a Unit shall comply with these restrictions and City ordinances, be approved by the Developer during the Development and Sales Period, and thereafter by the Association, and be approved by the City. All decks and patios shall be located within the Unit at the rear of the residential structure located within the width of the Dwelling located in the Unit. All decks shall be constructed of wolmanized wood, cedar or composite material. All patios shall be constructed of cement slab or brick pavers. Either decks or patios may be constructed of other materials, as approved by the Developer during the Development and Sales Period, and thereafter by the Association.

Section 6.14 Fences, Walls, Privacy Walls. No fence, wall or privacy wall may be constructed or maintained within a Unit or on the Common Elements except: a) a Co-owner may maintain any existing wall or fence located within the Unit which is along the perimeter of the Condominium Premises; b) a Co-owner may maintain a decorative wall or fence as part of a landscaping feature if approved in writing by the Association; and c) a Co-owner may construct and maintain fences required by the City to be erected and maintained around the perimeter of a swimming pool. Any fence around a swimming pool shall be constructed within 5 feet of the pool and may not serve as a fence around the exterior perimeter of the Unit. Any fence around a swimming pool shall be decorative in nature. The location of the fence and the materials used to construct the fence must be approved by the Association in writing before the installation of the fence.

Section 6.15 Swimming Pools. No swimming pool may be built which is higher than one foot (1') above the final grade of the Unit.

Section 6.16 Trailers, Boats, Recreation and Commercial Vehicles. No house trailers, commercial vehicles, boat trailers, boats, camping, recreational vehicles or camping trailers, horse trailers or other utility trailers or vehicles may be parked on or stored on any Unit. However, a construction trailer may be maintained by each Builder or independent contractor contracting with a Co-Owner during the Development and Sales Period when new houses are under construction in the Project.

Section 6.17 Temporary Structures. Trailers, shacks, barns or any temporary buildings of any description whatsoever are expressly prohibited and no temporary occupancy shall be permitted in unfinished buildings. The Developer, any Builders or their subcontractors and/or independent contractors contracting with a Co-Owner, may erect temporary storage buildings for materials and supplies to be used in the construction of houses during the Development and Sales Period.

Section 6.18 Trash and Garbage. No Co-Owner shall throw or allow to accumulate on his or any other Unit or the Common Elements, trash, refuse or rubbish of any kind. No Co-Owner shall dump or otherwise dispose of chemicals, motor oil, paint, gasoline or petroleum distillates in, over or within the Project or the sanitary or storm sewer drains serving the Project. No Unit shall be used or maintained as a dumping ground for rubbish, trash, garbage or other waste, and the same shall not be kept, except in sanitary containers properly concealed from public view. Garbage containers shall not be left at the roadside for more than twenty-four (24) hours in any one week.

Section 6.19 Animals or Pets. No farm animals, livestock or wild animals may be kept, bred or harbored at the Condominium. No household pets shall be bred at the Condominium. No animal may be kept or bred on any Unit for any commercial purpose. No dangerous or savage animal shall be kept, bred or harbored at the Condominium. The maximum number of dogs and/or cats maintained at a Unit shall be two (2) dogs or two (2) cats or one (1) dog and one (1) cat. Ordinary household pets shall have such care and restraint so as not to be dangerous, obnoxious or offensive on account of noise, odor or unsanitary conditions. No such pet may be permitted to run loose upon the Common Elements, Limited or General. Pet owners shall clean up after pets and pick up and dispose of any pet excrement. Any person who causes an animal to be brought or kept in the Condominium shall indemnify and hold harmless the Association from any damage, loss or liability which might accrue to the Association as a result of the presence of such animal in the Condominium. The Owner of a pet must obtain any license for a pet which is required by the Association.

Section 6.20 Remodeling and Alteration of Structures. No exterior alterations or changes may be made to the exterior of any Dwelling or any other structure erected on any Unit until the plans and specification showing the nature, kind, shape, height, color, materials and location of the proposed modifications have been submitted to and approved in writing by the Developer during the Development and Sales Period, and thereafter by the Association.

Section 6.21 Maintenance of Improvements. Each Co-Owner shall keep the Dwelling within the Unit in good condition and in good repair at all times. The exterior of all Dwellings and other structures shall be maintained in good repair, structurally sound and in a sanitary condition so as not to threaten the health, safety or welfare of any occupant or any Co-Owner or to substantially detract from the appearance of the Project as a whole or any area of the Project.

Section 6.22 No Use of Firearms or Dangerous Weapons. No member shall use, or permit any occupant, agent, employee, invitee, guest or member of his family to use, any firearms, rifles, shotguns, handguns, air rifles, pellet guns, BB guns, crossbows and archery equipment, or other similar dangerous weapons, projectiles or devices anywhere on or about the Condominium Premises.

Section 6.23 Activities. No member owning any Unit shall do or permit anything to be done or keep or permit to be kept in his Unit or on the Common Elements anything that will increase the insurance rate on the Condominium without the written approval of the Association. Each member who is the cause thereof shall pay to the Association the increased cost of insurance premiums resulting from any such activity or the maintenance of any such condition.

Section 6.24 Aesthetics. The General Common Elements shall not be used to store supplies, materials, personal property, trash or refuse of any kind, except as designated by the Association. There shall not be any drying, shaking, or airing of clothing or other fabrics outside of the Dwelling. In general, no activity shall be carried on nor condition maintained by a member, either in his Unit or upon the Common Elements, which spoils the appearance of the Condominium.

Section 6.25 Obstructions in the Roads and General Common Element Areas. Roads and all of the General Common Elements, shall not be obstructed in any way nor shall they be used for purposes other than those for which they are reasonably and obviously intended. No bicycles, vehicles, chairs or benches may be left unattended on or about the General Common Elements, without the prior written consent of the Board of Directors.

Section 6.26 Signs. No sign or billboard of any kind shall be placed, erected or maintained on any Unit excepting that the provisions of this paragraph shall not apply to such signs as may be for purposes of resale by any Co-Owner. Signs for purposes of resale shall be limited to one sign per Unit, not exceeding four (4) square feet and shall be subject to review and approval of the Association and the Developer so long as the Developer shall hold title to any Unit. The provisions of this paragraph shall not apply to signs installed or erected on any Unit by the Developer, a Builder, or any entity that acquires title to one or more Units for the purpose of residential construction on those Units and subsequent resale, during such periods as any Units shall be “for sale” or used as a model or for display purposes by the Developer, Builder or other entity. Political signs for a period of three months (90 days) prior to an election may be displayed, one (1) sign per candidate, ground-mounted, on the Unit. No political sign shall be permitted on any of the General Common Elements. No political sign shall exceed four (4) square feet. In addition to these restrictions and limitations, a Co-Owner must also comply with any City ordinance relating to signs.

Section 6.27 Destruction of Building by Fire, etc. Any debris resulting from the destruction, in whole or in part, of any Dwelling within any Unit shall be removed as soon as possible from such Unit in order to prevent an unsightly or unsafe condition.

Section 6.28 Unit Leasing and Rental. A Co-Owner may lease his Unit for the same purposes set forth in this Article provided that written disclosure of such lease transaction is submitted to the Association in the manner specified in subsection “1” below, and provided that written approval (which approval shall not be unreasonably withheld) of such transaction is obtained from the Association. No Co-Owner shall lease less than an entire Unit in the Condominium and no tenant shall be permitted to occupy, except under a lease, the initial term of which is at least six (6) months, unless specifically approved in writing by the Association. The terms of all leases, occupancy agreements and occupancy arrangements shall incorporate, or be deemed to incorporate, all of the provisions of the Condominium Documents. The Developer may lease any number of Units in the Condominium in its discretion. Any rental arrangement and lease shall also comply with any applicable City ordinance.

(a) **Leasing Procedures.** The leasing of Units in the Project shall conform to the following provisions:

(1) A Co-Owner, not including the Developer until after the Transitional Control Date, desiring to rent or lease a Unit, shall disclose that fact in writing to the Association at least ten (10) days before presenting a lease form to a potential lessee and, at the same time, shall supply the Association with a copy of the exact lease form for its review for its compliance with the Condominium Documents. The Co-Owner and the Developer, if applicable, shall also provide the Association with a copy of the executed lease. If no written lease is to be used, then the Co-owner or the Developer, if applicable, shall supply the Association with the name and address of the lessees or occupants, along with the rental amount and due dates of any rent or compensation payable to a Co-owner or the Developer, if applicable, the due dates of that rental and compensation, and the term of the proposed arrangement.

(2) Tenants and non-owner occupants shall comply with all of the conditions of the Condominium Documents and all leases and rental agreements shall so state.

(3) If the Association determines that the tenant or non-owner occupant has failed to comply with the conditions of the Condominium Documents, the Association shall take the following action:

(i) The Association shall notify the Co-Owner by certified mail advising of the alleged violation by the tenant.

(ii) The Co-Owner shall have fifteen (15) days after receipt of such notice to investigate and correct the alleged breach by the tenant or advise the Association that a violation has not occurred.

(iii) If after fifteen (15) days the Association believes that the alleged breach is not cured or may be repeated, it may institute on its behalf or derivatively by the Co-Owners on behalf of the Association, if it is under the control of the Developer, an action for eviction against the tenant or non-owner occupant and, simultaneously, for money damages in the same action against the Co-Owner and tenant or non-owner occupant for breach of the conditions of the Condominium Documents. The relief provided for in this subsection may be by summary proceeding. The Association may hold both the tenant and the Co-Owner liable for any damages to the Common Elements caused by the Co-Owner or tenant in connection with the Unit or Condominium Project.

(iv) When a Co-Owner is in arrears to the Association for assessments, the Association may give written notice of the arrearage to a tenant occupying a Co-Owner's Unit under a lease or rental agreement and the tenant, after receiving the notice, shall deduct from any rental payment due the Co-Owner the arrearage and future assessments as they fall due and pay them to the Association. The deductions to pay past due and future assessments shall not constitute a breach of the rental agreement or lease by the tenant. If the tenant, after being notified, fails or refuses to remit rent otherwise due from the Co-Owner to the Association, then the Association may do the following: (a) issue a statutory notice to quit for non-payment of rent to the tenant and the Association shall have the right to enforce the notice by summary proceeding; (b) initiate proceedings on the Association's behalf or derivatively by the Co-Owners on behalf of the Association, an action for both eviction against the tenant or non-Co-Owner and, simultaneously, an action for money damages against the Co-Owner and tenant or non-Co-Owner occupant for breach of the conditions of the Condominium Documents.

Section 6.29 Landscaping.

(a) Installation. Any Co-owner taking occupancy of a newly constructed residence upon any Unit between September 1 and April 30 shall have the landscaping improvements, including, but not limited to, trees, plantings, shrubs and lawns, installed no later than the next August 31. Any Co-owner taking occupancy of a newly constructed home between May 1 and August 31 shall have the landscaping improvements as described above installed within one hundred twenty (120) days after taking occupancy but no later than November 30. No shrub or planting which obstructs sight lines shall be placed or

permitted to remain on any corner Unit within the triangular area formed by the lot lines and a line connecting them at points twenty-five feet (25') from the intersection of the lot lines, or in the case of a rounded property corner, from the intersection of the lot lines as though extended. No tree shall be permitted to remain within such distances of such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of the sight lines.

(b) Maintenance. The Unit and the right-of-way contiguous to each Unit shall be kept free of weeds by the Co-owner, and all landscaping and lawns shall be well-maintained at all times. All lawn areas on a Unit shall be maintained by regular mowing during the months of April through October of each year unless weather conditions otherwise require additional mowing. All lawn and landscaping areas shall be kept in a vigorous, weed free, growing condition by regularly scheduled lawn care practices (i.e., fertilization, irrigation, and similar measures). Each year all dead and sparse grass areas shall be restored to a dense and healthy condition. Trees and shrubs located on a Unit shall be pruned and maintained according to standard horticultural practices to keep them in a neat and healthy condition. Broken, dead and unsafe branches shall be removed when said condition occurs. Trees, shrubs and other plantings shall be replaced with similar material when plantings are more than fifty percent (50%) dead.

(c) Irrigation Systems. Co-Owners shall install an irrigation system for all landscaped areas within the Unit. All landscape irrigation systems shall be kept operable as designed and shall be utilized as site and weather conditions dictate to ensure healthy, quality lawns and landscape.

(d) Drainage Systems. Drainage systems shall be maintained free of debris, mud, silt, or other conditions and shall be kept fully operable as designed and built.

Section 6.30 Mailboxes. The Association shall install, maintain, repair, and replace, as necessary, the mailboxes and mailbox stands in the areas dedicated for mailboxes in the Condominium. A Co-owner may not install or maintain a separate mailbox. A Co-owner shall not install or maintain a separate receptacle for newspapers, magazines or other similar materials. A Co-Owner may add a newspaper holder to the mailbox at the Co-Owner's expense with the written approval of the Association. Each Co-owner shall pay the Association that Co-owner's pro-rata share of the cost of installing that Co-owner's mailbox and mailbox stand and, if necessary, the cost of replacing that Co-Owner's mailbox and mailbox stand. If a Co-owner or the Co-owner's tenant, guest or invitee, or the guest or invitee of the Co-owner's tenant, damages any mailbox or mailbox stand, such Co-owner shall be responsible for repairing or replacing the damaged mailbox(es) or mailbox stand(s) with the identical mailbox or mailbox stand or one that is substantially similar if an identical one is not available. If the Co-owner fails to repair or replace the damaged mailbox(es) or mailbox stand, the Association shall repair or replace the damaged mailbox(es) or mailbox stand and the Co-owner shall reimburse the Association for the cost of repairing or replacing the mailbox(es) and mailbox stand within ten (10) days after the Association makes a written demand for payment. If the Co-Owner fails to pay the amount due to the Association, the Association may treat the amount due as a delinquent assessment and collect the delinquent assessment as provided in Section 2.7 of these Bylaws.

Section 6.31 Rules and Regulations. Reasonable rules and regulations consistent with the Act, the Master Deed and these Bylaws concerning the use of the Common Elements may be made and amended from time to time by any Board of Directors of the Association, including the Board of Directors appointed by the Incorporator and its successors. Copies of all such rules and regulations and amendments thereto shall be furnished to all members and shall become effective ten (10) days after mailing or delivery thereof to the designated voting representative of each member. Any such rule, regulation or amendment may be revoked at any time by the affirmative vote of more than fifty (50%) percent of all members at any duly convened meeting of the Association, except that the members may not revoke any rule, regulation or amendment prior to the First Annual Meeting of the Association.

Section 6.32 Application of Restrictions to Developer. None of the restrictions contained in this Article shall apply to any of the activities of the Developer, a Builder or other entity that acquires title to one or more Units for the purpose of residential construction on those Units and subsequent resale, during the Development and Sales Period, or of the Association in furtherance of its powers and purposes set forth herein and in its Articles of Incorporation and Bylaws as the same may be amended from time to time.

Section 6.33 Sales – Business Office. Notwithstanding anything to the contrary elsewhere herein contained, Developer or any entity that acquires title to one or more Units for the purpose of residential construction on those Units and subsequent resale, shall have the right to maintain a sales office (including a mobile office), a business office (including a mobile office), a construction office (including a mobile office), model units, storage areas and reasonable parking incident to the foregoing and such access to, from and over the Project as may be reasonable to facilitate the development and sale of the entire Project. During the Development and Sales Period, the Developer, or other entity, shall be responsible for all costs related to maintaining such sales and business offices as provided under this section, including all costs related to Units and Common Elements used by the Developer, Builder or other entity in furtherance of the development and sale of the Project. Developer may assign these rights during the Development and Sales Period. Developer shall restore the areas so utilized under this section, whether used by the Developer or by its assignee(s), to habitable status upon termination of use, or such costs required to restore same shall be chargeable to the Developer by the Association.

Section 6.34 Architectural Review Committee.

(a) No building, fence, wall, deck, swimming pool, outbuilding, drainage structure or other structure, or exterior improvement shall be commenced, erected or maintained on any Unit, nor shall any exterior addition to or change or alteration therein or change in the exterior appearance thereof be made until the plans and specifications showing the kind, size, shape, height, colors, materials, topography and location of the same on the Unit shall have been submitted to and approved in writing by an architectural review committee (the "Committee"). The Committee shall be composed of three (3) persons appointed by the Association. Committee members are not required to be Members of the Association, and may be employees, officers, directors, agents or affiliates of the Developer. Each member of the Committee shall serve until he resigns or is replaced by a subsequent appointee. Neither the Developer nor the Committee shall have any liability whatsoever for the approval or disapproval of any plans or specifications.

(b) Preliminary plans describing the improvements proposed to be made may be submitted to the Committee for preliminary consideration and approval prior to the preparation and submission of the plans and specifications described in subsection (c) below.

(c) Plans and specifications for final consideration for approval by the Committee shall include the following:

- (i) Complete plans and specifications sufficient to secure a building permit in the Municipality including a dimensioned plot plan showing the Unit and placement of all improvements;
- (ii) Front elevation, side elevations and rear elevation of the building, plus elevations of any walls and fences;
- (iii) A perspective drawing, if deemed necessary by the Committee,

to interpret adequately the exterior design;

- (iv) Data as to size, materials, colors and texture of all exteriors, including roof coverings and any fences and walls;
- (v) One set of plans (no less than 12" X 18" in size) to be left with the Committee until construction is completed;
- (vi) Any other data, drawings or materials which the Committee requests in order to fulfill its function.

(d) No approval by the Committee shall be valid if the structure or improvement violates any of the restrictions as otherwise set forth in Article VI of these Bylaws, except in cases where waivers have been granted as provided for herein.

(e) The Committee may disapprove plans because of noncompliance with any of the restrictions set forth in these Bylaws, or because the Committee is not satisfied with the grading and drainage plan, the location of the structure on the Unit, the materials used, the color scheme, the finish, design, proportion, shape, height, style or appropriateness of the proposed improvement or alteration or because of any matter or thing, which, in the judgment of the Committee, would render the proposed improvement or alteration inharmonious with, or out of keeping with, the objectives of the Developer in the creation of the Condominium or the provisions of these Bylaws as determined by the Committee, in its sole discretion, or with improvements erected or to be erected on other Units in the Condominium, including purely aesthetic considerations. No member of the Committee shall be liable for any approval or disapproval of any plan. The decision of the Committee is final and there is no appeals process.

(f) If the Committee fails to approve or disapprove plans within thirty (30) days after the proper and complete submission of plans and specifications, then such approval will not be required, but all other limitations, conditions and restrictions set forth in the Master Deed shall apply and remain in force as to such plans, specifications, and improvements.

(g) Committee approval shall be deemed given if either (a) the plans and specifications submitted for approval are marked or stamped as having been finally approved by the Committee, or (b) an approval form specifying the plans and specifications submitted for approval is dated and signed by two (2) members of the Committee who were validly serving on the Committee on the date of such approval.

(h) The Committee may, but shall not be required to, adopt guidelines for its approval process. The guidelines, if adopted, may include discussion of aesthetic standards to be utilized by the Committee in approving plans and specifications, preferred materials, preferred styles of residences, and other matters which will assist Co-owners seeking Committee approval. The guidelines, if adopted, will be intended solely for the purposes of illustrating and explaining current Committee standards. The guidelines shall not be construed to create any obligation on the part of the Committee to approve or reject any specific plan or specification or to otherwise modify or diminish the discretion of the Committee under this Article.

(i) The Committee may charge a review fee of a maximum of Two Hundred Fifty Dollars (\$250.00) to any Builder or Co-owner for the purposes of reviewing plans for the construction of a residence. The fee may not be utilized for the purposes of paying salaries to any members of the Committee but shall be utilized exclusively for the purposes of reimbursing

actual expenses of the Committee, including, but not limited to, professional review fees of independent consultants.

Section 6.35 Non-Co-Owner Compliance.

(a) All non-Co-Owner occupants of or visitors to any unit shall comply with all of the terms and conditions of the Condominium Documents and the provisions of the Act.

(b) If the Association determines that a non-Co-Owner occupant or visitor has failed to comply with the conditions of the Condominium Documents, or the provisions of the Act, the Association shall take the following action: (i) the Association shall advise the appropriate member by certified mail of the alleged violation by a person occupying or visiting his unit; (ii) the member shall have fifteen (15) days after receipt of the notice to investigate and correct the alleged breach or advise the Association that a violation has not occurred; (iii) if after fifteen (15) days the Association believes that the alleged breach has not been cured or may be repeated, it may impose an assessment against the Unit occupied by the non-Co-Owner or visitor to cover the cost incurred by the Association to cure the breach, if any, and the Association may institute, on its behalf, or derivatively by the members on behalf of the Association if it is under the control of the Developer, an action for eviction against the non-co-owner occupant or visitor and, simultaneously, for money damages against the member and non-co-owner occupant or visitor for breach of the conditions of the Condominium Documents or of the Act. The relief set forth in this Section may be by any appropriate proceeding. The Association may hold both the non-co-owner occupant or visitor and the member liable for any damages caused to the Condominium. If the violation is determined to be of an emergency nature, the Association may apply to the appropriate court for, and obtain injunctive relief, in addition to all other remedies, including money damages as above.

Section 6.36 Co-Owner Maintenance. Each Co-Owner shall maintain his or her Unit, the Dwelling constructed thereon, and any Limited Common Elements appurtenant thereto for which he or she has maintenance responsibility in a safe, clean and sanitary condition. Each Co-Owner shall also use due care to avoid damaging any of the Common Elements including, but not limited to, landscaping and the telephone, water, sanitary sewer, storm sewer, irrigation, gas, plumbing, electrical or other utility conduits and systems and any other Common Elements which are appurtenant to or which may affect any other Unit. Each Co-Owner shall be responsible for damages or costs to the Association resulting from negligent damage to or misuse of any of the Common Elements by him or her, or his or her family, guests, contractors, agents or invitees, unless such damages or costs are covered by insurance carried by the Association (in which case there shall be no such responsibility, unless reimbursement to the Association is limited by virtue of a deductible provision, in which case the responsible Co-Owner shall bear the expense to the extent of the deductible amount). Each individual Co-Owner shall indemnify the Association and all other Co-Owners against such damages and costs, including attorneys' fees, and all such costs or damages to the Association may be assessed to and collected from the responsible Co-Owner in the manner provided in Article II hereof.

Section 6.37 Enforcement. Failure to comply with any of the terms of the Act, the Master Deed, these Bylaws, the Articles of Incorporation or Rules and Regulations of the Association, shall be grounds for relief, which may include, without limitation, an action to recover sums due for such damages, injunctive relief and any other remedy that may be appropriate to the nature of the breach. The failure of the Association to enforce any right, provision, covenant or condition which may be granted by the Act, the Master Deed, these Bylaws, the Articles of Incorporation, or Rules and Regulations of the Association, shall not constitute a waiver of the right of the Association to enforce such right, provision, covenant or condition in the future. The Developer shall have the right to enforce these Bylaws

throughout the Development and Sales Period, which right of enforcement shall include (without limitation) an action to restrain the Association or any Co-Owner from any activity prohibited by these Bylaws.

Section 6.38 Waiver. During the Development and Sales Period, the Developer, and thereafter the Association, may waive the restrictions contained herein if it reasonably determines that the harmony and appearance of the community will not be adversely affected thereby.

ARTICLE VII

MORTGAGES

Section 7.1 Notice to Association. Any Co-owner who mortgages his Unit shall notify the Association of the name and address of the mortgagee, and the Association shall maintain such information in a book entitled "Mortgages of Units". The Association may, at the written request of a mortgagee of any such Unit, report any unpaid assessments due from the Co-owner of such Unit. The Association shall give to the holder of any first mortgage covering any Unit written notification of any default in the performance of the obligations of the Co-owner of such Unit that is not cured within sixty (60) days.

Section 7.2 Notification of Meetings. Upon request submitted to the Association, any institutional holder of a first mortgage lien on a Unit shall be entitled to receive written notification of every meeting of the Members of the Association and to designate a representative to attend such meeting.

ARTICLE VIII

VOTING

Section 8.1 Vote. Except as otherwise specifically provided in these Bylaws, each Co-owner shall be entitled to one vote for each Condominium Unit owned. With respect to those Sections of these Bylaws which require votes to be cast on a percentage of value basis, each Co-owner's Unit shall be assigned the number votes proportionate to the percentage of value pertaining to such Co-owner's Unit.

Section 8.2 Eligibility to Vote. No Co-owner, other than Developer, shall be entitled to vote at any meeting of the Association until he has presented to the Association evidence that the Co-owner owns a Unit. Except as provided in Section 11.2 of these Bylaws, no Co-owner, other than Developer, shall be entitled to vote prior to the date of the First Annual Meeting of Members held in accordance with Section 11.2. The vote of each Co-owner may be cast only by the individual representative designated by such Co-owner in the notice required in Section 8.3 below or by a proxy given by such individual representative. Developer shall be the only person entitled to vote at a meeting of the Association until the First Annual Meeting of Members and shall be entitled to vote during such period notwithstanding the fact that Developer may own no Units at some time or from time to time during such period. At the First Annual Meeting, and thereafter, Developer shall be entitled to vote for each Unit that it owns.

Section 8.3 Designation of Voting Representative. Each Co-owner shall file with the Association a written notice designating the individual representative who shall vote at meetings of the Association and receive all notices and other communications from the Association on behalf of the Co-owner. If a Co-owner designates himself as the individual representative, he need not file any written notice with the Association. The failure of any Co-owner to file any written notice with the Association

shall create a presumption that the Co-owner has designated himself as the voting representative. The notice shall state the name and address of the individual representative designated, the address of the Unit or Units owned by the Co-owner and the name and address of each person, firm, corporation, partnership, limited liability company, association, trust or other entity who is the Co-owner. The notice shall be signed and dated by the Co-owner. The Co-owner may change an individual representative at any time by filing a new notice in accordance with this Section 8.3. In the event a Unit is owned by multiple Co-owners who fail to designate an individual voting representative for such Co-owners, the Co-owner whose name first appears on record title shall be deemed to be the individual representative authorized to vote on behalf of all the multiple Co-owners of the Unit(s) and any vote cast in person or by proxy by said individual representative shall be binding upon all such multiple Co-owners.

Section 8.4 Quorum. The presence in person or by proxy of Co-owners representing thirty-five (35%) percent of the total number of votes of all Co-owners qualified to vote (based on one vote per Unit for quorum purposes) shall constitute a quorum for holding a meeting of the Members of the Association, except for voting on questions specifically required by the Condominium Documents to require a greater quorum. The written vote of any person furnished at or prior to any duly called meeting at which said person is not otherwise present in person or by proxy shall be counted in determining the presence of a quorum with respect to the question upon which the vote is cast.

Section 8.5 Voting. Votes may be cast in person or by proxy by a writing duly signed by the designated voting representative not present at a given meeting in person or by proxy. Proxies and any written votes must be filed with the Secretary of the Association at or before the appointed time of each meeting of the Members of the Association. Cumulative voting shall not be permitted.

Section 8.6 Majority. When an action is to be authorized by vote of the Co-owners of the Association, the action must be authorized by a majority of the votes cast at a meeting duly called for such purpose, unless the Master Deed, these Bylaws or the Act requires a greater percentage vote.

ARTICLE IX

MEETINGS

Section 9.1 Place of Meeting. Meetings of the Association shall be held at the principal office of the Association or at such other suitable place convenient to the Co-owners as may be designated by the Board of Directors. Meetings of the Association shall be conducted in accordance with generally recognized rules of parliamentary procedure, which are not in conflict with the Condominium Documents or the laws of the State of Michigan.

Section 9.2 First Annual Meeting. Developer may convene the First Annual Meeting of members of the Association in its discretion at any time prior to the date the First Annual Meeting is required to be convened pursuant to this Section 9.2. The First Annual Meeting must be held: (i) within one hundred twenty (120) days following the conveyance of legal or equitable title to non-Developer Co-owners of seventy-five (75%) percent of all Units that may be created; or (ii) fifty-four (54) months from the first conveyance to a non-Developer Co-owner of legal or equitable title to a Unit, whichever is the earlier to occur. Developer may call meetings of Members for informative or other appropriate purposes prior to the First Annual Meeting of Members and no such meeting shall be construed as the First Annual Meeting of Members. The date, time and place of such meeting shall be set by the Board of Directors, and at least ten (10) days written notice thereof shall be given to each Co-owner's individual representative. The phrase "Units that may be created" as used in this Section 9.2 and elsewhere in the Condominium Documents refers to the maximum number of Units that Developer is permitted to include in the Condominium Project under the Condominium Documents, as they may be amended.

Section 9.3 Annual Meetings. Annual meetings of Association Members shall be held not later than May 30 of each succeeding year following the year in which the First Annual Meeting is held, at a time and place determined by the Board of Directors. At each annual meeting, the Co-owners shall elect members of the Board of Directors in accordance with Article XI of these Bylaws. The Co-owners may also transact at annual meetings such other Association business as may properly come before them.

Section 9.4. Special Meeting. The President shall call a special meeting of Members as directed by resolution of the Board of Directors or upon presentation to the Association's Secretary of a petition signed by Co-owners representing at least one third (1/3) of the votes of all Co-owners qualified to vote (based upon one vote per Unit). Notice of any special meeting shall state the time and place of such meeting and the purposes thereof. No business shall be transacted at a special meeting except as stated in the notice.

Section 9.5 Notice of Meetings. The Secretary (or other Association officer in the Secretary's absence) shall provide each Co-owner of record, or, if applicable, a Co-owner's individual representative, with notice of each annual or special meeting, stating the purpose thereof and the time and place where it is to be held. A notice of an annual or special meeting shall be served at least ten (10) days but not more than sixty (60) days prior to each meeting, except for a Litigation Evaluation Meeting, which notice requirements, are prescribed in Article III. The mailing, postage prepaid, of a notice to the individual representative of each Co-owner at the address shown in the notice filed with the Association under Section 8.3 of these Bylaws shall be deemed properly served. Any Co-owner or individual representative may waive such notice, by filing with the Association a written waiver of notice signed by such Co-owner or individual representative.

Section 9.6 Adjournment. If any meeting of Co-owners cannot be held because a quorum is not in attendance, the Co-owners who are present may adjourn the meeting to a time not less than forty-eight (48) hours from the time the original meeting was called. When a meeting is adjourned to another time or place, it is not necessary to give notice of the adjourned meeting if the time and place to which the meeting is adjourned are announced at the meeting at which the adjournment is taken and only such business is transacted at the adjourned meeting as might have been transacted at the original meeting. However, if after the adjournment, the Board of Directors fixes a new record date for the adjourned meeting, a notice of adjourned meeting shall be given to each Co-owner or Co-owner's individual representative.

If a meeting is adjourned in accordance with the provisions of this Section 9.6 due to the lack of a quorum, the required quorum at the subsequent meeting shall be two thirds (2/3) of the required quorum for the meeting that was adjourned, provided that the Board of Directors provides each Co-owner (or Co-owner's individual representative) with notice of the adjourned meeting in accordance with Section 9.5 above and provided further the subsequent meeting is held within sixty (60) days from the date of the adjourned meeting.

Section 9.7 Action Without Meeting. Any action required or permitted to be taken at any meeting of Members may be taken without a meeting, without prior notice and without a vote, except for litigation referenced in Article III and Article XXI, if a written consent, setting forth the actions so taken, is signed by the Co-owners (or their individual representatives) having not less than the minimum number of votes that would be necessary to authorize or take the action if the action were taken at a meeting at which all Co-owners entitled to vote thereon were present and voted. Prompt notice of any action that is taken without a meeting by less than unanimous written consent shall be given to the Co-owners who have not consented in writing.

ARTICLE X

ADVISORY COMMITTEE

Within one (1) year after the first conveyance to a non-Developer Co-owner of legal or equitable title to a Unit in the Project or within one hundred twenty (120) days following the conveyance to non-Developer Co-owners of one third (1/3) of the total number of Units that may be created, whichever first occurs, Developer shall cause to be established an Advisory Committee consisting of at least three (3) non-Developer Co-owners. The Committee shall be established in any manner Developer deems advisable. The purpose of the Advisory Committee shall be to facilitate communications between the temporary Board of Directors and the non-developer Co-owners and to aid in the transition of control of the Association from Developer to purchaser Co-owners. The Advisory Committee shall automatically cease to exist when a majority of the Board of Directors of the Association is elected by non-Developer Co-owners. Developer may at any time remove and replace at its discretion any member of the Advisory Committee.

ARTICLE XI

BOARD OF DIRECTORS

Section 11.1 Number and Qualification of Directors. The Board of Directors shall be comprised of three (3) Directors. Following the Transitional Control Date, the Co-owners may elect to increase the number of Directors to five (5) by an affirmative vote of the Co-owners (or their individual representatives) who represent greater than fifty (50%) percent of the total votes of all Co-owners qualified to vote.

Section 11.2 Election of Directors.

(a) ***First Board of Directors.*** Until such time as the non-Developer Co-owners are entitled to elect one (1) of the members of the Board of Directors, Developer shall select all of the Directors, which persons may be removed or replaced by Developer in its discretion.

(b) ***Appointment of Non-Developer Co-owners to Board Prior to First Annual Meeting.*** Not later than one hundred twenty (120) days following the conveyance to non-Developer Co-owners of legal or equitable title to twenty-five (25%) percent of the Units that may be created, at least one (1) member and not less than twenty-five (25%) of the Board of Directors shall be elected by non-Developer Co-owners. Developer shall select the remaining members of the Board of Directors. Not later than one hundred twenty (120) days following the conveyance of legal or equitable title to non-Developer Co-owners of fifty (50%) percent of the units that may be created, not less than thirty-three and one-third (33-1/3%) percent of the Board of Directors shall be elected by non-Developer Co-owners. When the required percentage level of conveyance has been reached, Developer shall notify the non-Developer Co-owners and request that they hold a meeting to elect the required Director. Upon certification by the Co-owners to Developer of the Director elected, Developer shall immediately appoint such Director to the Board, to serve until the First Annual Meeting of Co-owners, unless he is removed pursuant to Section 11.7 or he resigns or becomes incapacitated.

(c) **Election of Directors at and after First Annual Meeting.**

(1) Not later than one hundred twenty (120) days following the conveyance to non-Developer Co-owners of legal or equitable title to seventy-five (75%) percent of the Units that may be created, and before conveyance of ninety (90%) percent of such Units, the non-Developer Co-owners shall elect all of the Directors on the Board, except that Developer shall have the right to designate at least one Director so long as Developer owns and offers for sale at least ten (10%) percent of the Units in the Project or as long as ten (10%) of the Units remain that may be created. Whenever the seventy-five (75%) percent conveyance level is achieved, a meeting of Co-owners shall promptly be convened within one hundred twenty (120) days to effectuate this provision, even if the First Annual Meeting has already occurred.

(2) Regardless of the percentage of Units which have been conveyed, upon the elapse of fifty-four (54) months after the first conveyance to a non-Developer Co-owner of legal or equitable title to a Unit in the Project, and if title to not less than seventy-five (75%) percent of the Units that may be created has not been conveyed, the non-Developer Co-owners have the right to elect a number of members of the Board of Directors equal to the percentage of Units they own, and Developer has the right to elect a number of members of the Board of Directors equal to the percentage of Units which are owned by Developer and for which assessments are payable by Developer. This election may increase, but shall not reduce, the minimum election and designation rights otherwise established in Section 11.2(b) or 11.2(c)(1) above. Application of this subsection does not require a change in the size of the Board of Directors.

(3) If the calculation of the percentage of members of the Board of Directors that the non-Developer Co-owners have the right to elect under subsection (2) above, or if the product of the number of members of the Board of Directors multiplied by the percentage of Units held by the non-Developer Co-owners under subsection (b) results in a right of non-Developer Co-owners to elect a fractional number of members of the Board of Directors, then a fractional election right of 0.5 or greater shall be rounded up to the nearest whole number, which number shall be the number of members of the Board of Directors that the non-Developer Co-owners have the right to elect. After application of this formula, Developer shall have the right to elect the remaining members of the Board of Directors. Application of this subsection shall not eliminate the right of Developer to designate one director as provided in subsection (1) above.

(4) At such time as the non-Developer Co-owners are entitled to elect all of the Directors, two (2) Directors shall be elected for a term of two (2) years and one (1) Director shall be elected for a term of one (1) year. At such meeting, all nominees shall stand for election as one slate and the two (2) persons receiving the highest number of votes shall be elected for a term of two (2) years and the one (1) person receiving the next highest number of votes shall be elected for a term of one (1) year. At each annual meeting held thereafter, either one (1) or two (2) Directors shall be elected depending upon the number of Directors whose terms expire, and the term of office of each Director shall be two (2) years. The Directors shall hold office until their successors have been elected and hold their first meeting.

Section 11.3 Powers and Duties. The Board of Directors shall have the powers and duties necessary for the administration of the affairs of the Association and may do all acts and things which are

not prohibited by the Condominium Documents or specifically required to be exercised and performed by the Co-owners.

Section 11.4 Specific Powers and Duties. In addition to the duties imposed by these Bylaws or any further duties that may be imposed by resolution of the Co-owners of the Association, the Board of Directors shall have the following powers and duties:

- (a) To manage and administer the affairs of and maintain the Condominium Project and the Common Elements.
- (b) To collect assessments from the Co-owners and to expend the proceeds for the purposes of the Association.
- (c) To carry insurance and collect and allocate the proceeds thereof.
- (d) To reconstruct or repair improvements after casualty.
- (e) To contract for and employ persons, firms, corporations or other agents to assist in the management, operation, maintenance and administration of the Condominium Project.
- (f) To acquire, maintain and improve; and to buy, operate, manage, sell, convey, assign, mortgage or lease any real or personal property (including any Unit in the Condominium and easements, rights-of-way and licenses) on behalf of the Association in furtherance of any of the purposes of the Association.
- (g) To borrow money and issue evidences of indebtedness in furtherance of any or all of the purposes of the Association, and to secure the same by mortgage, pledge, or other lien, on property owned by the Association; provided, however, that any such action shall also be approved by the affirmative vote of the Co-owners (or their individual representatives) representing at least seventy-five (75%) percent of the total percentages of value of all Co-owners qualified to vote.
- (h) To establish rules and regulations in accordance with Section 6.28 of these Bylaws.
- (i) To establish such committees as the Board of Directors deems necessary, convenient or desirable and to appoint persons thereto for the purpose of implementing the administration of the Condominium and to delegate to such committees any functions or responsibilities which are not by law or the Condominium Documents required to be exclusively performed by the Board.
- (j) To enforce the provisions of the Condominium Documents.

Section 11.5 Management Agent. The Board of Directors may employ for the Association a professional management agent (which may include Developer or any person or entity related thereto) at a reasonable compensation established by the Board to perform such duties and services as the Board shall authorize, including, but not limited to, the duties listed in Sections 11.3 and 11.4, and the Board may delegate to such management agent any other duties or powers which are not by law or by the Condominium Documents required to be exclusively performed by or have the approval of the Board of Directors or the Members of the Association.

Section 11.6 Vacancies. Vacancies in the Board of Directors that occur after the Transitional Control Date caused by any reason other than the removal of a Director by a vote of the Co-owners of the Association shall be filled by vote of the majority of the remaining Directors, even though they may constitute less than a quorum, except that Developer shall be solely entitled to fill the vacancy of any Director whom it is permitted in the first instance to designate. Each person so elected shall be a Director until a successor is elected at the next annual meeting of the Association. Vacancies among Directors elected by non-Developer Co-owners that occur prior to the Transitional Control Date may be filled only through election by non-Developer Co-owners and shall be filled in the manner as specified in Section 11.2(b).

Section 11.7 Removal. At any regular or special meeting of the Association duly called with due notice of the removal action proposed to be taken, any one or more of the Directors elected by the non-Developer Co-owners may be removed with or without cause by the affirmative vote of the Co-owners (or their individual representatives) who represent greater than fifty (50%) percent of the total votes of all Co-owners qualified to vote, and a successor may then and there be elected to fill any vacancy thus created. Any Director whose removal has been proposed by a Co-owner shall be given an opportunity to be heard at the meeting. Developer may remove and replace any or all of the Directors selected by it at any time or from time to time in its sole discretion. Any Director selected by the non-Developer Co-owners to serve before the First Annual Meeting may also be removed by such Co-owners before the First Annual Meeting in the manner described in this Section 11.7.

Section 11.8 First Meeting. The first meeting of the elected Board of Directors shall be held within ten (10) days of election at a time and place fixed by the Directors at the meeting at which such Directors were elected, and no notice shall be necessary in order to legally convene such meeting, provided a majority of the Board shall be present.

Section 11.9 Regular Meetings. Regular meetings of the Board of Directors may be held at such times and places as shall be determined from time to time by a majority of the Directors, but at least two (2) such meetings shall be held during each fiscal year of the Association. Notice of regular meetings of the Board of Directors shall be given to each Director, personally, by mail, telephone, facsimile or email at least ten (10) days prior to the date named for such meeting.

Section 11.10 Special Meetings. Special meetings of the Board of Directors may be called by the President on three (3) days notice to each Director, given personally, by mail, telephone or facsimile, which notice shall state the time, place and purpose of the meeting. The President or Secretary shall call special meetings of the Board of Directors in like manner on the written request of two (2) or more Directors.

Section 11.11 Quorum and Required Vote of Board of Directors. At all meetings of the Board of Directors, a majority of the members of the Board of Directors then in office shall constitute a quorum. The vote of the majority of Directors at a meeting at which a quorum is present constitutes the action of the Board of Directors, unless the Michigan Non-profit Corporation Act, the Articles of Incorporation, the Master Deed or these Bylaws require a greater plurality. If a quorum is not present at any meeting of the Board of Directors, the Directors present at such meeting may adjourn the meeting from time to time without notice other than an announcement at the meeting, until the quorum shall be present.

Section 11.12 Consent in Lieu of Meeting. Any action required or permitted to be taken at a meeting of the Board of Directors may be taken without a meeting if all members of the Board of Directors consent in writing. The written consent shall be filed with the minutes of the proceedings of the Board of Directors. The consent has the same effect as a vote of the Board of Directors for all purposes.

Section 11.13 Participation in a Meeting by Telephone. A Director may participate in a meeting by means of conference telephone or similar communications equipment by means of which all persons participating in the meeting can hear each other. Participation in a meeting pursuant to this Section 11.13 constitutes presence at the meeting.

Section 11.14 Fidelity Bonds. Following the Transitional Control Date, the Board of Directors shall require that all officers and employees of the Association handling or responsible for Association funds furnish adequate fidelity bonds. The premiums on such bonds shall be expenses of administration.

Section 11.15 Compensation. The Board of Directors shall not receive any compensation for rendering services in their capacity as Directors, unless approved by the Co-owners (or their individual representatives) who represent sixty (60%) percent or more of the total votes of all Co-owners qualified to vote.

ARTICLE XII

OFFICERS

Section 12.1 Selection of Officers. The Board of Directors, at a meeting called for such purpose, shall appoint a president, secretary and treasurer. The Board of Directors may also appoint one or more vice-presidents and such other officers, employees and agents as the Board shall deem necessary, which officers, employees and agents shall hold their offices for such terms and shall exercise such powers and perform such duties as shall be determined from time to time by the Board of Directors. One (1) person who may also be a Director may hold two (2) or more offices, except that of president and vice-president. An officer shall be a Co-owner, or shareholder, officer, director, employee, member or partner of a Co-owner that is an entity.

Section 12.2 Term, Removal and Vacancies. Each officer of the Association shall hold office for the term for which he is appointed until his successor is elected or appointed, or until his resignation or removal. The Board of Directors with or without cause may remove any officer appointed by the Board of Directors at any time. Any officer may resign by written notice to the Board of Directors. The Board of Directors may fill any vacancy occurring in any office.

Section 12.3 President. The President shall be a Member of the Board of Directors and shall act as the chief executive officer of the Association. The President shall preside at all meetings of the Association and of the Board of Directors. The President shall have all of the general powers and duties that are usually vested in the office of the President of an Association, subject to Section 12.1.

Section 12.4 Vice President. The Vice President shall take the place of the President and perform his duties whenever the President shall be absent or unable to act. If neither the President nor the Vice President is able to act, the Board of Directors shall appoint some other member of the Board to do so on an interim basis. The Vice President shall also perform such other duties as shall from time to time be imposed upon him by the Board of Directors.

Section 12.5 Secretary. The Secretary shall keep the minutes of all meetings of the Board of Directors and the minutes of all meetings of the Co-owners of the Association. The Secretary shall have charge of the corporate seal, if any, and of such books and papers as the Board of Directors may direct; and he shall, in general, perform all duties incident to the office of the Secretary.

Section 12.6 Treasurer. The Treasurer shall have responsibility for the Association funds and securities and shall be responsible for keeping full and accurate accounts of all receipts and disbursements in books belonging to the Association. The Treasurer shall be responsible for the deposit of all monies and the Board of Directors may from time to time, designate other valuable effects in the name and to the credit of the Association, in such depositories as may, from time to time, be designated by the Board of Directors.

ARTICLE XIII

SEAL

The Association may (but need not) have a seal. If the Board determines that the Association shall have a seal, then it shall have inscribed thereon the name of the Association, the words "corporate seal", and "Michigan".

ARTICLE XIV

FINANCE; BOOKS AND RECORDS; CO-OWNER RESPONSIBILITIES WHEN TRANSFERRING UNIT

Section 14.1 Records. The Association shall keep detailed books of account showing all expenditures and receipts of administration, which shall specify the maintenance and repair expenses of the Common Elements, and any other expenses incurred by or on behalf of the Association and the Co-owners. Such accounts and all other Association records shall be open for inspection by the Co-owners and their mortgagees during reasonable working hours. The Association shall prepare and distribute to each Co-owner at least once a year a financial statement, the contents of which shall be determined by the Association. The books of account shall be audited at least annually; provided, however, that such auditors need not be certified public accountants nor does such audit need to be a certified audit. Upon request, any institutional holder of a first mortgage lien on any Unit in the Condominium shall be entitled to receive a copy of such annual financial statement within ninety (90) days following the end of the Association's fiscal year. The costs of any such audit and any accounting expenses shall be expenses of administration.

Section 14.2 Fiscal Year. The fiscal year of the Association shall be an annual period commencing on the date initially determined by the Directors. The Board of Directors in its discretion may change the Association's fiscal year.

Section 14.3 Bank Accounts. The Association's funds shall initially be deposited in such bank or savings association as may be designated by the Directors. All checks, drafts and order of payment of money shall be signed in the name of the Association in such manner and by such person or persons as the Board of Directors shall from time to time designate for that purpose. The Association's funds may be invested from time to time in accounts or deposit certificates of such bank or savings association that are insured by the Federal Deposit Insurance Corporation of the Federal Savings and Loan Insurance Corporation and may also be invested in interest-bearing obligations of the United States Government.

Section 14.4 Co-owner Access to Books and Records; Procedures. Each Co-owner has the right to review the books and records of the Association. The following procedures are to be followed regarding such requests.

(a) In order to review the records, the requesting Co-owner must submit a request in writing to the Board of Directors in care of the management agent (or if there is no management agent, to the Secretary of the Association).

(i) The request must state which books and records the Co-owner seeks to review.

(ii) The request must state whether the Co-owner will require copies of the records which are requested.

(iii) The request must have the name, address and telephone number of the requesting party.

(b) Upon receipt of the request from a Co-owner to review the records, the management agent (or Secretary of the Association if there is no management agent) will advise the Board of Directors of the Association of the request. The management agent (or Secretary if there is no management agent) will then inform the Co-owner of a convenient time, place and date where the requested records may be reviewed. The Co-owner shall be advised of the time place and date within five (5) working days of the receipt of the Co-owner's initial request. The Co-owner shall be advised at that time of the following:

(i) The Co-owner will be responsible for payment of the actual costs of all reproductions or copies of the requested documents. The Co-owner shall be informed of the per page copying cost before copies are made.

(ii) The Co-owner shall be responsible for payment for time spent by management agent personnel at the rate set by the management contract.

(c) Each Co-owner may make only one such request per calendar quarter.

(d) These procedures shall also apply to requests for copies of books and records made by mortgagees of Units.

Section 14.5 Disposition of Interest in Unit by Sale or Lease. No Co-owner may dispose of a Unit in the Condominium, or any interest therein, by a sale or lease without complying with the following terms or conditions:

(a) **Notice to Association: Co-owner to Provide Condominium Documents to Purchaser or Tenant.** A Co-owner intending to make a sale or lease of a Unit in the Condominium, or any interest therein, shall give written notice of such intention delivered to the Association at its registered office and shall furnish the name and address of the intended purchaser or lessee and such other information as the Association may reasonably require. Prior to the sale or lease of a Unit, the selling or leasing Co-owner shall provide a copy of the Condominium Master Deed (including Exhibits A and B thereto) and any amendments to the Master Deed, the Articles of Incorporation and any amendment thereto, and the rules and regulations, as amended, if any, to the proposed purchaser or lessee. In the event a Co-owner shall fail to notify the Association of the proposed sale or lease or in the event a Co-owner shall fail to provide the prospective purchaser or lessee with a copy of the Master Deed and other documents referred to above, such Co-owner shall be liable for all costs and expenses, including attorney fees, that may be incurred by the Association as a result thereof or by reason of any noncompliance of such purchaser or lessee with the terms, provisions and restrictions set forth in

the Master Deed; provided, however, that this provision shall not be construed so as to relieve the purchaser or lessee of his obligations to comply with the provisions of the Condominium Documents.

(b) **Developer and Mortgagees Not Subject to this Section.** The Developer shall not be subject to this Section regarding the sale or, except to the extent provided in Article VI, Section 2(b), the lease of any Unit in the Condominium which it owns, nor shall the holder of any mortgage which comes into possession of a Unit pursuant to the remedies provided in the mortgage, foreclosure of the mortgage or deed in lieu of foreclosure, be subject to the provisions of this Section.

(c) **Charges.** The Association may charge a reasonable fee for any dues statement or status letter requested by a Co-Owner, prospective mortgagee, title company, or purchaser under these Bylaws. The purchaser of a Unit shall also be responsible for the payment of any Unit transfer fee, new account start-up or similar charge customarily collected by the Association or management agent upon the sale of the Unit. These charges are intended to cover the administrative expenses incurred by the management agent and Association when a unit is transferred or refinanced.

ARTICLE XV

INDEMNIFICATION OF OFFICERS AND DIRECTORS

Section 15.1 Third Party Actions. To the fullest extent permitted by the Michigan Non-profit Corporation Act, the Association shall, subject to Section 15.5 below, indemnify any person who was or is a party defendant or is threatened to be made a party defendant to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Association) by reason of the fact that he is or was a Director or officer of the Association, or is or was serving at the request of the Association as a Director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including, without limitation, the Association's Management Agent, if any, against expenses (including actual and reasonable attorney fees), judgments, fines and amounts reasonably paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Association or its members, and with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption (a) that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Association or its members, and, (b) with respect to any criminal action or proceeding, that the person had reasonable cause to believe that his conduct was unlawful.

Section 15.2 Actions in the Right of the Association. To the fullest extent permitted by the Michigan Non-profit Corporation Act, the Association shall, subject to Section 15.5 below, indemnify any person who was or is a party defendant to or is threatened to be made a party defendant of any threatened, pending or completed action or suit by or in the right of the Association to procure a judgment in its favor by reason of the fact that he is or was a Director or officer of the Association, or is or was serving at the request of the Association as a Director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including actual and reasonable attorney fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit and amounts reasonably paid in settlement if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Association or its members, except

that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the Association unless and only to the extent that the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

Section 15.3 Insurance. The Association may purchase and maintain insurance on behalf of any person who is or was a Director, employee or agent of the Association, or is or was serving at the request of the Association as a Director, officer, employee or agent against any liability asserted against him and incurred by him in any such capacity or arising out of his status as such, whether or not the Association would have power to indemnify him against such liability under Sections 15.1 and 15.2. In addition, the Association may purchase and maintain insurance for its own benefit to indemnify it against any liabilities it may have as a result of its obligations of indemnification made under Sections 15.1 and 15.2.

Section 15.4 Expenses of Successful Defense. To the extent that a person has been successful on the merits or otherwise in defense of any action, suit, or proceeding referred to in Sections 15.1 and 15.2, or in defense of any claim, issue, or matter therein, or to the extent such person incurs expenses (including actual and reasonable attorney fees) in successfully enforcing the provisions of this Article XV, he shall be indemnified against expenses (including reasonable attorney fees) actually and reasonably incurred by him in connection therewith.

Section 15.5 Determination That Indemnification is Proper. Any indemnification under Sections 15.1 and 15.2 (unless ordered by a court) shall be made by the Association only as authorized in the specific case upon a determination that indemnification of the person is proper under the circumstances, because he has met the applicable standard of conduct set forth in Section 15.1 or 15.2, whichever is applicable. Notwithstanding anything to the contrary contained in this Article XV, in no event shall any person be entitled to any indemnification under the provisions of this Article XV if he is adjudged guilty of willful or wanton misconduct or gross negligence in the performance of his duties. The determination to extend such indemnification shall be made in any one (1) of the following ways:

- (a) By a majority vote of a quorum of the Board of Directors consisting of Directors who were not parties to such action, suit or proceeding;
- (b) If such quorum described in (a) is not obtainable, then by a majority vote of a committee of Directors who are not parties to the action, suit or proceeding. The committee shall consist of not less than two (2) disinterested Directors; or
- (c) If such quorum described in (a) is not obtainable (or, even if obtainable, a quorum of disinterested Directors, so directs), by independent legal counsel in a written opinion.

If the Association determines that full indemnification is not proper under Sections 15.1 or 15.2, it may nonetheless determine to make whatever partial indemnification it deems proper. At least ten (10) days prior to the payment of any indemnification claim that is approved, the Board of Directors shall provide all Co-owners with written notice thereof.

Section 15.6 Expense Advance. Expenses incurred in defending a civil or criminal action, suit or proceeding described in Section 15.1 and 15.2 may be paid by the Association in advance of the final disposition of such action, suit, or proceeding as provided in Section 15.4 upon receipt of an undertaking by or on behalf of the person involved to repay such amount unless it shall ultimately be

determined that he is entitled to be indemnified by the Association. At least ten (10) days prior to advancing any expenses to any person under this Section 15.6, the Board of Directors shall provide all Co-owners with written notice thereof.

Section 15.7 Former Representatives, Officers, Employees or Agents. The indemnification provided in this Article XV shall continue as to a person who has ceased to be a Director, officer, employee or agent of the Association and shall inure to the benefit of the heirs, executors and administrators of such person.

Section 15.8 Changes in Michigan Law. In the event of any change of the Michigan statutory provisions applicable to the Association relating to the subject matter of this Article XV, the indemnification to which any person shall be entitled hereunder arising out of acts or omissions occurring after the effective date of such amendment shall be determined by such changed provisions. No amendment to or repeal of Michigan law with respect to indemnification shall restrict the Association's indemnification undertaking herein with respect to acts or omissions occurring prior to such amendment or repeal. The Board of Directors are authorized to amend this Article XV to conform to any such changed statutory provisions.

ARTICLE XVI

AMENDMENTS

Section 16.1 By Developer. In addition to the rights of amendment provided to Developer in the various Articles of the Master Deed, Developer may, during the Development and Sales Period and for a period of two (2) years following the expiration of the Development and Sales Period, and without the consent of any Co-owner, mortgagee or any other person, amend these Bylaws provided such amendment or amendments do not materially alter the rights of Co-owners or mortgagees.

Section 16.2 Proposal. Amendments to these Bylaws may be proposed by the Board of Directors of the Association upon the vote of the majority of the Directors or may be proposed by one-third (1/3) or more in number of the Co-owners by a written instrument identifying the proposed amendment and signed by the applicable Co-owners.

Section 16.3 Meeting. If the Board of Directors or the Co-owners propose any amendment to these Bylaws, a meeting for consideration of the proposal shall be duly called in accordance with the provisions of these Bylaws.

Section 16.4 Voting. These Bylaws may be amended by the Co-owners at any regular meeting or a special meeting called for such purpose by an affirmative vote of sixty-six and two-thirds (66-2/3%) percent or more of the total votes of all Co-owners qualified to vote, as determined on a percentage of value basis. No consent of mortgagees shall be required to amend these Bylaws unless such amendment would materially alter or change the rights of such mortgagees, in which event the approval of sixty-six and two-thirds (66-2/3%) percent of all mortgagees of Units shall be required. Each mortgagee shall have one vote for each mortgage held. Notwithstanding anything to the contrary contained in this Article XVI, during the Development and Sales Period, these Bylaws shall not be amended in any way without the prior written consent of Developer.

Section 16.5 Effective Date of Amendment. Any amendment to these Bylaws shall become effective upon the recording of such amendment in the office of the Macomb County Register of Deeds.

Section 16.6 Binding Effect. A copy of each amendment to the Bylaws shall be furnished to every Member of the Association after its adoption; provided, however, that any amendment to these Bylaws that is adopted in accordance with this Article XVI shall be binding upon all persons who have an interest in the Project irrespective of whether such persons actually receive a copy of the amendment.

ARTICLE XVII

COMPLIANCE

The Association or any Co-owners and all present or future Co-owners, tenants, future tenants, or any other persons acquiring an interest in or using the facilities of the Project in any manner are subject to and shall comply with the Act, as amended, and the mere acquisition, occupancy or rental of any Unit or an interest therein or the utilization of or entry upon the Condominium Premises shall signify that the Condominium Documents are accepted and ratified. In the event the Condominium Documents conflict with the provisions of the Act, the Act shall govern.

ARTICLE XVIII

REMEDIES FOR DEFAULT

Any default by a Co-owner of its obligations under any of the Condominium Documents shall entitle the Association or another Co-owner or Co-owners to the following relief:

Section 18.1 Legal Action. Failure to comply with any of the terms or provisions of the Condominium Documents shall be grounds for relief, which may include, without limitation, an action to recover damages, injunctive relief, foreclosure of lien (if there is a default in the payment of an assessment) or any combination thereof, and such relief may be sought by the Association or, if appropriate, by an aggrieved Co-owner or Co-owners.

Section 18.2 Recovery of Costs. In any proceeding arising because of an alleged default by any Co-owner, the Association, if successful, shall be entitled to recover the costs of the proceeding and such reasonable attorneys' fees (not limited to statutory fees) as may be determined by the court, but in no event shall any Co-owner be entitled to recover such attorneys' fees.

Section 18.3 Removal and Abatement. The violation of any provisions of the Condominium Documents shall also give the Association or its duly authorized agents the right, in addition to the rights set forth above, to enter upon the Common Elements, Limited or General, or into any Unit and the improvements thereon, where reasonably necessary, and summarily remove and abate, at the expense of the Co-owner in violation, any structure or condition existing or maintained in violation of the provisions of the Condominium Documents. The Association shall have no liability to any Co-owner arising out of the exercise of its rights under this Section 18.3.

Section 18.4 Assessment of Fines. The violation of any of the provisions of the Condominium Documents by any Co-owner shall be grounds for the assessment by the Association, acting through its duly constituted Board of Directors, of monetary fines against the applicable Co-owner. No fine may be assessed unless rules and regulations establishing such fines have first been duly adopted by the Board of Directors of the Association and notice thereof given to all Co-owners in the same manner as prescribed in Section 9.5 of these Bylaws. Thereafter, fines may be assessed only upon notice to the offending Co-owner, and an opportunity for such Co-owner to appear before the Board no less than seven (7) days from the date of the notice and offer evidence in defense of the alleged violation. All fines duly assessed may be collected in the same manner as provided in Article II of these Bylaws. No fine

shall be levied for the first violation. No fine shall exceed Twenty-Five and 00/100 (\$25.00) Dollars for the second violation, Fifty and 00/100 (\$50.00) Dollars for the third violation or One Hundred and 00/100 (\$100.00) Dollars for any subsequent violation.

Section 18.5 Non-Waiver of Rights. The failure of the Association or of any Co-owner to enforce any right, provision, covenant or condition which may be granted by the Condominium Documents shall not constitute a waiver of the right of the Association or of any such Co-owner to enforce such right, provision, covenant or condition in the future.

Section 18.6 Cumulative Rights, Remedies and Privileges. All rights, remedies and privileges granted to the Association or any Co-owner or Co-owners pursuant to any of the terms, provisions, covenants or conditions of the Condominium Documents shall be deemed to be cumulative and the exercise of any one or more of such rights or remedies shall not be deemed to constitute an election of remedies, nor shall it preclude the party exercising the same from exercising such other and additional rights, remedies or privileges as may be available to such party under the Condominium Documents at law or in equity.

Section 18.7 Enforcement of Provisions of Condominium Documents. A Co-owner may, at its sole cost and expense, maintain an action against any other Co-owner for injunctive relief or for damages or any combination thereof for noncompliance with the terms and provisions of the Condominium Documents or the Act.

ARTICLE XIX

RIGHTS RESERVED TO DEVELOPER

Any or all of the rights and powers granted or reserved to Developer in the Condominium Documents or by law, including the right and power to approve or disapprove any act, use or proposed action or any other matter, may be assigned by Developer to any other entity or to the Association. Any such assignment or transfer shall be made by an appropriate written instrument in which the assignee or transferee evidences its consent to the acceptance of such powers and rights. Any rights and powers reserved or retained by Developer or its successors and assigns shall expire, at the conclusion of two (2) years following the expiration of the Development and Sales Period, except as otherwise expressly provided in the Condominium Documents. The immediately preceding sentence dealing with the expiration and termination of certain rights and powers granted or reserved to Developer are intended to apply, insofar as Developer is concerned, only to Developer's rights to approve and control the administration of the Condominium and shall not, under any circumstances, be construed to apply to or cause the termination and expiration of any real property rights granted or reserved to Developer or its successors and assigns in the Master Deed or elsewhere (including, but not limited to, access easements, utility easements and all other easements created and reserved in such documents which shall not be terminable in any manner hereunder) and which shall be governed only in accordance with the terms of the instruments, documents or agreements that created or reserved such property rights.

ARTICLE XX

SEVERABILITY

In the event that any of the terms, provisions or covenants of the Master Deed, these Bylaws or the Condominium Documents are held to be partially or wholly invalid or unenforceable for any reason whatsoever, such invalidity shall not affect, alter, modify or impair in any manner whatsoever any of the

other terms, provisions or covenants of such documents or the remaining portions of any terms, provisions or covenants held to be partially invalid or unenforceable.

ARTICLE XXI

ARBITRATION

Section 21.1 Scope and Election. Subject to Article III of these Bylaws, disputes, claims, or grievances arising out of or relating to the interpretation or the application of the Condominium Documents, or any disputes, claims or grievances arising among or between the Co-owners and the Association, upon the election and written consent of the parties to any such disputes, claims or grievances (which consent shall include an agreement of the parties that the judgment of any circuit court of the State of Michigan may be rendered upon any award pursuant to such arbitration), and upon written notice to the Association, shall be submitted to arbitration, and the parties shall accept the arbitrator's decision as final and binding, provided that no question affecting the claim of title of any person to any fee or life estate in real estate is involved. The Commercial Arbitration Rules of the American Arbitration Association as amended and in effect from time to time shall be applicable to any such arbitration.

Section 21.2 Election of Remedies. The election and written consent by the disputing parties to submit any dispute, claim or grievance to arbitration shall preclude such parties from thereafter litigating such dispute, claim or grievance in the courts. Nothing contained in this Article XXI shall limit the rights of the Association or any Co-owner described in Section 144 of the Act.

UNAPPROVED MINUTES

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MINUTES OF THE 1,163rd PUBLIC HEARINGS AND REGULAR MEETING HELD BY THE CITY PLANNING COMMISSION OF THE CITY OF LIVONIA

On Tuesday, December 15, 2020, the City Planning Commission of the City of Livonia held its 1,163rd Public Hearings and Regular Meeting via Zoom Meeting Software.

Mr. Ian Wilshaw, Chairman, called the meeting to order at 7:00 p.m.

Members present: David Bongero Sam Caramagno Glen Long
 Betsy McCue Carol Smiley Peter Ventura
 Ian Wilshaw

Members absent: None

Mr. Mark Taormina, Planning Director, Scott Miller, Planner IV, Stephanie Reece, Program Supervisor, and Debra Walter, Clerk-Typist were also present.

Chairman Wilshaw informed the audience that if a petition on tonight's agenda involves a rezoning request, this Commission makes a recommendation to the City Council who, in turn, will hold its own public hearing and make the final determination as to whether a petition is approved or denied. The Planning Commission holds the only public hearing on a request for preliminary plat and/or vacating petition. The Commission's recommendation is forwarded to the City Council for the final determination as to whether a plat is accepted or rejected. If a petition requesting a waiver of use or site plan approval is denied tonight, the Petitioner has ten days in which to appeal the decision, in writing, to the City Council. Resolutions adopted by the City Planning Commission become effective seven (7) days after the date of adoption. The Planning Commission and the professional staff have reviewed each of these petitions upon their filing. The staff has furnished the Commission with both approving and denying resolutions, which the Commission may, or may not, use depending on the outcome of the proceedings tonight.

ITEM #2 PETITION 2020-11-08-07 Adams Park Development

Mr. Caramagno, Secretary, announced the next item on the agenda, Petition 2020-11-08-07 submitted by Adams Park Development, L.L.C. requesting approval of the Master Deed, Bylaws and site plan pursuant to Section 18.62 of the City of Livonia Zoning Ordinance #543, as amended, to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) located on the

south side of Lyndon Avenue between Inkster and Middlebelt Roads in the Southeast ¼ of Section 24.

Mr. Taormina: This request involves the development of a condominium subdivision. The location is the site of the former Adams Elementary School, which is at the southeast corner of Lyndon and Harrison Avenues. This property is 11.83 acres in area. It has 685 feet of frontage on Harrison and 785 feet of frontage on Lyndon. Surrounding the site are single-family subdivisions to the west and to the east. To the west is Compton Village and Har-Lo Subdivisions. The zoning there is R-1. To the east is Buckingham Village subdivision, also zoned R-1. To the north across Lyndon is Bishop estates, which is a six unit attached cluster housing development. Adjacent to that is Western Golf estates, zoned R-2. To the south of this property is the John F. Dooley park, which is zoned PL (Public Land). The subject property is currently in the process of being rezoned from PL (Public Land) to R-1 (One-family residential). City Council gave first reading on the rezoning on November 4, 2020. Second reading and Roll Call which are the final steps in the rezoning process are on hold pending a review of the site plan. Under the R-1 zoning the minimum lot size is 7,250 square feet per lot. Lot width minimum is 60 feet, and the depth is 120 feet. The site plan shows a total of 39 condominium lots. Most of the lots, as you can see here, are shown having frontage on two new streets that are designed in a U-shaped configuration. There is also a short cul-de-sac which extends south from the road along the west side of the development. Lots 11 through 39 would have access on the internal street and lots one to ten would have direct frontage on Harrison Ave, which borders the site along its west side. All 39 lots would meet or exceed the R-1 lot size requirements. In fact, roughly half the lots in this development measure 70 feet in width. There are three private open space areas . The largest is in the southeast corner of the property and it includes a detention pond, which is necessary for collecting and managing the sites storm water runoff. This park measures about 47,600 square feet or 1.1 acre. About 60% of the area would be devoted to the detention basin. There are two separate access paths to the park that would be available between lots 21 and 22. One is for the pedestrians to access the upland portion of the site. The other is a wider path that runs along the back of lots 22 through 26 that would be used for access for maintenance equipment. The other two open space areas are much smaller. One is in the southwest corner of the site between lot 1 and Dooley Park. The other is a narrow strip along Lyndon, which is adjacent to lot 39. That one would be

used for landscaping and placement of subdivision signs. The other two areas which are not as obvious to see on this plan, are located here in the southwest corner and then that narrow strip that I mentioned for landscaping and monument sign is located here. For all new plats and condominium subdivisions, the city requires the dedication of public open space at a ratio of 720 square feet per lot, which for Adams Park would equal 28,080 square feet. The combined area of the three open space areas total 52,819 square feet, which is nearly double the required land area. However, the petitioner is seeking approval to waive the requirement of dedicating the open space in the form of public parks and is instead proposing to assign these areas as general common elements under the Master Deed of the condominium subdivision. I am not going to go through the details of the homes. Additional information was provided to the Planning Commission which shows the design of the homes. I will let the petitioner do that. With that, Mr. Chairman, I can read out the departmental correspondence.

Mr. Wilshaw: Yes, please.

Mr. Taormina: The first item is from the Engineering Division, dated November 17, 2020, which reads as follows: *"In accordance with your request, the Engineering Division has reviewed the above referenced petition. We have no objections to the proposed project at this time. The properties associated with the project are assigned the addresses of #28201 Lyndon Avenue and #14416 Harrison Avenue. The legal description included on the plans submitted by the owner appears to be correct, and should be used to describe the parcels. The proposed development is currently serviced by public water main, storm and sanitary sewers, and the submitted drawings indicate that new utility connections will be constructed to service the proposed parcel layout. Easements will need to be provided for the new water and sanitary sewers, as well as portions of the storm sewer that are to be maintained by the City. At this time, Exhibit "B" drawings have not been provided to show proposed easements, so we cannot determine if the proposed easements are correct. The proposed construction will be required to meet the Wayne County Stormwater Ordinance, including detention requirements. Detention is shown on the preliminary plans, and a full review of the proposed development will be completed when plans are submitted for permitting. It should be noted that the proposed outlet for the development is owned by Wayne County, and therefore storm water permitting will be through the Wayne County Department of Public Service. The submitted*

drawings indicate that the proposed roadways are to be 27' wide, but the current Engineering Department standards require roadways to be 31' wide. Access to the detention pond and accessory structures will need to be hardscaped (either sidewalk or pavers) to be able to drive equipment on for any future maintenance, as well as for residents to access the proposed open areas. The submitted drawings do not indicate roadway names for any of the proposed streets, but it should be noted that "Adams" will not be allowed for any of the roadways in this development as that name is already in use by roadways on the west side of the City. " The letter is signed by David W. Lear, P.E., Assistant City Engineer. The next letter is from the Livonia Fire & Rescue Division, dated December 7, 2020, which reads as follows: "This office has reviewed the site plan submitted in connection with a request to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on properties located at the above referenced addresses. We have no objections to this proposal with the following stipulations: 1. Any curves or corner of streets shall accommodate emergency vehicles with a turning radius of fifty-three feet wall to wall and an inside turning radius of twenty-nine feet six inches. 2. Standard for residential cul-de-sacs is 50' with a minimum right-of-way radius of 60' to provide for sidewalks and utilities." The letter is signed by Greg Thomas, Fire Marshal. The next letter is from the Division of Police, dated November 23, 2020, which reads as follows: "I have reviewed the plans in connection with the petition. I have no objections to the proposal." The letter is signed by Scott Sczepanski, Sergeant, Traffic Bureau. The next letter is from the Inspection Department, dated December 10, 2020, which reads as follows: "Pursuant to your request, the above-referenced petition has been reviewed. This Department has no further objections to this petition." The letter is signed by Jerome Hanna, Director of Inspection. The next letter is from the Finance Department, dated November 20, 2020, which reads as follows: I have reviewed the addresses connected with the above noted petition. As there are no outstanding amounts receivable (general or water and sewer), I have no objections to the proposal." The letter is signed by Connie Kumpula, Chief Accountant. The next letter is from the Treasurer's Department, dated December 2, 2020, which reads as follows: In accordance with your request, the Treasurer's Office has reviewed the name and addresses connected with the above noted petition. At this time there are taxes due, but they are not delinquent, therefore I have no objections to the proposal." The letter is signed by

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Lynda Scheel, Treasurer. That is the extent of the correspondence.

Mr. Wilshaw: I will note that in our packet we do have a copy of the floorplan elevations and some renderings with some examples which are on the screen for us to see right now. We also have a copy of the Master Deed and Bylaws for this development. Are there any questions of the Planning Director? I don't see any. I will ask if the petitioner here this evening. If so, please click raise hand and we will recognize you and welcome you to our meeting. We will need your name and address for the record please.

Stuart Michaelson and George Major, 31333 W. 13 Mile Road, Farmington Hills, MI 48334.

Mr. Michaelson: It is a site plan that you have seen a few times. We did make corrections and additions to it from our first meeting we had in front of you. I don't know what else to say besides what Mark has already relayed. It is 39 lots. You can see the site plan. We increased the size of the width of many of the lots to 70 feet and some were even wider than 70 feet. The minimum is 60. The minimum depth is 120. We made many of them deeper than the 120. We have increased the depth of the lots that back up to Lyons street. We are over 140 in those lots. That will leave enough room for rear yard drainage. Plenty of rear yard drainage. We think that will accommodate the people that live on Lyons and have complaints of some issues with flooding. We will be able to handle any excess water from their lots. When the school was there, they had parking and they had no place for the rainwater to runoff, so I think we are solving their problem. We are very excited about building these homes. We know there is a shortage of lots in general in the whole area and the addition of this community would be a big addition to the City of Livonia.

Mr. Wilshaw: Thank you, Mr. Michaelson. I think...just because we are used to seeing these plans, but for the sake of anyone who is not used to seeing these plans...you are intending on having in the rear of the lots, especially along the lots near Lyons there is going to be a system of swales and catch basins that will collect water and take it to the retention pond?

Mr. Michaelson: Correct. All of the storm water from our site ends up from the sump pumps and the homes from the rear yard drainage and from the street drainage, will end up in that detention. It then

outlets to the storm sewer. The purpose of the retention is that it slows the volume of water into the storm, so it won't flood the system. It will have a 100-year storm retention and it will store the water first and then slowly outlet into the storm system.

Mr. Wilshaw: Alright. Very good. That is exactly what we are used to seeing. Is there any questions for the petitioner from any of our commissioners this evening? Going once, going twice...anyone have any questions for our petitioner?

Mr. Caramagno: I know there was a question last time about front entry garages and side entry garages and if it was already talked about, I apologize. Where would the front entry or the side entry garages be located on this map?

Mr. Michaelson: All of the lots are designed to be front entry because of the width. That change was made in the Master Deed after the last meeting. I believe it was you that caught that. Everything will be a front now. There are corner lots, like for example 35,36, 22 that will be side entry because a corner lot can accommodate the side entry. The other lots will be front entry.

Mr. Caramagno: Okay, so there are a few that will be side entry. That answers that for me. Let me also ask you, the detention pond on...I think we talked about brick pavers that goes $\frac{3}{4}$ - $\frac{1}{2}$ around the detention pond and then a walkway with a cul-de-sac on the end there. Is there any reason that can't go all the way around the detention pond as a walking area?

Mr. Michaelson: Actually, our plan was...there is no reason, but our plan was to have a little area there with a bench and even a pergola as a sitting area for people to sit because we are going to enhance the pond with a fountain. It is going to be an enhanced pond and it is a good place for someone to walk out and sit and meet some of their neighbors if they would like. That was a landscape enhancement. The other one is going to be for service vehicles. Every so often you have to have a service vehicle come in and clean out the detention pond because it is going to be a grassy type mat that will look nice but will be able to handle any equipment that they have to use to get back there.

Mr. Caramagno: I think you said that last time. I forgot. Thank you.

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Mr. Wilshaw: Any other questions for our petitioner? Mr. Michaelson, who is going to be responsible for cutting and maintaining the grass around that pond area? Is that going to be the association?

Mr. Michaelson: We are going to form an association and we will collect yearly dues from each one of the homeowners. They are going to handle all of the common areas, including the front where the signage and landscaping will be and the maintenance of the open space and the pond.

Mr. Wilshaw: Okay, great. Any other questions on this petition from any of the commissioners? If not, I am going to go to our audience and see if anyone wishes to speak for or against this item? If so, please click raise hand and we will give you an opportunity to speak. We have Ms. Laura Franklin. You can unmute yourself.

Laura Franklin, Good evening everyone. I had questions concerning the retention pond and also on the site plan. Where does it show the discharge of the water? Which sewage line would the water be going in to?

Mr. Michaelson: it isn't shown on the plan, but it is all underground. It ties into an underground storm sewer.

Ms. Franklin: Yes, but I need to know if it would be heading toward east of Harrison which is next to my property or is there another storm drain that would be utilized?

Mr. Michaelson: Evan, are you on?

Mr. Wilshaw: He is. Let me unmute him.

Mr. Michaelson: Evan is our engineer. He can explain that better than I could.

Mr. Wilshaw: Let me just make sure that we have decorum.

Mr. Michaelson: Just so you know, the outlet is on the west end of the...it is all underground but it is on the west end of the pond.

Mr. Wilshaw: I just want to make sure we don't get into a back and forth between the audience and the petitioner. We want to try to maintain the questions through the commission and we will get those questions answered. Mr. Priest, good evening. We will see if you can answer those questions about the storm sewer system.

- Evan Priest: If you go back to that sheet right there, the outlet is...you can see on the east end of the pond there is a...right there. That pipe is going to connect to an underground pipe. It is an eight-foot diameter pipe, and it is...I want to say it is 12 feet underground. It flows north to the Livonia Drain #2 which runs east under Lyndon. Actually, it will go away from Harrison. The lots that face Harrison will have a rear yard storm sewer which you can see on this plan too. We are going to try and collect as much of that lot, including the roof, as we can. Obviously, the driveway will run out into Harrison. The rest of it we are going to collect and put into that pond and put it underground in that eight-foot diameter sewer, which for Ms. Franklins information, it is all separate from your sanitary sewer if that is your concern. The city does have some issues with things like that, maybe footing drains or connected to sanitary sewers...that is not the case here. All of the sump pumps will connect directly to the storm drain which will be kept completely separate from the sanitary sewer area.
- Mr. Wilshaw: Thank you for that response, Mr. Priest. Ms. Franklin, hopefully that addresses your question. Is there anything else you would like to say?
- Ms. Franklin: I'm just concerned because my property...there is access to not just water but also sewage that goes right next to my property, so that is why I need to know if the below of the site would mainly be shifting toward where those outlets are at my property. I don't have a sump pump in my basement, and I haven't had flooding in my basement since I have been here for quite some years. That is my concern in terms of how water is going to flow. It is all around my property.
- Mr. Wilshaw: For what it is worth, Ms. Franklin, each petition that comes before us and this has been the case for a number of years because of Wayne County's storm water management ordinance. Developments such as this have to basically retain their water on site that comes from storm water into these ponds and they need to slowly discharge it as a very controlled rate of release into existing storm sewer systems like this large pipe that they are referring to. It is not going to be discharged into anyone's yard or into any open areas. It is going to go into a system, and it is going to be done at a very controlled rate. It should not impact or cause any additional flooding or water retain on any neighbors' properties.

- Ms. Franklin: Okay. I did have one more question. I think what the builder is doing is phenomenal to bring value to the neighborhood, but I had a question concerning a potential traffic challenge. Lyndon street...there was a survey done in 2015 and it was on April 22. They just did it for a 24-hour period. They noticed that there was 2,428 vehicles that went through. On April 23, 2,754 vehicles had went through. This was back in 2015. With AADT, they said the average is 2,480 vehicles going through over a 24-hour period. My question is, the entrance that closest to Harrison currently, where it is placed, that is the same place where the new buses actually release students and have students on, at Harrison and Lyndon street. Early in the morning, the congestion of traffic and throughout the day, there is a lot of traffic on Lyndon street. Has that been considered?
- Mr. Wilshaw: This plan has been looked at by our Traffic Division of the Police Department and they indicated that they had no concerns with the traffic that would be caused by this development. The Police Department will usually give us recommendations that you may have heard on the previous petition if they think a no left turn sign or right turn signs or any other traffic controls are necessary, they will indicate that. That hasn't been noted in this case of the development for essentially 30 something homes that are going to be there.
- Ms. Franklin: Okay, I do understand. I heard the letter that approved it but there was no mention of what was going on with the buses that actually stop. They stop on the north side and where they stope it is right there where the driveway is.
- Mr. Wilshaw: Right. It is possible if this property is developed as we see it here, that the school system may have to review where they have the bus stop and make some adjustments to ensure the safety of the children that get on those buses.
- Ms. Franklin; Thank you.
- Mr. Wilshaw: Thank you, Ms. Franklin, for attending this evening. We will see if anyone else wishes to speak for or against this item. You are welcome to click raise hand. I don't see anyone else doing that so, we will go back to Mr. Michaelson. Is there any other comments that you would like to make in regard to the petition before us?
- Mr. Michaelson: The only thing...I am hoping that you all agree that this will be a great addition to the city. We have a good reputation in all of

the cities we have built in and around Livonia. We have actually built in Livonia previously years ago. I think you will be happy with our development with the way we deal with the city and the inspectors and everybody involved. We think of ourselves as very professional and we are looking forward to being approved and being able to start hopefully before spring.

Mr. Wilshaw: Thank you, Mr. Michaelson. Any questions for our petitioner? If not, a motion would be in order.

On a motion by Long, seconded by Ventura, and unanimously adopted, it was

#12-61-2020 **RESOLVED**, That the City Planning Commission does hereby recommend to City Council that Petition 2020-11-08-07 submitted by Adams Park Development, L.L.C. requesting approval of the Master Deed, Bylaws and site plan pursuant to Section 18.62 of the City of Livonia Zoning Ordinance #543, as amended, to develop a site condominium (Adams Park) consisting of thirty-nine (39) single-family homes on the properties at 14416 Harrison Avenue and 28201 Lyndon Avenue (former Adams Elementary School site) located on the south side of Lyndon Avenue between Inkster and Middlebelt Roads in the Southeast ¼ of Section 24, be approved, and the Public Open Space requirement of the Subdivision Rules and Regulations is hereby waived, subject to the following conditions:

1. That the Site Plan identified as Sheet 03, dated November 17, 2020, prepared by Michael L. Priest & Associates, Inc., is hereby approved and shall be adhered to.
2. That the issues as outlined in the correspondence dated December 7, 2020, from the Fire Marshal shall be resolved to the satisfaction of the Livonia Fire and Rescue Division.
3. That the Landscape Planting Plan identified as L-1 and the Landscape Notes & Details identified as L-2, both dated Novembers 19, 2020 as revised, prepared by Nagy Devlin Land Design., are hereby approved and shall be adhered to.
4. That streetlights and sidewalks shall be installed throughout the development to the satisfaction of the Engineering Department.

5. That the condominium Master Deed and Bylaws comply with the requirements of the Subdivision Control Ordinance, Title 16, Chapter 16.04-16.40 of the Livonia Code of Ordinance, and Article XX, Section 20.01-20.06 of Zoning Ordinance #543.
6. That Section 6.7 Garages of the Bylaws shall be modified to include front entries where applicable.
7. That the brick used in the construction of each condominium unit shall be full face four-inch (4") brick.
8. In the event of a conflict between the provisions set forth in the Master Deed and bylaws, and the requirements set forth in the City of Livonia Zoning Ordinance No. 543, as amended, the Zoning Ordinance requirements shall prevail, and petitioner shall comply with the Zoning Ordinance requirements.
9. That the petitioner shall include language in the Master Deed and bylaws or a separate recordable instrument wherein the condominium association shall reimburse the City of Livonia for any maintenance or repair costs incurred for the storm water detention/retention and outlet facilities, and giving the City of Livonia the right to impose liens on each lot owner's property pro rata and place said charges on their real estate tax bills in the event said charges are not paid by the condominium association (or each lot owner) within thirty (30) days of billing for the City of Livonia.
10. That all required cash deposits, certified checks, irrevocable bank letters of credit and/or surety bonds which shall be established by the City Engineer pursuant to Article XVIII of Ordinance No. 543, Section 18.66 of the ordinance, shall be deposited with the City prior to the issuance of engineering permits for this site condominium development.
11. That only a conforming entrance marker is approved with this petition, and any additional signage shall be separately submitted for review and approval by the Zoning Board of Appeals; and
12. Pursuant to Section 19.10 of Ordinance #543, the Zoning Ordinance of the City of Livonia, this approval is valid for a period of one year only from the date of approval by City

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Council, and unless a building permit is obtained, this approval shall be null and void at the expiration of said period.

Mr. Wilshaw: Is there any discussion?

Mr. Wilshaw, Chairman, declared the motion is carried and the foregoing resolution adopted. It will go on to City Council with an approving resolution.

ITEM #6 APPROVAL OF MINUTES 1,162nd Public Hearings and Regular Meeting

Mr. Caramagno, Secretary, announced the next item on the agenda, Approval of the Minutes of the 1,162nd Public Hearings and Regular Meeting held on November 10, 2020.

On a motion by Smiley, seconded by McCue , and unanimously adopted, it was

#12-62-2020 *RESOLVED*, That the Minutes of 1,162^{ndth} Public Hearings and Regular Meeting held by the Planning Commission on November 10, 2020, are hereby approved.

A roll call vote on the foregoing resolution resulted in the following:

AYES:	Long, McCue, Smiley, Ventura, Bongero, Caramagno, Wilshaw
NAYS:	None
ABSENT:	None
ABSTAIN:	None

Mr. Wilshaw, Chairman, declared the motion is carried and the foregoing resolution adopted.

On a motion duly made, seconded and unanimously adopted, the 1,163rd Public Hearings and Regular Meeting held on December 15, 2020, was adjourned at 9:33 p.m.

CITY PLANNING COMMISSION

Sam Caramagno, Secretary

ATTEST: _____
Ian Wilshaw, Chairman