



CITY of NOVI CITY COUNCIL

Agenda Item 5
October 8, 2018

SUBJECT: Consideration of tentative approval of the request of McBride Dale Clarion for Speedway at 14 Mile and Haggerty, JSP 17-63, with Zoning Map Amendment 18.720, to rezone property in Section 1, located at the southwest corner of Fourteen Mile Road and Haggerty Road from OST (Planned Office Service Technology) and B-3 (General Business) to B-3 (General Business) subject to a Planned Rezoning Overlay (PRO) Agreement, and corresponding PRO Concept Plan. The property totals 2.03 acres and the applicant is proposing to update and rebuild the whole site.

SUBMITTING DEPARTMENT: Community Development Department - Planning *Bau*

CITY MANAGER APPROVAL: *[Signature]*

BACKGROUND INFORMATION:

The petitioner is requesting a Zoning Map amendment for a 2.03 acre property at the southwest corner of Fourteen Mile Road and Haggerty Road from OST (Office Service Technology) and B-3 (General Business) to B-3 (General Business) using the City's Planned Rezoning Overlay (PRO) option. The applicant states that the rezoning request is necessary to allow the rebuild of the Speedway gas station and convenience store on a larger site. This will allow the applicant to update and rebuild the whole site.

The PRO option creates a "floating district" with a conceptual plan attached to the rezoning of a parcel. As part of the PRO, the underlying zoning is proposed to be changed (in this case from OST to B-3) and the applicant enters into a PRO Agreement with the City, whereby the City and the applicant agree to tentative approval of a conceptual plan for development of the site. Following final approval of the PRO Concept Plan and PRO Agreement, the applicant will submit for Preliminary and Final Site Plan approval under standard site plan review procedures. The PRO runs with the land, so future owners, successors, or assignees are bound by the terms of the agreement, absent modification by the City of Novi. If the development has not begun within two years, the rezoning and PRO Concept plan expires and the Agreement becomes void.

The applicant began with a similar request in 2016 (RZ18.714 and JSP16-13), and a PRO Agreement was approved in December 2016 (minutes attached). In 2017, the applicant indicated that Speedway determined they intend to construct their "café style" store at this location. The café designation requires the construction of a larger convenience store and includes an outdoor seating area. The applicant has proposed a 4,608 square foot convenience store (3,936 square feet was previously approved) and 5,400 square foot fuel canopy over 8 double-sided fuel dispensers. The project includes razing the 2,417 square foot existing building and 6 double-sided fuel dispensers.

Because of the changes to the concept plan, size of the building, and change in the deviations and offered public benefits, the process for rezoning recommenced at the beginning, and the Planning Commission held a public hearing in November, 2017. At that time there were issues with the driveway taper on Haggerty Road, and the Planning Commission moved to postpone decision on the matter to allow additional time for the

applicant and City staff to resolve the issue. The applicant has addressed the taper lane in the current revised Concept submittal, as well as other items identified in the previous rounds of staff and consultant reviews.

As part of the proposed redevelopment, existing driveways will be shifted away from the intersection and aligned with the driveways across 14 Mile Road and Haggerty Road. Speedway is proposing to dedicate approximately 10 feet of ROW along 14 Mile Road. There will be an above-ground detention basin in the southwest corner of the enlarged property. The applicant is not proposing the sale of alcohol at this location.

The Planning Commission held another public hearing on September 12, 2018, and recommended approval of the most recent application to the City Council.

Master Plan for Land Use

The Future Land Use Map of the 2017 City of Novi Master Plan for Land Use identifies this property and all adjacent land within the City as office research development technology. The proposal would follow objectives listed in the Master Plan for Land Use including the following:

1. Objective: The City, working with the development community and partners, should continue to foster a favorable business climate. *The proposal would allow an existing business to expand, provide an update to the visual aesthetic at an entryway to the City, and provide an estimated 19 more jobs, \$5 million in sales volume, \$250,000 in sales tax, and \$3.76 million in investment.*
2. Objective: Support and strengthen existing businesses, as it is easier to keep a business in the City than attract a new one to fill a vacant facility. *The proposal would allow an existing business to expand and develop a vacant parcel.*

Ordinance Deviations Requested

Section 7.13.2.D.i.c(2) permits deviations from the strict interpretation of the Zoning Ordinance within a PRO agreement. These deviations must be accompanied by a finding by City Council that "each Zoning Ordinance provision sought to be deviated would, if the deviation were not granted, prohibit an enhancement of the development that would be in the public interest, and that approving the deviation would be consistent with the Master Plan and compatible with the surrounding areas." Such deviations must be considered by City Council, who will make a finding of whether to include those deviations in a proposed PRO agreement. The proposed PRO agreement would be considered by City Council after tentative approval of the proposed concept plan and rezoning.

The Concept Plan submitted with an application for a rezoning with a PRO is not required to contain the same level of detail as a Preliminary Site Plan. Staff has reviewed the Concept Plan in as much detail as possible to determine what deviations from the Zoning Ordinance are required. The applicant may choose to revise the Concept Plan to better comply with the standards of the Zoning Ordinance, or may proceed with the plan as submitted with the understanding that those deviations would have to be approved by City Council in a proposed PRO Agreement. The following are deviations from the Zoning Ordinance and other applicable ordinances requested by the applicant and supplemented by staff and consultant recommendations:

- a. Planning deviation from Section 4.29 to forgo the required noise impact statement for this project because the proposed use is the same as the existing use and no additional noise impacts are anticipated;

- b. Planning Deviation from Sec. 5.4.2 of the Zoning Ordinance for loading space size and location:
 - i. 570 square foot loading zone proposed, 940 square feet required.
 - ii. Loading zone is located in the front yard where the ordinance indicates it should be located in the interior side yard of a double-frontage lot.
- c. Section 9 Façade Waiver for the overage of Asphalt Shingles (maximum allowed 25 percent; proposed 50 percent on east, 35 percent on south, 40 percent on north) on the building.
- d. Section 9 Façade Waiver for the exceeding the percentage of flat metal panels on the fuel canopy, because the canopy consists of the maximum percentage of brick feasible due to relative proportions of the columns to fascia;
- e. Landscape deviation from Sec. 5.5.3.C of Zoning Ordinance for deficiency in parking lot landscape area (2,456 square feet required, 1,916 square feet proposed) because the applicant has agreed to widen landscape islands near the detention pond, which will lessen the deviation;
- f. Landscape deviation from Sec. 5.5.3.D for a portion of the building foundation landscaping being located away from the building;
- g. Engineering deviation to reduce the required buffer width from 25 feet to 10 feet around the proposed detention basin because modifying the location would cause the slope of the detention basin to exceed the City's requirements;
- h. Traffic deviation from opposite side driveway spacing requirement on Haggerty Road because the new driveway location has optimized site conditions and will improve safety along Haggerty Road from the existing location;
- i. Traffic deviation to allow the driveway on 14 Mile Road to be located approximately 121 feet from the neighboring driveway to the west to allow the proposed driveway to align with the opposing driveway on the north side of 14 Mile Road, which will improve safety and site distance at the intersection;
- j. Traffic deviation for the width of the driveways. The applicant is proposing 35 foot wide driveways rather than the City's standard of 30 feet to ensure the fuel delivery truck can access the site and maneuver without running over internal or external curbing or landscaping;

Public Benefit under PRO Ordinance

Section 7.13.2.D.ii states that the City Council must determine that the proposed PRO rezoning would be in the public interest and the public benefits of the proposed PRO rezoning would clearly outweigh the detriments:

1. Install a "Welcome to Novi" sign along the Haggerty Road property line.
2. Dedicate 10 feet of right-of-way along 14 Mile Road.
3. Construct an approximately 18 foot section of missing off-site sidewalk west of the development,
4. Redevelop the site with a building and canopy that is architecturally consistent with current zoning regulations.
5. Pedestrian access is improved:

- i. Sidewalks will be extended the length of the expanded property and will close gaps in the sidewalk system, and
 - ii. Sidewalk connections from the convenience store to 14 Mile Road and Haggerty Road are provided.
6. Safety improvements:
- i. Relocation of driveway away from 14 Mile and Haggerty intersection and to align with opposing driveway, and
 - ii. On-site circulation and visibility with new canopy.

The proposed benefits should be weighed against the proposal to determine if they clearly outweigh any detriments of the proposed rezoning. Of the 6 benefits listed, three – architectural improvements, pedestrian access, and safety improvements – would be requirements of any new development on the subject property under the existing zoning. The three others – “Welcome to Novi” sign, right-of-way dedication along 14 Mile Road, and constructing a missing sidewalk gap off-site – would be considered enhancements that would benefit the public that would not be required as part of a development under the existing zoning. However, it should be noted that while it is not required, the dedication of right-of-way is typical of developments.

PRO Conditions

The applicant is required to submit a conceptual plan and a list of terms that they are willing to include with the PRO agreement. The applicant has submitted a conceptual plan showing the general layout of the site, the location of the proposed detention pond, and location of the proposed pathways. The only “terms” or “conditions” within the submittal are the design elements illustrated on the conceptual plan and the public benefits outlined in the corresponding letter.

City Council Action

If the City Council is inclined to approve the rezoning request with PRO at this time, the City Council's motion would be to direct the City Attorney to prepare a PRO Agreement to be brought back before the City Council for approval with specified PRO Conditions.

RECOMMENDED ACTION:

THREE PART MOTION AS FOLLOWS:

Tentative indication that Council may **approve** the request of McBride Dale Clarion for Speedway at 14 Mile and Haggerty, JSP 17-63, with Zoning Map Amendment 18.720, to rezone property in Section 1, located at the southwest corner of Fourteen Mile Road and Haggerty Road from OST (Office Service Technology) and B-3 (General Business) to B-3 (General Business) subject to a Planned Rezoning Overlay (PRO) Agreement, and corresponding PRO Concept Plan as reviewed by the Planning Commission on September 12, 2018, and direction to the City Attorney to prepare a proposed PRO Agreement with the following ordinance deviations:

- a. Planning deviation from Section 4.29 to forgo the required noise impact statement for this project because the proposed use is the same as the existing use and no additional noise impacts are anticipated;
- b. Planning Deviation from Sec. 5.4.2 of the Zoning Ordinance for loading space size and location:
 - i. 570 square foot loading zone proposed, 940 square feet required.
 - ii. Loading zone is located in the front yard where the ordinance indicates it should be located in the interior side yard of a double-frontage lot.

- c. Section 9 Façade Waiver for the overage of Asphalt Shingles (maximum allowed 25 percent; proposed 50 percent on east, 35 percent on south, 40 percent on north) on the building.
- d. Section 9 Façade Waiver for the exceeding the percentage of flat metal panels on the fuel canopy, because the canopy consists of the maximum percentage of brick feasible due to relative proportions of the columns to fascia;
- e. Landscape deviation from Sec. 5.5.3.C of Zoning Ordinance for deficiency in parking lot landscape area (2,456 square feet required, 1,916 square feet proposed) because the applicant has agreed to widen landscape islands near the detention pond, which will lessen the deviation;
- f. Landscape deviation from Sec. 5.5.3.D for a portion of the building foundation landscaping being located away from the building;
- g. Engineering deviation to reduce the required buffer width from 25 feet to 10 feet around the proposed detention basin because modifying the location would cause the slope of the detention basin to exceed the City's requirements;
- h. Traffic deviation from opposite side driveway spacing requirement on Haggerty Road because the new driveway location has optimized site conditions and will improve safety along Haggerty Road from the existing location;
- i. Traffic deviation to allow the driveway on 14 Mile Road to be located approximately 121 feet from the neighboring driveway to the west to allow the proposed driveway to align with the opposing driveway on the north side of 14 Mile Road, which will improve safety and site distance at the intersection; and
- j. Traffic deviation for the width of the driveways. The applicant is proposing 35 foot wide driveways rather than the City's standard of 30 feet to ensure the fuel delivery truck can access the site and maneuver without running over internal or external curbing or landscaping.

The following conditions shall be requirements of the Planned Rezoning Overlay Agreement:

- a. *Acceptance of applicant's offer of public benefits as proposed:*
 - i. *Installation of a "Welcome to Novi" sign along the Haggerty Road property line.*
 - ii. *Dedication of 10 feet of ROW along 14 Mile Road to the Road Commission of Oakland County.*
 - iii. *Construct an approximately 18 foot section of missing off-site sidewalk west of the development.*
 - iv. *Redevelop the site with a building and canopy that is architecturally consistent with current zoning regulations.*
 - v. *Pedestrian access is improved: (a) sidewalks will be extended the length of the expanded property and will close gaps in the sidewalk system and (b) sidewalk connections from the convenience store to 14 Mile Road and Haggerty Road are provided.*
 - vi. *Safety improvements: (a) relocation of driveway away from 14 Mile and Haggerty intersection and to align with opposing driveway and (b) on-site circulation and visibility with new canopy.*
- b. *Applicant complying with the conditions listed in the staff and consultant review letters.*

This motion is made because:

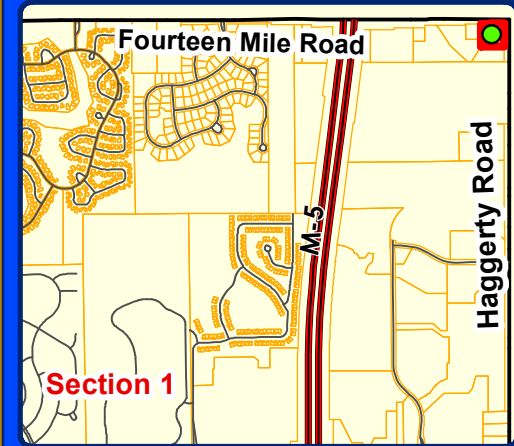
- a. The proposed plan meets several objectives of the Master Plan, as noted in the review letter, including:

- i. The City, working with the development community and partners, should continue to foster a favorable business climate (by allowing an existing business to grow, provide an update to the visual aesthetic at an entryway to the City, and provide addition jobs, sales volume, sales tax and investment).*
 - ii. Support and strengthen existing businesses, as it is easier to keep a business in the City than attract a new one to fill a vacant facility (by allowing an existing business to expand and develop an available parcel).*
- b. The concept plan improves existing non-conformities (minimum site size from 0.7 acres to 2.03 acres, location of driveways away from intersection, and upgraded stormwater management).
- c. The rebuild and expansion of this site provides an update to the visual aesthetic at an entryway to the City, modern fuel dispensers and convenience store, and replacement of underground storage tanks.
- d. There is a negligible impact on the utilities due to expected utility demand reduced from 4 residential equivalent units to 3, minimal impact on available water capacity, pressure, and flow, and no apparent impact of the downstream sanitary sewer.
- e. Submittal of a Concept Plan and any resulting PRO Agreement, provides assurance to the Planning Commission and to the City Council of the manner in which the property will be developed, and offers benefits that would not be likely to be offered under standard development options.


MAPS
Location
Zoning
Future Land Use
Natural Features

SPEEDWAY #2224 PRO: JSP17-63

LOCATION



LEGEND

 Subject Property



City of Novi

Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

Map Author: Lindsay Bell
Date: 09/05/2018
Project: SPEEDWAY PRO JSP17-63
Version #: 1



1 inch = 250 feet

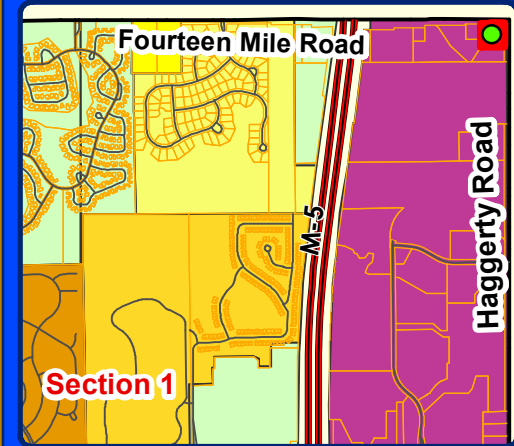


MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

SPEEDWAY #2224 PRO: JSP17-63

ZONING



LEGEND

- R-A: Residential Acreage
- R-2: One-Family Residential
- R-4: One-Family Residential District
- RM-1: Low-Density Multiple Family
- MH: Mobile Home District
- B-3: General Business District
- OST: Office Service Technology
- Subject Property



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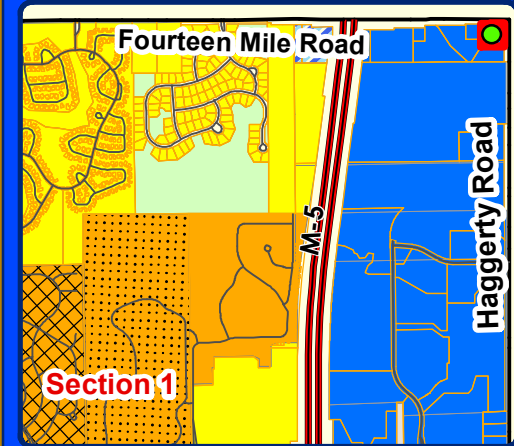


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SPEEDWAY #2224 PRO: JSP17-63

FUTURE LAND USE



LEGEND

- FUTURE LAND USE
- Single Family
 - Multiple Family
 - PD1
 - Mobile Home Park
 - Community Office
 - Office RD Tech
 - Private Park
 - Utility
 - Subject Property



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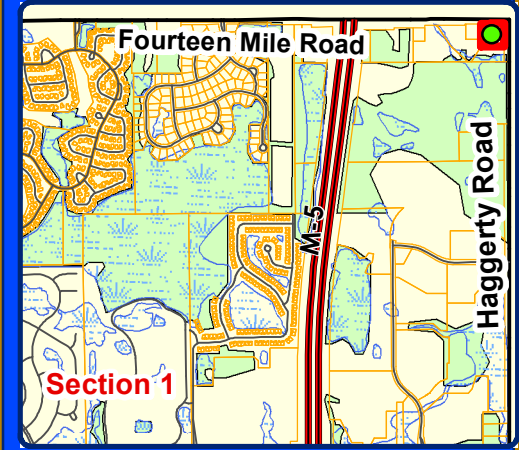


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SPEEDWAY #2224 PRO: JSP17-63

NATURAL FEATURES




LEGEND

- WETLANDS
- WOODLANDS
- Subject Property

**City of Novi**
Dept. of Community Development
City Hall / Civic Center
45175 W Ten Mile Rd
Novi, MI 48375
cityofnovi.org

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0 55 110 220 330 Feet
1 inch = 250 feet

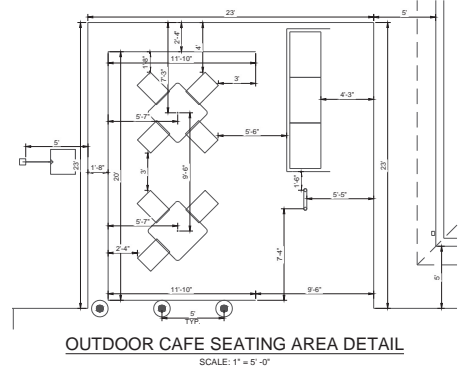
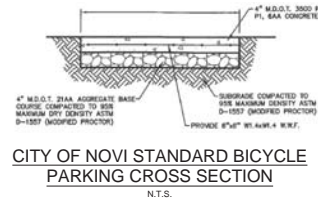
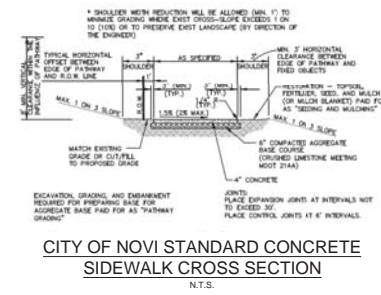
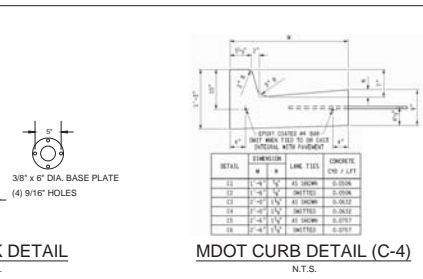
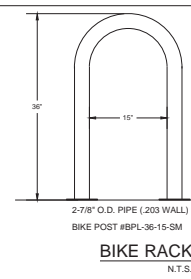
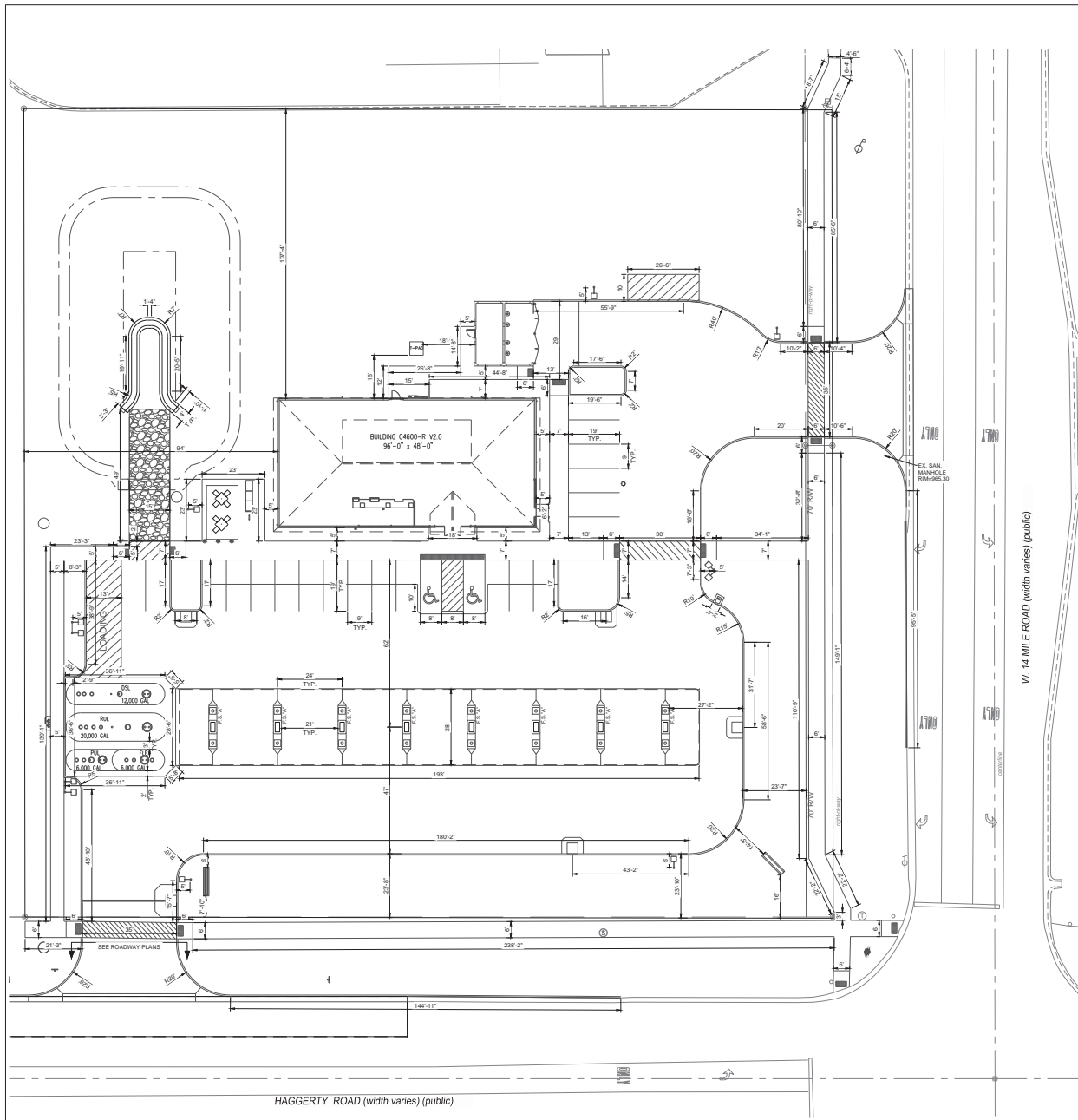


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SITE PLAN

(Full plan set available for viewing at the Community Development Department.)



Speedway
 31275 Haggerty Road
 Novi, MI 48240
 248-482-1111

NO.	DATE	DESCRIPTION
1	11/11/24	ISSUED FOR PERMITS
2	11/11/24	ISSUED FOR CITY AND COUNTY COMMENTS
3	11/11/24	ISSUED FOR PERMITS

PLOT PLAN DETAILS
REBUILD
 31275 HAGGERTY ROAD
 OAKLAND COUNTY
 NOVI, MI

STORE NO: 0002224
 PROJECT ID: 95505
 SCALE: 1" = 20' 0"

DESIGN TEAM: R. THORNTON (10/11/24), J.C. BARBER (10/11/24), M. MOSSBACH (10/11/24)
 DATE: 11/11/24
 2224 - CS

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD NOTES AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION, DEPTH, OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR ENCOUNTERS A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES.

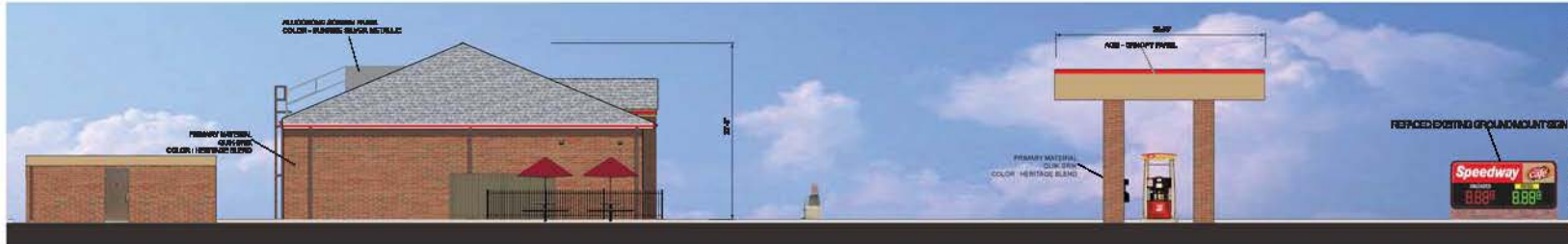




FRONT ELEVATION



REAR ELEVATION



LEFT ELEVATION



RIGHT ELEVATION

Primary Material Breakout (Canopy)		
Elevation	Square Footage	Percentage
Front Elevation	482	25.11%
ACM Panel (Tan)	482	100.00%
ACM Panel (Red stripe)	72.375	14.99%
Brick Column wrap	320	66.00%
Total	874.375	100.00%
Rear Elevation	Square Footage	Percentage
ACM Panel (white)	482	55.13%
ACM Panel (Red stripe)	72.375	8.28%
Brick Column wrap	320	36.46%
Total	874.375	100.00%
Left Elevation	Square Footage	Percentage
ACM Panel (white)	70	43.61%
ACM Panel (Red stripe)	10.5	6.54%
Brick Column wrap	80	49.84%
Total	160.5	100.00%
Right Elevation	Square Footage	Percentage
ACM Panel (white)	70	43.61%
ACM Panel (Red stripe)	10.5	6.54%
Brick Column wrap	80	49.84%
Total	160.5	100.00%

Primary Material Breakout (Building)		
Elevation	Square Footage	Percentage
Front Elevation	1152	100.00%
Brick	723	62.76%
Glass Store Front	429	37.24%
Total	1152	100.00%
Rear Elevation	Square Footage	Percentage
Brick	1110	96.35%
Glass Store Front	42	3.65%
Total	1152	100.00%
Left Elevation	Square Footage	Percentage
Brick	551.5	47.78%
Glass Store Front	24.5	2.12%
Total	576	100.00%
Right Elevation	Square Footage	Percentage
Brick	494	78.82%
Egress door	122	21.18%
Total	616	100.00%

Speedway
 Speedway Construction Dept.
 E. OHIO, OH 43025

BUILDING ELEVATIONS
 REBUILD
 6125 JACOBIY ROAD
 CANON, OHIO 43021
 10/20/18

STORE # 2224
 REVISION OR PROJECT # 95505
 SCALE 1/8" = 1'-0"
 DATE 10/20/18
 DRAWN BY JACOB
 CHECKED BY JACOB
 DATE 10/20/18
 2224-ELE

SEE PLAN FOR DIMENSIONS
 10/20/18 JACOB
 10/20/18 JACOB

CITY COUNCIL ACTION
ON JSP 16-13 WITH ZONING MAP AMENDMENT 18.714
DECEMBER 19, 2016

Roll call vote on CM 16-12-161

**Yeas: Mutch, Wrobel, Gatt, Staudt, Burke
Casey**

Nays: None

Absent: Markham

2. Approval at the request of McBride Dale Clarion for the Speedway at 14 Mile and Haggerty, JSP 16-13, with Zoning Map Amendment 18.714, to rezone property in Section 1, located at the southwest corner of Fourteen Mile Road and Haggerty Road from OST (Planned Office Service Technology) and B-3 (General Business) to B-3 (General Business) subject to the related Planned Rezoning Overlay (PRO) Agreement and corresponding PRO Plan. The property totals 2.03 acres and the applicant is proposing to update and rebuild the whole site.

CM 16-12-162

Moved by Staudt, seconded by Wrobel ; UNANIMOUSLY CARRIED:

Recommend final approval at the request of McBride Dale Clarion for the Speedway at 14 Mile & Haggerty, JSP 16-13, with Zoning Map Amendment 18.714, to rezone property in Section 1, located at the southwest corner of Fourteen Mile Road and Haggerty Road from OST (Office Service Technology) and B-3 (General Business) to B-3 (General Business) subject to the related Planned Rezoning Overlay (PRO) Agreement and corresponding PRO Plan, and subject to the conditions listed in the staff and consultant review letters, and with any changes and/or conditions as discussed at the City Council meeting, with any final minor alterations required in the determination of the City Manager and City Attorney to be incorporated by the City Attorney's office prior to the execution of the final agreement. This motion is made for the following reasons:

- a. The Master Plan for Land Use objective to foster a favorable business climate is fulfilled by allowing an existing business to expand and provide 5 more jobs, \$235,000 in sales tax, and \$3.1 million in investment.**
- b. The Master Plan for Land Use objective to support and strengthen existing businesses is fulfilled by allowing an existing business to expand and develop a vacant parcel.**
- c. The concept plan improves existing non-conformities (minimum site size from 0.7 acres to 2.03 acres, location of driveways away from intersection, and upgraded stormwater management).**
- d. There is a negligible impact on the utilities due to expected utility demand reduced from 4 residential equivalent units to 3, minimal impact on available water capacity, pressure, and flow, and no apparent impact of the downstream sanitary sewer.**

- e. The rebuild and expansion of this site provides an update to the visual aesthetic at an entryway to the City, modern fuel dispensers and convenience store, and replacement of underground storage tanks.**

Member Mutch praised the applicant and said as part of this PRO Agreement they have agreed to complete a sidewalk gap that they do not own. If it wasn't done it would have left a gap between their property and the adjacent property. He noted this will make a significant improvement to that corner, both from a traffic perspective with getting the driveways moved back and the addition to the "Welcome to Novi" sign at that corner. He thanked the applicant for the investment.

Roll call vote on CM 16-12-162

Yeas: Wrobel, Gatt, Staudt, Burke, Casey, Mutch

Nays: None

Absent: Markham

3. Approval of the Michigan Department of Transportation (MDOT) request for a Variance of the City's Noise Ordinance for the 2017 M-5 Expressway Concrete Patching Project between 12 Mile and Pontiac Trail (of which 12 Mile to 14 Mile is within City jurisdiction).

City Manager, Pete Auger said that staff worked with MDOT on this, which was similar to what we did with the I-275 project last year. Courtney DeFauw and Sandra Montes, MDOT representatives, were present to answer any questions if needed.

Member Mutch wondered what type of work was going to be done. He asked that they introduce themselves and give their title. Courtney DeFauw, Traffic Engineer said she worked for the Oakland TSC and Sandy Montes said she worked for MDOT and was the Oakland TSC Manager. Mr. DeFauw said they have done a few maintenance type repairs and tried to do small minor repairs of the joints. She said they are trying to do concrete pavement repairs to the longitudinal and transverse repairs to the whole section of M-5 so they can preserve this section for another couple of years. They would like to fix the joint issue. They put together a Capital Preventative Maintenance Project to come in and finish everything, including the ramps at 12 Mile, and the M-5 Connector which is really bad. They are going to finish where the I-275 project all the way to the north. Member Mutch did say some areas that they fixed are much better. He confirmed that this is a lot less intensive than the I-96 project. Ms. DeFauw said yes, but there is a lot of quantity, they want to fix as much as they can. The section in Novi from Fourteen Mile south is worse than the section of 14 Mile to Pontiac Trail. There will be a lot of repairs in that section. Especially the 14 Mile intersection, which is probably the worst intersection, so they will be making many repairs there as well. Member Mutch stated that looking at the proposal; it makes sense in terms of having to deal with this for 6 weeks rather than 6 months. There are residents that will be affected by the work on M-5. Ms. DeFauw said they are requesting a variance to the City of Novi's Noise Ordinance to allow for construction activities on M-5 from 12 Mile Road to Pontiac

PLANNING REVIEW



PLAN REVIEW CENTER REPORT

August 16, 2018

Planning Review

Speedway at 14 Mile & Haggerty
JSP17-63 with PRO Rezoning 18.720

PETITIONER

McBride Dale Clarion

REVIEW TYPE

Rezoning Request from OST (Office Service Technology) & B-3 (General Business) to B-3 (General Business) with Planned Rezoning Overlay (PRO) – Second Revised Concept Plan

PROPERTY CHARACTERISTICS

- Site Location: Southwest corner of 14 Mile Rd. and Haggerty Rd. (Section 1)
- Site Zoning: OST – Office Service Technology & B-3 General Business
- Adjoining Zoning: North: Commercial (Commerce Charter Township);
Northeast: Commercial (West Bloomfield Township);
East: Commercial (Farmington Hills);
South: OST
West: OST
- Current Site Use: Speedway Gas Station and Convenience Store & Undeveloped
- Adjoining Uses: North: Shopping plaza;
Northeast: Shopping Plaza;
East: CVS, Shopping plaza;
South: Undeveloped
West: Flagstar Bank and Office plaza
- School District: Walled Lake Consolidated School District
- Site Size: 0.70 Acres (Existing) + 1.33 Acres (Rezoning) = 2.03 Acres (Total)

PROJECT SUMMARY

The petitioner is requesting a Zoning Map amendment for a 2.03 acre property on the west of Haggerty Road and south of 14 Mile Road (Section 1) from OST (Office Service Technology) & B-3 (General Business) to B-3 (General Business) utilizing the Planned Rezoning Overlay (PRO) option. The applicant states that the rezoning request is necessary to allow the rebuild of the Speedway gas station and convenience store on a larger site. This will allow the applicant to update and rebuild the whole site.

The applicant supplied a similar request in 2016, and a PRO Agreement was approved in December 2016. In 2017, the applicant contacted Planning staff and indicated that Speedway determined they intend to construct their “café style” store at this location. The café designation requires the construction of a larger convenience store and includes an outdoor seating area. The applicant has proposed a 4,608 sq. ft. convenience store (3936 square ft. was previously approved) and 5,400 sq. ft. fuel canopy over 8 double-sided fuel dispensers. This will include razing the 2,417 sq. ft. existing building and 6 double-sided fuel dispensers. Because of the changes to the concept plan, size of the building, and change in the deviations and offered public benefits, the process for rezoning recommence at the beginning and a public hearing was held in November of 2017. At that time there were issues with the driveway location on Haggerty Road, and the Planning Commission moved to postpone decision on the matter to allow additional time for the applicant

and City staff to resolve the taper lane issue. The applicant has addressed the issue in the current revised Concept submittal, as well as other items identified in the previous rounds of staff and consultant reviews.

As part of the proposed redevelopment, existing driveways will be shifted away from the intersection and aligned with the driveways across 14 Mile Road and Haggerty Road. Speedway is proposing to dedicate approximately 10 feet of ROW along 14 Mile Road. There will be an above-ground detention basin in the southwest corner of the enlarged property. The applicant is not proposing the sale of alcohol at this location.

The PRO option creates a “floating district” with a conceptual plan attached to the rezoning of a parcel. As part of the PRO, the underlying zoning is proposed to be changed (in this case from OST to B-3) and the applicant enters into a PRO agreement with the City, whereby the City and the applicant agree to tentative approval of a conceptual plan for development of the site. Following final approval of the PRO concept plan and PRO agreement, the applicant will submit for Preliminary and Final Site Plan approval under standard site plan review procedures. The PRO runs with the land, so future owners, successors, or assignees are bound by the terms of the agreement, absent modification by the City of Novi. If the development has not begun within two (2) years, the rezoning and PRO concept plan expires and the agreement becomes void.

PREVIOUS PLANNING COMMISSION ACTION

Planning Commission held a public hearing on November 08, 2017 and postponed making a recommendation to the City Council based on the following motion:

In the matter of Speedway JSP17-63 with Rezoning 18.720, motion postpone making a recommendation on the proposed PRO and Concept Plan to rezone the subject property from OST (Office Serve Technology) and B-3 (General Business) to B-3 (General Business). This recommendation is made for the following reasons:

- a. To allow the applicant time to **work** with staff the proposed driveway along proposed deceleration lane as discussed in the review letters.*

MASTER PLAN FOR LAND USE

The Future Land Use Map of the City of Novi Master Plan for Land Use identifies this property and all adjacent land within the City as office research development technology. The proposal would follow objectives listed in the Master Plan for Land Use including the following:

1. Objective: The City, working with the development community and partners, should continue to foster a favorable business climate. The proposal would allow an existing business to expand, provide an update to the visual aesthetic at an entryway to the City, and provide an estimated 19 additional jobs, an increase of \$5 million in sales volume, an increase of approximately \$250,000 in sales tax, and \$3.76 million in investment.
2. Objective: Support and strengthen existing businesses, as it is easier to keep a business in the City than attract a new one to fill a vacant facility. The proposal would allow an existing business to expand and develop a vacant parcel.

EXISTING ZONING AND LAND USE

The following table summarizes the zoning and land use status for the subject property and surrounding properties.

Land Use and Zoning: For Subject Property and Adjacent Properties

	Existing Zoning	Existing Land Use	Master Plan Land Use Designation
Subject Property	OST: Office Service Technology	Undeveloped	Office Research Technology Development
Northern Parcels	B-2: Community Business (Commerce Charter Twp)	Shopping Plaza (Grocery, Bank, Cleaners, Restaurants)	Community Commercial
Northeast Parcels	B-1: Local Business (West Bloomfield Twp)	Shopping Plaza	General Business
Eastern Parcels	B-2: Community Business (Farmington Hills)	Commercial (CVS), Shopping Plaza	Shopping Center Type Business
Southern Parcels	OST: Office Service Technology	Undeveloped	Office Research Technology Development
Western Parcels	OST: Office Service Technology	Bank, Office Plaza	Office Research Technology Development

COMPATIBILITY WITH SURROUNDING LAND USE

The surrounding land uses are shown on the above chart. The compatibility of the proposed PRO concept plan with the zoning and uses on the adjacent properties should be considered by the Planning Commission in making the recommendation to City Council on the rezoning request with the PRO option.



The properties to the north, northeast, and east are developed commercial. All properties immediately adjacent to the south of the subject property are predominantly underdeveloped or vacant. The properties to the west are developed office.

The properties to the **north** across 14 Mile Road have a shopping plaza with a grocery store, bank, and various other retail and restaurants.

The properties to the **northeast** across 14 Mile Road and Haggerty Rd. have a shopping plaza with a Walgreens, FedEx, and various other retail and restaurants.

The properties to the **east** across Haggerty Road have a stand-alone CVS and a shopping plaza with an animal hospital and various retail and restaurants.

The properties to the **south** are vacant, undeveloped land with some wetlands and woodlands.

The properties immediately adjacent to the **west** have a bank and medical office building.

COMPARISON OF ZONING DISTRICTS

The following table provides a comparison of the current (OST) and proposed (B-3) zoning classifications.

	OST Zoning (Existing)	B-3 Zoning (Proposed)
Principal Permitted Uses	<ol style="list-style-type: none"> 1. Professional office buildings, offices, and office sales and service activities 2. Data processing and computer centers 3. Laboratories 4. Research, testing, design, and development, technical training, an design of pilot or experimental products 5. Hotels and business motels 6. Colleges, universities, and other such post-secondary institutions of higher learning, public or private, offering courses in general, technical, or religious education 7. Motion picture, television, radio and photographic production facilities 8. Medical offices, including laboratories and clinics 9. Facilities for human care 10. Off-street parking lots 11. Publicly owned and operated parks, parkways and outdoor recreational facilities 12. Publicly-owned buildings, telephone exchange buildings, and public utility offices, but no including storage yard, transformer stations, substations or gas regulator stations 13. Financial institution uses with drive-in facilities as an accessory use only 14. Public or private indoor and private outdoor recreational facilities 15. Day care centers and adult day care centers 16. Secondary uses 17. Site down restaurants 18. Other uses similar to the above uses and subject to the same conditions s noted 19. Accessory building and uses customarily incidental and integral to any of the above permitted uses 	<ol style="list-style-type: none"> 1. Retail businesses use 2. Retail business service uses 3. Dry cleaning establishments, or pick-up stations, dealing directly with the consumer 4. Business establishments which perform services on the premises 5. Professional services 6. Retail business or retail business service establishments 7. Professional and medical offices including laboratories 8. Fueling station 9. Auto wash 10. Bus passenger stations 11. New and used car salesroom, showroom, or office 12. Other uses similar to the above uses 13. Tattoo parlors 14. Publicly owned and operated parks, parkways, and outdoor recreational facilities 15. Accessory structures and uses customarily incident to the above permitted uses 16. Public or private health and fitness facilities and clubs 17. Microbreweries 18. Brewpubs

	OST Zoning (Existing)	B-3 Zoning (Proposed)
Special Land Uses	<ol style="list-style-type: none"> 1. Retail businesses use 2. Retail business service uses 3. Restaurants, including sit down 4. Fast food drive-through restaurants 	<ol style="list-style-type: none"> 1. Outdoor space for exclusive sale of new or used automobiles, campers, recreation vehicles, mobile home, or rental or trailers or automobiles 2. Motel 3. Business in the character of a drive-in or open front store 4. Veterinary hospitals or clinics 5. Plant materials nursery 6. Public or private indoor and private outdoor recreational facilities 7. Mini-lube or oil change establishments 8. Sale of produce and seasonal plant materials outdoors 9. Restaurant in the character of a fast food carryout, drive-in, fast food drive-through, or fast food sit-down
Building Height	46 ft. or 3 stories, whichever is less	30 ft.
Building Setbacks	All: 50 ft.	Front: 30 ft. Side: 15 ft. Rear: 20 ft.
Parking Setbacks	All: 20 ft.	Front: 20 ft. Side/Rear: 10 ft.

INFRASTRUCTURE CONCERNS

• **Engineering**

The Staff Engineer reviewed the PRO revised Concept Plan and request for rezoning. The proposed a 4,608 sq. ft. retail building with a demand of 3 REUs which is less than the current zoning. Therefore, the plan would have negligible impact on the utilities.

• **Traffic**

The City’s traffic consultant has reviewed the PRO Concept Plan and the applicant’s Rezoning Traffic Impact Study (RTIS). The RTIS does not meet the requirements of the Site Plan and Development Manual and additional information is required. However the estimated number of trips generated from the proposed redevelopment is not expected to diminish roadway operations.

MAJOR CONDITIONS OF PLANNED REZONING OVERLAY AGREEMENT

The Planned Rezoning Overlay process involves a PRO concept plan and specific PRO conditions in conjunction with a rezoning request. The submittal requirements and the process are codified under the PRO ordinance (Section 7.13.2). Within the process, which is completely voluntary by the applicant, the applicant and City Council can agree on a series of conditions to be included as part of the approval.

The applicant is required to submit a conceptual plan and a list of terms that they are willing to include with the PRO agreement. The applicant has submitted a conceptual plan showing the general layout of the rebuilt convenience store and fuel station, detention pond, and landscaping. The applicant has provided a narrative describing the proposed benefits to the public.

1. Install a “Welcome to Novi” sign along the Haggerty Road property line.
2. Dedicate 10 feet of Right of Way along 14 Mile Road.
3. Redevelop the site with a building and canopy that is architecturally consistent with current zoning regulations.
4. Pedestrian access is improved: (a) Sidewalks will be extended the length of the expanded

- property and will close gaps in the sidewalk system, (b) an approximately 18 foot section of missing off-site sidewalk west of the development would be constructed, and (c) sidewalk connections from the convenience store to 14 Mile Road and Haggerty Road are provided.
5. Safety improvements: (a) relocation of driveway away from 14 Mile and Haggerty intersection and to align with opposing driveway and (b) on-site circulation and visibility with new canopy.

ORDINANCE DEVIATIONS

Section 7.13.2.D.i.c(2) permits deviations from the strict interpretation of the Zoning Ordinance within a PRO agreement. These deviations must be accompanied by a finding by City Council that *“each Zoning Ordinance provision sought to be deviated would, if the deviation were not granted, prohibit an enhancement of the development that would be in the public interest, and that approving the deviation would be consistent with the Master Plan and compatible with the surrounding areas.”* Such deviations must be considered by City Council, who will make a finding of whether to include those deviations in a proposed PRO agreement. The proposed PRO agreement would be considered by City Council after tentative approval of the proposed concept plan and rezoning.

The concept plan submitted with an application for a rezoning with a PRO is not required to contain the same level of detail as a preliminary site plan. Staff has reviewed the concept plan in as much detail as possible to determine what deviations from the Zoning Ordinance are currently shown. In many cases, additional information is required to make a determination if a deviation is required. The applicant may choose to revise the concept plan to better comply with the standards of the Zoning Ordinance, or may proceed with the plan as submitted with the understanding that those deviations would have to be approved by City Council in a proposed PRO agreement. The following are deviations from the Zoning Ordinance and other applicable ordinances that may be requested by the applicant:

1. Deviation for the exceeding the percentage of flat metal panels on the canopy, are recommended by the City’s Façade Consultant. Compliance for the minimum percentage of Brick on the canopy can be readily achieved by using full height brick on all columns. *The most recent elevations submitted indicate full brick columns.*
2. Deviation from opposite side driveway spacing requirement on Haggerty Road. The new driveway location on Haggerty Road has been moved further south from the intersection with 14 Mile Road. The proposed driveway aligns as close as Speedway can get without crossing the property line or extending the southern driveway radii onto the neighboring property. There are no other driveways on the west side of Haggerty Road within 700 feet. The new driveway location will improve safety along Haggerty Road. Supported by staff.
3. Deviation to allow the driveway on 14 Mile Road to be located approximately 121 ft. from the neighboring driveway to the west. The variation is requested to allow the proposed driveway to align with the opposing driveway on the north side of 14 Mile Road. The current driveway is approximately 119 ft. from the intersection, while the relocated driveway is approximately 203 ft. from the intersection. The new driveway location will improve safety and site distance at the intersection. Supported by staff.
4. Deviation for the width of the driveways. The applicant is proposing 35 foot wide driveways rather than the City’s standard of 30 feet. Justification has been given that the width is the minimum necessary to ensure the fuel delivery truck can access the site and maneuver without running over internal or external curbing or landscaping. The 35 foot width is within the allowable range and is supported by staff.
5. Deviation to reduce the required buffer width from 25 feet to 10 feet around the proposed detention basin. If the basin is moved to meet the requirement, the bottom of the basin will

- require more excavation, and the slope of the detention basin will exceed the City's requirements. Supported by staff.
6. Deviation to allow the proposed loading space in the front yard. Supported by staff.
 7. Deviation to allow 570 square foot loading area rather than the required 940 square foot. Supported by staff.
 8. Deviation to forgo the required noise impact statement for this project.
 9. Deviation in minimum width of the parking lot island at the south edge of parking is insufficiently wide (8 feet). This deviation is not supported by staff.
 10. Deviation in total parking lot landscape area provided (2456 sf is required, 1916 sf is proposed). This deviation is not supported by staff.
 11. Deviation to allow parking lot perimeter trees more than 15 feet from the back of curb. This deviation is not supported by staff.
 12. Deviation to allow 7 inch curbs rather than the 6 inch City standard. This deviation is not supported by staff.
 13. Deviation to allow end islands that are not 3 feet shorter than the adjacent parking stalls. This deviation is not supported by staff.

The applicant should confirm in their response letter which of these items will be corrected and which deviations should be included in the PRO agreement.

APPLICANT BURDEN UNDER PRO ORDINANCE

The Planned Rezoning Overlay ordinance requires the applicant to demonstrate that certain requirements and standards are met. The applicant should be prepared to discuss these items, especially in part a, where the ordinance suggests that the enhancement under the PRO request would be unlikely to be achieved or would not be assured without utilizing the Planned Rezoning Overlay. Section 7.13.2.D.ii states the following:

- a. *Approval of the application shall accomplish, among other things, and as determined in the discretion of the City Council, the integration of the proposed land development project with the characteristics of the project area, and result in an enhancement of the project area as compared to the existing zoning, and such enhancement would be unlikely to be achieved or would not be assured in the absence of the use of a Planned Rezoning Overlay.*
- b. *Sufficient conditions shall be included on and in the PRO Plan and PRO Agreement on the basis of which the City Council concludes, in its discretion, that, as compared to the existing zoning and considering the site specific land use proposed by the applicant, it would be in the public interest to grant the Rezoning with Planned Rezoning Overlay; provided, in determining whether approval of a proposed application would be in the public interest, the benefits which would reasonably be expected to accrue from the proposal shall be balanced against, and be found to clearly outweigh the reasonably foreseeable detriments thereof, taking into consideration reasonably accepted planning, engineering, environmental and other principles, as presented to the City Council, following recommendation by the Planning Commission, and also taking into consideration the special knowledge and understanding of the City by the City Council and Planning Commission.*

IDENTIFYING BENEFITS TO PUBLIC RESULTING FROM THE REZONING AND THE PROPOSED DEVIATIONS

Section 7.13.2.D.ii states that the City Council must determine that the proposed PRO rezoning would be in the public interest and that the benefits to the public of the proposed PRO rezoning would clearly outweigh the detriments. The following benefits are suggested by the applicant (as listed in their narrative) as resulting from the development proposal:

1. Install a "Welcome to Novi" sign along the Haggerty Road property line.

2. Dedicate 10 feet of right-of-way along 14 Mile Road.
3. Redevelop the site with a building and canopy that is architecturally consistent with current zoning regulations.
4. Construct approximately 18 foot section of missing off-site sidewalk west of the development;
5. Pedestrian access is improved:
 - (a) Sidewalks will be extended the length of the expanded property and will close gaps in the sidewalk system; and
 - (b) Sidewalk connections from the convenience store to 14 Mile Road and Haggerty Road are provided.
6. Safety improvements:
 - (a) Relocation of driveway away from 14 Mile and Haggerty intersection and to align with opposing driveway; and
 - (b) On-site circulation and visibility with new canopy.

The proposed benefits should be weighed against the proposal to determine if they clearly outweigh any detriments of the proposed rezoning. Of the six benefits listed, three – architectural improvements, pedestrian access, and safety improvements – would be requirements of any new development on the subject property under the existing zoning. The three others – “Welcome to Novi” sign, off-site sidewalk construction, and right-of-way dedication along 14 Mile Road – would be considered enhancements that would benefit the public that would not be required as part of a development under the existing zoning. However, it should be noted that while it is not required the dedication of right-of-way is typical of developments.

RECOMMENDATION

Approval of the **PRO Concept Plan is recommended** because the rezoning request fulfills two objectives of the Master Plan for Land Use by fostering a favorable business climate and strengthening an existing business. The rebuild and expansion of this site provides an update to the visual aesthetic at an entryway to the City, modern fuel dispensers and convenience store, and replacement of underground storage tanks. The rezoning will also have negligible impact on the utilities due to expected utility demand reduced from 4 residential equivalent units to 3, minimal impact on available water capacity, pressure, and flow, and no apparent impact of the downstream sanitary sewer. The project also will provide sidewalk connections where there are gaps in the existing non-motorized transportation network along both 14 Mile and Haggerty Road, which addresses the goal in the Master Plan of enhancing the City’s non-motorized transportation facilities. Finally, the plan improves existing non-conformities (minimum site size from 0.7 acres to 2.03 acres, location of driveways away from intersection, and upgraded stormwater management).

The plan generally conforms to the requirements of the Zoning Ordinance, with additional details required with the next site plan submittal. The PRO agreement and concept plan approval are step one in the process; the applicant will still need to seek the required approvals from Planning Commission for the Preliminary Site Plan, Section 9 Façade Waiver, and Stormwater Management Plan.

SUMMARY OF OTHER REVIEWS:

- a. Engineering Review: **Recommended for approval** with comments to be addressed in the response letter and in the next submittal.
- b. Landscape Review: **Recommended for approval** with comments to be addressed in the response letter and on the next submittal. **Deviations from ordinance requirements are not supported by staff.**
- c. Wetland and Woodland Reviews: It was determined at Pre-Application and again with PRO Concept Plan submittal that there are no regulated wetlands or woodlands on site. No further review is needed.

- d. Traffic Review: The revised Concept plan is recommended for Approval noting additional comments to be addressed on the next submittal. **The RTIS is not recommended for approval at this time based on incomplete information in the study. See review letter for detailed comments.**
- e. Facade Review: Recommended for Approval noting a Section 9 Façade Waiver for exceeding the maximum percentage of flat metal panels on the canopy. The Façade consultant recommends the waiver as full height brick on the canopy columns has been provided.
- f. Fire Review: Recommended for Approval.

NEXT STEP: PLANNING COMMISSION

This Site Plan is scheduled to go before the Planning Commission for public hearing on September 12, 2018. Please provide the following **no later than September 6, 2018 at noon** if you wish to keep the schedule.

- 1. A response letter addressing **ALL** the comments from **ALL** the review letters.
- 2. A PDF version of all the Site Plan drawings that were dated 5/23/18 (less than 10 MB). **NO CHANGES MADE.**
- 3. A color rendering of the Site Plan, if any.

If the applicant has any questions concerning the above review or the process in general, do not hesitate to contact me at 248.347.0484 or lbell@cityofnovi.org.



Lindsay Bell – Planner



PLANNING REVIEW CHART: B-3 General Business District

Review Date: August 16, 2018
Review Type: Concept PRO, Revised
Project Name: Speedway at 14 Mile and Haggerty
Plan Date: 5.23.2018
Prepared by: Lindsay Bell, Planner
Contact: E-mail: lbell@cityofnovi.org Phone: 248.347.0484

Items in **Bold** need to be addressed by the applicant prior to the approval of the Preliminary Site Plan. Items underlined need to be addressed prior to the approval of the Final Site Plan.

Item	Required Code	Proposed	Meets Code	Comments
Zoning and Use Requirements				
Master Plan (adopted August 25, 2010)	Office Research Development Technology	Fueling Station and Retail Food	Yes	
Area Study	The site does not fall under any special category	NA	Yes	
Zoning (Effective Dec. 25, 2013)	B-3: General Business District & OST: Office Service Technology	B-3	Yes	Proposing PRO Rezoning (See Sec.7.13.2 for details) Previous PRO Agreement was recorded January 30, 2014. Applicant is now seeking a modified plan.
Uses Permitted (Sec 3.1.12.B & C)	Sec 3.1.12.B Principal Uses Permitted. Sec 3.1.12.C Special Land Uses	Rebuild of fueling station with addition of retail food business	Yes	Permitted Use under B-3
Alcohol sales at gas station (Section 4.29)	Alcohol sales permitted subject to the standards of Zoning Ordinance Section 4.29	Alcohol sales not proposed	Yes	
Fueling Stations And Minor Automobile Service Establishments (Sec. 4.29)				
Curb Cuts for Entrances (Sec 4.29.1.A)	Entrances shall be no closer than 100 ft. from street intersections or from adjacent residential districts	Changes to entrances proposed, 100 ft. from intersection	Yes	
Minimum Site Size (Sec 4.29.1.B)	Minimum lot area shall be 1 acre	Combining lots to equal 2.03 acres	Yes	<u>Lot combination has been approved</u>

Item	Required Code	Proposed	Meets Code	Comments
Location of Fueling station (Sec 4.29.1.C)	- Minimize the impact on residential districts, OS-1, OSC or B-1	NA	NA	
	- Ample space for vehicles waiting for service or picked up after service	NA	NA	
	- Sufficient stacking space shall be provided at the pump	Show stacking spaces on site plan	Yes	
Canopies (Sec 4.29.1.D) (Sec. 4.19.2.C.i)	- Attached canopies shall comply with building setback requirements	NA	NA	
	- Detached canopies shall comply with Section 4.19: Canopies shall be 15 ft. from Right-of-way	52 ft. and 39 ft. 9 inches proposed	Yes	
Height, bulk, density and area limitations (Sec 3.1.12)				
Frontage on a Public Street. (Sec. 5.12)	Frontage on a Public Street is required	14 Mile and Haggerty	Yes	
Minimum Zoning Lot Size (Sec 3.6.2.D)	Except where otherwise provided in this Ordinance, the minimum lot area and width, and the maximum percent of lot coverage shall be determined on the basis of off-street parking, loading, greenbelt screening, yard setback or usable open space.	2.03 acres Minimum required is 1 acre (per section 4.29)	Yes	
Open Space Area	---	---	---	---
Maximum % of Lot Area Covered (By All Buildings)	(Sec 3.6.2.D)		NA	
Building Height (Sec. 3.1.23.D)	30 ft.	23.6 ft. to peak of gas station roof, 20 feet to top of the canopy	Yes	
Building Setbacks (Sec 3.1.23.D)				
Front (east)	30 ft.	144 ft.	Yes	
Exterior Side (north)	30 ft. (Sec. 3.6.2.C)	100 ft.	Yes	
Interior Side (south)	15 ft.	94 ft.	Yes	
Rear (west)	20 ft.	107 ft., 4 in	Yes	

Item	Required Code	Proposed	Meets Code	Comments
Parking Setback (Sec 3.1.23.D)				
Front (east)	20 ft.	23 ft. 8 inches	Yes	
Exterior Side (north)	10 ft.	23 ft. 7 inches	Yes	
Interior Side (south)	10 ft.	23 ft.	Yes	
Rear (west)	10 ft.	107 ft.	Yes	
Note To District Standards (Sec 3.6.2)				
Exterior Side Yard Abutting a Street (Sec 3.6.2.C)	All exterior side yards abutting a street shall be provided with a setback equal to the front yard setback requirement of the district in which located.	100 ft. proposed 30 ft. required	Yes	
Minimum Lot Area (Sec. 3.6.2.D)	The minimum lot area and width, and the maximum percent of lot coverage shall be determined on the basis of off-street parking, loading, greenbelt screening, yard setback or usable open space requirements	Proposed	Yes	
Off-Street Parking in Front Yard (Sec 3.6.2.E)	Off-street parking shall be permitted in the front yard, except that said parking shall observe the minimum off-street parking setback requirements in Sec. 3.1 and 5.5.3	Proposed	Yes	
Parking Setback from Residential District (Sec 3.6.2.L)	Wherever property directly abuts or is adjacent to residentially zoned property, the minimum parking setback shall be 20 ft.	NA	NA	
Wetland/ Watercourse Setback (Sec 3.6.2.M)	Refer to Sec 3.6.2 for more details.	NA	NA	
Parking setback screening (Sec 3.6.2.P)	Required parking setback area shall be landscaped per sec 5.5.3.	Landscape plan is provided	Yes	See landscape letter for additional details
Modification of parking setback requirements (Sec 3.6.2.Q)	Refer to Sec 3.6.2 for more details	None proposed	NA	

Item	Required Code	Proposed	Meets Code	Comments
Parking, Loading, and Dumpster Requirements				
Number of Parking Spaces Fueling Station without accessory service garage (Sec.5.2.12.E)	1 space per 200 sq. ft. of usable floor area + accessory uses; 3 spaces minimum 1 per fueling station 16 fueling stations 2609/200 = 13 spaces 29 spaces required	22 spaces provided for the building, plus one at each fueling station (16). 38 parking spaces proposed	Yes	Applicant provided floorplan showing 2609 SF usable floor area
Parking Space Dimensions and Maneuvering Lanes (Sec. 5.3.2)	<ul style="list-style-type: none"> - 90° Parking: 9 ft. x 19 ft. - 24 ft. two way drives - 9 ft. x 17 ft. parking spaces allowed along 7 ft. wide interior sidewalks as long as detail indicates a 4" curb at these locations and along landscaping 	All parking spaces are proposed to be 9 ft. x 19 ft. Proposed drives are at least 24 ft. wide	Yes	
Parking stall located adjacent to a parking lot entrance (public or private) (Sec. 5.3.13)	Shall not be located closer than twenty-five (25) feet from the street right-of-way (ROW) line, street easement or sidewalk, whichever is closer	NA	NA	
End Islands (Sec. 5.3.12)	<ul style="list-style-type: none"> - End Islands with landscaping and raised curbs are required at the end of all parking bays that abut traffic circulation aisles. - The end islands shall generally be at least 8 feet wide, have an outside radius of 15 feet, and be constructed 3' shorter than the adjacent parking stall as illustrated in the Zoning Ordinance 	End islands proposed are not shown 3' shorter than parking stalls	No	
Barrier Free Spaces <i>Barrier Free Code (2012 Michigan Building Code)</i>	<ul style="list-style-type: none"> - 2 barrier free parking spaces required for 26-50 parking requirement - Every 6 or fraction of six accessible parking spaces, at least one shall be van-accessible 	2 van accessible spaces proposed	Yes	

Item	Required Code	Proposed	Meets Code	Comments
Barrier Free Space Dimensions <i>Barrier Free Code (2012 Michigan Building Code)</i>	<ul style="list-style-type: none"> - 8' wide with an 8' wide access aisle for van accessible spaces - 5' wide with a 5' wide access aisle for regular accessible spaces 	8 ft. wide spaces with 8 ft. wide access aisle proposed.	Yes	
Barrier Free Signs <i>Barrier Free Code</i>	One sign for each accessible parking space.	None shown	No	Show sign locations on plans
Minimum number of Bicycle Parking <i>(Sec. 5.16.1)</i>	2 spaces required for fueling stations	2 spaces proposed	Yes	
Bicycle Parking General requirements <i>(Sec. 5.16)</i>	<ul style="list-style-type: none"> - No farther than 120 ft. from the entrance being served - When 4 or more spaces are required for a building with multiple entrances, the spaces shall be provided in multiple locations - Spaces to be paved and the bike rack shall be inverted "U" design - Shall be accessible via 6 ft. paved sidewalk 	75 ft. proposed NA Proposed Part of the dining plaza	Yes NA Yes Yes	<u>Detail to be provided at the time of Preliminary Site Plan submittal to confirm standards.</u>
Bicycle Parking Lot layout <i>(Sec 5.16.6)</i>	Parking space width: 6 ft. One tier width: 10 ft. Two tier width: 16 ft. Maneuvering lane width: 4 ft. Parking space depth: 2 ft. single, 2 ½ ft. double	6 ft. minimum proposed	Yes	
Loading Spaces <i>(Sec. 5.4.2)</i>	<ul style="list-style-type: none"> - Loading, unloading space shall be provided in the rear yard at a ratio of 10 sq. ft. for each front foot of building - Except in the case of a double frontage lot, loading-unloading, as well as trash receptacles may be located in an interior side yard beyond the minimum side yard setback requirement of the district; location subject to approval by the City. 	940 sq. ft. of loading area required. 570 sq. ft. proposed Located in the front yard	No No	<u>Deviation in the PRO requested</u> <u>Deviation in the PRO requested</u>

Item	Required Code	Proposed	Meets Code	Comments
Dumpster (Sec 4.19.2.F)	- Located in rear yard or interior side yard in case of double frontage	Proposed in the interior side yard	Yes	
	- Attached to the building OR	NA	NA	
	- No closer than 10 ft. from building if not attached	10 ft. from building	Yes	
	- Not located in parking setback	Not in setback,	Yes	
	- If no setback, then it cannot be any closer than 10 ft, from property line.	NA	NA	
	- Away from Barrier free Spaces	Proposed away from barrier free	Yes	
Dumpster Enclosure (Sec. 21-145. (c))	- Screened from public view	Yes	Yes	
	- A wall or fence 1 ft. higher than height of refuse bin	Yes		
	- And no less than 5 ft. on three sides	Yes		
	- Posts or bumpers to protect the screening	Yes		
	- Hard surface pad.	Yes		
	- Screening Materials: Masonry, wood or evergreen shrubbery	Yes Yes		
Lighting and Other Equipment Requirements				
Exterior lighting (Sec. 5.7)	Photometric plan and exterior lighting details needed at time of Final Site Plan submittal	No Photometric plan provided	No	Photometric plan should be provided at the time of Final Site Plan submittal
Roof top equipment and wall mounted utility equipment (Sec. 4.19.2.E.ii)	- All roof top equipment must be screened and all wall mounted utility equipment must be enclosed and integrated into the design and color of the building	Proposed	Yes	
Roof top appurtenances screening	Roof top appurtenances shall be screened in accordance with applicable facade regulations, and shall not be visible from any street, road, or adjacent property	Proposed	Yes	
B-3 District Required Conditions (Sec 3.10.3)				
Outdoor Storage	- No truck well, loading	No proposed service	NA	

Item	Required Code	Proposed	Meets Code	Comments
of above ground storage tanks (Sec 3.10.3)	dock, overhead door or other type of service bay door shall face a major thoroughfare, nor an abutting residential district. - Pedestrian exits or emergency doors are permitted on such building facades.	doors Proposed	Yes	
Sidewalk Requirements				
Sidewalks (Sec. 7.4.2 of the Engineering Design Manual)	- A 6 ft. – 8 ft. wide sidewalk or roadside pathway shall be constructed along all arterial and collector roads except in industrial districts	6 ft. wide sidewalk connection proposed on 14 Mile, including off-site connection to existing sidewalk. Existing sidewalk on Haggerty is 5 ft. wide.	Yes	
Pedestrian Connectivity	Whether the traffic circulation features within the site and location of automobile parking areas are designed to assure safety and convenience of both vehicular and pedestrian traffic both within the site and in relation to access streets	Sidewalk connection to 14 Mile and Haggerty Roads provided.	Yes	
Building Code and Other Design Standard Requirements				
Building Code	Building exits must be connected to sidewalk system or parking lot.	Proposed	Yes	
Design and Construction Standards Manual	Land description, Sidwell number (metes and bounds for acreage parcel, lot number(s), Liber, and page for subdivisions).	Some details provided	No	Provide parcel number on the ALTA plans and include in plan set.
General layout and dimension of proposed physical improvements	Location of all existing and proposed buildings, proposed building heights, building layouts, (floor area in sq. ft.), location of proposed parking and parking layout, streets and drives, and indicate sq. ft. of pavement area (indicate public or private).	Provided	Yes	

Item	Required Code	Proposed	Meets Code	Comments
Economic Impact	<ul style="list-style-type: none"> - Total cost of the proposed building & site improvements - Number of anticipated jobs created (during construction & after building is occupied) 	<ul style="list-style-type: none"> - Redevelopment would increase jobs by 19 employees. - Sales volume would increase by \$5 million annually. - Sales tax generation \$250,000. - Estimated redevelopment cost is \$3.76 million. 	Yes	
Development/ Business Sign	<ul style="list-style-type: none"> - Signage, if proposed, requires a permit. - Exterior Signage is not regulated by the Planning Division or Planning Commission. 	2 signs proposed; one ground and one wall Welcome to Novi Sign proposed on Haggerty Road.	NA	For sign permit information contact Maureen Underhill 248-735-5602.
Rezoning Signage Site Plan and Development Manual, Chapter 3	Applicant must install rezoning sign a minimum of 15 days prior to the Planning Commission Hearing. Dimensions and locations specified in the Site Plan Manual.	No details provided	No	Provide and post Rezoning Signage as required
Noise Impact Statement	A noise impact statement is required subject to the standards of Section 5.14.10.B.	Not provided	No	<u>Applicant requests deviation in PRO Agreement.</u>
Lighting and Photometric Plan (Sec. 5.7)				
Intent (Sec. 5.7.1)	Establish appropriate minimum levels, prevent unnecessary glare, reduce spillover onto adjacent properties & reduce unnecessary transmission of light into the night sky	Photometric plan not provided.	No	Previous review comments shown below as no lighting plan provided in this submittal.
Lighting Plan (Sec. 5.7.A.1)	Site plan showing location of all existing & proposed buildings, landscaping, streets, drives, parking areas & exterior lighting fixtures	Proposed	No	
Lighting Plan (Sec.5.7.A.2)	Specifications for all proposed & existing lighting fixtures: <ul style="list-style-type: none"> ▪ Photometric data 	Fixture height is proposed to be 15 ft. pole on 2 ft. concrete pad; total is 17 ft. high	Yes	

Item	Required Code	Proposed	Meets Code	Comments
	<ul style="list-style-type: none"> ▪ Fixture height ▪ Mounting & design ▪ Glare control devices ▪ Type & color rendition of lamps ▪ Hours of operation Photometric plan illustrating all light sources that impact the subject site, including spill-over information from neighboring properties	The store operation is 24/7 and lighting associated with store operation from dusk to dawn.		
Required Conditions (Sec. 5.7.3.A)	Height not to exceed maximum height of zoning district (or 25 ft. where adjacent to residential districts or uses)	30 ft. maximum 17 ft. proposed	Yes	
Required Conditions (Sec. 5.7.3.B)	<ul style="list-style-type: none"> ▪ Electrical service to light fixtures shall be placed underground ▪ Flashing light shall not be permitted ▪ Only necessary lighting for security purposes & limited operations shall be permitted after a site's hours of operation 	Proposed?	Yes?	Please include this note on the Preliminary Site Plan submittal
Required Conditions (Sec.5.7.3.E)	Average to minimum light level of the surface being lit to the lowest light of the surface being lit not to exceed 4:1	Average light proposed is 4.49:1	No	Please modify the plan at the time of Preliminary Site Plan Submittal to comply with this standard
Required Conditions (Sec. 5.7.3.F)	Use of true color rendering lamps such as metal halide is preferred over high & low pressure sodium lamps	LED proposed	Yes	
Min. Illumination (Sec. 5.7.3.k)	<ul style="list-style-type: none"> ▪ Parking areas: 0.2 min ▪ Loading & unloading areas: 0.4 min ▪ Walkways: 0.2 min ▪ Building entrances, frequent use: 1.0 min ▪ Building entrances, infrequent use: 0.2 min 	Lighting minimums and maximums proposed	Yes	
Max. Illumination adjacent to Non-Residential (Sec. 5.7.3.K)	When site abuts a non-residential district, maximum illumination at the property line shall not exceed 1 foot candle	NA	Yes?	

Item	Required Code	Proposed	Meets Code	Comments
Cut off Angles (Sec. 5.7.3.L)	<ul style="list-style-type: none"> ▪ Cut off angles of fixtures must be 90° adjacent to residential districts ▪ Max illumination at the property line shall not exceed 0.5 foot candle 	NA	NA	
Illumination of gasoline service stations and convenience stores (Sec. 5.7.2 J.)	<p>The illumination of gasoline service stations and convenience stores shall be the minimum level necessary to facilitate such uses. Excessive lighting for the purposes of attraction and advertising shall not be permitted.</p> <p>i. Areas away from gasoline pump islands that are used for parking and vehicle storage shall be illuminated in accordance with the parking area requirements of this Section.</p> <p>ii. Light fixtures mounted on canopies shall be recessed or flush with the bottom of the canopy. Where a drop- down fixture is used, the lens shall be flush with (i.e., no more than one inch beyond) the casing so that light is directed down and not sideways.</p> <p>All canopy lighting shall be shielded to provide a cut-off angle of eighty-five (85) degrees. Fixtures shall not be mounted on the top or sides of canopies.</p>	<p>To be determined</p> <p>To be determined</p> <p>To be determined</p>		<p><u>Applicant is asked to address these special considerations at the time of Preliminary Site Plan Review.</u></p>

NOTES:

1. This table is a working summary chart and not intended to substitute for any Ordinance or City of Novi requirements or standards.
2. The section of the applicable ordinance or standard is indicated in parenthesis. Please refer to those sections in Article 3, 4, and 5 of the zoning ordinance for further details.
3. Please include a written response to any points requiring clarification or for any corresponding site plan modifications to the City of Novi Planning Division with future submittals.

ENGINEERING REVIEW



PLAN REVIEW CENTER REPORT

August 17, 2018

Engineering Review

Speedway - Rebuild – PRO
JSP17-0063

Applicant

Speedway

Review Type

Revised Concept Plan for PRO

Property Characteristics

- Site Location: S. of 14 Mile Rd. and W. of Haggerty Rd.
- Site Size: 2.04 acres
- Plan Date: 05/23/2018
- Design Engineer: Speedway Engineering & Construction Department

Project Summary

- Construction of an approximately 4,608 square-foot retail building and associated parking. Site access would be provided by new curb cuts onto 14 Mile Rd. and Haggerty Rd. replacing the existing curb cuts closer to the intersection. The 5/6-foot wide sidewalks along the 14 Mile Rd. and Haggerty Rd. frontages would be completed.
- Water service would be provided by 2-inch domestic lead from the existing 8-inch water main stub on the south side of 14 Mile Rd.
- Sanitary sewer service would be provided a 6-inch sanitary lead from the existing sanitary sewer on the south side of 14 Mile Rd.
- Storm water would be collected by a single storm sewer collection system and detained in an on-site basin.

Recommendation

Approval of the Concept Plan and the Concept Storm Water Management Plan is recommended.

Comments:

The Concept Plan meets the general requirements of Chapter 11 of the Code of Ordinances, the Storm Water Management Ordinance and/or the Engineering Design Manual, with the following review comments to be addressed with future submittals:

Additional Comments (to be addressed with Preliminary and Final Site Plan submittals):

General

1. Provide a minimum of two ties to established section or quarter section corners.
2. Right-of-way permits will be required from the City of Novi and Road Commission for Oakland County.
3. Provide the City's standard detail sheets for water main (5 sheets-rev. 02/16/2018), sanitary sewer (3 sheets- rev. 02/16/2018), storm sewer (2 sheets- rev. 02/16/2018), and paving (2 sheets-rev. 03/05/2018) at the time of the Stamping Set submittal. These details can be found on the City's website at this location: <http://cityofnovi.org/Government/City-Services/Public-Services/Engineering-Division/Engineering-Standards-and-Construction-Details.aspx>
4. Soil borings shall be provided for a preliminary review of the constructability of the proposed development. Borings identifying soil types, and groundwater elevation should be provided at the time of Preliminary Site plan.
5. Provide a sign table listing the quantities of each sign type proposed for the development including accessible parking signs. Provide a note along with the table stating all signage will comply with the current MMUTCD standards.
6. Provide a construction materials table on the Utility Plan listing the quantity and material type for each utility (water, sanitary and storm) being proposed.
7. Provide a construction materials table on the Utility Plan listing the quantity and material type for each utility (water, sanitary and storm) being proposed.
8. Provide a note stating if dewatering is anticipated or encountered during construction a dewatering plan must be submitted to the Engineering Department for review.

Water Main

9. The proposed water lead is connecting to a water main in the Commerce Township water distribution system. Contact Commerce Township for review and any additional requirements.

Sanitary Sewer

10. Indicate invert elevations of sanitary sewer.

Storm Sewer

11. In situations where the minimum cover cannot be achieved, Class V pipe must be used with an absolute minimum cover depth of 2 feet. An explanation shall be provided where the cover depth cannot be provided.

12. Indicate ADS High Performance or RCP class IV or class V pipe for storm sewer. Ensure connections to structures are per pipe manufacturer's recommendation.
13. Storm sewer in the R.O.W. must be RCP, class IV or class V.
14. Provide profiles for all storm sewer 12-inches or larger.
15. Provide storm sewer sizing calculations.
16. Label all inlet storm structures on the profiles. Inlets are only permitted in paved areas and when followed by a catch basin within 50 feet.
17. Label the 10-year HGL on the storm sewer profiles, and ensure the HGL remains at least 1-foot below the rim of each structure.
18. Provide a four-foot deep sump and an oil/gas separator in the last storm structure prior to discharge to the storm water basin.
19. Provide a schedule listing the size, inverts and other relevant information for each proposed storm structure on the utility plan. Round castings shall be provided on all catch basins except curb inlet structures, as described on storm sewer standard details and notes.

Storm Water Management Plan

20. The Storm Water Management Plan for this development shall be designed in accordance with the Storm Water Ordinance and Chapter 5 of the new Engineering Design Manual. Refer to section 5.6.2 for pond geometry and location of inlet and outlet requirements.
21. Provide a cross-section for the proposed basin outlet.
22. Provide manufacturers details and sizing calculations for the pretreatment structure. Provide drainage area and runoff coefficient calculations specific to the area tributary to the treatment structure. The treated flow rate should be based on the 1-year storm event intensity (~1.6 In/Hr), resulting in a flow rate of approximately 2.35 CFS. Higher flows shall be bypassed.
23. Provide an access easement for maintenance over the storm water detention system and the pretreatment structure from the public road right-of-way, also known as a Storm Drainage Facility Maintenance Easement Agreement.
24. Provide release rate calculations for the three design storm events (first flush, bank full, 100-year).
25. Clearly show the emergency overland flow route for the proposed basin.

Paving & Grading

26. The end islands shall conform to the City standard island design, or variations of the standard design, while still conforming to the standards given in Section 2506 of Appendix A of the Zoning ordinance (i.e. 2' minor radius, 15' major radius, minimum 8' wide, 3' shorter than adjacent 19' stall).
27. Revise the grading plan to show limits of grading south beyond end of sidewalk with maximum 4:1 (25%) slope.
28. Provide signage indicating the end of sidewalk.

29. Refer to City standard paving details for pavement cross sections. Any alternative pavement sections proposed must be consistent with the pavement mixes shown in standard details.
30. Refer to standard paving detail sheets for standard curb details.
31. Provide top of curb/walk and pavement/gutter grades to indicate height of curb adjacent to parking stalls or drive areas.
32. The proposed driveway width of 35 feet exceeds the standard commercial driveway width. **A variance from the Design and Construction Standards for a driveway width within the allowable range shown in Figure IX.1 can be supported.**
33. Detectable warning plates are required at locations of road crossings and other crossing locations of high traffic volume. Barrier-free ramps shall comply with current MDOT specifications for ADA Sidewalk Ramps. Provide the latest version of the MDOT standard detail for detectable surfaces.
34. Label specific ramp locations on the plans where detectable warning surface is to be installed.
35. Verify the slopes along the ingress/egress routing to the building from the barrier-free stalls comply with Michigan Barrier-Free regulations.

Off-Site Easements

36. Any off-site easements anticipated must be executed by both parties **prior to final approval of the plans**. Drafts of the easement shall be submitted at the time of the Preliminary Site Plan submittal for review, and shall be approved by the City prior to final signatures.
 - a. A temporary grading easement is required from the property owner to the south.

The following must be submitted at the time of Preliminary Site Plan submittal:

37. A letter from either the applicant or the applicant's engineer highlighting the changes made to the plans addressing each of the comments listed above and indicating the revised sheets involved should be submitted with the Preliminary Site Plan.

The following must be submitted at the time of Final Site Plan submittal:

38. An itemized construction cost estimate must be submitted to the Community Development Department at the time of Final Site Plan submittal for the determination of plan review and construction inspection fees. This estimate should only include the civil site work and not any costs associated with construction of the building or any demolition work. **The cost estimate must be itemized** for each utility (water, sanitary, storm sewer), on-site paving, right-of-way paving (including proposed right-of-way), grading, and the storm water basin (basin construction, control structure, pretreatment structure and restoration).
39. A draft of the off-site temporary grading permit and associated exhibit(s) for review and approval by City of Novi Engineering and Legal staff.

40. Payment of legal fees (amount to be determined) to be held in escrow and refunded as determined at project close out.

The following must be submitted at the time of Stamping Set submittal:

41. A draft copy of the maintenance agreement for the storm water facilities, as outlined in the Storm Water Management Ordinance, must be submitted to the Community Development Department. Once the form of the agreement is approved, this agreement must be approved by City Council and shall be recorded in the office of the Oakland County Register of Deeds.
42. Executed copies of any required off-site easements must be submitted to the Community Development Department.

The following must be addressed prior to construction:

43. A pre-construction meeting shall be required prior to any site work being started. Please contact Sarah Marchioni in the Community Development Department to setup a meeting (248-347-0430).
44. A City of Novi Grading Permit will be required prior to any grading on the site. This permit will be issued at the pre-construction meeting. There is no fee for this permit.
45. A Soil Erosion Control Permit must be obtained from the City of Novi. Contact Sarah Marchioni in the Community Development Department (248-347-0430) for forms and information.
46. A permit for work within the right-of-way of 14 Mile Rd. and Haggerty Rd. must be obtained from the City of Novi. The application is available from the City Engineering Division and should be filed at the time of Final Site Plan submittal. Please contact the Engineering Division at 248-347-0454 for further information.
47. A permit for work within the right-of-way of 14 Mile Rd. and Haggerty Rd. must be obtained from the Road Commission for Oakland County. Please contact the RCO (248-858-4835) directly with any questions. The applicant must forward a copy of this permit to the City. Provide a note on the plans indicating all work within the right-of-way will be constructed in accordance with the Road Commission for Oakland County standards.
48. Construction Inspection Fees to be determined once the construction cost estimate is submitted must be paid prior to the pre-construction meeting.
49. Material certifications must be submitted to Spalding DeDecker for review prior to the construction of any utilities on the site. Contact Ted Meadows at 248-844-5400 for more information.
50. A storm water performance guarantee, equal to 1.2 times the amount required to complete storm water management and facilities as specified in the Storm Water Management Ordinance, must be posted with Community Development.

51. A street sign financial guarantee in an amount to be determined (\$400 per traffic control sign proposed) must be posted with Community Development.

To the extent this review letter addresses items and requirements that require the approval of or a permit from an agency or entity other than the City, this review shall not be considered an indication or statement that such approvals or permits will be issued.

Please contact Darcy Rechtien at (248) 735-5695 with any questions.


Darcy N. Rechtien, P.E.

cc: Theresa Bridges, Construction Engineer
George Melistas, Engineering Senior Manager
Sri Komaragiri, Community Development

LANDSCAPE REVIEW



PLAN REVIEW CENTER REPORT

August 9, 2018

Revised PRO Concept Plan - Landscaping

Speedway Rebuild – 14 Mile Rd & Haggerty Rd

Review Type

Revised PRO Concept Site Plan Landscape Review

Project Number

JSP17-0063

Property Characteristics

- Site Location: Southwest corner of 14 Mile Road and Haggerty Road
- Site Zoning: OST – Proposed B-3 with PRO
- Adjacent Zoning: OST, Commerce Township, Farmington Hills
- Plan Date: May 22, 2018

Recommendation:

This project is **recommended for approval** with the understanding that the items listed below and on the accompanying landscape chart will be addressed satisfactorily in the Preliminary and Final Site Plans and/or the applicant receives the necessary PRO deviation approvals.

Ordinance Considerations

This project was reviewed for conformance with Chapter 37: Woodland Protection, Zoning Article 5.5 Landscape Standards, the Landscape Design Manual and any other applicable provisions of the Zoning Ordinance. Items in **bold** below must be addressed and incorporated as part of the Preliminary Site Plan submittal. Underlined items must be addressed in Final Site Plans. Please follow guidelines of the Zoning Ordinance and Landscape Design Guidelines. This review is a summary and not intended to substitute for any Ordinance. Please consult the Landscape Chart for more detailed discussions of some items.

Deviations from Ordinance requirements:

1. Parking lot island at the south edge of parking is insufficiently wide (8 feet). This deviation is not supported by staff.
2. Insufficient total parking lot landscape area is provided (2456 sf is required, 1916sf is provided). This deviation is not supported by staff.
3. Many required parking lot perimeter trees are not proposed within 15 feet of the back of curb. This deviation is not supported by staff.

EXISTING ELEMENTS

Existing and proposed overhead and underground utilities, including hydrants.(LDM 2.e.(4))

1. Existing and proposed utilities are shown on landscape plans.

Existing Trees and Tree Protection (Sec 37 Woodland Protection, Preliminary Site Plan checklist #17 and LDM 2.3 (2))

1. All existing trees, tree removals and trees to be saved are shown on plans.
2. Tree protection fencing and fencing details have been provided.
3. Four 36" trees are being removed so 16 replacement credits are required.

LANDSCAPING REQUIREMENTS

Adjacent to Public Rights-of-Way – Berm (Wall) & Buffer (Zoning Sec. 5.5.3.B.ii and iii)

1. Twenty foot greenbelt and berms provided meet requirements.

2. 4 canopy or large evergreen trees are required per the ordinance and city clear vision zones for each frontage. 4 new trees are provided on each.
3. 7 subcanopy trees and 14 shrubs are required and are provided along each frontage. More than the required number of shrubs are provided along 14 Mile Road, unless some are being used to count toward the foundation landscaping. **If that is the case, please quantify the area, show the SF on the plan and add it to the calculation.**

Street Tree Requirements (Zoning Sec. 5.5.3.E.i.c and LDM 1.d.)

1. Six trees are required along each road, or 9 subcanopy trees along Haggerty due to the overhead lines. See the landscape chart for detailed calculations.
2. **The extra trees can be removed from the plan if desired.**

Parking Lot Landscaping (Zoning Sec. 5.5.3.C)

1. **2456sf of interior landscape space is required, 1916sf is provided.** The deficiency is a landscape deviation. Adding extra trees to compensate for the discrepancy is not an available option.
2. **Please see the landscape chart for detailed calculations.**
3. Interior parking lot trees cannot be double-counted as perimeter trees, and vice versa. **Please use the attached image to help assign and add trees in order to meet the requirements and avoid having deviations. Please note, except in the case of the trees near the snow deposit areas, all parking lot trees need to be inside of or within 15 feet of the curb to count toward those requirements.**

Parking lot Perimeter Landscaping (Zoning Sec 5.5.3.C.iii footnote)

1. See above, and consult the landscape chart for detailed information.

Storm Basin Landscape (Zoning Sec 5.5.3.E.iv and LDM 1.d.(3))

1. All required detention basin landscaping is provided.
2. **Please make the seed mix more legible.**

Transformer/Utility Box and Fire Hydrant Plantings (LDM 1.3 from 1-5, Zoning Sec 5.5.3.C.ii.d)

Please use a taller plant than globe arborvitae or use a 36" min. height at planting. The shrubs used should reach and maintain a height at least as tall as the utility box it is screening.

Building Foundation Landscaping (Zoning Sec. 5.5.3.D)

1. **Please label clearly as foundation landscaping areas to be counted toward that total.**
2. **A landscape waiver is required for foundation areas not planted at the building foundation. This will be supported by staff if correct total area is provided. It appears that the area heavy in shrubs near 14 Mile could be counted to make up the difference.**

OTHER REQUIREMENTS

Plant List, Notations and Details (LDM 2.h. and t.)

1. All have been provided satisfactorily.
2. **The detail sheet was not included with the set. Please include all details specified in the last review letter.**

Cost estimates for Proposed Landscaping (LDM 2.t.)

Cost estimates will be needed for Final Site Plans.

Irrigation (LDM 1.a.(1)(e) and 2.s)

A system for providing water for plant establishment and long-term survival is required. This can be an irrigation system, or use of xeriscaping or other drought-tolerant plants. If the

latter is to used, a description of how the plants will be watered to become established, and the species' watering requirements needs to be provided.

Proposed topography. 2' contour minimum (LDM 2.e.(1))

Please show the greenbelt contours on the landscape plans.

Snow Deposit (LDM.2.q.)

Snow deposit areas have been noted on the plans.

Corner Clearance (Zoning Sec 5.9)

Required corner clearances are provided.

If the applicant has any questions concerning the above review or the process in general, please do not hesitate to contact me at 248.735.5621 or rmeader rmeader@cityofnovi.org.



Rick Meader – Landscape Architect

LANDSCAPE REVIEW – Revised PRO CONCEPT SUMMARY CHART

Review Date: August 9, 2018
Project Name: 14 & Haggerty Speedway Rebuild
Plan Date: May 22, 2018
Prepared by: Rick Meader, Landscape Architect E-mail: rmeader@cityofnovi.org;
 Phone: (248) 735-5621

Items in **Bold** need to be addressed by the applicant before approval of the Preliminary Site Plan.
Underlined items need to be addressed for Final Site Plan.

Deviations from Ordinance requirements

1. Parking lot island at south entrance is insufficiently wide (8 feet). *This deviation is not supported by staff.*
2. Insufficient total parking lot landscape area is provided (2456 sf is required, 1916sf is provided). *This deviation is not supported by staff.*
3. Many required parking lot perimeter trees are not proposed within 15 feet of the back of curb. This deviation is not supported by staff.

Item	Required	Proposed	Meets Code	Comments
Landscape Plan Requirements (LDM (2))				
Landscape Plan (Zoning Sec 5.5.2, LDM 2.e.)	<ul style="list-style-type: none"> ▪ New commercial or residential developments ▪ Addition to existing building greater than 25% increase in overall footage or 400 SF whichever is less. ▪ 1" =20' minimum with proper North. Variations from this scale can be approved by LA ▪ Consistent with plans throughout set 	Yes	Yes	Scale 1" =20' Pond plan: 1" =10'
Project Information (LDM 2.d.)	Name and Address	Yes	Yes	
Owner/Developer Contact Information (LDM 2.a.)	Name, address and telephone number of the owner and developer or association	Yes	Yes	
Landscape Architect contact information (LDM 2.b.)	Name, Address and telephone number of RLA/LLA	Yes	Yes	
Sealed by LA. (LDM 2.g.)	Requires original signature	Yes	Yes	<u>Need for Final Site Plan</u>
Miss Dig Note (800) 482-7171 (LDM.3.a.(8))	Show on all plan sheets	Yes	Yes	
Zoning (LDM 2.f.)	Include all adjacent zoning	<u>Site:</u> B-3&OST <u>North:</u> Commerce	Yes	

Item	Required	Proposed	Meets Code	Comments
		Twp commercial <u>East</u> : Farmington Hills SF Residential <u>South, West</u> : OST		
Survey information (LDM 2.c.)	<ul style="list-style-type: none"> ▪ Legal description or boundary line survey ▪ Existing topography 	Sheet 2224-CD	Yes	
Existing plant material Existing woodlands or wetlands (LDM 2.e.(2))	<ul style="list-style-type: none"> ▪ Show location type and size. Label to be saved or removed. ▪ Plan shall state if none exists. 	<ul style="list-style-type: none"> ▪ Sheet 2224-Ex ▪ 6 trees being saved – shown being protected with tree fencing. ▪ 2 trees are shown as being transplanted. 	Yes/No	1. 4 trees with a dbh of 36" or greater are shown as being removed. 13 trees and 3 preserved trees are being used as replacements. 2. Gray dogwood is a shrub, not a tree, and can't be counted as a replacement tree. Please use tree species from the attached Woodland Tree Replacement Chart.
Soil types (LDM.2.r.)	<ul style="list-style-type: none"> ▪ As determined by Soils survey of Oakland county ▪ Show types, boundaries 	Sheet 2224-CE – Mostly Marlette Sandy Loam	Yes	
Existing and proposed improvements (LDM 2.e.(4))	Existing and proposed buildings, easements, parking spaces, vehicular use areas, and R.O.W	Yes	Yes	
Existing and proposed utilities (LDM 2.e.(4))	Overhead and underground utilities, including hydrants	Yes	Yes	1. Overhead utility line along Haggerty Rd impacts plantings, underground lines impact plantings in islands north of parking along 14 Mile Road. 2. Subcanopy trees are proposed – this is acceptable.
Proposed grading. 2' contour minimum (LDM 2.e.(1))	Provide proposed contours at 2' interval	Sheet 2224-CG	Yes	Please show greenbelt berms on Landscape Plan.
Snow deposit (LDM.2.g.)	Show snow deposit areas on plan	Yes	Yes	
LANDSCAPING REQUIREMENTS				

Item	Required	Proposed	Meets Code	Comments
Parking Area Landscape Requirements LDM 1.c. & Calculations (LDM 2.o.)				
General requirements (LDM 1.c)	<ul style="list-style-type: none"> ▪ Clear sight distance within parking islands ▪ No evergreen trees 	Yes	Yes	
Name, type and number of ground cover (LDM 1.c.(5))	As proposed on planting islands	Yes	Yes	Please indicate seed or sod or other groundcover on plan
General (Zoning Sec 5.5.3.C.ii)				
Parking lot Islands (a, b. i)	<ul style="list-style-type: none"> ▪ A minimum of 200 SF to qualify ▪ Minimum of 200sf/tree planted in an island. ▪ 6" curbs ▪ Islands minimum width 10' BOC to BOC 	Yes	Yes/No	Please increase southern landscape island's width to at least 10' at back of curb by moving the northern curb north.
Curbs and Parking stall reduction (c)	Parking stall can be reduced to 17' and the curb to 4" adjacent to a sidewalk of minimum 7 ft.	No		
Contiguous space limit (i)	Maximum of 15 contiguous spaces	Longest bay is 14 spaces	Yes	
Plantings around Fire Hydrant (d)	No plantings with matured height greater than 12' within 10 ft. of fire hydrants	Yes	Yes	1. Single hydrant is near 14 Mile road, 2. Trees should be placed at least 10 feet away from hydrants and all utility structures
Landscaped area (g)	Areas not dedicated to parking use or driveways exceeding 100 sq. ft. shall be landscaped	Yes	Yes	
Clear Zones (LDM 2.3.(5))	Due to the site's frontage on 2 roads under Road Commission for Oakland County jurisdiction, the clear zones must follow RCOC guidelines.	RCOC clear zones and City of Novi zones provided.	Yes	
Category 1: For OS-1, OS-2, OSC, OST, B-1, B-2, B-3, NCC, EXPO, FS, TC, TC-1, RC, Special Land Use or non-residential use in any R district (Zoning Sec 5.5.3.C.iii)				
A = Total square footage of vehicular use area up to 50,000 sf x 7.5%	<ul style="list-style-type: none"> ▪ $A = x 7.5\% = sf$ ▪ $32,752 * 7.5\% = 2456 sf$ 			
B= Total square footage of additional paved vehicular use areas over 50,000 SF x	<ul style="list-style-type: none"> ▪ $B = x 1\% = sf$ 	NA		

Item	Required	Proposed	Meets Code	Comments
1 %				
Category 2: For: I-1 and I-2 (Zoning Sec 5.5.3.C.iii)				
A. = Total square footage of vehicular use area up to 50,000 sf x 5%	$A = 5\% \times \text{xx sf} = \text{xx sf}$	NA		
B= Total square footage of additional paved vehicular use areas over 50,000 SF) x 0.5%	$B = 0.5\% \times 0 \text{ sf} = 0 \text{ SF}$	NA		
All Categories				
C = A+B Total square footage of landscaped islands	$2456 + 0 = 2456 \text{ SF}$	1877 SF	No	<ol style="list-style-type: none"> 1. Please correct calculations. 2. Please add additional landscape area. 3. Please increase the island widths to at least 10' at backs of curbs, and 200sf per tree planted in an island.
D = C/200 Number of canopy trees required	$2456/200 = 12 \text{ Trees}$	12 trees	<ul style="list-style-type: none"> • No. • As shown, the plan is not correct but it can be amended to meet rules. 	<ol style="list-style-type: none"> 1. Extra trees cannot compensate for a lack of interior space. The shortage of space is a landscape deviation. 2. Perimeter trees can't be double-counted with interior trees, only greenbelt canopy trees that area within 15' of the parking lot curb. 3. Please use attached image to re-assign and add trees to meet requirement. Trees marked in green can count as interior trees.
Perimeter Green space	<ul style="list-style-type: none"> ▪ 1 Canopy tree per 35 lf ▪ $544 \text{ lf}/35 = 16 \text{ trees}$ 	18 trees	<ul style="list-style-type: none"> • No. • As shown, the plan is not correct 	<ol style="list-style-type: none"> 1. Perimeter trees can't be double-counted with interior trees, only greenbelt canopy trees that area within 15' of the parking lot curb.

Item	Required	Proposed	Meets Code	Comments
			t but it can be amended to meet rules.	2. Please use attached image to re-assign and add trees to meet requirement. Trees marked in pink can count as perimeter trees.
Parking land banked	NA	No		
Berms, Walls and ROW Planting Requirements				
Berms				
<ul style="list-style-type: none"> ▪ All berms shall have a maximum slope of 33%. Gradual slopes are encouraged. Show 1ft. contours ▪ Berm should be located on lot line except in conflict with utilities. ▪ Berms should be constructed with 6" of top soil. 				
Residential Adjacent to Non-residential (Sec 5.5.3.A) & (LDM 1.a)				
Berm requirements (Zoning Sec 5.5.A)	Refer to Residential Adjacent to Non-residential berm requirements chart	NA		Site is not adjacent to residential
Planting requirements (LDM 1.a.)	LDM Novi Street Tree List	Yes	Yes	
Cross-Section of Berms (LDM 2.j)				
Slope, height and width	<ul style="list-style-type: none"> ▪ Label contour lines ▪ Maximum 33% ▪ Min. 5 feet flat horizontal area 	No	No	1. See above. 2. Berms must be constructed per requirements below and a typical cross section detail must be provided showing maximum slope, minimum height and minimum crest, as well as 6" deep top layer of topsoil and construction of loamy soils.
Type of Ground Cover		No	No	Indicate groundcover on detail
Setbacks from Utilities	Overhead utility lines and 15 ft. setback from edge of utility or 20 ft. setback from closest pole	Yes	Yes	Subcanopy trees are used along Haggerty due to overhead lines.
Walls (LDM 2.k & Zoning Sec 5.5.3.vi)				
Material, height and type of construction footing	Freestanding walls should have brick or stone exterior with masonry or concrete interior	No	No	

Item	Required	Proposed	Meets Code	Comments
Walls greater than 3 ½ ft. should be designed and sealed by an Engineer		NA		
ROW Landscape Screening Requirements (Sec 5.5.3.B. ii)				
Greenbelt width (2)(3) (5)	Parking: 20 ft.	Yes	Yes	
Berm requirements (Zoning Sec 5.5.3.A.(5))	Refer to ROW landscape screening requirements chart for corresponding requirements.	3' greenbelt berms are proposed on grading plan.	Yes	Please copy berm contours to landscape plan.
Min. berm crest width	Parking: 2 ft.	Yes	Yes	
Minimum berm height (9)	Parking: 3 ft.	Yes	Yes	
3' wall	(4)(7)	No		
Canopy deciduous or large evergreen trees Notes (1) (10)	Parking: 1 tree per 75 lf; (300-35)/75 = 4 trees each road	<u>Haggerty Rd:</u> 4 trees <u>14 Mile Rd:</u> 4 trees	Yes	1. Please use the attached image to add and assign trees to meet all requirements. 2. Trees marked in light blue can be greenbelt trees.
Sub-canopy deciduous trees & shrubs Notes (2)(10)	<ul style="list-style-type: none"> • Parking: 1 tree per 40 lf and 2 shrubs per 40 lf • (300-35)/40 = 7 trees each road • 2*(300-35)/40 = 14 shrubs 	<u>Haggerty Rd:</u> <ul style="list-style-type: none"> ▪ 4 new subcanopy trees + 3 existing ▪ 14 shrubs <u>14 Mile Rd:</u> <ul style="list-style-type: none"> ▪ 7 subcanopy trees ▪ 36 shrubs 	Yes	1. See above 2. It appears that there are more shrubs than necessary, unless they are being used to fulfill building foundation requirements. 3. Any excess shrubs may be removed from the plan if desired.
Canopy deciduous trees in area between sidewalk and curb (Novi Street Tree List)	<ul style="list-style-type: none"> • Parking: 1 tree per 35 lf • Haggerty Rd: (300-80)/35 = 6 trees or 9 subcanopy trees • 14 Mile Road: (300-85)/35 = 6 trees 	<u>Haggerty Rd:</u> 18 subcanopy <u>14 Mile Rd:</u> 9 canopy trees	Yes	Excess trees may be removed from the plan if desired.
Non-Residential Zoning Sec 5.5.3.E.iii & LDM 1.d (2) Refer to Planting in ROW, building foundation landscape, parking lot landscaping and LDM				
Interior Street to Industrial subdivision (LDM 1.d.(2))	<ul style="list-style-type: none"> ▪ 1 canopy deciduous or 1 large evergreen per 35 l.f. along ROW ▪ No evergreen trees closer than 20 ft. ▪ 3 sub canopy trees per 	NA		

Item	Required	Proposed	Meets Code	Comments
	40 l.f. of total linear frontage ▪ Plant massing for 25% of ROW			
Screening of outdoor storage, loading/unloading <i>(Zoning Sec. 3.14, 3.15, 4.55, 4.56, 5.5)</i>		Yes	Yes	
Transformers/Utility boxes <i>(LDM 1.e from 1 through 5)</i>	▪ A minimum of 2ft. separation between box and the plants ▪ Ground cover below 4" is allowed up to pad. ▪ No plant materials within 8 ft. from the doors	Yes	Yes	1. The shrubs used should reach and maintain a height at least as tall as the utility box it is screening. 2. If the Little Giant Arborvitae is going to be kept, due to its slow growth rate it needs to be at least 30" tall at planting.
Building Foundation Landscape Requirements (Sec 5.5.3.D)				
Interior site landscaping SF	▪ Equals to entire perimeter of the building x 8 with a minimum width of 4 ft. ▪ May deduct widths of man doors from perimeter. ▪ (288-39)lf x 8ft = 1992sf	1916 sf	No	Shrub borders along perimeter of parking can be counted toward foundation requirement but a landscape waiver to have the foundation landscape areas away from the building must be requested. Staff will support it.
<i>Zoning Sec 5.5.3.D.ii. All items from (b) to (e)</i>	If visible from public street a minimum of 60% of the exterior building perimeter should be covered in green space	More than 60% of visible foundation is landscaped.	Yes	
Detention/Retention Basin Requirements (Sec. 5.5.3.E.iv)				
Planting requirements <i>(Sec. 5.5.3.E.iv)</i>	▪ Clusters shall cover 70-75% of the basin rim area ▪ 10" to 14" tall grass along sides of basin ▪ Refer to wetland for basin mix	Yes	Yes	1. Please show the high water line on Sheet LP2 and cluster the shrubs along that. 2. Please make seed mix list more legible. The rightmost 7 columns are not needed.
LANDSCAPING NOTES, DETAILS AND GENERAL REQUIREMENTS				
Landscape Notes – Utilize City of Novi Standard Notes				

Item	Required	Proposed	Meets Code	Comments
Installation date (LDM 2.l. & Zoning Sec 5.5.5.B)	Provide intended date	Yes	Yes	
Maintenance & Statement of intent (LDM 2.m & Zoning Sec 5.5.6)	<ul style="list-style-type: none"> ▪ Include statement of intent to install and guarantee all materials for 2 years. ▪ Include a minimum one cultivation in June, July and August for the 2-year warranty period. 	Yes	Yes	
Plant source (LDM 2.n & LDM 3.a.(2))	Shall be northern nursery grown, No.1 grade.	Yes	Yes	
Irrigation plan (LDM 2.s.)	A fully automatic irrigation system and a method of draining is required with Final Site Plan	No		<u>Need for final site plan</u>
Other information (LDM 2.u)	Required by Planning Commission	NA		
Establishment period (Zoning Sec 5.5.6.B)	2 yr. Guarantee	Yes	Yes	
Approval of substitutions. (Zoning Sec 5.5.5.E)	City must approve any substitutions in writing prior to installation.	Yes	Yes	
Plant List (LDM 2.h.) - Include all cost estimates				
Quantities and sizes	Refer to LDM suggested plant list	Yes	Yes	
Root type		Yes	Yes	
Botanical and common names		Yes	Yes	1. Please use a tree with a minimum 20' wide canopy instead of the Carpinus betula that is specified. It is a very narrow tree that doesn't get to 20' in width. 2. Please use a tree from the Woodland Replacement chart in place of the Gray Dogwood for the replacement trees, as the latter is a shrub, not a tree.
Type and amount of lawn		Yes	Yes	

Item	Required	Proposed	Meets Code	Comments
Cost estimate (LDM 2.t)	For all new plantings, mulch and sod as listed on the plan	No	No	<u>Need for Final Site Plans</u>
Planting Details/Info (LDM 2.i) – Utilize City of Novi Standard Details				
Canopy Deciduous Tree	Refer to LDM for detail drawings	Sheet with details (L3) not included in set.		
Evergreen Tree				
Shrub				
Perennial/ Ground Cover				
Tree stakes and guys. (Wood stakes, fabric guys)				
Tree protection fencing	Located at Critical Root Zone (1' outside of dripline)			
Other Plant Material Requirements (LDM 3)				
General Conditions (LDM 3.a)	Plant materials shall not be planted within 4 ft. of property line	No	Yes	
Plant Materials & Existing Plant Material (LDM 3.b)	Clearly show trees to be removed and trees to be saved.	Sheet 2224-EX	Yes	
Landscape tree credit (LDM3.b.(d))	Substitutions to landscape standards for preserved canopy trees outside woodlands/ wetlands should be approved by LA. Refer to Landscape tree Credit Chart in LDM	6 tree preservation credits taken – 3 for replacements, 3 for Haggerty Road greenbelt.		
Plant Sizes for ROW, Woodland replacement and others (LDM 3.c)	Canopy Deciduous shall be 3" and sub-canopy deciduous shall be 2.5" caliper. Refer to section for more details	Yes/No	Yes/No	1. Right of way canopy trees (street trees) should be 3" cal. Subcanopy trees can be 2-2.5" cal. 2. Please change the plant list for the deciduous trees to 3" to avoid confusion.
Plant size credit (LDM3.c.(2))	NA	No		
Prohibited Plants (LDM 3.d)	No plants on City Invasive Species List	None	Yes	
Recommended trees for planting under overhead utilities (LDM 3.e)	Label the distance from the overhead utilities	Yes	Yes	Trees within 15' of overhead lines are subcanopy trees spaced appropriately.

Item	Required	Proposed	Meets Code	Comments
Collected or Transplanted trees <i>(LDM 3.f)</i>		2 trees are shown as being transplanted on site.		1. 2 year warranty will be required for all transplanted trees. 2. If cost of transplanting trees is found to exceed the cost of new trees, new trees may be used, but please do not replace the pears with flowering pears as they are now prohibited species in Novi.
Nonliving Durable Material: Mulch <i>(LDM 4)</i>	<ul style="list-style-type: none"> ▪ Trees shall be mulched to 4" depth and shrubs, groundcovers to 3" depth ▪ Specify natural color, finely shredded hardwood bark mulch. Include in cost estimate. ▪ Refer to section for additional information 	Yes	Yes	In General Note #9, please replace peat moss with compost.

NOTES:

1. This table is a working summary chart and not intended to substitute for any Ordinance or City of Novi requirements or standards.
2. The section of the applicable ordinance or standard is indicated in parenthesis. For the landscape requirements, please see the Zoning Ordinance landscape section 5.5 and the Landscape Design Manual for the appropriate items under the applicable zoning classification.
3. Please include a written response to any points requiring clarification or for any corresponding site plan modifications to the City of Novi Planning Department with future submittals.

TRAFFIC REVIEW



AECOM
27777 Franklin Road
Southfield
MI, 48034
USA
aecom.com

Project name:
JSP17-0063 Speedway Revised PRO Concept
Traffic Review

From:
AECOM

Date:
August 14, 2018

To:
Barbara McBeth, AICP
City of Novi
45175 10 Mile Road
Novi, Michigan 48375

CC:
Sri Komaragiri, Lindsay Bell, George Melistas,
Theresa Bridges, Darcy Rechten, Hannah Smith

Memo

Subject: Speedway Revised PRO Concept Traffic Review

The revised PRO concept site plan was reviewed to the level of detail provided and AECOM **recommends approval** for the applicant to move forward with the condition that the comments provided below are adequately addressed to the satisfaction of the City.

GENERAL COMMENTS

1. The applicant, McBride Dale Clarion, is proposing plans to expand the existing building footprint, additional pump stations, and other site modifications of the Speedway Gas Station that is located on the southwest corner of the intersection of 14 Mile Road and Haggerty Road.
2. The site is currently zoned B-3; however, the applicant is proposing a planned rezoning overlay (PRO) to OS-T.
3. Both 14 Mile Road and Haggerty Road are under the jurisdiction of the Road Commission for Oakland County.
4. Summary of waivers/variances:
 - a. **The applicant is seeking a waiver to reduce the number of parking spaces from the 39 required to 38.**
 - b. **The applicant is seeking a waiver to reduce the required 960 SF of loading space to 540 SF with a potential of increasing to 700 SF.**
 - c. **The applicant is seeking a waiver for driveway spacing along 14 Mile Road.**
 - d. **The applicant is seeking a waiver for driveway width exceeding the standard 30 feet.**

TRAFFIC IMPACTS

1. AECOM performed an initial trip generation estimate based on the ITE Trip Generation Manual, 10th Edition, as follows:

ITE Code: 945 (Gasoline/Service Station with Convenience Market)
Development-specific Quantity: 12 existing gasoline pumps. 16 proposed gasoline pumps.
Zoning Change: B-3 to OS-T (PRO)

Trip Generation Summary				
	City of Novi Threshold	Existing Trips	New Trips	Net Additional Trips

AM Peak-Hour, Peak-Direction Trips	100	76	102	26
PM Peak-Hour, Peak-Direction Trips	100	86	114	28
Daily (One-Directional) Trips	750	2464	3286	822

- The number of trips does exceed the City’s threshold of more than 750 trips per day or 100 trips per either the AM or PM peak hour. AECOM recommends performing the following traffic impact study in accordance with the City’s requirements:

Traffic Impact Study Recommendation	
Type of Study	Justification
Rezoning Traffic Impact Study	The applicant is required to submit a rezoning traffic impact study (RTIS) to the PRO.

EXTERNAL SITE ACCESS AND OPERATIONS

The following comments relate to the external interface between the proposed development and the surrounding roadway(s).

- The applicant is proposing to relocate the existing driveways farther away from the intersection of 14 Mile Road and Haggerty Road.
- The applicant has provided compliant turning radii at each driveway; however, the driveway width exceeds the City’s standard for width (30 feet). **The applicant is requesting an administrative variance from the City due to 35 feet being the minimum width necessary to ensure that the fuel delivery truck can access the site.**
- The point of curvature for any driveway is not located within 17 feet of the right-of-way (ROW) of the intersection and complies with City standards.
- The applicant has proposed relocation of the driveway along Haggerty Road in addition to improvements to on Haggerty Road so that the driveway is not located within the existing taper.
 - The applicant should indicate the dimensions for the proposed acceleration lane and taper to the south of the proposed driveway on Haggerty Road.
- The applicant should include a “Road Work Ahead” (W20-1) sign north of 14 Mile Road on the Maintenance of Traffic Plan for the construction of the Haggerty Road improvements.
- The applicant should indicate sight distance in both directions at each driveway in accordance with Figure XIII-E of the City’s Code of Ordinances.
- The applicant should indicate corner clearance zones at both driveways in accordance with Sec. 11-216.b.1 in the City’s Code of Ordinances.
- The applicant has aligned the proposed driveway along 14 Mile Road with minimal offset from the existing driveway on the north side of 14 Mile Road.
- The applicant is seeking a waiver for the distance of the proposed driveway along 14 Mile Road to the driveway to the west of the site.**

INTERNAL SITE OPERATIONS

The following comments relate to the on-site design and traffic flow operations.

1. General Traffic Flow

- a. The applicant has provided fuel truck turning patterns throughout the site.
 - i. Confirm that the turning patterns of the fuel truck design vehicle are larger than or equal to those of a fire truck.
 - ii. Near the second dispensing station from the north, it appears as if a truck may not be able to maneuver around the corner should a car potentially be parked nearer the building on the west side of the gasoline pump as indicated by the car templates on the northernmost pump on the circulation plan.
- b. The applicant is requesting a waiver for the size and location of the loading zone.**
- c. The trash enclosure area is fully accessible and is not expected to interfere with parking operations.
- d. The proposed end islands are not in compliance with Section 5.3.12 of the City's Zoning Ordinance. The end island should be 3 feet shorter than the adjacent parking stall and be at least 10 feet wide. The outside radius of the end island should be 15 feet.
- e. The applicant should update the grading plan to include the gutter and top of curb/top of walk grades to enable the reviewer to confirm proposed curb heights throughout,

2. Parking Facilities

- a. The City requires one parking space per each fuel dispensing stand and one parking space for each 200 square feet of usable building space which results in a total of 39 required spaces. The applicant should revise the required parking section on sheet 2224-CS to reflect 39 spaces required.
- b. The applicant has provided 38 total parking spaces including 20 standard parking spaces, 2 ADA spaces and 16 dispenser parking spaces. **The applicant is seeking a waiver for the reduced number of parking spaces.**
- c. The applicant has proposed 19 foot long parking spaces with a seven inch curb. The applicant should reduce the curb height to six inches to be compliant with City standards. Reference Section 5.3.2 of the City's Zoning Ordinance for more clarification. Note E-9 on sheet 2224-CS refers to type F-4 curb which is six inches, however, the detail on sheet 2224-CS1 is type C-4 which is seven inches.
- d. The proposed barrier free parking space dimensions are in compliance with ADA standards.
- e. The applicant is required to provide two bicycle parking spaces, and has provided two spaces.
 - i. Bicycle parking calculations should be included in the parking calculations table.
 - ii. The applicant provided a detail of the inverted "U" design bicycle rack, which is in compliance with City standards.
 - iii. The applicant should provide a detailed layout of the bicycle parking spaces to ensure maneuverability. Please reference Section 5.16 of the City's Zoning Ordinance.

3. Sidewalk Requirements

- a. The applicant is generally proposing 5' wide sidewalks throughout the site. The applicant should note that, where a 17' parking space abuts a sidewalk, the sidewalk is required to be a minimum of 7' wide to provide a 2' vehicle overhang and 2' clear walkway. Additionally, a 6' wide paved route shall be provided between the roadway and the bicycle parking area. The applicant should further review these requirements and update as applicable.
- b. The applicant should provide details for the proposed sidewalk ramps.
- c. Sidewalks along Haggerty Road and 14 Mile Road are proposed to be six feet wide, which is in compliance with the City's Non-Motorized Master Plan.
- d. The applicant should provide dimensions for the sidewalk offset from the roadway.

SIGNING AND STRIPING

- 1. All on-site signing and pavement markings shall be in compliance with the Michigan Manual on Uniform Traffic Control Devices (MMUTCD).
- 2. The applicant should provide the following notes and details on future plans.
 - a. All roadside signs should be installed two feet from the face of the curb to the near edge of the sign.

- b. Single signs with nominal dimensions of 12" x 18" or smaller in size shall be mounted on a galvanized 2 lb. U-channel post. Multiple signs and/or signs with nominal dimension greater than 12" x 18" shall be mounted on a galvanized 3 lb. or greater U-channel post as dictated by the weight of the proposed signs.
 - c. Traffic control signs shall use the Federal Highway Administration (FHWA) Standard Alphabet series.
 - d. Traffic control signs shall have High Intensity Prismatic (HIP) sheeting to meet FHWA retroreflectivity requirements.
3. The applicant should provide signing quantities and details, including size, MMUTCD designation and post, in future submittals.
 4. The speed limit sign on sheet 2224-SS should be 45 MPH for Haggerty Road and not 50 MPH.
 5. The applicant should propose a stop sign (R1-1) at the driveway on 14 Mile Road.
 6. The applicant has only labeled one (1) accessible parking sign, however, a sign is required for both accessible parking spaces.
 7. The applicant should provide notes and details related to proposed pavement markings.
 1. The applicant should update the Note F-3 on sheet 2224-CS to indicate white striping for standard spaces. Blue may be used for accessible parking spaces. Where a standard parking space is located next to an accessible parking space a white line shall abut a blue line.
 2. The international symbol for accessibility shall be white or white with a blue background and white border. The applicant should provide a detail.
 3. Provide details for any proposed pavement marking arrows.
 8. The applicant should provide crosswalk marking details (color, width, spacing, etc.) in future submittals.
 9. The applicant should indicate proposed loading zone pavement markings in future submittals.
 10. The applicant indicates two (2) right turn arrow pavement markings on sheet 5 of the Haggerty Road improvement plans and indicates two (2) right turn arrow pavement markings with "Only" legends on sheet 7. The applicant should make the sheets consistent noting that only one (1) set of arrow/only markings is required due to the short distance of the right turn lane.
 11. The applicant should include a distance between the right turn arrow and "Only" legend on sheet 7 along with a note that all pavement markings shall be in compliance with the MMUTCD.

Should the City or applicant have questions regarding this review, they should contact AECOM for further clarification.

Sincerely,

AECOM



Maureen N. Peters, PE
Senior Traffic/ITS Engineer



Paula K. Johnson, PE
Senior Traffic Engineer



AECOM
27777 Franklin Road
Southfield
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USA
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Project name:
JSP17-0063 Speedway Rezoning Traffic Impact
Study Review

From:
AECOM

Date:
August 14, 2018

To:
Barbara McBeth, AICP
City of Novi
45175 10 Mile Road
Novi, Michigan 48375

CC:
Sri Komaragiri, Lindsay Bell, George Melistas,
Theresa Bridges, Darcy Rechten, Hannah Smith

Memo

Subject: Speedway Rezoning Traffic Impact Study (RTIS) Review

The rezoning traffic impact study was reviewed to the level of detail provided and AECOM **recommends denial** for the RTIS on the basis that requirements of the Site Plan and Development Manual for a RTIS are not complete, and under the condition that the comments provided below are adequately addressed to the satisfaction of the City; however, the AECOM recommends approval for the applicant to move forward with the site plan, based upon traffic review comments under a separate letter.

GENERAL COMMENTS

1. The applicant consulted CESO, Inc. to perform a rezoning traffic impact study for the proposed redevelopment of the Speedway site located on the south side of 14 Mile Road, west of Haggerty Road.
2. Haggerty Road and 14 Mile Road are under the jurisdiction of the Road Commission for Oakland County (RCOC) and experiences an average traffic volume of 15,900 vehicles per day.
3. The site is currently zoned B-3, and the applicant is requesting an OS-T planned rezoning overlay.
4. The rezoning study presents a trip generation comparison of the existing facility with 12 fueling stations to the proposed facility with 16 fueling stations.
5. The study presents available average daily traffic (ADT) data as gathered from the Southeast Michigan Council of Governments (SEMCOG) and notes that the counts were available for 12-05-07, but then lists the count date as 12-05-17. The preparer should clarify whether the traffic data was from 2007 or 2017. Additionally, the SEMCOG data should be included in an appendix.

TRIP GENERATION

1. The study examines the trip generation under both existing and proposed site conditions, using the ITE Trip Generation Manual, 9th Edition.
 - a. The existing Speedway facility with 12 fueling stations generates 122 trips during the AM peak period, 162 during the PM peak period and 1,954 daily trips.
 - b. The proposed Speedway facility with 16 fueling stations is expected to generate 162 trips during the AM peak period, 216 trips during the PM peak period, and 2,604 daily trips.
 - c. The net increase is 40 trips during the AM peak period, 54 trips during the PM peak period, and 650 daily trips.

2. The trip generation section shall also compare trip generation of typical uses permitted under the requested zoning district with those in the existing zoning district, as required in the Site Plan and Development Manual.
3. The revised RTIS should reference the latest version of the ITE Trip Generation Manual, 10th Edition.

CONCLUSIONS AND RECOMMENDATIONS

1. The preparer should update the RTIS to include a comparison of trip generation estimates for typical uses permitted under the existing zoning and proposed zoning, in addition to the proposed development. It is recommended that the ITE Trip Generation Manual, 10th Edition be used for trip generation calculations.
 - a. As part of the rezoning trip generation comparison, the preparer should provide the methodology for how typical land uses were determined and how land use sizes were calculated in order for the reviewer to properly assess the traffic impacts of the rezoning.
2. The proposed redevelopment of the Speedway site is expected to generate a minimal amount of net new trips during the peak periods, and therefore, the impact of the redevelopment is not expected to diminish roadway operations below acceptable levels.

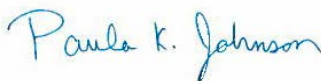
Should the City or applicant have questions regarding this review, they should contact AECOM for further clarification.

Sincerely,

AECOM



Maureen N. Peters, PE
Senior Traffic/ITS Engineer



Paula K. Johnson, PE
Senior Traffic Engineer

FAÇADE REVIEW



August 15, 2018 (Rev 9/7/18)

Façade Review Status Summary:

Approved, Section 9 Waivers Recommended

City of Novi Planning Department
 45175 W. 10 Mile Rd.
 Novi, MI 48375- 3024

Re: **FACADE ORDINANCE REVIEW**
Speedway Store 2224, Revised PRO Concept Plan, JSP17-63
 Façade Region: 1, Zoning District: B-3

Dear Ms. McBeth;

The following is the Façade Review for the building and canopy located at 31275 Haggerty Rd. This review is based on the drawings prepared by Speedway Engineering, dated 6/4/18. Materials in non-compliance, if any, are highlighted in bold. The applicant is proposing demolishing the existing building and canopy and construction a new larger building and canopy.

Building	East (Front)	South	West	North	Façade Ordinance Section 2520 Maximum
Brick (Quick Brick, Heritage Blend)	42%	65%	72%	60%	100% (30% Minimum)
Asphalt Shingles (Color unknown)	50%	35%	16%	40%	25%
Flat Metal Panel (Roof Screen, Silver)	0%	0%	12%	0%	50%
EIFS (Color unknown)	8%	0%	0%	0%	25%

Canopy	East (Front)	South	West	North	Façade Ordinance Section 2520 Maximum
Brick (Quick Brick, Heritage Blend)	31%	43%	31%	43%	100% (30% Minimum)
Flat Metal Panel (Fascia, color unknown)	69%	57%	69%	57%	50%

As shown above the percentage of Asphalt Shingles on the building and the percentage of Flat Metal Panels on the canopy exceed the maximum amount allowed by the Ordinance. In the case of the Asphalt Shingles, the roof is proportional to and enhances the overall design of the building. In the case of the Flat Metal Panels on the canopy we believe that the overage is justified by the fact that the canopy consists of the maximum percentage of Brick that is feasible due to relative proportions of the columns and the fascia.

With respect to Section 5.15.12 of the Ordinance which requires that 30% of the façade of the canopy be a material identical to the primary material used on the building, the percentage of Brick on the canopy (31% minimum) meets this requirement.

Colors - The proposed colors for the canopy fascia, EIFS, Asphalt Shingles and other materials are not clearly indicated. The proposed “bright red” color proposed for the building gutters may be inconsistent with Section 5.15.2 of the Ordinance which prohibits dissonant or intense colors. If similar colors are proposed for the canopy fascia or other features, a similar concern would apply. A sample indicating the type and color of all proposed façade materials should be provided not less than 5 days prior to the Planning Commission meeting to verify compliance.

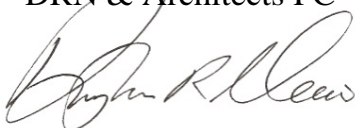
Recommendation – For the reasons stated above, it is our recommendation that the building and canopy are consistent with the intent and purpose of the Façade Ordinance and that a Section 9 Waiver be granted for the overage of Asphalt Shingles on the building and the overage of Flat Metal Panels on the canopy. This recommendation is contingent upon submission of sample board as required by Section 5.15.4.D of the Ordinance, illustrating carefully coordinated colors for all façade materials.

Notes to the Applicant:

1. It should be noted that all roof top equipment must be screened from view from all vantage points both on-site and off-site using materials in compliance with the Façade Ordinance.
2. It should be noted that all proposed signs are not regulated by the Façade Ordinance and must comply with the City’s Sign Ordinance.
3. Inspections – The Façade Ordinance requires inspection(s) for all projects. Materials displayed on the approved sample board (in this case the adjacent existing material) will be compared to materials to be installed. It is the applicant’s responsibility to request the inspection of each façade material at the appropriate time. Inspections may be requested using the Novi Building Department’s Online Inspection Portal with the following link. Please click on “Click here to Request an Inspection” under “Contractors”, then click “Façade”. <http://www.cityofnovi.org/Services/CommDev/OnlineInspectionPortal.asp>.

If you have any questions regarding this review, please do not hesitate to call.

Sincerely,
DRN & Architects PC



Douglas R. Necci, AIA

FIRE REVIEW



August 1, 2018

TO: Barbara McBeth- City Planner
Sri Ravali Komaragiri- Plan Review Center
Lindsay Bell-Plan Review Center
Hannah Smith-Planning Assistant

RE: Speedway #2224 Concept Plan

PSP# 18-0112

CITY COUNCIL

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Bob Gatt

Mayor Pro Tem
Dave Staudt

Andrew Mutch

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City Manager
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David E. Molloy

Director of EMS/Fire Operations
Jeffery R. Johnson

Assistant Chief of Police
Erick W. Zinser

Assistant Chief of Police
Scott R. Baetens

Project Description:

Rebuild Speedway Gas Station at 14 mile and Haggerty Rds.

Comments:

MEETS FIRE DEPARTMENT STANDARDS

Recommendation:

APPROVED

Sincerely,

Kevin S. Pierce-Fire Marshal
City of Novi – Fire Dept.

cc: file

Novi Public Safety Administration
45125 Ten Mile Road
Novi, Michigan 48375
248.348.7100
248.347.0590 fax

cityofnovi.org

APPLICANT RESPONSE LETTER



August 31, 2018

Ms. Lindsay Bell
Planner
City of Novi
45175 Ten Mile Road
Novi, Michigan 48375

Via Overnight Mail

RE: JSP17-63 – Speedway #2224 – 31275 Haggerty Road – Comment Response Letter

Dear Sri:

The following responses are provided to the comments received from the City of Novi – Plan Review Center Report dated August 16, 2018 related to the proposed expansion and reconstruction of Speedway #2224 at 31275 Haggerty Road, Novi, Michigan. The letters addressing comments from the Landscape Plan Reviewer and Engineering Plan Reviewer are provided under separate cover.

Ordinance Deviations

9. Deviation in minimum width of the parking lot island at the south edge of parking is insufficiently wide (8 feet). This deviation is not supported by staff.
Response: Members of the Speedway team, the City’s Landscape Architect, and a representative of City Planning had a conference call on August 21, 2018 to discuss the landscape comments. During the call, Speedway agreed to increase the island in the southwest corner of the parking area (near the access drive to the detention basin) to 10’ The island on the southeast corner (near the driveway) cannot be widened due to producing a greater driveway offset with the opposing driveway across Haggerty Road. This island will be planted with a tree. This solution was agreeable to parties.
10. Deviation in total parking lot landscape area provided (2456 sf is required, 1916 sf is proposed). This deviation is not supported by staff.
Response: This issue was discussed during the conference call on August 21, 2018. It was stated the City’s Landscape Architect would support a deviation request if the landscape islands near the access drives to the detention pond were widened. Speedway agreed to these improvements.
11. Deviation to allow parking lot perimeter trees more than 15 feet from the back of curb. This deviation is not supported by staff.
Response: Speedway agrees to plant the trees within 15’ of the back of curb.
12. Deviation to allow 7-inch curbs rather than the 6-inch City standard. This deviation is not supported by staff.
Response: Speedway agrees to construct 6” curbs.
13. Deviation to allow end islands that are not 3 feet shorter than the adjacent parking stalls.

This deviation is not supported by staff.

Response: Speedway will install a landscape islands as required by code, the City Landscape Architect, and the City Engineer.

Planning Review Chart (To Be Addressed Prior To Approval of Preliminary Site Plan)

Responses to the comments received in the Planning Review Center Report dated August 16, 2018 are provided in bold.

1. Required parking and setback area shall be landscaped per Sec. 5.5.3. See landscape letter for additional details
Response: Please see the landscape response letter from Weihe Engineers dated August 23, 2018.
2. Provide barrier free sign locations at the time of Preliminary Site Plan submittal.
Response: The sign locations will be detailed on the Preliminary Site Plan submittal.
3. Deviations related to the loading area (size and location) have been requested as part of the application.
4. Photometric plan should be provided at the time of Final Site Plan submittal.
Response: Speedway will comply.
5. Provide one more ADA/ Barrier free parking space
Response: An additional barrier free space will be added to the site plans.
6. Provide parcel numbers on the ALTA plans.
Response: The ALTA plan will be revised to include the parcel number.
7. Provide and post rezoning signage as required.
Response: The rezoning signage is installed and has been re-secured.
8. Applicant is asked to provide Noise Impact Statement or request a deviation in PRO agreement
Response: Speedway is requesting a deviation for the Noise Impact Statement.
9. Please modify the plan at the time of Preliminary Site Plan Submittal to comply with this standard. (Lighting 5.7.3.E)
Response: Speedway will provide lighting plans and details as required.

Landscape Plan Review Comments – Please see the landscape response letter from Weihe Engineers dated August 23, 2018.

Engineering Plan Review Comments – Please see the Engineering Response letter dated August 31, 2018 responding to the comments.

Speedway Concept Traffic Review (by AECOM)

External Site Access and Operations:

- The wider driveways are proposed to allow the fuel delivery truck to access the site without running over landscape areas. The driveways are designed to be wide enough to allow the fuel delivery truck to exit the site without crossing into opposing traffic.
- Site distance, corner clearance zones, and spacing distances will be provided on the plans for the next submittal.
- The widths of the driveway are necessary to accommodate the fuel truck delivery routes.
- A traffic maintenance plan and dimensions on the taper lane will be provided during the Preliminary and Final Site Plan reviews.

Internal Site Operations:

1. The proposed fuel delivery truck is larger than most fire trucks. Truck turns were completed on the proposed layout and it has been determined the proposed fuel delivery truck and vehicles the same size or smaller can access the site.
2. Speedway will review the plans to ensure the landscape islands are consistent with the zoning requirements and comments from Landscape, Engineering, and Traffic Engineering.
3. Additional dimensions and details will be provided on the next plan sets. Dimensions of curbs will be adjusted to 6" per the City's standard.
4. All pavement markings will comply with the proposed requirements.

Rezoning Traffic Study (RTIS) Review:


- A copy of the RTIS memorandum was provided to staff for review on August 20, 2018. If additional details are needed, Speedway will coordinate these with proper City authority.

Speedway Concept Architectural Review (by DRN & Associates)

- All roof top equipment will be screened from view.
- Speedway will coordinate sign review with the City accordingly.
- Speedway will request inspections of the façade per the requirements of the City.

Please review the responses and contact me immediately if additional information is needed. Thank you for your continued assistance with this project. Our team looks forward to re-presenting to the City of Novi Planning Commission on September 12, 2018.

Sincerely,



Robert C. Sweet

Enclosures

cc: Jake Miller, Speedway
Maggie Noschang, Speedway
MDC #3675

RE: **JSP17-0063** – Speedway - Rebuild - PRO

August 31, 2018

Dear Ms. Darcy N. Rechten:

Please see the engineering review comments and responses below.

Property Characteristics

- Site Location: S. of 14 Mile Rd. and W. of Haggerty Rd.
- Site Size: 2.04 acres
- Plan Date: 05/23/2018
- Design Engineer: Speedway Engineering & Construction Department

Project Summary

- Construction of an approximately 4,608 square-foot retail building and associated parking. Site access would be provided by new curb cuts onto 14 Mile Rd. and Haggerty Rd. replacing the existing curb cuts closer to the intersection. The 5/6-foot wide sidewalks along the 14 Mile Rd. and Haggerty Rd. frontages would be completed.
- Water service would be provided by 2-inch domestic lead from the existing 8-inch water main stub on the south side of 14 Mile Rd.
- Sanitary sewer service would be provided a 6-inch sanitary lead from the existing sanitary sewer on the south side of 14 Mile Rd.
- Storm water would be collected by a single storm sewer collection system and detained in an on-site basin.

Recommendation:

Approval of the Concept Plan and the Concept Storm Water Management Plan is recommended.

Comments:

The Concept Plan meets the general requirements of Chapter 11 of the Code of Ordinances, the Storm Water Management Ordinance and/or the Engineering Design Manual, with the following review comments to be addressed with future submittals:

Additional Comments (to be addressed with Preliminary and Final Site Plan submittals): General

1. Provide a minimum of two ties to established section or quarter section corners. **Refer to ALTA survey date 12-6-17.**

2. Right-of-way permits will be required from the City of Novi and Road Commission for Oakland County. **Noted and will apply for.**

3. Provide the City's standard detail sheets for water main (5 sheets-rev. 02/16/2018), sanitary sewer (3 sheets- rev. 02/16/2018), storm sewer (2 sheets- rev. 02/16/2018), and paving (2 sheets-rev. 03/05/2018) at the time of the Stamping Set submittal. These details can be found on the City's website at this location: <http://cityofnovi.org/Government/City-Services/Public-Services/Engineering-Division/Engineering-Standards-and-Construction-Details.aspx> **Will include during the Stamping Set submittal**

4. Soil borings shall be provided for a preliminary review of the constructability of the proposed development. Borings identifying soil types, and groundwater elevation should be provided at the time of Preliminary Site plan. **Refer to geotech report dated 5-13-16.**

5. Provide a sign table listing the quantities of each sign type proposed for the development including accessible parking signs. Provide a note along with the table stating all signage will comply with the current MMUTCD standards. **Refer to signage table on 2224-SS. ADA signs will be added to the table.**

Provide a construction materials table on the Utility Plan listing the quantity and material type for each utility (water, sanitary and storm) being proposed. **Refer to materials table on sheet 2224-CU. Table will be updated to reflect the correct quantities.**

6. Provide a construction materials table on the Utility Plan listing the quantity and material type for each utility (water, sanitary and storm) being proposed. **Duplicate comment #6.**

7. Provide a note stating if dewatering is anticipated or encountered during construction a dewatering plan must be submitted to the Engineering Department for review. **Refer to note on sheet 2224-CU.**

Water Main

8. The proposed water lead is connecting to a water main in the Commerce Township water distribution system. Contact Commerce Township for review and any additional requirements. **Proposed plans will be routed through the Commerce Township water distribution system.**

Sanitary Sewer

9. Indicate invert elevations of sanitary sewer. **Refer to sheet 2224-CU.**

Storm Sewer

10. In situations where the minimum cover cannot be achieved, Class V pipe must be used with an absolute minimum cover depth of 2 feet. An explanation shall be provided where the cover depth

cannot be provided. **All pipes are currently designed with a minimum cover of greater than 3 feet except for pipe 6. The first 20' only has 2' of cover. This was unavoidable due to the grading of the site. Refer to 2224-CU**

11. Indicate ADS High Performance or RCP class IV or class V pipe for storm sewer. Ensure connections to structures are per pipe manufacturer's recommendation. **Refer to sheet 2224-CU for piping material callouts.**
12. Storm sewer in the R.O.W. must be RCP, class IV or class V. **Refer to sheet 2224-CU for piping material callouts.**
13. Provide profiles for all storm sewer 12-inches or larger. **Refer to sheets 2224-CU-1 through 2224-CU-2.**
14. Provide storm sewer sizing calculations. **Storm sewer calculations will be provided with the next submittal.**
15. Label all inlet storm structures on the profiles. Inlets are only permitted in paved areas and when followed by a catch basin within 50 feet. **Refer to sheet 2224-CU.**
16. Label the 10-year HGL on the storm sewer profiles, and ensure the HGL remains at least 1-foot below the rim of each structure. **HGL lines will be added to the storm sewer profiles.**
17. Provide a four-foot deep sump and an oil/gas separator in the last storm structure prior to discharge to the storm water basin. **Refer to the Aqua swirl detail on 2224-CU3**
18. Provide a schedule listing the size, inverts and other relevant information for each proposed storm structure on the utility plan. Round castings shall be provided on all catch basins except curb inlet structures, as described on storm sewer standard details and notes. **Refer to sheet 2224-CU. All catch basins will be modified to be either 4' or 5' in diameter as noted in the city's standard storm sewer details.**

Storm Water Management Plan

19. The Storm Water Management Plan for this development shall be designed in accordance with the Storm Water Ordinance and Chapter 5 of the new Engineering Design Manual. Refer to section 5.6.2 for pond geometry and location of inlet and outlet requirements. **Noted. Refer to sheet 2224-SWMP.**
20. Provide a cross-section for the proposed basin outlet. **Refer to outlet control structure detail on sheet 2224-CU3.**
21. Provide manufacturers details and sizing calculations for the pretreatment structure. Provide drainage area and runoff coefficient calculations specific to the area tributary to the treatment structure. The treated flow rate should be based on the 1-year storm event intensity (~1.6 In/Hr), resulting in a flow rate of approximately 2.35 CFS. Higher flows shall be bypassed. **See Aqua Swirl detail on sheet 2224-CU3. Sizing calculations will be provided on this sheet for this structure.**

22. Provide an access easement for maintenance over the storm water detention system and the pretreatment structure from the public road right-of-way, also known as a Storm Drainage Facility Maintenance Easement Agreement. **Refer to 2224-CS.**

23. Provide release rate calculations for the three design storm events (first flush, bank full, 100-year). **Refer to sheet 2224-CU3 for pond release rate calculations.**

24. Clearly show the emergency overland flow route for the proposed basin. **Emergency overflow route will be added to sheet 2224-CG.**

Paving & Grading

25. The end islands shall conform to the City standard island design, or variations of the standard design, while still conforming to the standards given in Section 2506 of Appendix A of the Zoning ordinance (i.e. 2' minor radius, 15' major radius, minimum 8' wide, 3' shorter than adjacent 19' stall). **Refer to 2224-CS. Parking Islands on will be modified to be 10' wide to comply with the landscape requirements.**

26. Revise the grading plan to show limits of grading south beyond end of sidewalk with maximum 4:1 (25%) slope. **25% slope will be added to sheet 2224-CG for the limits of grading.**

27. Provide signage indicating the end of sidewalk. **Refer to 2224-SS.**

28. Refer to City standard paving details for pavement cross sections. Any alternative pavement sections proposed must be consistent with the pavement mixes shown in standard details. **Standard city details will be added with the next submission.**

29. Refer to standard paving detail sheets for standard curb details. **See comment above.**

30. Provide top of curb/walk and pavement/gutter grades to indicate height of curb adjacent to parking stalls or drive areas. **Refer to sheet 2224-CG1.**

31. The proposed driveway width of 35 feet exceeds the standard commercial driveway width. **A variance from the Design and Construction Standards for a driveway width within the allowable range shown in Figure IX.1 can be supported.**

32. Detectable warning plates are required at locations of road crossings and other crossing locations of high traffic volume. Barrier-free ramps shall comply with current MDOT specifications for ADA Sidewalk Ramps. Provide the latest version of the MDOT standard detail for detectable surfaces. **Detail will be added to 2224 – CS1. Note E10 on 2224 – CS will reference this MDOT specs for ADA sidewalk ramps.**

33. Label specific ramp locations on the plans where detectable warning surface is to be installed. **Refer to sheet 2224-CS.**

34. Verify the slopes along the ingress/egress routing to the building from the barrier-free stalls comply with Michigan Barrier-Free regulations. Refer to sheet 2224-CG – for grading of barrier-free stalls. **Refer to sheet 2224-CS1 for dimensions of barrier-free stalls.**

Off-Site Easements

35. Any off-site easements anticipated must be executed by both parties prior to final approval of the plans. Drafts of the easement shall be submitted at the time of the Preliminary Site Plan submittal for review, and shall be approved by the City prior to final signatures.

a. A temporary grading easement is required from the property owner to the south.

If any off site easements are needed, they will be submitted at the time of the Preliminary Site Plan submittal for the city to review and approve.

The following must be submitted at the time of Preliminary Site Plan submittal:

36. A letter from either the applicant or the applicant's engineer highlighting the changes made to the plans addressing each of the comments listed above and indicating the revised sheets involved should be submitted with the Preliminary Site Plan.

The following must be submitted at the time of Final Site Plan submittal:

37. An itemized construction cost estimate must be submitted to the Community Development Department at the time of Final Site Plan submittal for the determination of plan review and construction inspection fees. This estimate should only include the civil site work and not any costs associated with construction of the building or any demolition work. The cost estimate must be itemized for each utility (water, sanitary, storm sewer), on-site paving, right-of-way paving (including proposed right-of-way), grading, and the storm water basin (basin construction, control structure, pretreatment structure and restoration).

38. A draft of the off-site temporary grading permit and associated exhibit(s) for review and approval by City of Novi Engineering and Legal staff.

39. Payment of legal fees (amount to be determined) to be held in escrow and refunded as determined at project close out.

The following must be submitted at the time of Stamping Set submittal:

40. A draft copy of the maintenance agreement for the storm water facilities, as outlined in the Storm Water Management Ordinance, must be submitted to the Community Development Department. Once the form of the agreement is approved, this agreement must be approved by City Council and shall be recorded in the office of the Oakland County Register of Deeds.

41. Executed copies of any required off-site easements must be submitted to the Community Development Department.

The following must be addressed prior to construction:

42. A pre-construction meeting shall be required prior to any site work being started. Please contact Sarah Marchioni in the Community Development Department to setup a meeting (248-347-0430).
43. A City of Novi Grading Permit will be required prior to any grading on the site. This permit will be issued at the pre-construction meeting. There is no fee for this permit.
44. A Soil Erosion Control Permit must be obtained from the City of Novi. Contact Sarah Marchioni in the Community Development Department (248-347-0430) for forms and information.
45. A permit for work within the right-of-way of 14 Mile Rd. and Haggerty Rd. must be obtained from the City of Novi. The application is available from the City Engineering Division and should be filed at the time of Final Site Plan submittal. Please contact the Engineering Division at 248-347-0454 for further information.
46. A permit for work within the right-of-way of 14 Mile Rd. and Haggerty Rd. must be obtained from the Road Commission for Oakland County. Please contact the RCOC (248-858-4835) directly with any questions. The applicant must forward a copy of this permit to the City. Provide a note on the plans indicating all work within the right-of-way will be constructed in accordance with the Road Commission for Oakland County standards.
47. Construction Inspection Fees to be determined once the construction cost estimate is submitted must be paid prior to the pre-construction meeting.
48. Material certifications must be submitted to Spalding DeDecker for review prior to the construction of any utilities on the site. Contact Ted Meadows at 248-844- 5400 for more information.
49. A storm water performance guarantee, equal to 1.2 times the amount required to complete storm water management and facilities as specified in the Storm Water Management Ordinance, must be posted with Community Development.
50. A street sign financial guarantee in an amount to be determined (\$400 per traffic control sign proposed) must be posted with Community Development.

August 23, 2018

Mr. Rick Meader
Novi Landscape Architect
45125 W. Ten Mile Road
Novi, Michigan 48375
(248) 348-7100

RE: Speedway at 14 Mile & Haggerty JSP17-63 with PRO Rezoning 18.720

Dear Mr. Meader,

This letter is in response to your comment email dated August 16, 2018 for the above referenced project. We have prepared the following responses to the plan review comments listed below.

Deviations from Ordinance requirements:

- Comment: Parking lot island at the south edge of parking is insufficiently wide (8 feet). This deviation is not supported by staff.*

Response: Speedway will modify the island to be 10' wide. Based on conversations with Rick Meader on 8/21, only the East island will be modified due to having a tree in the island.
- Comment: Insufficient total parking lot landscape area is provided (2456 sf is required, 1916sf is provided). This deviation is not supported by staff.*

Response: Per conversations with Rick Meader on 8/21, This will be supported if the island was increased to 10' wide (see comment #1)
- Comment: Many required parking lot perimeter trees are not proposed within 15 feet of the back of curb. This deviation is not supported by staff.*

Response: Trees will be shifted to be within the 15' back of curb.

Existing Elements

- Comment: Existing and proposed overhead and underground utilities, including hydrants. (LDM 2.e.(4))
Existing and proposed utilities are shown on landscape plans.*

Response: Noted.

1. *Comment: Existing Trees and Tree Protection (Sec 37 Woodland Protection, Preliminary Site Plan checklist #17 and LDM 2.3 (2))
All existing trees, tree removals and trees to be saved are shown on plans.*

Response: Noted.

2. *Comment: Tree protection fencing, and fencing details have been provided.*

Response: Noted.

3. *Comment: Four 36" trees are being removed so 16 replacement credits are required.*

Response: Noted.

Landscaping Requirements:

Adjacent to Public Rights-of-Way – Berm (Wall) & Buffer (Zoning Sec. 5.5.3.B.ii and iii)

1. *Comment: Twenty-foot greenbelt and berms provided meet requirements.*

Response: Noted.

2. *Comment: 4 canopy or large evergreen trees are required per the ordinance and city clear vision zones for each frontage. 4 new trees are provided on each.*

Response: Noted.

3. *Comment: 7 subcanopy trees and 14 shrubs are required and are provided along each frontage. More than the required number of shrubs are provided along 14 Mile Road, unless some are being used to count toward the foundation landscaping. If that is the case, please quantify the area, show the SF on the plan and add it to the calculation.*

Response: Noted.

Street Tree Requirements

1. *Comment: Six trees are required along each road, or 9 subcanopy trees along Haggerty due to the overhead lines. See the landscape chart for detailed calculations.*

Response: Noted.

2. *Comment: The extra trees can be removed from the plan if desired.*

Response: Trees will be removed to meet code.

Parking Lot Landscaping

1. *Comment:* 2456sf of interior landscape space is required, 1916sf is provided. The deficiency is a landscape deviation. Adding extra trees to compensate for the discrepancy is not an available option.

Response: Per conversations with Rick Meader on 8/21, This will be supported if the island was increased to 10' wide (see comment #1)

2. *Comment:* Please see the landscape chart for detailed calculations.

Response: Noted.

3. *Comment:* Interior parking lot trees cannot be double-counted as perimeter trees, and vice versa. Please use the attached image to help assign and add trees in order to meet the requirements and avoid having deviations. Please note, except in the case of the trees near the snow deposit areas, all parking lot trees need to be inside of or within 15 feet of the curb to count toward those requirements.

Response: Trees will be re-labeled based on recommendations.

Parking Lot Perimeter Landscaping

1. *Comment:* See above, and consult the landscape chart for detailed information.

Response: Noted.

Storm Basin Landscaping

1. *Comment:* All required detention basin landscaping is provided.

Response: Noted.

2. *Comment:* Please make the seed mix more legible.

Response: This will be updated to be more legible.

Transformer/Utility Box and Fire Hydrant Plantings (LDM 1.3 from 1-5 Zoning Sec. 5.5.3C.ii.d

1. *Comment:* Please use a taller plant than globe arborvitae or use a 36" min. height at

planting. The shrubs used should reach and maintain a height at least as tall as the utility box it is screening.

Response: A taller variety such as Arborvitea ‘ Bergmans’ Gold will be selected to meet code.

Building Foundation Landscaping (Zoning Sec 5.5.3D)

1. *Comment:* Please label clearly as foundation landscaping areas to be counted toward that total.

Response: Each area is labeled currently as “Foundation Area 1, 2, etc.) Will label more clearly (darkening up the label?)

2. *Comment:* A landscape waiver is required for foundation areas not planted at the building foundation. This will be supported by staff if correct total area is provided. It appears that the area heavy in shrubs near 14 Mile could be counted to make up the difference.

Response: It appears we can add more landscape to the NE of the building meeting code.

Other Requirements

1. *Comment:* Plant list, Notations and Details (LDM 2.h and t.) All have been provided satisfactorily.

Response: Noted.

2. *Comment:* The detail sheet was not included with the set. Please include all details specified in the last review letter.

Response: Noted.

3. *Comment:* Cost estimates for Proposed Landscaping (LDM 2.t.) Cost estimates will be needed for Final Site Plans.

Response: Noted.

4. *Comment:* Irrigation (LDM 1.a.(1)(e) and 2.s)
A system for providing water for plant establishment and long-term survival is required. This can be an irrigation system or use of xeriscaping or other drought-tolerant plants. If the latter is to use, a

description of how the plants will be watered to become established, and the species' watering requirements needs to be provided.

Response: Speedway will evaluate using an irrigation system.

5. *Comment: Proposed topography. 2' contour minimum (LDM 2.e.(1))
Please show the greenbelt contours on the landscape plans.*

Response: Will add contours on the Landscape plan.

6. *Comment: Snow Deposit (LDM.2.q.)
Snow deposit areas have been noted on the plans.*

Response: Noted.

7. *Comment: Corner Clearance (Zoning Sec 5.9)
Required corner clearances are provided.*

Response: Noted.

Landscape Review
Deviations from Ordinance Requirements

1. *Comment: Parking lot island at south entrance is insufficiently wide (8 feet). This deviation is not supported by staff.*

Response: This will be modified to be 10'.

2. *Comment: Insufficient total parking lot landscape area is provided (2456 sf is required, 1916sf is provided). This deviation is not supported by staff.*

Response: Per recent conversations staff will support if the item in #1 is addressed (10' wide island).

3. *Comment: Many required parking lot perimeter trees are not proposed within 15 feet of the back of curb. This deviation is not supported by staff.*

Response: These will be moved.

Landscape Plan Requirements (LDM (2))

1. *Comment: Sealed by LA (LDM 2.g.), Requires original signature
Need for Final Site Plan*

Response: Noted.

2. *Comment:* Existing plant material/Existing woodlands or wetlands (LDM 2.e.(2))
- Gray dogwood is a shrub, not a tree, and can't be counted as a replacement tree. Please use tree species from the attached Woodland Tree Replacement Chart.*

Response: A few Oak Species will be used which will be selected off of the Tree Replacement Chart.

3. *Comment:* Proposed grading. 2' contour minimum (LDM.2.e (1))
Provide proposed contours at 2' interval
- Please show greenbelt berms on Landscape Plan.*

Response: Will show contours.

General (Zoning Sec 5.5.3.C.ii)

1. *Comment:* Parking lot islands;
- A minimum of 200 SF to qualify
 - Minimum of 200 sf/tree planted on an island
 - 6" curbs
 - Islands minimum width 10' BOC to BOC

Please increase southern landscape island's width to at least 10' at back of curb by moving the northern curb north.

Response: This will be increased.

2. *Comment:* Plantings around Fire Hydrant (d)
No plantings with matured height greater than 12' within 10 ft. of fire hydrants.

Trees should be placed at least 10 feet away from hydrants and all utility structures.

Response: Trees will be placed appropriately.

All categories:

1. *Comment:* C=A+B

Total square footage of landscaped islands
 $2456 + 0 = 2456$ SF (required)
1877 SF (proposed)

Please correct calculations.
Please add additional landscape area.
Please increase the island widths to at least 10' at backs of curbs, and 200 sf per tree planted in an island.

Response: **Islands will be 10' back of curb. Other requirements are supported by staff per discussions on 8/21.**

2. *Comment:* $D = C/200$
Number of canopy trees required
 $2456/200 = 12$ trees (required)
12 trees (proposed)
Meets code: No, as shown, the plan is not correct but can be amended to meet rules.

- *Extra trees cannot compensate for a lack of interior space. The shortage of space is a landscape deviation.*
- *Perimeter trees can't be double-counted with interior trees, only greenbelt canopy tree that area within 15' of the parking lot curb.*
- *Please use attached image to re-assign and add trees to meet requirement. Trees marked in green can count as interior trees.*

Response: **Trees will be modified to meet code matching marked up plan.**

3. *Comment:* *Perimeter Green space*
1 Canopy tree per 35 sf
 $544 \text{ sf}/35 = 16$ trees (required)
18 trees (proposed)
Meets code: no, as shown, the plan is not correct, but it can be amended to meet rules.

- *Perimeter trees can't be double-counted with interior trees, only greenbelt canopy trees that area within 15' of the parking lot curb.*
- *Please use attached image to re-assign and add trees to meet requirement. Trees marked in pink can count as perimeter trees.*

Response: **Trees will be modified to meet code matching marked up plan.**

Berms:

- All berms shall have a maximum slope of 33%. Gradual slopes are encouraged. Show 1 ft. contours.
- Berm should be located on lot line except in conflict with utilities.
- Berms should be constructed with 6" of top soil

1. *Comment:* *Slope, height and width Required*
- *Label contour lines*
 - *Maximum 33%*
 - *Min. 5 feet flat horizontal area*
- Proposed: no*
Meet code: no
- *See above.*
 - *Berms must be constructed per requirements below and a typical cross section detail must be provided showing maximum slope, minimum height and minimum crest, as well as 6" deep top layer of topsoil and construction of loamy soils.*

Response: **Detail will be on Landscape plan detail sheet.**

2. *Comment:* *Type of ground cover*
- *Indicate groundcover on detail.*

Response: **Will add groundcover on plans.**

ROW Landscape Requirements:

1. *Comment:* *Berm requirements (Zoning Sec 5.5.3.A (5))*
Refer to ROW landscape screening requirements chart for corresponding requirements.
Required: 3' greenbelt berms are proposed on grading plan
Proposed: yes
- Please copy berm contours to landscape plan.*

Response: **Will copy berm contours.**

2. *Comment:* *Canopy deciduous or large evergreen trees. (Notes (1) (10))*
Parking: 1 tree per 75 lf; $(300-35)/75 = 4$ trees each road
Required: Haggerty Rd: 4 trees
14 Mile Rd: 4 Trees
Proposed: yes

- *Please use the attached image to add and assign trees to meet all requirements.*
- *Trees marked in light blue can be greenbelt trees.*

Response: **Trees will be modified per attachment provided.**

3. *Comment:* *Sub-canopy deciduous trees and shrubs (Notes (2) (10))*
- *Parking: 1 tree per 40 lf and 2 shrubs per 40 lf*
 - *(300-35)/40 = 7 trees each road*
 - *2*(300-35)/40 = 14 shrubs*
- *See above*
 - *It appears that there are more shrubs than necessary, unless they are being used to fulfill building foundation requirements.*
 - *Any excess shrubs may be removed from the plan if desired.*

Response: **Shrubs will be re-evaluated for removal.**

4. *Comment:* *Canopy deciduous trees in area between sidewalk and curb (Novi Street Tree List)*
- *Parking: 1 tree per 35 lf*
 - *Haggerty Rd: (300-80)/35 = 6 trees or 9 subcanopy trees*
 - *14 Mile Road: (300-85)/35 = 6 trees*
- Required: Haggerty Rd; 18 subcanopy
14 Mile Rd: 9 canopy trees*
- Proposed Yes*

Excess trees may be removed from the plan if desired.

Response: **Trees will be removed as necessary.**

5. *Comment:* *Transformers/Utility boxes (LDM 1.e from 1 through 5)*
- *A minimum of 2ft. separation between box and the plants*
 - *Ground cover below 4" is allowed up to pad.*
 - *No plant materials within 8 ft. from the doors*
- *The shrubs used should reach and maintain a height at least as tall as the utility box it is screening.*
 - *If the Little Giant Arborvitae is going to be kept, due to its slow growth rate it needs to be at least 30" tall at planting.*

Response: **A different variety of Arborvitae will be utilized.**

Building Foundation Landscape Requirements (Sec 5.5.3.D)

1. **Comment:** *Interior site landscaping SF*
- *Equals to entire perimeter of the building x 8 with a minimum width of 4 ft.*
 - *May deduct widths of man doors from perimeter.*
 - *(288-39) lf x 8ft = 1992 sf*
- Required: 1916 sf*
Proposed: No

Shrub borders along perimeter of parking can be counted toward foundation requirement but a landscape waiver to have the foundation landscape areas away from the building must be requested. Staff will support it.

Response: **It appears additional landscape area can be added to the foundation.**

2. **Comment:** *Planting requirements (Sec. 5.5.3.E.iv)*
- *Clusters shall cover 70-75% of the basin rim area*
 - *10" to 14" tall grass along sides of basin*
 - *Refer to wetland for basin mix*
- Required: Yes*
Proposed: Yes
- *Please show the high-water line on Sheet LP2 and cluster the shrubs along that.*
 - *Please make seed mix list more legible. The rightmost 7 columns are not needed.*

Response: **High water line will be added / seed mix will be made more legible.**

Landscape Notes, Details and general requirements

1. **Comment:** *Irrigation plan (LDM 2.s.)*
- *A fully automatic irrigation system and a method of draining is required with Final Site Plan*
- Need for final site plan*

Response: **Noted.**

Plant List (LDM 2.h) – Include all cost estimates

1. **Comment:** *Botanical and common names*
- *Refer to LDM Suggest plant list*
- Proposed: Yes*
Meets code: Yes
- *Please use a tree with a minimum 20' wide canopy instead of the Carpinus betula that is specified. It is a very narrow tree that doesn't get to 20' in width.*
 - *Please use a tree from the Woodland Replacement chart in place of the Gray Dogwood for the replacement trees, as the latter is a shrub, not a tree.*

Response: **A different tree from the Woodland Replacement chart will be used.**

2. **Comment:** *Cost estimate (LDM 2.t)*
- *For all new plantings, mulch and sod as listed on the plan*
- Proposed: No*
Meets code: No
- Need for Final Site Plans*

Response: **Noted.**

Other Plant Material Requirements (LDM 3)

1. **Comment:** *Plant Sizes for ROW, Woodland replacement and others (LDM 3.c)*
- *Canopy Deciduous shall be 3" and sub-canopy deciduous shall be 2.5" caliper. Refer to section for more details*
- Proposed: Yes/No*
Meet code: Yes/No
- *Right of way canopy trees (street trees) should be 3" cal. Subcanopy trees can be 2-2.5" cal.*
 - *Please change the plant list for the deciduous trees to 3" to avoid confusion.*

Response: **See updated table to 3" cal.**

2. **Comment:** *Collected or Transplanted trees (LDM 3.f)*
- Proposed: 2 trees are shown as being transplanted on site*

- *2-year warranty will be required for all transplanted trees.*
- *If cost of transplanting trees is found to exceed the cost of new trees, new trees may be used, but please do not replace the pears with flowering pears as they are now prohibited species in Novi.*

Response: **Noted.**

3. *Comment:* *Nonliving Durable Material: Mulch (LDM 4)*
- *Trees shall be mulched to 4" depth and shrubs, groundcovers to 3" depth*
 - *Specify natural color, finely shredded hardwood bark mulch. Include in cost estimate.*
 - *Refer to section for additional information*

In General Note #9, please replace peat moss with compost.

Response: **General note #9 will be modified.**

Should you have any further questions or requests for additional information pertaining to this project review, please contact me at 317-846-6611.

Sincerely,



Eric Carter, R.L.A.
Project Manager, Commercial Development

STORE #2224
REBUILD
 C4600 - RIGHT HAND QUIK BRICK V2.0 (CAFE)
 31275 HAGGERTY ROAD
 OAKLAND COUNTY
 NOVI, MI 48377

OWNER AND PROJECT MANAGEMENT :

Speedway

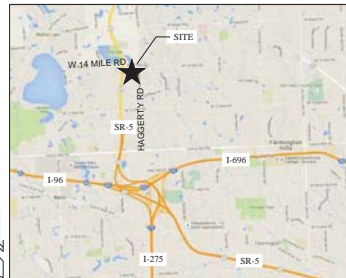
500 SPEEDWAY DRIVE
 ENON, OH 45323
 937-864-3000

CIVIL ENGINEER :

Speedway



VICINITY MAP
NO SCALE



LOCATION MAP
NO SCALE

SITE SPECIFIC	
2224-CV	COVER SHEET
2224-CD	DEMOLITION PLAN
2224-CD1	DEMOLITION OVERLAY PLAN
2224-CS	PLUT PLAN
2224-CS1	PLUT PLAN DETAILS
2224-CS2	DRIVEWAY LOCATION PLAN & PLOT PLAN DETAILS
2224-CG	GRADING PLAN
2224-CG1	GRADING PLAN DETAILS
2224-CG2	GRADING PLAN PROFILES
2224-SMPP	STORM WATER MANAGEMENT PLAN
2224-CE	SWPPP - PHASE ONE
2224-CE1	SWPPP - PHASE TWO
2224-CE2	SWPPP - NOTES
2224-CE3	SWPPP - DETAILS
2224-CU	PUMP & UTILITY PLAN
2224-CU1	STORM SEWER PROFILES
2224-CU2	STORM SEWER PROFILES
2224-CU3	STORM WATER DETAILS
2224-CS	STORM SEWER PLAN
2224-LP	LANDSCAPE PLAN
2224-LP1	POND PLANTING DETAILS
2224-LP2	LANDSCAPE DETAILS
2224-EX	EXISTING TREE SURVEY
2224-OR	CIRCULATION PLAN
2224-ELE	COLOR ELEVATIONS
ROADWAY PLANS	
1	COVER SHEET
2	GENERAL NOTES
3	MAINTENANCE OF TRAFFIC PLAN
4	TYPICAL SECTIONS
5	PLAN AND PROFILE
6	CROSS SECTIONS
7	TRAFFIC CONTROL PLAN
THIRD PARTY ENGINEERING SUPPORT	
ALTA SURVEY PREPARED BY: CECO, INC.	DATE: DECEMBER 06, 2017
EXISTING TREE SURVEY PREPARED BY: WEHBE ENGINEERS	DATE: JULY 15, 2016
GEOTECHNICAL ENGINEERING BY: CTL ENGINEERING, INC.	DATE: MAY 13, 2016
PROJECT NO: 155020290AP	DATE: JANUARY 31, 2017
LANDSCAPE PLAN BY: WEHBE ENGINEERS	DATE: AUGUST 09, 2017
PHOTOMETRIC PLAN BY: RED LEONARD ASSOCIATES	DATE: TBD
SIGNAGE FOUNDATION PLAN BY: EVERBRITE	DATE: TBD
CANOPY PLANS BY: MCGEE	DATE: TBD

FLOOD NOTE:
 THIS SITE IS IN FLOODZONE X. ACCORDINGLY, THE DETENTION AREA WAS CALCULATED FOR A 100 YEAR STORM.

FINAL SET
 NOT FOR CONSTRUCTION

NOTE:
 ALL WORK SHALL CONFORM TO THE CURRENT CITY OF NOVI STANDARDS AND SPECIFICATIONS

OPERATING AUTHORITIES

WATER:
 CITY OF NOVI
 BECKY ARNOLD
 2630 LEE BRISOLE DR
 NOVI, MI 48375
 (248) 347-0498

COMMERCE TOWNSHIP
 BUILDING, WATER AND SEWER DEPT.
 2009 TOWNSHIP DR
 COMMERCE TOWNSHIP, MI 48390
 (248) 980-7000

ELECTRIC:
 NORTHWEST REGION
 37849 INTERCHANGE DR
 FARMINGTON HILLS, MI 48335

SANITARY:
 CITY OF NOVI
 BECKY ARNOLD
 2630 LEE BRISOLE DR
 NOVI, MI 48375
 (248) 347-0498

GAS:
 CONSUMERS ENERGY
 STEVEN BORSA
 CUSTOMER ENERGY SPECIALIST
 11811 FARMINGTON RD
 LIVONIA, MI 48150
 (734) 524-6246

STORM WATER:
 CITY OF NOVI
 BRIAN COBURN
 ENGINEERING SENIOR MANAGER
 2630 LEE BRISOLE DR
 NOVI, MI 48375
 (248) 347-0498

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD TOPIC AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION/ELEVATION OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES.



Speedway
 Speedway Construction Dept.
 Enon, OH 45323

REVISION	DATE	BY	DESCRIPTION
1			ISSUED FOR PERMITS AND COUNTY COMMENTS
2			ISSUED FOR PERMITS AND COUNTY COMMENTS
3			ISSUED FOR PERMITS AND COUNTY COMMENTS
4			ISSUED FOR PERMITS AND COUNTY COMMENTS
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10			ISSUED FOR PERMITS AND COUNTY COMMENTS

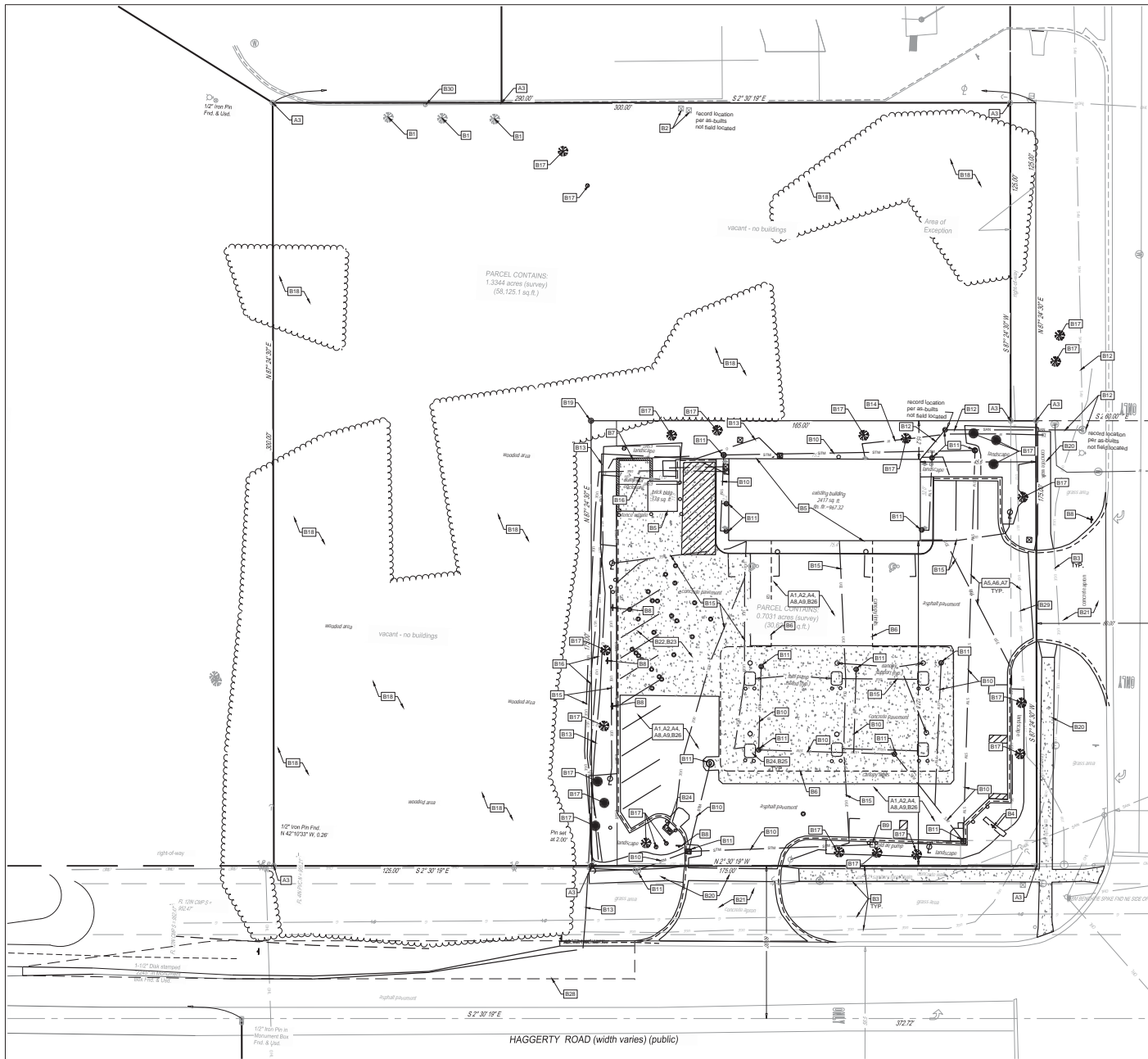
COVER SHEET
REBUILD
 31275 HAGGERTY ROAD
 OAKLAND COUNTY
 NOVI, MI

STORE NO: **0002224**
 PROJECT ID: **95505**
 SCALE: **NO SCALE**

DESIGN TEAM

DRWING NO:	DATE:
2224 - CV	

THIS DRAWING IS THE PROPERTY OF SPEEDWAY AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN CONSENT OF SPEEDWAY.



- A. GENERAL NOTES**
- CLEAR ENTIRE SITE AND PROPERLY DISPOSE OF ALL MATERIALS UNLESS OTHERWISE SPECIFIED ON THE PLANS OR BY THE OWNER'S REPRESENTATIVE.
 - CONTRACTOR SHALL NOTIFY THE OWNER OF ANY UNFORSEEN CONDITIONS.
 - THE PROPERTY CORNERS SHALL BE MARKED BY OWNER AND PROTECTED AND MAINTAINED BY CONTRACTOR.
 - IF DAMAGED AS A RESULT OF THIS CONTRACT, ANY ITEMS TO REMAIN SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - CONTRACTOR SHALL NOTIFY LOCAL UTILITIES 72 HRS. PRIOR TO DEMOLITION.
 - CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH ALL UTILITIES AND COMPLY WITH REGULATIONS AND STANDARDS FOR EACH UTILITY.
 - WHEN REMOVING EXISTING UTILITY, CAP UTILITY AT THE MAIN.
 - CONTRACTOR SHALL PROVIDE BARRIERS, PERIMETER FENCING, PARTITIONS, PLANKING, BRACING, SHORING, LIGHTS, AND SIGNS AS NECESSARY TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES.
 - CONTRACTOR SHALL EXERCISE CARE TO PREVENT DUST, VIBRATION, SETTLEMENT, OR OTHER IMPACT TO ADJACENT PROPERTY.

- B. KEY NOTES:**
- EXISTING INDIGENOUS TREES TO REMAIN.
 - EXISTING ELECTRICAL STRUCTURE TO REMAIN. FIELD VERIFY LOCATION.
 - ALL EXISTING UTILITY LINES WITHIN RIGHT-OF-WAY TO REMAIN.
 - EXISTING TRADEMARK SIGN TO REMAIN AND BE RE-FACED WITH LEDS.
 - EXISTING BUILDING TO BE REMOVED.
 - EXISTING CANOPY TO BE REMOVED.
 - EXISTING TRASH ENCLOSURE TO BE REMOVED.
 - EXISTING SIGN TO BE REMOVED.
 - EXISTING AIR MACHINE AND ISLAND TO BE REMOVED.
 - EXISTING STORM LINE TO BE REMOVED.
 - EXISTING STORM STRUCTURE TO BE REMOVED.
 - EXISTING SANITARY SEWER LINE AND STRUCTURES TO BE REMOVED.
 - EXISTING GAS LINE TO BE REMOVED.
 - EXISTING WATER LINE TO BE REMOVED.
 - EXISTING UNDERGROUND ELECTRIC LINE TO BE REMOVED.
 - EXISTING UNDERGROUND TELEPHONE LINE TO BE REMOVED.
 - EXISTING TREE TO BE REMOVED.
 - EXISTING WOODED AREA TO BE REMOVED.
 - EXISTING PROPERTY PIN TO BE REMOVED AND LOTS CONSOLIDATED.
 - REMOVE THE EXISTING SIDEWALK WITHIN THE RIGHT-OF-WAY.
 - REMOVE EXISTING APPROACHES AND DEPRESSED CURB IN RIGHT OF WAY AND SAWCUT EXISTING PAVEMENT AS NECESSARY.
 - REMOVE AND DISPOSE OF (5) EXISTING FIBERGLASS TANKS. OLD TANK HOLE SHALL BE FILLED AND COMPACTED PER SPECIFICATIONS.
 - REFER TO "SCOPE OF WORK REMOVAL OF UNDERGROUND STORAGE TANK, UNDERGROUND PIPING, HOISTS, AND/OR DISPENSER DISPOSAL" (UST REMOVAL SOW).
 - REMOVE (7) EXISTING DISPENSERS. DRAIN ALL FUEL, REMOVE HOSES AND RISERS FROM DISPENSERS AND PLUG OPENINGS TO PREVENT LEAKAGE OF FUEL.
 - REMOVE ALL PRODUCT PIPING, VENT LINES AND RISERS, AND ISLANDS.
 - SAW CUT, REMOVE AND PROPERLY DISPOSE OF CONCRETE AND ASPHALT NECESSARY FOR CONSTRUCTION ACTIVITIES. ALL MATERIALS REMOVED DURING CONSTRUCTION SHALL BE DISPOSED OF OFF SITE AS DIRECTED BY OWNER'S REPRESENTATIVE.
 - EXISTING LIGHT POLE TO BE REMOVED.
 - SAWCUT FOR ROADWAY IMPROVEMENTS. SEE ROADWAY PLANS.
 - EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN.
 - EXISTING WATER STRUCTURE TO REMAIN.

LEGEND

	EXISTING STORM LINE TO BE REMOVED
	EXISTING UNDERGROUND ELECTRIC LINE TO BE REMOVED
	EXISTING GAS LINE TO BE REMOVED
	EXISTING SANITARY SEWER LINE TO BE REMOVED
	EXISTING WATER LINE TO BE REMOVED
	EXISTING UNDERGROUND TELEPHONE LINE TO BE REMOVED
	EXISTING OVERHEAD ELECTRIC LINE TO REMAIN
	EXISTING UNDERGROUND ELECTRIC LINE TO REMAIN
	EXISTING GAS LINE TO REMAIN
	EXISTING SANITARY SEWER LINE TO REMAIN
	EXISTING UNDERGROUND TELEPHONE LINE TO REMAIN

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD NOTES AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION, DEPTH, OR THAT ADDITIONAL UNDERGROUND STRUCTURES SHOWN ON THESE PLANS MAY NOT BE INCORRECTLY LOCATED. IF THE CONTRACTOR ENCOUNTERS A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CHANGES TO EXISTING UTILITIES.

MICHIGAN 811
 1 WORKING DAYS BEFORE YOU DIG
 CALL MISS DIG
 1-800-482-1111

DESIGN TEAM: R. TRICONTON (3/11/24), R. BARRD (3/11/24), M. MOSSBACH (3/11/24)
 DATE: 3/11/24
 PROJECT: 2224 - CD



Speedway
 31275 Haggerty Road
 Oakland County
 Novi, MI 48224

NO.	REVISIONS	DATE	BY	CHKD
1	ISSUED FOR PER CITY AND COUNTY COMMENTS			
2	ISSUED FOR PER CITY AND COUNTY COMMENTS			
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30	ISSUED FOR PER CITY AND COUNTY COMMENTS			

DEMOLITION PLAN
REBUILD
 31275 HAGGERTY ROAD
 OAKLAND COUNTY
 NOVI, MI

STORE NO: 0002224
 PROJECT ID: 95505
 SCALE: 1" = 20' 0"

DATE: 3/11/24
 2224 - CD



Speedway®
CONSTRUCTION DEPT.
10000 W. 14TH AVENUE
EVANSTON, ILL. 60120

REVISION	DATE	BY
1	01/11/24	MM
2	01/11/24	MM
3	01/11/24	MM
4	01/11/24	MM
5	01/11/24	MM
6	01/11/24	MM
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18	01/11/24	MM
19	01/11/24	MM
20	01/11/24	MM

PLOT PLAN
REBUILD
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO. **0002224**
PROJECT ID **95505**

DESIGN TEAM
DATE
R. THORNTON 01/11/24
R. BAIRD 01/11/24
M. NOSHCHEN 01/11/24
SCALE 1" = 30' 0"

DRWG NO. **2224 - CS**

A. GENERAL NOTES

- ALL MATERIAL NOTED ON DRAWINGS WILL BE SUPPLIED BY THE CONTRACTOR UNLESS NOTED OTHERWISE.
- RESTORE TO ORIGINAL OR BETTER CONDITION ALL AREAS DISTURBED BY CONSTRUCTION. UPON COMPLETION, POWER WASH ALL PAVED TO OWNER'S SATISFACTION.
- SHOW ALL MODIFIED PIPING, CONDUIT RUNS, UTILITIES AND TURN OVERPOINTS MADE TO THE ORIGINAL DRAWINGS ON A SEPARATE PRINT AND TURN OVER TO OWNER'S REPRESENTATIVE UPON COMPLETION.
- THIS LAYOUT IS PARALLEL TO THE EASTERN PROPERTY LINE (N 02° 30' 19" W).
- TURN-OVER MANUAL ON THE DAY OF THE "TURN-OVER" THE CONTRACTOR WILL PROVIDE (THREE) COPIES OF THE COMPLETION MANUALS.
- OWNER SHALL PROVIDE AND THE CONTRACTOR SHALL IMMEDIATELY INSTALL AND MAINTAIN THROUGH OUT CONSTRUCTION (2) TEMPORARY BANNER SIGNS ANNOUNCING SPEEDWAY COMING SOON. THE SIGN SHALL DIRECT CUSTOMERS TO NEAREST SPEEDWAY IF APPLICABLE. CONTRACTOR SHALL MAKE EVERY REASONABLE EFFORT TO COORDINATE WITH SPEEDWAYS VENDOR TO ERECT THE SIGN(S) AS EARLY IN THE CONSTRUCTION PROCESS AS POSSIBLE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF THE ENTIRE SITE. THE PROPERTY CORNERS SHALL BE MARKED BY OWNER AND PROTECTED AND MAINTAINED BY CONTRACTOR.
- IF DEWATERING IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION, A DEWATERING PLAN MUST BE COMPLETED AND SUBMITTED TO THE ENGINEERING DEPARTMENT FOR REVIEW.

B. BUILDING DETAILS

- CONSTRUCT (2) STORE BUILDING AND/OR QUIK-BRICK PER DRAWINGS LISTED. HVAC SYSTEM SHALL BE GAS AND BE ROOF MOUNTED. THE FOLLOWING OPTIONS SHALL BE INSTALLED: ALUMINUM SCREENING PANELS ON ROOFTOP HANDRAIL.
- PAIN THE ENTIRE VERTICAL FACE OF THE SIDEWALK HIGHWAY YELLOW (160004) INCLUDING 4" ONTO THE TOP OF SIDEWALK EXCEPT WHERE GRADES ARE FLUSH AT HANDICAP RAMPS OR ADJACENT TO MOVED SURFACES.
- CONSTRUCT BUILDING SIDEWALK AS SHOWN ON PLOT PLAN AND PER DRAWING STD-CPC-1.4.
- INSTALL KNOX BOX ON EXTERIOR WALL OF BUILDING.
- LANDSCAPING AREA TO MEET LOCAL REQUIREMENTS.

C. CANOPY DETAILS

- COORDINATE WITH VENDOR TO INSTALL NEW AUTO CANOPY PER MCGEE DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR FOOTERS AND INSTALLING VENDOR SUPPLIED ANCHOR BOLTS.
- USE AUTO CANOPY COLUMN FOUNDATIONS SIZE (16) 4X 4X 5' FOR BIDDING PURPOSES IF AUTO CANOPY DRAWINGS ARE NOT AVAILABLE IN TIME FOR BIDDING. AUTO CANOPY DRAWINGS WILL BE AVAILABLE FOR CONSTRUCTION.
- CONSTRUCT FULL HEIGHT QUIK-BRICK AROUND ROUND CANOPY COLLARS PER DETAIL ON DRAWING STD-3MC8-1. FINISH SHALL MATCH BUILDING.

D. DISPENSER DETAILS

- THE CONTRACTOR IS RESPONSIBLE FOR PURGING OF THE FUELING SYSTEM NECESSARY AT START-UP AND DISPENSER CALIBRATION. THE OWNER SHALL PAY FOR (1) THIRD-PARTY LINE TEST FOR EACH PRODUCT LINE AFTER PURGING IS COMPLETE. COST OF ANY ADDITIONAL DISPENSER CALIBRATIONS AND/OR LINE TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PURGE SYSTEM PER DISPENSER MANUFACTURER'S INSTRUCTIONS AND OWNER'S SPECIFICATIONS. ALL TESTING TO BE COORDINATED WITH SPEEDWAY COMPLIANCE DEPARTMENT. AFTER PURGING IS COMPLETE, CONTRACTOR SHALL REMOVE ALL DISCHARGE SCREENS AND FACTORY FILTERS AND INSTALL NEW FILTERS (MODEL NOTED BELOW). FURNISHED BY OWNER. INSTALLATION DATES SHALL BE CLEARLY MARKED ON FILTER BY CONTRACTOR. FILTER MODELS ARE: (A) AUTO PETROL CLEAR 4051A (B) AUTO-DOL AND K-1 PETROL CLEAR 4051W (C) GEMFLEX 70991 (D) HIGHFLOW DSG PETROL CLEAR 51110W. SPEEDWAY'S MAINTENANCE DEPARTMENT SHALL REMOVE ALL DISPENSER FACIL LABELS.
- THE CONTRACTOR SHALL COMPLETE THE WAYNE PROCESSED START-UP CALIBRATION REPORT FORM "W9240136" PRIOR TO START-UP. THE 1-1 TEST MUST BE COMPLETED VIA THE ATO PRIOR TO OPENING FUEL GALLONS FORM "9176-007" SHALL BE COMPLETED BY WAYNE'S AUTHORIZED SERVICE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH SPEEDWAY'S PREFERRED AUTHORIZED SERVICE CONTRACTOR (ASO) FOR TRIPS AS FOLLOWS:

TRIP	WAYNE ASO RESPONSIBILITY	FINANCIAL RESPONSIBILITY
1	PREP DISPENSERS FOR CONTRACTOR TO PURGE	WAYNE
2	REVIEW CONTRACTOR'S PURGE WORK	WAYNE
3	REVIEW CONTRACTOR'S COMPLETED WAYNE START-UP CALIBRATION FORM (WAYNE)	WAYNE
4	COMPLETE FORM "9" AND FORM "10" (PRE-POST INTEGRATION)	WAYNE
5	COMPLETE FORM "9" AND FORM "10" (POST-POST INTEGRATION)	CONTRACTOR
6	OPENING DAY SUPPORT (SPEEDWAY REQUIREMENT)	CONTRACTOR

- THE CONTRACTOR WILL BE RESPONSIBLE TO HAVE, AT A MINIMUM, THE SITE SUPERINTENDENT, CERTIFIED ELECTRICAL AND PETROLEUM START-UP CONTRACTOR ON-SITE AT OPENING FOR A MINIMUM OF (1) HOUR TO ENSURE PROPER OPERATION OF THE FUELING SYSTEM.
- INSTALL (2) NEW WAYNE 3 PRODUCT (2A) HIGH HOSE DISPENSER WITH CARD READER. INSTALL (6) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR GASOLINE DISPENSERS. PRODUCT PIPING LINE UP AND FRONT SIDE "A" (7.5" X 9") DISPENSERS SHALL BE AS SHOWN.
- INSTALL (5) NEW WAYNE 4 PRODUCT (3A-1) HIGH HOSE DISPENSER WITH CARD READER. INSTALL (10) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR GASOLINE DISPENSERS. (8) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR DIESEL DISPENSERS AND (2) HOSES, NOZZLES, SWIVELS AND BREAKAWAY FOR ETHANOL FLEX FUEL DISPENSERS. PRODUCT PIPING LINE UP AND FRONT SIDE "A" (7.5" X 9") OF DISPENSERS SHALL BE AS SHOWN.
- INSTALL NEW (1) 1" AND (2) 3/4" CONDUITS FROM WIRE IN BUILDING TO EACH DISPENSER. (1) 1" CONDUIT TO BE USED FOR POWER DATA. (1) 3/4" CONDUIT TO BE USED FOR DISPENSER SWAMP SENSOR. OTHER 3/4" CONDUIT TO BE USED FOR INTERCOM AND APPLAUSE MEDIA SYSTEMS FOR NEW WIRE AND WIRE DISPENSER PER MANUFACTURER'S SPECIFICATIONS.

E. PAVING DETAILS

- CONSTRUCT NEW CONCRETE TANK SLAB PER DRAWINGS STD-PQ-4.1 AND STD-CPC-1.
- CONSTRUCT NEW CONCRETE CAR CANOPY ISLAND SLAB PER DRAWINGS STD-CIS-8 AND STD-CPC-1.
- INSTALL NORMAL STRENGTH ASPHALT PAVEMENT WITH AN AGGREGATE BASE PER PAVEMENT SECTION STD-CPC-1 AND USE THE RECOMMENDATIONS OF GEOTECHNICAL CONSULTANT FOR ALL OTHER SUBSURFACE CONDITIONS ON THIS SITE. NOTIFY THE OWNER'S REPRESENTATIVE IF THERE ARE ANY CONFLICTS.
- CONSTRUCT A 6" WIDE NORMAL STRENGTH CONCRETE SLAB ON BUILDING FRONT PARKING AREAS AS SHOWN ON PLOT PLAN.
- CONSTRUCT (2) CONCRETE APPROACHES PER STATE AND/OR LOCAL SPECIFICATIONS. IF APPLICABLE, REMOVE CURB THROUGH APPROACH WIDTH AND REPLACE WITH 1-1/2" HIGH DEPRESSION CURB PER APPLICABLE SPECIFICATIONS.
- INSTALL 5" WIDE (6" WHERE NOTED), 4" THICK THROUGH APPROACH MATCH THICKNESS CONCRETE SIDEWALK PER STATE AND/OR LOCAL SPECIFICATIONS. REMOVE AND REPLACE EXISTING WALK AS NECESSARY TO ALLOW RAMP TO MEET A.D.A. REQUIREMENTS.
- INSTALL (6) NEW CONCRETE DISPENSER ISLANDS WITH 3 X 5 X 13' ISLAND FORM FOR AUTO DISPENSERS.
- CONSTRUCT CONCRETE CURB AND GUTTER IN RIGHT-OF-WAY PER MDT CURB DETAIL ON SHEET 2224-C51. MATCH EXISTING CURB PROFILE AND ELEVATION. TRAPEZOID CURB AT THE END OF THE RUN IF NOT CONNECTING TO EXISTING CURB.
- INSTALL MDT F-4 TYPE CONCRETE CURB. SEE DETAIL ON SHEET 2224-C51.
- CONSTRUCT RAMP WITH DETECTABLE WARRING SURFACE CONCRETE WALK PER APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
- INSTALL 2" WIDE DETECTABLE WARRING SURFACE ALIGNED ON ACCESSIBLE ISLES PER APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
- NOTE NOT USED.
- INSTALL CONCRETE SLAB FOR AIR MACHINE PER DRAWING STD-CYE-A. INSTALL (1) 3/4" CONDUIT AND WIRE PER MANUFACTURER'S RECOMMENDATIONS. VERIFY INSTALLATION DETAILS WITH VENDOR.

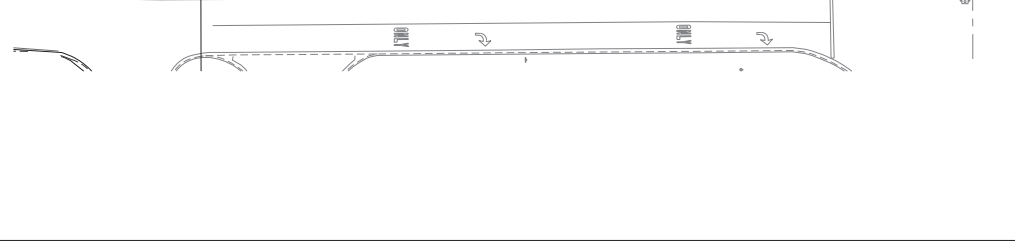
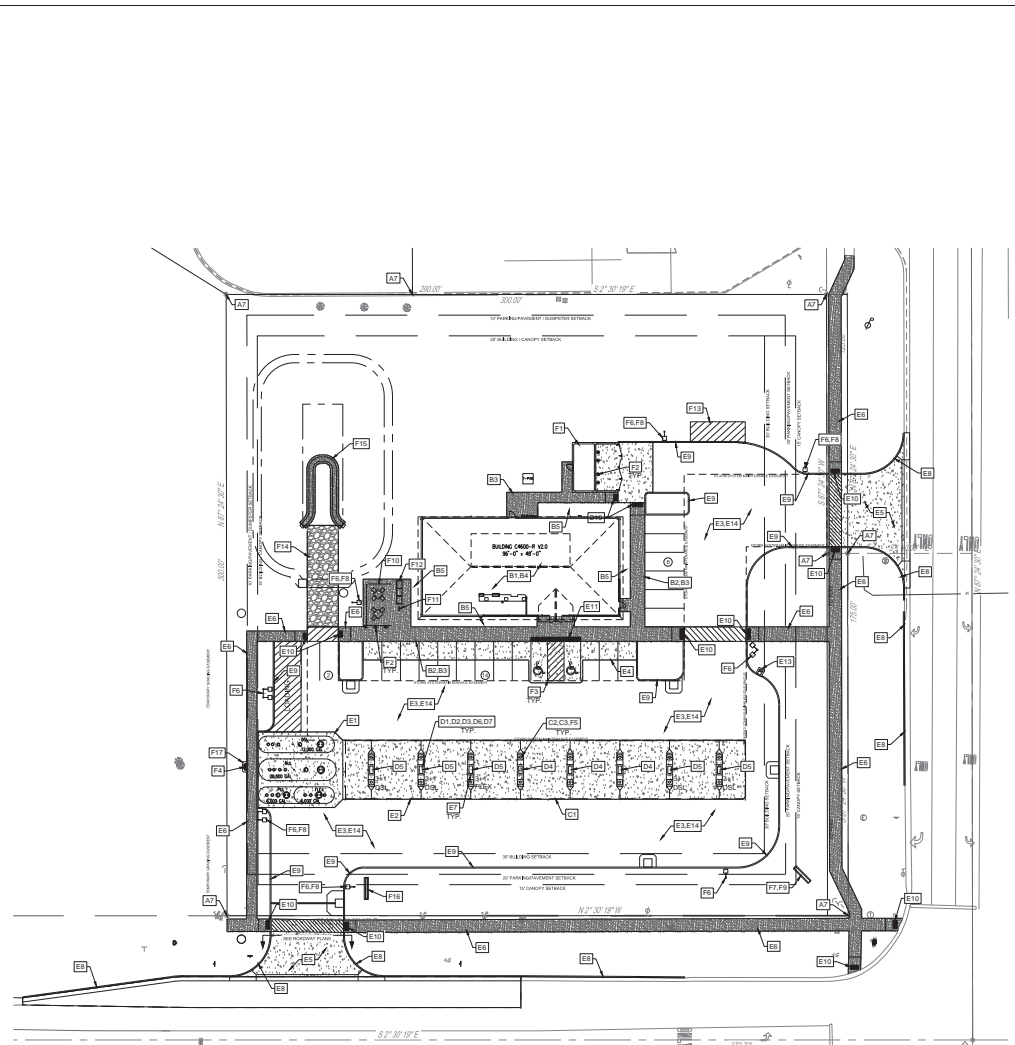
F. YARD AREA DETAILS

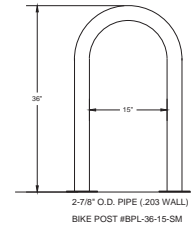
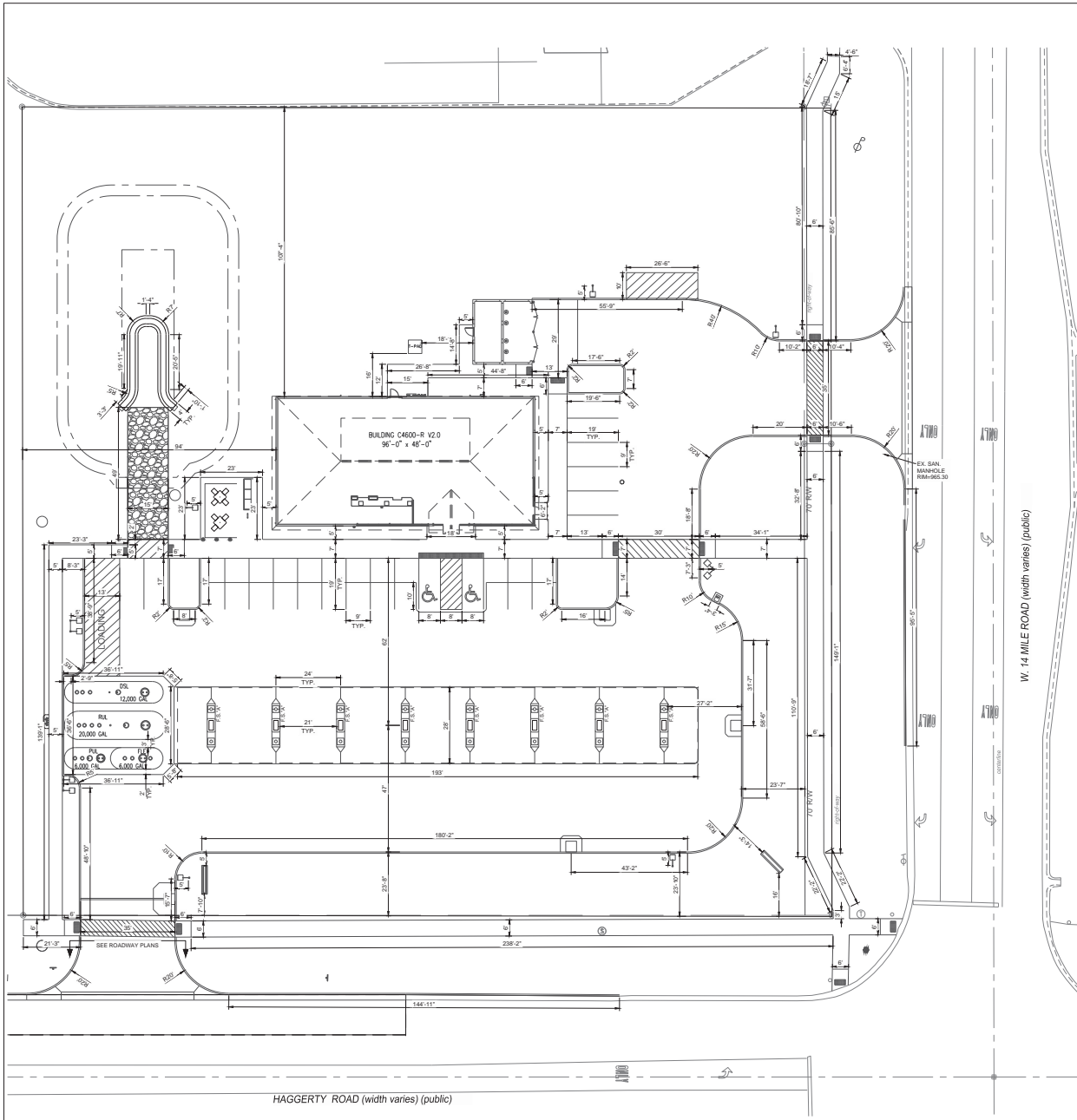
- CONSTRUCT DUMPSTER ENCLOSURE AND COLLECTION PAD WITH ATTACHED STORAGE SHED AND RELATED WIRING AND CONDUITS PER DRAWING STD-3MB-1 AND STD-3E-CA. GATE SHALL BE BOARD ON BOARD. ENCLOSURE SHALL BE SAME AS BUILDING MATERIAL.
- SUPPLY AND INSTALL (7) 6" BOLLARDS PER DETAIL ON DRAWING STD-CYE-A AND STD-3E-CA. GATE SHALL BE PAINTED RED PER OWNER'S SPECIFICATIONS.
- PAINT INDICATED ACCESSIBLE PARKING STALLS AND INSTALL SIGNAGE PER APPLICABLE CODES. PAINT ALL OTHER PARKING STRIPES REPRESENTATIVE.
- INSTALL 3" PVC PIPE TO HOLD TANK STICK PER OWNER'S REPRESENTATIVE.
- PROVIDE AND INSTALL CODE APPROVED FIRE EXTINGUISHERS (51 MINIMUM) WITH PLASTIC BOX HOUSING IN APPROVED LOCATIONS AS REQUIRED BY LOCAL FIRE OFFICIALS. FIRE EXTINGUISHERS ARE OWNER SUPPLIED AND CONTRACTOR INSTALLED, AND SHALL BE LOCATED SUCH THAT EXTINGUISHERS IS NOT MORE THAN 30 FEET FROM PUMPS, DISPENSERS, OR STORAGE TANK FILL DEVICES PER LOCAL CODE. FIRE EXTINGUISHER MINIMUM RATING SHALL BE 2-A-10-B-C.
- CONSTRUCT (6) 1/2" DIAMETER LIGHT POLE BOLLARDS 2' 0" HIGH FOR 15' HIGH LIGHTS PER DETAILS ON DRAWING STD-CYE-A. INSTALL (1) 3/4" UNDERGROUND CONDUIT PER DETAIL ON DRAWING STD-CYE-A. PANELS FROM ELECTRICAL PANELS REPRESENTATIVE AND WIRE FUTURES. CONTRACTOR IS RESPONSIBLE FOR TOUCH-UP PAINTING AND ANCHORS BOLTS, ETC. FLASHING LIGHT SHALL NOT BE PERMITTED. ONLY NECESSARY LIGHTING FOR SECURITY PURPOSES AND LIMITED OPERATIONS SHALL BE PERMITTED AFTER A SITE'S HOURS OF OPERATION.
- PROVIDE AND INSTALL (1) 1" CONDUIT AND WIRING FROM ELECTRICAL PANEL TO PRICER SIGN FOR 120V POWER. ALSO COMMISSION A WIRELESS CONTROL FROM MANAGER'S WORKSTATION TO PRICER SIGN.
- CONTRACTOR SHALL SUPPLY AND INSTALL CONDUIT (SIZED PER NEC CODES) AND RIGID 1/2" DIAMETER CABLE FOR VIDEO SECURITY CAMERA TO THESE LOCATIONS. SECURITY CAMERAS SHALL BE INSTALLED BY SPEEDWAY MAINTENANCE DEPT.
- EXISTING ID SIGN SHALL BE CLEANED AND RECEIVE NEW FACES. LAMPS, BALLASTS, UPGRADDED TO LED PRICER PANELS AND PAINT TO THE EXTENT ALLOWED BY THE SIGN ORDINANCE.
- OWNER TO SUPPLY AND CONTRACTOR TO INSTALL (24) TABLES. EACH TABLE SHALL INCLUDE (4) SEATING POSITIONS AND (1) UMBRELLA. THE SEATING POSITION CLOSEST TO THE FRONT ENTRY IS TO REMAIN OPEN FOR ADA ACCESSIBILITY. INSTALL TABLES AND UMBRELLAS PER DIMENSIONED DETAILS ON DRAWINGS 2224-C52. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION DETAILS OF THE TABLES AND CHAIRS PER OWNER'S REPRESENTATIVE.
- BICYCLE PARKING AREA. INSTALL BIKE RACK PER DETAIL ON SHEET 2224-C51.
- CONSTRUCT PROPANE MERCHANTS ENCLOSURE. MATERIAL SHALL BE THE SAME AS THE DUMPSTER ENCLOSURE GATES.
- INSTALL 15' WIDE, 6" DEEP GRAVEL ACCESS DRIVE.
- INSTALL CONCRETE FLUME FOR DETENTION AREA PER DETAIL ON SHEET STD-CUC-3.
- INSTALL "WELCOME TO NOV" COMMUNITY SIGN PER LOCAL REQUIREMENTS AND SHEET 2224-S5.
- INSTALL 1" MULCH AREA AROUND VENT STACKS.
- INSTALL CONTRACTOR SUPPLIED ORNAMENTAL FENCE PER DETAIL ON DRAWING 2224-C50.

PROPOSED LEGEND	EXISTING LEGEND
PROPOSED CURB	R/W CONCRETE SIDEWALK TO REMAIN
CONCRETE SIDEWALK PER SPEEDWAY STANDARDS	
NORMAL STRENGTH CONCRETE PER SPEEDWAY STANDARDS	

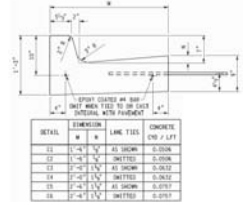
SITE DATA SITE AREA = 2.04 AC BUILDING AREA = 4,808 SF IMPERVIOUS COVERAGE OF LOT AREA = 42,734 SF = 48.2% COVERAGE AREA	PARKING PARKING REQUIREMENT: 2 PER GASOLINE PUMPING ISLAND 30 FOR CONVENIENCE STORE TOTAL AUTO PARKING REQUIRED: 36 SPACES PARKING DIMENSIONS = 8' X 18'
EXISTING PROPERTY - B-3 PROPOSED ZONING - OS-7 ENTIRE SITE WILL REQUIRE ZONE MAP AMENDMENT TO B-3 P.R.D.	PARKING PROVIDED: 20 STANDARD SPACES 2 ADA SPACES "SPACES AT DISPENSERS COUNT TOWARDS PARKING REQUIREMENTS"
SETBACKS BUILDING: 20' FRONT, 15' SIDE, 20' REAR CANOPY: 10' FRONT, 15' SIDE, 20' REAR PARKING: 20' FRONT, 10' SIDE, 10' REAR PAVEMENT: 20' FRONT, 10' SIDE, 10' REAR DUMPSTER: 30' SIDE	

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THESE PLANS AND PROFILES ARE TAKEN FROM ELECTRIC AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION/ELEVATION OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.

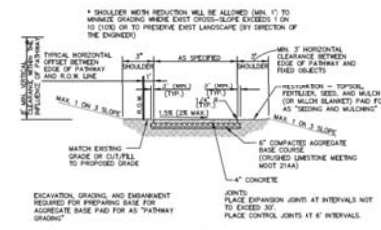




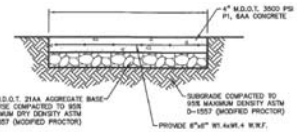
BIKE RACK DETAIL
N.T.S.



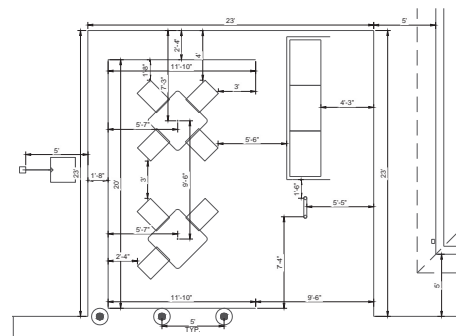
MDOT CURB DETAIL (C-4)
N.T.S.



CITY OF NOVI STANDARD CONCRETE SIDEWALK CROSS SECTION
N.T.S.



CITY OF NOVI STANDARD BICYCLE PARKING CROSS SECTION
N.T.S.



OUTDOOR CAFE SEATING AREA DETAIL
SCALE: 1" = 5'-0"

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD NOTES AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION, DEPTH, OR THAT ADDITIONAL UNDERGROUND STRUCTURES SHOWN ON THESE PLANS ARE INCORRECTLY LOCATED. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGES TO EXISTING UTILITIES.

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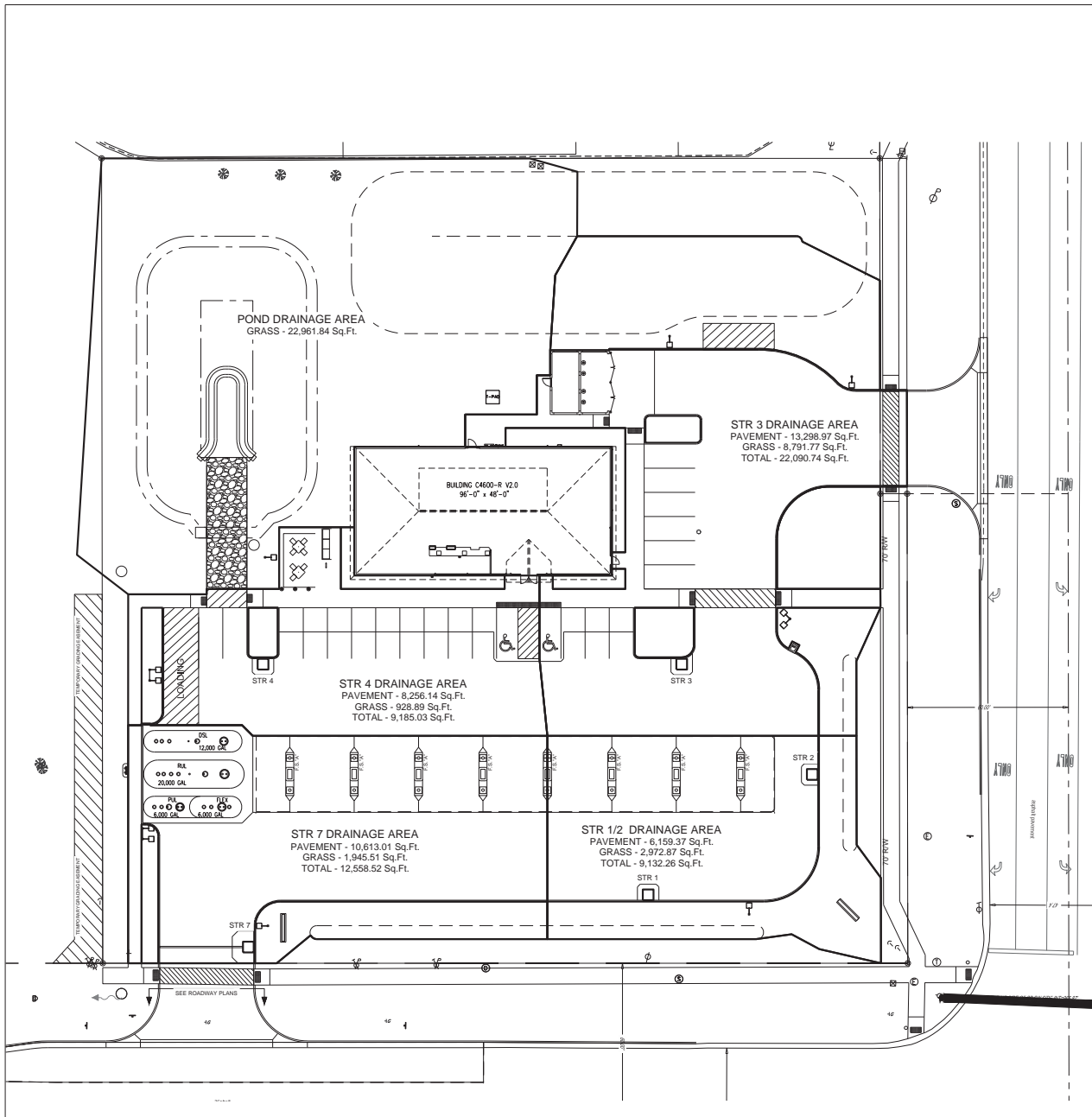
NO.	DATE	DESCRIPTION
1	11/11/24	ISSUED FOR CITY AND COUNTY COMMENTS
2	11/11/24	ISSUED FOR CITY AND COUNTY COMMENTS

PLOT PLAN DETAILS
REBUILD
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO: 0002224
PROJECT ID: 95505
SCALE: 1" = 20'-0"

DESIGN TEAM	DATE
DRWG: JG	10/11/24
CHECKED: R. THORNTON	10/11/24
APPROVED: J.C. BARRETT	10/11/24
DESIGNED: M. MOSSBACH	10/11/24

2224 - CS



DETENTION BASIN CALCULATION

ASSUMPTION:

1. THE DETENTION SYSTEM WAS DESIGNED USING THE FLOOD STORAGE VOLUME REQUIREMENT CALCULATIONS AS PROVIDED IN THE ENGINEERING DESIGN MANUAL FOR THE CITY OF NOVI.

Composite Runoff Coefficient

	Area	C	A x C
Semi-perVIOUS (Soil Type C)	1,056	0.5	0.528
Impervious	0.981	0.95	0.932
Offsite Semi-perVIOUS (Soil Type C)		0.3	0
Offsite Pavement/Road		0.95	0
Total =	2.04		1.46

Composite C = 0.72

L' = 76, S₀ = 0.67; k = 1.49; n = .013; L = 291;

Peak Flow Rate

Sheet Flow	28.91 minutes
Piping Flow (V)	4.88 ft/s
Piping Time (min)	0.99 minutes
Total Time of Concentration (T _c)	28.91 minutes
Intensity for 10yr Storm	3.25 in/hr
Peak Flow	4.74 cfs

$$T_{c1} (\text{min}) = L' / 0.48 \text{ sq ft } (S_0 \times 60)$$

$$= k/n \times R^{1/2} / (3)^{1/2} \times (L/2)$$

$$= L/V$$

$$= \text{Sheet Flow} + \text{Waterway}$$

$$I = 1.75 / T_c - 25$$

$$Q = CIA$$

1 year Flow Rate for Stormwater Manufactured

Treatment Sizing

1 for 1 Year storm	1.34 in/hr
Flow Rate	1.95 cfs

$$I = 72 / T_c - 25$$

$$Q = CIA$$

Required Storage Volumes for 100 yr Storm

Sum of drainage areas, A =	2.04 acres
Q ₁ (onsite) =	0.306 cfs
Q ₂ (onsite) =	0.209 cfs / (acre imp)
Q ₃ , Total (offsite & onsite) =	0.306 cfs
Time to peak, T _p =	196.97 min
V _{1,10} =	12,993 ft ³ / (acre imp)
Flood Control Volume, V _{1,10} =	18,971 ft ³
Bank Full Volume, V _{1,10} =	7,534 ft ³
First Flush Volume, V _{1,10} =	2,650 ft ³

$$Q_1 = 0.15 \text{ cfs} / \text{acre} \times A$$

$$Q_2 = Q_1 / (A \times C)$$

$$Q_3 = Q_{1(onsite)} + Q_{2(onsite)}$$

$$T_{p,10} = 25 + (10312.5 / Q_3)^{0.5}$$

$$V_{1,10} = (16500 \times T_{p,10}) / (T_{p,10} + 25) - 40 \times Q_3 \times T_{p,10}$$

$$V_{1,10} = 5160 \times A \times C$$

$$V_{1,10} = 1815 \times A \times C$$

Provided Storage Volume

Above ground storage

ELEVATION	STORAGE, ft ³		
	Under ground	Above ground	Total
Invert Outlet Elevation	954.49	0.00	0.00
First Flush Volume	956.30	2,650	2,650
Bank Full Volume	957.90	7,534	7,534
Flood Control Volume	960.10	18,971	18,971
Top of Pond (Provided Detention)	960.40	21,405	21,405

Elevation where required First Flush storage is achieved
 Elevation where required BANK FULL storage is achieved 957.90 = Z_{BF}
 Elevation where required 100-YEAR storage is achieved 960.10 = Z₁₀₀

* THE STORM WATER MANAGEMENT PLAN FOR THIS DEVELOPMENT HAS BEEN DESIGNED IN ACCORDANCE WITH THE STORM WATER ORDINANCE AND CHAPTER 5 OF THE NEW ENGINEERING DESIGN MANUAL.

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THESE PLANS AND PROFILES IS TAKEN FROM FIELD TOPS AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION/ELEVATION, OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.

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 Farmington Hills, MI 48334

NO.	REVISION	DATE	BY	CHKD.
1	ISSUED FOR PERMITS			
2	ISSUED FOR CITY AND COUNTY COMMENTS			
3	ISSUED FOR PERMITS			

STORM WATER MANAGEMENT PLAN REBUILD
 31275 HAGGERTY ROAD
 OAKLAND COUNTY
 NOVI, MI

STORE NO. 0002224

PROJECT ID 95505

SCALE 1" = 20' @

DATE

DESIGNED BY R. THORNTON 10/14/21

CHECKED BY R. BARRD 10/14/21

APPROVED BY M. NOSHANG 10/14/21

PROJECT NO. 2224 - SWMP

EROSION AND SEDIMENT CONTROL NOTES

- A. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THIS STORM WATER POLLUTION PREVENTION PLAN. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST TO OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
- B. BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
- C. SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERWAYS, PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERWAYS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.
- D. CONTRACTOR TO LIMIT DISTURBANCE OF SITE IN STRICT ACCORDANCE WITH SWPPP IMPLEMENTATION SEQUENCING, OR AS REQUIRED BY THE APPLICABLE GENERAL PERMIT. NO UNNECESSARY OR IMPROPERLY SEQUENCED CLEARING AND/OR GRADING SHALL BE PERMITTED.
- E. ALL DENUDED/BARE AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE, MUST BE STABILIZED IMMEDIATELY UPON COMPLETION OF MOST RECENT GRADING ACTIVITY, WITH THE USE OF FAST-GERMINATING ANNUAL GRASS/GRAIN VARIETIES, STRAWHAY MULCH, WOOD CELLULOSE FIBERS, TACKIFIERS, NETTING AND/OR BLANKETS. COMPLETION MUST BE ACHIEVED WITHIN 14 DAYS.
- F. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY STABILIZED AS SHOWN ON THE PLANS. THESE AREAS SHALL BE SEEDED, SOODED, AND/OR VEGETATED IMMEDIATELY, AND COMPLETED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE GRADING PLAN AND/OR LANDSCAPE PLAN.
- G. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION. TEMPORARY AND/OR PERMANENT STABILIZATION SHALL BE APPLIED PER ABOVE REQUIREMENTS.
- H. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION AND SEDIMENT CONTROL MEASURES (SILT FENCES, ETC.) TO PREVENT EROSION AND POLLUTANT DISCHARGE OFF-SITE.
- I. ALL MEASURES STATED ON THIS SITE MAP, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZED TIME FRAMES. AS REQUIRED UNDER THE PROVISIONS OF THE CLEAN WATER ACT, ANY SPILL OR DISCHARGE ENTERING WATERS OF THE UNITED STATES SHALL BE PROPERLY REPORTED.
- J. STORM WATER POLLUTANT CONTROL MEASURES INSTALLED DURING CONSTRUCTION, THAT WILL ALSO PROVIDE STORM WATER MANAGEMENT BENEFITS AFTER CONSTRUCTION, ARE INCLUDED IN THE CONTRACT DOCUMENTS. THE SITE-SPECIFIC POST CONSTRUCTION STORM WATER OPERATION AND MAINTENANCE (OSM) MANUAL IS INCLUDED IN THE CONTRACT DOCUMENTS.
- K. ALL CONTROLS AND SYSTEMS MUST BE INSTALLED AND FUNCTIONING AS DESIGNED AND FREE OF ACCUMULATED SEDIMENT AND DEBRIS DURING FINAL PROJECT INSPECTION AND APPROVAL.

HAZARDOUS MATERIAL MANAGEMENT & SPILL REPORTING

ANY HAZARDOUS OR POTENTIALLY HAZARDOUS MATERIAL THAT IS BROUGHT ONTO THE CONSTRUCTION SITE SHALL BE HANDLED PROPERLY TO REDUCE THE POTENTIAL FOR STORMWATER POLLUTION. ALL MATERIALS USED ON THIS CONSTRUCTION SITE SHALL BE PROPERLY STORED, HANDLED, DISPENSED AND DISPOSED OF FOLLOWING ALL APPLICABLE LABEL DIRECTIONS. FLAMMABLE AND COMBUSTIBLE LIQUIDS SHALL BE STORED AND HANDLED ACCORDING TO APPLICABLE REGULATIONS, AND, AT A MINIMUM, ACCORDING TO 29 CFR 1926.152. ONLY APPROVED CONTAINERS AND PORTABLE TANKS SHALL BE USED FOR STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.

MATERIAL SAFETY DATA SHEETS (MSDS) INFORMATION SHALL BE KEPT ON SITE FOR ANY AND ALL APPLICABLE MATERIALS. HOWEVER, MSDS MAY ALSO BE ACCESSIBLE VIA TELEPHONE OR OTHER ELECTRONIC MEANS OR APPARATUS.

IN THE EVENT OF AN ACCIDENTAL SPILL, IMMEDIATE ACTION SHALL BE TAKEN BY THE CONTRACTOR TO CONTAIN AND REMOVE THE SPILLED MATERIAL. THE SPILL SHALL BE REPORTED TO THE APPROPRIATE AGENCIES IN THE REQUIRED TIME FRAMES. AS REQUIRED UNDER THE PROVISIONS OF THE CLEAN WATER ACT, ANY SPILL OR DISCHARGE ENTERING WATERS OF THE UNITED STATES SHALL BE PROPERLY REPORTED.

ALL HAZARDOUS MATERIALS, INCLUDING CONTAMINATED SOIL AND LIQUID CONCRETE WASTE, SHALL BE DISPOSED OF BY THE CONTRACTOR IN THE MANNER SPECIFIED BY FEDERAL, STATE AND LOCAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS.

THE CONTRACTOR SHALL PREPARE A WRITTEN RECORD OF ANY SPILL AND ASSOCIATED CLEAN-UP ACTIVITIES OF PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS IN EXCESS OF 1 GALLON OR REPORTABLE QUANTITIES, WHICHEVER IS LESS, ON THE DAY OF THE SPILL. THE CONTRACTOR SHALL PROVIDE NOTICE TO OWNER, VIA THE ONLINE CRITICAL INCIDENT REPORT, IMMEDIATELY UPON IDENTIFICATION OF ANY SPILL. SPILL REPORT FORMS ARE AVAILABLE IN THE ONLINE SWPPP REPORTING SYSTEM PROVIDED BY THE OWNER. COPIES OF SPILL CRITICAL INCIDENT REPORTS SHOULD BE PRINTED AND MAINTAINED IN THE JOBSITE BINDER.

ANY SPILLS OF PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS IN EXCESS OF REPORTABLE QUANTITIES AS DEFINED BY EPA OR THE STATE OR LOCAL AGENCY REGULATIONS, SHALL BE IMMEDIATELY REPORTED TO THE EPA NATIONAL RESPONSE CENTER (1-800-424-8802) AND MICHIGAN ENVIRONMENTAL PROTECTION AGENCY 1-800-621-8431.

THE STATE REPORTABLE QUANTITY FOR PETROLEUM PRODUCTS IS: 25 GALLONS

TO MINIMIZE THE POTENTIAL FOR A SPILL OF PETROLEUM PRODUCT OR HAZARDOUS MATERIALS TO COME IN CONTACT WITH STORM WATER, THE FOLLOWING STEPS SHALL BE IMPLEMENTED:

- 1) ALL MATERIALS WITH HAZARDOUS PROPERTIES, SUCH AS PESTICIDES, PETROLEUM PRODUCTS, FERTILIZERS, SOAPS, DETERGENTS, CONSTRUCTION CHEMICALS, ACIDS, BASES, PANS, PAINT SOLVENTS, ADDITIVES FOR SOILS, CURING COMPOUNDS AND ADDITIVES, ETC., SHALL BE STORED IN A SECURE LOCATION, UNDER COVER AND IN APPROPRIATE, TIGHTLY SEALED CONTAINERS WHEN NOT IN USE.
- 2) THE MINIMUM PRACTICAL QUANTITY OF ALL SUCH MATERIALS SHALL BE KEPT ON THE JOB SITE AND SCHEDULED FOR DELIVERY AS CLOSE TO TIME OF USE AS PRACTICAL.
- 3) A SPILL CONTROL AND CONTAINMENT KIT (CONTAINING FOR EXAMPLE, ABSORBENT MATERIAL SUCH AS KITTY LITTER OR SANDVUST, ACID BASE, NEUTRALIZING AGENT, BROOMS, DUST PANS, ROPS, HATS, GLOVES, GOGGLES, PLASTIC AND METAL TRASH CONTAINERS, ETC.) SHALL BE PROVIDED AT THE CONSTRUCTION SITE AND ITS LOCATION(S) SHALL BE IDENTIFIED WITH LEGIBLE SIGNAGE AND SHOWN ON SITE MAPS.
 - a. THE SPILL CONTROL AND CONTAINMENT KIT SUPPLIES SHALL BE OF SUFFICIENT QUANTITIES AND APPROPRIATE CONTENT TO CONTAIN A SPILL FROM THE LARGEST ANTICIPATED PIECE OF EQUIPMENT AND FROM THE LARGEST ANTICIPATED QUANTITIES OF PRODUCTS STORED ON THE SITE AT ANY GIVEN TIME.
 - b. CONTENTS SHALL BE INSPECTED DAILY DURING THE DAILY STORMWATER INSPECTION.
- 4) ALL PRODUCTS SHALL BE STORED IN AND USED FROM THE ORIGINAL CONTAINER WITH THE ORIGINAL PRODUCT LABEL. CONTAINERS MUST BE STORED IN A MANNER TO PROTECT THEM FROM THE ELEMENTS AND INCIDENTAL DAMAGE.
- 5) ALL PRODUCTS SHALL BE USED IN STRICT COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT LABEL.
- 6) THE DISPOSAL OF EXCESS OR USED PRODUCTS SHALL BE IN STRICT COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT LABEL AND REGULATIONS.

A. SOLID WASTE DISPOSAL

SUBSTANCES THAT HAVE THE POTENTIAL FOR POLLUTING SURFACE AND/OR GROUNDWATER MUST BE CONTROLLED BY ANY MEANS NECESSARY TO ENSURE THAT THOSE DO NOT DISCHARGE FROM THE SITE. IN THIS REGARD, POTENTIALLY POLLUTING SUBSTANCES SHALL BE STORED AND HANDLED IN A MANNER CONSISTENT WITH THE RISK OF IMPACT OF THOSE RESPECTIVE, AND ACCORDING WITH THE REGULATIONS.

NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, ARE ALLOWED TO BE DISCHARGED FROM THE SITE WITH STORMWATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER TRASH MATERIALS SHALL BE DEPOSITED INTO SEPARATELY IDENTIFIED CONTAINERS PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE. THE CONTAINERS SHALL BE HALLED AWAY FROM THE SITE AND EMPHED WITHIN 150 FEET OF ANY WATERWAY, WATER BODY OR WETLAND, AND SHALL BE LOCATED AS FAR AS PRACTICAL FROM STORM SEWER INLETS. DRIP PANS SHALL BE USED FOR VEHICLE MAINTENANCE ACTIVITIES AND RESULTANT WASTES SHALL BE DISPOSED OF IN ACCORDANCE WITH THE HAZARDOUS MATERIAL MANAGEMENT AND SPILL REPORTING PLAN NOTES INCLUDED ON THIS PLAN SHEET.

USE OF DETERGENTS FOR LARGE SCALE WASHING IS PROHIBITED (FOR EXAMPLE, WASHING VEHICLES, BUILDINGS, PAVEMENT SURFACES, ETC.). ALL WASH WATER SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

B. SANITARY FACILITIES
ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY OR SEPTIC SYSTEM REGULATIONS. PORTABLE TOILETS MUST BE LOCATED AT LEAST 30 FEET FROM INLETS, CHANNELS, SWALES, OR PERMITTED LIMITS OF DISTURBANCE, AND MUST BE LOCATED AT LEAST 50 FEET FROM WATERS OF THE STATE, OR WATERS OF THE U.S.. PORTABLE TOILETS MUST BE SECURELY ANCHORED AND/OR TIED DOWN. SECONDARY CONTAINMENT SHALL BE PROVIDED AND FULL CAPACITY SHALL BE RESTORED IMMEDIATELY UPON DISCOVERY OF ITS DIMINISHMENT. THE LOCATION OF SANITARY FACILITIES SHALL BE SHOWN ON THE SITE MAPS.

C. TEMPORARY PARKING
THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE), THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.

D. MATERIAL STORAGE AREAS
MATERIAL STORAGE AREAS SHOULD BE LOCATED, WHEN POSSIBLE, TO MINIMIZE EXPOSURE TO WEATHER. INSPECTIONS SHALL EVALUATE DISTURBED AREAS AND AREAS USED FOR STORING MATERIALS THAT ARE EXPOSED TO RAINFALL, OR THE POTENTIAL FOR POLLUTANTS ENTERING THE DRAINAGE SYSTEM OR DISCHARGING FROM THE SITE. IF NECESSARY, THE MATERIALS MUST BE COVERED OR ORIGINAL COVERS MUST BE REPAIRED OR SUPPLEMENTED. ALSO, PROTECTIVE BERMUS MUST BE CONSTRUCTED, IF NEEDED, TO CONTAIN RUNOFF FROM MATERIAL STORAGE AREAS. CONTRACTOR SHALL ADHERE TO ALL STATE AND LOCAL REGULATIONS PERTAINING TO MATERIAL STORAGE AREAS.

CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER TOXIC MATERIALS MUST BE STORED IN WATERPROOF CONTAINERS. EXCEPT DURING APPLICATION, THE CONTAINERS AND THE CONTENTS MUST BE KEPT IN TRUCKS OR INSIDE OF STORAGE FACILITIES. RUNOFF CONTAINING SUCH MATERIAL MUST BE COLLECTED, REMOVED FROM THE SITE, TREATED, AND DISPOSED OF AT AN APPROVED SOLID WASTE AND CHEMICAL DISPOSAL FACILITY.

E. CEMENT AND CONCRETE WASTE MANAGEMENT; CONCRETE WASHOUT
CONCRETE WASTE MANAGEMENT PERTAINS TO WASTE FROM CONCRETE READY-MIX TRUCKS, MASONRY OPERATIONS, AND SIMILAR WASTE.

DISCHARGE OF EXCESS OR WASTE CONCRETE AND/OR WASH WATER FROM CONCRETE TRUCKS IS ALLOWED AT THE CONSTRUCTION SITE. ONLY COMMERCIALY AVAILABLE ABOVE GROUND PORTABLE CONCRETE WASHOUT CONTAINERS ARE ALLOWED AND MUST BE PROTECTED FROM VEHICLE TRAFFIC AND CLEARLY IDENTIFIED BY LEGIBLE SIGNAGE, AND MUST BE LOCATED OUTSIDE OF VEGETATED BUFFERS AND AS FAR AS PRACTICABLE FROM STORMWATER CONVEYANCES AND IMPOUNDMENTS AND WATER BODIES. PORTABLE CONCRETE WASHOUT CONTAINERS SHALL CONTAIN AND ACTIVELY MANAGE BOTH SOLID AND FLUID COMPONENTS OF THE MIX. CONCRETE WASHOUT CONTAINERS MUST BE CLEANED OR EXCHANGED WHEN THE REMAINING VOLUME IS REDUCED BY 85% TO PREVENT ANY POTENTIAL OVERFLOW IN A STORM EVENT. PORTABLE CONCRETE WASHOUT CONTAINERS MUST HAVE A PLASTIC LINER.

ALTERNATIVELY, WASTE CONCRETE CAN BE PLACED INTO FORMS TO MAKE RIP RAP AND OTHER USEFUL CONCRETE PRODUCTS. PORTABLE CONCRETE WASHOUT CONTAINERS SHALL BE DISPOSED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT THESE PROCEDURES, APPLICABLE LAWS, AND ENVIRONMENTAL REGULATIONS ARE FOLLOWED. THE LOCATION OF CONCRETE WASHOUT CONTAINERS SHALL BE SHOWN ON THE SITE MAPS.

F. MASONS' AREA
THE CONTRACTOR SHALL IDENTIFY MASONS' AREA WITH LEGIBLE SIGNAGE ON THE SITE. TO THE EXTENT PRACTICAL, ALL MASONRY TOOLS, MATERIAL, INCLUDING SAND AND SACKED CEMENT AND/OR MORTAR MATERIALS, MIX, AND EQUIPMENT SHALL BE LOCATED WITHIN THE AREA IDENTIFIED. MATERIALS VULNERABLE TO WEATHER ELEMENTS SHALL BE STORED IN CONTAINERS AT THE END OF EACH WORK DAY. SUCH MATERIALS SHALL REMAIN STORED IN CONTAINERS WHEN NOT IN USE.

RUNOFF CONTROL, SUCH AS DIVERSION BERMUS, SILT FENCE, SILT DIKE, OR OTHER MEANS OF CONTAINMENT SHALL BE PROVIDED TO PREVENT THE MIGRATION OF STORMWATER POLLUTANTS FROM THE MASONS' AREA. COVERED RECEPTACLES FOR DEBRIS AND TRASH DISPOSAL SHALL ALSO BE PROVIDED.

THE MASONS' AREA SHALL MEET OSHA AND OTHER REGULATORY REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT (PPE), FIRE EXTINGUISHERS, ETC. CONTRACTOR SHALL PROVIDE SCREENING OR OTHER TECHNOLOGIES FOR MASONS' AREA TO PREVENT AIRBORNE TRANSPORT OF CEMENT DUST AND OTHER PARTICULATES DUE TO HIGH SPEED WIND OR OTHER CONDITIONS. THE LOCATION OF THE MASONS' AREA SHALL BE SHOWN ON THE SITE MAPS.

G. FUEL TANKS

THE CONTRACTOR SHALL IDENTIFY FUELING AREAS WITH LEGIBLE SIGNAGE ON THE SITE. TEMPORARY ON-SITE FUEL TANKS FOR CONSTRUCTION VEHICLES SHALL MEET ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. ALL TANKS, SINGLE AND DOUBLE WALLED, SHALL BE PROVIDED WITH SECONDARY CONTAINMENT (THAT IS CONTAINMENT EXTERNAL TO AND SEPARATE FROM PRIMARY CONTAINMENT). TANKS SHALL HAVE APPROVED SPILL CONTAINMENT WITH THE CAPACITY REQUIRED BY THE APPLICABLE REGULATIONS. SECONDARY CONTAINMENT SHALL BE CONSTRUCTED OF MATERIALS OF SUFFICIENT THICKNESS, DENSITY, AND COMPOSITION SO AS NOT TO BE STRUCTURALLY WEAKENED AS A RESULT OF CONTACT WITH THE FUEL STORED AND CAPABLE OF CONTAINING DISCHARGED FUEL FOR A PERIOD OF TIME EQUAL TO OR LONGER THAN THE MAXIMUM ANTICIPATED TIME SUFFICIENT TO ALLOW RECOVERY OF DISCHARGED FUEL. IT SHALL BE CAPABLE OF CONTAINING 10% OF THE VOLUME OF THE PRIMARY TANK IF A SINGLE TANK IS USED, OR IN THE CASE OF MULTIPLE TANKS, 15% OF THE LARGEST TANK OR 10% OF THE AGGREGATE, WHICHEVER IS LARGER.

THE TANKS SHALL BE IN SOUND CONDITION, FREE OF RUST OR OTHER DAMAGE WHICH MIGHT COMPROMISE CONTAINMENT. FUEL STORAGE AREAS SHALL MEET ALL EPA, OSHA AND OTHER REGULATORY REQUIREMENTS FOR SIGNAGE, FUEL EXTINGUISHERS, ETC. HOSES, VALVES, FITTINGS, CAPS, FILLER NOZZLES, AND ASSOCIATED TIE-INS SHALL BE MAINTAINED IN PROPER WORKING CONDITION AT ALL TIMES. TANKS SHALL BE LOCATED TO MINIMIZE EXPOSURE TO WEATHER AND SURFACE WATER DRAINAGE FEATURES. THE LOCATION OF FUEL TANKS SHALL BE SHOWN ON THE SITE MAPS.

A SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) PLAN MUST BE DEVELOPED IF ABOVEGROUND OIL STORAGE CAPACITY AT THE CONSTRUCTION SITE EXCEEDS 1,320 GALLONS OR AS SPECIFIED BY STATE. CONTAINERS WITH A STORAGE CAPACITY OF 55-GALLONS OR LESS ARE NOT INCLUDED WHEN CALCULATING SITE STORAGE CAPACITY. THE CONTRACTOR SHALL WORK WITH THE CIVIL ENGINEER TO DEVELOP AND IMPLEMENT A SPCC PLAN IN ACCORDANCE WITH THE OIL POLLUTION PREVENTION REGULATION AT TITLE 40 OF THE CODE OF FEDERAL REGULATIONS, PART 112, (40 CFR 112).

H. EQUIPMENT CLEANING AND MAINTENANCE AREAS

THE CONTRACTOR SHALL DESIGNATE AREAS ON THE SITE MAPS FOR EQUIPMENT CLEANING, MAINTENANCE, AND REPAIR. THE CONTRACTOR AND SUBCONTRACTORS SHALL UTILIZE SUCH DESIGNATED AREAS. CLEANING, MAINTENANCE, AND REPAIR AREAS SHALL BE PROTECTED BY A TEMPORARY PERIMETER BERM, SHALL NOT OCCUR WITHIN 150 FEET OF ANY WATERWAY, WATER BODY OR WETLAND, AND SHALL OCCUR IN AREAS LOCATED AS FAR AS PRACTICAL FROM STORM SEWER INLETS. DRIP PANS SHALL BE USED FOR VEHICLE MAINTENANCE ACTIVITIES AND RESULTANT WASTES SHALL BE DISPOSED OF IN ACCORDANCE WITH THE HAZARDOUS MATERIAL MANAGEMENT AND SPILL REPORTING PLAN NOTES INCLUDED ON THIS PLAN SHEET.

USE OF DETERGENTS FOR LARGE SCALE WASHING IS PROHIBITED (FOR EXAMPLE, WASHING VEHICLES, BUILDINGS, PAVEMENT SURFACES, ETC.). ALL WASH WATER SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

I. PREPAREDNESS, PREVENTION, AND CONTINGENCY PLANS (PPC)
THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING A PPC PLAN AND KEEPING IT POSTED IN THE JOB TRAILER AT ALL TIMES.

GENERAL NOTES

- 1. FILTER FABRIC SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 6'-0" STAY SPACING.
- 2. FILTER FABRIC SHALL BE MIRAFI 140 FABRIC OR EQUIVALENT. BURLAP CANNOT BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.
- 3. WOOD POSTS SHALL BE 6'-0" TO 7'-0" IN HEIGHT AND 2" IN WIDTH. WIRE FABRIC SHALL BE FASTENED TO WOODEN POST WITH NOT LESS THAN #9 WIRE STAPLES 1-1/2" LONG.
- 4. THE CONTRACTOR SHALL INSTALL ALL SOIL EROSION CONTROL MEASURES PER THIS DRAWING. CONTRACTOR SHALL ENSURE ALL EROSION CONTROL REQUIREMENTS ARE MET OUTSIDE OF SILT FENCE PERIMETER AS REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SOIL EROSION CONTROL MEASURES PER THE FOLLOWING MAINTENANCE GUIDELINES AND PER LOCAL CODE.

MAINTENANCE NOTES

- 1. FILTER BARRIERS, INCLUDING BUT NOT LIMITED TO SILT FENCE AND INLET PROTECTION, SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- 2. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
- 3. IF THE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.
- 4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE PRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED.

CONSTRUCTION SEQUENCE

- 1. ENSURE NOTICE OF INTENT (NO.I) IS FILED. INSTALL EROSION CONTROL MEASURES INCLUDING STRAW BALES AND SILT FENCE AS SHOWN ON THE SOIL EROSION PLAN.
- 2. INSPECTION OF EROSION CONTROL MEASURES AS OUTLINED IN NOTES. REPAIRS AND/OR REPLACEMENTS SHALL BE MADE AS NECESSARY.
- 3. STRIP AND STOCKPILE TOPSOIL.
- 4. COMPLETE CONSTRUCTION ACTIVITIES.
- 5. REDISTRIBUTE TOPSOIL PER LANDSCAPE PLAN. ALL AREAS DISTURBED BY CONSTRUCTION THAT WILL NOT BE PAVED SHALL BE GRADED AND HAVE VEGETATION ESTABLISHED PER LANDSCAPE PLAN.
- 6. REMOVE SOIL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED. ENSURE NOTICE OF TERMINATION (N.O.T.) IS FILED.

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CONSTRUCTION SEQUENCE																								
TEMPORARY CONSTRUCTION EXIT																								
TEMPORARY CONSTRUCTION MEASURES																								
STRIP AND STOCKPILE TOPSOIL																								
ROUGH GRADE																								
STORM FACILITIES																								
SITE CONSTRUCTION																								
PERMANENT CONTROL STRUCTURES																								
FOUNDATION/BUILDING CONSTRUCTION																								
FINISH GRADING																								
LANDSCAPING/SEED/FINAL STABILIZATION																								

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DATED FEBRUARY 27, 2017

CONTRACTOR SHALL REVIEW THE COMPLETE DRAWINGS SET AND NOTIFY THE DESIGN PROFESSIONAL IN WRITING PRIOR TO CONSTRUCTION, IF ANY DISCREPANCIES ARE FOUND WITHIN THE DRAWINGS OR WITH ACTUAL FIELD CONDITIONS.

BENCHMARK
NAVD 83
MICHIGAN SOUTH
BM*: SPIKE IN NORTHEAST SIDE OF SIGNAL POLE AT SOUTHWEST CORNER OF W. 14 MILE ROAD AND HAGGERTY ROAD 865-87

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THESE PLANS AND PROFILES IS TAKEN FROM FIELD NOTES AND/OR AVAILABLE RECORDS, BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION/DEPTH OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGING TO EXISTING UTILITIES.

MICHIGAN 811
3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 1-800-482-7
DESIGN TEAM: R. THORNTON (861417), R. BARSD (861417), M. NOSHCHANG (861417)
DRAWING NO: 2224 - CE2



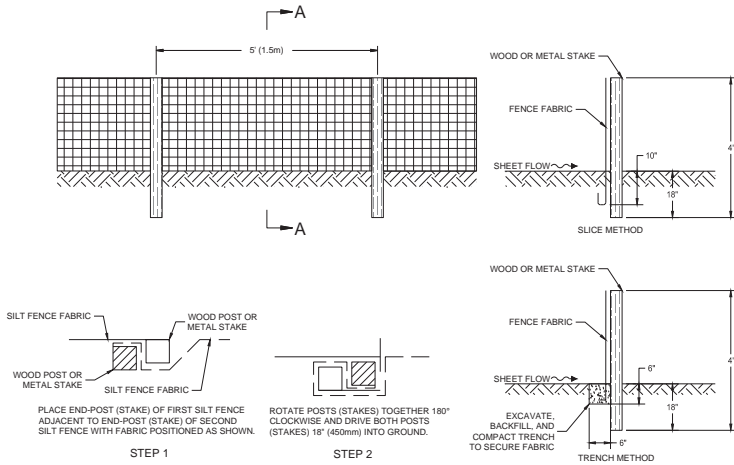
NO.	DATE	REVISIONS
1	02/27/17	ISSUED FOR PERMITS
2	02/27/17	ISSUED FOR PERMITS
3	02/27/17	ISSUED FOR PERMITS
4	02/27/17	ISSUED FOR PERMITS
5	02/27/17	ISSUED FOR PERMITS
6	02/27/17	ISSUED FOR PERMITS
7	02/27/17	ISSUED FOR PERMITS
8	02/27/17	ISSUED FOR PERMITS
9	02/27/17	ISSUED FOR PERMITS
10	02/27/17	ISSUED FOR PERMITS

SWPPP - NOTES
REBUILD
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO: **0002224**
PROJECT ID: **95505**
SCALE: **NO SCALE**

DESIGN TEAM: R. THORNTON (861417), R. BARSD (861417), M. NOSHCHANG (861417)
DRAWING NO: **2224 - CE2**

- SILT FENCE NOTES**
- SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
 - INSTALL ON LEVEL HORIZONTAL CONTOUR WITH ENDS TURNED UPSLOPE.
 - MAXIMUM DRAINAGE AREA FOR SHEET FLOW RUNOFF TO A SILT FENCE SHOULD NOT EXCEED 0.5 ACRES PER 100 FEET OF FENCE.
 - EMBED SILT FENCE INTO SOIL 6 INCHES WITH STAKES ON THE DOWNHILL SIDE.
 - WHEN REQUIRED FOR SILT FENCE, SPLICE THE FABRIC AT A SUPPORT POST WITH A MAXIMUM OF 6 INCHES OVERLAP, FOLD OVER AND SECURELY FASTEN.
 - NEVER INSTALL SILT FENCES IN OR ACROSS CONCENTRATED FLOW PATHS. REPLACE PERIMETER EROSION BARRIER (PEB) INTERCEPTING CONCENTRATED FLOWS WITH A BMP INTENDED FOR CONCENTRATED FLOWS.
 - WHEN J-HOOKS ARE USED TO SUPPORT SILT FENCE, NO NOT ALLOW SPLICES OF FABRIC BETWEEN THE SILT FENCE PEB AND THE ANCHORING POINTS OF THE J-HOOK SEGMENT.
 - INSPECTION AND MAINTENANCE:
 - ALL PEB IS TO BE INSPECTED EVERY 7 CALENDAR DAYS AND AFTER A STORM EVENT OF 1/2 INCH OR GREATER (INCLUDING SNOWFALL).
 - PEB IS TO HAVE NO TEARS OR GAPS AND MUST NOT BE LEANING, REPAIR TEARS, GAPS OR UNDERMINING. RESTORE LEANING PEB AND ENSURE TAUT.
 - REPAIR OR REPLACE ANY MISSING OR BROKEN STAKES IMMEDIATELY.
 - CLEAN PEB IF SEDIMENT REACHES ONE-THIRD HEIGHT OF BARRIER.
 - REMOVE PEB ONCE FINAL STABILIZATION IS ESTABLISHED, AS PEB IS NO LONGER NECESSARY AND SHOULD BE REMOVED.
 - REPAIR PEB IF UNDERMINING OCCURS ANYWHERE ALONG ITS ENTIRE LENGTH.



ATTACHING TWO SILT FILTER FENCES
(NOT APPLICABLE FOR J-HOOKS)

SECTION "A-A"
(N.T.S.)

SILT FENCE DETAILS
N.T.S.

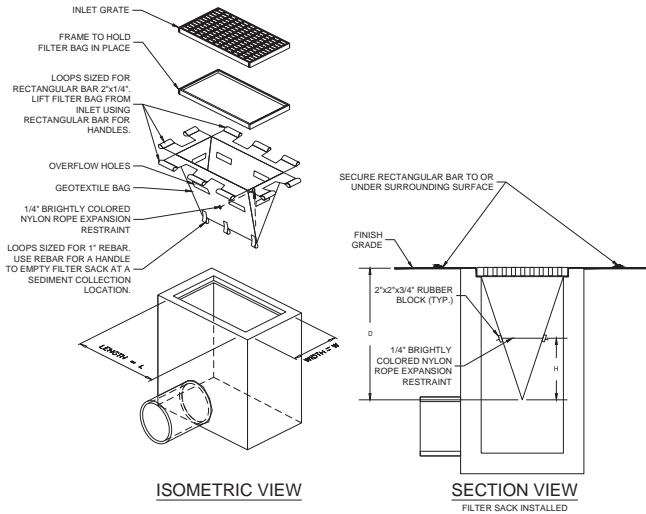
NOTE: FOR MORE INFORMATION, REFER TO THE MICHIGAN DEPARTMENT OF TRANSPORTATION EROSION AND SEDIMENT CONTROL FIELD GUIDE FOR CONSTRUCTION INSPECTION FOR MORE INFORMATION.

INLET PROTECTION NOTES

- GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
- PLACE AN OIL ABSORBENT PAD OR PILLOW UNDER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
- THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
- THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES.
- THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

MAINTENANCE NOTES

- INLET PROTECTION DEVICES MUST BE INSPECTED FOR SEDIMENT ACCUMULATION WITHIN THE CATCH BASIN. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
- REMOVAL OF SEDIMENT ACCUMULATED IN OR ADJACENT TO A STORM DRAIN INLET MUST BEGIN IMMEDIATELY UPON DISCOVERY, WITH COMPLETION OF THE ACTIVITY OCCURRING NO LATER THAN THE END OF THE FOLLOWING BUSINESS DAY.
- INLET PROTECTION DEVICES SHALL BE INSPECTED FOR UNINTENDED BYPASS OR IMPROPER FLOW-RATES THAT MAY CAUSE DOWNSTREAM FLOODING.
- CONTACT THE CIVIL ENGINEER FOR ALTERNATE INLET PROTECTION IF THE DESIGNED PROTECTION MAY IMPACT DOWNSTREAM BMPs, ADJACENT SLOPES, ETC. DUE TO PONDING ISSUES. ENSURE THAT NO UNDERMINING OF INLET PROTECTION DEVICES HAS OCCURRED.
- INLET PROTECTION DEVICES AND BARRIERS SHALL BE PREPARED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETRIORATION.



INLET PROTECTION FILTER SACK
N.T.S.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4633	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4633	120 LBS
UV RESISTANCE	ASTM D-4356	90%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ.FT.
PERMITTIVITY	ASTM D-4491	0.55 SEC ⁻¹

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4633	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4633	45 LBS
UV RESISTANCE	ASTM D-4356	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ.FT.
PERMITTIVITY	ASTM D-4491	1.5 SEC ⁻¹

* FOR USE ONLY IN PAVED AREAS WHERE SEDIMENT LOADS ARE EXPECTED TO BE VERY LOW. FILTER SACK MUST HAVE OVERFLOW HOLES TO PREVENT PONDING.

SURVEY PROVIDED BY
CESO, INC.
DATED FEBRUARY 27, 2017

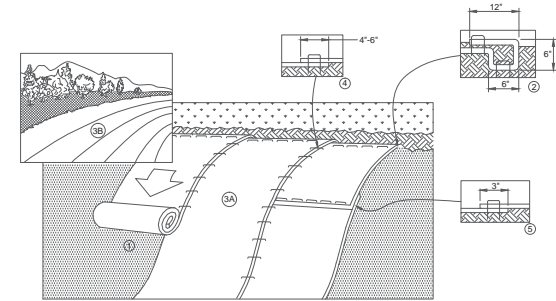
CONTRACTOR SHALL REVIEW THE COMPLETE DRAWING SET AND NOTIFY THE DESIGN PROFESSIONAL IN WRITING PRIOR TO CONSTRUCTION. IF ANY DISCREPANCIES ARE FOUND WITHIN THE DRAWINGS OR WITH ACTUAL FIELD CONDITIONS.

BENCHMARK
MICHIGAN SOUTH
Spike in northeast side of signal pole at southwest corner of W. 14 mile road and Haggerty road
965.87

DATUM
NAVD 83
MICHIGAN SOUTH
NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THESE PLANS AND PROFILES IS TAKEN FROM FIELD TOPS AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION, DEPTH, OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES TO EXISTING UTILITIES.

MICHIGAN 811
WORKING DAYS BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

DESIGN TEAM DATE
R. THORNTON 08/14/17
R. BAIRD 08/14/17
M. NOSHCHANG 08/14/17
2224 - CE3

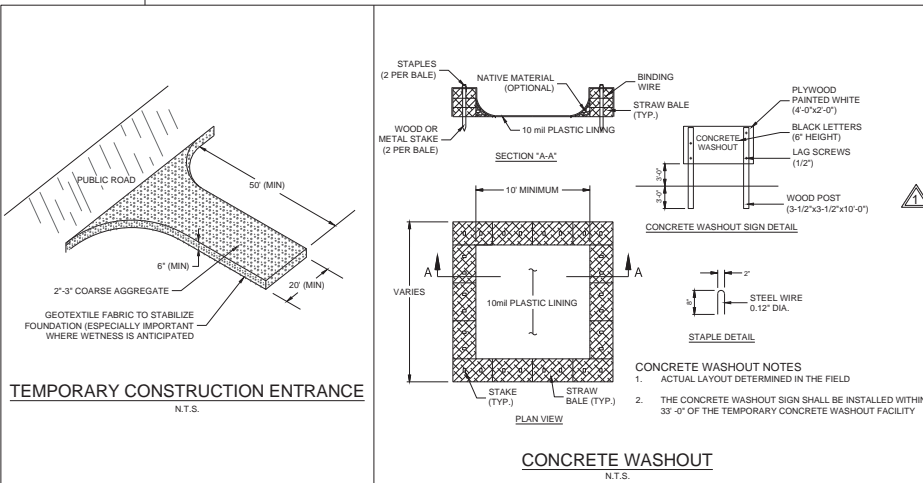


EROSION CONTROL BLANKET NOTES

- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH AS SHOWN IN DETAIL 2. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURER'S RECOMMENDATION.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH MINIMUM 6" OVERLAP. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
- PLACE STAPLES/STAKES PER MANUFACTURER'S RECOMMENDATION FOR THE APPROPRIATE SLOPE BEING APPLIED.

EROSION CONTROL BLANKET

N.T.S.



NO.	REVISION	DATE	BY	APP'D.

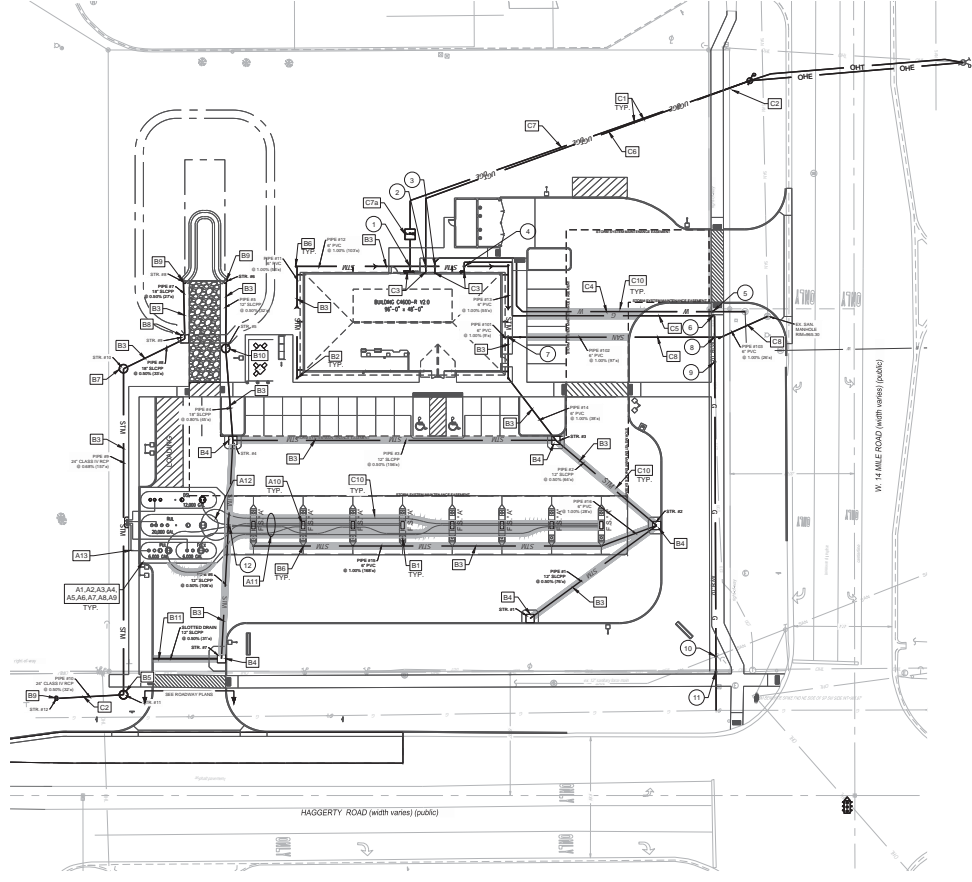
SWPPP DETAILS
REBUILD
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO. 0002224
PROJECT ID 95505
SCALE NO SCALE

2224 - CE3

Speedway
Speedway Construction Dept.
P.O. Box 141233
Farmington Hills, MI 48333

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A. TANKS AND PRODUCT PIPING DETAILS

- CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AS INDICATED ON STD-PQ SERIES DRAWINGS.
- ALL NEW INSTALLATIONS AND MODIFICATIONS TO THE UNDERGROUND STORAGE TANK SYSTEM SHALL COMPLY WITH PEI RP100-05, PEI RP300-09, API RP1615 AND ALL FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
- TANKS SHALL BE ANCHORED PER STANDARD DRAWING STD-PQ-5.
- BID AS ALTERNATE 1 SHEET PILE TANK HOLE.
- BID AS ALTERNATE 2 SUPPLY AND INSTALL FILTER FABRIC LINER IN NEW TANK HOLE AND PRODUCT PIPING TRENCHES.
- BALLAST TANKS TO 90% FULL WITH CLEAN WATER. DO NOT BALLAST DEF TANKS WITH WATER. AFTER THE TANKS HAVE BEEN PROPERLY COVERED BY OVERBURDEN AND BEFORE PRODUCT IS DELIVERED, THE CONTRACTOR SHALL REMOVE ALL WATER. COORDINATE WITH OWNER'S REPRESENTATIVE FOR DELIVERY OF PRODUCT. ANY WATER REMAINING IN TANKS AFTER PRODUCT DELIVERY SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- INSTALL TANK CONDUIT FROM TANK TO DISPENSER ELECTRICAL EQUIPMENT INSIDE BUILDING PER STD-PQ SERIES DRAWINGS AND MANUFACTURER'S INSTRUCTIONS.
- INSTALL VEEDER ROOT LINE LEAK DETECTION AND ATO SYSTEM, RELATED MANHOLES, CONDUITS, AND JUNCTION BOXES PER DRAWING STD-EVR-450 AND MANUFACTURER'S INSTRUCTIONS. INSTALL TANK INTERSTITIAL SENSORS FURNISHED BY OWNER.
- INSTALL TANK SUMP SENSORS FURNISHED BY OWNER.
- PRODUCT PIPING LINE-UP AND FRONT SIDE 'A' (F.S. 'A') OF DISPENSERS SHALL BE AS SHOWN. PIPING AND CONDUIT LOCATION AND SPACING UNDER DISPENSERS SHALL BE PER STD-PQ SERIES DRAWINGS.
- INSTALL 2" DIRECT-BURY SOLID WALL PRODUCT PIPING (UPP DOUBLE WALL) PER MANUFACTURER'S RECOMMENDATIONS AND SERIES STD-PQ DRAWINGS. THE PIPE, APPURTENANCES (INCLUDING BULKHEAD FITTINGS), AND MISC. MATERIALS NECESSARY TO ASSEMBLE SYSTEM SHALL BE OWNER SUPPLIED.
- INSTALL A SECOND FILL PIPE ON 20,000 GALLON TANKS PER DETAILS ON THE STD-PQ SERIES DRAWINGS.
- SUPPLY AND INSTALL 2" SINGLE WALL FIBERGLASS VENT LINES AND RELATED EQUIPMENT. CONTRACTOR TO LOCATE VENT STACKS A MINIMUM OF 10' AWAY FROM ELECTRICAL EQUIPMENT AND EXISTING BUILDING STRUCTURES.

B. STORM PIPING

- A CLEANOUT SHALL BE INCLUDED AT EVERY CANOPY COLUMN WITH A DOWNSPOUT THAT IS CONNECTED TO THE STORM DRAINAGE SYSTEM AS INDICATED PER DRAWING STD-SCB-1.
- BUILDING DOWNSPOUTS SHALL BE CONNECTED TO STORM DRAINAGE SYSTEM AS INDICATED.
- SUPPLY AND INSTALL SMOOTH LINED CORRUGATED PLASTIC STORM DRAINAGE PIPING (SDPP) AS SHOWN PER STANDARD DRAWING SERIES STD-CUD. ENSURE CONNECTIONS TO STRUCTURES ARE PER PIPE MANUFACTURER'S RECOMMENDATION.
- SUPPLY AND INSTALL (5) STANDARD DUTY CATCH BASINS, WITH SPIDER DRAINS, INCLUDING CONCRETE COLLAR IF IN ASPHALT PAVEMENT PER DRAWING #STD-CUD-1.
- SUPPLY AND INSTALL (1) STANDARD DUTY MANHOLE, INCLUDING CONCRETE COLLAR IF IN ASPHALT PAVEMENT, PER DRAWING STD-CUD-1.
- SUPPLY AND INSTALL CLEAN OUTS AT LOCATIONS SHOWN PER DRAWING STD-CUD-1 AND STD-SCB-1.
- SUPPLY AND INSTALL (1) YARD DRAIN PER DRAWING STD-CUD-2.
- SUPPLY AND INSTALL (1) OUTLET CONTROL STRUCTURE PER DETAIL ON 2224-CUS AND PER STANDARD DRAWING STD-CUD-1.
- CONSTRUCT (3) HEADWALL STRUCTURES IN POND AND RIGHT-OF-WAY PER CITY OF NOVI STANDARD DETAILS.
- SUPPLY AND INSTALL STORM WATER BMP SEDIMENT REMOVAL SYSTEM PER MANUFACTURER'S SPECIFICATIONS. SEE SHEET 2224-CUS FOR SYSTEM LAYOUT AND PREFERRED MANUFACTURER'S INFORMATION.
- INSTALL TRENCH DRAIN.

C. UTILITIES

- VERIFY ALL SERVICE UTILITY ROUTINGS WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. VERIFY ALL UTILITY CLEARANCES ARE MAINTAINED PER LOCAL CODE.
- ALL WORK WITHIN RIGHT-OF-WAY SHALL CONFORM TO GOVERNING STATE AND/OR LOCAL SPECIFICATIONS.
- SITE CONTRACTOR TO BRING UTILITIES WITHIN 5' OF BUILDING AT LOCATIONS SHOWN. COORDINATE ALL BUILDING UTILITY CONNECTIONS WITH BUILDING DRAWINGS.

- CONTRACTOR SHALL FURNISH AND INSTALL 2" COPPER WATER LINE FROM METER TO EXISTING TAP. CONTRACTOR SHALL INSTALL THE WATER LINE FROM THE METER TO THE BUILDING SERVICE PER THE BUILDING DRAWINGS. CONTRACTOR SHALL COORDINATE INSTALLATION WITH WATER COMPANY.
- CONTRACTOR SHALL FURNISH AND INSTALL 1.25" GAS LINE FROM METER TO NEW TAP. THE CONTRACTOR SHALL INSTALL THE GAS LINE FROM THE METER TO THE BUILDING SERVICE PER THE BUILDING DRAWINGS. CONTRACTOR SHALL COORDINATE INSTALLATION WITH GAS COMPANY.
- CONTRACTOR SHALL FURNISH AND INSTALL (1) 2" PVC CONDUIT WITH PULL STRING FROM TELEPHONE SERVICE CONNECTION TO BUILDING.
- NEW UNDERGROUND 120/208V THREE PHASE ELECTRIC SERVICE SHALL BE INSTALLED PER BUILDING DRAWINGS. CONTRACTOR SHALL INSTALL CONDUITS AND CONDUCTORS FROM PAD MOUNTED TRANSFORMER TO BUILDING. CONTRACTOR SHALL SUPPLY AND INSTALL CONDUITS FOR PRIMARY POWER AS SPECIFIED BY LOCAL POWER COMPANY FROM POWER POLE TO TRANSFORMER. PRIMARY POWER CONDUCTORS SUPPLIED AND INSTALLED BY LOCAL POWER COMPANY.
- INSTALL CONCRETE TRANSFORMER PAD AT LOCATION INDICATED PER REQUIREMENTS OF LOCAL POWER COMPANY, INCLUDING ANY REQUIRED BOLLARDS.
- INSTALL 6" PVC SANITARY SEWER LINE (MINIMUM SDR-23.5 FOR LATERALS AND SDR-26 FOR MAINS) FROM BUILDING TO APPROPRIATE SERVICE LATERAL PER FIELD CONDITIONS. MINIMUM SLOPE SHALL BE 1.0%. INSTALL CLEAN-OUTS EVERY 100' ALONG SEWER LINE. MINIMUM BURIED DEPTH OF 5' UNDER PAVEMENT.
- INSTALL 3" PVC SLEEVE FOR IRRIGATION LINES UNDER APPROACHES.
- COMPACTED SAND BACKFILL SHALL BE PROVIDED PER LOCAL CODE FOR ALL UTILITIES WITHIN THE INFLUENCE OF PAVED AREAS.

SANITARY CHART			
#	STRUCTURE	RIM ELEV.	PIPE INV.
101	SANITARY CLEANOUT	963.68	957.72 (8') S 957.72 (8') N
102	SANITARY CLEANOUT	958.43	956.75 (8') S 956.76 (8') NW
103	EX. SANITARY MANHOLE	965.30	956.50 (8') SE

UTILITY CROSSING SCHEDULE			
NO.	UTILITY	ELEVATION	CLEARANCE
1	PR. ELEC	B/PIPE=960	1.1'
2	PR. 6" STM	T/PIPE=958.90	1.18'
3	PR. 2" WTR	B/PIPE=960	-
4	PR. 2" WTR	T/PIPE=958.82	1.18'
5	PR. 2" WTR	T/PIPE=958.78	-
6	PR. 1.25" GAS	B/PIPE=960	1.26'
7	PR. 6" STM	T/PIPE=958.64	-
8	EX. TELE	B/PIPE=TBD	-
9	PR. 2" WTR	T/PIPE=TBD	-
10	EX. TELE	B/PIPE=TBD	-
11	PR. 1.25" GAS	T/PIPE=TBD	-
12	PR. 6" SAN	B/PIPE=960	1.52'
13	PR. 6" SAN	T/PIPE=958.48	-
14	PR. 1.25" GAS	B/PIPE=TBD	-
15	PR. 1.25" GAS	T/PIPE=TBD	-
16	EX. TELE	B/PIPE=958	-
17	PR. 1.25" GAS	B/PIPE=TBD	-
18	EX. TELE	B/PIPE=TBD	-
19	PR. PRODUCT LINES	B/PIPE=958.87	-
20	PR. 12" STM	T/PIPE=957.75	1.12'

STORM CHART			
#	STRUCTURE	RIM ELEV.	PIPE INV.
1	AREA INLET	960.87	958.00 (12") NW
2	AREA INLET	964.44	957.62 (12") SE 957.62 (12") SW 957.62 (8') SE
3	AREA INLET	962.04	957.20 (12") NE 957.20 (12") S 957.30 (8") SW
4	48" MANHOLE	961.54	955.94 (12") E 955.94 (18") W 955.94 (12") N
5	AQUASWIRL	960.65	965.38 (18") W 955.58 (18") E
6	HEADWALL	954.86	955.42 (18") E
7	AREA INLET	959.23	956.82 (12") S 956.47 (12") E
8	NULL STRUCTURE	954.77	954.49 (18") E
9	OUTLET CONTROL	961.77	954.35 (18") W 954.25 (18") SE
10	48" MANHOLE	962.48	954.09 (18") NW 953.99 (24") E
11	48" MANHOLE	959.65	952.82 (24") W 952.82 (24") S
12	HEADWALL	954.83	952.60 (24") N
BC01	CLEANOUT	963.85	957.68 (8') NE 957.78 (8') W
BC02	CLEANOUT	963.97	958.42 (8') S 958.32 (8') E
BC03	CLEANOUT	963.22	959.54 (8') E 959.44 (8') N
BC04	CLEANOUT	963.50	960.08 (8') W
CC01	CLEANOUT	963.41	957.91 (8') NW 957.91 (8') S
CC02	CLEANOUT	961.54	959.59 (8') N

Materials List			
Type	Size	Material	Quantity
Sanitary	6"	PVC	3
Water	2"	Copper	5
Gas	1.25"	Polyethylene	3
Storm	Varies	SDPP	15

EXISTING LEGEND		PROPOSED LEGEND	
---	STORM SEWER	---	STM
---	SANITARY SEWER	---	SSW
---	GAS LINE	---	G
---	WATER LINE	---	W
---	OVERHEAD ELECTRIC LINE	---	ONE
---		---	COMPACTED SAND BACKFILL

** IF DEWATERING IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION, A DEWATERING PLAN IS TO BE SUBMITTED TO THE CITY OF NOVI ENGINEERING DEPARTMENT FOR REVIEW.

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PIPING & UTILITIES PLAN

REBUILD

31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO. 0002224
PROJECT ID 95505
SCALE 1" = 30' 0"

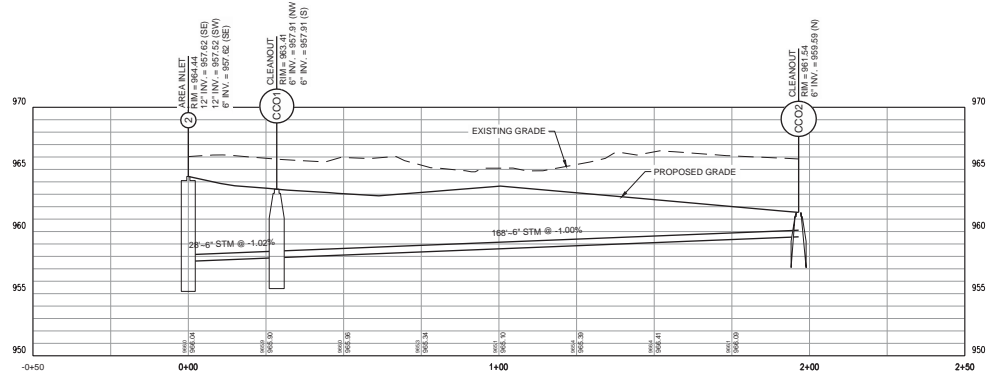
DESIGN TEAM
R. THORNTON 08/14/17
R. BARRD 08/14/17
M. MOSSBACH 08/14/17

DATE 08/14/17

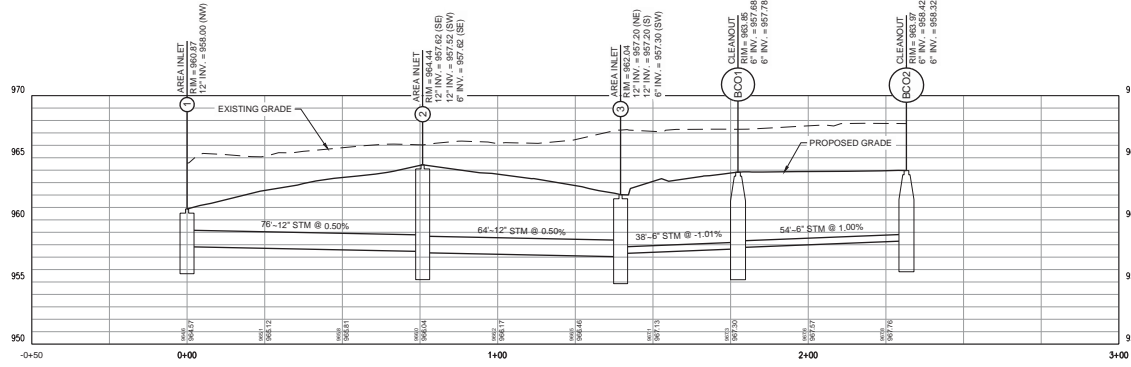
2224 - CU



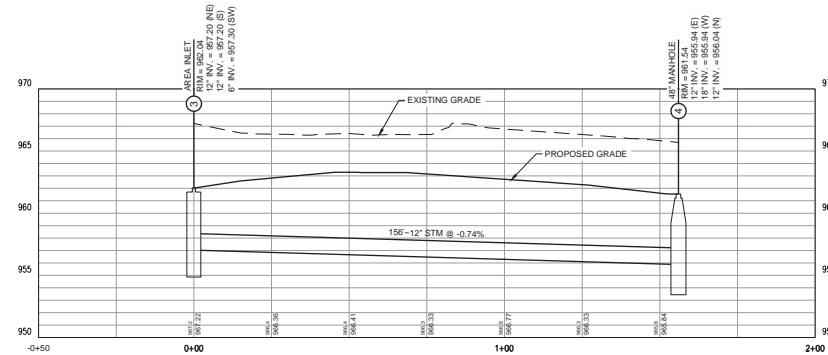
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STORM STRUCTURE CCO1-CCO2-2 PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



STORM STRUCTURE 1-2-3-BCO1-BCO2 PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



STORM STRUCTURE 3-4 PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.

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STORM SEWER PROFILES REBUILD
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO: 0002224
PROJECT ID: 95505
SCALE: NO SCALE

DESIGN TEAM: R. THEODORON (08/14/21), R. BARRD (08/14/21), M. NOSHANG (08/14/21)
DATE: 08/14/21

2224 - CU1



Speedway Construction Dept.
ENGR. CH 145232

NO.	REVISION	DATE	BY	APP'D.
1	ISSUED FOR PER CITY AND COUNTY COMMENTS			
2	REVISED FOR CITY AND COUNTY COMMENTS			
3	REVISED FOR CITY AND COUNTY COMMENTS			
4	REVISED FOR CITY AND COUNTY COMMENTS			
5	REVISED FOR CITY AND COUNTY COMMENTS			
6	REVISED FOR CITY AND COUNTY COMMENTS			
7	REVISED FOR CITY AND COUNTY COMMENTS			
8	REVISED FOR CITY AND COUNTY COMMENTS			
9	REVISED FOR CITY AND COUNTY COMMENTS			
10	REVISED FOR CITY AND COUNTY COMMENTS			

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Pond Report

Hydroflow Hydrographs Extension for AutoCAD® Civil 3D® 2015 by Autodesk, Inc. v10.4

Tuesday, 05 / 15 / 2018

Pond No. 1 - Primary Detention Pond

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 954.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	954.50	03	0	0
0.30	954.80	1,107	166	166
0.60	955.10	1,447	343	549
0.90	955.40	1,877	458	1,018
1.20	955.70	1,968	538	1,556
1.50	956.00	2,152	609	2,165
1.80	956.30	2,407	684	2,849
2.10	956.60	2,668	761	3,610
2.40	956.90	2,945	842	4,452
2.70	957.20	3,233	927	5,378
3.00	957.50	3,531	1,015	6,393
3.30	957.80	3,845	1,106	7,499
3.60	958.10	4,173	1,203	8,702
3.90	958.40	4,516	1,303	10,005
4.20	958.70	4,874	1,408	11,413
4.50	959.00	5,252	1,519	12,932
4.80	959.30	5,648	1,635	14,567
5.10	959.60	6,015	1,750	16,317
5.40	960.10	6,380	3,099	19,416
5.90	960.40	6,879	1,989	21,405

Culvert / Orifice Structures

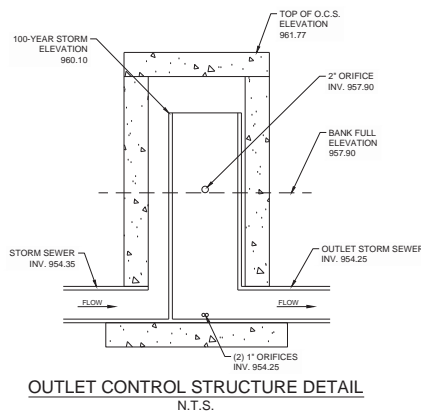
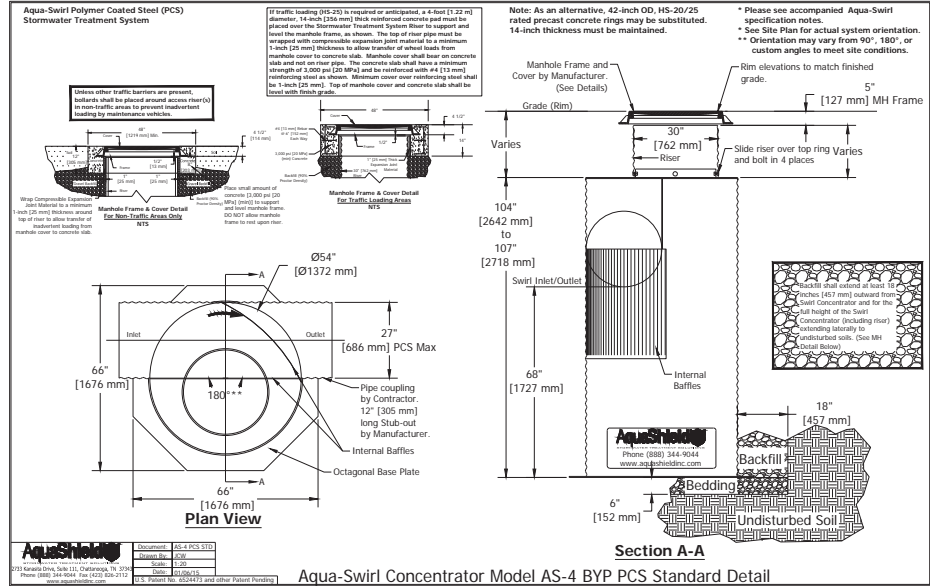
Weir Structures			
[A]	[B]	[C]	[Pr/Rsr]
Rise (in)	= 1.00	2.00	Inactive
Span (in)	= 1.00	2.00	18.00
No. Barrels	= 2	1	2
Invert El. (ft)	= 954.25	957.50	954.89
Length (ft)	= 0.00	0.00	27.00
Slope (%)	= 0.00	0.00	0.50
N-Value	= 0.13	0.13	n/a
Orifice Coeff.	= 0.50	0.60	0.50
Multi-Stage	= n/a	No	Yes

Note: Cased/Orifice outfalls are analyzed under wet (w) and outlet (o) control. Wet Weirs checked for surface conditions (s) and submerged (s).

Stage / Storage / Discharge Table

Stage #	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	Civ D cfs	Pr/Rsr cfs	Wv A cfs	Wv B cfs	Wv C cfs	Wv D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	954.50	0.00	0.00	0.00	---	---	---	---	---	---	---	---	0.000
0.30	166	954.80	0.03	0.00	0.00	---	---	---	---	---	---	---	---	0.028
0.60	549	955.10	0.04	0.00	0.00	---	---	---	---	---	---	---	---	0.040
0.90	1,018	955.40	0.05	0.00	0.00	---	---	---	---	---	---	---	---	0.050
1.20	1,556	955.70	0.06	0.00	0.00	---	---	---	---	---	---	---	---	0.057
1.50	2,165	956.00	0.06	0.00	0.00	---	---	---	---	---	---	---	---	0.064
1.80	2,849	956.30	0.07	0.00	0.00	---	---	---	---	---	---	---	---	0.070
2.10	3,610	956.60	0.08	0.00	0.00	---	---	---	---	---	---	---	---	0.076
2.40	4,452	956.90	0.08	0.00	0.00	---	---	---	---	---	---	---	---	0.081
2.70	5,378	957.20	0.09	0.00	0.00	---	---	---	---	---	---	---	---	0.086
3.00	6,393	957.50	0.09	0.00	0.00	---	---	---	---	---	---	---	---	0.091
3.30	7,499	957.80	0.10	0.00	0.00	---	---	---	---	---	---	---	---	0.095
3.60	8,702	958.10	0.10	0.00	0.00	---	---	---	---	---	---	---	---	0.100
3.90	10,005	958.40	0.10	0.00	0.00	---	---	---	---	---	---	---	---	0.111
4.20	11,413	958.70	0.11	0.00	0.00	---	---	---	---	---	---	---	---	0.116
4.50	12,932	959.00	0.11	0.00	0.00	---	---	---	---	---	---	---	---	0.127
4.80	14,567	959.30	0.11	0.00	0.00	---	---	---	---	---	---	---	---	0.135
5.10	16,317	959.60	0.12	0.00	0.00	---	---	---	---	---	---	---	---	0.142
5.40	19,416	960.10	0.12	0.00	0.00	---	---	---	---	---	---	---	---	0.150
5.90	21,405	960.40	0.13	0.00	0.00	---	---	---	---	---	---	---	---	2.119

POND REPORT
NO SCALE



NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD TOPO AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION, ELEVATION, OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.

MICHIGAN 811
1 WORKING DAY BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

DESIGN TEAM DATE
R. THORNTON 08/14/17
R. BAIRD 08/14/17
M. NIOSHANG 08/14/17
2224 - CU3

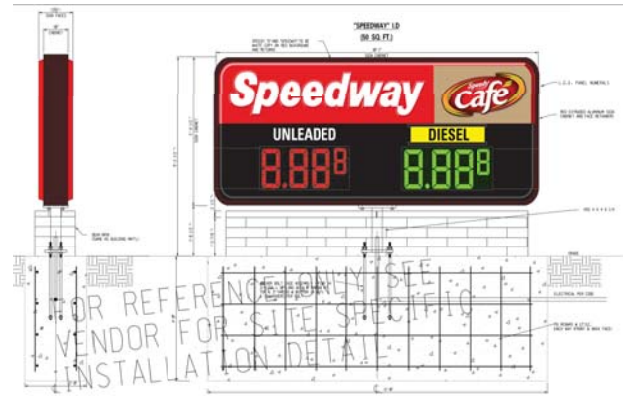
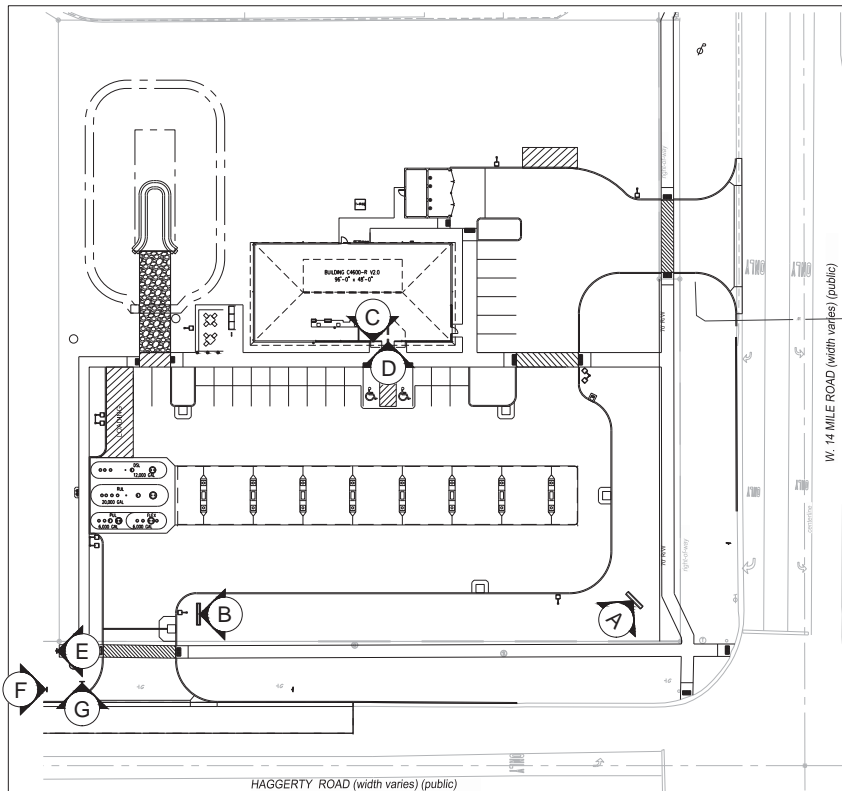
Speedway
Speedway Construction, Inc.
10000 N. Dixie Ave.
Columbus, OH 43235

NO.	DATE	DESCRIPTION
1	08/14/17	ISSUED FOR CITY AND COUNTY COMMENTS
2	08/14/17	ISSUED FOR CITY AND COUNTY COMMENTS
3	08/14/17	ISSUED FOR CITY AND COUNTY COMMENTS
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50	08/14/17	ISSUED FOR CITY AND COUNTY COMMENTS

STORM WATER DETAILS
REBUILD
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO. 0002224
PROJECT ID 95505
SCALE NO SCALE

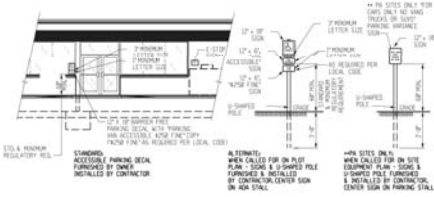
DESIGN TEAM DATE
R. THORNTON 08/14/17
R. BAIRD 08/14/17
M. NIOSHANG 08/14/17
2224 - CU3



A 40 SQ. FT. GROUND MOUNT SIGN DETAILS
N.T.S.



QUICK-BRIK GROUND MOUNT BASE DETAILS
N.T.S.



C ACCESSIBLE PARKING SIGN DETAIL
N.T.S.



B NOVI WELCOME SIGN DETAIL
N.T.S.

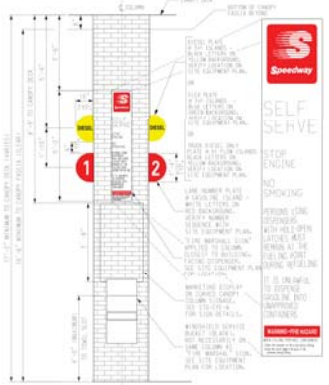


E "END OF PATH" SIGN DETAIL
N.T.S.

NOTE:
1. SIGNS SHALL BE 18"X18" AND CONSTRUCTED OF 303 ENGINEERING GRADE REFLECTIVE ALUMINUM WITH 1/2" RADIUS AT CORNERS.
2. SIGNS SHALL HAVE A YELLOW BACKGROUND WITH BLACK COPY AND BLACK OUTLINE.
3. SIGN POST AND FASTENERS SHALL BE PER M.M.U.T.C.D. (MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.

ITEM #	REF	SUBSTRATE	PRIMER	INTERMEDIATE	TOPCOAT
1		METAL BOLLARDS	PRO-CRYL B95-310 COLOR: OFF-WHITE 2.0 - 4.0 MILS DFT	SHER-CRYL B69R000 COLOR: SW4001 SAFETY RED 2.5 - 4.0 MILS DFT	SHER-CRYL B69R000 COLOR: SW4001 SAFETY RED 2.5 - 4.0 MILS DFT
2		METAL SIGN POLES AND FRAMES	PRO-CRYL B95-310 COLOR: OFF-WHITE 2.0 - 4.0 MILS DFT	SHER-CRYL B69R000 COLOR: MATCH PMS 4975 2.5 - 4.0 MILS DFT	SHER-CRYL B69R000 COLOR: MATCH PMS 4975 2.5 - 4.0 MILS DFT
3		METAL AREA LIGHT POLES	DTM BONDING PRIMER B69A50 COLOR: OFF-WHITE 2.0 - 5.0 MILS DFT	SHER-CRYL CLEAR BASE COLOR: BATH BRONZE TONE 2.5 - 4.0 MILS DFT	SHER-CRYL CLEAR BASE COLOR: BATH BRONZE TONE 2.5 - 4.0 MILS DFT
4		METAL STRUCTURAL CANOPY COLLARS	DTM BONDING PRIMER B69A50 COLOR: OFF-WHITE 2.0 - 5.0 MILS DFT	SHER-CRYL B69W351 COLOR: SW6134 NETSLAKE 2.5 - 4.0 MILS DFT	SHER-CRYL B69W351 COLOR: SW6134 NETSLAKE 2.5 - 4.0 MILS DFT
4.1		GASOLINE ISLAND CANOPIES	DTM BONDING PRIMER B69A50 COLOR: OFF-WHITE 2.0 - 5.0 MILS DFT	SHER-CRYL B69W351 COLOR: SW6134 NETSLAKE 2.5 - 4.0 MILS DFT	SHER-CRYL B69W351 COLOR: SW6134 NETSLAKE 2.5 - 4.0 MILS DFT
4.2		GASOLINE ISLAND CANOPIES	DTM BONDING PRIMER B69A50 COLOR: OFF-WHITE 2.0 - 5.0 MILS DFT	SHER-CRYL B69W351 COLOR: SW7008 EXTRA WHITE 2.5 - 4.0 MILS DFT	SHER-CRYL B69W351 COLOR: SW7008 EXTRA WHITE 2.5 - 4.0 MILS DFT
5		ARRIVE ON SITE POWDER COATED	STANDARD C2000C4000 BLOCK OR BRICK COLOR SCHEMES		DM - BRITE RED
6		DOWNSPOUTING	DTM BONDING PRIMER B69A50 COLOR: OFF-WHITE 2.0 - 5.0 MILS DFT	SHER-CRYL CLEAR BASE COLOR: BATH BRONZE TONE 2.5 - 4.0 MILS DFT	SHER-CRYL CLEAR BASE COLOR: BATH BRONZE TONE 2.5 - 4.0 MILS DFT
7		METAL EXTERIOR DOORS	PRO-CRYL B66-310 COLOR: OFF-WHITE 2.0 - 4.0 MILS DFT	SHER-CRYL CLEAR BASE COLOR: BATH BRONZE TONE 2.5 - 4.0 MILS DFT	SHER-CRYL CLEAR BASE COLOR: BATH BRONZE TONE 2.5 - 4.0 MILS DFT
8		PARKING LOT STRIPING & CURB TRANSITIONS (NON-ADA) STANDARD	NOT REQUIRED	NOT REQUIRED	PRO-PAK™ WATERBORNE TRAFFIC MARKING PAINT COLOR: YELLOW B87Y 02467 PRO-PAK™ WATERBORNE TRAFFIC MARKING PAINT COLOR: BLUE B97L D2002
8		PARKING LOT STRIPING (ADA) STANDARD	NOT REQUIRED	NOT REQUIRED	PRO-PAK™ WATERBORNE TRAFFIC MARKING PAINT COLOR: WHITE B97W D2034
8		PARKING LOT STRIPING (NON-ADA) - ONLY WHEN WHITE IS REQUIRED	NOT REQUIRED	NOT REQUIRED	SHER-CRYL B69W311 COLOR: SW7008 EXTRA WHITE 2.5 - 4.0 MILS DFT
11		METAL CANOPY DECKING	DTM BONDING PRIMER B69A50 COLOR: OFF-WHITE 2.0 - 5.0 MILS DFT	NOT REQUIRED	

SPEEDWAY PAINT SCHEDULE



F CANOPY COLUMN DETAILS
N.T.S.



D ENTRANCE CAFE SIGN DETAIL
N.T.S.



CANOPY FASCIA ELEVATION
N.T.S.



F SPEED LIMIT SIGN (R2-1)
N.T.S.



C STOP SIGN (R1-1)
N.T.S.

REF. LTR.	LOCATION	MESSAGE	ILLUMINATION	DIMENSION	AREA
BUILDING - SEE GRAPHICS CONTROL DRAWING					
D	FRONT ENTRANCE	ENTRANCE CAFE SIGN	ILLUMINATED	5.66 x 3'	16.92 SF
GROUND MOUNT - SEE SIGN DRAWING					
A	NORTHEAST CORNER	TRADEMARK/PRICE	ILLUMINATED	3'-11 1/2" X 10'-1"	40 SF
SITE TOTAL					56.92 SF

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MICHIGAN 811
WORKING DAYS BEFORE YOU DIG
CALL MISS DIG
1-800-487-1111



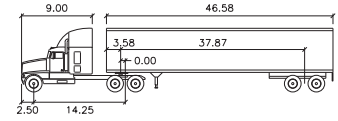
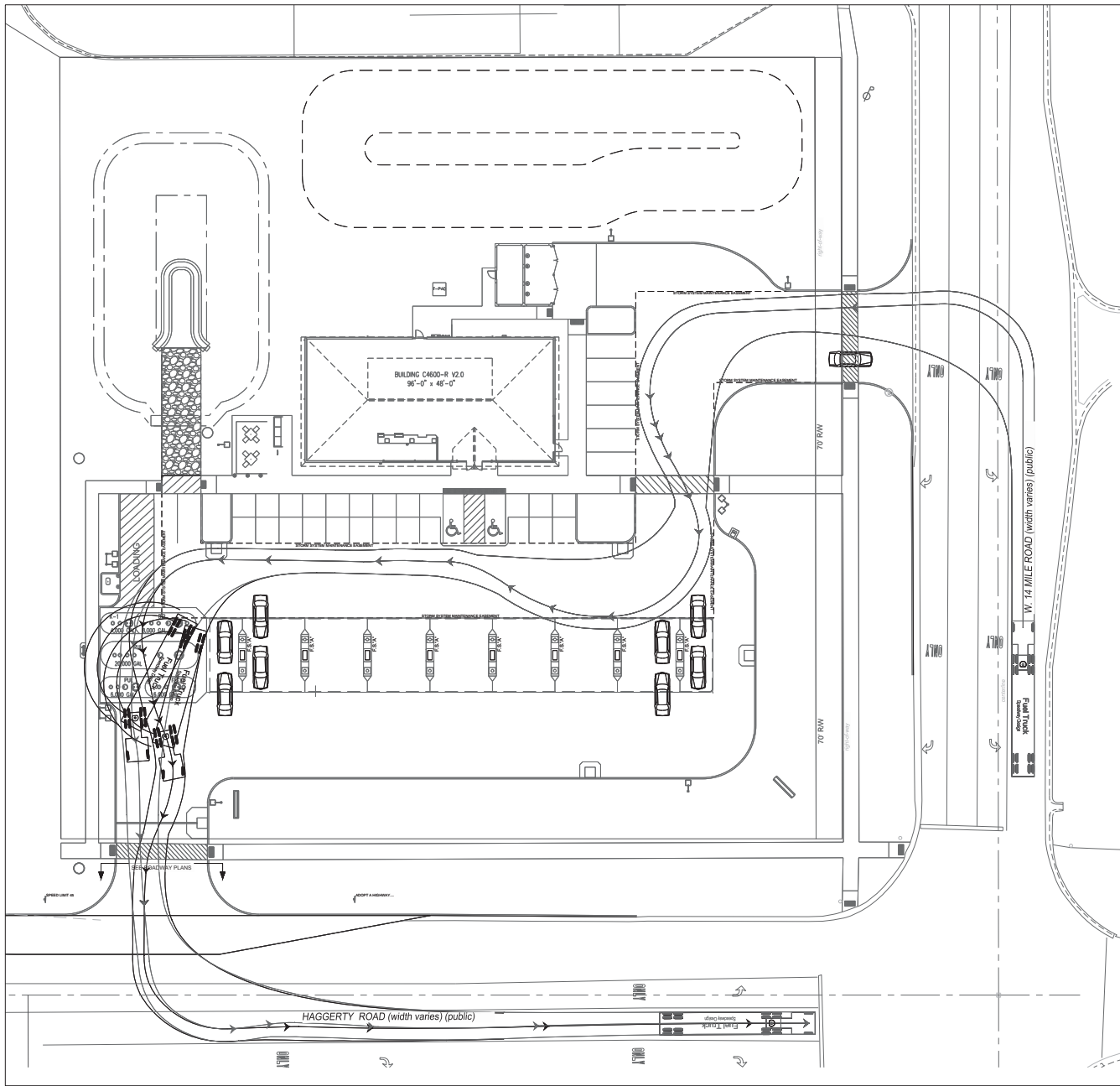
REVISION	DATE	DESCRIPTION
1		REVISED PER CITY AND COUNTY COMMENTS

SIGNAGE PLAN
REBUILD
31726 HAGGERTY ROAD
CANTON AND COUNTY
NOVI, MI

STORE NO: 0002224
PROJECT ID: 95505

DESIGN TEAM	DATE
DESIGNED BY: R. THORNTON	08/14/17
DRAWN BY: R. BAIRD	08/14/17
CHECKED BY: M. NIOSCHANG	08/14/17

2224 - SS



Fuel Truck	feet		
Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.0
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		



NO.	REVISIONS	SCALE OF PLAN	DATE
1	REVISED PER CITY AND COUNTY REVIEW		

CIRCULATION PLAN
REBUILD
 31725 HAGGERTY ROAD
 OAKLAND COUNTY
 NOV11, MI

STORE NO. 0002224
 PROJECT ID 95505
 SCALE 1" = 20' 0"

DESIGN TEAM	DATE
Checked by: R. THORNTON	08/14/17
Drawn by: A. SALT	08/14/17
Reviewed by: R. ROOSEN	08/14/17
DRWG. NO.	2224 - CR

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MICHIGAN 811
 3 WORKING DAYS BEFORE YOU DIG
 CALL MISS DIG 1-800-487-1171

ROADWAY IMPROVEMENT PLANS

SPEEDWAY #2224

31275 HAGGERTY ROAD

CITY OF NOVI

OAKLAND COUNTY, MI

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GENERAL NOTES.....2

MAINTENANCE OF TRAFFIC PLAN.....3

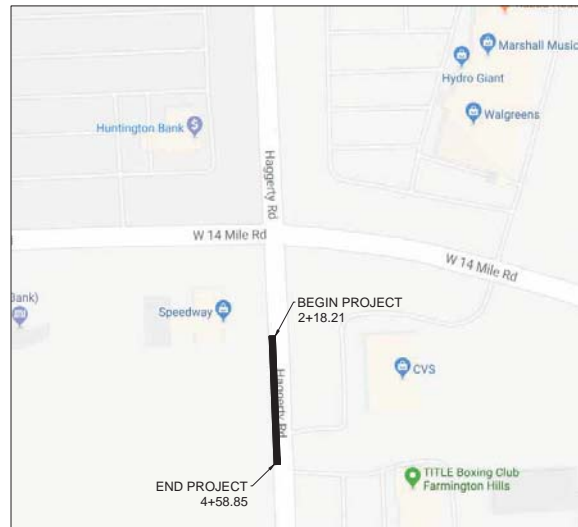
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PLAN AND PROFILE.....5

CROSS SECTIONS.....6

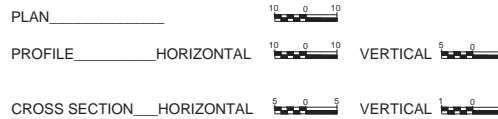
TRAFFIC CONTROL PLAN.....7

NOTE: REFER TO REBUILD SPEEDWAY STORE #2224 FOR SITE PLAN IMPROVEMENTS



LOCATION MAP

SCALES



2012 SPECIFICATIONS

THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

OAKLAND COUNTY STANDARDS

THE STANDARDS OF OAKLAND COUNTY SHALL BE USED FOR THIS PROJECT, WHENEVER A COUNTY STANDARD DIFFERS FROM THE STANDARDS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION, THE COUNTY STANDARDS SHALL APPLY.

APPROVALS

ROAD COMMISSIONER FOR OAKLAND COUNTY ROAD COMMISSIONER

DATE



Speedway Construction Dept.
Novi, OH 44132

COVER SHEET
ROADWAY IMPROVEMENTS
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO. 0002224

PROJECT ID 95505

SCALE

NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD TOPIC AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION/ELEVATION, OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR DIRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.



DESIGN TEAM	DATE
DR. THORNTON	05/09/18
JR. BARD	05/09/18
M. MESSINGHAM	05/09/18

DRWG. NO. 1/7

SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS

THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2012, AND THE NOTED STANDARD CONSTRUCTION DRAWINGS SHALL GOVERN THIS IMPROVEMENT UNLESS THE WORD "STATE" OCCURS, IT IS TO MEAN THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT), WHEREVER THE WORD "COUNTY" OCCURS, IT IS TO MEAN ROAD COMMISSION FOR OAKLAND COUNTY (ROCC).

WHENEVER THE WORD "ENGINEER" OR "DEPARTMENT" IS USED HEREIN, IT SHALL BE HELD TO MEAN THE ROCC PROJECT ENGINEER, OR DULY AUTHORIZED AUTHORITY.

MISCELLANEOUS

NOTHING IN THE GENERAL NOTES OR SPECIAL PROVISIONS SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE PROPOSED CONSTRUCTION AREA.

PAVEMENT MARKINGS

PERMANENT PAVEMENT LINE MARKINGS SHALL BE REFLECTORIZED PAINT OR THERMOPLASTIC (AS INDICATED IN THE PLANS) INSTALLED TO PERMANENT STANDARDS AT THE END OF EACH DAY'S WORK. SHORT, UNMARKED SECTIONS SHALL NOT BE ALLOWED.

ADDITIONAL INFORMATION

SEE CIVIL SITE PLANS FOR ADDITIONAL NOTES, SPECIFICATIONS AND DETAILS.

EXISTING SURVEY MONUMENTS

EXISTING SURVEY MONUMENTS, INCLUDING BUT NOT LIMITED TO PROPERTY CORNERS, CENTERLINE MONUMENTS, RIGHT-OF-WAY MONUMENTS, ETC., MAY POTENTIALLY BE DISTURBED OR DESTROYED BY CONSTRUCTION OF THESE ROADWAY IMPROVEMENTS. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL SURVEYOR, LICENSED IN THE STATE OF MICHIGAN, TO IDENTIFY MONUMENTS THAT MAY BE DISTURBED AND TO PROPERLY REPLACE DISTURBED MONUMENTS IN-KIND AFTER CONSTRUCTION IS COMPLETE.

PERMITS FEES AND NOTICES

THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ANY AND ALL PERMITS AND INSPECTIONS REQUIRED FOR THE PROSECUTION OF THE WORK BY LOCAL LAWS, ORDINANCES, RULES AND REGULATIONS.

MATERIALS AND WORKMANSHIP

UNLESS OTHERWISE SPECIFIED, ALL MATERIALS SHALL BE NEW AND BOTH WORKMANSHIP AND MATERIALS SHALL BE OF THE FIRST QUALITY, PROPER AND SUFFICIENT FOR THE PURPOSE CONTEMPLATED. THE CONTRACTOR SHALL FURNISH, IF SO REQUIRED, SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND WORKMANSHIP. ALL ITEMS OF EQUIPMENT AND/OR MATERIALS PROPOSED FOR SUBSTITUTION MUST BE APPROVED BY THE ENGINEER IN WRITING AND SHALL BE EQUAL OR BE SUPERIOR TO THE ITEMS SPECIFIED IN THE CONTRACT DOCUMENTS. IF SAID SUBSTITUTION PROPOSED BY THE CONTRACTOR FOR A SPECIFIED ITEM REQUIRED ENGINEERING REVISIONS, THE EXPENSE OF SUCH REVISIONS SHALL BE PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

EXISTING FACILITIES

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM HIS WORK IN SUCH A MANNER AS NOT TO DAMAGE OR DESTROY ANY EXISTING FACILITY. IF ANY SUCH DAMAGE DOES OCCUR DUE TO THE CONTRACTOR'S OPERATIONS, HE SHALL REPLACE THE DAMAGED PORTION AT HIS EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

EXAMINATION OF THE SITE

THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE OF THE PROPOSED WORK, THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS MADE SUCH EXAMINATION AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED IN PERFORMING THE WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

COOPERATION WITH UTILITY COMPANIES

WHILE THE WORK OF THIS CONTRACT IS BEING PERFORMED, THE UTILITY COMPANIES MAY BE WORKING IN THE AREA ADJUSING AND RESETTING EXISTING FACILITIES. THE CONTRACTOR SHALL FULLY COOPERATE WITH UTILITY COMPANIES SO THAT THE ENTIRE WORK IS COMPLETED IN A MANNER CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. THE CONTRACTOR, UTILITIES, AND ENGINEER SHALL DISCUSS THE NECESSARY CONSTRUCTION SCHEDULES TO COMPLETE THE PROJECT.

CROSSINGS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING THE PROPOSED CONDUIT.

UTILITIES NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN ON THE PLAN.

THE OWNER OF THE UNDERGROUND FACILITY SHALL, WITHIN 48 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS), MARK THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE AND THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

TEMPORARY TRAFFIC CONTROL

IT IS ESSENTIAL THAT THE ENGINEER HAVE THE AUTHORITY TO CONTROL THE PROGRESS OF THE WORK ON THE PROJECT IN ITS RELATION TO OBTAINING SAFE CONDITIONS. THIS INCLUDES THE AUTHORITY TO MODIFY CONDITIONS OR HALT WORK UNTIL APPLICABLE OR REMEDIAL SAFETY MEASURES ARE TAKEN. THE CONTRACTOR IS TO SUPPLY ALL TRAFFIC CONTROL AS THE ENGINEER DEEMS NECESSARY. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE APPLICABLE SPECIFICATIONS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH SECTION 812 OF THE MDOT STANDARD SPECIFICATIONS AND OTHER APPLICABLE PORTIONS OF THE MDOT SPECIFICATIONS, AS WELL AS THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

WEATHER CONDITIONS

NO CONSTRUCTION SHALL BE DONE DURING STORMY, FREEZING OR INCLEMENT WEATHER UNLESS PERMISSION IS GIVEN BY THE ENGINEER WHENEVER WORK PROCEEDS DURING SUCH WEATHER, THE CONTRACTOR SHALL PROVIDE APPROVED FACILITIES, INCLUDING HEAT (IF REQUIRED), FOR THE PROTECTION OF ALL MATERIALS AND FINISHED WORK.

RESTORATION

THE CONTRACTOR SHALL PROVIDE FOR PROTECTION OF THE FOLLOWING:

EXISTING STREETS, DRIVEWAYS, SIDEWALKS, CURBS, GUTTERS, RE-SEEDING/RE-SODDING, REMOVAL OF TREES, RESTORATION OF AGRICULTURAL LAND, THE MAINTENANCE OF THE CONSTRUCTION AREA DURING PROGRESS OF THE WORK AND THE COMPLETE RESTORATION OF THE CONSTRUCTION AREA TO ITS ORIGINAL CONDITION AT THE COMPLETION OF THE WORK.

THE CONTRACTOR SHALL CONTINUOUSLY CARRY ON WITH THE FINAL RESTORATION OF THE CONSTRUCTION AREA AFTER THE BACKFILLING IS COMPLETED, AND HE SHALL PROCEED TO RESTORE TO ITS ORIGINAL CONDITION ALL STREETS, DRIVEWAYS, SIDEWALKS, CURBS, GUTTERS, STRUCTURES, AND ALL AREAS THAT WERE DAMAGED, DISTURBED, OR OCCUPIED BY THE CONTRACTOR IN CONNECTION WITH ANY PHASE OF THE WORK.

PAVEMENTS, TREES, SHRUBS, FENCES, POLES, OR OTHER PROPERTY AND SURFACE STRUCTURES WHICH HAVE BEEN DAMAGED, REMOVED, OR DISTURBED BY THE CONTRACTOR, WHETHER DELIBERATELY OR THROUGH FAILURE TO CARRY OUT THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, STATE LAWS, MUNICIPAL ORDINANCES, THE SPECIFIC DIRECTION OF THE ENGINEER, OR THROUGH FAILURE TO EMPLOY USUAL AND REASONABLE SAFEGUARDS SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

ALL TEMPORARY SIGNS, SPRINKLER SYSTEMS, LANDSCAPING, ORNAMENTAL FENCING, ETC., LOCATED WITHIN THE PROJECT LIMITS MUST BE REPLACED OR RELOCATED UPON COMPLETION OF THE CONSTRUCTION.

SEEDING AND MULCHING

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT.

UTILITY COORDINATION

THE FOLLOWING IS A LIST OF THE KNOWN EXISTING UTILITIES IN THE PROJECT AREA ALONG WITH THE RESPECTIVE OWNERS. THE LIST IS INCLUDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY OWNERS IN THE PROJECT AREA PRIOR TO START OF CONSTRUCTION WHETHER LISTED ON THIS PAGE OR NOT.

TELEPHONE:

ATTET
PH: (855) 899-8253

WATER:

CITY OF NOVI
BECKY ARNOLD
26300 LEE BEGOLLE DR
NOVI, MI 48375
(248) 347-0498

COMMERCE TOWNSHIP
BUILDING, WATER AND SEWER DEPT.
2009 TOWNSHIP DR
COMMERCE TOWNSHIP, MI 48390
(248) 960-7060

ELECTRIC

DTE
NORTHWEST REGION
37849 INTERCHANGE DR
FARMINGTON HILLS, MI 48355

SANITARY

CITY OF NOVI
BECKY ARNOLD
36300 LEE BEGOLLE DR
NOVI, MI 48375
(248) 347-0498

SANITARY

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BECKY ARNOLD
36300 LEE BEGOLLE DR
NOVI, MI 48375
(248) 347-0498

GAS

CONSUMERS ENERGY
STEVEN SORIA
CUSTOMER ENERGY SPECIALIST
LIVONIA SERVICE CENTER
11801 FARMINGTON RD
LIVONIA, MI 48150
(734) 524-5345


























STORM WATER




CITY OF NOVI
BRIAN COBURN
ENGINEERING SENIOR MANAGER
26300 LEE BEGOLLE DR
NOVI, MI 48375
(248) 347-0498

ROAD COMMISSION FOR OAKLAND COUNTY





RON FOWKES
COMMISSIONER
31001 LAHSER RD.
BEVERLY HILLS, MI 48025
(877) 858-4804


EXISTING LEGEND

-  FOUND MONUMENT AT SECTION CORNER
-  FOUND IRON PIN
-  POWER TELEPHONE POLE
-  ANCHOR
-  POWER POLE
-  LIGHT POLE
-  SANITARY MANHOLE
-  STORM MANHOLE
-  CATCH BASIN
-  ROUND CATCH BASIN
-  FIRE HYDRANT
-  WATER VALVE
-  WATER METER
-  TRAFFIC MANHOLE
-  TELEPHONE MANHOLE
-  TELEPHONE PEDESTAL
-  SIGN
-  UNDERGROUND TELEPHONE
-  UNDERGROUND ELECTRIC
-  OVERHEAD ELECTRIC
-  WATER LINE
-  SANITARY SEWER
-  STORM SEWER
-  EXISTING FENCE
-  EXISTING DITCH

-  BUSH
-  CONIFEROUS TREE
-  DECIDUOUS TREE

PROPOSED LEGEND

-  ASPHALT WIDENING
-  PROPOSED SIGN
-  CUT PIPE AND GROAT
-  PROPOSED CURB INLET



Speedway
Specialty
Construction, Dispt.
Eng., CH 48-203

NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20
REVISIONS																			


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GENERAL NOTES
ROADWAY IMPROVEMENTS
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO: 0002224
PROJECT ID: 95505
SCALE:

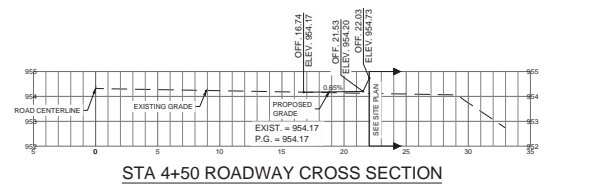
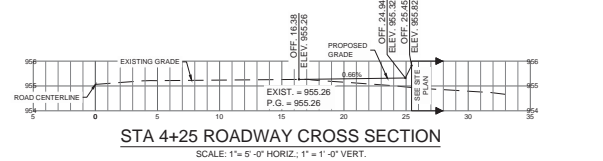
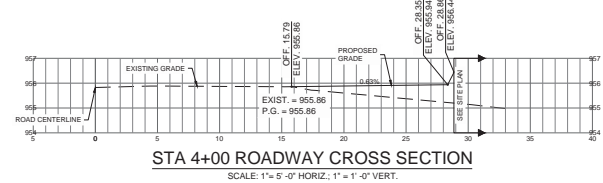
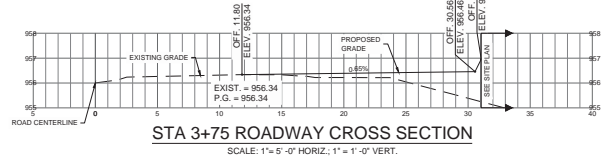
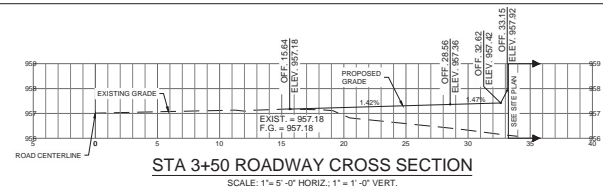
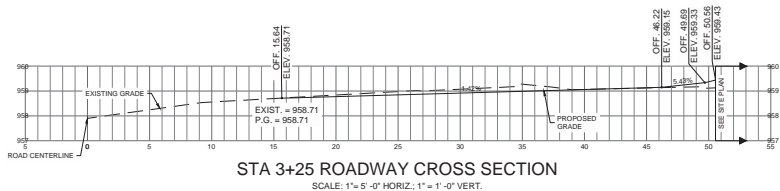
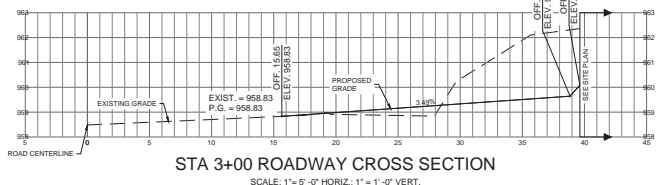
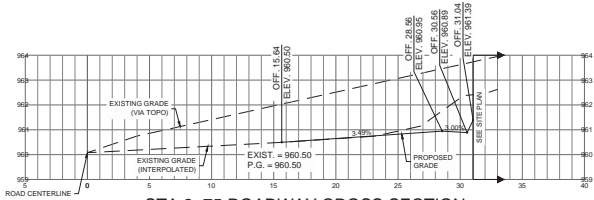
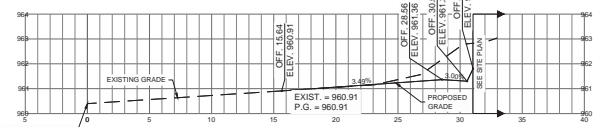
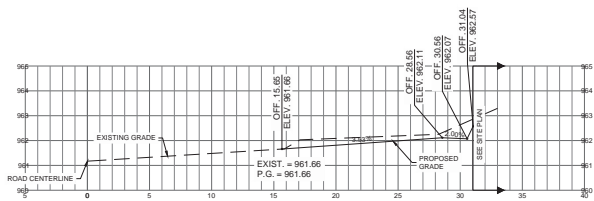
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MICHIGAN 811



1 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG
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DESIGN TEAM	DATE
----- R. THORNTON	05/09/18
----- R. BAIRD	05/09/18
----- M. NIOSCHANG	05/09/18
DRWG. NO.	217



NOTE: AS AN AID TO THE CONTRACTOR, VARIOUS UTILITIES AND UNDERGROUND STRUCTURES ARE SHOWN ON THESE PLANS AND PROFILES. ALL INFORMATION CONCERNING ALL UTILITIES SHOWN ON THE PLANS AND PROFILES IS TAKEN FROM FIELD TOPO AND/OR AVAILABLE RECORDS. BUT THE OWNER AND ENGINEER DO NOT GUARANTEE THEIR LOCATION, DEPTH, OR THAT ADDITIONAL UNDERGROUND STRUCTURES OR UTILITIES MAY NOT BE ENCOUNTERED. IF THE CONTRACTOR DOES ENCOUNTER A PREVIOUSLY UNIDENTIFIED UTILITY AND/OR STRUCTURE, OR DETERMINES THAT ONE OF THE UTILITIES/STRUCTURES SHOWN ON THESE PLANS IS INCORRECTLY LOCATED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND ENGINEER FOR CORRECTION ON HOW TO PROCEED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.



DESIGN TEAM	DATE
DR. THORNTON	05/09/18
JR. BAIRD	05/09/18
M. MOSCHIANO	05/09/18
DRWG. NO.	6/7

CROSS SECTIONS
ROADWAY IMPROVEMENTS
31275 HAGGERTY ROAD
OAKLAND COUNTY
NOVI, MI

STORE NO. 0002224
PROJECT ID 95505
SCALE NOTED

NO.	REVISIONS	DATE	BY	APP'D.



Speedway
31275 Haggerty Road
Novi, MI 48220
ENGR. CH 48-232

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