



SUBURBAN COLLECTION SHOWPLACE EXPANSION JSP16-12

SUBURBAN COLLECTION SHOWPLACE EXPANSION JSP 16-12

Public Hearing at the request of TBON, LLC for Planning Commission's recommendation to City Council for approval of Special Land Use, Preliminary Site Plan, Wetlands Permit and Stormwater Management Plan. The request is for an expansion of the building and parking lot for land within the OST, Planned Office Service Technology District, and in the OST, Planned Office Service Technology District with an EXO, Exposition Overlay District. The subject property is located in section 16, north of Grand River Avenue and west of Taft Road. The applicant is proposing to expand the existing showplace exposition facility by adding a 175,815 square foot building addition, with associated parking lot and other site improvements. The site plan is proposing an off-street parking lot on an adjacent OST-zoned property to serve the exposition facility. Off-street parking lots on another site require a Special Land Use Permit.

Required Action

Recommendation to City Council for Approval/Denial of the Special Land Use Permit, Preliminary Site Plan, Wetland Permit, and Stormwater Management Plan.

REVIEW	RESULT	DATE	COMMENTS
Planning	Approval recommended	07-12-16	<ul style="list-style-type: none"> • Zoning Board of Appeals variances for not meeting the minimum parking requirement, reducing parking setbacks, absence of end islands, to increase of maximum allowed illumination levels along property lines and to increase of minimum distance required from the nearest point of a building to the nearest point of the off-street parking lot on a different parcel • Items to be addressed on the final site plan submittal
Engineering	Approval recommended	07-13-16	<ul style="list-style-type: none"> • MDOT approval of the storm water detention basin discharge to the I-96 Right-of-Way • Items to be addressed on the final site plan submittal
Landscaping	Approval recommended	07-14-16	<ul style="list-style-type: none"> • Waiver for absence of parking lot landscape, landscape island area and for exceeding the maximum number of contiguous spaces within a parking bay. • Items to be addressed on the final site plan submittal
Wetland	Approval recommended	07-11-16	<ul style="list-style-type: none"> • Requires a City of Novi Non-Minor Wetland Permit and an Authorization to encroach the 25-Foot Natural Features Setback • Items to be addressed on the final site plan submittal
Woodland	No further review	07-11-16	

	necessary		
Traffic	Approval not recommended	07-15-16	<ul style="list-style-type: none"> • City Council variances for absence of curb, gutter, for METP study in lieu of Traffic Impact study and right turn taper lane along Grand River Avenue • Items to be addressed on the final site plan submittal
Traffic Study	Approval recommended	07-13-16	<ul style="list-style-type: none"> • Items to be addressed on the final site plan submittal
Facade	Approval recommended	07-13-16	<ul style="list-style-type: none"> • A section 9 waiver would be required for the overage of Horizontal Rib Metal Panels, Vertical Metal Panels and Split Faced CMU
Fire	Approval recommended	07-05-16	

Motion Sheet

Approval – Special Land Use Permit

In the matter of Suburban Collection Showplace Expansion, JSP 16-12, motion to recommend **approval** to City Council for the Special Land Use Permit based on the following findings:

- a. The proposed use will not cause any detrimental impact on existing *thoroughfares (as indicated in the submitted Major Event Traffic Plan and based on the findings from Traffic review)*;
- b. The proposed use will not cause any detrimental impact on the capabilities of public services and facilities *(as indicated in the submitted Community Impact Statement and in the staff and consultant review letters)*;
- c. The proposed use is compatible with the natural features and characteristics of the land *(because the plan is not proposing major impacts to existing features)*;
- d. The proposed use is compatible with adjacent uses of land *(given the type of use and the surrounding development)*;
- e. The proposed use is consistent with the goals, objectives and recommendations of the City's Master Plan for Land Use *(given there is no change in permitted use for EXO Overlay districts and Office Service and Technology district)*;
- f. The proposed use will promote the use of land in a socially and economically desirable manner;
- g. The proposed use is (1) listed among the provision of uses requiring special land use review as set forth in the various zoning districts of this Ordinance, and (2) is in harmony with the purposes and conforms to the applicable site design regulations of the zoning district in which it is located;
- h. *(additional comments here if any)*

(This motion is made because the plan is otherwise in compliance with Article 4.4, Article 4, Article 5 and Article 6 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

- AND -

Approval – Preliminary Site Plan with EXO Overlay

In the matter of Suburban Collection Showplace Expansion, JSP 16-12, motion to recommend **approval** to City Council for the Preliminary Site Plan with Exo Overlay based on and subject to City Council approval of the following waivers proposed and Design and Constructions standard variances:

- a. A section 9 façade waiver for the overage of Horizontal Rib Metal Panels(0% allowed, a maximum 15% on south, 5% on North, 3% on east and 8% on west provided), Vertical Metal Panels(50% allowed, 60% on north and east side provided) and Split Faced CMU(10% allowed, 15% on south, 35% on North, 24% on east and 43% on west provided);
- b. Applicant shall plant additional trees to address staff's comments with regards to Landscape screening requirements adjacent to I-96 right of way as determined by the City's Landscape Architect during a site visit after the installation of transplanted trees ;
- c. A Landscape waiver to permit the absence of required landscaped area within the parking lot (approximately 15,664 sf is required, 0 provided), as listed in Section 5.5.3.C.iii ;

- d. A Landscape waiver to permit the absence of parking lot interior trees (approximately 209 canopy deciduous trees required, 0 provided), as listed in Section 5.5.3.C.iii ;
- e. A Landscape waiver for exceeding the maximum number of contiguous spaces within a parking bay (15 maximum allowed, a maximum of 93 provided) as listed in Section 5.5.3.C.ii.i to allow for alternate use of parking lot as a Ride and Drive Automotive Research Lot and other activities;
- f. A Landscape waiver to permit the absence of parking perimeter trees along the western edge (approximately 50 trees required, 35 provided), as listed in Section 5.5.3.C, chart footnote ;
- g. A Landscape waiver to permit reduction of required foundation plantings as listed in Section 5.5.3.D (14,592 square foot required, 2,258 square foot provided) due to the proposed use of outside concert venue;
- h. A City Council Waiver to allow painted end islands in lieu of required end islands as listed in Section 5.3.12;
- i. City Council variance from Sec. 11-216 (c) (8) of Novi City Code for absence of a right turn taper and/or lane along Grand River Avenue; and the need for installation of the warranted right turn taper and/or lane shall be revisited within two (2) years from the date of the Certificate of Occupancy of the new building addition or sooner if City Engineer determines the need based on available crash data, or based on a diminished level of service identified by the City during major events as identified in the METP (Major Event Traffic Plan). At that time, the applicant shall provide an operational analysis of the subject driveways during major events until that date or additional information requested which will be reviewed by the City's Traffic Engineer for further recommendations and additional regulations as required, regarding the need for installation of the warranted right turn taper and/or lane;
- j. Applicant to work with the Road Commission for Oakland County (RCOC) to meet the requirements for road improvements within Grand River Avenue Right of way;
- k. A City Council Waiver to allow Major Event Traffic Plan in lieu of required Traffic Impact Study due to the unique and non-routine operations associated with Suburban Collection Showplace and the development of a Major Event Traffic Plan should serve as a suitable replacement;
- l. A Zoning Boards of Appeals variance from Section 3.1.15.D to reduce the front yard setback from 100 feet to varied range from 85 feet to 98 feet due to recessed building design;
- m. A Zoning Boards of Appeals variance from Section 3.1.15.D to reduce the parking side setback from 20 feet to a varied range from 0 feet to 15 feet to allow for construction of parking lot across multiple properties;
- n. A Zoning Boards of Appeals variance from Section 5.3.12 to allow absence of parking lot end islands within off-street parking area to allow for alternate use of parking lot as a Ride and Drive Automotive Research Lot;
- o. A Zoning Boards of Appeals variance from Section 5.7 to allow for increase of maximum allowed illumination levels along property lines adjacent to non-residential districts as the development is expanded among multiple properties owned by the applicant;
- p. A Zoning Boards of Appeals variance from Section 5.2.12.C. to allow reduction of minimum required parking spaces to be provided on site (2,979 spaces required, 2,951 spaces provided);
- q. A Zoning Boards of Appeals variance from Section 5.2.3. to allow increase of minimum distance required from the nearest point of a building to the nearest point of the off-street parking lot on a different parcel (300 feet required, approximately 450 feet provided);
- r. The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan; and

s. (additional conditions here if any).

(This motion is made because the plan is otherwise in compliance with Article 3, Article 4 and Article 5 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)

- AND -

Approval – Non-Minor Wetland Permit

In the matter of Suburban Collection Showplace Expansion, JSP 16-12, motion to recommend **approval** to City Council for the Non-Minor Wetland Permit based on and subject to the following:

- a. *The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan; and*
- b. *(additional conditions here if any).*

(This motion is made because the plan is otherwise in compliance with Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)

- AND -

Approval – Stormwater Management Plan

In the matter of Suburban Collection Showplace Expansion, JSP 16-12, motion to recommend **approval** to City Council for the Stormwater Management Plan, based on and subject to:

- c. *Applicant to obtain MDOT approval of the storm water detention basin discharge to the I-96 Right-of-Way*
- d. *The findings of compliance with Ordinance standards in the staff and consultant review letters, and the conditions and items listed in those letters being addressed on the Final Site Plan; and*
- e. *(additional conditions here if any).*

(This motion is made because it otherwise in compliance with Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)

- OR -

Denial – Special Land Use Permit

In the matter of Suburban Collection Showplace Expansion, JSP 16-12, motion to recommend **denial** to City Council for the Preliminary Site Plan ...

- f. *because the plan is not in compliance with Article 3, Article 4 and Article 5 of the Zoning Ordinance and all other applicable provisions of the Ordinance*
- g. *The findings of non-compliance with Ordinance standards in the staff and consultant review letters and the conditions; and*
- h. *(additional conditions here if any)*

- AND -

Denial – Preliminary Site Plan

In the matter of Suburban Collection Showplace Expansion, JSP 16-12 motion to recommend **denial** to City Council for the Preliminary Site Plan...*(because the plan is not in compliance with Article 3, Article 4 and Article 5 of the Zoning Ordinance and all other applicable provisions of the Ordinance.)*

- AND -

Denial – Wetland Permit

In the matter of Suburban Collection Showplace Expansion, JSP 16-12,, motion to recommend **denial** to City Council for the Wetland Permit...*(because the plan is not in compliance with Chapter 12, Article V of the Code of Ordinances and all other applicable provisions of the Ordinance.)*

- AND -

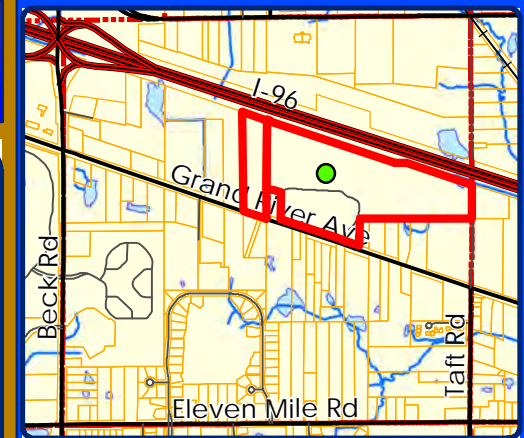
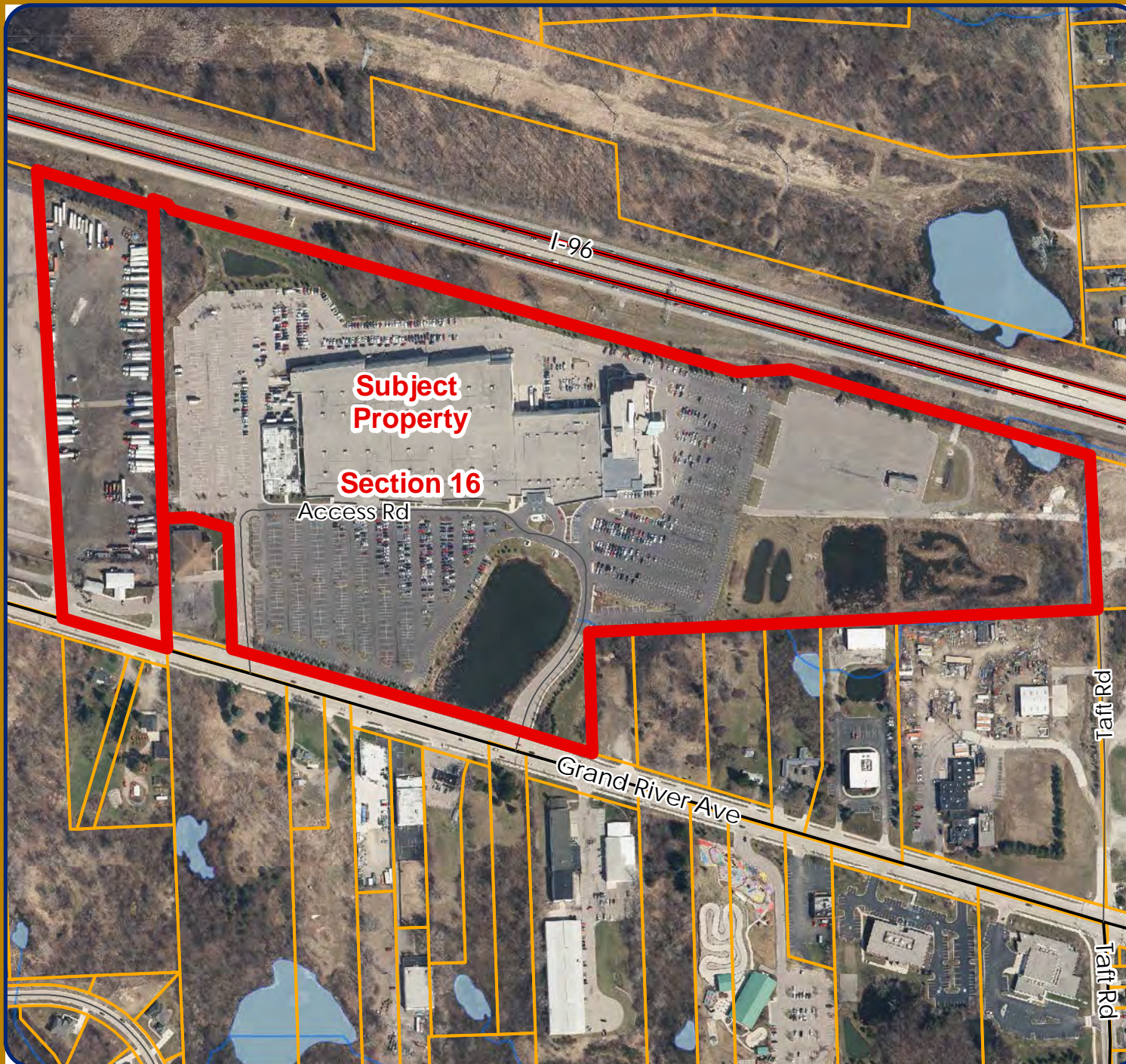
Denial – Stormwater Management Plan

In the matter of Suburban Collection Showplace Expansion, JSP 16-12, motion to recommend **denial** to City Council for the Stormwater Management Plan...*(because the plan is not in compliance with Chapter 11 of the Code of Ordinances and all other applicable provisions of the Ordinance.)*

MAPS
Location
Zoning
Future Land Use
Natural Features

16-12 Suburban Collection Showplace Expansion

Location



LEGEND

 Sections



City of Novi

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

Map Author: Sri Komaragiri

Date: 07/22/16

Project: 16-12 Suburban Collection Showplace Expansion

Version #: 1

0 90 180 360 540 Feet

1 inch = 417 feet

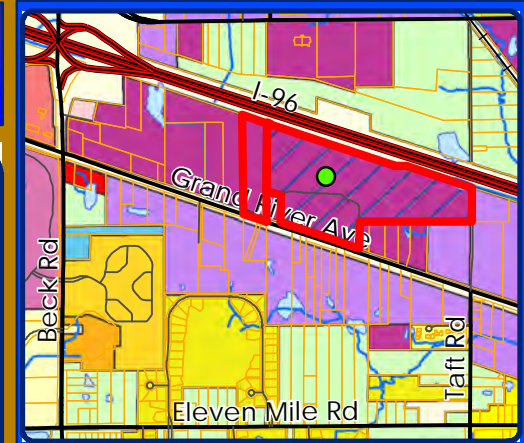
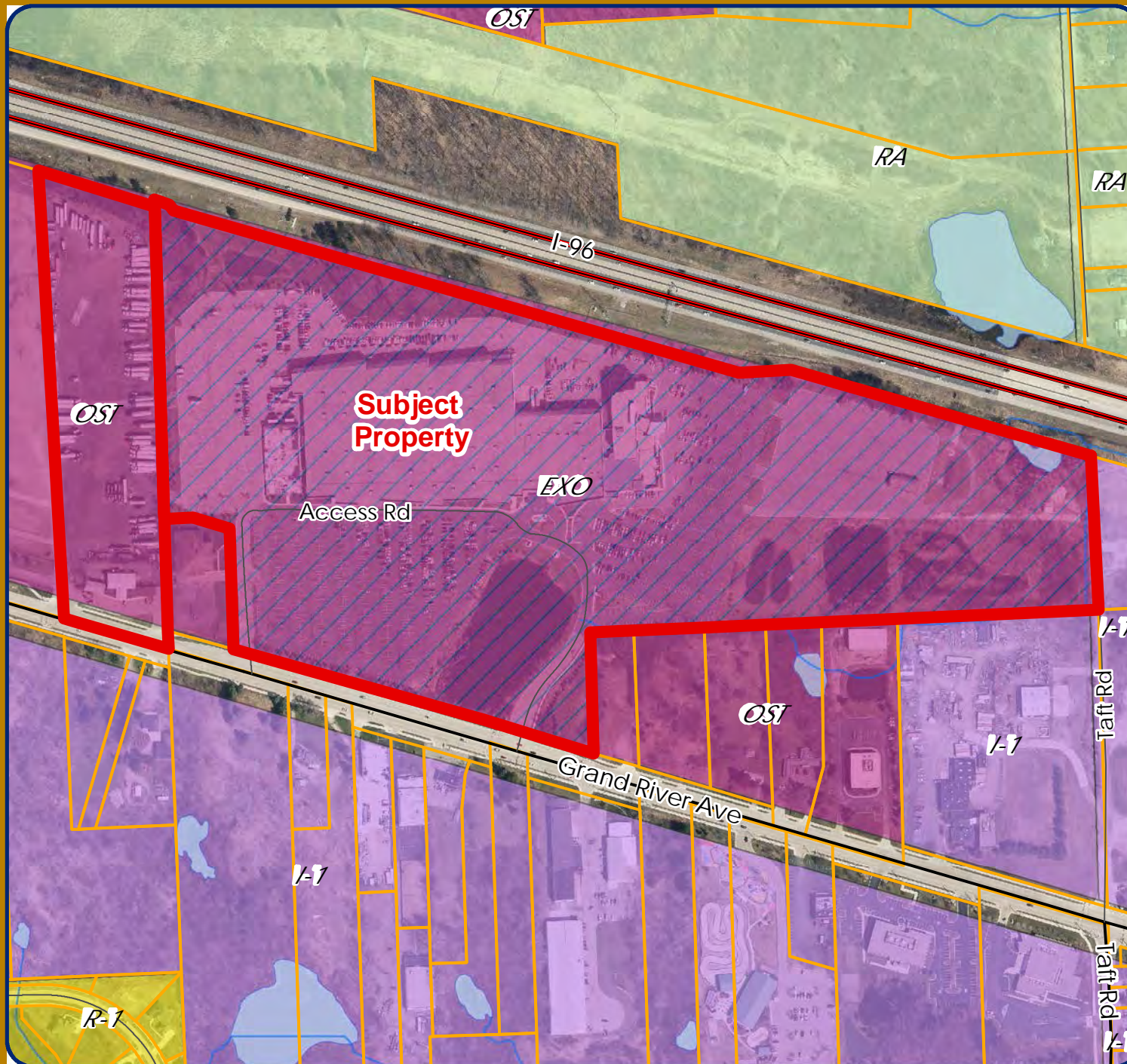


MAP INTERPRETATION NOTICE

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.

16-12 Suburban Collection Showplace Expansion

Zoning



LEGEND

- R-A: Residential Acreage
- R-1: One-Family Residential District
- R-2: One-Family Residential District
- R-3: One-Family Residential District
- R-4: One-Family Residential District
- RM-1: Low-Density Multiple Family
- RM-2: High-Density Multiple Family
- B-2: Community Business District
- B-3: General Business District
- EXO: OST District with EXO Overlay
- FS: Freeway Service District
- I-1: Light Industrial District
- OS-1: Office Service District
- OSC: Office Service Commercial
- OST: Office Service Technology



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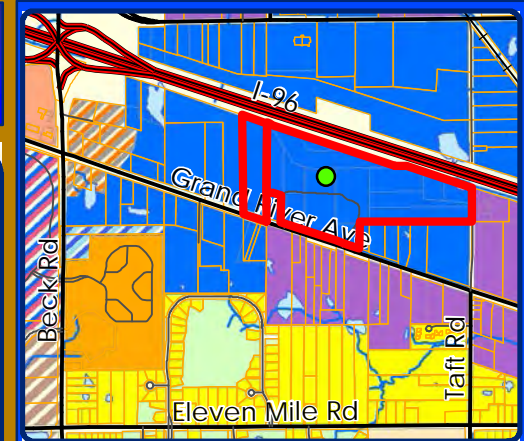
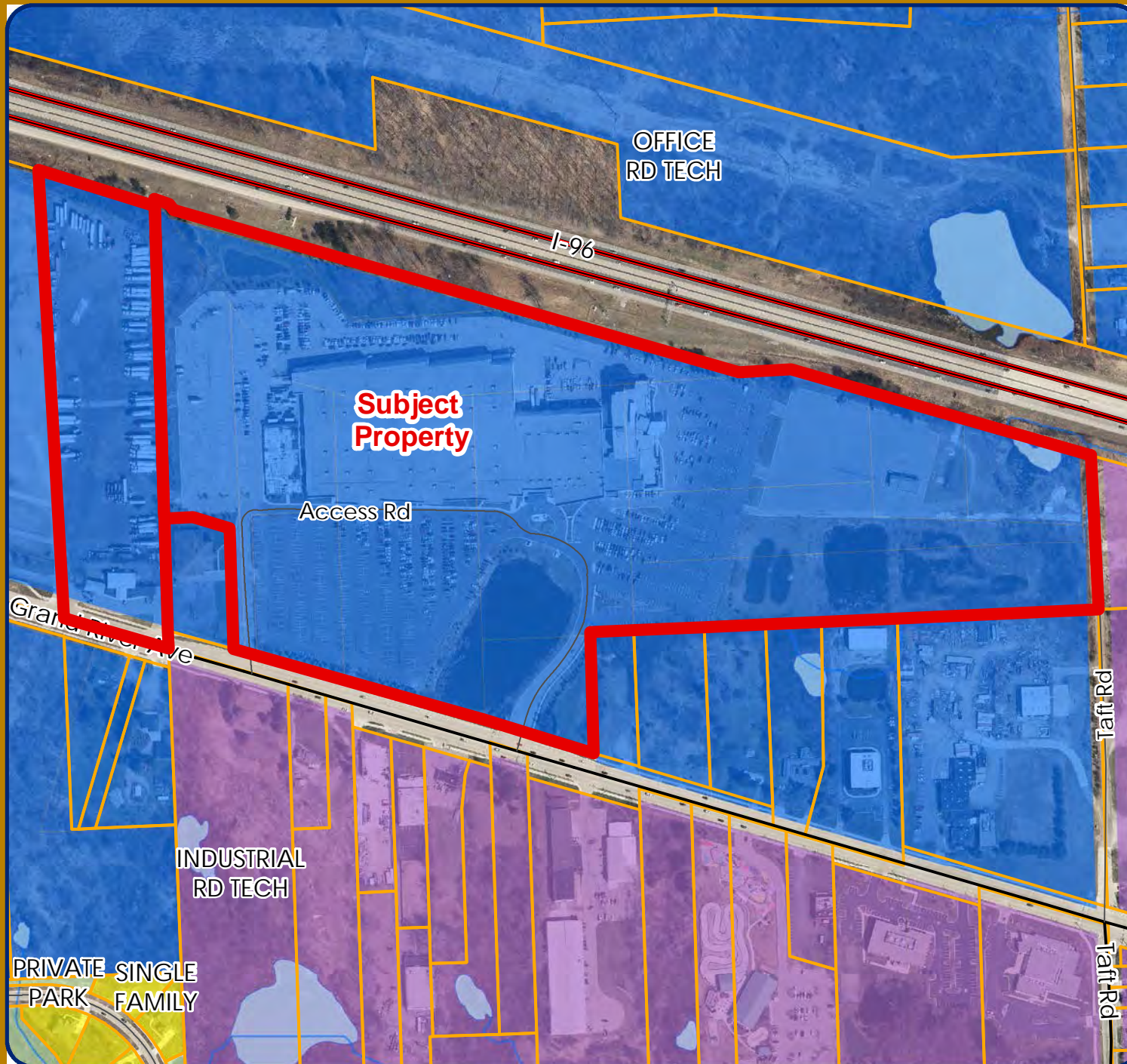


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16-12 Suburban Collection Showplace Expansion

Future Land Use



LEGEND

FUTURE LAND USE

- Single Family
- Multiple Family
- Suburban Low-Rise
- Community Office
- Office RD Tech
- Office Commercial
- Office Research W/Retail Overlay
- Industrial RD Tech
- Local Commercial
- Educational Facility
- Public Park
- Private Park



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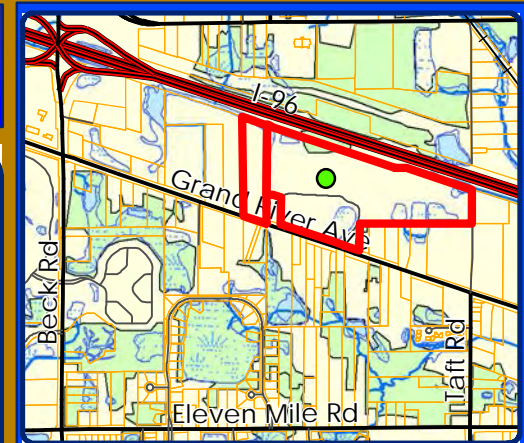
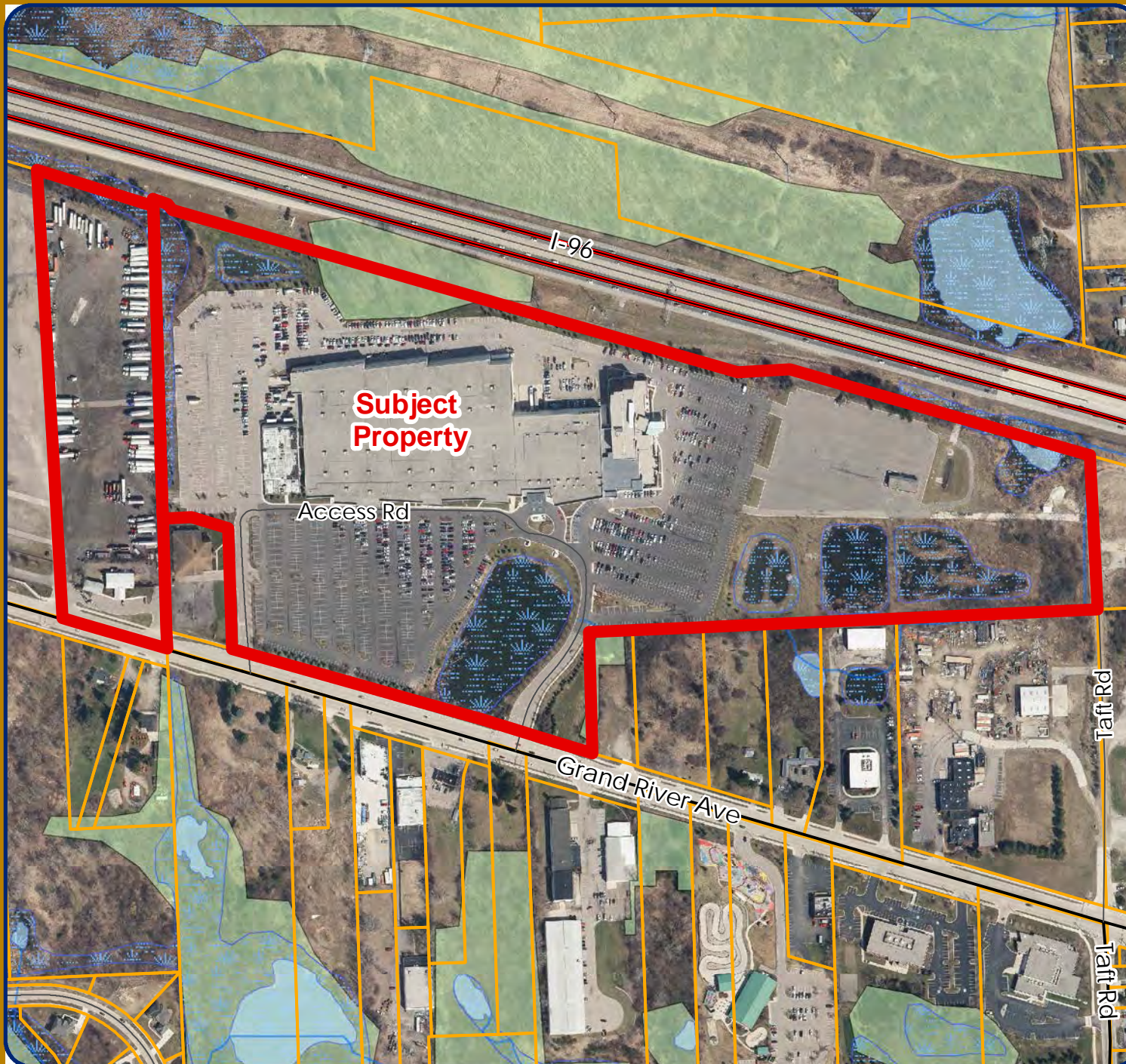


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16-12 Suburban Collection Showplace Expansion

Natural Features



LEGEND

- WETLANDS
- WOODLANDS



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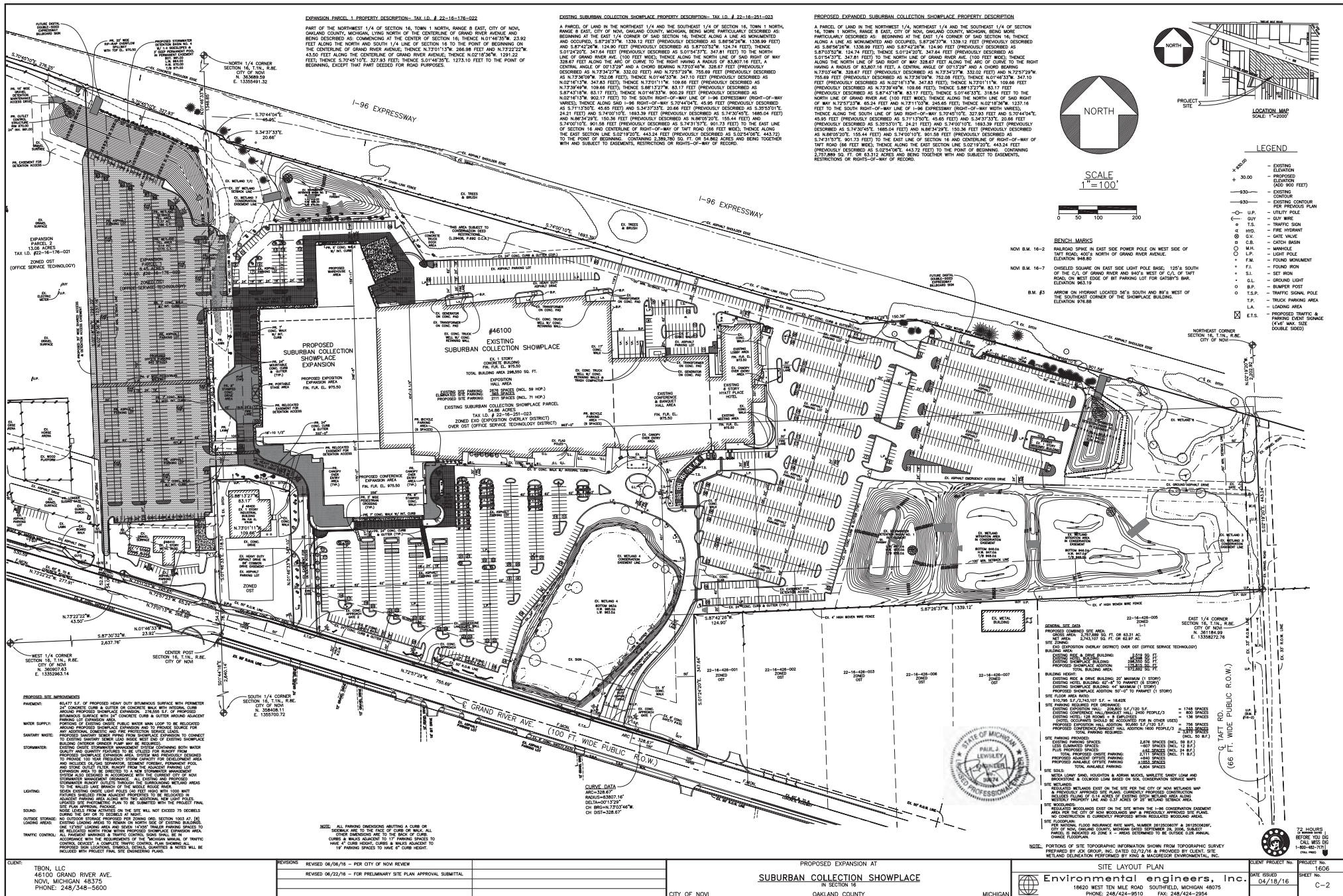


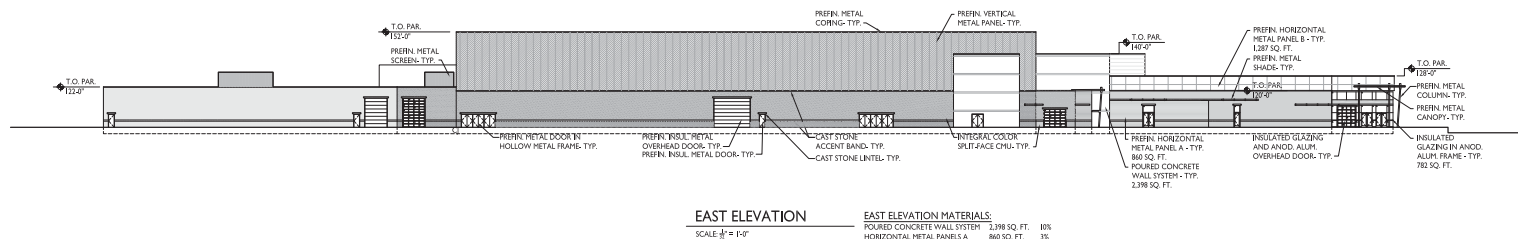
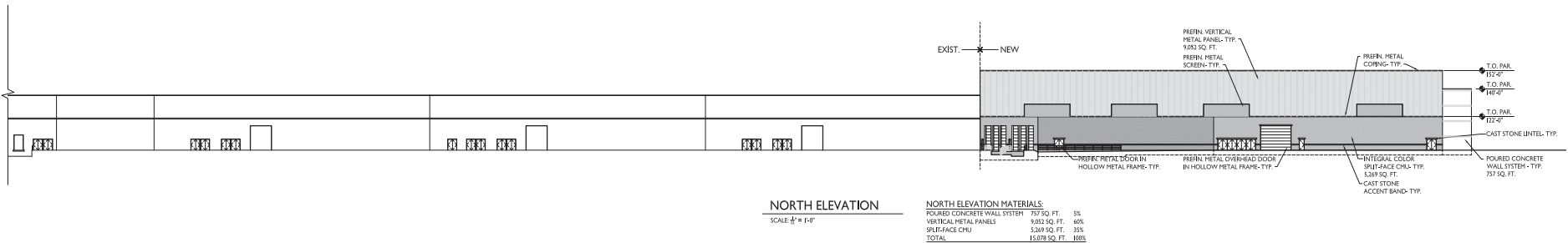
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SITE PLAN

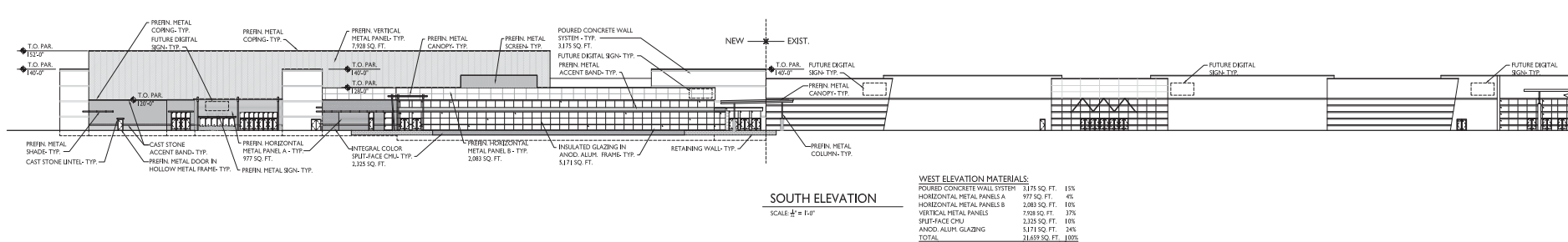
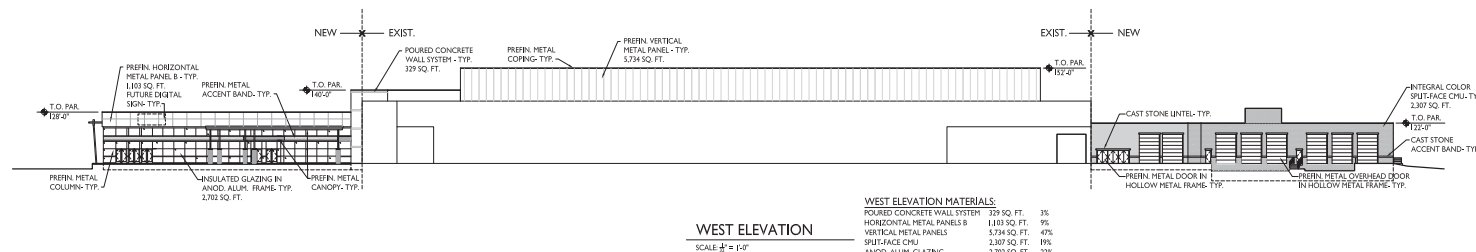
(Full plan set available for viewing at the Community Development Department.)





ELEVATION MATERIAL TOTALS:

POURED CONCRETE WALL SYSTEM	8,659 SQ. FT.	9%
HORIZONTAL METAL PANELS A	1,837 SQ. FT.	2%
HORIZONTAL METAL PANELS B	4,473 SQ. FT.	6%
VERTICAL METAL PANELS	32,148 SQ. FT.	43%
SPLIT-FACE CHU	20,640 SQ. FT.	28%
ANOD. ALUM. GLAZING	8,655 SQ. FT.	13%
BUILDING TOTAL	74,383 SQ. FT.	100%



PLANNING REVIEW



PLAN REVIEW CENTER REPORT

July 12, 2016

Planning Review

Suburban Collection Showplace Expansion
JSP 16-12

Petitioner

TBON, LLC

Review Type

Special Land Use and Preliminary Site Plan

Property Characteristics

Section	16	
Site Location	North of Grand River Avenue; East of Taft Road; 46100 Grand River Ave & 46410 Grand River Ave	
Site School District	Novi Community School District	
Site Zoning	OST: Office Service Technology & EXO Overlay District with OST	
Adjoining Zoning	North	Interstate I-96
	East	OST: Office Service Technology & I-1 Light Industrial District
	West	OST: Office Service Technology
	South	I-1 Light Industrial District
Current Site Use	Suburban Collection Showplace	
Adjoining Uses	North	Interstate I-96
	East	Industrial Office
	West	Vacant/Fairgrounds
	South	Industrial/Office/Vacant
Site Size	63.32 Acres	
Plan Date	June 22, 2016	

Project Summary

The applicant is proposing to expand the existing showplace exposition facility within the existing EXO Overlay district by adding a 175,815 square foot building addition, with associated parking lot and other site improvements. The new building addition will house a 90,658 square foot Exhibit Hall, several smaller Exhibit spaces, a Pre-Function space with access to meeting rooms, and a Warehouse addition on the north side with loading docks and a receiving area. An 18,780 square foot mezzanine is proposed to be added as a second story overlooking the new large Exhibit Hall. An existing building located at the west end of the facility will be removed to accommodate the addition, and to allow additional outside patio areas, similar to those found near the Hyatt Hotel on the east side of the site.

The applicant is proposing to utilize the OST, Office Service Technology parcel immediately to the west of the Suburban Collection Showplace primarily for parking for existing exposition facility and as a secondary and temporary use as fair grounds, outside exhibits and as a Ride and Drive Automotive Research Lot to test vehicle capabilities in a variety of situations. A total of 2951

paved parking spaces are proposed for the new expansion, The Overall Master Site Plan, Sheet C-1 shows two additional "Expansion Parcels" to the west, but are not part of the site plan request at this time.

To accommodate the proposed secondary uses, the applicant is proposing a flat paved area with no interior parking lot islands to allow for the greatest flexibility in "test course design", similar to existing ride and drive lot previously approved on the eastern side of the site. A striping plan has been submitted but the applicant has indicated the automotive research users have requested the area either remains un-striped or that it be striped in a muted color.

The site plan proposes expansion across two properties with different zoning, OST, Office Service Technology, and EXO Overlay over the OST District. For the purpose of this review, we are considering the entire site plan as one development plan. However, the two zoning districts will be reviewed for conformance for respective zoning regulations.

	Referred to as EXO Site	Referred to as OST Site
Current Use	Suburban Collection Showplace	Vacant/Fair grounds as a temporary use
Property Address	46100 Grand River Ave	46410 Grand River Ave
Zoning	EXO Overlay District with OST	Office Service Technology
Proposed	Building and Parking expansion	Primary Use: Parking Seasonal secondary use: Fair grounds, ride and drive automotive research lot

Special Land Use Considerations

The site plan is proposing an off-street parking lot on an adjacent OST-zoned property to serve the exposition facility. Notwithstanding Section 6.1.1.C.i (permitting administrative site plan review of expansion of existing off-street parking areas), all off-premises parking lots must be approved by the Planning Commission in accordance with requirements of Section 6.1.2.C for special land uses and subject to the public hearing requirements set forth and regulated in Section 6.2. **Section 6.1.2.C of the Zoning Ordinance outlines specific factors the Planning Commission shall consider in the review of any Special Land Use:**

- i. Whether, relative to other feasible uses of the site, the proposed use will cause any detrimental impact on existing thoroughfares in terms of overall volumes, capacity, safety, vehicular turning patterns, intersections, view obstructions, line of sight, ingress and egress, acceleration/deceleration lanes, off-street parking, off-street loading/unloading, travel times and thoroughfare level of service.
- ii. Whether, relative to other feasible uses of the site, the proposed use will cause any detrimental impact on the capabilities of public services and facilities, including water service, sanitary sewer service, storm water disposal and police and fire protection to service existing and planned uses in the area.
- iii. Whether, relative to other feasible uses of the site, the proposed use is compatible with the natural features and characteristics of the land, including existing woodlands, wetlands, watercourses and wildlife habitats.
- iv. Whether, relative to other feasible uses of the site, the proposed use is compatible with adjacent uses of land in terms of location, size, character, and impact on adjacent property or the surrounding neighborhood.

- v. Whether, relative to other feasible uses of the site, the proposed use is consistent with the goals, objectives and recommendations of the City's Master Plan for Land Use.
- vi. Whether, relative to other feasible uses of the site, the proposed use will promote the use of land in a socially and economically desirable manner.
- vii. Whether, relative to other feasible uses of the site, the proposed use is
 - a. listed among the provision of uses requiring special land use review as set forth in the various zoning districts of this Ordinance, and
 - b. Is in harmony with the purposes and conforms to the applicable site design regulations of the zoning district in which it is located.

Recommendation

Approval of the *Special Land Use and Preliminary Site Plan is recommended*. The plan mostly conforms to the requirements of the Zoning Ordinance, with a few deviations listed in this and other review letters. Deviations from the zoning ordinance would require variances to be approved by the Zoning Board of Appeals and deviations from landscape ordinance would require City Council approval. Additional details will be required at the time of Final Site Plan submittal. **Planning Commission's recommendation to the City Council for Preliminary Site Plan, Special Land Use Permit, Wetland Permit and Storm Water Management Plan approval is required.**

Ordinance Deviations

1. **Building Setbacks (Sec. 3.1.15.D):** Front building setbacks shall be a minimum of 100 feet for EXO zoning. The proposed site plan is deviating from the minimum required setback distance at multiple locations at the southwest corner of the addition due to the recessed natures of the building footprint. The deviations vary from 2 feet to approximately 12 feet less than the minimum, 100 feet. **The applicant can relocate or redesign the building to stay outside the setbacks or seek a variance from the Zoning Board of Appeals for the building setback deficiency.**
2. **Parking Lot Setback (Sec. 3.1.15.D):** All parking must be setback a minimum of 20 feet from adjacent properties. The OST site has not been combined with the larger Suburban Collection Showplace property and the setback for new pavement at the eastern property line varies from 0 ft. to 15 ft. The setbacks on the western property as well do not meet the minimum required. **The applicant can either combine the properties to avoid one deviation or seek a variance from the Zoning Board of Appeals for the parking setback deficiency.**
3. **Minimum required parking (Sec. 5.3.12):** The EXO Overlay Ordinance requires at least 75 percent of the required spaces to be provided on site subject to certain standards. A total of 2,979 parking spaces are required on site, and 2,951 spaces are provided resulting in a deficiency of 28 parking spaces. **The applicant may choose to provide updated parking calculations to include warehouse and office spaces to determine whether adequate parking is provided on site, or apply for a Zoning Board of Appeals variance for this deviation from Section 5.2.12.C.**
4. **End Islands (Sec. 5.3.12):** All off-street parking areas are required to have landscaped islands. **The applicant should seek a variance from the Zoning Board of Appeals for the lack of end islands around permanent parking spaces.**
5. **Minimum distance between building and Off-Street parking (Section 5.2.3.):** Off-street parking for other than residential use shall be either on the same parcel of land or within three-hundred (300) feet of the building it is intended to serve, measured along a pedestrian walkway from the nearest point of such building to the nearest point of the off-street parking lot. The current plan indicates separate parcels, and provides a distance of minimum of 450

feet. **The applicant may choose to combine parcel 2 with parcel 1 to eliminate this deviation or apply for a Zoning Board of Appeals variance from Section 5.2.3.**

6. **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. The proposed photometric plan indicates foot candle to exceed the maximum along western property line and southern property line. Staff understands that the development is expanded along adjacent property, also owned by the applicant. **The applicant should seek a variance from the Zoning Board of Appeals for the proposed ordinance deficiencies along western boundary with regards to lighting. Staff suggests to adjust the lighting to avoid exceeding the maximum along the southern property**(46400 Grand River Ave).
7. **Landscape Requirements:** The applicant should refer to the landscape review letter for a detailed list of the landscape waivers that would be required from the City Council in order for the plan to be approved in its current form. **The applicant should consider addressing some of the landscape deficiencies identified by incorporating more required landscape areas into the plan in lieu of seeking waivers from the Ordinance requirements.**
8. **Facade Waiver:** A section 9 waiver would be required for the overage of Horizontal Rib Metal Panels, Vertical Metal Panels and Split Faced CMU.

Ordinance Requirements

This project was reviewed for conformance with the Zoning Ordinance with respect to Article 3 (Zoning Districts), Article 4 (Use Standards), Article 5 (Site Standards), and any other applicable provisions of the Zoning Ordinance. **Please see the attached charts for information pertaining to ordinance requirements.** Items in **bold** below must be addressed and incorporated as part of the stamping set submittal.

1. **City Council Approval:** Section 3.25.2.L.iii of the Zoning Ordinance requires City Council approval of all plans proposed in the EXO, Exposition Overlay District after review and recommendation by the Planning Commission.
2. **Use:** The applicant is proposing an expansion to existing exposition facility, which is a permitted use in EXO district. The applicant is also proposing to utilize the vacant parcel west of Suburban Collection Showplace as primarily off-site parking and secondarily for a Ride and Drive Automotive Research Lot to test vehicle capabilities in a variety of situations. The applicant also mentioned other uses such as the Michigan State Fair and outdoor events. The applicant intends to seek Temporary Use Approval for the State Fair this year, as had been done in the past. The applicant is asked to include a cover letter with all possible uses as can be anticipated at this time. **Staff is interested to know how the applicant is considering addressing parking needs when there are indoor events to full capacity and outdoor events at the same time.**
3. **Vehicular Access (Sec. 3.25.2.A):** Traffic review letter raises concerns **westerly driveway off of Grand River Avenue. The applicant is asked to provide additional information as requested so that a proper determination with regards to the need for a new taper lane on Grand River Avenue at the westerly driveway. Refer to Traffic review for further details.**
4. **Pedestrian Ways:** The ordinance requires the submitted site plan to show pedestrian sidewalks within an exposition conference and convention facility site to permit safe and convenient access to the facility from parking lots and adjacent properties. Staff notes that the applicant has proposed one pathway connecting the proposed westerly off-

street parking lot with the proposed building addition. **Staff recommends the applicant to continue to consider additional means to assure safe and convenient access such as wayfinding, raised landscaped islands to buffer the pathway, or other means. The pathway should be extended to the building to provide direct access to the entrances.**

5. Barrier free parking: **Barrier free spaces shall be distributed among all building entrances according to the Building Code. Provide some handicap accessible spaces near the proposed building entrance on west.**
6. Parking Calculations: Refer to chart for more details. **More information is needed to make a determination whether the required parking is provided on site.**
7. Bicycle Parking General requirements (Sec. 5.16): **Provide additional details as required per this section with regards to layout and rack details.**
8. Signage: The plan appears to propose or modify a couple of billboard sign in the rear yard and proposes five new digital signs on the building and one event traffic and parking event signage on the front along Grand River Avenue. **Exterior Signage is not regulated by the Planning Division or Planning Commission. Please contact Jeannie Niland (248.347.0438) for information regarding sign permits.**
9. Phasing: Please indicate if phasing is proposed. Phasing requires City Council approval.
10. Property Split / Combination: **Please clarify if there is an intent to combine parcels to eliminate several of the variance requests as listed in the attached Planning Review Chart.**
11. Response Letter: Given the scale of the project and the scale of the drawings provided, it is challenging to identify all elements of the plan. **Please provide a response letter addressing all comments and refer to sheet numbers where the change is reflected.**
12. Other Reviews:
 - a. Engineering Review: Additional comments to be addressed with Final Site Plan. Engineering recommends approval.
 - b. Landscape Review: Landscape review has identified waivers that may be required. Refer to review letter for more comments. Landscape recommends approval.
 - a. Wetlands Review: The City of Novi Wetland Permit and Buffer Authorization are required for the proposed impacts to wetlands and regulated wetland setbacks. Additional comments to be addressed with Final Site Plan. Wetlands recommend approval.
 - a. Woodlands Review: The proposed project limits do not contain regulated trees. No further woodland review of the proposed project is necessary.
 - b. Traffic Review: Traffic identified couple of deviations that would require variances/waivers. Additional information requested to perform complete review. Traffic does not recommend approval.
 - c. Traffic Study Review: Traffic is requesting additional information to determine roadway improvements that may be required. Traffic recommends approval.
 - d. Facade Review: A section 9 waiver would be required. Façade recommends approval. **A sample board is required prior to Planning Commission meeting.**
 - e. Fire Review: Fire recommends approval.

Response Letter

This Site Plan is scheduled to go before Planning Commission for consideration on July 13, 2016. Please provide the following **no later than 9:00am, July 21, 2015** if you wish to keep the schedule.

1. A response letter addressing ALL the comments from ALL the review letters and **a request for waivers as you see fit.**
2. A PDF version of the all Site Plan drawings that were submitted for the Preliminary review, dated June 22, 2016. **NO CHANGES MADE.**
3. A color rendering of the Site Plan, if any.
4. A sample board of building materials as requested by our Façade Consultant.

City Council Approval

The plan would require City Council's approval for Preliminary Site Plan, Special Land Use Permit, Wetland Permit and Storm Water Management Plan.

Final Site Plan Submittal

After receiving City Council approval of the Preliminary Site Plan, please submit the following for Final site plan review and approval

1. Seven copies of Final Site Plan addressing all comments from Preliminary review
2. Response letter
3. [Final Site Plan Application](#)
4. [Final Site Plan Checklist](#)
5. Engineering Estimate
6. Landscape Estimate
7. [Other Agency Checklist](#)
8. [Hazardous Materials Packet](#)
9. [Non-Domestic User Survey](#)
10. [No Revision Façade Affidavit](#) (if no changes are proposed for Façade)

Electronic Stamping Set Submittal and Response Letter

After receiving Final Site Plan approval, plans addressing the comments in all of the staff and consultant review letters should be submitted electronically for informal review and approval prior to printing Stamping Sets. A letter from either the applicant or the applicant's representative addressing comments in this and other review letters and associated charts is requested to be submitted with the electronic stamping set.

Stamping Set Approval

After receiving the approval for electronic stamping set submittal from all reviewing agencies, please submit **10 size 24" x 36" copies with original signature and original seals,** to the Community Development Department for final approval.

Drafts for all required legal documents with a legal transmittal are required along with stamping sets.


Pre-Construction Meeting

Prior to the start of any work on the site, Pre-Construction (Pre-Con) meetings must be held with the applicant's contractor and the City's consulting engineer. Pre-Con meetings are generally held after Stamping Sets have been issued and prior to the start of any work on the site. There are a variety of requirements, fees and permits that must be issued before a Pre-Con can be scheduled. If you have questions regarding the checklist or the Pre-Con itself, please contact Sarah Marchioni [248.347.0430 or smarchioni@cityofnovi.org] in the Community Development Department.

Chapter 26.5

Chapter 26.5 of the City of Novi Code of Ordinances generally requires all projects be completed within two years of the issuance of any starting permit. Please contact Sarah Marchioni at 248-347-0430 for additional information on starting permits. The applicant should review and be aware of the requirements of Chapter 26.5 before starting construction.

If the applicant has any questions concerning the above review or the process in general, do not hesitate to contact me at 248.735.5607 or skomaragiri@cityofnovi.org.



Sri Ravali Komaragiri – Planner



PLANNING REVIEW CHART

EXO Exposition Overlay District and OST Office Service and Technology

Review Date: July 07, 2016
Review Type: Preliminary Site Plan
Project Name: JSP16-12 Suburban Collection Showplace Expansion
Plan Date: 4.18.2016
Prepared by: Sri Ravali Komaragiri, Planner E-mail: skomaragiri@cityofnovi.org
Phone: 248.735.5607

Items in **Bold** need to be addressed by the applicant before approval of the Final Site Plan. Underlined items need to be addressed on the Stamping set submittal.

Item	Required Code	Proposed	Meets Code	Comments
<p>The site plan proposes expansion across two properties with different zoning. For the purpose of this review, we are considering the entire site plan as one. However, each property will be reviewed for conformance for respective zoning regulations.</p> <p>EXO Site (EXO Overlay with OST): Suburban Collection Showplace OST Site (OST): Vacant Site</p>				
Zoning and Use Requirements				
Master Plan (adopted August 25, 2010)	Office Research Development Technology	Office Research Development Technology	Yes	
Area Study	2016 Master plan for land use update- Grand River Corridor (ongoing-not adapted)			Applicant is suggested to look at the draft online and consider any recommendations related to place making efforts, signage or landscape recommendations that may apply to this project
Intent of District (Sec. 3.1.15.A)	Designed to accommodate the development of a planned exposition, convention, and conference facility.	Exposition, conference and off-street parking lot	Yes	
Zoning (Effective December 25, 2013)	EXO Overlay District with OST & OST: Office Service Technology	EXO Overlay District with OST & OST: Office Service Technology	Yes	
Uses Permitted (Sec 3.1.15 B&C) (Sec 3.1.23.B & C)	3.1.15.B – Principal Permitted Uses for EXO 3.1.15.C – Special Land Uses for EXO 3.1.23.B - Principal Permitted Uses for OST 3.1.23.C - Principal	EXO: permitted Use for Exposition, Conference, and Convention facilities OST: Off-street parking lots	Yes	Planning Commission's recommendation to the City Council for Preliminary Site Plan, Special Land Use Permit, Wetland Permit and Storm Water Management Plan approval is required.

Item	Required Code	Proposed	Meets Code	Comments
	Permitted Uses for OST			Please clarify the use of the existing building within the subject properties. Please clarify if any phasing is proposed
Height, bulk, density, and area limitations (Sec 3.1.15.D)				
Minimum Zoning Lot Area (Sec 3.1.15.D) (Sec. 3.1.23.D)	EXO See Section 3.25	Existing	Yes	
	OST See Sec 3.6.2.D		Yes	
Minimum Zoning Lot Width (Sec 3.1.15.D)	EXO Not specified. OST See Sec. 3.6.2.D	Existing	Yes	
Open Space Area	--	--	--	--
Maximum % of Lot Area Covered (Sec 3.1.15.D)	EXO 0.5 FAR OST See Sec. 3.6.2.D	EXO Not provided OST No building proposed	No	Please provide the Floor Area Ratio on the site plan
Building Height (Sec. 3.1.15.D)	EXO 65 ft. or 5 stories, whichever is less OST 46 ft or 3 stories, whichever is less (Other conditions may apply)	EXO 50 ft. proposed expansion 62 ft. maximum existing buildings OST No Building proposed	Yes	Label building height on elevations
Building Setbacks (Sec 3.1.15.D) Refer to applicable notes in Sec 3.25.2.F				
Front	EXO: 100 ft. OST: 50 ft.	Setbacks are deviating from minimum required by a varied range from 2 ft. to approximately 12 ft. southwest corner of addition	No	Building setbacks do not meet the minimum requirements at southwest corner. <u>A Zoning Board of Appeals variance would be required for this deviation</u>
Rear	EXO: 50 ft. or height of building OST: 50 ft.	50 ft.	Yes	
Side (West)	EXO: 50 ft. or height of building OST: 50 ft.	Approx. 88 ft. to 100ft. OST No Building proposed	Yes	
Side (East)	EXO: 50 ft. or height of	Existing	Yes	

Item	Required Code	Proposed	Meets Code	Comments
	building OST: 50 ft.			
Accessory Buildings (Sec. 4.19)	Accessory buildings shall not be erected in any required front yard or in any required exterior side yard.	None proposed	Yes	
Parking Setback (Sec 3.1.15.D)				
Front(South)	EXO: 20 ft. OST: 20 ft.	40 ft. 0 ft.	Yes No	Parking setbacks do not meet the minimum requirements at multiple locations. <u>A Zoning Board of Appeals variance would be required for this deviation</u>
Rear	EXO: 20 ft. OST: 20 ft.	0 ft.	No	
Side (West)	EXO: 20 ft. OST: 20 ft.	EXO: 20 ft.(northwest) OST: 15ft.	No	
Side (East)	EXO: 20 ft. OST: 20 ft.	EXO: Existing OST: Varying widths from 0 ft. to 15 ft.	No	Refer to Planning review for further explanation Staff suggests the applicant to combine both parcels to avoid deviation on the east
Note To District Standards (Sec 3.6.2)(For both OST and EXO)				
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 front yard.	No exterior side yards	NA	
Off-Street Parking in Front Yard (Sec 3.6.2.E)	Off-street parking is allowed in front yard.	Proposed	Yes	
Distance between buildings (Sec 3.6.2.H)	It is governed by sec. 3.8.2 or by the minimum setback requirements, whichever is greater	Expansion to existing building	NA	
Wetland/ Watercourse Setback (Sec 3.6.2.M)	A setback of 25 ft. from wetlands and from high watermark course shall be maintained.	Buffer indicated on the plan	Yes	Refer to wetlands review for additional details
Parking Setback Screening (Sec 3.6.2.P)	Required parking setback area shall be landscaped per Sec. 5.5.3.	Adequate screening is not provided	No	Refer to Landscape review for additional details
Modification of Parking Setback Requirements (Sec 3.6.2.Q)	The Planning Commission may modify parking setback requirements based on Sec 3.6.2.Q.	Modifications are requested	NA	The site plan does not demonstrate that the modifications result in improved use of the site and/ or in improved landscaping. <u>The proposed modifications would require</u>

Item	Required Code	Proposed	Meets Code	Comments
				<u>a variance from Zoning Board of Appeals</u>
OST District Required Conditions (Sec 3.20)				
Additional Height (Sec 3.20.1)	Properties north of Grand River Ave., Max height: 65 ft. with additional setbacks of 2 ft. for every 1 ft. in excess of 46 ft.	Building is not proposed in OST site 50 ft. maximum height on proposed building expansion	NA	
Loading and Unloading Screening (Sec. 3.20.2.A & Sec. 5.4.3)	Truck service areas and overhead truck loading/unloading doors shall be screened from view from any public right-of-way	One 12' x 50' loading dock and seven 14' x 55' trailer parking spaces are shown to be relocated from the west to north. 5 Existing Loading are in the backyard. Landscape plan does not indicate adequate screening	Yes	Refer to landscape review for additional details and address the concern
Required Parking Calculation (Sec 3.20.2.B)	A floor plan indicating different uses, leasable floor space used for calculating parking should be shown on the plans.	Floor plan provided for expansion, but not for existing	Yes	Refer to Parking Calculations for additional clarification requested Update the parking layout shown on the building floor plans to match the layout on site plan
Additional conditions for permitted uses in 3.1.23.B.ii – v (Sec 3.20.2.C)	Uses permitted under subsections 3.1.23.B.ii - v shall not be located on property sharing a common boundary with property zoned for R-A, R-1, R-2, R-3, R-4 or MH district use unless conditions in section 3.20.2.C are met	Boundaries are OST and I-1	Yes	
Outdoor storage (Sec 3.20.2.D)	The outdoor storage of goods or materials shall be prohibited.	A note has been added to sheet C-1 indicating no outdoor storage	Yes	The note refers to incorrect section number. Please change it to Sec. 3.20.2.D
EXO District Required Conditions (Sec. 3.25)				
Minimum Exposition Space (Sec. 3.25.1.A)	Minimum of 250,000 sq. ft.	Proposed expansion: 298,550 sf Total building area	Yes	

Item	Required Code	Proposed	Meets Code	Comments
		after expansion: 572,882 sf		
Required Conditions (Sec. 3.25.1.B)	<ul style="list-style-type: none"> i. Must be within one mile of the TC District ii. Contiguous with I-96 iii. Direct access from a major thoroughfare iv. No less than 45 acres, no more than 55 acres; no EXO overlay within two miles of another EXO v. Zoning shall be OST vi. Second district shall not be approved until city exceeds 100,000 people 	EXO district boundaries are existing and previously approved	Yes	Applicant may consider rezoning OST parcel to include EXO at a later date
Required Conditions (Sec. 3.25.1.H)	Recreational vehicles and trucks used in transporting exhibit materials at scheduled exposition functions occurring in an exposition facility may be parked on site during the term of the exposition and 5 days preceding or following said exposition, provided they are parking in a location which is designated and striped for oversized vehicle parking and screened from view from public roadways.	<p>One 12' x 50' loading dock and seven 14' x 55' trailer parking spaces are shown to be relocated from the west to north.</p> <p>3 Existing Trailer parking is provided in the rear yard.</p> <p>Landscape plan does not indicate adequate screening</p>	Yes	
Supplemental Required Conditions (Sec. 3.25.2)				
Vehicular Access (Sec. 3.25.2.A)	2 points of external access available at all times for emergency vehicles	Two additional driveways are proposed with this expansion, which are existing on OST parcel	Yes?	<p>Refer to Traffic review letter for additional comments. Traffic has concerns about westerly driveways off of Grand River Avenue that may or may not require additional improvements along Grand River Avenue.</p> <p>Provided additional details on the existing gate located in the driveway between Parcel 2 and Parcel 3</p>
Floor Space (Sec. 3.25.2.B)	At least 150,000 sq ft. of exposition floor space	Total building area after expansion: 572,882 sf	Yes	

Item	Required Code	Proposed	Meets Code	Comments
Density (Sec. 3.25.2.C)	Total floor space of all overlay uses permitted in gross square feet shall not exceed 50 percent of total lot area measured in sq. ft.	510,795/2,374,998 sq. ft. = 21.51% proposed	Yes	Site floor area should be calculated based on the EXO parcel alone. Please update the calculations on sheet C-1
Building Height (Sec. 3.25.2.D)	65 ft. or 5 stories, whichever is less	50 ft. proposed Existing hotel is 63 ft.	Yes	
Pedestrian Ways (Sec. 3.25.2.E)	Pedestrian sidewalks within an exposition conference and convention facility site to permit safe and convenient access to the facility from parking lots and adjacent properties	Sidewalks are not proposed. However, a nine foot wide path is designated for pedestrian access from parking lot to the proposed building entry. Paths are not protected by raised curbs or landscaping	Yes	Staff recommends the applicant to continue to consider additional means to assure safe and convenient access. Please extend the path all the way straight to the building. Visitors have to walk all around the loop to get to the front building entrance
Minimum Setback and Screening (Sec. 3.25.2.F)	i. Setback from front shall be 100 ft. for uses in Sec. 3.1.15.C.i or ii; where adjacent to the freeway minimum of 30 ft. if extensive landscaping exists. ii. Additional 10% berm or landscaping may be required by City Council	100 ft., but only 94 ft. from 46400 Grand River parcel	No	Building setbacks do not meet the minimum requirements at southwest corner. <u>A Zoning Board of Appeals variance would be required for this deviation</u>
Building Design (Sec. 3.25.2.G)	Façade material schedule	Proposed elevations provided, no materials board	Yes	See Façade Review
Outside Storage (Sec. 3.25.2.H)	Limited to off-street parking, loading/unloading space, and the outside uses allowed in connection with the use permitted.	Proposed	Yes	
Outdoor Recreation Uses (Sec. 3.25.2.I)	Reasonable conditions imposed by City Council to ensure compatible uses	Applicant supplied a brochure of State fair use of property as part of Community Impact statement	Yes	
Financial, Retail, Service, Restaurant Uses (Sec. 3.25.2.J)	Must support exposition activities are limited to: 1 bank, less than 5 acres of retail sales, and 2 restaurants	None proposed	Yes	

Item	Required Code	Proposed	Meets Code	Comments
Covenants & Restrictions (Sec. 3.25.2.K)	After creation by rezoning, the owners of all property in the district shall join in the execution of covenants and restrictions	The proposed addition does not appear affect the existing covenants and restrictions	<u>Yes</u>	<u>Additional review may be needed at the time of Final Site Plan approval</u>
Parking, Loading, and Dumpster Requirements				
Number of Parking Spaces Exposition Conference Hotel (Sec. 5.2.12.C)	<u>Exposition</u> 1 per 120 sq. ft. + any accessory uses Existing: 209,800 SF Proposed: 90,660SF Total: 300,460 SF <u>Required spaces: 2,503</u> <u>Conference</u> 1 per every 3 people Existing: 2,400 People Proposed: 1,600 People Total: 4,000 people <u>Required spaces: 1,333</u> <u>Hotel</u> 1 per each unit + 1 per employee + accessory uses Existing: 128 rooms + 8 employees <u>Required Spaces: 136</u> <u>TOTAL REQUIRED: 3972</u>	<u>EXO Site:</u> Existing parking spaces (inc 59 BF): 2,676 Eliminated during construction(inc 12 BF): 607 Added during proposed expansion (inc. BF): 42 Total on EXO site: 2,111 <u>OST Site:</u> Proposed off-street parking: 840 <u>Total on-site (OST + EXO): 2,951 spaces</u> <u>OFF-SITE (per data provided by applicant)</u> Available off-site parking: 1,853 spaces Total parking available for exposition use: 4,804 spaces	Yes	Parking calculations from the original approved site plan included 39,771 square feet of warehouse space and about 1,950 square feet of office space. Please update the parking calculations including the existing or if any proposed warehouse and office areas Extra off-site parking has not been reviewed by staff, and may not comply with ordinance standards due to distance from the site and surface materials <u>A Zoning Board of Appeals variance would be required for this deviation</u>
Required Parking on other properties (Sec. 5.2.12.C)	The parking requirements for an exposition facility may be satisfied by onsite and offsite parking, subject to other conditions discussed further in the chart	The current site plan indicates unpaved parking layout on parcel 2 and parcel 3.	No	Current review did not review the proposed offsite unpaved parking for conformance. For the purposes of calculation, we are considering that the parking is "reserved on a site owned by the applicant".

Item	Required Code	Proposed	Meets Code	Comments
Required Parking on other properties (Sec. 5.2.12.C)	75 percent of the minimum required spaces on-site, provided that an area sufficient to construct the remaining twenty-five (25) percent of required spaces is reserved on the site, or on a site owned by the applicant which is within three hundred (300) feet of the site pursuant to Section 5.2.3.	Required parking: 3972 75% of required (to be provided on site): 2979 spaces 2951 spaces provided between EXO site and OST site. The spaces fall short by 28	No	The site plan requires at least 75 percent of the required spaces to be provided on site (2979 required on site, 2951 provided). A reduction of 28 spaces from minimum Required. The applicant may choose to provide updated parking calculations to include warehouse and office spaces or apply for ZBA variance for this deviation from section 5.2.12.C.
Parking Report	The applicant shall on an annual basis submit a report to the Building Division listing each event held at the facility, the number of attendees, the total number of vehicles parked on site each day for the event, and the peak number of vehicles parked on site at a given time during the event. The Building Division shall also have provided to it by City consultants and departments, any additional information pertinent to the reasonable adequacy of the usable parking at the facility. The Building Division shall make a determination on an annual basis as to whether additional parking shall be constructed on the land reserved or a portion of the land reserved		No	The applicant shall provide additional information in response with the intent to comply with this requirement
Minimum distance between building and Off-Street parking (Section 5.2.3.)	Off-street parking for other than residential use shall be either on the same parcel of and or within three-hundred (300) feet of the building it is intended to serve, measured along a pedestrian walkway from the nearest point of such building to the nearest point of the off-street parking lot.	Minimum distance provided: approximately 450 feet The pedestrian walkway is on the applicant's property as required The walkway does not provide a reasonably safe method of pedestrian access between the parking area and the building served	No	The applicant may choose to combine parcel 2 with parcel 1 to eliminate this deviation or apply for ZBA variance from section 5.2.3. <u>A Zoning Board of Appeals variance would be required for this deviation</u>

Item	Required Code	Proposed	Meets Code	Comments
Number of Tractor-trailer Truck Parking Spaces (Sec. 5.2.12.C)	A minimum of 10 tractor-trailer truck parking spaces shall be provided for an exhibition facility, measuring 14 feet wide and 55 feet long, with maneuvering area.	The site plan proposes relocating existing 7 trailer parking spaces and 1 loading area There are 3 additional trailer parking and 5 loading spaces located near the existing conference and banquet area	Yes	Original site plan received ZBA variance to allow loading in the exterior side yard. Trailer park is moved much closer to property line Include the calculations under general site data on sheet C-2
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 	Proposed Proposed None Proposed	Yes	Please provide more clarification on the parking spaces next to stamped concrete drive area in front of the building on west. Refer to Traffic for more details.
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	Not applicable.	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 	Some end islands proposed on EXO site Striped islands are proposed in lieu of raised end islands End islands are not provided at required intervals	No	Refer to Planning review letter for more details. <u>Deviations with regards to end islands would require City Council waivers and Zoning Board of Appeals variances</u> Refer to Traffic and Engineering comments for more details. Painted islands do not meet ordinance standards
Interior Landscape Islands (Section 5.5.3.C.ii.i)	No bay of parking greater than fifteen parking spaces in length shall be provided unless a landscape island is provided at a minimum interval of one island per 15 parking spaces.	None proposed	No	<u>Deviations for the lack of end islands would require Zoning Board of Appeals variances</u>
Barrier Free Spaces (2012 Michigan)	1,001 and over: 20, plus one for each 100 or fraction	71 proposed	Yes	Include the calculations under general site data on

Item	Required Code	Proposed	Meets Code	Comments
<i>Building Code</i> <i>Sec.1106)</i>	thereof, over 1,000 For 2,951 spaces, <u>40 required</u>			sheet C-2 Barrier free spaces shall be distributed among all building entrances according to building code. Provide some handicap accessible spaces near the proposed building entrance on west
Barrier Free Space Dimensions <i>(ICC ANCI a1.17.1 2009)</i>	- 8' wide with an 8' wide access aisle for van accessible spaces - 5' wide with a 5' wide access aisle for regular accessible spaces 12 van spaces required.	19 van spaces proposed	Yes	
Barrier Free Signs <i>(ICC ANCI a1.17.1 2009)</i>	One sign for each accessible parking space.	Barrier free signs are indicated as TSP	Yes	
Minimum number of Bicycle Parking <i>(Sec. 5.16.1)</i>	4 spaces are required per exposition, conference, and hotel use 12 spaces required	Twelve spaces proposed near existing building	Yes	Include the calculations under general site data on sheet C-2
Bicycle Parking General requirements <i>(Sec. 5.16)</i>	- 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	Twelve spaces are proposed. Additional details are not provided	Yes	Provide additional details as required per this section
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	Additional details are not provided	No	Provide additional details as required per this section

Item	Required Code	Proposed	Meets Code	Comments
Loading Spaces (Sec 5.4)	Within the EXO district, all loading and unloading operations shall be conducted in the rear yard, except where an interior side yard is located adjacent to certain zoning districts, loading may be conducted in the interior side yard when located near the rear of the building, with aesthetic screening .	4 existing loading spaces 1 existing loading space relocated from west side yard to rear yard	Yes	
Dumpster (Sec 4.19.2.F)	<ul style="list-style-type: none"> - Located in rear yard - Attached to the building or - No closer than 10 ft. from building if not attached - Not located in parking setback - If no setback, then it cannot be any closer than 10 ft, from property line. - Away from Barrier free Spaces 	<p>The plan does not appear to propose additional dumpster</p> <p>There is existing trash compactor on site</p>	Yes?	Please indicate in your response letter if any dumpster is being proposed
Dumpster Enclosure Sec. 21-145. (c) Chapter 21 of City Code of Ordinances	<ul style="list-style-type: none"> - Screened from public view - A wall or fence 1 ft. higher than height of refuse bin - And no less than 5 ft. on three sides - Posts or bumpers to protect the screening - Hard surface pad. - Screening Materials: Masonry, wood or evergreen shrubbery 	See above comment	NA	
Exterior lighting (Sec. 5.7)	Photometric plan and exterior lighting details needed at time of Final Site Plan submittal	Applicant indicated that 7 existing light poles within OST site are to be relocated. Applicant submitted updated photometric plan	No	Maximum illumination levels at the property line exceed the maximum allowed. <u>A Zoning Board of Appeals variance would be required for this deviation</u>
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	Rooftop equipment is proposed and is screened by prefinished metal	Yes	Refer to Façade review for more details

Item	Required Code	Proposed	Meets Code	Comments
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.	Rooftop equipment is proposed and is screened by prefinished metal	Yes	Refer to Façade review for more details
Non-Motorized Facilities				
Off-Road Non-Motorized Facilities (City Code Sec. 11-256.c)	Arterials and collectors shall be 6 ft. or 8 ft. as designated by the "Bicycle and Pedestrian Plan" Novi Plan.	None proposed. Existing major walkway already in place.	Yes	
Pedestrian Connectivity	Assure safety and convenience of both vehicular and pedestrian traffic both within the site and in relation to access streets.	Sidewalks are not proposed. However, a nine foot wide path is designated for pedestrian access from parking lot to the proposed building entry	Yes	Staff recommends the applicant to continue to consider additional means to assure safe and convenient access
Building Code and Other Requirements				
Building Code	Building exits must be connected to sidewalk system or parking lot.	Sidewalks 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).	Provided	Yes	
General layout and dimension of proposed physical improvements	Location of all existing and proposed buildings, proposed building heights, building layouts, (floor area in square feet), location of proposed parking and parking layout, streets and drives, and indicate square footage of pavement area (indicate public or private).	Provided	Yes	Provide additional information requested in all staff and consultants review letters
Frontage on a Public Street and Access to Major Thoroughfare (Sec. 5.12)	No lot or parcels of land shall be used for any purpose unless said lot or parcel shall front directly upon a public street.	Proposed	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, if known) 	The applicant provided summaries from economic impact statements from 1999 and 2008. The applicant indicates an additional 20 % increase from \$600,000,000 per year estimated in 2008	Yes	
Community Impact Statement				
Development/ Business Sign	Signage if proposed requires a permit.	The plan appears to propose or modify couple billboard signage in the rear yard and five digital signs on the building and few event traffic and parking event signage on the front along Grand River Avenue	Yes?	<p><u>The proposed signage may require Zoning Board of Appeals variances.</u></p> <p>Signs are not regulated by the Planning Department</p> <p><u>A sign permit will need to be submitted.</u> <u>For further information contact Jeannie Niland 248-347-0438.</u></p>
Development and Street Names	Development and street names must be approved by the Street Naming Committee before Preliminary Site Plan approval	No new names are proposed.	Yes	
Property Split / Combination	The proposed property combination must be submitted to the Assessing Dept. for approval.	The site plan does not propose any property splits or combinations	NA	Please clarify if there is a intent to combine parcels to eliminate some variance requests as listed in this chart
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	Provided	Yes	Refer to other comments
Lighting Plan (Sec. 5.7.A.1)	Site plan showing location of all existing & proposed buildings, landscaping,			Provide further explanation on how site lighting will be addressed when the

Item	Required Code	Proposed	Meets Code	Comments
	streets, drives, parking areas & exterior lighting fixtures			parking lot is used for event parking. Will there be generators or electric boxes etc
Lighting Plan (Sec.5.7.A.2)	Specifications for all proposed & existing lighting fixtures	Not provided	No	Provide all the missing information indicated and required.
	Photometric data	Provided	Yes	
	Fixture height	Not provided	No	
	Mounting & design	Not provided	No	
	Glare control devices	Not provided	No	
	Type & color rendition of lamps	LED	Yes	
	Hours of operation	Not provided	No	
	Photometric plan illustrating all light sources that impact the subject site, including spill-over information from neighboring properties	Provided	Yes	
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	Not adjacent to residential districts. Height not provided	No	Please indicate the height of fixtures on the plan
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 	Please add these notes to the photometric plan	Yes	
Required Conditions (Sec.5.7.3.E)	Average light level of the surface being lit to the lowest light of the surface being lit shall not exceed 4:1	Not provided	Yes?	Provide photometric plan.
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	Yes	
Min. Illumination (Sec. 5.7.3.k)	Parking areas: 0.2 min	0.2 min	yes	
	Loading & unloading areas:	0.0 min	No	

Item	Required Code	Proposed	Meets Code	Comments
	0.4 min			
	Walkways: 0.2 min	0.1 min (at the west end of 9 foot path)		
	Building entrances, frequent use: 1.0 min	1.0 min		
	Building entrances, infrequent use: 0.2 min	0.0 Min (near trailer parking)		
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	Foot candles exceed 1 at the property line on the west and south	Yes	<u>A Zoning Board of Appeals variance would be required for this deviation</u>
Cut off Angles (Sec. 5.7.3.L)	When adjacent to residential districts - All cut off angles of fixtures must be 90° - maximum illumination at the property line shall not exceed 0.5 foot candle	Not adjacent to residential districts	NA	<u>Provide cut sheets for proposed light fixtures</u>

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

07/13/2016

Engineering Review

SHOWPLACE BUILDING & PARKING EXPANSION
JSP16-0012

Applicant

TBON LLC

Review Type

Preliminary Site Plan

Property Characteristics

- Site Location: N. of Grand River Ave. and W. of Taft Rd,
- Site Size: 54.86 acres
- Plan Date: 06/22/16

Project Summary

- Construction of an approximately 175,815 square-foot expansion of the existing Suburban Collection Showplace and paving the parcel to the west to expand parking.
- The existing 8-inch water main on the north and south side of the building will be relocated around the proposed building addition. Two existing hydrants will be relocated.
- Storm water would be collected by a single storm sewer collection system and detained in a proposed detention basin on the north end of the parcel west of the showplace.

Recommendation

Approval of the Preliminary Site Plan and Preliminary Storm Water Management Plan is recommended.

Comments:

The Preliminary Site Plan meets the general requirements of Chapter 11, the Storm Water Management Ordinance and the Engineering Design Manual with the following items to be addressed at the time of Final Site Plan submittal (further engineering detail will be required at the time of the final site plan submittal):

Additional Comments (to be addressed prior to the Final Site Plan submittal):

General

1. Provide a traffic control sign table listing the quantities of each sign type proposed for the development. Provide a note along with the table stating all traffic signage will comply with the current MMUTCD standards.
2. Provide a utility crossing table indicating that at least 18-inch vertical clearance will be provided, or that additional bedding measures will be utilized at points of conflict where adequate clearance cannot be maintained.
3. The City standard detail sheets are not required for the Final Site Plan submittal. They will be required with the Stamping Set submittal. They can be found on the City website (www.cityofnovi.org/DesignManual).

Water Main

4. Provide profiles for all proposed water main 8-inches and larger.
5. Three (3) sealed sets of revised utility plans along with the MDEQ permit application (1/07 rev.) for water main construction and the Streamlined Water Main Permit Checklist should be submitted to the Engineering Department for review, assuming no further design changes are anticipated. Utility plan sets shall include only the cover sheet, any applicable utility sheets and the standard detail sheets.

Storm Sewer

6. Provide profiles for all proposed storm sewer 12-inches and larger.
7. A minimum cover depth of 3 feet shall be maintained over all storm sewers. Grades shall be elevated and minimum pipe slopes shall be used to maximize the cover depth. In situations where the minimum cover cannot be achieved, Class V pipe must be used with an absolute minimum cover depth of 2 feet. A Design and Construction standards variance application shall be provided where the cover depth cannot be provided. This must be submitted under a separate cover.
8. Provide a 0.1-foot drop in the downstream invert of all storm structures where a change in direction of 30 degrees or greater occurs.
9. Match the 0.80 diameter depth above invert for pipe size increases.
10. Storm manholes with differences in invert elevations exceeding two feet shall contain a 2-foot deep plunge pool.
11. Provide a four-foot deep sump and an oil/gas separator in the last storm structure prior to discharge to the storm water basin.

12. 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.
13. 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.
14. Illustrate all pipes intersecting storm structures on the storm profiles.
15. An easement is required over the storm sewer accepting and conveying off-site drainage.

Storm Water Management Plan

16. A 4-foot wide safety shelf is required one-foot below the permanent water surface elevation within the basin.
17. Provide a cross-section of the proposed basin.
18. M.D.O.T. approval of the storm basin discharge to the I-96 R.O.W. will be required prior to stamping set approval.

Paving & Grading

19. Revise the sidewalk details to show a maximum 2-percent cross-slope.

Soil Erosion and Sediment Control

20. A SESC permit is required. A review has not been done at this time. The review checklist detailing all SESC requirements is attached to this letter. An informal review will be completed with the final site plan review if the SESC plans are included. Please submit a SESC permit application under a separate cover. The application can be found on the City's website at <http://cityofnovi.org/Reference/Forms-and-Permits.aspx>.

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

21. A letter from either the applicant or the applicant's engineer must be submitted with the Final Site Plan highlighting the changes made to the plans addressing each of the comments listed above and indicating the revised sheets involved.
22. 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).

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

23. 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 with the Final Site Plan. 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.

24. A draft copy of the 20-foot wide easement for the water main to be constructed on the site must be submitted to the Community Development Department.
25. A 20-foot wide easement where storm sewer or surface drainage crosses lot boundaries must be shown on the Exhibit B drawings of the Master Deed.

The following must be addressed prior to construction:

26. 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).
27. 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. Once determined, a grading permit fee must be paid to the City Treasurer's Office.
28. An NPDES permit must be obtained from the MDEQ because the site is over 5 acres in size. The MDEQ requires an approved plan to be submitted with the Notice of Coverage.
29. 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.
30. A permit for water main construction must be obtained from the MDEQ. This permit application must be submitted through the City Engineer after the water main plans have been approved.
31. Construction Inspection Fees to be determined once the construction cost estimate is submitted must be paid prior to the pre-construction meeting.
32. A storm water performance guarantee, equal to 1.5 times the amount required to complete storm water management and facilities as specified in the Storm Water Management Ordinance, must be posted at the Treasurer's Office.
33. An incomplete site work performance guarantee for this development will be calculated (equal to 1.5 times the amount required to complete the site improvements, excluding the storm water facilities) as specified in the Performance Guarantee Ordinance. This guarantee will be posted prior to TCO, at which time it may be reduced based on percentage of construction completed.
34. A street sign financial guarantee in an amount to be determined (\$400 per traffic control sign proposed) must be posted at the Treasurer's Office.

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 Jeremy Miller at (248) 735-5694 with any questions.

A handwritten signature in blue ink, reading "Jeremy J. Miller", is written over a horizontal line.

cc: Adam Wayne, Engineering
Brian Coburn, Engineering
Sri Komaragiri, Community Development
Sabrina Lilla, Water & Sewer



CITY OF NOVI ENGINEERING DIVISION SOIL EROSION AND SEDIMENTATION CONTROL PLAN CHECKLIST

PROJECT:

SESC Application #: SE -

Contact Name:

DATE COMPLETED:

Phone Number:

DATE OF PLAN:

Fax Number:

STATUS:

General Requirements – Following the initial Soil Erosion and Sedimentation Control permit application to the Community Development Department, all SESC plan revisions shall be submitted directly to the Engineering Department for further review and/or permit approval. One (1) copy of revised soil erosion plans, including response letter addressing the comments below, shall be submitted for each subsequent review until the plan has been given approval by the Engineering Department, at which point five (5) copies will be required for permit approval. Plans shall be signed and sealed, and the bond must be submitted to the Treasurer's Office prior to permit issuance.

ITEM NO.	ITEM	Provided on Plans	COMMENTS
1.	Plan shall be at scale of not more than 1" = 200', include legal description, location, proximity to lakes, streams or wetlands, slopes, etc.	<input type="checkbox"/>	
2.	Plan shall include a soil survey or a written description of soil types of the exposed land area.	<input type="checkbox"/>	
3.	Plan shall show the limits of earth disruption.	<input type="checkbox"/>	
4.	Plan shall show tree protection fencing and location of trees to be protected.	<input type="checkbox"/>	
5.	Plan shall show all existing and proposed on-site drainage and dewatering facilities (i.e. structure details, rim elev., etc.)	<input type="checkbox"/>	
6.	Detailed sequence of construction shall be provided on plans structured similar to the following, supplemented with site specific items: 1) Install tracking mat, 2) Install temp. SESC measures, 3) Construct storm water basins and install treatment structures, if applicable, 4) Install storm sewer, with inlet protection to follow immediately, 5) Remove all temp. SESC measures once site is stabilized.	<input type="checkbox"/>	
7.	Plan must address maintenance of soil erosion and sedimentation control measures (temporary and permanent)	<input type="checkbox"/>	

8.	Provide a note stating if dewatering is anticipated or encountered during construction a dewatering plan must be submitted to the Engineering Division for review.	<input type="checkbox"/>	
9.	A grading plan shall be provided, or grade information shown on plan.	<input type="checkbox"/>	
10.	Note that it is the developer's responsibility to grade and stabilize disturbances due to the installation of public utilities.	<input type="checkbox"/>	
11.	The CSWO shall be listed on permit application.	<input type="checkbox"/>	
12.	Plan sealed by registered civil engineer with original signature.	<input type="checkbox"/>	
13.	An itemized cost estimate (Silt Fence, Inlet Filters, Topsoil/Seed/Mulch, Const. Access, etc.) shall be provided.	<input type="checkbox"/>	The SESC financial guarantee will be \$. The SESC inspection fees will be \$.
14.	Potential stockpile areas shall be shown on the plan, with note stating a ring of silt fence will be installed surrounding any stockpiled material.	<input type="checkbox"/>	
15.	Sediment basin: Provide filter on standpipe outlet structure until site is stabilized, then removed. Noted on plan and standpipe detail(s).	<input type="checkbox"/>	
16.	Provide a note on the plan stating the storm water basin will be stabilized prior to directing flow to the basin.	<input type="checkbox"/>	
17.	Pretreatment Structures: Noted to inspect weekly for sediment accumulation until site is stabilized, and will clean as required.	<input type="checkbox"/>	.
18.	Attach the Oakland County standard detail sheet.	<input type="checkbox"/>	
19.	Construction mud tracking entrance: 75'x20', 6" of 1" to 3" stone, on geotextile fabric.	<input type="checkbox"/>	
20.	Silt fence: 6" anchor trench, stakes 6' on center. Prominent line type on plan, with legend.	<input type="checkbox"/>	
21.	Provide Silt Sack with overflow capability as the inlet protection, and provide detail on plans.	<input type="checkbox"/>	
22.	Catch basin inlet filters shall be provided on existing roadways along construction route for reasonable distance from site.	<input type="checkbox"/>	
23.	Street sweeping and dust control shall be noted on plan as responsibility of contractor.	<input type="checkbox"/>	
24.	Vegetation shall be established within 5 days of final grade, or whenever disturbed areas will remain unchanged for 30 days or greater. 3-4" of topsoil will be used where vegetation is required.	<input type="checkbox"/>	
25.	Vegetated buffer strips (25' wide wherever possible) shall be created or retained along the	<input type="checkbox"/>	

	edges of all water bodies, water courses or wetlands.		
26.	Diversion berms or terracing shall be implemented where necessary.	<input type="checkbox"/>	
27.	All drainage ditches shall be stabilized with erosion control blanket and shall utilize check dams as necessary. Drainage ditches steeper than 3% shall be sodded.	<input type="checkbox"/>	
28.	Slopes steeper than 1V:6H (16%) shall be stabilized with erosion control blanket. Add this note as a general note, and also in a prominent location near any berm, etc. where a significant slope is proposed.	<input type="checkbox"/>	
29.	All culvert end sections must contain grouted rip-rap in accordance with ordinance specifications.	<input type="checkbox"/>	

ADDITIONAL COMMENTS:

1. Please note that installation of silt fencing or tree protection fencing shall not occur prior to the initial City pre-construction meeting. When natural features exist on the site, inspection of staking may be required prior to installation of the fencing.
2. **Provide an estimated time of earth disruption at the next submittal. At that time, an inspection fee will be provided.**

Reviewed By: Lindon Ivezaj (248) 735-5694

LANDSCAPE REVIEW



PLAN REVIEW CENTER REPORT

July 14, 2016

Preliminary Site Plan - Landscaping

Suburban Collection Expansion

Review Type

Preliminary Site Plan Landscape Review

Project Number

JSP16-0012

Property Characteristics

- Site Location: 46100 Grand River
- Site Zoning: EXO
- Adjacent Zoning: West: OST, South: OST, I-1 South, East: I-1
- Plan Date: June 22, 2016

Recommendation:

This project is **recommended for approval** with the understanding that the items listed below will be addressed satisfactorily in the Final Site Plans.

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. Please follow guidelines of the Zoning Ordinance and Landscape Design Guidelines. This review is a summary and not intended to substitute for any Ordinance.

EXISTING ELEMENTS

Existing Soils (Preliminary Site Plan checklist #10, #17)

Listed on Sheet C-1 with no boundaries provided.

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

1. Existing and proposed utilities are shown on landscape plans.
2. **An existing tree is too close to a hydrant but doesn't need to be removed.**

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, trees to be transplanted and trees to be saved are shown on plans.
2. Tree protection fencing details have been provided.

LANDSCAPING REQUIREMENTS

Adjacent to Public Rights-of-Way – Berm (Wall) & Buffer (Zoning Sec. 5.5.3.B.ii and iii, Sec 3.25.2.F)

GRAND RIVER – no additions required – berm, existing landscaping and existing buildings provide sufficient screening. If the existing buildings are removed in the future, berms and landscaping required by the ordinance at that time must be installed for that frontage.

I-96

1. **The greenbelt width between the right-of-way and the parking should be dimensioned. It appears that the width far exceeds the 20-foot requirement.**
2. **Please verify that the existing berm between I-96 and the new detention basin is 3 feet**

- high, as required. If it is not sufficient, please raise the berm to the required height.
3. The landscape plan indicates that more than 40 existing trees will provide the required greenbelt landscaping. However, it also appears that the proposed grading will remove all existing landscaping along that frontage.
 4. If the existing trees are removed, the required large canopy or evergreen, and subcanopy trees must be provided. If the existing trees do remain and provide sufficient screening, the existing trees can be used to meet the requirements and the berm does in that area does not need to be modified.
 5. A site visit revealed that the existing loading areas and the proposed loading zone are actually quite visible from I-96 through the woods. While some transplants proposed for that area will help, additional shrubs or short trees should be added to screen the view of the proposed loading area from I-96. As no changes are made to the existing loading areas along the north edge of the building, no additional screening for them is required.

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

No new street trees are required.

Parking Lot Landscape (Zoning Sec. 5.5.3.C.)

1. Calculations are provided, but it is not clear what areas are included in them. **Please indicate with a map or other visual aid which areas are included.**
2. **The calculations should be corrected as shown on the Landscape Chart.** As they are they under-calculate the required landscape area and interior trees required.
3. Currently, the calculations indicate that approximately 15,664 sf of interior island space is required but none is provided. **Please provide the required interior island space based on the corrected calculations.** If deciduous canopy trees are added to the large island west of the building, the unpaved area of that island could be counted toward the requirement.
4. The existing islands south of the building have been reduced in size to approximately 8 feet from back to back. The ordinance requires that islands be at least 10 feet, back to back, for survival of the trees. **Please increase the width of those islands.**
5. Landscape islands are required to break up expanses of parking such that no bay is longer than 15 spaces. No interior islands are proposed and bays range from 13 to 93 spaces, with most well over 15 spaces. The painted endcap "islands" do not count as landscape islands. **Please provide interior islands to break up the expanse of paving.**

Parking Lot Perimeter Canopy Trees (Zoning Sec. 5.5.3.C.(3) Chart footnote)

1. The perimeter is shown as 1721lf with a total of 50 perimeter trees required and 35 provided. Also, it is unclear what was used as the basis of the perimeter measurement. **Please show that on the same map that shows the vehicular use areas used in the calculations, and modify the calculations.** Due to the projected use of the unpaved area, the applicant can request a landscape variance from City Council for the perimeter trees required along the western edge of the new paved areas and it would be supported by staff.
2. **See the Landscape Chart for a more detailed discussion of the calculations.**

Building Foundation Landscape (Zoning Sec 5.5.3.D.)

1. Based on the building perimeter of 1824 lf, 14,592 sf of foundation landscaping is required at the base of the building. The layout provides 2,258 sf. **Please provide more foundation landscape area where possible and request a landscape variance for the area not provided, with a justification for not providing it.**
2. **Please add SF labels for all foundation landscaping areas to verify the 2642 sf of landscaping noted on the plans.**

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

The requirement for storm basin landscaping is met.

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

Please add the required screening for any utility units on the site. A copy of the city's standard screening detail is available upon request.

OTHER REQUIREMENTS

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

All have been provided satisfactorily.

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

Cost estimates were provided.

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

An irrigation plan for all landscaped areas is required as part of the Final Site Plans.

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

Please add proposed contours to the landscape plan. The tops of berms should be 3' above the adjacent top of pavement elevations.

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 SUMMARY CHART

Review Date: July 14, 2016
Project Name: JSP16 – 0012: SUBURBAN SHOWCASE COLLECTION ADDITION
Plan Date: June 23, 2016
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.

Item	Required	Proposed	Meets Code	Comments
Landscape Plan Requirements (LDM (2))				
Landscape Plan (Zoning Sec 5.5.2, LDM 2.e.)	§ 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	Overall: 1"=150' Region sheets: 1"=30'
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	Yes	Yes	
Sealed by LA. (LDM 2.g.)	Requires original signature	Yes	Yes	Required for Final Site Plan
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	Yes	Yes	Site: EXO South: I-1 and OST, East I-1, West OST
Survey information (LDM 2.c.)	§ Legal description or boundary line survey § Existing topography	Yes	Yes	Sheets TS1-4
Existing plant material Existing woodlands or wetlands (LDM 2.e.(2))	§ Show location type and size. Label to be saved or removed. § Plan shall state if none	Yes	Yes	Sheets TS3, TS4

Item	Required	Proposed	Meets Code	Comments
	exists.			
Soil types (LDM.2.r.)	§ As determined by Soils survey of Oakland county § Show types, boundaries	Yes	Yes	Listed on Sheet C-1 but no boundaries are provided.
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	
Proposed grading. 2' contour minimum (LDM 2.e.(1))	Provide proposed contours at 2' interval	Yes	Yes	Spot elevations are provided on Sheets C-5, C-6.
Snow deposit (LDM.2.q.)	Show snow deposit areas on plan	No	No	Please add notes indicating snow deposit areas on landscape plan
LANDSCAPING REQUIREMENTS				
Parking Area Landscape Requirements LDM 1.c. & Calculations (LDM 2.o.)				
General requirements (LDM 1.c)	§ Clear sight distance within parking islands § No evergreen trees	Yes	No	No interior islands are proposed in new parking areas.
Name, type and number of ground cover (LDM 1.c.(5))	As proposed on planting islands	No	No	
General (Zoning Sec 5.5.3.C.ii)				
Parking lot Islands (a, b. i)	§ A minimum of 300 SF to qualify § 6" curbs § Islands minimum width 10' BOC to BOC	No	No	1. No curbed islands proposed in parking areas to west of building. 2. Reconfigured islands south of building are only 7.5 wide back of curb to back of curb. Please widen islands to meet code.
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.	Yes	Yes	Spaces fronting on green space west of building addition are 17 feet long.
Contiguous space limit (i)	Maximum of 15 contiguous spaces	No	No	1. Bays range from 13 to 93 spaces, with most well over 15

Item	Required	Proposed	Meets Code	Comments
				spaces. 2. Please add islands to break up long bays as required by the ordinance for parking areas.
Plantings around Fire Hydrant (d)	No plantings with matured height greater than 12' within 10 ft. of fire hydrants	Yes	Yes	No new hydrants indicated
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))	25 ft corner clearance required. Refer to Zoning Section 5.5.9	Yes	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 parking spaces not including access aisles x 10%	$\$ A = \text{Area} \times 10\%$ $\$ 143640 \times 10\% = 14,364\text{sf}$	No	No	1. Calculations have been provided but it's not clear what area is included in calculations. 2. Please provide a small inset map showing the areas included in the calculations. If only new paved area west of building is included in calculations, please make that clear with a calculations note.
B = Total square footage of additional paved vehicular use areas (not including A) under 50,000 SF) x 5%	$\$ B = \text{Area} \times 5\%$ $\$ \text{Paved Vehicular access area includes loading areas}$ $\$ 50000 \times 5\% = 2,500\text{sf}$	No	No	The calculations should include this calculation for the first 50,000 of vehicular use area.
C= Total square footage of additional paved vehicular use areas (not including A or B) over 50,000 SF) x 1 %	$\$ C = \text{Area} \times 1\% = \text{sf}$ $\$ 79998 \times 1\% = 800\text{sf}$	No	No	This area should apparently be 79,998 (129,998-50,000).
Category 2: For: I-1 and I-2 (Zoning Sec 5.5.3.C.iii)				
A. = Total square footage of parking spaces not including	$\$ A = 7\% \times \text{xx sf} = \text{xx sf}$	NA		

Item	Required	Proposed	Meets Code	Comments
access aisles x 7%				
B = Total square footage of additional Paved vehicular use areas (not including A) under 50,000 SF) x 2%	$\$ B = 2\% \times \text{xx sf} = \text{xx sf}$	NA		
C= Total square footage of additional paved vehicular use areas (not including A or B) over 50,000 SF) x 0.5%	$\$ C = 0.5\% \times 0 \text{ sf} = 0 \text{ SF}$	NA		
All Categories				
D = A+B or A+C Total square footage of landscaped islands	$14364 + 2500 + 800 = 17664 \text{ SF}$	None in new paved area, reduced area from existing in existing parking area.	No	<ol style="list-style-type: none"> 1. Please clarify calculations for all parking areas included to help determine quantities impacted by landscape waiver. 2. Add curbed interior parking islands with deciduous canopy trees to meet required area. 3. Please quantify areas of curbed landscape islands in SF (painted "endcaps" do not count as landscape islands).
E = D/75 Number of canopy trees required	$\$ 17664/75 = 236 \text{ Trees}$	None	No	<ol style="list-style-type: none"> 1. Revise calculations per above comments to determine quantities impacted by landscape waiver required. 2. Add trees to interior parking islands to meet requirement. 3. Trees added to the large open space between the new parking area and the building could count toward requirement. 4. Indicate with unique labeling which trees

Item	Required	Proposed	Meets Code	Comments
				are parking lot trees.
Perimeter Green space	<p>§ 1 Canopy tree per 35 lf</p> <p>§ New parking area perimeter = approximately 1000lf on north, east and south sides;</p> <p>§ $1000/35 = 29$ trees</p>	41 new, existing and transplanted trees	Yes	<p>1. It is unclear what is used as the basis of the perimeter calculation provided. A request for a waiver to not include the west side of the newly paved area can be requested and will be supported since that side is not paved and will not be used regularly for parking as the paved area will be.)</p> <p>2. It would be helpful to add some perimeter trees along the north edge of the parking while still leaving room for snow deposits.</p> <p>3. Indicate with unique labeling which trees are perimeter trees.</p>
Parking land banked	§ NA	No		
Berms, Walls and ROW Planting Requirements				
Berms				
<p>§ All berms shall have a maximum slope of 33%. Gradual slopes are encouraged. Show 1ft. contours</p> <p>§ Berm should be located on lot line except in conflict with utilities.</p> <p>§ Berms should be constructed with 6" of top soil.</p>		No new berms proposed		
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		There is no residential land use or zoning adjacent to site.
Planting requirements (LDM 1.a.)	LDM Novi Street Tree List	NA		
Adjacent to Public Rights-of-Way (Sec 5.5.B) and (LDM 1.b)				
Berm requirements (Zoning Sec 5.5.3.A.(5))	Refer to ROW landscape screening requirements chart for corresponding	No – existing berm	TBD	<p>1. No new berm is required along Grand River.</p> <p>2. It appears that</p>

Item	Required	Proposed	Meets Code	Comments
	requirements.			existing I-96 berm does not meet requirements for height and the grading shown appears to eliminate the existing landscaping that is shown as remaining and meeting the greenbelt landscape requirements 3. Please verify if the existing plantings will remain or not and propose new plantings to meet the requirements listed below if they will not.
Cross-Section of Berms (LDM 2.j)				
Slope, height and width	§ Label contour lines § Maximum 33% § Min. 5 feet flat horizontal area	No	TBD	1. No new berms are proposed. 2. If new berms are required along I-96, detail for it should be provided.
Type of Ground Cover		NA		
Setbacks from Utilities	Overhead utility lines and 15 ft. setback from edge of utility or 20 ft. setback from closest pole	NA		
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	Rock ledge walls are provided along front of building at driveway	Yes	
Walls greater than 3 ½ ft. should be designed and sealed by an Engineer			Yes	No wall is taller than 3'
ROW Landscape Screening Requirements (Sec 5.5.3.B. ii)				
Greenbelt width (2)(3) (5)	Parking: 20 ft.	I-96: Approximately 120 ft	Yes	1. Grand River – NA 2. Please provide dimensions to I-96 ROW for all proposed parking.

Item	Required	Proposed	Meets Code	Comments
Min. berm crest width	Parking: 2 ft.	No	No	1. Grand River – NA 2. I-96 – see note above regarding contour labels. 3. If berm is required, please provide required berm.
Minimum berm height (9)	Parking: 3 ft.	No	No	1. Grand River – NA 2. I-96 – see note above regarding contour labels. 3. If berm is required, please provide required berm.
3' wall	§ (4)(7)	No		
Canopy deciduous or large evergreen trees Notes (1) (10)	§ Parking: 1 tree per 35 lf § 410/35 = 12 trees	Existing trees north of proposed detention basin Applicant states that a mix of over 40 evergreen trees are there.	Yes	1. Grand River – NA 2. I-96 – The frontage appears to be closer to 410 lf than 200 lf based on Sheet L-1. Please check calculations. 3. See above comments regarding the berm requirements and the existing vegetation that is supposed to remain. Add required greenbelt landscaping if necessary.
Sub-canopy deciduous trees Notes (2)(10)	§ Parking: 1 tree per 20 lf § 410/20 = 21 trees	See above	Yes	1. Grand River – NA 2. See above
Canopy deciduous trees in area between sidewalk and curb (Novi Street Tree List)	§ Parking: 1 tree per 35 lf	NA		NA
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))	§ 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 40 l.f. of total linear frontage § Plant massing for 25% of ROW	NA		

Item	Required	Proposed	Meets Code	Comments
Screening of outdoor storage, loading/unloading (Zoning Sec. 3.14, 3.15, 4.55, 4.56, 5.5)		Yes		Transplanted trees have been added along the loading zone perimeter to screen from I-96. This may or may not be satisfactory. As it is, the existing woods do not provide sufficient screening from I-96. Additional large shrubs, evergreens or small trees may be needed to screen the loading area from the highway.
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	No utility boxes shown		Please add a note that there will be no new utility boxes, or add a note that any new utility boxes will be screened per the City of Novi standard screening detail (attached).
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. § 1824 If x 8ft = 14,592 SF	2,258 sf	No	1. Please provide additional foundation landscaping area with labels showing SF of foundation areas.
<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	§ Greater than 60% of Grand River frontage is covered in green space. § No foundation landscaping along I-96 frontage is shown.	Yes/No	1. Frontage along Grand River is sufficiently landscaped per frontage requirement. 2. See above note regarding I-96 screening.
Detention/Retention Basin Requirements (Sec. 5.5.3.E.iv)				
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	810 of 1125 If has shrubs and/or trees = 72%	Yes	Additional shrubs have been added along the rim to meet the requirement.
LANDSCAPING NOTES, DETAILS AND GENERAL REQUIREMENTS				

Item	Required	Proposed	Meets Code	Comments
Landscape Notes – Utilize City of Novi Standard Notes				
Installation date (LDM 2.l. & Zoning Sec 5.5.5.B)	Provide intended date	Fall 2016 or Spring 2017	No	Please revise note to state between March and November.
Maintenance & Statement of intent (LDM 2.m & Zoning Sec 5.5.6)	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.	No	No	1. Please revise guarantee note to 2 years. 2. Please add “and/or City of Novi” to General Note #12 for section stating who determines whether plants shall be replaced. 3. Please add cultivation note.
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	No	<u>Need for final site plan</u>
Other information (LDM 2.u)	Required by Planning Commission	NA		1. Please remove “City of Novi” from heading of Planting Notes as many are not standards of Novi. 2. Please change the first General Note to “City of Novi”.
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	
Type and amount of lawn		Yes	Yes	Seed and sod
Cost estimate (LDM 2.t)	For all new plantings, mulch and sod as listed on the plan	Yes	Yes/No	1. <u>Cost estimates have been added. Please use the standard costs below for the</u>

Item	Required	Proposed	Meets Code	Comments
				<u>items.</u> 2. <u>Please add quantities and costs for perennials.</u>
Planting Details/Info (LDM 2.i) – Utilize City of Novi Standard Details				
Canopy Deciduous Tree	Refer to LDM for detail drawings	Yes	Yes	
Evergreen Tree		Yes	Yes	
Shrub		Yes	Yes	
Perennial/ Ground Cover		Yes	Yes	
Tree stakes and guys. (Wood stakes, fabric guys)		Yes	Yes	
Tree protection fencing	Located at Critical Root Zone (1' outside of dripline)	Detail is provided.	No	1. Tree fence detail has been corrected as requested. 2. Please show tree protection fence lines on demolition plan (Sheet C-4).
Other Plant Material Requirements (LDM 3)				
General Conditions (LDM 3.a)	Plant materials shall not be planted within 4 ft. of property line	Yes	Yes	
Plant Materials & Existing Plant Material (LDM 3.b)	Clearly show trees to be removed and trees to be saved.	Yes	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	NA		
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	Yes	
Plant size credit (LDM3.c.(2))	NA	NA		
Prohibited Plants (LDM 3.d)	No plants on City Invasive Species List	Yes		While they are not on the city's Prohibited Plants list, privet is known to be an invasive shrub in Michigan.

Item	Required	Proposed	Meets Code	Comments
				Please replace it with a non-invasive species.
Recommended trees for planting under overhead utilities (LDM 3.e)	§ Label the distance from the overhead utilities	NA		
Collected or Transplanted trees (LDM 3.f)		Yes	Yes	1. Transplanting notes and transplant locations are indicated. 2. Transplanted trees will need to be replaced if they die as with all planted landscape material.
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	Yes	Yes	Details show shredded hardwood mulch as requested.

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.

Standard costs:

Canopy tree	\$400 ea.
Evergreen tree	\$325 ea.
Subcanopy tree	\$250 ea.
Shrubs	\$ 50 ea.
Perennials/Grasses	\$ 15 ea.
Mulch	\$ 35/cu. yd.
Sod	\$6.00/sq. yd.
Seed	\$3.00/sq. yd.



PLAN REVIEW CENTER REPORT

July 8, 2016

Preliminary Site Plan - Landscaping

Suburban Collection Expansion

Review Type

Preliminary Site Plan Landscape Review

Project Number

JSP16-0012

LANDSCAPE VARIANCES REQUIRED:

- Required area based on vehicular use area has not been provided, but based on their calculations, approximately 15,664 sf of interior island space is required.
- Based on their calculations, 209 interior parking deciduous canopy trees are required but none are provided.
- Islands breaking up expanse to create bays no greater than 15 contiguous spaces must be provided – none are.
- New endcap islands south of the expanded building need to be 10' between backs of curb, but appear to be only about 8'.
- Parking lot perimeter plantings along west edge of new paving should be provided but are not.
- Foundation plantings provided are only 15.5% of that required.

WETLANDS REVIEW

July 11, 2016

Ms. Barbara McBeth
City Planner
Community Development Department
City of Novi
45175 W. Ten Mile Road
Novi, Michigan 48375

Re: Suburban Collection Showplace Expansion (JSP16-0012)
Wetland Review of the Preliminary Site Plan (PSP16-0089)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Preliminary Site Plan for the proposed Suburban Collection Showplace Expansion project prepared by Environmental Engineers, Inc. dated June 22, 2016 (Plan). The Plan was reviewed for conformance with the City of Novi Wetland and Watercourse Protection Ordinance and the natural features setback provisions in the Zoning Ordinance. ECT conducted a wetland evaluation for the property on Wednesday, July 6, 2016.

ECT currently recommends approval of the Preliminary Site Plan for Wetlands contingent on the Applicant addressing the concerns noted in the *Wetland Comments* section of this letter prior to Final Stamping Set approval.

The proposed project is located just west of the existing Suburban Collection Showplace, north of Grand River Avenue and west of Taft Road in Section 16. The Plan proposes the construction of the following:

- Showplace building addition;
- Expedition Hall addition;
- Conference/Banquet Hall addition;
- On-site parking (42 spaces);
- Adjacent off-site parking (840 spaces);
- Storm water detention basin No. 4.

Based on our review of the application, Novi aerial photos, Novi GIS, the City of Novi Official Wetlands and Woodlands Maps (see Figure 1, attached) it appears as if this proposed project site is adjacent to City-Regulated Woodlands and contains City-Regulated Wetland areas.

Onsite Wetland Evaluation

ECT visited the site on April 22, 2015 as well as on July 6, 2016 for the purpose of a wetland boundary verification. The focus of the inspection was to review site conditions in order to determine whether on-site wetland is considered regulated under the City of Novi's Wetland and Watercourse Protection Ordinance. ECT reviewed the wetland area (Wetland 7/C) at the proposed project location. The approximate project boundary is depicted in Figure 1.

Wetland 7/C is an emergent/scrub-shrub wetland area directly adjacent to a storm water drainage ditch with considerable side slopes/banks. Plant species identified include cottonwood (*Populus deltoides*), reed canary grass (*Phalaris arundinacea*) and common reed (*Phragmites australis*).

This wetland area appears to be of fair to poor quality and impact to this wetland is proposed as part the site design (see Site Photos). ECT has verified that the wetland boundaries appear to be accurately depicted on the Plan.

What follows is a summary of the wetland impacts associated with the proposed site design.

Wetlands Impact Review

The Plan appears to propose 0.14-acre of fill within an existing wetland/ditch (i.e., Wetland 7/C) just west of the existing parking lot that is west of the Suburban Collection Showplace. The Plan proposes 1,170 cubic yards of wetland fill in this area. The purposed of this wetland impact is for the construction of additional site parking. It should be noted that the proposed wetland impact does not require wetland mitigation as the City's threshold for requiring wetland mitigation is 0.25-acre of impact to existing wetland (the MDEQ threshold for wetland mitigation is 0.33-acre). Approximate wetland impact area is shown in Figure 2.

In addition to wetlands, the City seeks to preserve the 25-foot wetland buffer. The Plan also proposes to impact 0.37-acre (1,186 cubic yards fill) of 25-foot wetland buffer/setback. The applicant is urged to minimize all impacts to existing wetlands and the associated 25-foot setbacks.

It appears as if storm water from at least a portion of the proposed parking area will drain to storm water detention area #4. The outlet from this basin will outlet to the existing wetland north of the proposed site (adjacent to the I-96 Expressway). It is recommended that any proposed storm water discharge pipes end at the upland edge of the 25-foot wetland setback in order to maximize the nutrient and pollutant removal from storm water runoff prior to entering the wetland area. Based on the current Plan, the applicant appears to be prepared to meet this recommendation.

Permits & Regulatory Status

The on-site wetland appears to be regulated by the Michigan Department of Environmental Quality (MDEQ) as it appears to be within 500 feet of a watercourse/regulated drain. It should be noted that the filling of a section of wetland immediately south of currently proposed area of fill was authorized (MDEQ Permit No. 15-63-0175-P dated July 20, 2015) as part of the previous Showplace Fairgrounds Connection project in 2015. It was determined that a permit for the wetland impact was required under Part 303 of the NREPA (Natural Resources and Environmental Protection Act, 1994 PA 451, as amended). The Applicant has provided a copy of the MDEQ permit application for the current project (signed/dated June 17, 2016). The applicant shall provide a copy of the MDEQ issued permit once issued.

The Applicant will need a City of Novi Non-Minor Wetland Permit and Wetland Buffer Authorization as well. The City of Novi Wetland Permit and Buffer Authorization are required for the proposed impacts to wetlands and regulated wetland setbacks. The on-site wetland appears to be considered essential by the City as it appears to meet one or more of the essentiality criteria set forth in the City's Wetland and Watercourse Protection Ordinance (i.e., storm water storage/flood control, wildlife habitat, etc.).

Wetland Comments

ECT recommends that the Applicant address the following prior to Final Stamping Set approval:

1. It appears as if the proposed project requires a wetland use permit from the MDEQ for the proposed wetland impact. Final determination as to the regulatory status of the on-site wetlands shall be made by MDEQ. It appears as though this process is in process as the applicant has provided a copy of the permit application for the project (dated June 17, 2016). The Applicant should provide a copy of the MDEQ Wetland Use Permit to the City (and our office) upon issuance. A City of Novi Wetland Permit cannot be issued prior to receiving this information.

Recommendation

ECT currently recommends approval of the Preliminary Site Plan for Wetlands contingent on the Applicant addressing the concerns noted in the *Comments* section above prior to Final Site Plan approval.

If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer

cc: Sri Komaragiri, City of Novi Planner
Richelle Leskun, City of Novi Planning Assistant
Rick Meader, City of Novi Landscape Architect
Kirsten Mellem, City of Novi Planner

Attachments: Figure 1, Figure 2 & Site Photos



Figure 1. City of Novi Regulated Wetland & Woodland Map (approximate project location shown in red). Regulated Woodland areas are shown in green and regulated Wetland areas are shown in blue. Approximate overall project boundary is indicated in red.



Figure 2. Approximate wetland impact area. Aerial photo source Google Earth (accessed July 11, 2016). Approximate extents of wetland impact is indicated in yellow.

Site Photos



Photo 1. Looking north at proposed impact location (ECT, July 6, 2016).



Photo 2. Looking north toward northern extent of proposed wetland impact area (ECT, July 6, 2016).



Photo 3. Looking north from southern end of proposed wetland impact area. Split rail fence to be removed (ECT, July 6, 2016).

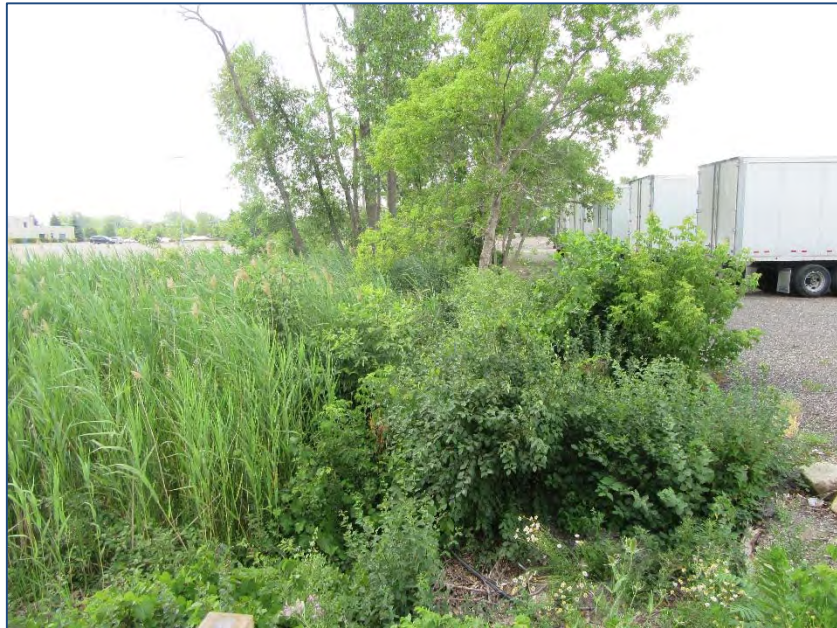


Photo 4. Looking south from northern end of proposed wetland impact area (ECT, July 6, 2016).

WOODLANDS REVIEW

July 11, 2016

Ms. Barbara McBeth
City Planner
Community Development Department
City of Novi
45175 W. Ten Mile Road
Novi, Michigan 48375

Re: Suburban Collection Showplace Expansion (JSP16-0012)
Woodland Review of the Preliminary Site Plan (PSP16-0089)

Dear Ms. McBeth:

Environmental Consulting & Technology, Inc. (ECT) has reviewed the Preliminary Site Plan for the proposed Suburban Collection Showplace Expansion project prepared by Environmental Engineers, Inc. dated June 22, 2016 (Plan). ECT visited this site for the purpose of a woodland evaluation on Wednesday, July 6, 2016. The Plan was reviewed for conformance with the City of Novi Woodland Protection Ordinance Chapter 37. The purpose of the Woodlands Protection Ordinance is to:

- 1) Provide for the protection, preservation, replacement, proper maintenance and use of trees and woodlands located in the city in order to minimize disturbance to them and to prevent damage from erosion and siltation, a loss of wildlife and vegetation, and/or from the destruction of the natural habitat. In this regard, it is the intent of this chapter to protect the integrity of woodland areas as a whole, in recognition that woodlands serve as part of an ecosystem, and to place priority on the preservation of woodlands, trees, similar woody vegetation, and related natural resources over development when there are no location alternatives;*
- 2) Protect the woodlands, including trees and other forms of vegetation, of the city for their economic support of local property values when allowed to remain uncleared and/or unharvested and for their natural beauty, wilderness character of geological, ecological, or historical significance; and*
- 3) Provide for the paramount public concern for these natural resources in the interest of health, safety and general welfare of the residents of the city.*

ECT currently recommends approval of the Preliminary Site Plan for Woodlands. The proposed project limits do not contain regulated trees. **No further woodland review of the proposed project is necessary.**

The proposed project is located just west of the existing Suburban Collection Showplace, north of Grand River Avenue and west of Taft Road in Section 16. The Plan proposes the construction of the following:

- Showplace building addition;
- Expedition Hall addition;
- Conference/Banquet Hall addition;
- On-site parking (42 spaces);
- Adjacent off-site parking (840 spaces);
- Storm water detention basin No. 4.

Based on our review of the application, Novi aerial photos, Novi GIS, the City of Novi Official Wetlands and Woodlands Maps (see Figure 1, attached) it appears as if this proposed project site is adjacent to City-Regulated Woodlands but no regulated trees are located within the proposed limits of disturbance.

Woodlands

Portions of the proposed project are adjacent to City of Novi Regulated Woodlands (see Figure 1). The current Plan indicates that some existing trees associated with the wetland fill area (i.e., Wetland 7/C) are to be removed. The *Site Topographic Survey* (Sheet TS-3) appears to indicate the size and location of existing trees within the proposed limits of disturbance.

It should be noted that the trees to be removed do not appear to be located within an area designated as City Regulated Woodland. The City of Novi regulates trees that are 8-inch diameter-at-breast-height (DBH) or greater and are located within areas designated as regulated on the City Regulated Woodland map. In addition, any tree 36-inches DBH or greater are also regulated. As a result, the proposed project does require a City of Novi Woodland Permit.

Recommendation

ECT currently recommends approval of the Preliminary Site Plan for Woodlands. The proposed project limits do not contain regulated trees. **No further woodland review of the proposed project is necessary.**

If you have any questions regarding the contents of this letter, please contact us.

Respectfully submitted,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.



Pete Hill, P.E.
Senior Associate Engineer

cc: Sri Komaragiri, City of Novi Planner
Richelle Leskun, City of Novi Planning Assistant
Rick Meader, City of Novi Landscape Architect
Kirsten Mellem, City of Novi Planner

Attachments: Figure 1 & Site Photos



Figure 1. City of Novi Regulated Wetland & Woodland Map (approximate project location shown in red). Regulated Woodland areas are shown in green and regulated Wetland areas are shown in blue). Approximate overall project boundary is indicated in red.

TRAFFIC REVIEW

Memorandum

To	Barbara McBeth, AICP	Page	1
CC	Sri Komaragiri		
Subject	JSP 16-0012 – Suburban Collection – Preliminary – Traffic Review		
From	Matt Klawon, PE Maureen Peters, PE		
Date	July 15, 2016		

The preliminary site plan was reviewed to the level of detail provided and AECOM **does not recommend approval** for the applicant to move forward based on the site access and circulation concerns as described herein and until the comments provided below are adequately addressed to the satisfaction of the City.

GENERAL COMMENTS

1. The applicant, Suburban Collection Showplace, is proposing a 175,815 S.F. building addition to their facility located on the north side of Grand River Avenue between Beck Road and Taft Road. Grand River Avenue is under the jurisdiction of the Road Commission for Oakland County.
2. The site is currently zoned OST (Office Service Technology) with EXO (Exposition) overlay.
3. In the “Proposed Site Improvements” notes section of sheet C-1, under “Traffic Control,” it states that all pavement markings and traffic control signs shall be in accordance with the requirements of the “Michigan Manual for Traffic Control Devices...”
 - a. Not all signing and pavement markings are in compliance (e.g., the proposed green striping), so this statement is not accurate. This statement should be updated to reflect any exclusions, as necessary.
 - b. The statement should reference the “Michigan Manual for Uniform Traffic Control Devices,” adding the word “Uniform” to the manual title.

TRAFFIC IMPACTS

Through meetings with the City and the applicant, it was determined that a traffic management plan (TMP) would be provided in lieu of a standard traffic impact study since the land use and associated traffic impacts are unique and would not be appropriate to measure the site’s traffic impacts. The applicant has submitted a draft TMP and AECOM has provided comments on it under a separate letter.

EXTERNAL SITE ACCESS AND OPERATIONS

The applicant should further clarify the intended use of the westerly driveways off of Grand River Avenue, for the following purposes:

1. The two-way ADT along Grand River in front of Suburban Collection Showplace is approximately 17,705 vehicles (Source: SEMCOG, 2014). If the driveways are used for ingress, the applicant should provide the following geometric modifications to Grand River Avenue at the site driveways:
 - a. Install a right-turn taper. The ADT volume requires a right-turn taper to be installed regardless of the right-turning volume.
 - b. Install a right turn lane if peak hour right turn volumes are expected to exceed approximately 95 vehicles per hour.
2. If the driveways will be used exclusively for egress traffic patterns, modifications to Grand River are not required and greater detail should be shown as to how ingress traffic would be prohibited from using this driveway (e.g., signing, pavement markings).
3. There are existing gates at the two westerly driveways. The applicant should further clarify the intended use of the gates and indicate when, and to whom, they will permit access to/from the parking lots.

INTERNAL SITE OPERATIONS

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

1. General traffic flow
 - a. The applicant should provide anticipated truck circulation patterns to ensure that the trucks will be able to adequately access the dock areas.
 - b. The applicant should provide fire truck circulation patterns to ensure that fire vehicles can adequately maneuver the site.
 - c. The applicant could consider traffic calming techniques within the proposed paved parking lot near the west side of the site. The lack of raised end islands provides a wide open surface through which vehicles may travel at higher rates of speed and potentially unsafe maneuvers.
 - d. The applicant should consider transverse aisle(s) throughout the parking lot to provide access to/from parking spaces without vehicles traveling the entire length of the lot. Such access aisles should be designed with end islands (painted may be acceptable for this site) to provide a barrier between parked vehicles and moving vehicles.
2. Parking facilities
 - a. The applicant should further clarify the parking calculations. Please see the Planning Review Letter for additional details regarding the parking calculations.
 - b. The proposed parking space dimensions are generally in compliance; however, the applicant should review the following:
 - i. The parking spaces immediately to the west of the proposed building expansion are dimensioned with 19.5' or 17' lengths.
 - ii. There is a note in the same area indicating that the spaces are "9' x 19' TYP."

- iii. The applicant should confirm which is correct and update as necessary to reduce confusion.
- c. Western parking bay within stamped concrete drive area:
 - i. The parking space pavement markings appear to be different line type within the stamped concrete drive area. The applicant should clarify the intended pavement marking color and line width.
 - ii. **The parking spaces appear to be striped without abutting a curb on the west side and would require a Council DCS variance.**
- d. Handicap parking requirements are met; however the applicant should consider relocating a portion of the handicap parking to be nearer to the proposed west facility entrance to better distribute the handicap parking around the facility to align with City Ordinances.
- e. Parking Islands
 - i. The standard parking island detail indicates an 8' minimum width which is not in compliance with the 10' minimum width shown in Section 5.3.12 of the City's Ordinance.
 - ii. The plan shows end islands as painted, the City's Ordinance preference is raised. **The applicant should seek a ZBA variance for the lack of end islands and a City Council waiver for the use of painted islands in place of raised islands.**
 - iii. The applicant should consider revising the painted end islands near the building (within the heavy duty asphalt drive and stamped concrete areas) to be raised end islands to provide additional permeable surface area and to better delineate parking operations.
 - iv. The painted end islands along the north end of the proposed paved parking lot do not meet minimum size requirements, as stated in the City's Ordinance and should be reviewed and updated as necessary.
 - v. Landscape islands are to be provided at an interval of every 15 parking spaces per Section 5.5.3.C.ii.i of the City's Ordinance; however, based on the intended use of the parking facility during specific events, the exclusion of landscape islands may be reasonable. **The applicant should seek a City Council waiver to exclude such landscape islands at 15 parking space intervals.**
- f. To ensure bicycle parking requirements are met, the applicant should include bicycle parking calculations in the General Site Data section of the plans.
- 3. Aisle width and turning radii meet standard requirements where dimensioned. Additional dimensions should be provided to confirm compliance.
- 4. Sidewalk Requirements
 - a. Sidewalk ramp design details should be included in the next submittal to ensure ADA compliance.
- 5. All on-site signing and pavement markings shall be in compliance with the Michigan Manual on Uniform Traffic Control Devices (MMUTCD).
 - a. The applicant should add a sign table listing the proposed signs and the total quantity for each sign.
 - b. The standard parking island detail indicates green striping which is not in compliance with MMUTCD guidelines. **If the use of green pavement markings is required for special use of the facility, the applicant should seek an administrative variance.**



- c. The applicant should further indicate the proposed pavement marking colors and line weights for all markings throughout the site.

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

Sincerely,

AECOM

A handwritten signature in blue ink, reading "Maureen N. Peters".

Maureen N. Peters, PE
Reviewer

A handwritten signature in blue ink, reading "Matthew G. Klawon".

Matthew G. Klawon, PE
Manager, Traffic Engineering and ITS Engineering Services

Memorandum

To	Barbara McBeth, AICP	Page	1
CC	Sri Komaragiri		
Subject	JSP16-0012 – Suburban Collection Showplace Expansion Traffic Plan Review		
From	Matt Klawon, PE Maureen Peters, PE		
Date	July 13, 2016		

The Suburban Collection Showplace (SCS) is proposing a site expansion to include a building addition and parking lot(s) expansion to accommodate additional and larger exhibits; however, the expansion is not expected to attract higher volumes of attendees. Because of the anticipated use of the site, it was determined that a traditional Traffic Impact Study would not be required, but rather a Traffic Management Plan (TMP) should be provided to define the courses of action SCS personnel would enact during major events, such as the State Fair and Comic-Con. The SCS “Major Event Traffic Plan” (METP) has been reviewed to the level of detail provided and AECOM offers the following comments.

1. The SCS should explicitly define the intended use of all driveways/gates along Grand River Avenue, for purposes of analyzing the need for right-turn tapers and lanes. **If the two westerly gates will be used for ingress traffic, right-turn taper/lane warrants should be performed as part of the site plan review process.** The two-way 24-hour volumes of 17,705 vehicles along Grand River Avenue require a right-turn taper regardless of the right turning volume (Source: SEMCOG, 2014).
2. The SCS should consider the changes to parking scenarios based on the added on-site parking capacity and whether or not off-site parking will still be utilized. They should review the impacts this will have to Grand River Avenue and surrounding roadways.
3. The METP proposes to use a threshold of 80% of the traffic experienced during Comic-Con to trigger the use of the METP.
 - a. The volumes experienced during Comic-Con were not provided as part of this submittal; therefore, this threshold cannot be verified.
 - b. SCS should provide an analysis to support the proposed 80% threshold for further review and consideration.
 - c. The threshold should be determined based on the impacts the site-generated traffic is expected to have on the surrounding roadway network, not only at the site itself. A reasonable threshold should be set just prior to the “breaking point” of the roadway network, since the mitigation measures outlined in the METP will likely adjust roadway operations to accommodate the additional traffic.

4. The SCS provided a summary of key elements to be included in the METP; however, more detailed information should be included in each of the elements. AECOM offers the following comments to the proposed sections of the METP. The numbering scheme provided herein corresponds to the element listed on pages 2 – 3 of the METP.
 - a. **Element 1** – Provide a description as to the process that SCS will follow to determine whether or not the anticipated event will meet or exceed the threshold for triggering the METP. For example, how will the anticipated event volumes be estimated?
 - b. **Element 2** – Consider a timeline for sending notifications. It is best to plan for events several weeks prior to their occurrence, so that all stakeholders have adequate time to review their responsibilities and plan for the event.
 - c. **Element 3** – Consider developing stakeholder “groups” for each of the events requiring the enactment of the METP, as it is likely that not all parties are required to be involved with all events. Consider what information to include with the notification so that the stakeholder can adequately begin planning efforts.
 - d. **Element 4** – Should either the “Gate 3” or “Gate 4” entrances be used for ingress traffic operations, the SCS should perform a right-turn taper/lane warrant analysis as part of the site plan review process to determine if geometric modifications are needed.
 - e. **Element 5** – The event-specific METP should indicate whether or not auxiliary, off-site lots will be used, the organizations who will be operating the lots and the means by which users will travel to/from the off-site lot and the event venue.
 - f. **Element 6** – The event-specific METP should clearly indicate where shuttle lots will be located and the times that the shuttle services will be offered.
 - g. **Element 7** – The METP should identify the affected area of the event and indicate whether or not the Road Commission for Oakland County (RCOC) has alternative signal timing plans available for implementation. If available, the METP should indicate the times and durations the alternative timing plans will be active.
 - h. **Element 8** – The METP should identify what, where, when and who will be responsible for any roadway/ramp traffic control measures that will be needed.
 - i. **Element 9** – Dynamic message signs (DMS) can be a useful tool in event traffic management and the Michigan Department of Transportation (MDOT) DMS resources may be used for events at the SCS. Prior to the event, the SCS should coordinate with MDOT to develop the message plans and applicable locations of DMS based on the event location. The locations of DMS and proposed message plans should be included in the METP, and the times for running any planned messages should be included. Likewise, the protocol for communicating the need for revised/alternate message plans should be outlined in the METP.
 - j. **Element 10** – Indicate the timeline for scheduling such pre-planning and post-analysis meetings in the METP.
 - k. **Element 11** – Any necessary roadway modifications should be included as part of the proposed site plan; therefore, any anticipated use of external driveways should be reviewed and submitted to the City for consideration, and turn lane warrants should be performed.

Additional sections, such as Stakeholder contact information and roles, should also be included for quick reference before, during or following the event.



It is further recommended that SCS develop individual METPs for the various major events as the stakeholders and mitigation actions associated with one event may vary from the next event and having event-tailored information readily available for updating for each recurrence of the event should provide for consistent, well-managed events.

As part of the site plan review process, it would be beneficial if the applicant would provide a template METP to confirm that all necessary elements are addressed adequately and that the appropriate mitigation measures for traffic control are considered so that the traffic impacts to the surrounding roadways are adequately accounted for. Should the City or applicant have questions regarding this review, they should contact AECOM for further clarification. AECOM would be glad to meet with the City and/or applicant if further discussions regarding the need for or content of the METP are required.

Sincerely,

AECOM

A handwritten signature in blue ink, reading "Maureen Peters".

Maureen Peters, PE

Reviewer

A handwritten signature in blue ink, reading "Matthew G. Klawon".

Matthew G. Klawon, PE

Manager, Traffic Engineering and ITS Engineering Services

FAÇADE REVIEW



July 13, 2016

Facade Review Status Summary:

Approved, Section 9 Waiver Recommended

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

Re: **FACADE ORDINANCE - Facade Review**
Suburban Collection Showplace Expansion, PSP16-0089
 Façade Region: 1, Zoning District: EXO

Dear Ms. McBeth;

The following is the Facade Review for the above referenced project based on the drawings prepared by Bowers & Associates Architects, dated 6/22/16. This project is subject to the Façade Ordinance Section 5.15. The percentages of materials proposed for each façade are as shown in the tables below. Materials in non-compliance, if any, are highlighted in bold. A sample board had not been provided at the time of this review.

Garages	South (Front)	North	East	West	Façade Ordinance Section 2520 Maximum (Minimum)
Brick	0%	0%	0%	0%	100% (30% Min)
Concrete, Painted	15%	5%	3%	10%	0%
Horizontal Rib Metal Panels	15%	0%	12%	8%	0%
Vertical Metal Panels (Flat)	50%	60%	60%	38%	50%
Split Faced CMU	15%	35%	24%	43%	10%
Flat Metal (accent)	5%	0%	1%	1%	50%

This project is considered an addition in accordance with Section 5.15.7 of the Façade Ordinance. The addition is less than 100% of the area of the existing building; therefore a continuation of existing materials would be permitted. In this case the proposed addition consists of materials that are significantly different from the existing building and as shown above, significant deviations from the Façade Ordinance occur on all facades. The minimum percentage of Brick is not provided on all facades. In this case the existing building previously received a Section 9 Waiver for the underage of Brick and overage of Concrete Panels. The proposed addition is consistent with the existing building in this respect.

A section 9 waiver would be required for the overage of Horizontal Rib Metal Panels, Vertical Metal Panels and Split Faced CMU. The applicant has provided multiple colored renderings illustrating how the proposed design will integrate with the existing building. From these renderings it is evident that proposed addition will harmonize well with the existing structure. Careful attention to detail with respect to overall massing and design of main entrances is evident. Similar treatment of the existing and proposed entrance canopies will create a unifying element for the overall building. A possible concern exists with respect to the north elevation to the extent the truck dock area may be visible from the I-96 expressway. The landscape plan indicates evergreen plantings along the north and east sides of the truck dock area that appears to adequately screening of this area.

Roof equipment screens are indicated on the lower roof areas. The applicant should note that any equipment on the upper roof area must also be screened. All screens should be of sufficient height to fully conceal the equipment from all vantage points both on and off site.

Several wall mounted signs are indicated on the drawings. It should be noted that all signs must be compliant with the Sign Ordinance, which is not part of this review.

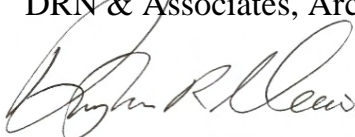
Recommendation - For the reasons stated above it is our recommendation that the design is consistent with the intent and purpose of the Façade Ordinance and that a Section 9 Waiver be granted for the aforementioned deviations from the Façade Ordinance. The applicant should provide a sample board illustrating that the color of all proposed materials will harmonize with the existing building. The sample board should be provided at least 5 days prior to the Planning Commission meeting.

Notes to the Applicant:

1. Façade Ordinance requires inspection(s) for all projects. Materials displayed on the approved sample board will be compared to materials delivered to the site. 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 project please do not hesitate to call.

Sincerely,
DRN & Associates, Architects PC



Douglas R. Necci, AIA

FAÇADE BOARD



STRUCTURAL STEEL COLOR



HORIZONTAL METAL PANELS

ELEVATION MATERIAL TOTALS			
POURED CONCRETE WALL SYSTEM	6,659 SQ. FT.	9%	
HORIZONTAL METAL PANELS A	1,817 SQ. FT.	2%	
HORIZONTAL METAL PANELS B	4,473 SQ. FT.	6%	
VERTICAL METAL PANELS	32,148 SQ. FT.	43%	
SPLIT-FACE CMU	20,410 SQ. FT.	28%	
ANOD. ALUM. GLAZING	8,663 SQ. FT.	12%	
BUILDING TOTAL	74,163 SQ. FT.	100%	

VERTICAL METAL PANELS



HORIZONTAL METAL PANELS



STONE COLUMNS



realstoneSYSTEMS

www.realstone.com
Real Stone Systems

Please see reverse side for product information.
The image depicted may not represent the full range of color available for the product.



ANOD. ALUM. GLAZING



SPLIT FACE CMU



CAST STONE ACCENTS

FIRE REVIEW



July 5, 2016

TO: Barbara McBeth- City Planner
Sri Komaragiri- Plan Review Center

RE: Suburban Collection Expansion

PSP#16-0089

CITY COUNCIL

Mayor
Bob Gatt

Mayor Pro Tem
Dave Staudt

Gwen Markham

Andrew Mutch

Wayne Wrobel

Laura Marie Casey

Brian Burke

City Manager
Pete Auger

**Director of Public Safety
Chief of Police**
David E. Molloy

Director of EMS/Fire Operations
Jeffery R. Johnson

Assistant Chief of Police
Erick W. Zinser

Assistant Chief of Police
Jerrold S. Hart

Project Description: Addition to the existing Suburban Collection
46100 Grand River Ave.

Comments:

- 1) Add hydrant to the North loading dock area. Hydrants shall be spaced approximately three hundred (300) feet apart on line in commercial, industrial, and multiple-residential areas. In cases where the buildings within developments are fully fire suppressed, hydrants shall be no more than five hundred (500) feet apart. (D.C.S. Sec. 11-68 (f)(1)c)**Corrected 7/5/16**
- 2) Drive lane turning radius at southwest corner of the proposed building does not meet FD standard, Apparatus traveling north cannot make the right hand turn. Fire apparatus access drives to and from buildings through parking lots shall have a minimum fifty (50) feet outside turning radius and designed to support a minimum of thirty-five (35) tons. (D.C.S. Sec 11-239(b)(5))**Corrected 7/5/16**

Recommendation: Recommended for Approval

Sincerely,

Joseph Shelton- Fire Marshal
City of Novi – Fire Dept.

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

cityofnovi.org

cc: file

APPLICANT RESPONSE LETTER

TBON, L.L.C.

A Michigan Limited Liability Company

46100 Grand River Ave.

Novi, Michigan 48374

Ph: (248) 348-5600 Fax: (248) 347-7720

July 20, 2016

Ms. Sri Komaragiri, Planner

City of Novi

45175 Ten Mile Road

Novi, MI 48375

RE: Response Letter – Site Plan JSP 16-12

Dear Sri,

We very much appreciate the opportunity to go before the Planning Commission at the July 27 scheduled meeting and are providing the response letter and the following:

1. This response letter – please also note that individual professionals will be responding with additional information in some of the categories.
2. A color rendering of the site plan – this will be provided by the project architect Scott Bowers. He is contacting your office to see if this can be sent electronically or if you need a physical copy. If so, what size?
3. A sample board of build materials will be supplied by 9:00 A.M. tomorrow morning. The main structures metal panel material sample will not be available at the time of compiling the board. A sample of a similar panel and color will be attached and then replaced with the actual sample as soon as it is available. We expect that to be before the end of the week.

Planning Review:

As you know we have worked with the Planning and Community Development Department to make application for all potentially necessary variances. Any additional items can be addressed through the final site planning process.

Engineering Review:

Paul Lewsley from Environmental Engineering will be providing a response letter. However, it is anticipated that it will address any additional items at final site plan.

Landscape Review:

Conroy & Associates will be providing a direct but limited response letter as well. We understand that due to the unique nature of the proposed project that multiple waivers will be required as identified and outlined in the review letter. Furthermore, although there are minor differences in calculations as to exact extent and amount of such waivers we will defer to the landscape consultants calculations and request the required waivers according to their calculations.

Wetlands Review:

We understand that the MDEQ permit relating to the wetlands activities has been processed and is in the final stages. We will work to address any additional items at final site plan.

Woodlands review

N/A

Traffic Review:

A stake holder traffic planning meeting was held on July 19 and during that meeting an outline consistent with the review letter was provided and we will work to shape a more detailed Major Event Traffic Plan (METP) utilizing that outline. We understand that there are potentially necessary waivers that may be necessary including the replacement of the technical traffic study requirement with the development of the METP program.

Traffic Study Review:

See item above.

Façade Review:

Items will be addressed at Final. Material board will be provided initially by July 21 and updated with the main metal panel as soon as sample is available and prior to Planning Commission meeting. We understand that a façade waiver is required and we are seeking approval of the same.

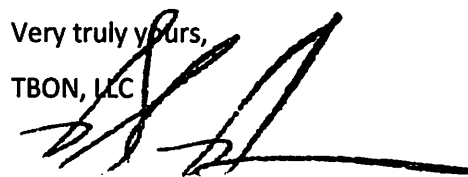
Fire review.

No response necessary.

Please do not hesitate to contact me with any questions or concerns.

Very truly yours,

TBON, LLC

A handwritten signature in black ink, appearing to read 'Blair M. Bowman', is written over the text 'TBON, LLC'.

Blair M. Bowman
Manager

APPLICANT RESPONSE LETTER
LANDSCAPE



7/20/19

Mr. Blair Bowman
TBON, LLC.
46100 Grand River Ave.
Novi, MI 48375

Re: Suburban Showplace Exhibition/Arena
Landscape Review

Dear Mr. Bowman;

The following is in response to the City of Novi Landscape review comments dated 7/14/16.

**Suburban Showcase Collection Addition
Landscape Review Summary Response from City of Novi review letter dated 7/14/16**

I-96 ROW Landscape Screening Requirements

1. While the parking lot is located 158' from the I-96 ROW, we will add the 20' greenbelt dimension from the property line.
2. See above note regarding berming in this area. I have verified with Civil Engineering that the new detention basin will be located south of these existing trees and no grading will take place where the trees are located
3. See note above.
4. See note above.
5. I would suggest looking at this area after the construction is completed and the transplanted trees are in and then decide whether additional planting should be installed.

Parking Area Landscape Requirements:

Because there are no parking lot islands proposed within the new paved area west of the building due to the variety of proposed uses of this parking lot/open space, there will need to be a variance granted for all landscape issues related to parking lot islands.

1. We will add a map indicating which parking areas the calculations are for.
2. We will use the City of Novi parking area calculations for the table summaries.
3. A variance will be requested for the interior island space. The large island west of the building will be part of the concert venue and stage located on the west side of the building. The lawn area is to be used for patron seating during concert or other stage events so trees would create a visual obstacle and that is why none are shown to be installed in this area.

4. According to the Civil Engineer, the island width matches the current islands south of the building.
5. A variance will requested for the required landscape islands.

Parking Lot Perimeter Canopy Trees

1. We will indicate on the map which vehicle use areas were used and modify the calculation if necessary.

Building Foundation Landscape

1. Based upon the site plan and proposed use of the areas around the building, no additional foundation landscape area can be provided. A variance will be requested for the required foundation landscape.
2. We will add SF labels for all foundation landscape areas.

Transformer/Utility Box and Fire Hydrant Plantings.

We will review the site plan and add required landscape screening for any utility units within the new construction area.

Proposed Topography, 2' Contours

Proposed contours are indicated on the plan and were provided by Civil Engineer.

Please feel free to contact me with any questions regarding the above.

Sincerely,

Patrick S. Conroy, RLA
President

**APPLICANT RESPONSE LETTER
ENGINEERING**



Environmental engineers, Inc.

18620 West Ten Mile Road, Southfield, Michigan 48075 Phone: (248) 424-9510 Fax: (248) 424-2954

July 20, 2016

Mr. Jeremy J. Miller, E.I.T.
City of Novi Engineering Division
45175 Ten Mile Road
Novi, Michigan 48375

Re: Engineering Review of the Preliminary Site Plan and
Preliminary Stormwater Management Plan for the
Suburban Collection Showplace Expansion JSP16-0012

Dear Mr. Miller,

We hereby acknowledge receipt of the Engineering Review Comments for the above referenced project dated July 13, 2016 and greatly appreciate your recommendation for project approval.

Review Comments 1 through 22 will be fully addressed in the Final Site Plan submittal for the project, which is anticipated to occur within approximately one week. Review Comments 23 through 25 will be fully addressed prior to the project's Stamping Set submittal and Comments 26 through 34 will be addressed prior to the start of construction.

Very truly yours,

ENVIRONMENTAL ENGINEERS, INC.

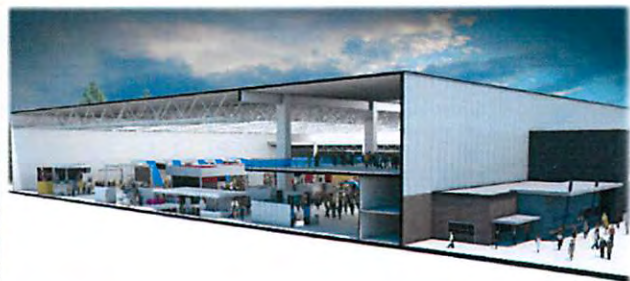
Paul J. Lewsley, P.E., LEED AP
President

Ee #1606
CC: Blair Bowman

COMMUNITY IMPACT STATEMENT

Expansion Suburban Collection Showplace /
Michigan State Fairgrounds

COMMUNITY IMPACT STATEMENT



Prepared for the City of Novi
Site Plan Submittal Process
June 21, 2016

COMMUNITY IMPACT STATEMENT

Prepared for: City of Novi

Prepared by: TBON, LLC

Date: June 21, 2016

RE: Expansion Suburban Collection Showplace / Michigan State Fairgrounds

This Community Impact Statement is being submitted in accordance with the City of Novi Site Plan Submittal and Review Process. In considering and reviewing this Community Impact Statement, the City of Novi truly has the best evidence at its disposal of the positive nature of the community impact from the proposed expansion given the nearly 24 years of history of the Expo and Showplace operations residing within their borders. The development of a privately held exposition and convention center in a community is so unique, that literally, the Suburban Collection Showplace is the largest non-casino based non-publicly funded convention and exposition facility in the country! This unique development occurred only through building a very positive public-private working relationship. With continued cooperation the expansion of the Showplace and the adjacent state fairgrounds will allow for growth in the positive economic impact that the Showplace provides as well as the enhancement of cultural and community components.

Attached as Exhibit "A" is the application package of the recently passed PA-198 Tax Abatement which includes excerpts from economic impact studies demonstrating the significant local and region wide economic benefit and Exhibit "B" which is the 2015 annual report from the Fifth Third Bank Michigan State Fair (as is widely known as the Michigan State Fair was revived at the Suburban Collection Showplace in 2012) which provides one example of major community involvement and positive impacts on charitable community organizations. The current and expanded Showplace will continue to introduce Novi, literally, to the world as it continues to attract major international, national, and regional events.

In addition to the general information provided above, the Community Impact Statement is to contain certain specific information. Including the following:

- Expected annual number police responses for the proposed development. See Exhibit "C" relating to public safety visits.
- Expected number of annual fire responses for the proposed development. See Exhibit "C" relating to public safety visits.
- Anticipated number of employees – please refer to the Exhibit "A" for the recently approved PA-198 Tax Abatement.

- Statement regarding compliance with city performance standards – with the limited exception only as to those variances and waivers required for approval of the submitted site plan and pending zoning ordinance text amendments/re-zonings to the best of our knowledge, the project meets or exceeds all city performance standards.
- Estimated sewer and water taps – a calculation and estimate request has been submitted to the Community Development and Building Department.
- Relationship of the proposed development with surrounding uses – the proposed development is an expansion of the already existing Suburban Collection Showplace and an enhancement and expansion of the immediately adjacent State Fairgrounds located to the west of the Showplace site.
- A description of the proposed land use – The proposed development includes the expansion of the physical events center portion of the Showplace facility and an expansion and enhancement of the fairgrounds to the immediate west. This expansion and enhancement will allow the Showplace to assist with the growth of their existing events and allow for the attraction of new major convention exposition and fair/festival style events.
- Description of environmental factors and impacts:

The expansion of the facility itself is contained wholly within the original Showplace site and attached to the west side of the facility with no environmental impacts whatsoever. The enhancement and expansion of the State Fairgrounds to the west including the installation of a significant amount of additional surfaced parking and outdoor function area will affect only a very modest amount of open ditch area technically requiring a MDEQ and City of Novi wetland permit. The proposed fill area is limited to 0.14 acres and added to the amount of fill for the installation for the green belt area prior to the 2015 State fair the fill activity in total is less than the state or city's requirement for mitigation. It is generally agreed that the area being filled is of extraordinary low environmental quality and no regulated woodland or tree species are being impacted. There are no underground storage tanks and the overall flexible fairground area of the site has been significantly enhanced and cleaned up from their prior use as outdoor storage and industrial yards. At the time of the submission of this statement an MDEQ permit has been applied for (Exhibit "D"). It is expected that this will be received and reviewed positively and a permit will be forthcoming within the next thirty days.

- A description of the social impacts of the development:

No relocation of any existing occupant is proposed; in fact, the small structures along the frontage of the enhanced fairgrounds site and to-be-installed-parking areas will remain in place and will not be displaced by the proposed development.

A coordinated effort as it relates to a traffic plan for future major events is underway. The plan contemplates a threshold of expected attendance and vehicle visits triggering a notification and coordination with agencies and departments including the Michigan



Department of Transportation, Oakland County Road Commission, State Police, City of Novi Police, City administration, Showplace staff and event producer representatives. A recent successful example of and a program to be used as a foundation for this plan was the traffic plan and implementation of that plan for the Motor City Comic-Con held last May.

In conclusion, overall, this proposed expansion and development will enhance the Grand River/I-96 Corridor; will allow for the growth of several critical existing events at the Showplace while also allowing for the attraction of many new diverse events, including amateur athletic events and large gathering events.

We look forward to presenting the overall site plan and working with the community on necessary zoning ordinance texts modifications and associated re-zonings.

Respectfully submitted,

TBON, LLC

EXHIBIT A

Copy of Application for PA-198 Tax Abatement

EXHIBIT B

2015 Fifth Third Bank Michigan State Fair Annual Report

Exhibit "A"

Application for PA 198 Tax Abatement



Prepared For:

City of Novi

45175 10 Mile Rd.

Novi, MI 48375

Ph: (248) 347-0460

Prepared By:

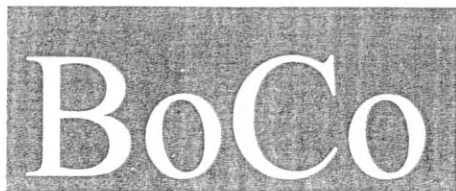
BoCo Enterprises, Inc.

46100 Grand River Ave.

Novi, MI 48374

Ph: (248) 348-5600

Fax: (248) 347-7720



*BoCo Enterprises Inc.,
46100 Grand River Avenue, Novi Michigan 48374
Phone 248.348.5600 Fax 248.347.7720*

April 7, 2016

Mayor Robert Gatt
Novi City Council
City Manager, Pete Auger
Members of City of Novi Administration
45175 Ten Mile Road
Novi, MI 48375

RE: Application for PA-198 Tax Abatement -- Expansion of Existing Industrial Facility -- Suburban
Collection Showplace (Convention Center as defined under the Act)

Dear Mayor Gatt, Council Members, Manager Auger and Members of the City Administration,

TBON, LLC is hereby pleased to submit our application under the City of Novi Tax Abatement policy for your consideration as it relates to the proposed expansion of the Suburban Collection Showplace Facility. It is our understanding that the Industrial Development District is already established and in accordance with the Act, the Showplace as previously abated meets the definition as an Industrial Facility being a privately funded exposition center in excess of 250,000 square feet which was constructed on or before 2010 amongst other criteria. We have completed and enclosed the application form, addressed all of the City of Novi criteria, and provided current proposed renderings and site plans for the project.

We would respectfully submit that the best argument in favor of granting this current abatement request is the past history and success of the prior abatement approvals relating to the project. While we are confident that the positive economic and very unique circumstances of a completely privately funded convention center operating within Novi's borders speaks for itself, we have also attached the initial Executive Summary and updated economic impact estimate submitted with our prior abatement request for your review and information.

In conclusion, we look forward to continuing to expand upon this highly unique and successful private-public partnership. Building upon this incredibly strong foundation and continuing a very constructive relationship with the City, we will be able to take "our" Convention Center.

I look forward to working with you in the coming months.

Very truly yours,

BOCO Enterprises, Inc.

A handwritten signature in dark ink, appearing to read "Blair M. Bowman", is written over the company name.

Blair M. Bowman
Member

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1. Tax Abatement Submittal Form & Application Criteria Responses
2. Positive Economic Impact of the Suburban Collection Showplace
3. Application for Industrial Facilities Tax Exemption Certificate Form 1012
4. Renderings



Tax Abatement Submittal Form

The City of Novi asks that all firms requesting more information about tax abatements for their new or existing business fill out this form.

Please return completed form by mail to:
Victor Cardenas
45175 W. Ten Mile Road
Novi, MI 48375

or by email to: vcardenas@cityofnovi.org

Name of firm requesting abatement: BoCo Enterprises, Inc.

Contact Person: Blair Bowman

Address: 46100 Grand River Ave. Novi, MI 48374

Phone: 2483485600 Email: bbowman@suburbanshowplace.com

Please answer the following questions as completely as possible.

1. How many acres does the project include? 4 +/- Ac., as part of a larger 55 Ac. parcel

2. How many new jobs would be brought to the City of Novi? See Attached

a. Average salary range of new hires? _____

Is this an expansion project of an existing business in Novi? Yes X No

project coming from within the State of Michigan? Yes X No

If you answered No, please indicate the origin state? _____

Is the headquarters on the site of the facility for which you are requesting abatement?

Yes X No _____

PA-198 Tax Abatement -- Expansion of Existing Industrial Facility
Suburban Collection Showplace (Convention Center as defined under the Act)

Statement as it Relates to City Goals:

In accordance with the City of Novi Tax Abatement goals, TBON, LLC's abatement application for the expansion of the Showplace provides for significant capital investment, a catalyst for other significant investment within the community, creates and retains a significant amount of employment opportunities, establishes and preserves major industrial and trade events within the community, expands and already existing high quality project within the community and otherwise promotes and provides for the expansion for the city's tax base. Please see attached preliminary renderings and site plans.

Application Criteria

- A. **A project must not have started more than 6 months before an application for abatement was received by the City, and be located in a plant rehabilitation district or industrial development district established prior to the commencement of the project**
 - The project has not started, however, preliminary steps have been taken to ensure the project's feasibility. Plans, designs, and economic forecasts—all of which assume the granting of this Tax Abatement Application—have been completed. No additional property has been purchased or prepared, as the property to be used for the project is already currently owned by Applicant. The project satisfies all requirements that it be located in a prior existing plant rehabilitation district or industrial development district. The project will be located within the current EXO District, adjacent and connected to the existing Suburban Collection Showplace facility located at 46100 Grand River Avenue.
- B. **There must be no outstanding taxes owed by the applicant or entity on the project.**
 - Neither the applicant nor the project entity have outstanding taxes.
- C. **If the facility is leased, the number of years awarded will not exceed the length of the lease**
 - The maximum number of years possible under the tax abatement will not exceed the length of the lease arrangement of the facility
- D. **There is no pending or current litigation, including but not limited to property tax appeals, against the city by the applicant or its agents**
 - Neither Applicant nor its Agents are engaged in any current litigation with the City.
- E. **Tax incentives will only be offered for the current phase of a project**
 - The proposed project is new construction of a unique addition to the Showplace Facility (convention center). The new facility will be utilized by new events as well as current users existing facility who will likely locate outside the state of Michigan without this project.
- F. **The project must be fiscally beneficial to Novi from a tax revenue standpoint and must have the potential to increase employment opportunities for citizens of the community.**
 - The greatest argument for granting this current tax abatement is looking at the past results from prior abatements provided for the project. Even as abated, the initial development of the Showplace has delivered literally millions of dollars' worth of net

additional tax revenue to the city and other taxing jurisdictions. When compared to the fact that these properties would likely have remained vacant until today, generating in total low hundreds of thousands of dollars in tax revenue this modest level of support shows good fiscal responsibility. The project will provide new job opportunities within the community and will stimulate additional business development along the Grand River corridor. It is also important to recognize that the project is being proposed because of demands from several of the large trade & industry shows that currently occupy the facility. These shows are in a position to expand and without completion of the project will take their events to other larger facilities in the region which are subsidized by their local municipalities. In the case of our largest and fastest growing events (i.e. Battery Show) they will likely locate outside of the state without the expansion.

- G. The company must demonstrate it would not locate or expand in the City if tax abatement was not available.**
- Without this tax abatement, Applicant will not proceed with its expansion plans. As a result, key industrial and trade events held at the Facility will likely locate outside the state of Michigan.
- H. The cost disparity between expanding or locating within Novi and alternative locations outside the community must be demonstrated by the applicant**
- Exposition and Conference centers are unique in that most facilities are partially—or fully—subsidized by the taxpayers within their community and the cost of an expansion or construction of this type of facility in other communities is generally passed on to the taxpayers of the community. In contrast, Applicant is a private facility who is responsible for the complete cost of constructing this new project. Thus, the cost disparity of expanding within Novi, when compared to other communities, is extreme.
- I. The long term impact of the project on Novi's economy, particularly in both real and personal property**
- Please refer to the attached *Economic Impact Analysis of The Novi Expo Center*, and the Economic Report from Morris, Kalish & Walgren as support for the project's impact upon Novi's economy.
- J. The contributions the business has made to communities where it is currently located (i.e., are they a good neighbor, do they get involved in civic activities).**
- Applicant and its employees are extremely involved in the Novi community. Applicant hosts numerous civic meetings and events, is involved with and donates to local charitable organizations, and is host to many charitable and community-focused events. Most notably, Applicant hosts the Fifth Third Bank Michigan State Fair. Please find a copy of the Fair's Annual Report for your viewing, in which the organization's charitable giving is fully outlined. Some highlights include providing scholarships to youth participants in the fair, the annual "V.I.P." Charity night at the Fairgrounds, where local charities, sponsors, and veterans can attend the Fair for free, and hundreds of thousands of dollars donated to charitable organizations. As the Fifth Third Bank Michigan State Fair continues to expand at Applicant's facility, the Fairgrounds will be used for recreational community sporting events and activities when not in active use for the Fair and Facility.

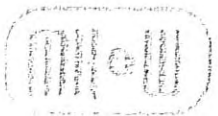
- K. **Diversification of the tax base that will have the effect of developing both real and personal property to Novi's tax base**
- Please refer to Applicant's answer to Application Criteria "I," which refers to the *Economic Impact Analysis of The Novi Expo Center*, and the updated Economic Report from Morris, Kalish & Walgren. From these sources, it is clear that the project will sufficiently diversify and develop real and personal property growth within Novi's tax base.
- L. **The development will provide enhanced opportunities for the existing business community**
- Please refer to Applicant's answer to Application Criteria "I," the *Economic Impact Analysis of The Novi Expo Center*, and the updated Economic Report from Morris, Kalish & Walgren. The further development of the Exposition and Conference facility will provide enhanced opportunities for the existing business community.
- M. **Evidence of corporate ongoing profitability, viability and vitality must be demonstrated, such as net profit, by percentage, and in real dollars for the last three corporate fiscal years.**
- The Applicant is a privately-owned entity and is thus not ordinarily under an obligation to make public its financial reports. We respectfully submit that the City of Novi has the best evidence of our ongoing corporate profitability in that we have been a growing and viable business entity within the community for more than two decades.
- N. **Applicants are to provide a fiscal impact analysis that demonstrates the positive impacts to the community and where the benefits outweigh the abated amount in taxes for the duration of the abatement**
- Please refer to the attached documents referred to in Application Criteria "I."
- O. **Any approved tax abatements will undergo a yearly compliance review**
- The Applicant welcomes any and all of such reviews.
- P. **The applicant must be committed to the community for the entire term of the tax abatement and into the future. Evidence of this involvement will need to occur once abatement is awarded to applicant.**
- Applicant is fully committed to the community of Novi and has been since its inception. Beginning as the Novi Expo Center, the Applicant built a successful business from the ground up—all within the City of Novi. When the time came for the business to expand, the Applicant chose to remain within Novi and eventually relocated one (1) miles west of its original facility. The Applicant further committed to Novi by expanding and diversifying its operations to include additional meeting space and a Hyatt Place Hotel. All told, The Suburban Collection Showplace has been a mainstay within Novi for nearly a quarter of a century. The Applicant sincerely wishes to commit to the city once again with the construction of this project.
- Q. **The granting of the industrial facilities exemption certificate, considered together with the aggregate amount of industrial facilities exemption certificates previously granted and currently in force shall not have the effect of substantially impeding the operation of the city**
- The Applicant avers that the City possesses the most complete knowledge of facts and circumstances to determine whether the City's operation would be substantially impeded by an additional Industrial Facilities Exemption Certificate. However, Applicant would like again to draw attention to the fact that both the PA 210 Tax Abatement upon the Hyatt Place Hotel and Diamond Center meeting space expansions and the PA 198

Tax Abatement upon the original Suburban Collection Showplace Facility will soon expire. In the Applicant's view, the additional tax revenues from these expiring abatements and the increased tax revenues from the expected developments surrounding the project will provide adequate support for the tax abatement sought in this application.

Positive Economic Impact Suburban Collection Showplace

For your consideration, we have attached the Executive Summary from the original economic study and the 2008 update showing an excess of \$600,000,000 per year in overall economic spinoff. The Showplace activities have exceeded those amounts used for these projections and a conservative estimate of an additional 20% increase in economic spinoff activity will result from the expansion when in full operation. It is worth noting, as we have previously pointed out, that the multiplier used by the professionals when deriving this economic impact estimate is a very conservative 2x.

April 7, 2016
PA-198 Application
Boco Enterprises, Inc.
Suburban Collection Showplace
Expansion



MORRIS, KALISH • WALGREN, P.C.
CERTIFIED PUBLIC ACCOUNTANTS AND CONSULTANTS

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JOHN A. WALGREN, C.P.A., OF COURSE

REVIEW AND UPDATE OF ECONOMIC IMPACT ANALYSIS
ROCK FINANCIAL SHOWPLACE
July 25, 2008

We have been the accounting firm utilized by Mr. Blair Bowman and his related entities for over ten years. Mr. Bowman requested we review the economic impact analysis prepared by Michigan Consultants prior to the opening of the Rock Financial Showplace and extrapolate using current operational data.

Michigan Consultants conducted an Economic Impact Analysis of the former Novi Expo Center facility as well as an anticipated direct economic impact from the then to be constructed "new facility" now known as the Rock Financial Showplace which included the following activities:

- * Survey event promoters.
- * Review event information.
- * Analyze the state and national figures on spending by trade and consumer show attendees and exhibitors.
- * Analyze tourism spending data.
- * Review impact studies performed at other venues.
- * Discussions and interviews with various commercial outlets near the facility.

Michigan Consultants identified usage figures derived from hosted event information and then utilized those figures to calculate direct economic impact in the following categories:

- * Offsite spending by individuals.
- * Local business spending by promoters and exhibitors.
- * Local exhibitor "retained revenues" (product purchase dollars captured locally)
- * NEC Expenditures.

Further on in the report Michigan Consultants identified an estimate of annual economic impact from the new expo center (Rock Financial Showplace) by combining the existing event impact with "new conventions or conferences". Once the overall economic impact was derived Michigan Consultants applied a multiplier factor of two (2). In the reviewer's opinion this was a conservative multiplier factor with many economic impact studies utilizing four to five times multiplier. It is with this lateral calculation that our review and update will deal with in substance. In short, we understand because of the uncertainty as to what new events were going to be generated in the new facility that it was difficult to project. However, one needs only to review the event master, a copy of which is contained herein, to see the extensive amount of new activity and impact that is being generated at the Rock Financial Showplace.

In performing this update we reviewed the above utilized methodology by Michigan Consultants and found the assumptions and figures to be basically sound as far as visitor days and expenditure data. We also examined the former Novi Expo Center Event Promoter list utilized by Michigan Consultants against the Event Master for the current event roster at the Rock Financial Showplace. It was determined that almost all of the events then being produced at the former Novi Expo Center are currently being produced or similar events to them at the Rock Financial Showplace. In addition, there are multiple additional major events as well as literally hundreds of additional conference, convention and meeting activities held at the new facility. We have adopted the procedure of utilizing the Michigan Consultants study as a base from which to work and applied an additional multiplier for the new facility for the actual activity being two (2) times that which was projected by the original study. The validity of this multiplier was further supported by information received from the box office management and the conference and banquet center marketing manager at the existing Rock Financial Showplace. Utilizing this similar methodology, total visitor days would be in excess of 1,750,000 and individual exhibits were estimated to be in excess of 25,000. These figures when injected into the Michigan Consultants impact model would yield an amount of impact well in excess of our two (2) times multiplier.

Finally, a calculation was performed to express the economic impact in terms of current year dollar values applying a traditional CPI increase analysis. The table below is a modification and expansion of Table C as contained in the original Executive Summary of the Michigan Consultants Economic Impact Study and provides for a calculation of the updated economic impact for the existing Rock Financial Showplace of \$675,916,000.

TABLE C*		
ANNUAL ECONOMIC IMPACTS FOR THE NEW NOVI EXPO CENTER		
DIRECT IMPACTS		
New conventions or conferences	\$ 12,570,000	
Present categories of events (including incremental gains)	\$117,414,000	
DIRECT SUB-TOTAL		\$ 129,984,000
MULTIPLIER		2.0
AREA OF ECONOMIC IMPACT ATTRIBUTABLE TO THE NEW FACILITY (as previously projected)		\$ 259,968,000
MULTIPLIER (additional)		2.0
ACTUAL AMOUNT OF EVENTS AND EXPENDITURES EXPERIENCED IN THE ROCK FINANCIAL SHOWPLACE		\$ 519,936,000

$$\frac{\text{June 2008 CPI} - \text{October 1999 CPI}}{\text{October 1999 CPI}} = \frac{218.815 - 168.2}{168.2}$$

1.30

\$519,936,000

x 1.30 =

\$675,916,800.00

2008 Dollars

July 25, 2008

Page 3

In conclusion, we believe that this extrapolation process is yielding a reasonable impact figure. As mentioned throughout the Michigan Consultant report it is worthy of emphasis that this is a major amount of economic impact derived uniquely through a privately funded operation in an environment which is almost solely and exclusively occupied by fully government subsidized operation.

It is also worth noting that this economic impact analysis does not take into consideration the economic impact from the onsite hotel planned to be constructed on the grounds of the Rock Financial Showplace. The planned hotel project will have a positive economic impact from a construction cost impact, job creation impact and tax revenue impact.

Morris, Kalish + Walgren P.C.

MORRIS, KALISH + WALGREN, P.C.

October 18, 1999

ECONOMIC IMPACT ANALYSIS OF
THE NOVI EXPO CENTER

Prepared by:

MICHIGAN CONSULTANTS
426 W. OTTAWA
LANSING, MICHIGAN 48933
517-482-0790

Jacob Miklojcik, President

EXECUTIVE SUMMARY

ECONOMIC IMPACT ANALYSIS OF THE NOVI EXPO CENTER

MISSION OF PROJECT

The Novi Expo Center (NEC) has been in operation for over seven years. Hundreds of thousands of individuals are attracted to Novi annually to attend the various trade shows, consumer shows, civic events, conferences, and other functions that utilize the center. The NEC is unique in that *it is the only convention/expo center of substantial size in Michigan that is privately owned and operated.*

This report identifies and enumerates the economic activity and impacts generated by the existing NEC. These figures exhibit what the NEC means to the area and the loss that would occur if the facility no longer existed within Novi. The analysis also provides projections for the additional benefits that would be generated from a new facility. The consultants undertook a variety of tasks in order to generate well-founded impact estimates. These activities included:

- Survey of event promoters.
- Review of event information in NEC archives.
- Analysis of state and national figures on spending by trade and consumer show attendees and exhibitors.
- Analysis of tourism spending data.
- Review of impact studies performed at other venues.
- Discussions with various commercial outlets near the center.

USAGE FIGURES

During a recent 12-month period, the NEC hosted 68 major events, most being several days in length. The trade shows drew attendees from selected target groups while the consumer shows and civic events drew from the public at large. The center also hosted numerous small, non-published, events. In that the NEC itself typically does not serve as an event promoter, exact historic records on attendees and exhibitors are not available. In order to develop the usage figures NEC data was supplemented by a survey of promoters and national surveys. The results are summarized in Table A.

TABLE A TOTAL VISITOR ESTIMATES FOR 12 MONTH PERIOD	
Visitor days	769,854
Individual exhibits	11,697
Room nights	68,589

EXECUTIVE SUMMARY
ECONOMIC IMPACT ANALYSIS OF THE NOVI EXPO CENTER

ECONOMIC IMPACTS

The visitors spend money off-site on such things as hotels, restaurants, and retail items. The exhibitors and promoters also spend dollars off-site for goods and services that aid with making the event a success. The consumer shows also attract people from throughout southeastern Michigan, the Midwest, and Canada to purchase goods at the events, many from local firms and vendors. The NEC also has a substantial budget, with the dollars flowing to the local economy.

These various expenditures result in economic impacts for the Novi area, Oakland County and Southeastern Michigan. Table B exhibits the total direct impacts.

TABLE B ANNUAL DIRECT IMPACT TOTALS FOR THE NOVI EXPO CENTER	
OFF-SITE SPENDING BY INDIVIDUALS	\$34,533,190
LOCAL BUSINESS SPENDING BY PROMOTERS AND EXHIBITORS	\$6,025,100
LOCAL EXHIBITOR "RETAINED REVENUES" (product purchase dollars captured locally)	\$47,353,075
NEC EXPENDITURES	\$7,000,000
TOTAL DIRECT IMPACTS	\$94,911,365

The full report delineates the manner in which care was taken to differentiate those dollars that were new to the geographic area or were retained in the area from dollars that simply passed through or that represent only a temporary shift. The report also identifies how the expenditure and impact factors utilized were more conservative than those used in similar studies for events and centers in other areas of the nation.

GROSS IMPACT AFTER CONSIDERATION OF MULTIPLIER EFFECTS

The dollars expended ripple through the economy via successive rounds of spending. The RIMS-2 model from the Bureau of Economic Analysis uses 2.075 as the multiplier for lodging and entertainment, 2.327 for eating and dining, and 2.244 for retail. The consultants choose to use a more conservative multiplier of 2.0 for all expenditures.

EXECUTIVE SUMMARY
ECONOMIC IMPACT ANALYSIS OF THE NOVI EXPO CENTER

Using this multiplier, *the annual economic impact of the Novi Expo Center is calculated to be \$189,800,000 annually.* Given the location of exhibitors, as well as the restaurants, hotels, and retail stores, it is reasonable to calculate that more than half this figure occurs in *Oakland County--- approximately \$100,000,000 annually.*

These are extremely impressive totals, particularly considering that the NEC opened less than a decade ago, operates in a retrofitted facility built for other purposes, and has not received any public subsidies.

INCREASED ECONOMIC IMPACTS AT A NEW FACILITY

The report notes the limitations of the existing facility and the improvements planned for the new Novi Expo Center. The new facility will increase economic impacts by being able to attract large-scale conferences and conventions that the present facility cannot accommodate, and by increasing the number of attendees and exhibitors at present events. *It is stressed that the most important economic impact created by the new facility is retention of the present base of economic benefits.*

Table C exhibits the key totals for the new facility. *The annual economic impact of the new center is calculated to be over one-quarter of a billion dollars.* This figure is arrived at through conservative assumptions, caution in avoiding double counting, and exclusion of economic activities that occur outside of the general geographic region.

TABLE C ANNUAL-ECONOMIC IMPACTS FOR THE NEW NOVI EXPO CENTER		
DIRECT IMPACTS		
New conventions or conferences	\$12,570,000	
Present categories of events (including incremental gains)	\$117,414,000	
DIRECT SUB-TOTAL		\$129,984,000
MULTIPLIER		2.0
AREA ECONOMIC IMPACT ATTRIBUTABLE TO THE NEW FACILITY		\$259,968,000

At least 65% of the benefits are attributable to Oakland County, and a large portion is captured within Novi itself

EMPLOYMENT (on-going)

The direct spending displayed in Table B creates employment. The figures calculate to an estimated *1,582 full-time equivalent jobs*. Additional positions are created by ripple effects in the economy.

The new center will assure that present employment created from present economic impacts is retained and additional employment occurs. The report calculates that *1,957 full-time equivalent jobs will be created/retained by the new facility*. Ripple effect positions increase this total.

CONSTRUCTION IMPACTS

The construction of the new facility will also produce a direct economic benefit to the area. A reasonable new construction estimate is \$12,000,000, although detailed cost engineering has not been completed. The local spending by construction company employees and subcontractors will further expand the economic impacts gained from construction.

A COMPETITIVE ENVIRONMENT

The final chapter of the report notes that the NEC operates in a competitive environment against heavily subsidized competition. A review of other centers in the Midwest with over 100,000 square feet of exposition space found only one other facility that was privately operated. The other major centers in Michigan (in Detroit, Lansing, and Grand Rapids) receive large public subsidies. Grand Rapids recently received a direct state appropriation of \$60,000,000 and a County appropriation of \$15,000,000 to aid with their new facility.

Application for Industrial Facilities Tax Exemption Certificate

Issued under authority of Public Act 198 of 1974, as amended. Filing is mandatory.

INSTRUCTIONS: File the original and two copies of this form and the required attachments (three complete sets) with the clerk of the local government unit. The State Tax Commission (STC) requires two complete sets (one original and one copy). One copy is retained by the clerk. If you have any questions regarding the completion of this form, call (517) 373-3302.

To be completed by Clerk of Local Government Unit	
Signature of Clerk	Date Received by Local Unit
STC Use Only	
Date Received by STC	Application Number

APPLICANT INFORMATION

All boxes must be completed.

1a. Company Name (Applicant must be the occupant/operator of the facility) BoCo Enterprises, Inc.		1b. Standard Industrial Classification (SIC) Code - Sec. 2(10) (4 or 6 Digit Code) 9015	
1c. Facility Address (City, State, ZIP Code) (real and/or personal property location) See Attached Exhibit A		1d. City/Township/Village (indicate which) Novi	1e. County Oakland
2. Type of Approval Requested <input checked="" type="checkbox"/> New (Sec. 2(5)) <input type="checkbox"/> Speculative Building (Sec. 3(8)) <input type="checkbox"/> Research and Development (Sec. 2(10))		3a. School District where facility is located Novi	3b. School Code 63100
<input type="checkbox"/> Transfer <input type="checkbox"/> Rehabilitation (Sec. 3(6)) <input type="checkbox"/> Increase/Amendment		4. Amount of years requested for exemption (1-12 Years) 12	

5. Per section 5, the application shall contain or be accompanied by a general description of the facility and a general description of the proposed use of the facility, the general nature and extent of the restoration, replacement, or construction to be undertaken, a descriptive list of the equipment that will be part of the facility. Attach additional page(s) if more room is needed.

New construction of a 180,000 sq. ft. multi-purpose events facility attached to an existing convention and conference center in excess of 250,000 sq. ft.

6a. Cost of land and building improvements (excluding cost of land) * Attach list of improvements and associated costs. * Also attach a copy of building permit if project has already begun.	9-10 Million Real Property Costs
6b. Cost of machinery, equipment, furniture and fixtures * Attach itemized listing with month, day and year of beginning of installation, plus total	N/A Personal Property Costs
6c. Total Project Costs * Round Costs to Nearest Dollar	9-10 Million Total of Real & Personal Costs

7. Indicate the time schedule for start and finish of construction and equipment installation. Projects must be completed within a two year period of the effective date of the certificate unless otherwise approved by the STC.

	Begin Date (M/D/Y)	End Date (M/D/Y)	
Real Property Improvements	9/1/2016	10/1/2017	<input type="checkbox"/> Owned <input checked="" type="checkbox"/> Leased
Personal Property Improvements			<input type="checkbox"/> Owned <input type="checkbox"/> Leased

8. Are State Education Taxes reduced or abated by the Michigan Economic Development Corporation (MEDC)? If yes, applicant must attach a signed MEDC Letter of Commitment to receive this exemption. ☐ Yes ☒ No

9. No. of existing jobs at this facility that will be retained as a result of this project. 250-300	10. No. of new jobs at this facility expected to create within 2 years of completion. 50
--	---

11. Rehabilitation applications only: Complete a, b and c of this section. You must attach the assessor's statement of SEV for the entire plant rehabilitation district and obsolescence statement for property. The Taxable Value (TV) data below must be as of December 31 of the year prior to the rehabilitation.

a. TV of Real Property (excluding land)	
b. TV of Personal Property (excluding inventory)	
c. Total TV	

12a. Check the type of District the facility is located in:

☒ Industrial Development District ☐ Plant Rehabilitation District

12b. Date district was established by local government unit (contact local unit)

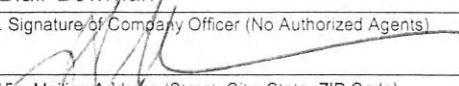
12c. Is this application for a speculative building (Sec. 3(8))?

☐ Yes ☒ No

APPLICANT CERTIFICATION - complete all boxes.

The undersigned, authorized officer of the company making this application certifies that, to the best of his/her knowledge, no information contained herein or in the attachments hereto is false in any way and that all are truly descriptive of the industrial property for which this application is being submitted.

It is further certified that the undersigned is familiar with the provisions of P.A. 198 of 1974, as amended, being Sections 207.551 to 207.572, inclusive, of the Michigan Compiled Laws; and to the best of his/her knowledge and belief, (s)he has complied or will be able to comply with all of the requirements thereof which are prerequisite to the approval of the application by the local unit of government and the issuance of an Industrial Facilities Exemption Certificate by the State Tax Commission.

13a. Preparer Name Blair Bowman	13b. Telephone Number 248-348-5600	13c. Fax Number 248-347-7720	13d. E-mail Address BBowman@SuburbanShowplace.com
14a. Name of Contact Person Blair Bowman	14b. Telephone Number 248-348-5600	14c. Fax Number 248-347-7720	14d. E-mail Address BBowman@SuburbanShowplace.com
▶ 15a. Name of Company Officer (No Authorized Agents) Blair Bowman			
15b. Signature of Company Officer (No Authorized Agents) 		15c. Fax Number 248-347-7720	15d. Date
▶ 15e. Mailing Address (Street, City, State, ZIP Code) 46100 Grand River Ave, Novi, MI, 48374		15f. Telephone Number 248-348-5600	15g. E-mail Address BBowman@SuburbanShowplace.com

LOCAL GOVERNMENT ACTION & CERTIFICATION - complete all boxes.

This section must be completed by the clerk of the local governing unit before submitting application to the State Tax Commission. Check items on file at the Local Unit and those included with the submittal.

▶ 16. Action taken by local government unit <input type="checkbox"/> Abatement Approved for _____ Yrs Real (1-12), _____ Yrs Pers (1-12) After Completion <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Denied (Include Resolution Denying)		16b. The State Tax Commission Requires the following documents be filed for an administratively complete application: Check or Indicate N/A if Not Applicable <input type="checkbox"/> 1. Original Application plus attachments, and one complete copy <input type="checkbox"/> 2. Resolution establishing district <input type="checkbox"/> 3. Resolution approving/denying application <input type="checkbox"/> 4. Letter of Agreement (Signed by local unit and applicant) <input type="checkbox"/> 5. Affidavit of Fees (Signed by local unit and applicant) <input type="checkbox"/> 6. Building Permit for real improvements (if project has a real building) <input type="checkbox"/> 7. Equipment List with dates of beginning of installation <input type="checkbox"/> 8. Form 3222 (if applicable) <input type="checkbox"/> 9. Speculative building resolution and affidavits (if applicable)	
16a. Documents Required to be on file with the Local Unit Check or Indicate N/A if Not Applicable <input type="checkbox"/> 1. Notice to the public prior to hearing establishing a district. <input type="checkbox"/> 2. Notice to taxing authorities of opportunity for a hearing. <input type="checkbox"/> 3. List of taxing authorities notified for district and application action. <input type="checkbox"/> 4. Lease Agreement showing applicants tax liability.			
16c. LUCI Code		16d. School Code	
17. Name of Local Government Body		▶ 18. Date of Resolution Approving/Denying this Application	

Attached hereto is an original application and all documents listed in 16b. I also certify that all documents listed in 16a are on file at the local unit for inspection at any time, and that any leases show sufficient tax liability.

19a. Signature of Clerk	19b. Name of Clerk	19c. E-mail Address
19d. Clerk's Mailing Address (Street, City, State, ZIP Code)		
19e. Telephone Number	19f. Fax Number	

State Tax Commission Rule Number 57: Complete applications approved by the local unit and received by the State Tax Commission by October 31 each year will be acted upon by December 31. Applications received after October 31 may be acted upon in the following year.

Local Unit: Mail one original and one copy of the completed application and all required attachments to:

Michigan Department of Treasury
State Tax Commission
PO Box 30471
Lansing, MI 48909

(For guaranteed receipt by the STC, it is recommended that applications are sent by certified mail.)

STC USE ONLY				
▶ LUCI Code	▶ Begin Date Real	▶ Begin Date Personal	▶ End Date Real	▶ End Date Personal

Instruction for Completing Form 1012, Industrial Facilities Tax Exemption (IFT) Application

The completed original application form 1012 and all required attachments, **MUST** be filed with the clerk of the local unit of government where the facility is or will be located. Complete applications must be received by the State Tax Commission by October 31 to ensure processing and certification for the following tax year. Applications received after the October 31 deadline will be processed as expeditiously as possible.

Please note that attachments listed on the application in number 16a are to be retained by the local unit of government, and attachments listed in number 16b are to be included with the application when forwarding to the State Tax Commission (STC).

(Before commencement of a project the local unit of government must establish a district, or the applicant must request in writing a district be established, in order to qualify for an IFT abatement. Applications and attachments must be received by the local unit of government **within six months of commencement of project.**)

The following information is required on separate documents attached to form 1012 by the applicant and provided to the local unit of government (city, township or village). **(Providing an accurate school district where the facility is located is vital.)**

1. Legal description of the real property on which the facility is or will be located. Also provide property identification number if available.
2. Personal Property Requirements: Complete list of new machinery, equipment, furniture and fixtures which will be used in the facility. The list should include description, **beginning date of installation** or expected installation by **month/day/year**, and costs or expected costs (see sample). Detail listing of machinery and equipment **must match amount shown** on question 6b of the application. Personal property applications must have attached a certified statement/affidavit as proof of the beginning date of installation (see sample).
3. Real Property Requirements: Proof of date the construction started (groundbreaking). Applicant must include one of the following if the project has already begun; building permit, footings inspection report, or certified statement/affidavit from contractor indicating exact date of commencement.

4. Complete copy of lease agreement as executed, if applicable, verifying lessee (applicant) has direct ad valorem real and/or personal property tax liability. The applicant must have real and/or personal property tax liability to qualify for an IFT abatement on leased property. If applying for a real property tax exemption on leased property, the lease must run the full length of time the abatement is granted by the local unit of government. Tax liability for leased property should be determined before sending to the STC.

The following information is required of the local unit of government: [Please note that only items 2, 4, 5, 6, & 7 below are forwarded to the State Tax Commission with the application, along with items 2 & 3 from above. The original is required by the STC. The remaining items are to be retained at the local unit of government for future reference. **(The local unit must verify that the school district listed on all IFT applications is correct.)**]

1. A copy of the notice to the general public and the certified notice to the property owners concerning the establishment of the district.
2. Certified copy of the resolution establishing the Industrial Development District (IDD) or Plant Rehabilitation District (PRD), which includes a legal description of the district (see sample). If the district was not established prior to the commencement of construction, the local unit shall include a certified copy or date stamped copy of the written request to establish the district.
3. Copy of the notice and the certified letters to the taxing authorities regarding the hearing to approve the application.
4. Certified copy of the resolution approving the application. The resolution must include the number of years the local unit is granting the abatement and the statement "the granting of the Industrial Facilities Exemption Certificate shall not have the effect of substantially impeding the operation of (governmental unit), or impairing the financial soundness of a taxing unit which levies ad valorem property taxes in (governmental unit – see sample).

5. Letter of Agreement (signed by the local unit of government and the applicant per P.A. 334 of 1993 (see sample).
6. Affidavit of Fees (signed by the local unit of government and the applicant), (Bulletin 3, January 16, 1998). This statement may be incorporated into the Letter of Agreement (see sample).
7. Treasury Form 3222 (if applicable - Fiscal Statement for Tax Abatement Request.

The following information is required for rehabilitation applications in addition to the above requirements:

1. A listing of existing machinery, equipment, furniture and fixtures which will be replaced or renovated. This listing should include description, beginning date of installation or expected installation by month/day/year, and costs or expected costs.
2. A rehabilitation application must include a statement from the Assessor showing the taxable valuation of the plant rehabilitation district, separately stated for real property (EXCLUDING LAND) and personal property. Attach a statement from the assessor indicating the obsolescence of the property being rehabilitated.

The following information is required for speculative building applications in addition to the above requirements:

1. A certified copy of the resolution to establish a speculative building.
2. A statement of non-occupancy from the owner and the assessor. Please refer to the following Web site for P.A. 198 of 1974:

Please refer to the following Web site for P.A. 198 of 1974: www.legislature.mi.gov/. For more information and Frequently Asked Questions, visit our Web site at www.michigan.gov/propertytaxexemptions.

For guaranteed receipt by the State Tax Commission, it is recommended that applications and attachments are sent by certified mail.

**Exhibit A: Legal Description of the Real Property on which the facility is or will be located, Property
Identification # 22-16-251-023**

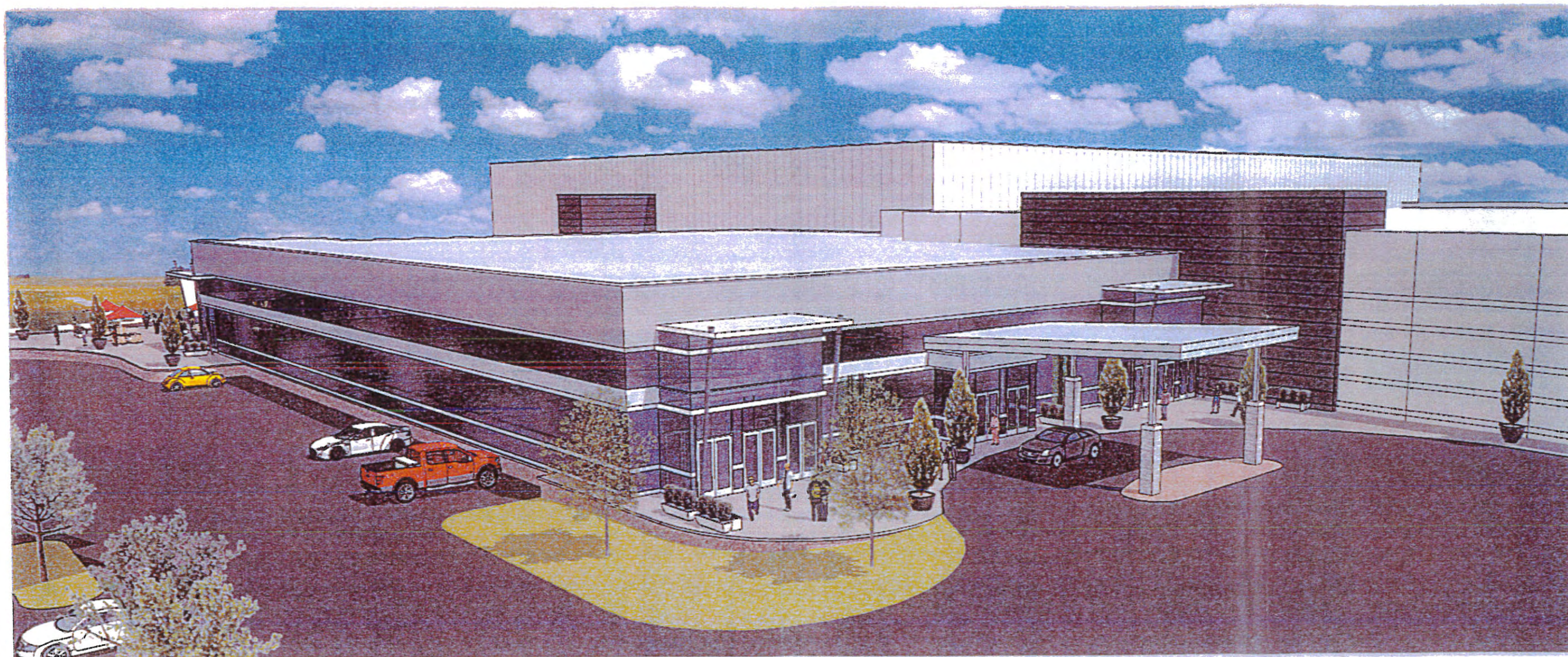
T1N, R8E, SEC 16 PART OF NE 1/4, ALSO PART OF SE 1/4 BEG AT E 1/4 COR, TH S 87-26-37 W 1339.12 FT, TH S 87-42-26 W 124.90 FT, TH S 01-24-20 E 347.64 FT, TH ALG CURVE TO RIGHT, RAD 83807.16 FT, CHORD BEARS N 73-03-46 W 328.67 FT, DIST OF 328.67 FT, TH N 72-57-29 W 755.69 FT, TH N 01-46-33 W 347.10 FT, TH N 73-01-11 W 109.66 FT, TH S 88-13-27 W 83.17 FT, TH N 01-46-33 W 900.29 FT, TH S 70-44-04 E 45.95 FT, TH S 34-37-33 E 20.66 FT, TH S 74-00-10 E 1693.39 FT, TH N 86-34-29 E 150.36 FT, TH S 74-00-10 E 901.58 FT, TH S 02-19-20 E 443.24 FT TO BEG 54.86 A 9-11-12 FR 021 & 022 Split/Combined on 09/18/2012 from 50-22-16-251-021, 50-22-16-251-022;

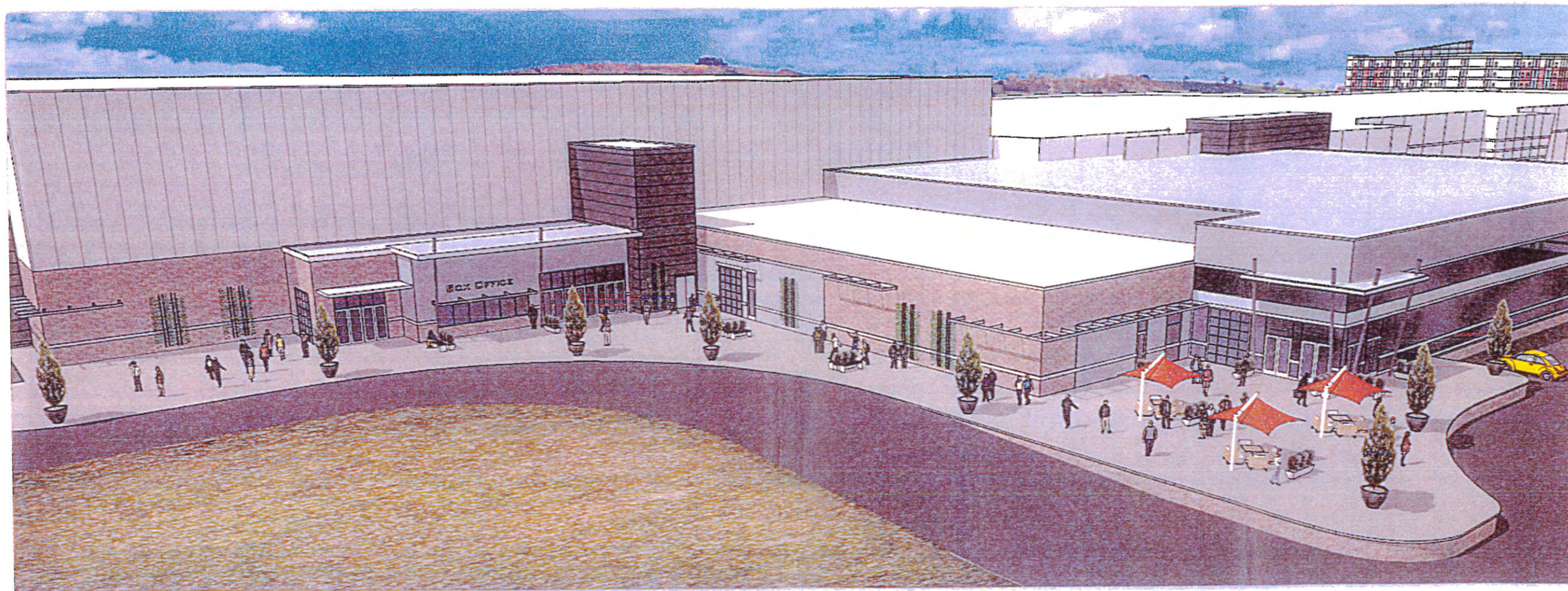
Exhibit B: Complete list of new machinery, equipment, furniture and fixtures which will be used in the facility.

N/A

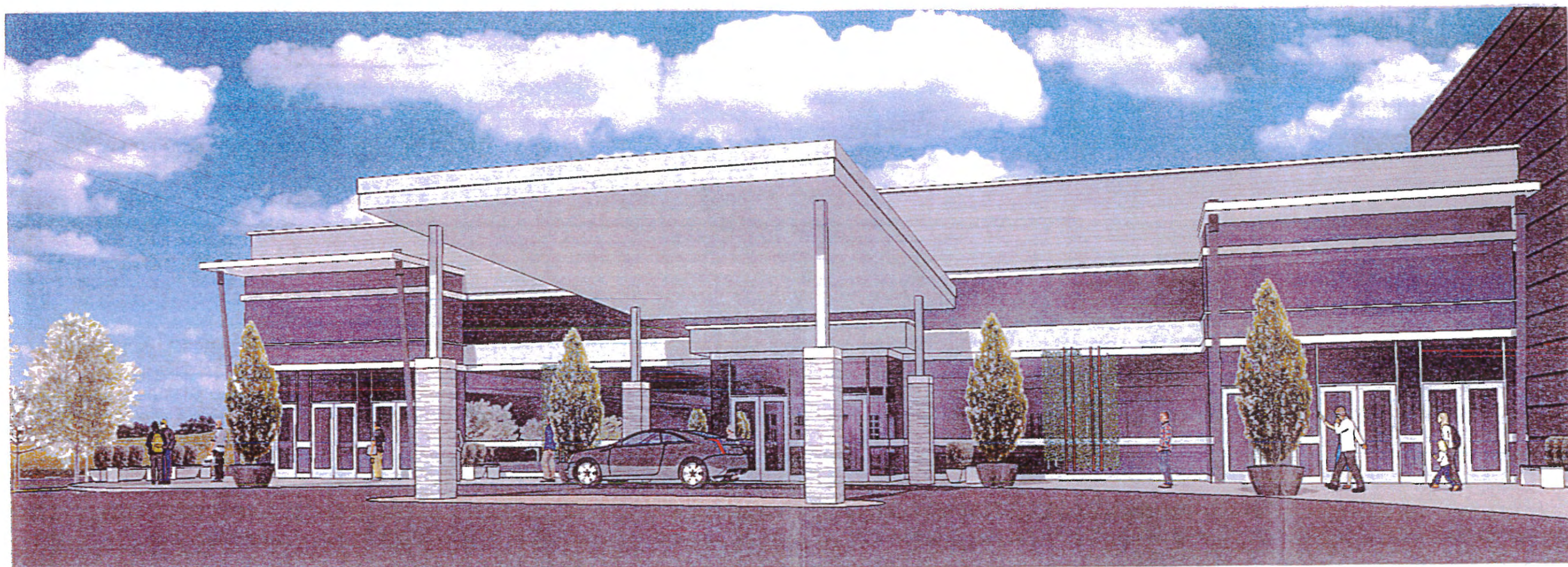
Exhibit C: Proof of date the construction started (groundbreaking):

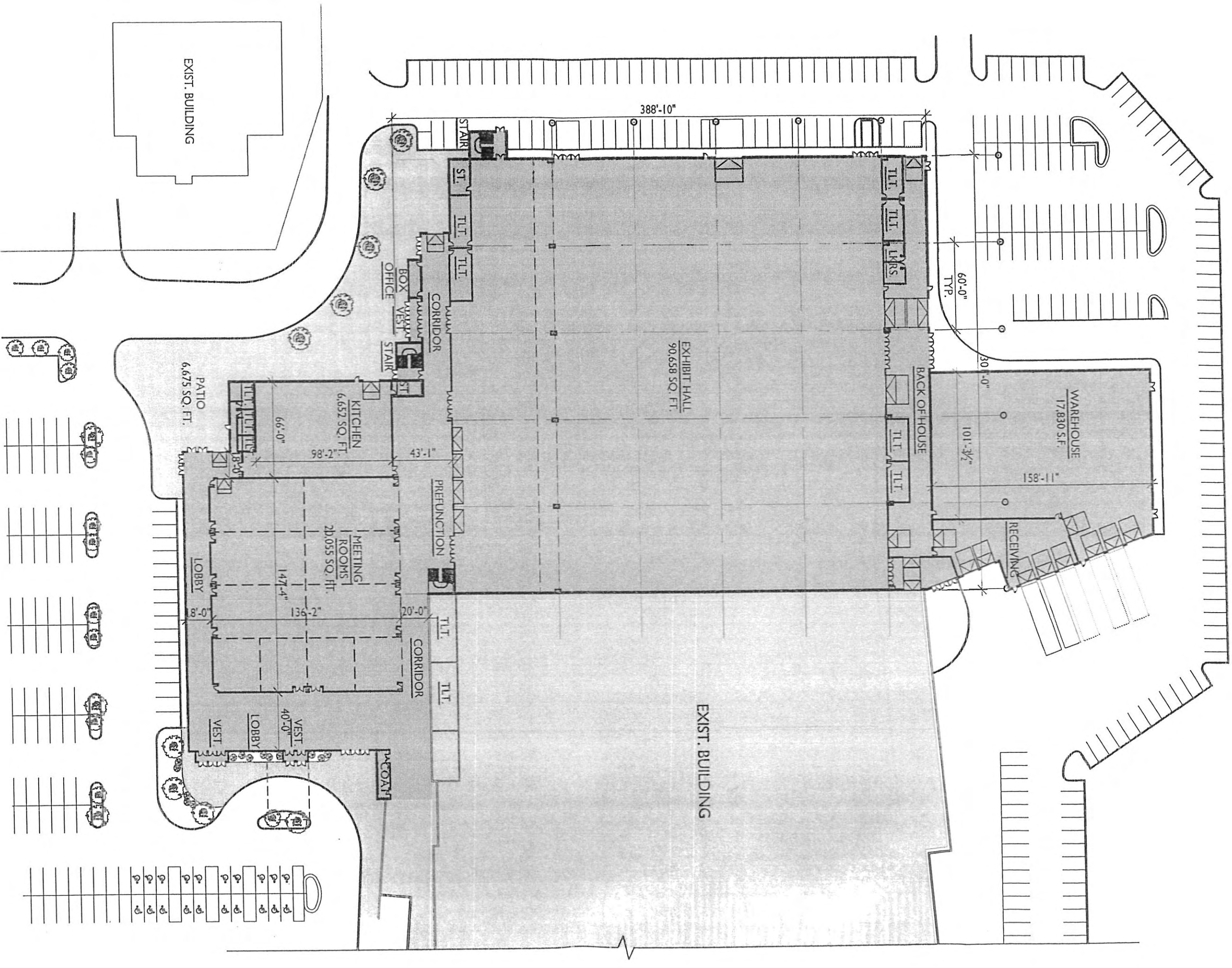
N/A









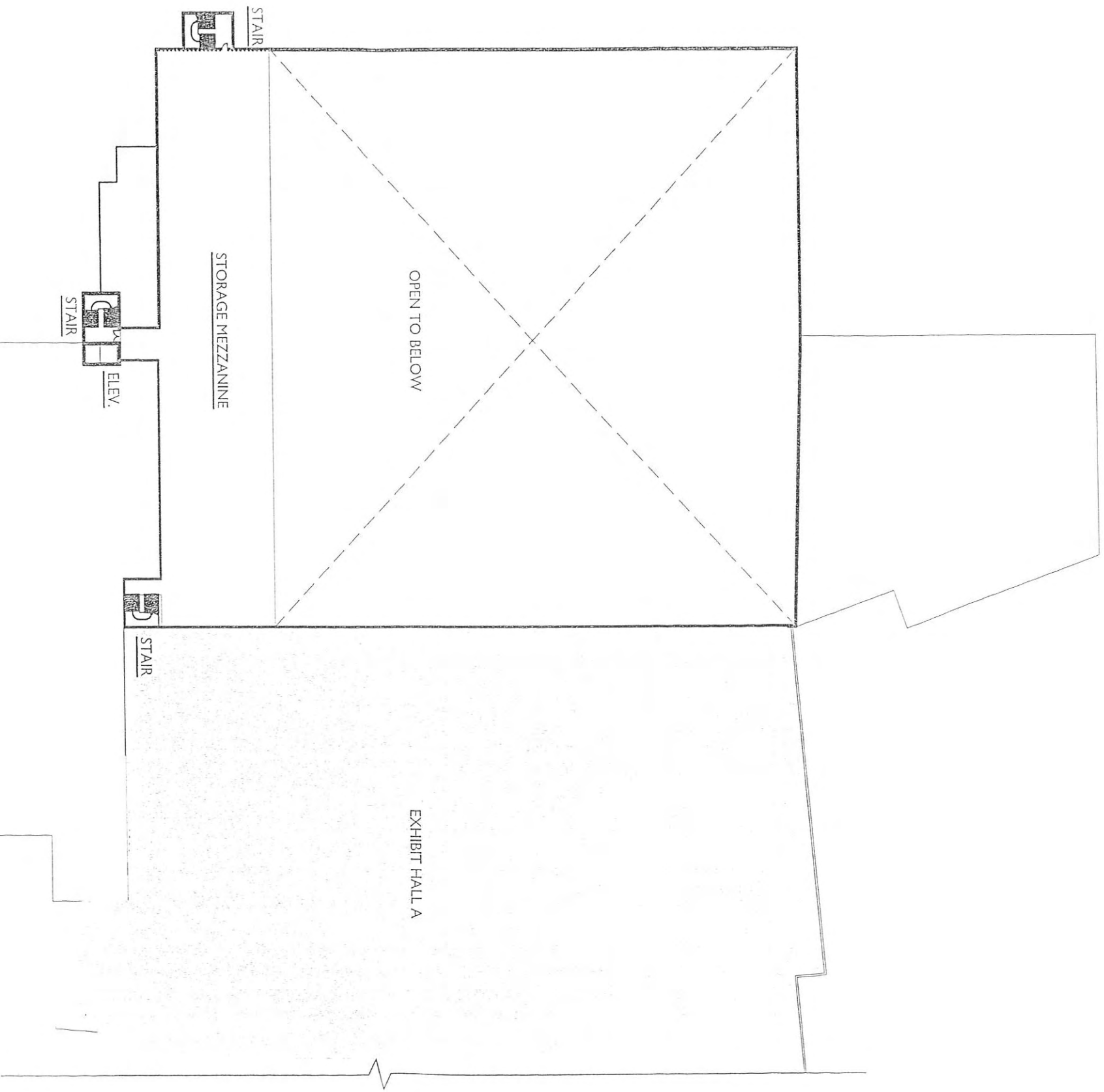


BOWERS+ASSOCIATES
ARCHITECTURE DESIGN

2400 S. HURON PARKWAY + ANN ARBOR, MI 48104
T: 734.976.2400 + F: 734.975.2410
WWW.BOWERSARCH.COM

PROJECT + NAME
SUBURBAN SHOWPLACE EXHIBITION/ ARENA
NOV, MICHIGAN
FLOOR PLAN
1/64" = 1'-0"

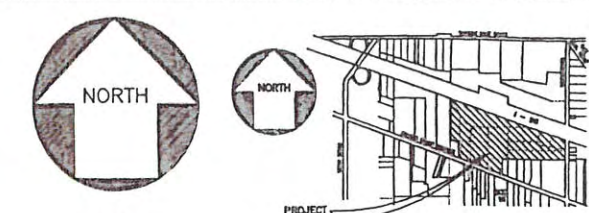
15-001
24 MARCH 2016



BOWERS+ASSOCIATES
2400 S. HURON PARKWAY + ANN ARBOR, MI 48104
T: 734.975.2400 + F: 734.975.2410
WWW.BOWERSARCH.COM

PROJECT + NAME
SUBURBAN SHOWPLACE EXHIBITION/ ARENA
NOV1, MICHIGAN
MEZZANINE PLAN
1/64" = 1'-0"

15-001
24 MARCH 2016



SCALE
1"=100'

LEGEND

- EXISTING ELEVATION
- PROPOSED ELEVATION (ADD 800 FEET)
- EXISTING CONTOUR
- EXISTING CONTOUR PER PREVIOUS PLAN
- EXISTING TREE TAG NO.
- U.P. - UTILITY POLE
- GUY - GUY WIRE
- T.S. - TRAFFIC SIGN
- HYD. - FIRE HYDRANT
- G.V. - GATE VALVE
- C.B. - CATCH BASIN
- M.H. - MANHOLE
- L.P. - LIGHT POLE
- F.M. - FOUND MONUMENT
- S.I. - SET IRON
- G.L. - GROUND LIGHT
- B.P. - BUMPER POST
- T.S.P. - TRAFFIC SIGNAL POLE
- T.P. - TRUCK PARKING AREA
- L.A. - LOADING AREA

BENCH MARKS

- B.M. 10-2 - RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF DFT ROAD, 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 846.10
- B.M. 10-7 - CHISELED SQUARE ON EAST SIDE LIGHT POLE BASE, 125'± SOUTH OF THE C/L OF GRAND RIVER AND 840'± WEST OF C/L OF TAFT ROAD, ON WEST EDGE OF RT PARKING LOT FOR GATSBY'S BNL. ELEVATION 843.19
- B.M. 13 - ARROW ON HYDRANT LOCATED 58'± SOUTH AND 81'± WEST OF THE SOUTHWEST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 878.85
- B.M. 14 - ARROW ON HYDRANT LOCATED 101'± NORTH AND 33'± EAST OF THE NORTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 878.87

EXPANSION

I-96 EXPRESSWAY

EXISTING SUBURBAN COLLECTION SHOWPLACE

EX. 1 STORY CONCRETE BUILDING
FIN. F.L. EL. 875.50
TOTAL BUILDING AREA 288,500 SQ. FT.
EXPOSITION HALL AREA
2500 SPACES (INCL. 43 HCP.)
EXISTING SITE PARKING
ELIMINATED SITE PARKING
PROPOSED SITE PARKING
2112 SPACES (INCL. 58 HCP.)

PRELIMINARY



72 HOURS
BEFORE YOU DO
CALL MISS DC
1-800-488-7071
PLAN 2015

Exhibit "B"

FIFTH THIRD BANK MICHIGAN STATE FAIR



MICHIGAN STATE FAIR
A PRIVATE ENTITY, LLC

2015

ANNUAL REPORT



SUBURBAN COLLECTION
SHOWPLACE



NOVI

PREPARED BY THE MICHIGAN STATE FAIR A PRIVATE ENTITY, LLC
www.MichiganStateFairLLC.com

PURE MICHIGAN
Your trip begins at michigan.org



Photo credit Nancy Phares

VALUE FOR STRONG FOUNDATION



Photo credit Diane Snyder



VALUE THROUGH PARTNERSHIP

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CONTACT US:

248.348.6942

info@MichiganStateFairLLC.com



Photo credit Diane Snyder



Photo credit Diane Snyder

VALUE THROUGH AGRICULTURE

VALUE THROUGH PEOPLE



Photo credit Louis Waldo



Photo credit JANE PURSLOW

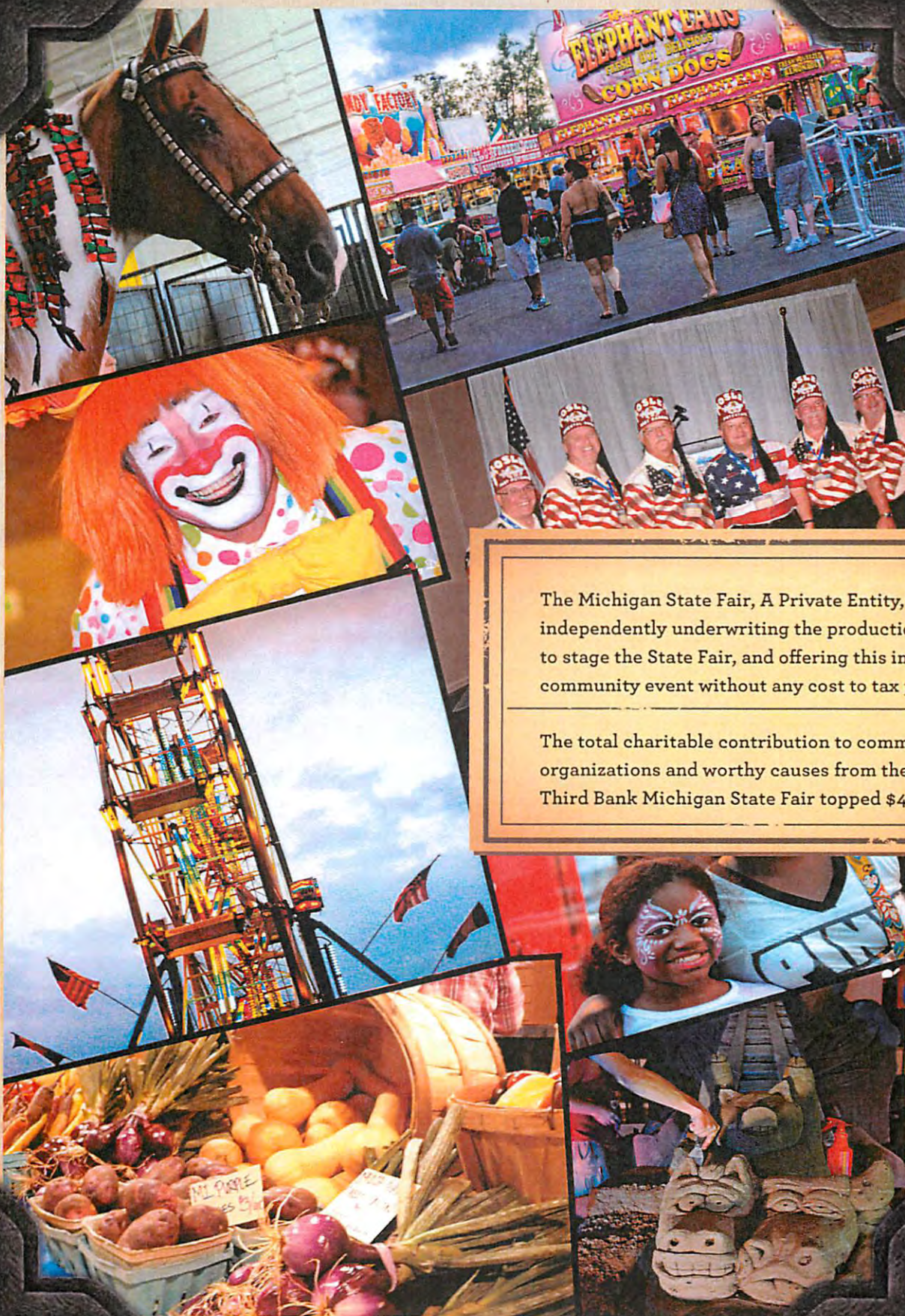
OUR MISSION

The mission of the Michigan State Fair, LLC is to engage our State's Residents and Businesses to promote and celebrate the positive achievements and advancements in Michigan Rural and Urban Agricultural, Business, and Industry.

It is furthermore the goal of this organization to:

- ★ Reimagine the State Fair business model for the new millennium, weaving beloved traditions together with modern technology and experiences relevant for today's attendees, vendors, and exhibitors while maintaining superior levels of customer service
- ★ Exceed Fairgoers expectations, by providing and maintaining a professional, clean, safe and fun atmosphere and experience that delivers on our position as Michigan's #1 Family Event
- ★ Reinforce, build, and maintain relationships with Michigan Agriculture, Business, Tourism and Industry for the mutual benefit of the State Fair, State's Residents and the Business Community
- ★ Recognize and celebrate youth participating in both Rural and Urban Agriculture development, who offer knowledge and leadership skills, in and out of the class room
- ★ Be a bright light, central gathering place and a force of good for Michigan Residents, Businesses, Organizations, and Communities through communication, networking, introductions, facilitation and charitable giving

Mission / Vision / Core Values



The Michigan State Fair, A Private Entity, LLC is now independently underwriting the production costs to stage the State Fair, and offering this important community event without any cost to tax payers!

The total charitable contribution to community organizations and worthy causes from the 2015 Fifth Third Bank Michigan State Fair topped \$400,000!

MESSAGE FROM THE MANAGER

BLAIR BOWMAN, OWNER,
SUBURBAN COLLECTION
SHOWPLACE AND THE MICHIGAN
STATE FAIR, A PRIVATE ENTITY, LLC:

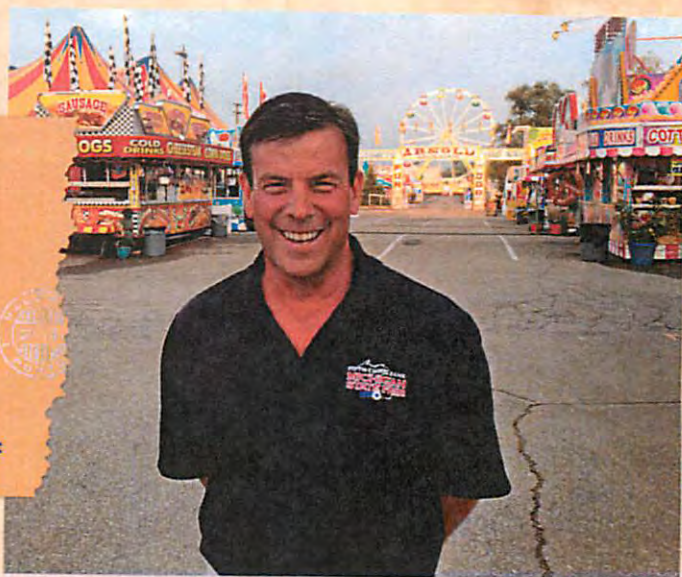


Photo Credit Nancy Phares

I am delighted to share that 2015 marked an enormous turning point and forward leap for the growth and evolution of the Fifth Third Bank Michigan State Fair. We welcomed several important new sponsors and partners, Ram Truck, Blue Care Network, American Honda, and strengthened our already wonderful collaborative relationships with the founding partners, Bright House Networks, the Detroit Shriners, C.F Burger Creamery, Kroger of Michigan, and Guernsey Farms Dairy and of course our title sponsor Fifth Third Bank. These dedicated organizations, along with the State Fair Steering Committee, who now number more than 100 hardworking individuals, have helped to shape our grand vision for a privately funded Michigan State Fair, LLC, the first of its kind in North America. This year, as a team, we could feel the momentum building as our work began to truly capture the imagination of the statewide agriculture, business and education communities, around what the future can offer for the Fifth Third Bank Michigan State Fair, and all of the constituencies it serves. In this spirit, I am extraordinarily pleased to report

that the Michigan State Fair, LLC is returning well over \$400,000 to Southeast Michigan charitable and community organizations this fall.

Following the tremendous expansion of the State Fairgrounds in 2015, including the addition of new horse arenas, barns and shows, plus larger Midway and Shrine Circus areas, we will settle in to polish and fine tune all the Fair attractions for 2016. All of this will be in preparation for larger scale projects and infrastructure improvements at the Suburban Collection Showplace and Michigan State Fairgrounds that are on the horizon.

For me personally, it has been a time of great joy and pride as I have watched this new State Fair business model hit its stride, and clearly demonstrate that the business of Michigan Agriculture is on a fast track to continued success for the great benefit of us all.

Blair Bowman

Proprietor, Suburban Collection Showplace and The Michigan State Fair, A Private Entity, LLC



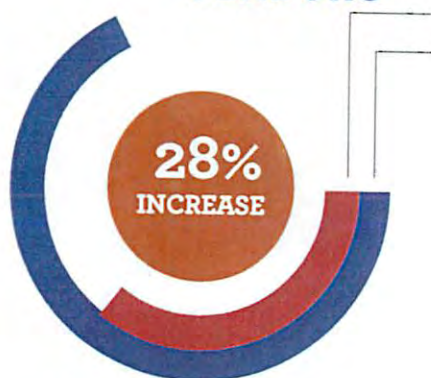
Photo credit Nancy Phares

Novi Mayor Bob Gatt and Blair Bowman



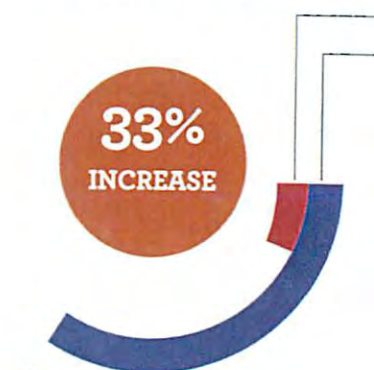
SUCCESS BY THE NUMBERS

COMMERCIAL VENDORS



2014 FTBMSF

CHARITABLE CONTRIBUTIONS



2015 FTBMSF

IN 2015:  33%
INCREASE IN NUMBER OF SPONSORS

compared to 2014 State Fair

SCHOLARSHIPS

NEWLY ESTABLISHED IN 2013
WITH AN INCREASE FROM \$30,000 TO \$40,000 in 2015

\$20,000 YOUTH URBAN AGRICULTURE SCHOLARSHIPS

\$20,000 YOUTH GOLD RIBBON AND LIVESTOCK SCHOLARSHIPS



^ 38%

INCREASE IN NUMBER OF
VOLUNTEERS
compared to 2014 Fair Event



2015 RIBBON CUTTING
Photo credit Janet M. Hug

^ 55%

INCREASE IN NUMBER OF
Agricultural/Home Arts Participation
compared to 2014 Fair Event

^ 60%

INCREASE IN NUMBER OF
Livestock Exhibits
compared to 2014 Fair Event

^ OVER 22%
ATTENDANCE INCREASE

Compared to 2014 Fair Event

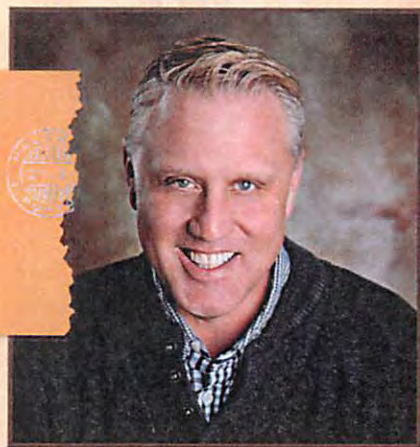


Photo credit Diane Snyder



MESSAGE FROM THE DIRECTOR

MESSAGE FROM STEVE MASTERS



What a surreal journey it has been, since I moved from the Upper Peninsula about a year and a half ago to take the helm as the first Executive Director of the Fifth Third Bank Michigan State Fair. My transition from the Upper Peninsula of Michigan continues to be enormously educational, fun, rewarding, and occasionally hilarious---as I continue to navigate all the commonalities and contrasts between the two Peninsulas. What I can say, with certainty, is that although there are geographic and cultural differences our State is chock full of incredibly dedicated, passionate, and generous people who support this mission of reinventing the tradition of an annual Michigan State Fair. I am still amazed by the rich abundance our magnificent state has to offer those who reside here, north and south. I am honored, as well as challenged, by the responsibility to re-kindle this beloved, grand old event for all Michiganders to truly celebrate Michigan, as we move toward the future.

We have just begun our journey on this long path, and there is an enormous amount of work yet to do. But, make no mistake, we made enormous strides in this third annual presentation of the Fifth Third Bank Michigan State Fair. Broad and significant increases in participation from livestock breeders and Home Art enthusiasts, increases in membership of the Steering Committee, plus the invaluable addition of dedicated new partners involved in Urban and Rural Agriculture, as well as sponsors who share the vision of what this new, 21st century Michigan State Fair, A Private Entity, LLC can be, moving forward. There is also an increased community understanding of the mission of this new version of The Michigan State Fair, to preserve the best and most favorite traditions of the original State Fair, create new modern relevant traditions, while streamlining the Fair model and creating a future vision for the role we play in the broader community. In the years to come it is our goal to continue to build on our early successes and be a beacon and central gathering place for future progress and sharing of accumulated wisdom, while building bridges between the people, communities, businesses, and industries of our great State as we celebrate all the wonderful elements that make us Pure Michigan!



Photo credit Nancy Phares



Photo credit Nancy Phares



Photo credit Nancy Phares



THE DETROIT SHRINERS ORGANIZATION

140 YEARS OF FELLOWSHIP, 90 YEARS
OF CHANGING LIVES - SHRINER'S, WITH
LOVE TO THE RESCUE



Photo Credit: Don Kincheloe

The Detroit Shriners are deeply proud to be a foundation partner of the Fifth Third Bank Michigan State Fair. The process of rebuilding this grand old Michigan tradition has been a great labor of love for our entire organization over the course of these past several years. Key members of the Shriners are delighted to serve on the Executive Committee of the State Fair, responsible for the oversight, direction and operation of the State Fair. We gladly offer the deep resources and great humanitarian network of the Shriners Michigan Organization, along with so many other community leaders, towards this wonderful collaborative effort. We share the great pride of all who are involved in expanding and improving the Michigan State Fair each and every year, to provide a terrific family fun atmosphere and a great value to attendees. Once again in 2015, it was our privilege to invite young Shrine hospital patients and their families, veterans, active military member and families to attend the Charity Preview evening as our guests. It is also with great pride the Shrine continues to be an underwriting sponsor of the State Fair Urban and Rural Scholarship programs, contributing \$7,000 in scholarship funds to assist Michigan youth in attaining their educational goals, and the Shrine was also a contributor to the City of Novi general fund, as part of the Executive Board donation to city programs.

Who are the Detroit Shriners?

The Shrine is a fraternity of 3,000 local members dedicated to helping kids through the international network of Shriner's Hospitals for children. This venerable organization attracts physicians, lawyers, truck

drivers, dentists, contractors, plus heads of state, movie stars, generals, clergymen and accountants. The first, humorous answer to the query of who the Shriners are, might be "Those guys who have the parades with the wild costumes and funny little cars." Another first thought might be of circuses and clowns... who wear those funny hats — like flowerpots — and have those big conventions." Past the levity, at a deeper and truer level, many have come to understand and have first hand knowledge of the great, strong network of support the Shriners offer to those in need. "My little girl was born with clubfeet...now they are straight, and she can walk, thanks to Shriners Hospitals for Children." Would be one example, and another "the Shriners run those fantastic, leading edge burn treatment hospitals... there are so many stories about their doctors treating kids with burns over 90 percent of their bodies."

All these various and complex views are correct. Each observer has experienced an individual facet of the Shrine Organization. At the core of it all is the camaraderie, deep friendships, good fellowship and great times shared by all Shriners. All Shriners share a grand Masonic heritage: Each is a Master Mason in the Freemasonry Fraternity. There are approximately 400,000 Shriners now, across the globe. They gather in temples, or chapters, throughout the United States, Canada, Mexico and the Republic of Panama.

There are 22 Shriners Hospitals for Children providing care for orthopedic conditions, burns, spinal cord injuries, and cleft lip and

palate. These hospitals have helped over 835,000 children — at no cost to parent or child — since the first Shriners Hospital opened in 1922. Our Detroit Shriners directly support hospitals in Erie, PA, Chicago and Cincinnati. We provide transportation weekly for young Detroit area patients and their families to each of these hospitals. The funds raised through events like the Fifth Third Bank Michigan State Fair helps provide resources to our Temple that enable us to carry out our mission of helping children overcome terrible and disabling injuries and deformities, allowing them to lead productive lives. It is with great pride and pleasure that we continue to be part of this tremendous annual family event at Suburban Collection Showplace. We, along with all the Executive and Steering Committee members that help guide the State Fair, strive to provide a superb event experience for the entire family to enjoy, while providing needed support to our local communities. We look very forward to the future, watching the Michigan State Fair, A Private Entity, LLC, grow and thrive, for future generations to enjoy, while supporting our local communities. It is our mission to see this Fair thrive and grow for future generations to enjoy.

CRAIG STIGELMAN

Detroit Shrine Circus Chairman

**bright
house**
NETWORKS



Shrine Circus Presented by:

OUR STEERING COMMITTEE



CHUCK ALKAZIAN
Superstar Mentor

JOHN ALMSTADT
Economic Development Dept. of
Oakland County

DEAN ANGOTT
C.F Burger Creamery

MICHAEL ANTARAN
Carrotpass

TOM ARNOLD
Arnold Amusements

PETE AUGER
City of Novi, City Manager

ANDREA AYRES
Make-A-Wish

DR. MIKE BALON
Studio B

KATE BARBER
Epoch Hospitality Group

BRANDON BARROW
Kroger

JIM BETTS
Urban Youth Scholarship Program

SUE BILA
Michigan Festival and Events
Association

TRACIE BOCK
Experience Six

CHERIE BOTIGULA
Volunteer

MCKENZIE BOWMAN
Epoch Hospitality Group

BLAIR BOWMAN
Suburban Collection Showplace

BLAIR, JR. BOWMAN
Suburban Collection Showplace

KIMBERLE BOWMAN
The Michigan State Fair, A Private
Entity, LLC

BARBARA BOWMAN
The Michigan State Fair, A Private
Entity, LLC

BILL, SR. BOWMAN
Thompson-Brown Company

LEIGH BYRD
Bright House Networks

KIM & JODI CAPELO
Volunteer

NIKITA CARGINS
Suburban Collection Showplace

DEB CHAPMAN
Chapman Sheep Farm
Fair Book

MARK CHAPMAN
Chapman Sheep Farm
Sheep Superintendent

KELLIE CISLO
St. John Providence Park Hospital

SHELBY COLLINS
Suburban Collection Showplace

LINDA COON
Goat Superintendent

**REPRESENTATIVE KATHY
CRAWFORD**
Michigan House of Representatives

HUGH D. CRAWFORD
Oakland County Commissioner

BOB CUMMINGS
Fair Historian

ARLENE DEFOREST
Hands on Milking Cow Simulator
Chairperson

CARRIE DELONG
Dairy Superintendent

SANDY DOREY
Senior Day

KELLY EBERLY
Epoch Hospitality Group

RON ELISON
Beginning of Life

JULIE FARKAS
City of Novi Library Board

TERRY FIELDS
Oakland County Parks & Rec., Chief
of Recreation Programs & Services

ELISA FIXLER
Studio B

TONY FONTAN
Epoch Hospitality Group

LAURA FRANZECA
Guernsey Farms Dairy

ALEXIS FRYATT
Suburban Collection Showplace

MAYOR BOB GATT
Mayor City of Novi

JAMES (JIM) GOTTS
Shriner Circus

JOHN HANEY
Oakland County Parks & Rec.,

MICHAEL F. HARRIS
Paralyzed Veterans of America

MARSHA HARWOOD
Home Arts Superintendent

JERRY ANN HEBRON
Oakland Avenue Farmers Market
Urban Agriculture

ASHLEY HECKSEL
Suburban Collection Showplace

PAUL HESS
Epoch Hospitality Group

DEB HOLMES
Livingston County Farm Bureau

JESSICA ILOFF
Blue Care Network

ALAN JAROS
MSU Extension - Tollgate Farm And
Education Center

RUTH ANN JIRASEK LEGISLATIVE
Director to Kathy Crawford

STEVE KARAKULA
Art Craft

MARKUS KELLY
Mackinaw Island Travel Bureau

JOE KISH
Shrine Circus

TOM KLICK
Beef Superintendent

KRISTINE KONESCO
Poultry Superintendent

**SENATOR MIKE KOWALL
MICHIGAN**
Senate

ALEXIS LAWRENCE
Farmer's Market Manager /
Michigan Farm to School

KEVIN LAWRENCE
Farmer's Market Manager /
Michigan Farm to School

ASHLEY MANN
Suburban Collection Showplace

STEVE MASTERS
Fifth Third Bank Michigan State Fair

APRIL MAUNU
Suburban Collection Showplace

BOB MCCANN
Bright House Networks

KEN MCCLURE
Kroger

MARTY MCGUIRE
Guernsey Farms Dairy

JACKIE MCMAHON
Suburban Collection Showplace

AL MILLER
Shrine Circus

JOHN MINNIS
Volunteer

JUDY MOORE
Home Arts/ Agriculture Director

MIKE MURRAY
Carrotpass

MARY JANE NOWAK
Fifth Third Bank

LYNN O'BRIEN
Director of District Affairs for
Senator Kowall

TERRI O'BRIEN
Street Marketing (Suburban
Collection Marketing Rep.)

TOM O'CALLAGHAN
Anheuser Busch (Hubert
Distributors)

J.NADIR OMOWALE
Superstar Mentor

COLLEEN ORTMAN
Guernsey Farms Dairy

GLEN & PAT PERKINS
Volunteer

SHARI PETERS
Volunteer

NANCY PHARES
Media Alchemy, LLC

PAIGE PHILLIPS
Suburban Collection Showplace

WILLIS AND CHRIS PLANK
Rabbit Superintendent

ROB REID
Agriculture, Livestock Committee
Member

LISA REIFF
Michigan Association of Fairs &
Exhibitions

SARAH RESSLER
Horse Superintendent

KRISSY RESSLER
Assistant Horse Superintendent

JACK RILEY
Fifth Third Bank

KENT ROBERTS
Urban Youth Agriculture Scholarship
Program Director

LAURA ROCHOW
Suburban Collection Showplace

MAV (DR.) SANGHVI
Providence Hospital/Rotary/City of
Novi ZBA

DEB SCHMUCKER
Center for Education and Leadership
Development Michigan Farm Bureau
(Director)

LC SCRAMLIN
Agriculture, Livestock & Home Arts
Director; Oakland County Fair, GM

JACKIE SCRAMLIN
Agriculture, Livestock & Home
Arts Director; Oakland County Fair,
Director

WALTER SLAN
Volunteer

RAY AND JUDY SMITH
Swine Superintendent

DAN STENCIL
Oakland County, CPRE Executive
Director

CRAIG STIGLEMAN
Shrine Circus

CAL & WHITNEY STONE
2 Stone Events

JESSICA STRIEGLE
Northville Community Foundation
(Mayberry Farm) (Executive
Director)

TIM SULLIVAN
Pepsi

ERIC SUPPES
Universal McCann-Great Lakes
Business Center (RAM)

ED SWEET
Hyatt

SUE WELLS
Oakland Parks & Rec, Ops. Manager

WAYNE WROBEL
City of Novi Council

ERIC YOUNAN
Fifth Third Bank

TARZAN ZERBINI
Shrine Circus

ASSISTANT CHIEF ERICK ZINSER
Novi Police Department

Establishing the vision and direction of an important community event, such as The Michigan State Fair, could never be accomplished without the support and participation of many valued volunteers. A dedicated and talented core group of individuals provided the heart and guidance for the 2015 Fifth Third Bank Michigan State Fair, as the Steering Committee.

Our deepest gratitude and thanks go out to them for their efforts to help make the State Fair a multi-faceted event that effectively serves many broad community objectives.

OUR TITLE SPONSOR FIFTH THIRD BANK



Jack Riley, at podium
Senior Vice President/Affiliate Marketing Director Fifth Third Bank
and Kent Roberts Urban Youth Agriculture Program Director
Photo credit Jane Pourslow

Once again, Fifth Third Bank was proud to serve as the presenting sponsor of the Fifth Third Bank Michigan State Fair. Now in its third year, the fair has firmly re-established itself as one of the more popular Labor Day Weekend traditions as evidenced by its 22% spike in attendance.

This sponsorship is gratifying for Fifth Third Bank for many reasons. As the "Curious Bank," we wondered if Michiganders knew the importance of farming and agriculture to Michigan's economy and its status of our state's second-largest industry. Thanks to the Fifth Third Bank Michigan State Fair, many of them now do. The farming and livestock exhibits spread across the fair's 43 acres provide an educational opportunity for metro Detroit's urban and suburban families, many of whom do not often get to see cows, sheep, goats and horses in real life or learn how the food they eat goes from farm to table.

For the second straight year, the Fifth Third Bank Michigan State Fair coincided with our Stand Up To Cancer (SU2C) campaign. We were grateful for the opportunity to spread our message to the 122,000-plus attendees who helped us raise money by sharing stories of how they fight cancer by using



FIFTH THIRD BANK

the hashtag #HowIFight on social media. Each post earned \$1 for SU2C and fairgoers have helped Fifth Third Bank payout more than \$5 million to SU2C to date.

Additionally, the Fifth Third Bank charitable components align with our mission of improving the lives of those in our communities. With that in mind, we were pleased to be part of an effort that provided more than \$400,000 in contributions to a wide range of community organizations.

While southeast Michigan has a number of events each Labor Day Weekend, we believe the Fifth Third Bank Michigan State Fair is the #1 event for families. It has a variety of activities for all ages and provides the perfect balance of entertainment and education. We are already looking forward to next year's "bigger and better" Fifth Third Bank Michigan State Fair.

- Jack Riley, Senior VP of Marketing,
Fifth Third Bank



Dave Girodat President & CEO Fifth Third Bank Eastern Michigan

MAJOR SPONSORS

The initial question, posed in 2012, as to whether or not the business community would embrace and support a new model Michigan State Fair at the Suburban Collection Showplace in Novi has been answered with a resounding "Yes!" In and around this effort to build on the State Fair Tradition, The Michigan State Fair, a Private Entity LLC, and for-profit organization, which receives no support from taxpayers or the State of Michigan, has formed key partnerships with those who were inspired by the challenge. The various roles these partners play cannot be overstated, and are instrumental to our continued growth as we reestablish, reinvent, and reimagine the role of a State Fair in the 21st Century. Foundational sponsors Fifth Third Bank, Bright House Networks, Suburban Collection Showplace, St. John Providence Health System, Detroit Moslem Shriners, C.F. Burger Creamery, Guernsey Farms Dairy, ITC, and Detroit Convention and Visitors Bureau, Livingston County Farm Bureau, Oakland County Farm Bureau, The City of Novi, Edward Jones Investments of Northville, AV Squared Audio and Visual, Art Craft Display Event Service, Epoch Hospitality Group all joined us as we began this journey and adventure, rekindling a beloved, dormant tradition that had meant so much to so many for so long. These first few years have been a time of astonishingly rapid growth in all components of the Michigan State Fair and includes adding substantial new partners to our sponsor family. Along the way we were fortunate that Kroger Company of Michigan, Pepsi, Sunglo Services,

Metro Sanitation, Elite Surface Shield, Eradico Pest Control, The Michigan Soybean Promotion Committee, 2 Stone Events, Infinity Primary Care, Studio B, Media Alchemy, LLC, Hadrout Design, Pearl Sound Studios, and Hyatt Place Detroit/Novi, among others, all added their singular skills and talents to the efforts of the founding partners and the State Fair Steering committee members, increasing the amazing groundswell of overall support and positivity. All of this combined energy, imagination and inspiration has elevated each successive Fifth Third Bank Michigan State Fair to be better than the last.

The 2015 State Fair continued to build on this network of support and welcomed new partners RAM Truck, Budweiser, Blue Care Network of Michigan, North American Honda, Marvel Apps and the Carrot Pass, Michigan Farm Bureau, U.S. Foods, Oakland County Parks and Recreation, Rosetta Hardscapes, Huron Valley Ambulance Services, Michigan State University Extension, K12, Kalmbach Feeds, and a large increase in commitment from Galaxy Fence Services, The Landscape Group, and Suburban Landscape. We are truly grateful and humbled by all the support that we have received from our sponsorship family and are proud to call them partners as we create a Michigan State Fair that celebrates and promotes Michigan Agriculture, Business, and Industry for the benefit of our fellow Michiganders.



RAM



**Blue Care
Network
of Michigan**

A nonprofit corporation and independent licensee
of the Blue Cross and Blue Shield Association





MICHIGAN STATE FAIR GOLD RIBBON SCHOLARSHIP PROGRAM FOR URBAN AND RURAL AGRICULTURE

Michigan State Fair Gold Ribbon Scholarship Program for Urban and Rural Agriculture awards increased from \$30,000 in 2014 to \$40,000 for 2015, with a total of 54 recipients. These scholarship programs are made possible through the dedicated support of State Fair sponsors Bright House Networks, C.F. Burger Creamery, Fifth Third Bank, the Detroit Shriners, Kroger Company of Michigan, and Guernsey Farms Dairy. Michigan State Fair Gold Ribbon Scholarship Recipients all received at least one gold ribbon from their local County Fair and were also reviewed on the basis of their academic and community involvement. Urban Scholars were considered based on their contribution to agriculture and food education in cities with populations greater than 30,000.

This scholarship program serves as a bridge and connector between our urban and rural communities. These urban farming initiatives are relatively new compared to the more traditional areas within our rural communities. Urban farming initiatives are now serving as important cornerstones in helping many urban areas begin to thrive. The rural winners carry forward the rich Michigan farming traditions that have made our State a national leader in agriculture for more than a century. These scholarship winners clearly demonstrate their passion and commitment, in representing the desires of their generation of young people. As Michigan's second leading industry, these students are real life examples that the agricultural legacy is strong and will continue. This year's winners represent 18 different counties and 10 Urban Gardens/Farms within Michigan.

2015 URBAN WINNERS:

BRIGHTMOOR YOUTH GARDEN
TIERRA MODOCK

CADILLAC URBAN GARDEN
DIEGO BARAJAS
CHRISTOPHER LARA
PAULINA TORRES-GUZMAN

EARTHWORKS
TYLER CHATMAN
LAUREN BROWN-DANZY
BLAIR DANZY
BRYCE DANZY
JULIEN DANZY
ANTHONY MORGAN
AALIA MUHAMMAD

OAKLAND AVENUE URBAN FARM
CARLEE BROWN
ALKESHA GRIFFIN
CHRISTOPHER GRIFFIN
JADE MATHIS
MYA NIXON

OHANA GARDENS
MY'KEL ALLIX
OHANA GARDENS YOUTH PROGRAM
DESTINY SILLS

PUTNAN COMMUNITY GARDEN
CHELSEA BEST

SPRINGWATER LANE HOME GARDEN
ANNA MEASOM

SUN, WATER & SEEDS 4H CLUB
AARON HUTKA
ALANA HUTKA
SUSANNA KHANUK
GWENDOLYN KLENKE
DECLAN BUSH
ETHAN BUSH

TOLLGATE FARM EDUCATIONAL
HEATHER GREGORY

Our winners are diverse and represent the ever-changing culture of our great State. With the generosity their investment of time and energy, plus pride in their work, will deliver a strong dividend for not only the scholarship winners but also Michigan State Fair to the State of Michigan.

A special thanks to Senator Mike Kowall, Representative Kathy Crawford, Director of District Affairs for the Office of Senate Majority Floor Leader Mike Kowall, Lynn O'Brien, and Chief of Staff for Representative Kathy Crawford, Ruth Ann Jirasek, for collaborating on the visit to the State Capitol, the Senate, and the house of Representatives making lasting memories for the scholarship winners. We would also thank Bright House Networks and The Kroger Company of Michigan for leading the charge to increase funds for the scholarship programs for 2015:

2015 RURAL WINNERS:



DAIRY

CIARA ALLAN

LIVESTOCK: SWINE

LAUREN BICKEL

*OVERALL LIVESTOCK

JAYCIE BROWN

LIVESTOCK: SHEEP

JAYCIE BROWN

*OVERALL LIVESTOCK

BRAD CHAPMAN

LIVESTOCK: SHEEP

BRAD CHAPMAN

LIVESTOCK: GOATS

LAURA COON

*OVERALL HOME ARTS/

AGRICULTURE

LYDIA DAVENPORT

HOME ARTS

LYDIA DAVENPORT

DAIRY

MACKENZIE DELONG

HOME ARTS

HUNTER DIVERT

HOME ARTS

GRETA GMAZEL

HOME ARTS

MEGAN GUYETTLER

HOME ARTS

MEGAN HEYDALUFF

HOME ARTS

CAMILLE KOWALSKI

EQUINE

KELSEY LAYMAN

HOME ARTS

KARLIE LOKUTA

HOME ARTS

JESSICA MARIMIETRI

LIVESTOCK: BEEF

KENDRA MERRIMAN

HOME ARTS

OLIVIA OMER

*OVERALL LIVESTOCK

ETHAN PLANK

LIVESTOCK: RABBIT

ETHAN PLANK

*OVERALL LIVESTOCK

TOM PURVES

LIVESTOCK: POULTRY

TOM PURVES

*OVERALL HOME ARTS/

AGRICULTURE

ALEXANDRA REAU

AGRICULTURE

ALEXANDRA REAU

HOME ARTS

BLAISE RHEIN

HOME ARTS

LAREN RINGWOLD

LIVESTOCK: SWINE

MADALIN ROBERTS

LIVESTOCK: GOATS

TAYLOR WALKER

*OVERALL LIVESTOCK

TARA WILSON

LIVESTOCK: RABBIT

TARA WILSON

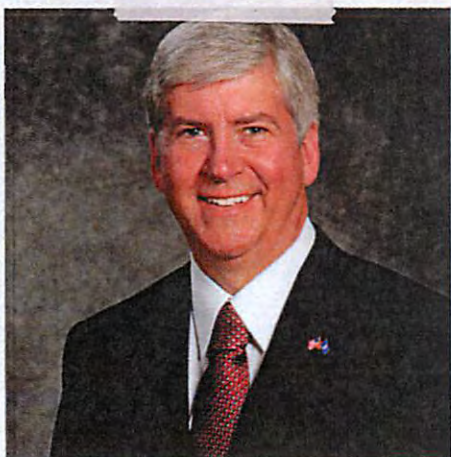
HOME ARTS

KELSEY YARGER



Photo credit Nikita Cargins

OUR COMMUNITY PARTNERS



Rick Snyder
Governor



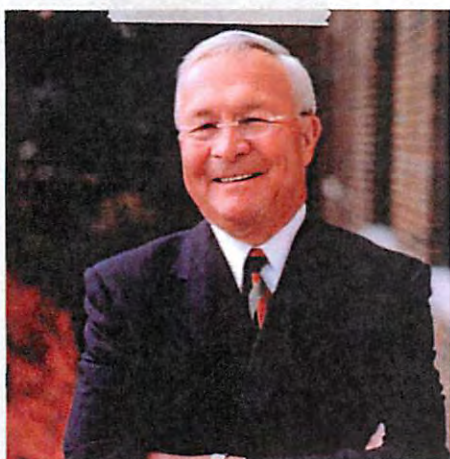
Jamie Clover Adams
Director, MDARD



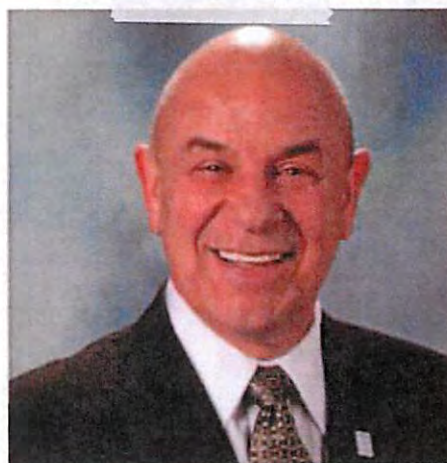
STATE OF MICHIGAN
EXECUTIVE OFFICE
LANSING



STATE OF MICHIGAN
EXECUTIVE OFFICE
LANSING



L. Brooks Patterson
Oakland County Executive



Bob Gatt
Mayor, City of Novi



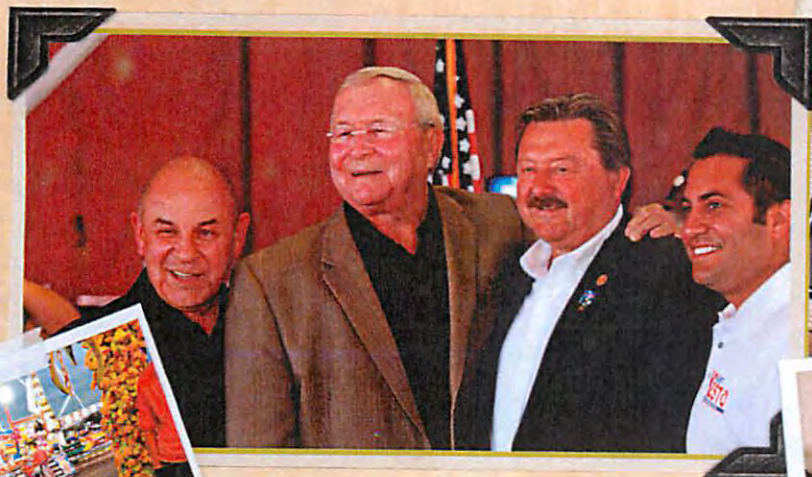
MICHIGAN STATE
UNIVERSITY | Extension



Special Thank You to:

**Novi Police Department, Novi Fire Department,
and St. John Providence Health System**

GIVING BACK TO THE COMMUNITY / CHARITY PREVIEW CELEBRATION



Sponsor and Participant



Photo Credit Nancy Phares



A renewed commitment to community, family fun and charitable giving has been key to the vision for the Michigan State Fair since its revival. Each year we share our time and talents, as well as funding and support to many charitable and community organizations throughout the State. We are forever dedicated to playing our part in helping organizations and individuals who are making Michigan a better place for all. In presenting Michigan's #1 Family Event, we also recognize that for various reasons, whether financial, medical, or other special circumstances, not all Michigan families have the ability to attend and enjoy the State Fair. In this spirit, we are delighted to host our marquee preview event each year, to spread the fun and magic of the Fifth Third Bank Michigan State Fair, thorough the Grand Affair and Charity Preview Night Celebration, to those who may enjoy it most.

The fresh approach to the preview evening for the 2015 Fifth Third Bank Michigan State Fair, Thursday, September 3, was extremely well

received! Outdoors, the Children's Charity Preview Party welcomed an estimated 5500 Michigan family members involved with local non-profit organizations such as the Rainbow Connection, Make-A-Wish Foundation, Special Olympics and Shriners Children's Hospitals, as well as active military and veterans. This year the State Fair made a broader community outreach for this very special, invitation-only, free event, and welcoming roughly 30% more attendees over 2014. Indoors, the sponsors networking reception and cocktail hour, was a great success, with several hundred community leaders, sponsors and supporters of the Fair enjoying a bountiful buffet provided by bd Mongolian Grill, Epoch Hospitality Group, Famous Dave's, Shriners Silver Garden Events Center, Olive Garden, Applebee's (Novi), Kroger Company of Michigan, Guernsey Farms Dairy, A Serendipity Cakery, Duel Restaurant (Novi), Rojo Mexican Bistro (Novi).



Sponsor:



**Detroit Food
POLICY COUNCIL**

FRIENDS OF THE FAIR - OUR VOLUNTEERS

Enormous thanks to our 2015 Fifth Third Bank Michigan State Fair Volunteers!

We are grateful for all of the many volunteers who shared their time and talent with us in 2015. Our volunteers join us from all walks of life, a broad array of communities and organizations from across the State, and even a husband and wife team from Florida! This year we were fortunate to have Blue Care Network of Michigan Employees join our ranks and the Detroit Moslem Shriners returned, creating the largest volunteer group to date.

With volunteer participation up over 38% from 2014, the Suburban Collection Showplace was filled with blinding fluorescent yellow t-shirts bustling everywhere. Volunteers performed every imaginable Fair function, from wrist-banding visitors, to waving crowds over to enjoy a contest at the Pepsi Contest Central Stage, or to enjoy a unique performance at the Blue Care Network of Michigan Community and Cultural Stage. They worked at the Bright House Network Shrine Circus, answered questions at the State Fair historical booth—and also provided assistance at multiple general information booths. The Fair volunteers are truly the shining face of the Fair, and their smiles were mirrored by the smiles of our fairgoers, as they graciously thanked Fifth Third Bank Michigan State Fair staff and volunteers for working so hard to keep a Michigan tradition alive.

When you volunteer, it means you give of yourself without condition and with heartfelt devotion. Our devoted volunteers were a reflection of compassion and unselfish caring, working tirelessly throughout the Fair weekend to help bring back an event that Michigan so well deserves. We are so grateful for our new family of volunteers and look forward to growing participation in years to come. There is no "I" in Team, but we are so thankful there is a "U" in Volunteer!



OVER 500 VOLUNTEERS

Live warm human investment of time, energy, smiles and hugs was one of the essential ingredients to the success of the 2015 Fifth Third Bank Michigan State Fair!



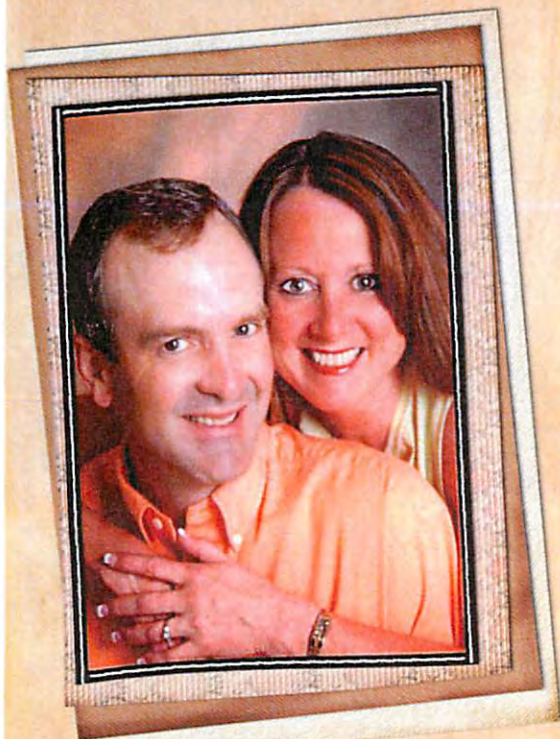
**Blue Care
Network
of Michigan**

A nonprofit corporation and independent licensee
of the Blue Cross and Blue Shield Association

INTERESTED IN VOLUNTEERING AT THE STATE FAIR, PLEASE
CONTACT US AT INFO@MICHIGANSTATEFAIRLLC.COM

DISTINGUISHED SERVICE AWARDS

A new State Fair means new traditions. Each year the Fifth Third Bank Michigan State Fair recognizes one or two individuals that have shown impactful dedication and freely invested their time and energy to help revive the annual tradition of a Michigan State Fair. In 2015 it was abundantly clear that three individuals invested their time, talent, heart and soul to help reestablish the great Michigan State Fair Tradition. Mark and Deb Chapman and Mike Mulligan were recognized at the Grand Affair kickoff event as the recipients of the 2015 Fifth Third Bank Michigan State Fair Award for Distinguished Service.



MARK AND DEB CHAPMAN

Mark and Deb have been actively involved in the Fifth Third Bank Michigan State Fair since its beginning. Mark and Deb serve on the Steering Committee, representing the livestock part of the Fair. They serve as the sheep superintendents and Deb is also responsible for Premium List Catalog for the State Fair.

The Chapman family has had a long history with the Michigan State Fair, and were continuous exhibitors at the old fair on Eight Mile for more than 70 years. Mark's grandfather, Delmont Chapman, served on the State Fair Advisory Board for many years in the 60's and 70's. Mark practically grew up showing sheep at the State Fair, and he and his family were greatly disappointed in the closing of the original fair, which at that time was the oldest State Fair in the nation.

Mark and Deb believe in the State Fair and the opportunity for the agricultural sector to showcase itself to the overall population of the state. As each generation becomes further removed from the farm it is very important for agriculture to share the accumulated knowledge of generations, and educate the general public.



Photo Credit Jack Purslow

MIKE MULLIGAN

Mike has been a fixture at the Suburban Collection Showplace over the last few years and as the State Fair has expanded, he has also been very instrumental as we work to create a flexible and modern fairgrounds. By sharing his wisdom and experience with landscaping, earth moving, and hard scape creation we were able to simultaneously improve the Suburban Collection Showplace, create unique spaces for the 2015 State Fair, and enhance the overall experience of visitors.

LIVESTOCK AND SHOWMANSHIP



2015 was a Banner year in the Livestock/Home Arts/Equine Areas of the Michigan State Fair!

Agriculture Directors LC and Jackie Scramlin are proud to announce that once again they saw substantial increases in nearly all areas. With increases of 55% in the Agriculture and Home Arts areas and total increases of 60% in the Livestock areas, (especially Youth) showed that the success of the Fifth Third Bank Michigan State Fair will continue to showcase the best our state has to offer, as well as drawing exhibitors and participants from throughout the Midwest. With the only area showing a decrease being Poultry (due to the 2015 summer ban on exhibiting live birds), exhibitors still used the opportunity to show pictures of their birds and provided fairgoers with educational exhibits to inform them of their projects.

New for the 2015 fair was the Equine (horse) area! Superintendent Sara Ressler did an outstanding job putting together a program for all types of horses, concluding with a Heavyweight Horse Pull on Labor Day Monday.

The Michigan Make It Yourself with Wool contest was new this year. Contestants created garments comprised of at least 50% wool, and then modeled them for the audience at the Fair. The local winners advanced to the National Make It Yourself with Wool Contest. They were judged not only on their modeling ability, but also on the construction of their garment.

Once again the Fifth Third Bank Michigan State Fair

offered the Rural Youth of the state an opportunity to compete for \$20,000 in scholarships (up from \$15,000 in 2014). The 26 winners from 16 counties not only received their scholarship, but were also invited to the state capital to be recognized on the State Senate floor courtesy of Senator Mike Kowall. State Representative Kathy Crawford also recognized the winners in the Michigan House of Representatives.

Another highlight of the fair for exhibitors was the Showmanship Sweepstakes and the Michigan State Fair Livestock Judging Contest. Showmanship Sweepstakes had the top youth showmen from the five livestock areas compete for the top overall showman. In the Livestock Judging Contest 38 contestants from 15 counties judged classes and gave reasons or answered questions on the animals presented. Many of the contestants were preparing for National Livestock Judging Contests including the Michigan State University Livestock Judging team.

Also increasing this year were the number of exhibitors who built educational displays to share more information about their species. In addition to the outstanding livestock shows that went on all weekend, our fair guests were able to watch sheep shearing and enjoy watching the baby animals in the Beginning of Life area.

LIVINGSTON COUNTY
FARM BUREAU

OAKLAND COUNTY
FARM BUREAU





Photo Credit Nikita Cargins

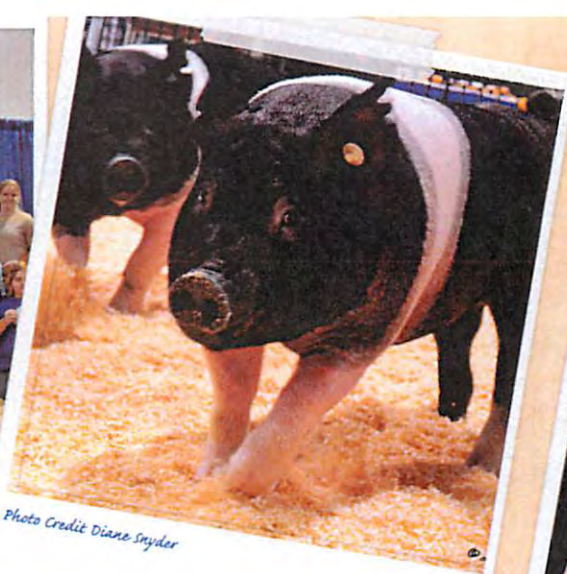


Photo Credit Diane Snyder

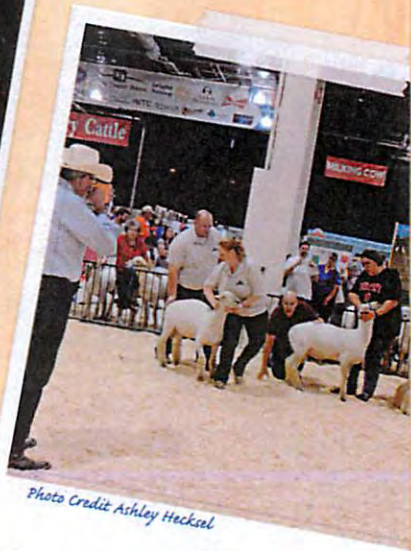


Photo Credit Ashley Hecksel

2015 INCREASE BY SPECIES

Open Dairy 20%	Open Rabbits 70%
Youth Dairy 24%	Youth Rabbits 43%
Open Beef 17%	Draft Horses no 2014 Show 8
Youth Beef 48%	Light Horses No 2014 Show 170
Open Sheep 36%	No Live Birds in 2015 decreases in birds
Youth Sheep 33%	Open Poultry -40%
Open Goats 152%	Youth Poultry -38%
Youth Goats 33%	
Open Swine 172%	
Youth Swine 217%	

2015 SUPERINTENDENTS

AGRICULTURE DIRECTORS
LC AND JACKIE SCRAMLIN

EQUINE
SARA RESSLER

BEEF
TOM KLINK

DAIRY
CARRIE DELONG

SHEEP
MARK & DEB CHAPMAN

GOATS
LINDA COON

SWINE
RAY & JUDY SMITH

POULTRY
KRISTINE KONESKO

RABBITS
WILLIS & CHRIS PLANK

HOME ARTS
MARSHA HARWOOD

AGRICULTURE
JUDY MOORE

URBAN AGRICULTURE
JERRY HEBRON



Photo Credit Diane Snyder



HOME ARTS AND AGRICULTURE

Exhibitor participation in the Home Arts and Agriculture section of the Fifth Third Bank Michigan State Fair continued to soar in 2015, with an increase of 55% over the 2014 increase of 100%. Many more growers of Michigan commodities more canned and preserved foods, more urban and rural youth agricultural displays, and along with more Home Arts and Craft projects filled the Home Arts Pavilion this year! The Michigan Fair Favorites Cookbook was updated, featuring more than 160 more recipes gathered by Home Arts Superintendents Marsha Harwood and Judy Moore, with the addition of popular local restaurant chefs, and the area added a stage for contests, demonstrations and entertainment.



Photo Credit Diane Snyder youth make it with wool State Competition



Photo Credit J PURSLOW



Photo Credit Louis Wallock



Photo Credit Ashley Hecksel



Photo Credit Ashley Hecksel



Photo Credit Ashley Hecksel



Photo Credit Ashley Hecksel



Photo Credit Nikita Cargins

**OAKLAND COUNTY
FARM BUREAU®**

**MICHIGAN
FARM BUREAU®**

**LIVINGSTON COUNTY
FARM BUREAU®**



NEW FOR 2015: URBAN AGRICULTURE COORDINATOR AND SCHOLARSHIP LIAISON COORDINATOR JERRY HEBRON

This year the State Fair Welcomed new Urban Agriculture Coordinator and Scholarship Liaison Coordinator Jerry Hebron. Jerry visited over 16 community, school and church gardens in Detroit, Hamtramck and Highland Park and made contact with two gardens in Flint, and Battle Creek. Her dedication of telling the story of the “new” State Fair and the scholarship program increase the number of applications received to over 50. Scholarships were awarded to 25 applicants from Detroit, Highland Park, Novi, West Bloomfield, Wixom, Pinckney, Farmington Hills and Hazel Park.



Jerry Hebron and Steve Masters
Photo Credit Nancy Phares



Photo Credit Nancy Phares

Oakland Avenue
FARMERS
MARKET



Photo Credit Nancy Phares

NEW FOR 2015: EQUESTRIAN PAVILION



RAM

One of the most important new features to debut at the Fifth Third Bank Michigan State Fair in 2015 was the new Ram Truck Equine Pavilion, at the western end of the Fairgrounds, managed by new Superintendent Sara Ressler. The two arenas and barns were very warmly received by fairgoers and hosted classes in English (Hunt and Saddle Seat), and Western Equitation plus Pleasure classes, Barrel Racing, Reining, and expanded pulling events, as well. As the Fair continues to evolve, expanding the equine component is an important natural progression and development of longtime State Fair attractions.



Photo Credit Nancy Phares



Photo Credit Debra Morgan



Photo Credit Debra Morgan



Photo Credit Nancy Phares



Photo Credit Lady Di



Photo Credit Patrick Gogolin

A special Thank you to Galaxy Fence, The Landscape Group, Rosetta Hardscapes and Suburban Landscape Supply for your help and support with Equestrian Arena, Green Space, and various grounds improvements



NEW FOR 2015: HONORED CITIZENS DAY

**OAKLAND
COUNTY PARKS**
DestinationOakland.com

Honored Citizens Day program and activities debuted on Friday, September 4, welcoming all those 65 years of age and older to the State Fair, free of charge, and providing box lunches and refreshments, courtesy of St. Johns Providence Health Systems and U.S. Foods. Buses ferrying seniors from across Southeast Michigan queued up outside the Suburban Collection Showplace, and multi-generations of Michigan families enjoying the Fair together were also very much in evidence. The Honored Michigan Citizens for 2015 were Marv Gans, Northville, Florence Baptist, Novi, Marion Cowan, Northville, and Barb Lewis, Novi, and the grand prize for best essay describing a Michigan State Fair memory was awarded to Judith Lewis Hansel, of Canton.

OAKLAND PRESS



Photo Credit Nikita Cargine



Photo Credit Nikita Cargine



Photo Credit Mary Jane Scott



STATE FAIR PARADE



The First Annual State Fair Parade along Grand River in Novi welcomed more than 350 participants from across Southeast Michigan, anchored by the Detroit Shriners mobile brigade.

MEGAJAM

DETROIT
METROTIMES

The exciting new Monday Michigan Mega Jam, presented by the Metro Times, was one of the new features of the 2015 Fifth Third Bank Michigan State Fair, which offered an All-Star band of luminaries paying tribute to decades of Michigan hits, including Jill Jack, Thornetta Davis, Nadir Omowale, Tosha Owens, Sean Blackman, Brandon Calhoon, Caleb Gutierrez, Jorg Kerasiotis, Steffanie Christi'an and Alison Albrecht, backed by the stellar St. Cecilia (Todd Glass, James Simonson, Brett Lucas) with very special guest Chris Codish on keyboards, along with Dezi Magby, DJ Psycho of the Detroit Techno Militia. This troupe of multi-genre performers represents some of Detroit's finest talent, recognized around the globe for their shining vocal ability and stellar musicianship.



Photo Credit Nancy Phares



Photo Credit Nancy Phares



Photo Credit Nancy Phares

NEW FOR 2015: CARROT APP



Marvel Apps was very recently named one of the “50 Michigan Companies to watch for 2015” by Governor Rick Snyder, sponsored by the Michigan Celebrates Small Business coalition.

The Fifth Third Bank Michigan State Fair forged an exciting new partnership with Marvel Apps of Royal Oak and their new, free Carrot Pass mobile app for iPhone and Android, a ground-breaking new product that utilizes beacon technology to offer financial rewards for living an active lifestyle, and allows participating businesses to reward patrons for the number of steps they take each day for the 2015 Fair. The partnership allowed fairgoers to buy tickets, schedule their day and get entertainment reminders, navigate the newly expanded fairgrounds via maps, get information on the animals and exhibits while strolling the grounds, and vote in the nightly State Fair Super Star contest.



Photo Credit Nikita Cargins

RAM TEST DRIVE EXPERIENCE

Thousands of Michigan State Fair-goers experienced the 40,000-square-foot interactive Ram Truck adventure zone at this year's expanded state fair and the Raminator monster truck – Monster Truck Racing Association's “Truck of the Year” – on display, ensuring fun for the whole family.

“Ram is proud to be a part of this year's Michigan State Fair, a longstanding tradition that celebrates the importance of farmers and farming communities to our state,” Jeff Hines, Director of the Great Lakes Business Center – FCA US LLC, said. “The Ram test track is always a crowd pleaser and we welcome the opportunity to bring this exciting event to the fair so participants can experience the power and capability of Ram trucks.”



Photo Credit Nikita Cargins



Photo Credit Nikita Cargins

HONDA NORTH AMERICA ATV TEST TRACK

Hundreds of Fair goers lined up daily to test drive newest all-terrain vehicles from North American Honda. The roughly 2 acre test track area was complete with a vehicle showroom, safety orientation area, and a fully decked 50 foot semi that dominated the Eastern most area of the Fairgrounds.



Photo Credit Nikita Cargins



ST JOHN PROVIDENCE HEALTH SYSTEMS MAIN ENTERTAINMENT STAGE



FIFTH-THIRD BANK
MICHIGAN
STATE FAIR

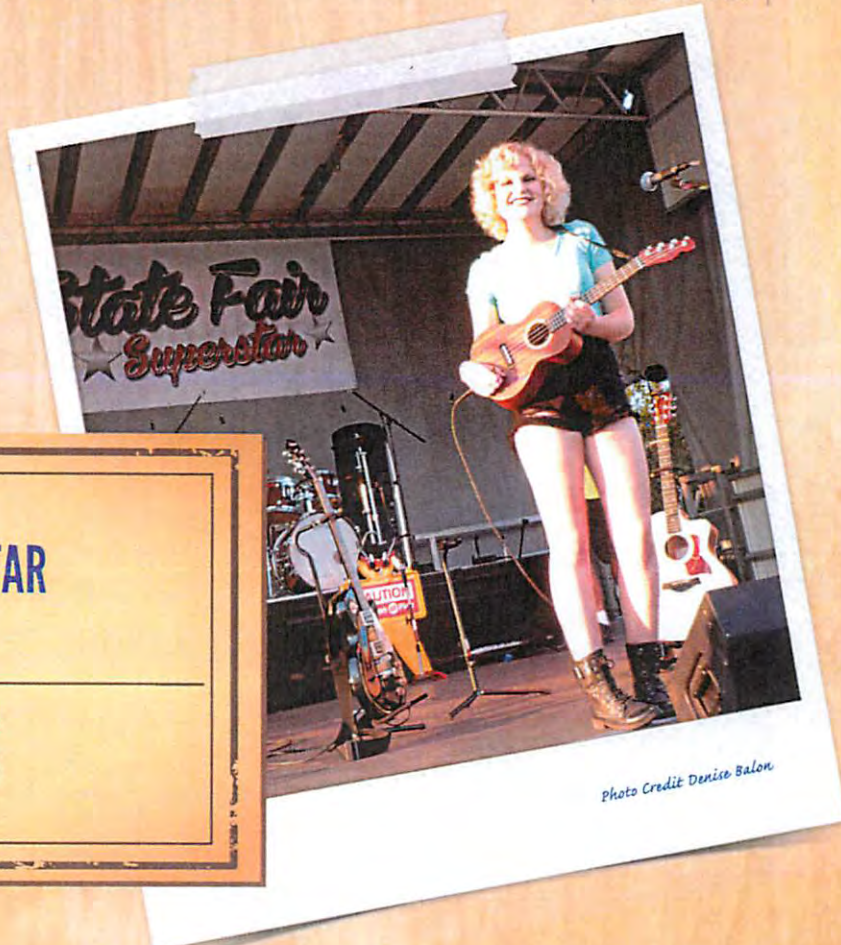


State Fair
Superstar



STATE FAIR SUPERSTAR
CONTEST WINNER

CARLY BINS



Superstar Contest: The Second Annual State Fair Superstar contest offers a purely Michigan mentoring twist on the standard pop music talent contest formula! Sixteen finalists performed on the Main Stage Friday evening September 4, and Saturday evening September 5, with the Grand Prize Winner Carly Bins, 16, of Northville, plus Runners-Up, Elise King of Detroit and Mia Green of Troy, headlining the Main Stage on Sunday evening September 6.

The Superstar prize package includes \$2000 cash, plus

songwriting advice and artist and repertoire coaching from award-winning artist/producer Nadir Omowale, live performance booking consultation from 2 Stones Events, and production of a three song EP at world famous Pearl Sound Studios of Canton, with internationally renowned sound engineer and producer Chuck Alkazian, in addition to Indie Music Business Coaching from new Music Mentor Jill Jack.

The new EP from 2014 Superstar Winner Alison Albrecht, 15, of Birmingham,

was also released during the State Fair, she signed hundreds of autographed copies on the Midway during the weekend, performed a solo set on the Main Stage, and also performed as a featured member of the All Star ensemble Michigan Mega Jam, including a powerful duet with Superstar Mentor Jill Jack on Jack's original "It Makes Me Wonder". "Alison Albrecht" is available on iTunes and the debut single "Midnight" is also streaming at www.AlisonAlbrecht.com

TWO STAGES OF FUN!

ST JOHN PROVIDENCE HEALTH SYSTEMS MAIN ENTERTAINMENT STAGE

State Fair Choir

In the third year of the Michigan State Fair Choir, "100 Years of Broadway" was performed under the direction of Elisa Fixler. With more than two dozen participants coming from the locales of Trenton, Ann Arbor, Grand Blanc and many cities in between, the group put on a great show!



Photo Credit Nikita Cargins



BLUE CARE NETWORK COMMUNITY AND CULTURAL STAGE

2015 marked Blue Care Network of Michigan joining the State Fair as the sponsor of the Community and Cultural Stage to help us celebrate cultural diversity. The state of Michigan is historically a rich melting pot of diverse cultures, the state we know and love today was built by centuries of immigrants from all corners of the world, with all of their myriad ethnicities and traditions. Dr. Mav Sanghvi and the Entertainment Committee reached out to all the various international embassies in the Metro Detroit area, with an invitation to showcase and celebrate culture and their heritage at the Fifth Third Bank Michigan State Fair.

The mission of this new stage is to celebrate the wealth of our diversity with a broad audience.



Photo Credit Nikita Cargins



Photo Credit Nikita Cargins

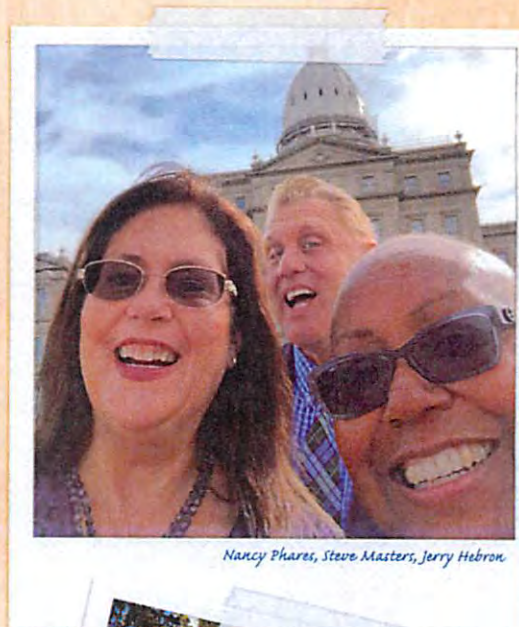


Photo Credit Nikita Cargins

OUR SOCIAL MEDIA



The Fifth Third Bank Michigan State Fair Facebook page, which debuted at the end of January 2013, peaked at nearly 25,000 followers by the end of the 2015 State Fair, with spirited conversation and terrific engagement, as fans enjoyed news about developments with the State Fair, Michigan agriculture, product production, tourism and future Fair endeavors. Along the way, the number of Fair followers surpassed that of many several other large, local festivals and events, some with much longer histories. The Facebook page was generating more than a half million impressions per week during the weeks leading up to and during the State Fair. The State Fair Twitter page has also doubled its followers through the course this year; with much more engaged activity, tags and re-tweets, as well.



Nancy Phares, Steve Masters, Jerry Hebron



State Fair Superstars Carly Bins (2015) and Alison Albrecht (2014)



Roop Raj Fox 2, Ken McClure Kroger Co. of Michigan, Mackenzie Martin MSU Product Center

22,000 + INCREASE IN FACEBOOK FANS IN LESS THAN 2 YEARS!



MEDIA PARTNERSHIPS AND ADVERTISING

Media Partnerships and Advertising: The Fifth Third Bank Michigan State Fair further built on very solid media and advertising partnerships with Fox 2, CBS Radio stations WOMC 104.3 FM, Amp Radio, and WYCD, Bright House Networks, Cumulus Radio WJR, and Hometown Newspapers in 2015, and also enjoyed great, warm recognition and statewide media coverage of the new, private entity Michigan State Fair, LLC. The Fair also added important new collaborative media partnerships with Adams Outdoor and the Detroit Public Television show Under the Radar Michigan, Hour Detroit Magazine came aboard as a sponsor of the kitchen stage, The Oakland Press/Digital First Media supported the new Senior Day programs, and the Metro Times was a proud partner of the Monday Michigan Mega Jam.



104.3
WOMC
DETROIT'S GREATEST HITS

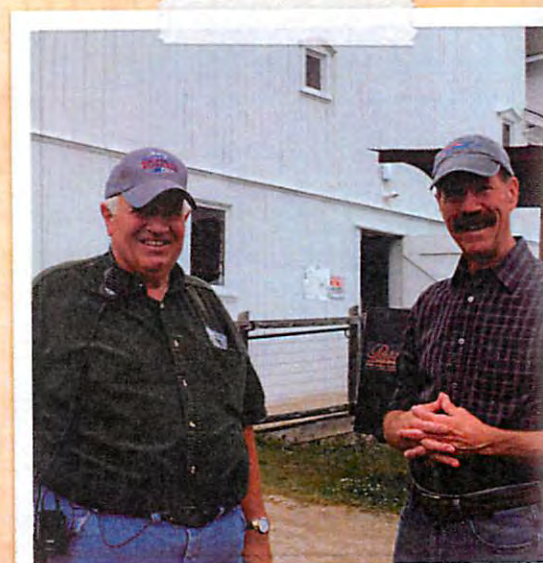
99.5 WYCD
DETROIT'S COUNTRY
WWW.WYCD.COM

under the radar
UTR MICHIGAN

The wonderful State Fair and Fox 2 partnership is once again deserving of special recognition, as their news planning editors and promotion and marketing department went above and beyond to support many important Fifth Third Bank Michigan State Fair initiatives, including the Superstar Contest, for which they ran a free recorded promo during July that helped boost applicants, and also Urban Agriculture initiatives supported by the State Fair, plus the Michigan Mega Jam, Make it with Wool contest, 4-H programs, Farm Fresh Cookbook and more

NEWS/TALK
WJR
760am

98.7 AMP!
RADIO
MORE HIT MUSIC EVERY HOUR
WAAAAAY LESS COMMERCIALS!



UTR Michigan's Tom Daldin and LG Scramlin talk State Fair, old and new.



HOURL

DETROIT

DETROIT
METRO TIMES

Back Stage at Fox 2 before Megajam Live segment with performers Brett Lucas and Jill Jack, 5/3 Bank's Jack Riley, and performer James Simonson.



Artist/Producer/Mentor Nadia Omwonde with 2014 Supertar Alison Albrecht, in studio at Fox 2.



Colleen Ortmann, Jay Towers, Steve Masters at Fox 2 Cooking school



Renee Chodkowitz "The Great Foodini" and Steve Masters Cooking with Kids at the Fox 2 Cooking school

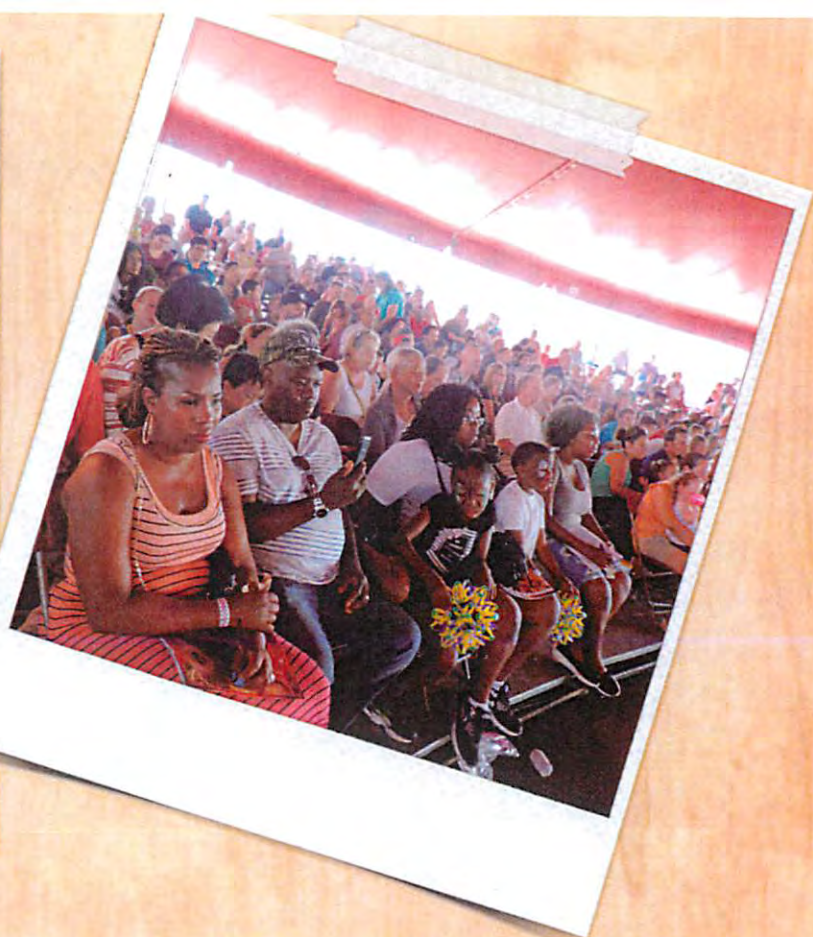


THE IMPACT

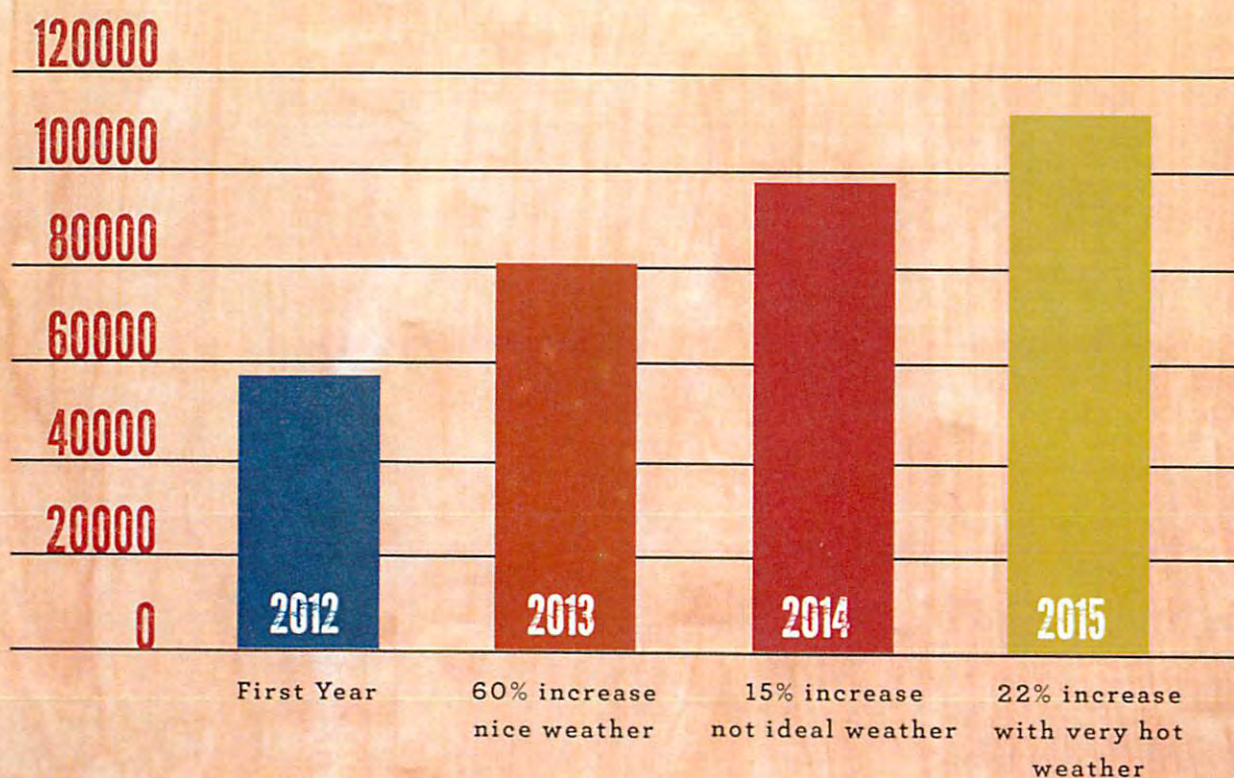
People from over 383 Cities, Villages, and Townships in Michigan visited the 2015 Fair along with residents from 7 States! Below are our some of the communities where our guests call home

PEOPLE FROM
383 CITIES, VILLAGES
AND TOWNSHIPS
WERE OUR GUESTS

ALLEN PARK	DUNDEE	HOLT	NEW HAVEN	SAGINAW
ALMONT	EAST LANSING	HOPKINS	NEW HUDSON	SALINE
ALPENA	EASTPOINTE	HOWELL	NEWAYGO	SHELBY TWP.
ANN ARBOR	EATON RAPIDS	HUNTINGTON WOODS	NEWPORT	SHERIDAN
ARIZONA	EAU CLAIRE	INKSTER	NILES	SMITHS CREEK
ARMADA	EDWARDSBURG	IONIA	NORTH BRANCH	SOUTH LYON
AUBURN	EMMET	JACKSON	NORTHVILLE	SOUTH ROCKWOOD
AUBURN HILLS	FARMINGTON	JASPER	NOVI	SOUTHFIELD
BATH	FARMINGTON HILLS	JONESVILLE	OAK PARK	SOUTHGATE
BELLEVILLE	FARWELL	KALAMAZOO	OKEMOS	ST. CLAIR SHORES
BELLEVUE	FENTON	KANSAS	ONONDAGA	ST. JOHNS
BERKLEY	FERNDAL	KAWKAWLIN	ORTONVILLE	ST. JOSEPH
BIRMINGHAM	FLAT ROCK	KEEGO HARBOR	OWOSSO	ST. CHARLES
BLOOMFIELD HILLS	FLINT	LAKE ANN	OXFORD	STANDISH
BRIGHTON	FORT GRATIOT	LAKE ORION	PARMA	STANWOOD
BROWN CITY	FOWLERVILLE	LANSING	PAW PAW	STERLING HEIGHTS
CANTON	FRANKENMUTH	LINCOLN PARK	PERRY	TAYLOR
CARLETON	FRANKLIN	LINDEN	PETERSBURG	TEMPERANCE
CARO	GARDEN	LIVONIA	PETOSKY	TRENTON
CASS CITY	GARDEN CITY	LOWELL	PINCKNEY	TROY
CENTER LINE	GOODELLS	LUPTON	PLAINWELL	UTICA
CHARLOTTE	GRAND BLANC	LYONS	PLEASANT LAKE	VAN BUREN TWP.
CHELSEA	GRAND LEDGE	MACOMB	PLYMOUTH	VASSAR
CLARKSTON	GRAND RAPIDS	MADISON HEIGHTS	PONTIAC	WALLED LAKE
CLAWSON	GRASS LAKE	MANCHESTER	PORT HURON	WARREN
CLINTON TWP.	GREEN OAK TWP.	MARNE	PORTLAND	WASHINGTON
CLIO	GROSSE ISLE TWP.	MARYLAND	PRESCOTT	WATERFORD TWP.
COMMERCE	GROSSE ISLE	MASON	RAPID RIVER	WAYNE
CONCORD	GROSSE POINTE	MAYBEE	RAVENNA	WEBBERVILLE
CONKLIN	HARPER WOODS	MAYVILLE	REDFORD TWP.	WEST BLOOMFIELD
CROSWELL	HARRISON TWP.	MELVINDALE	RICHLAND	WEST BLOOMFIELD TWP.
DAVISBURG	HARTLAND	MERRILL	RIVER ROUGE	WESTLAND
DEARBORN	HASLETT	METAMORA	RIVERVIEW	WHITE LAKE
DEARBORN HEIGHTS	HAZEL PARK	MIDDLEVILLE	RIVES JUNCTION	WHITMORE LAKE
DECKER	HEMLOCK	MILFORD	ROCHESTER	WILLIAMSTON
DECKERVILLE	HIGHLAND	MILLINGTON	ROCKWOOD	WIXOM
DETROIT	HIGHLAND PARK	MONROE	RODNEY	WYANDOTTE
DEWITT	HIGHLAND TWP.	MT. CLEMENS	ROMULUS	YPSILANTI
DOWAGIAC	HILLSDALE	NEW BALTIMORE	ROSEVILLE	
DOWLING	HOLLY	NEW BOSTON	ROYAL OAK	



YEARLY ATTENDANCE INCREASES



THE FIFTH THIRD BANK MICHIGAN STATE FAIR:

ONE MORE DAY OF
FUN IN 2016!

2016

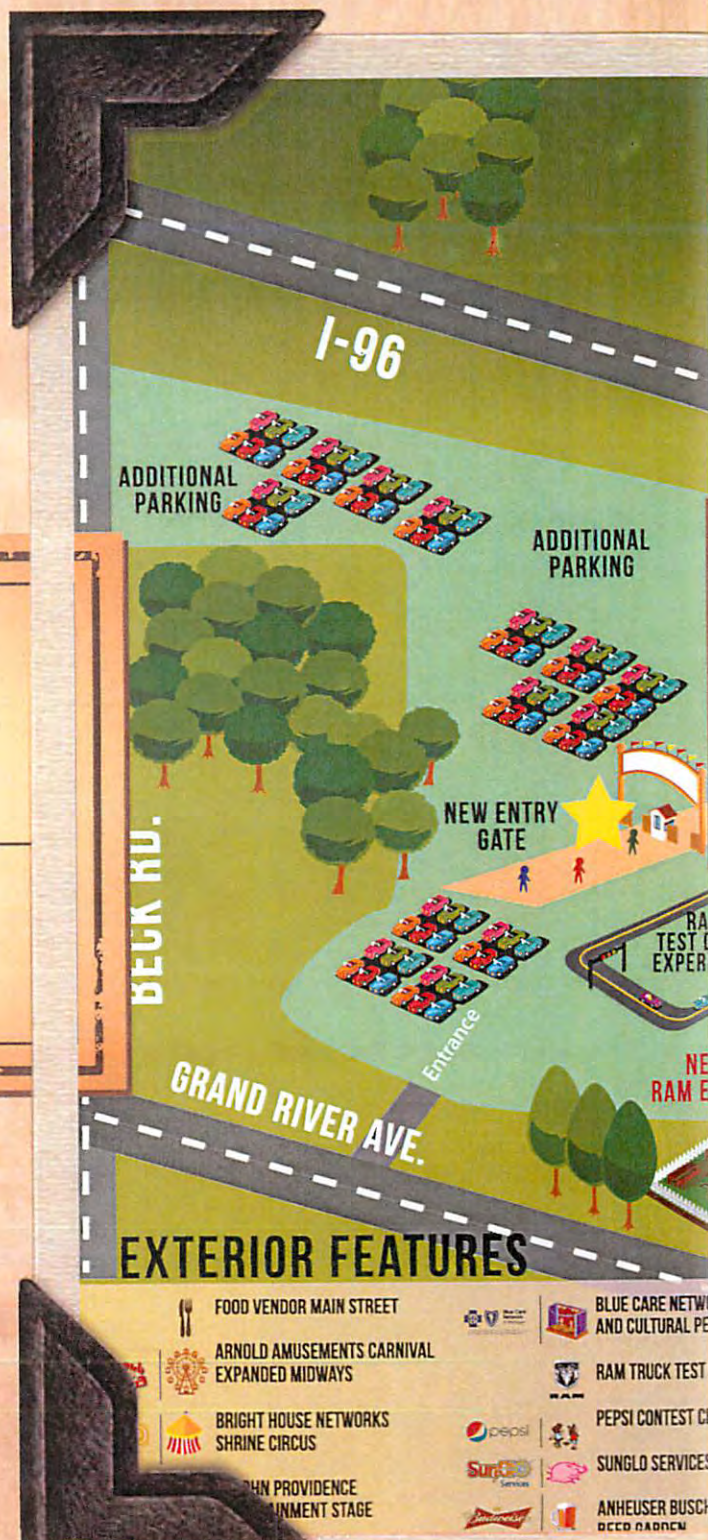
SEPTEMBER
1, 2, 3, 4, 5



CONTACT US:

248.348.6942

INFO@MICHIGANSTATEFAIRLLC.COM



MICHIGAN'S #1 FAMILY EVENTSM BIGGER, BETTER & MORE FUN!

THIRD BANK
MICHIGAN
STATE FAIR

Michigan's #1 Family EventSM

BIGGER, BETTER AND MORE FAMILY FUN!
LABOR DAY WEEKEND 2015!

INTERIOR HALL FEATURES

ANIMAL EXHIBITS
COWS GOATS
SHEEP RABBITS
HORSES PIGS



RAM TRUCK LIVESTOCK
SHOW ARENAS



C.F. BURGER CREAMERY OFFICIAL
MICHIGAN BUTTER COW



GUERNSEY FARMS DAIRY ENDLESS
CUP OF CHOCOLATE MILK



FARM BUREAU BEGINNING OF LIFE
YOUNG ANIMAL AND FARMER FOR
A DAY EXHIBITS



OUR MAGAZINE KITCHEN AND
DEMONSTRATION STAGE



KROGER MICHIGAN MADE
PAVILLION

FARMERS MARKET

COMMERCIAL VENDORS AND
EXHIBITORS

ROCK-N-ROLL K9'S DOG SHOW

ANTIQUE TRACTOR DISPLAYS

Artist rendition not to scale
and subject to change



OUR VALUED MICHIGAN STATE FAIR, A PRIVATE ENTITY, LLC 2015 PARTNERS

FIFTH THIRD BANK MICHIGAN STATE FAIR



Exhibit "C"

MEMORANDUM



TO: DAVID E. MOLLOY
DIRECTOR OF PUBLIC SAFETY / CHIEF OF POLICE

FROM: JERROD S. HART *JH*
ASSISTANT CHIEF OF POLICE

SUBJECT: SUBURBAN COLLECTION SHOWPLACE – 2015 CFS

DATE: JUNE 17, 2016

I have reviewed all police and fire calls for service at the Suburban Collection Showplace for CY 2015 with Public Safety Performance Analyst Jason Porter. The overwhelming majority of our police and fire calls for service are generated by staff providing extra patrols and/or inspections at the facility.

The calls for service are listed as:

Police Department

- 18 Vehicle Lockouts
- 04 Private Property Accidents
- 02 Animal Complaints
- 05 Assist Citizen / Civil Matter
- 03 Suspicious Circumstances
- 07 Larceny Complaints
- 01 Missing Person
- 01 AED
- 05 Liquor Inspections
- 02 Parking Complaint
- 243 Extra Patrols (96 related to the 5/3 Michigan State Fair)
- 01 Customer Trouble (unauthorized vendor selling knives at a show)
- 01 Accidental Discharge (gun show)
- 293 Total PD calls for service (93 related to the 5/3 Michigan State Fair)

Fire Department

- 37 EMS (22 were during the 5/3 Michigan State Fair)
- 01 Smoke / Odor Investigation
- 06 EMS Stand-by (All related to 5/3 Michigan State Fair)
- 04 Public Relations Details (3 related to 5/3 Michigan State Fair)
- 45 Fire Inspections (40 related to the 5/3 Michigan State Fair)
- 93 Total (71 related to 5/3 Michigan State Fair)



U.S. Army Corps of Engineers
 Detroit District Office
 Phone: 313-226-2218, Fax: 313-226-6763
 Website: www.lre.usace.army.mil

Exhibit "D"

Michigan Department of Environmental Quality
 Water Resources Division
 See staff map on page iii for contact information
 Website: www.mi.gov/jointpermit



Joint Permit Application

For Work in Inland Lakes and Streams, Great Lakes, Wetlands, Floodplains, Dams,
 High Risk Erosion Areas and Critical Dune Areas

www.mi.gov/jointpermit

What is the purpose of the Joint Permit Application?

This Joint Permit Application was developed to facilitate the state and federal permit application process administered by the Michigan Department of Environmental Quality (DEQ) and the U.S. Army Corps of Engineers (USACE).

The Joint Permit Application is a multi-purpose application used to describe and quantify proposed activities regulated by the DEQ and/or the USACE. This application is for those activities regulated by the following Parts of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended by the State of Michigan.

- Part 301, Inland Lakes and Streams
- Part 325, Great Lakes Submerged Lands
- Part 303, Wetlands Protection
- Floodplain Regulatory Authority found in Part 31, Water Resources Protection
- Part 315, Dam Safety
- Part 323, Shorelands Protection and Management (High Risk Erosion Areas)
- Part 353, Sand Dunes Protection and Management (Critical Dune Areas)

The regulated activities are summarized in Appendix D. The statutes and rules are available at www.mi.gov/jointpermit.

This application is also for those activities regulated by the USACE within the waters of the United States under Section 10, Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404, Clean Water Act of 1977 (33 U.S.C. 1344).

Preapplication Meeting: This is an optional service available for activities proposed in inland lakes and streams (Part 301), wetlands (Part 303), and critical dune areas (Part 353). A preapplication meeting can answer many questions regarding whether or not a permit is required and the review process. The application form and fee schedule are available at www.mi.gov/jointpermit.

How do I complete the Joint Permit Application?

An accurate and complete application package is required for processing; inaccurate or missing information will delay processing.

There are three parts to a complete Joint Permit Application package:

1. Application Form
2. Maps and Drawings
3. Fee

Follow the checklists on the following page for each part of the application package.

When you have questions or need assistance in completing the application package refer to the following information on our website www.mi.gov/jointpermit or you may contact the appropriate district office, page iii, or through the website link "Who to Contact."

- Joint Permit Application Training Manual
- EZ Guides for small projects
- Acronyms in Appendix A
- Sample drawings in Appendix B
- Minor Project and General Permit Categories in Appendix C
- Fee schedule in Appendix C
- State and Federal Authority and Penalties in Appendix D
- Glossary in Appendix E



Application Checklist

The following website will provide township, range, section, latitude and longitude information:

www.mcgi.state.mi.us/wetlands/

www.geocoder.us

In each section check all boxes that apply to your project.

Show and label property lines on the site plan.

Label existing and proposed contours, dimensions, excavation and/or fill on the site plans and cross sections.

Provide tables for multiple impact areas.

1. Application Form

- ☐ Complete Sections 1 through 9 of the application form.
- ☐ An authorization letter from the property owner if someone other than the property owner is signing the application.
- ☐ Complete those Sections 10 through 20 that apply to your project. Follow the instructions at the beginning of each section. For additional information, the instructions for each sample drawing in Appendix B indicate the application sections you will most likely need to complete. Complete the application form as much as possible before adding attachments. Label each attachment with the applicant's name.
- ☐ Stake or flag the area for site inspection including the property corners, proposed road or driveway centerlines, and areas of proposed impacts. The site must be flagged when the application is submitted.

2. Maps and Drawings

- ☐ All maps and drawings must be black and white, legible, reproducible, and sized to 8.5" x 11". Aerial photographs do not substitute for site plans. If larger drawings or blueprints are required to show adequate detail for review, you may also submit one full size copy.
- ☐ Vicinity Map: A map to the proposed project location that includes ALL streets, roads, intersections, highways, or cross-roads to the project. Do not assume review staff knows your project location.
- ☐ Project Site Plan: Overhead drawings to scale or with dimensions, length and width, of the proposed project are required. Show and label property lines on the site plan.
- ☐ Cross-section drawings are required. Provide the cross-sections and profile views to scale or with dimensions, length, width, and height.
- ☐ Elevation data must include a description of the reference point or benchmark used and its corresponding elevation. For projects on the Great Lakes or Section 10 Waters, elevations must be provided in IGLD 85. For observed Great Lake water elevations in IGLD, visit the USACE website under "water levels". If elevations are from still water, provide the observation date and water elevation. On inland sites, elevations can use NGVD 29, NAVD 88, a local datum or an assumed bench mark.
- ☐ Provide descriptive photographs of the proposed work site showing vegetation if wetlands are involved or the shoreline for shore protection projects. All photographs must be labeled with your name and the date of the photograph, indicate what they show, and be referenced to the site plan. Proposed activities or structure(s) may be indicated directly on the photographs using indelible markers or ink pens. Provide aerial photographs 1:400 or larger for major projects.

3. Fee

- ☐ Payment to the **State of Michigan**. Fees typically range from \$50 to \$4,000 depending on the type of project. Refer to Appendix C of the application and/or visit www.mi.gov/jointpermit to determine the appropriate fee for your project and for directions to pay by credit card or electronic fund transfer payment.
- ☐ Applications should be sent directly to the district offices. Please refer to page iii, or refer to www.mi.gov/jointpermit "who to contact" for address and/or phone number. Applications that cross county boundaries should be sent to the district containing the primary work effort.
- ☐ Applications for dams regulated under Part 315 or from public agencies eligible to receive federal and/or state transportation funding for a project involving public roadways, non-motorized paths, airports, or related facilities should be mailed to: DEQ, WRD, P.O. BOX 30458, LANSING, MI 48909-7958.

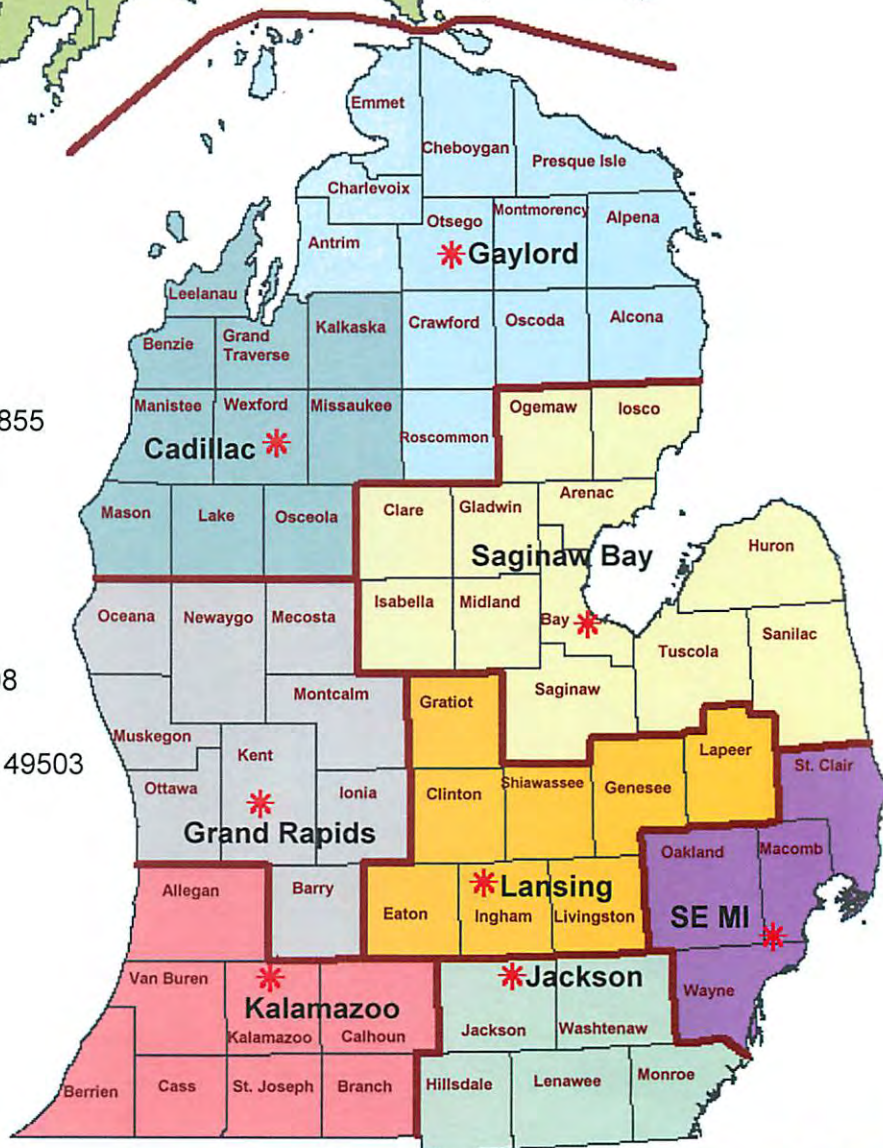


Land/Water Interface Permitting Staff Map

www.mi.gov/jointpermit



- Upper Peninsula:** 906-228-4853
1504 W. Washington St., Marquette, MI 49855
- Gaylord:** 989-731-4920
2100 West M-32, Gaylord 49735
- Cadillac:** 231-775-3960
120 W. Chapin St, Cadillac 49601
- Saginaw Bay:** 989-894-6200
401 Ketchum Street, Suite B Bay City 48708
- Grand Rapids:** 616-356-0500
5th Fl. 350 Ottawa Ave NW, Grand Rapids 49503
- Lansing:** 517-284-6651
P.O. Box 30242, Lansing, 48909
- SE Michigan:** 586-753-3700
27700 Donald Court, Warren 48092
- Kalamazoo:** 269-567-3500
7953 Adobe Road, Kalamazoo 49009
- Jackson:** 517-780-7690
301 E. Louis Glick Hwy, Jackson 49201



Water Resources Division

517-284-5567



APPENDICES

Appendix A:	Acronyms and Abbreviations	A-1
Appendix B:	Sample Drawings	
	1. General Instructions for all Drawings and Sample Site Location Maps.....	B-1
	2. Inland Lake Shore Protection	B-2
	3. Bulkhead/Seawall.....	B-2
	4. Pond Construction.....	B-3
	5. Floodplain Fill	B-3
	6. Wetland Boardwalk	B-4
	7. Dredging.....	B-4
	8. Driveway Across Wetland	B-5
	9. Residential Wetland Fill and Boardwalk Construction.....	B-5
	10. Docks - Piers - Mooring Piles.....	B-6
	11. Beach Sanding	B-6
	12. Pipe/Utility Crossings in a Trench	B-7
	13. Pipe/Utility Crossings using Directional Bore	B-7
	14. Bridge or Culvert (4 drawings).....	B-8
	15. Dam Construction.....	B-12
	16. Water Intake	B-12
	17. Great Lakes Shore Protection	B-13
	18. Maintenance Dredge Channel.....	B-13
	19. Proposed Residence in a High Risk Erosion Area	B-14
	20. Proposed Residence in a Critical Dune Area	B-14
	21. Marina Site Plan.....	B-15
	22. Outlet Pipe.....	B-16
	23. Temporary Logging Road Crossing	B-16
Appendix C:	Fees and Categories for Minor Project and General Permit for Minor Activities.....	C-1
Appendix D:	State Authority, Federal Authority, Privacy Act Statement, and State and Federal Penalties	D-1
Appendix E:	Glossary (listed words are italicized in the application package).....	E-1

Application status can be viewed on the Water Resources Division (WRD) website at www.deq.state.mi.us/CIWPIS. During the application period, if any information is missing from the application or if any clarification is needed regarding materials provided, the application is incomplete and staff will request the information from the applicant/agent by letter, email, fax or phone call. If a complete response is not provided within 30 days, the application will be closed. Some regulatory parts allow extensions if requested within the 30 day time frame. Once the WRD has received the information necessary for review of the project, including a thoroughly completed application, consistent drawings that have adequate detail for review and the full application fee, the file will be reviewed for final processing. A mailed postcard or a public notice will provide the file number and the telephone number of the office where the application is being processed. The review time to determine if an application is complete for processing ranges from 15 to 30 days. Technical processing times, after the application is administratively complete, may range from 60 to 90 days. Processing times will be longer if a public hearing is held. Staff from your local District/Field Office may visit the project site and may request additional information prior to a decision on the application. Application fees are not refundable or transferable.

If a federal permit will also be required, a copy of the permit application will be sent to the Detroit District Office, USACE, for processing at the federal level. Additional copies of this application form can be downloaded from the WRD website at www.mi.gov/jointpermit or can be photocopied from the original. If you have any questions about the permitting process or if you need to modify your application, you can contact the WRD by phone or fax at the addresses on the previous page, or email at DEQ-WRD-jointpermit@michigan.gov.

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

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

☒ All items in Sections 1 through 9 are completed.

☒ Project-specific Sections 10 through 20 are completed.

☒ Dimensions, volumes, and calculations are provided for all impact areas.

☒ All information contained in the headings for the appropriate Sections (1-20) are addressed, and identified attachments (➔) are included.

☒ Map, site plan(s), cross sections; one set must be black and white on 8 ½ by 11 inch paper; photographs.

☒ Application fee is attached.

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

Project Address (road, if no street address) 46100 GRAND RIVER AVE.	Zip Code 48375	Municipality (Township/Village/City) CITY OF NOVI	County OAKLAND
Property Tax Identification Number(s) 22-16-251-023 & 22-16-176-021	Latitude 42°29'24.25" N		Township/Range/Section (TRS) T 1 N N or S; R 8 E E or W;
Subdivision/Plat and Lot Number N/A	Longitude - 83°30'20.21" W		Sec 16 OR Private Claim # _____

2 Applicant and Agent Information

Owner/Applicant (individual or corporate name) TBON, LLC	Agent/Contractor (firm name and contact person)
Mailing Address 46100 GRAND RIVER AVE.	Mailing Address
City NOVI State MI Zip Code 48375	City State Zip Code
Contact Phone Number Fax 248/348-5600 248/347-7720	Contact Phone Number Fax
Email BBOWMAN@SUBURBANSHOWPLACE.COM	E-mail

☐ No ☒ Yes Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? ➔ If no, attach letter(s) of authorization from all property owners including the owner of the disposal site.

Property Owner's Name (If different from applicant) BLAIR BOWMAN	Mailing Address
Contact Phone Number 248/207-8040	City State Zip Code

3 Project Description

Project Name MICHIGAN STATE FAIR & SUBURBAN COLLECTION SHOWPLACE EXPANSION	Preapplication File Number - - -P
Name of Water body WETLAND 7/C	Date project staked/flagged 06/09/16

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

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

Written Summary of All Proposed Activities **FILLING OF 0.14 ACRES OF EX. WETLAND AND INSTALLATION OF 301 L.F. OF 24" STORM SEWER WITH END SECTION & RIP-RAP APRON FOR PROPOSED PARKING LOT EXPANSION. INSTALLATION OF 24" STORM SEWER OUTFALL END SECTION & RIP-RAP APRON FOR PROPOSED DETENTION BASIN.**

Construction Sequence and Methods **INSTALL TEMPORARY SILT FENCE, CLEAR EXISTING TREES, REMOVE EX. VEGETATION & UNSUITABLE SOILS, PLACE FILL, INSTALL 24" STORM SEWER AND PAVEMENT. INSTALL DETENTION BASIN & 24" OUTFALL. RESTORE ALL DISTURBED AREAS WITH TOPSOIL, SEED & MULCH BLANKETS AS SOON AS GRADING IS COMPLETED.**

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

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

PROPOSED WETLAND FILLING IS DESIRED TO ACCOMMODATE AN 175,815 S.F. EXPANSION OF THE ADJACENT SUBURBAN COLLECTION SHOWPLACE.

Describe the alternatives considered to avoid or minimize resource impacts. Include factors such as, but to limited to, alternative locations, project layout and design, and construction technologies. For utility crossings include alternative routes and construction methods.

CONSIDERED TRYING TO LEAVE THE PROPOSED WETLAND FILLING AREA UNDISTURBED HOWEVER IT RESULTED IN A SIGNIFICANT NEGATIVE IMPACT TO THE EXPANSION.**5 Locating Your Project Site** *Attach a legible black and white map with a North arrow.*Names of roads of closest intersection **NORTH SIDE OF GRAND RIVER AVE. EAST OF BECK RD.**Directions from main intersection to the project site, with distances from the best and nearest visible landmark and water body **EAST ALONG GRAND RIVER AVE. FROM BECK RD.**

Description of buildings on the site (color; 1 or 2 story, other)

LARGE 1 STORY BEIGE SHOWPLACE BUILDING

Description of adjacent landmarks or buildings (address; color; etc)

46400 GRAND RIVER AVE.-BELL FORKLIFT, INC.How can your site be identified if there is no visible address? **SUBURBAN COLLECTION SHOWPLACE SITE****6 Easements and Other Permits**☐ No ☒ Yes Is there a conservation easement or other easement, deed restriction, lease, or other encumbrance upon the property?

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

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

Agency	Type of Approval	Number	Date Applied	Date approved /denied	Reason for denial
CITY OF NOVI	SITE PLAN				
CITY OF NOVI	S.E.S.C.				

7 ComplianceIf a permit is issued, when will the activity begin? (M/D/Y) **09/06/16**Proposed completion date (M/D/Y) **12/06/16**☒ No ☐ Yes Has any construction activity commenced or been completed in a regulated area?

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

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

➔ If Yes, list the permit numbers

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

➔ If Yes, attach explanation.

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

Contact Person

Mailing Address

City

State and Zip Code

☐ Lake Association

List all adjoining property owners.

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

Property Owner's Name	Mailing Address	City	State and Zip Code
SERVMAN, LLC - BLAIR BOWMAN	46100 GRAND RIVER AVE	NOVI	MI 48375
SEE ATTACHED LIST			

**Suburban Collection Showplace Expansion
Adjoining Property Owners**

Bell Realty
34660 Centaur
Clinton Township, MI 48035

Schultz, Charles
2525 Country Club
Ann Arbor, MI 48105

ServMan, LLC
46100 Grand River Ave
Novi, MI 48374

Varteresian, Harry & Robert M
45800 Grand River
Novi, MI 48374

Frankfurth, James & Mary
PO Box 942
Novi, MI 48376

Novitel Corp.
Attn: Jeffrey C. Stearns
28049 S. Wixom, #315
Wixom, MI 48393

46153 Grand River Investors
3000 Town Center, Suite 530
Southfield, MI 48075

Sidock Properties Novi, LLC
45650 Grand River Ave
Novi, MI 48374

Lapham Investments Ltd Partnership
18412 Blue Heron Dr West
Northville, MI 48168

Demaria Building
45500 Grand River Ave
Novi, MI 48376

Hoffman, Cynthia Trust
220 Al-Don Dr
Pinckney, MI 48169

LHTR Development, LLC
26650 Taft Rd
Novi, MI 48376

Anderson, Sheridan & Judith
46089 Grand River Ave
Novi, MI 48374

Guardian Property Services, LLC
44375 Grand River Ave
Novi, MI 48375

Zdravkovski, Drakce
42558 Park Ridge
Novi, MI 48375

International Transmission Co
27175 Energy Way
Novi, MI 48377

Zdravkovski, Cvetko
24536 Kingspointe
Novi, MI 48374

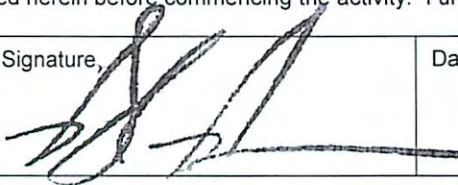
Paradise Properties, Inc.
23800 W. 8 Mile Rd
Southfield, MI 48033

**9 Applicant's Certification***Read carefully before signing.*

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

- ☒ Property Owner
☐ Agent/Contractor
☐ Corp. or Public Agency / Title

Printed Name
BLAIR BOWMAN

Signature, 

Date

06/17/16

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

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

Water Level Elevation

On inland waters ☐ NGVD 29 ☒ NAVD 88 ☐ other Observed water elevation (ft) **NONE** date of observation (M/D/Y) **06/09/16**
 On a Great Lake ☐ IGLD 85 ☐ surveyed ☐ converted from observed still water elevation.

☐ **A. PROJECTS REQUIRING FILL** (See All Sample Drawings)

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

Purpose ☐ bioengineered shore protection ☐ boat ramp ☐ boat well ☐ bridge or culvert ☐ crib dock
☒ riprap ☐ seawall ☐ swim area ☒ other **PARKING LOT EXPANSION**

Dimensions of fill (ft) Length 312' Width 25' Maximum Depth 8'	Total volume (cubic yards) 1,170 C.Y.	Volume below OHWM (cubic yards) NONE
Maximum water depth in fill area (ft) NONE	Area filled (sq ft) 6,103 S.F.	Will filter fabric be used under proposed fill? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, type)

Fill will extend **0** feet into the water from the shoreline and upland **30** feet out of the water.

Type of clean fill ☐ peastone % ☒ sand % ☐ gravel % ☒ other **RIP-RAP**

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

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

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

Purpose ☐ boat ramp ☐ boat well ☐ bridge or culvert ☐ maintenance dredge
☐ navigation ☐ pond/basin ☐ other

Dimensions (ft) Length Width Maximum Depth	Total volume (cu yds)	Volume below OHWM (cu yds)
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Has this same area been previously dredged? ☐ No ☐ Yes If Yes, provide date and permit number:

Will the previously dredged area be enlarged? ☐ No ☐ Yes If Yes, when and how much?

Is long-term maintenance dredging planned? ☐ No ☐ Yes If Yes, how often?

Dredge or Excavation Method ☐ Hydraulic ☐ Mechanical ☐ other

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

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

Riprap water ward of the ordinary high water mark: dimensions (ft) length width depth	Volume(cu yd)
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Riprap landward of the ordinary high water mark: dimensions (ft) length 13' width 14' depth 6" X 2 APRONS	Volume(cu yd) 7
--	------------------------

Type and size of riprap (inches)
☒ field stone **6"** ☐ angular rock ☐ other Will filter fabric or pea stone be used under proposed riprap?
☐ No ☒ Yes, Type

**☐ D. SHORE PROTECTION PROJECTS** (See EZ Guides and Sample Drawings 2, 3, and 17. Complete Sections 10A, B, and/or C.)

➔ For bioengineering projects include the list of native plants/seeds, if available.

Type and length (ft)	<input type="checkbox"/> bioengineering (ft)	<input type="checkbox"/> revetment (ft)	<input type="checkbox"/> riprap (ft)	<input type="checkbox"/> seawall/bulkhead (ft)
Structure is	<input type="checkbox"/> new	<input type="checkbox"/> repair	<input type="checkbox"/> replacement of an existing structure	Will the existing structure be removed? <input type="checkbox"/> No <input type="checkbox"/> Yes
Proposed Toe Stone (linear feet)	Distance of project from adjacent property lines (ft)			
Distance of project from an obvious fixed structure (example - 50 ft from SW corner of house)				
For bioengineering projects indicate the structure type <input type="checkbox"/> brush bundles <input type="checkbox"/> coir log <input type="checkbox"/> live stakes <input type="checkbox"/> tree revetment <input type="checkbox"/> other				

☐ E. DOCK - PIER – MOORING PILINGS (See Sample Drawing 10)

➔ Attach a copy of the property legal description, mortgage survey, or a property boundary survey report.

Dock Type	<input type="checkbox"/> open pile	<input type="checkbox"/> filled	<input type="checkbox"/> crib	<input type="checkbox"/> floating	<input type="checkbox"/> cantilevered	<input type="checkbox"/> spring piles	<input type="checkbox"/> piling clusters	<input type="checkbox"/> other
Is the structure within the applicant's riparian area interest area? <input type="checkbox"/> No <input type="checkbox"/> Yes ➔ Show parcel property lines on the site plan.								
Proposed structure dimensions (ft)	length	width	Use			<input type="checkbox"/> private	<input type="checkbox"/> public	<input type="checkbox"/> commercial
Dimensions of nearest adjacent structures (ft)	length	width	Distance of dock from adjacent property lines (ft)					

☐ F. BOAT WELL (See EZ Guide. Complete Sections 10A and 10B)

Dimensions (ft)	length	width	depth	Number of boats
Type of sidewall stabilization	<input type="checkbox"/> concrete	<input type="checkbox"/> riprap	<input type="checkbox"/> steel	<input type="checkbox"/> vinyl
Volume of backfill behind sidewall stabilization (cu yd)				Distance of boat well from adjacent property lines (ft)
Type <input type="checkbox"/> wood <input type="checkbox"/> other				

☐ G. BOAT RAMP (See EZ Guide. Complete sections 10A, 10B, and 10C for mattress and pavement fill, dredge, and riprap)

Type	<input type="checkbox"/> new	<input type="checkbox"/> existing	<input type="checkbox"/> maintenance/improvement	Use	<input type="checkbox"/> private	<input type="checkbox"/> public	<input type="checkbox"/> commercial
Existing overall boat ramp dimensions (ft)	length	width	depth	Type of construction material	<input type="checkbox"/> concrete	<input type="checkbox"/> wood	<input type="checkbox"/> stone
Proposed overall ramp dimensions (ft)	length	width	depth	Proposed ramp dimensions (ft) below ordinary high water mark	length	width	depth
Number of proposed skid piers	Proposed skid pier dimensions (ft)			Distance of ramp from adjacent property lines (ft)			
				length	width		

☐ H. BOAT HOIST – ROOFS (See EZ Guide)

Type	<input type="checkbox"/> cradle	<input type="checkbox"/> side lifter	<input type="checkbox"/> other	Located on	<input type="checkbox"/> seawall	<input type="checkbox"/> dock	<input type="checkbox"/> bottomlands
Hoist dimensions, including catwalks (ft)				length	width		
Area occupied, including cat walks (sq ft)				Distance of hoist from adjacent property lines (ft)			
Permanent Roof <input type="checkbox"/> No <input type="checkbox"/> Yes				Maximum Roof Dimensions (ft): length width height			
➔ If Yes, how is the roof supported?							

☐ I. BOARDWALKS and DECKS in WETLANDS or FLOODPLAINS (See Sample Drawings 5 and 6. Complete Sections 12 and/or 13)

➔ Provide a table for multiple boardwalks and decks proposed in one project; include locations and dimensions.

Wetlands				Floodplains			
Boardwalk <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Deck <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Boardwalk <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Deck <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Boardwalk <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Deck <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Boardwalk <input type="checkbox"/> on pilings <input type="checkbox"/> on fill	Deck <input type="checkbox"/> on pilings <input type="checkbox"/> on fill
Dimensions (ft)	Dimensions (ft)	Dimensions (ft)	Dimensions (ft)	Dimensions (ft)	Dimensions (ft)	Dimensions (ft)	Dimensions (ft)
length width	length width	length width	length width	length width	length width	length width	length width

☒ J. INTAKE PIPES (See Sample Drawing 16) or **OUTLET PIPES** (See Sample Drawing 22)

If outlet pipe, discharge is to <input type="checkbox"/> inland lake <input type="checkbox"/> stream, drain or river <input type="checkbox"/> overland flow <input type="checkbox"/> Great Lake <input checked="" type="checkbox"/> wetland <input type="checkbox"/> other			
Number of pipes	Pipe diameters and invert elevations	Does pipe discharge below the OHWM?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
2	24" E.S. INV. 963.02 & 960.63	Is the water treated before discharge?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
Type	<input type="checkbox"/> headwall <input checked="" type="checkbox"/> end section <input type="checkbox"/> other	Dimensions of headwall OR end section (ft)	
		length 6'	width 4' height 2' (BOTH E.S.)

**K. MOORING and NAVIGATION BUOYS** (See EZ Guide for Sample Drawing)

- Provide a site plan showing the distances between each buoy and from the shore to each buoy, and depth (ft) of water at each location.
- Provide cross-section drawing(s) showing anchoring system(s) and dimensions.

Purpose of buoy ☐ mooring ☐ navigation ☐ scientific structures ☐ swimming ☐ other

Number of buoys	Dimensions of buoys (ft)				Boat Lengths	Type of anchor system
	width	height	swing radius	chain length		

Buoy Location: Latitude . N Longitude -- W. ➤ Provide a table for multiple buoys.

Do you own the property along the shoreline? ☐ No ☐ Yes ➤ If No, attach an authorization letter from the property owner(s).Do you own the bottomlands? ☐ No ☐ Yes ➤ If No, attach an authorization letter from the property owner(s).**L. FENCES**

- Provide an overall site plan showing the proposed fencing through streams, wetlands or floodplains.
- Provide a drawing of fence profile showing the design, dimension, post spacing, mesh, and distance from ground to bottom of fence.

Purpose of fence ☐ Airport ☐ Cervidae ☐ Livestock ☐ Residential ☐ Security ☐ Other

Total length (ft) of fence through	Fence height (ft)	Fence type and material
streams wetlands floodplains		

M. OTHER - e.g., structure removal, maintenance or repair, aerator, dry fire hydrant, gold prospecting, habitat structures, scientific measuring devices, soil borings, or survey activities.

Structure description, dimensions and volumes. Complete Sections 10A-C as applicable.

11 Expansion of an Existing or Construction of a New Lake or Pond (See Sample Drawings 4 and 15)

- Complete Section 10J for outlets and Section 17 for water control structures.
- Provide elevations, cross-sections and profiles of outlets, dams, dikes, water control structures and emergency spillways to nearest water bodies.

Which best describes your proposed water body use (check all that apply)

☐ mining ☐ recreation ☐ storm water retention basin ☐ wastewater basin ☐ wildlife ☐ other

Water source for lake/pond

☐ groundwater ☐ natural springs ☐ Inland Lake or Stream ☐ storm water runoff ☐ pump ☐ sewage ☐ otherLocation of the lake/basin/pond ☐ floodplain ☐ wetland ☐ stream (inline) ☐ upland

Maximum dimensions (ft)	Maximum Area: <input type="checkbox"/> acres <input type="checkbox"/> sq ft
length width depth	

Has there been a hydrologic study performed on the site? ☐ No ☐ Yes ➤ If Yes, provide a copy.Has the DEQ conducted a wetland assessment for this parcel? ☐ No ☐ Yes ➤ If Yes, provide a copy or WIP number:Has a professional wetland delineation been conducted for this parcel? ☐ No ☐ Yes ➤ If Yes, provide a copy with data sheets.

Spoils Disposal	Dredged or excavated spoils will be placed <input type="checkbox"/> on-site <input type="checkbox"/> landfill <input type="checkbox"/> USACE confined disposal facility <input type="checkbox"/> other upland off-site
	For disposal, provide a ➤ Detailed spoils disposal area location map and site plan with property lines.
	➤ Letter of authorization from property owner of spoils disposal site, if disposed off-site.

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

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

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

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

FILL	Dimensions maximum length (ft) 312' maximum width (ft) 30'	Area <input checked="" type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 0.14 AC. 6,103 S.F.	Average depth (ft) 7	Volume (cu yd) 1,170
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DREDGE	Dimensions maximum length (ft) maximum width (ft)	Area <input type="checkbox"/> acres <input type="checkbox"/> sq ft	Average depth (ft)	Volume (cu yd)
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Spoils Disposal	Dredged or excavated spoils will be placed <input type="checkbox"/> on-site <input type="checkbox"/> landfill <input type="checkbox"/> USACE confined disposal facility <input type="checkbox"/> other upland off-site For disposal, provide a ➔ Detailed spoils disposal area location map and site plan with property lines. ➔ Letter of authorization from property owner of spoils disposal site, if disposed off-site.
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Septic System	The proposed project will be serviced by: <input checked="" type="checkbox"/> public sewer <input type="checkbox"/> private septic system ➔ Show system on plans.	If a private septic system is proposed, has an application for a permit been made to the County Health Department? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If Yes, has a permit been issued? <input type="checkbox"/> No <input type="checkbox"/> Yes ➔ Provide a copy of the permit.
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Describe the wetland impacts, the proposed use or development, and the alternatives considered:

0.14 AC. IMPACTED WETLANDS AREA BELIEVED TO BE OF MINIMAL HYDROLOGIC & ECOLOGICAL VALUE DUE TO ITS SIZE & DITCH CONFIGURATION. CONSIDERATION WAS GIVEN TO LEAVING THE WETLAND AREA UNDISTURBED, HOWEVER IT RESULTED IN A SIGNIFICANT NEGATIVE IMPACT TO THE EXPANSION.

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

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

ANY NEGATIVE IMPACTS WILL BE MINIMIZED THROUGH THE USE OF BOTH TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES.

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

COMPENSATORY MITIGATION SHOULD NOT BE REQUIRED DUE TO 0.14 AC. SIZE



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

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

Proposed Activity ☐ fill ☐ excavation or cut
☐ other

100-year floodplain elevation (ft) (if known)

Datum ☐ NGVD 29 ☐ NAVD 88 ☐ other

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

Fill volume below the 100-year floodplain elevation
(cu yds)

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

Buildings and/or Additions

Type of construction is ☐ residential ☐ garage/pole barn ☐ non residential ☐ other

Construction is ☐ new ☐ addition AND Serviced by ☐ public sewer ☐ private septic ☐ other

Lowest adjacent grade (ft): existing _____ proposed _____
 datum ☐ NGVD 29 ☐ NAVD 88 ☐ other

Existing Structure Information

Foundation type ☐ basement
☐ concrete slab on grade ☐ pilings
☐ crawl space ☐ other

Foundation floor elevation (ft)

Height of crawl space/basement from finished foundation floor to bottom of floor joists (ft)

Elevation of 1st floor above basement floor/crawl space (ft)

Proposed Structure Information

Foundation type ☐ basement
☐ concrete slab on grade ☐ pilings
☐ crawl space ☐ other

Foundation floor elevation (ft)

Height of crawl space/basement from finished foundation floor to bottom of floor joists (ft)

Elevation of 1st floor above basement floor/crawl space (ft)

For enclosed areas below the flood elevation, such as a crawl space, garages and accessory structures:

Area of proposed foundation (sq ft)

Elevation of proposed enclosed area (ft) datum ☐ NGVD 29 ☐ NAVD 88 ☐ other

Number of flood vents _____ net opening of each vent (sq inches) _____ lowest elevation of flood vents (ft)

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

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

Stream Information	The site has a high water elevation (ft) <input type="checkbox"/> above or <input type="checkbox"/> below the Reference Point of _____ Date observed _____			
	Reference datum used <input type="checkbox"/> NGVD 29 <input type="checkbox"/> NAVD 88 <input type="checkbox"/> IGLD 85 (Great Lakes coastal areas) <input type="checkbox"/> other _____			
	Average stream width (ft) at the ordinary high water mark (OHWM) outside the influence of any ponding or scour holes around the structure		Upstream _____ Downstream _____	
	Cross-sectional area of primary channel (sq ft) _____ (See Sample Drawing 14C for more information)			
	The width of the stream where the water begins to overflow its banks. Bankfull width (ft) _____			
	The invert of the stream 100-feet from structure (ft)		Upstream _____ Downstream _____	
	Is the existing culvert perched? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, provide a profile of the channel bottom at the high and low points for a distance of 200 feet upstream and downstream of the culvert.			
Complete this form for each bridge / culvert location.				
Bridge	Number of bridge spans		Existing _____	Proposed _____
	Bridge type (concrete box beam, concrete I-beam, timber, etc.)		Existing _____	Proposed _____
	Bridge span (length perpendicular to stream) (ft)		Existing _____	Proposed _____
	Bridge width (parallel to stream) (ft)		Existing _____	Proposed _____
	Bottom of bridge beam (ft)		Upstream _____ Downstream _____	Existing _____ Proposed _____
	Stream invert elevation at bridge (ft)		Upstream _____ Downstream _____	Existing _____ Proposed _____
	Bridge rise from bottom of beam to streambed (ft)		Existing _____	Proposed _____
	Culvert	Number of culverts		Existing _____
Culvert type (arch, bottomless, box, circular, elliptical, etc.)		Existing _____	Proposed _____	
Culvert material (concrete, corrugated metal, plastic, etc.)		Existing _____	Proposed _____	
Culvert length (ft)		Existing _____	Proposed _____	
Culvert <input type="checkbox"/> width <input type="checkbox"/> diameter (ft)		Existing _____	Proposed _____	
Culvert height prior to any burying (ft)		Existing _____	Proposed _____	
Depth culvert will be buried (ft)		Existing _____	Proposed _____	
Elevation of culvert crown (ft)		Upstream _____ Downstream _____	Existing _____ Proposed _____	
Higher elevation of <input type="checkbox"/> culvert invert OR <input type="checkbox"/> streambed within culvert (ft)		Upstream _____ Downstream _____	Existing _____ Proposed _____	
Complete for both Bridges and Culverts		Entrance design (mitered, projecting, wingwalls, etc.)		Existing _____
	Total structure waterway opening above streambed (sq ft)		Existing _____	Proposed _____
	Total structure waterway area below the 100-year elevation (sq ft) (if known)		Existing _____	Proposed _____
	Elevation of road grade at structure (ft)		Existing _____	Proposed _____
	Elevation of low point in road (ft)		Existing _____	Proposed _____
	Distance from low point of road to mid-point of bridge crossing (ft)		Existing _____	Proposed _____
	Length of approach fill from edge of bridge/culvert to existing grade (ft)		Existing _____	Proposed _____
	A Licensed Professional Engineer may certify that your project will not cause a harmful interference for a range of flood discharges up to and including the 100-year flood discharge. The "Required Certification Language" is found under "forms" on the "maps, forms and documents" link from the www.mi.gov/jointpermit page or a copy may be requested by phone, email, or mail. A hydraulic report supporting this certification may also be required. Is Certification Language attached? <input type="checkbox"/> No <input type="checkbox"/> Yes			

**15 Stream, River, or Drain Construction , Relocation and Enclosure Activities**

- Complete Section 10C for riprap activities.
- If side casting or other proposed activities will impact wetlands or floodplains, complete Sections 12 and 13, respectively.
 - ➔ Provide a scaled overall site plan showing existing lakes, streams, wetlands, and other water features; existing structures; and the location of all proposed structures and land change activities.
 - ➔ Provide scaled cross-section (elevation) drawings necessary to clearly show existing and proposed conditions.
 - ➔ For activities on legally established county drains, provide original design and proposed dimensions and elevations.

Stream Information	Water elevation (ft) datum <input type="checkbox"/> NGVD 29 <input type="checkbox"/> NAVD 88 <input type="checkbox"/> IGLD 85 (Great Lakes coastal areas) <input type="checkbox"/> other ➔ Show elevation on plans with description.		
	Dimensions (ft) of existing stream/drain channel (ft)	length	width depth
	Existing channel average water depth in a normal year (ft)		
Proposed Activity <input type="checkbox"/> enclosure <input type="checkbox"/> improvement <input type="checkbox"/> maintenance <input type="checkbox"/> new drain <input type="checkbox"/> relocation <input checked="" type="checkbox"/> wetlands <input type="checkbox"/> other			
If an enclosed structure is proposed, check material type <input checked="" type="checkbox"/> concrete <input type="checkbox"/> corrugated metal <input checked="" type="checkbox"/> plastic <input type="checkbox"/> other			
Dimensions (ft) of the structure: diameter 24" length 301'			Volume of fill (cu yds) 1,170 C.Y.
Will old/enclosed stream channel be backfilled to top of bank grade? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes			
Length of channel to be abandoned (ft) 312'			Volume of fill (cu yds) 1,170 C.Y.
Dimensions (ft) of improved, maintained, new, relocated or wetland stream/drain channel. length width depth			Volume of dredge/excavation (cu yds)
How will slopes and bottom be stabilized?			Proposed side slopes (vertical / horizontal)
Spoils Disposal	Dredged or excavated spoils will be placed <input type="checkbox"/> on-site <input type="checkbox"/> landfill <input type="checkbox"/> USACE confined disposal facility <input type="checkbox"/> other upland off-site For disposal, provide a ➔ Detailed spoils disposal area location map and site plan with property lines. ➔ Letter of authorization from property owner of spoils disposal site, if disposed off-site.		

16 Drawdown of an Impoundment

- If wetlands will be impacted, complete Section 12.

Type of drawdown <input type="checkbox"/> over winter <input type="checkbox"/> temporary <input type="checkbox"/> one-time event <input type="checkbox"/> annual event <input type="checkbox"/> permanent (dam removal) <input type="checkbox"/> other		
Reason for drawdown		
Has there been a previous drawdown? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, provide date (M/D/Y)		Previous DEQ permit number, if known
Does waterbody have established legal lake level? <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Not Sure		Dam ID Number, if known
Extent of vertical drawdown (ft)	Impoundment design head (ft)	Number of adjoining or impacted property owners
Date drawdown would start (M/D/Y)	Date drawdown would stop (M/D/Y)	Rate of drawdown (ft/day)
Date refilling would start (M/D/Y)	Date refill would end (M/D/Y)	Rate of refill (ft/day)
Type of outlet discharge structure to be used <input type="checkbox"/> surface <input type="checkbox"/> bottom <input type="checkbox"/> mid-depth	Impoundment area at normal water level (acres)	Sediment depth behind impoundment discharge structure (ft)

**17 Dam, Embankment, Dike, Spillway, or Control Structure Activities** (See Sample Drawing 15)

- For more information go to www.mi.gov/damsafety. If wetlands will be impacted, complete Section 12.
- Information on removing a dam is available at www.mi.gov/damsafety and following the Related Link –Dam Management.
 - ➔ Attach detailed signed and sealed engineering plans for a Part 315 dam repair, dam alteration, dam abandonment, or dam removal.
 - ➔ Part 315 Dam Safety application fees are added to all other application fees.
 - ➔ Mail applications for dams regulated under Part 315 to DEQ, WRD, P.O. BOX 30458, LANSING, MI 48909-7958, attention Dam Safety.

Proposed Activity ☐ abandonment ☐ alteration ☐ enlargement of an existing dam
☐ removal ☐ repair ☐ reconstruction of a failed dam
☐ new dam construction ☐ other

Dam ID Number, if known

Type of outlet discharge structure ☐ surface ☐ bottom ☐ mid-depthWill proposed activities require a drawdown of the waterbody to complete the work? ☐ No ☐ Yes ➔ If Yes, complete Section 16.

Structural height (difference between embankment top elevation and streambed elevation at downstream embankment toe) (ft) _____

Hydraulic Height (difference between design flood elevation and streambed elevation at downstream embankment toe) (ft) _____

Impoundment size at design flood elevation (acres)

Does dam meet the criteria for regulation under Part 315? (i.e. hydraulic height of 6 feet or more and an impoundment size at the design flood of 5 surface acres or more) ☐ No ☐ Yes

Dredging/excavation volume (cu yd)

Fill volume (cu yd)

Riprap volume (cu yd)

Will a water diversion during construction be required? ☐ No ☐ Yes

If Yes, describe how the stream flow will be controlled through the dam construction area during the proposed project activities:

Complete the following for a new dam, reconstruction of a failed dam or enlargement of an existing dam

For Part 315 regulated dams, the following must be attached:

- ➔ Site-specific conceptual plans of the dam for resource impact review (An engineering report and detailed engineering plans are not required until the project has been determined to be permissible).
- ➔ A description and evaluation of the loss of natural resources associated with the project.
- ➔ A description of the natural resources that are associated with or created by the impoundment and how they offset the natural resources lost by the creation of the impoundment.
- ➔ An assessment of all known existing and potential adverse effects within the scope of the project.

Embankment dimensions

length (ft)

top width (ft)

bottom width (ft)

slopes
(vertical / horizontal)Upstream
Downstream

Have soil borings been taken at dam location?

☐ No ☐ Yes

➔ If Yes, attach results.

Do you have flowage rights to all proposed flooded property at the design flood elevation?

☐ No ☐ Yes

➔ If No, provide a letter of authorization from the property owner.

Applications for Part 315 regulated dam removal projects must also include the following:

- An evaluation of the capacity of the remaining structure to pass flood flows.
- An evaluation of the quantity and quality of the sediments behind the impoundment.
- A description of the methods to be employed to control sediments.
- An assessment of all known existing and potential adverse impacts within the scope of the project.

**18 Utility Crossings** (See Sample Drawings 12 and 13, and EZ Guide)

- If side casting is proposed, complete Sections 10A and 10B. If spoils will be placed in or impact wetlands, complete Section 12.
- ✦ Attach additional sheets or tables with the requested information as needed for multiple crossings.
- ✦ For wetland crossings using the open trench method show clay plugs at the wetland/upland boundaries on the plans.

Crossing of ☐ Inland Lake or Stream ☐ floodplain ☐ Great Lake ☐ wetlands (also complete Section 12)What method will be used to construct the crossings? ☐ directional boring ☐ jack and bore ☐ open trench ☐ plow / knife ☐ flume

Utility Type	Number of lake or stream crossings	Number of wetland crossings	Pipe diameter with casing (in)	Pipe length per crossing (ft)	Distance below streambed or wetland (in)	Trench width (ft)
<input type="checkbox"/> sanitary sewer						
<input type="checkbox"/> storm sewer						
<input type="checkbox"/> watermain						
<input type="checkbox"/> cable						
<input type="checkbox"/> electric						
<input type="checkbox"/> fiber optic cable						
<input type="checkbox"/> oil/gas pipeline						

19 Marina Construction, Expansion and Reconfiguration (See Sample Drawing 21)

- For more information go to www.mi.gov/marinas
- Marinas located on the Great Lakes, including Lake St. Clair, may be required to secure leases or conveyances from the state of Michigan to place structures on the bottomlands. If a conveyance is necessary, an application must be submitted before the Joint Permit Application can be determined complete.
 - ✦ Fully complete Section 10 E. For multiple structures provide a table with the requested information.
 - ✦ Enclose a copy of any current pump-out agreement with another marina facility, if on-site sanitary pump out facilities are not available.
 - ✦ Attach a copy of the property legal description, mortgage survey, or a property boundary survey to your application.
 - ✦ The WRD may require a riparian interest area (RIA) estimate survey, sealed by a licensed surveyor, in order to determine whether the proposed project will adversely impact riparian rights. Include any available sealed RIA estimate survey and/or written authorizations from affected adjoining riparian owners with your application.

Proposed Marina Activity ☐ New construction ☐ Expansion ☐ ReconfigurationDo you have an existing Great Lake Conveyance? ☐ No ☐ Yes For more information visit www.mi.gov/deqgreatlakes.Are sanitary pump-out facilities available? ☐ No ☐ Yes Is there a pump out agreement? ☐ No ☐ Yes If Yes, provide a copy.

Marina Description	Current Count	Final Count
Number of boat slips/wells (do not include broadside dockage or mooring buoys)		
Lineal feet of broadside dockage		
Maximum number of boats at broadside dockage		
Number of mooring buoys		
Number of launch ramps/lanes		

**20 Critical Dune Areas and High Risk Erosion Areas** (See Sample Drawings 19 and 20)**Critical Dune Areas** (See Sample Drawing 20)

- Although not required, submitting PHOTOGRAPHS of the site may provide for a faster application review.
- For more information go to www.mi.gov/jointpermit, select "Sand Dune Protection" under "Related Links."
- All property boundaries and proposed structure corners, including decks, septic systems, water wells, driveways, grading, and terrain alteration locations must be staked before the WRD site inspection.
- Scaled overhead and cross-section plans must include all property boundaries, locations, and dimensions of all existing structures and impacted areas, and all proposed structures, terrain alterations, and construction access. Cross-sections must show existing and proposed grades, including foundations.
- Construction in critical dune areas on slopes greater than 33 percent (1 vertical: 3 horizontal) is prohibited without a special exception.
- Construction in critical dune areas on slopes that measure from 25 percent (1 vertical: 4 horizontal) to less than 33 percent requires sealed plans prepared by a registered architect or licensed professional engineer.

High Risk Erosion Areas (See Sample Drawing 19)

- For more information go to www.mi.gov/jointpermit, select "HREA" under "Related Links."
- All property boundaries, proposed structure corners, and septic system locations must be staked before the WRD site inspection.
- Scaled overhead plans must include all property boundaries, and the location and dimensions of all structures and septic systems must be included.
- Additional information, including the building construction plans, may be required to complete the application review.

Critical Dune Areas

Parcel dimensions (ft) width depth	Date project staked (M/D/Y)
Property is a <input type="checkbox"/> platted lot <input type="checkbox"/> unplatted parcel	Year current property boundaries created
Dune habitat present in Building Site and access route (check all that apply): <input type="checkbox"/> Wooded <input type="checkbox"/> Open Dune <input type="checkbox"/> Shrubs <input type="checkbox"/> Bare Sand <input type="checkbox"/> Lakefront Lot <input type="checkbox"/> MNFI Community if known: _____	
Type of construction activities <input type="checkbox"/> addition <input type="checkbox"/> driveway <input type="checkbox"/> garage <input type="checkbox"/> new home <input type="checkbox"/> renovation <input type="checkbox"/> septic <input type="checkbox"/> deck(s) <input type="checkbox"/> other	
<input type="checkbox"/> Provide a sand relocation plan with location and dimensions of disposal area. Indicate <input type="checkbox"/> on-site OR <input type="checkbox"/> off-site If on-site show location and how the disposal site will be accessed on the plans. Indicate the depth of the disposed sand on the plans.	
<input type="checkbox"/> Provide the permit or letter from the County Enforcing Agent stating the project complies with Part 91 (Soil Erosion and Sedimentation Control).	
The proposed project will be serviced by <input type="checkbox"/> public sewer <input type="checkbox"/> private septic system. ➔ On the plans, show the location and dimensions of the private septic system. If a private septic system is proposed, has a permit been issued by the health department? <input type="checkbox"/> No <input type="checkbox"/> Yes ➔ If Yes, provide a copy of the permit for all Critical Dune Area projects.	
<input type="checkbox"/> Provide a copy of the vegetation assurance letter. <input type="checkbox"/> Provide a re-vegetation plan, including # _____ of trees to be removed and # _____ of trees to be replanted.	
Proposed Utility Installation	Proposed New Construction
Utility Installation Method <input type="checkbox"/> directional bore <input type="checkbox"/> plowing in <input type="checkbox"/> open trench <input type="checkbox"/> other	Foundation type <input type="checkbox"/> basement <input type="checkbox"/> concrete slab <input type="checkbox"/> pilings <input type="checkbox"/> crawl space <input type="checkbox"/> other
➔ Show utility locations and dimensions on the site plan.	Area of existing structure (sq ft)
➔ Show construction access route on the site plan.	Area of proposed structure (sq ft)
➔ Show existing and proposed grades on the cross-section.	Area of existing deck (sq ft)
➔ Show locations of vegetation to be removed on the site plan.	Area of proposed deck (sq ft)
Provide the following information for special use projects: (a) Lot size, width, density, and front and side setbacks. (b) Storm water drainage that provides for disposal of drainage water without serious erosion. (c) Methods for controlling erosion from wind and water. (d) Re-stabilization plan. (e) Environmental Impact Statement.	



High Risk Erosion Areas	Parcel dimensions (ft) width depth		Date project staked (M/D/Y)	
	Existing Structure Information		Proposed New Construction	
	Foundation type <input type="checkbox"/> basement <input type="checkbox"/> concrete slab <input type="checkbox"/> pilings <input type="checkbox"/> crawl space <input type="checkbox"/> other		Foundation type <input type="checkbox"/> basement <input type="checkbox"/> concrete slab <input type="checkbox"/> pilings <input type="checkbox"/> crawl space <input type="checkbox"/> other	
	Material above foundation wall <input type="checkbox"/> block <input type="checkbox"/> log <input type="checkbox"/> stud frame <input type="checkbox"/> other		Material above foundation wall <input type="checkbox"/> block <input type="checkbox"/> log <input type="checkbox"/> stud frame <input type="checkbox"/> other	
	Siding material <input type="checkbox"/> block <input type="checkbox"/> vinyl <input type="checkbox"/> wood <input type="checkbox"/> other		Siding material <input type="checkbox"/> block <input type="checkbox"/> vinyl <input type="checkbox"/> wood <input type="checkbox"/> other	
	Area of the foundation, excluding attached garage (sq ft)		Area of the foundation, excluding attached garage (sq ft)	
	Area of the garage foundation (sq ft)		Area of the garage foundation (sq ft)	
	If renovating or restoring an existing structure, indicate the renovation or restoration cost \$			
	Current structure replacement value \$			
	Tax assessed value of existing structure excluding land value \$		Assessment Year	
Provide the number of individual living units in the proposed building				

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Michigan State Fair Grounds City/County: Oakland Sampling Date: 6/12/2015
 Applicant/Owner: TBON, LLC State: MI Sampling Point: D4
 Investigator(s): Woody Held Section, Township, Range: 16, T1N, R8E
 Landform (hillside, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): LRR L Lat: 42.4891 Long: -83.5056 Datum:
 Soil Map Unit Name: Metea loamy sand, 0 to 6 percent slopes NWI classification: PEM

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

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u></u> If yes, optional Wetland Site ID: <u></u>
Hydric Soil Present?	Yes <u>X</u> No <u></u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u></u>	
Remarks: (Explain alternative procedures here or in a separate report.)		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
<u>Primary Indicators (minimum of one is required: check all that apply)</u>			
<u>X</u> Surface Water (A1)	<u></u> Water-Stained Leaves (B9)	<u></u> Surface Soil Cracks (B6)	
<u>X</u> High Water Table (A2)	<u></u> Aquatic Fauna (B13)	<u></u> Drainage Patterns (B10)	
<u>X</u> Saturation (A3)	<u></u> Marl Deposits (B15)	<u></u> Moss Trim Lines (B16)	
<u></u> Water Marks (B1)	<u></u> Hydrogen Sulfide Odor (C1)	<u></u> Dry-Season Water Table (C2)	
<u></u> Sediment Deposits (B2)	<u></u> Oxidized Rhizospheres on Living Roots (C3)	<u></u> Crayfish Burrows (C8)	
<u></u> Drift Deposits (B3)	<u></u> Presence of Reduced Iron (C4)	<u></u> Saturation Visible on Aerial Imagery (C9)	
<u></u> Algal Mat or Crust (B4)	<u></u> Recent Iron Reduction in Tilled Soils (C6)	<u>X</u> Stunted or Stressed Plants (D1)	
<u></u> Iron Deposits (B5)	<u></u> Thin Muck Surface (C7)	<u></u> Geomorphic Position (D2)	
<u></u> Inundation Visible on Aerial Imagery (B7)	<u></u> Other (Explain in Remarks)	<u></u> Shallow Aquitard (D3)	
<u></u> Sparsely Vegetated Concave Surface (B8)		<u></u> Microtopographic Relief (D4)	
		<u>X</u> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes <u>X</u> No <u></u>	Depth (inches): <u>1</u>	Wetland Hydrology Present? Yes <u>X</u> No <u></u>	
Water Table Present? Yes <u>X</u> No <u></u>	Depth (inches): <u>1</u>		
Saturation Present? Yes <u></u> No <u></u>	Depth (inches): <u></u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.

 Sampling Point: D4

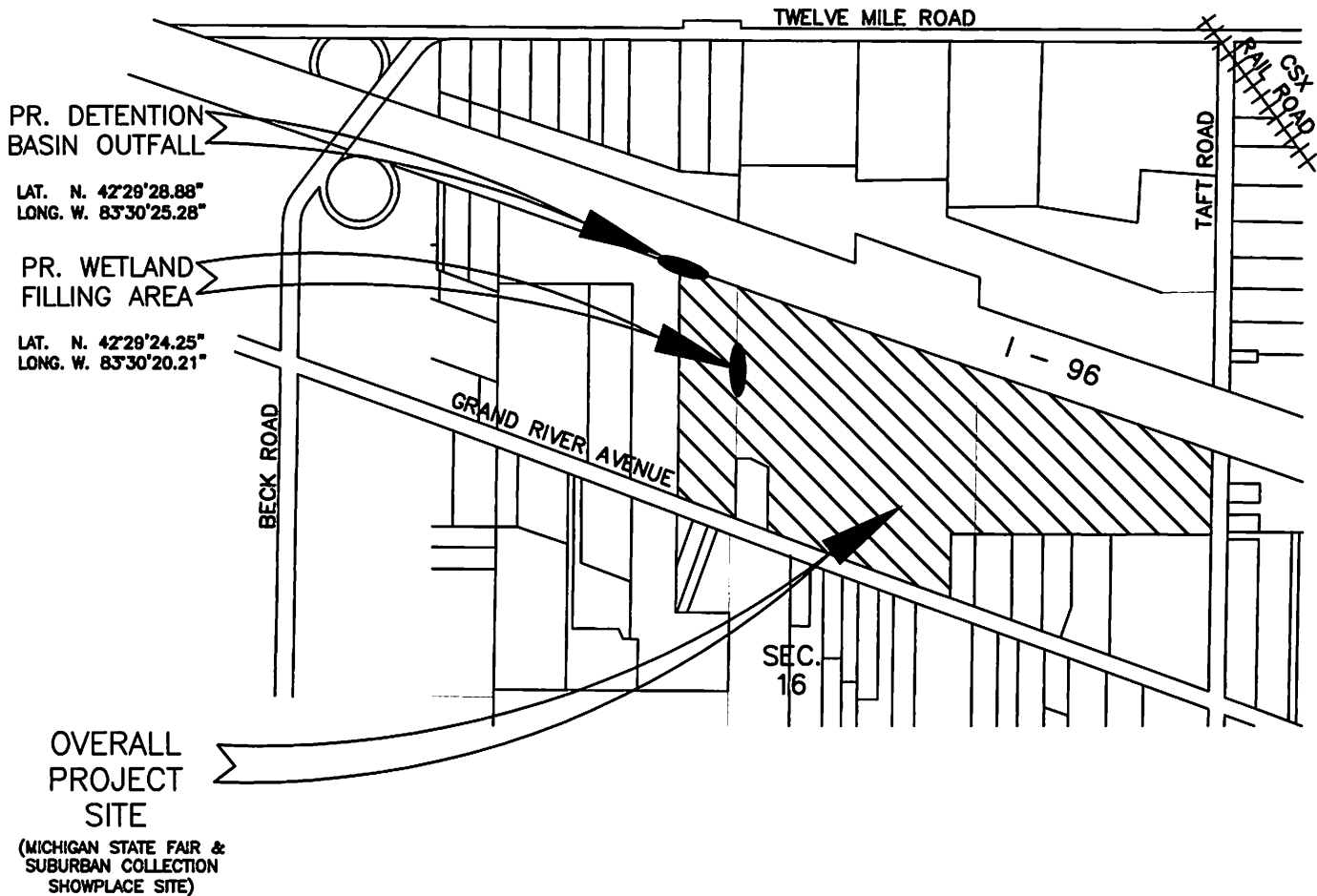
	Absolute % Cover	Dominant Species?	Indicator Status																																									
Tree Stratum (Plot size: <u>15'</u>)																																												
1. <u>Salix nigra</u>	10	Yes	OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																								
2. <u>Populus deltoides</u>	5	Yes	FAC																																									
3. _____																																												
4. _____																																												
5. _____																																												
6. _____																																												
7. _____																																												
	15	=Total Cover																																										
Sapling/Shrub Stratum (Plot size: <u>5'</u>)																																												
1. <u>Salix interior</u>	2	No	FACW	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">42</td> <td>x 1 =</td> <td style="text-align: center;">42</td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">2</td> <td>x 2 =</td> <td style="text-align: center;">4</td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">5</td> <td>x 3 =</td> <td style="text-align: center;">15</td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">0</td> <td>x 4 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">49</td> <td>(A)</td> <td style="text-align: center;">61</td> <td>(B)</td> </tr> <tr> <td colspan="4" style="text-align: right;">Prevalence Index = B/A =</td> <td style="text-align: center;">1.24</td> </tr> </table>	Total % Cover of:		Multiply by:			OBL species	42	x 1 =	42		FACW species	2	x 2 =	4		FAC species	5	x 3 =	15		FACU species	0	x 4 =	0		UPL species	0	x 5 =	0		Column Totals:	49	(A)	61	(B)	Prevalence Index = B/A =				1.24
Total % Cover of:		Multiply by:																																										
OBL species	42	x 1 =	42																																									
FACW species	2	x 2 =	4																																									
FAC species	5	x 3 =	15																																									
FACU species	0	x 4 =	0																																									
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Column Totals:	49	(A)	61	(B)																																								
Prevalence Index = B/A =				1.24																																								
2. _____																																												
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7. _____																																												
	2	=Total Cover																																										
Herb Stratum (Plot size: <u>5'</u>)																																												
1. <u>Typha angustifolia</u>	30	Yes	OBL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <input checked="" type="checkbox"/> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
2. <u>Eupatorium maculatum</u>	2	No	OBL																																									
3. _____																																												
4. _____																																												
5. _____																																												
6. _____																																												
7. _____																																												
8. _____																																												
9. _____																																												
10. _____																																												
11. _____																																												
12. _____																																												
	32	=Total Cover																																										
Woody Vine Stratum (Plot size: <u>5</u>)																																												
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																																								
2. _____																																												
3. _____																																												
4. _____																																												
=Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																																								

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

SOIL

Sampling Point: D4

[illegible]



**MICHIGAN STATE FAIR &
SUBURBAN COLLECTION
SHOWPLACE EXPANSION
LOCATION MAP**



SCALE
1"=1000'



<u>BENCH MARKS</u>	
NOVI B.M. 16-2	RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD; 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 948.80
NOVI B.M. 16-7	CHISELED SQUARE ON EAST SIDE LIGHT POLE BASE; 125'± SOUTH OF THE C/L OF GRAND RIVER AND 940'± WEST OF C/L OF TAFT ROAD; ON WEST EDGE OF BIT PARKING LOT FOR GATSBY'S BAR. ELEVATION 963.19
B.M. #3	ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88

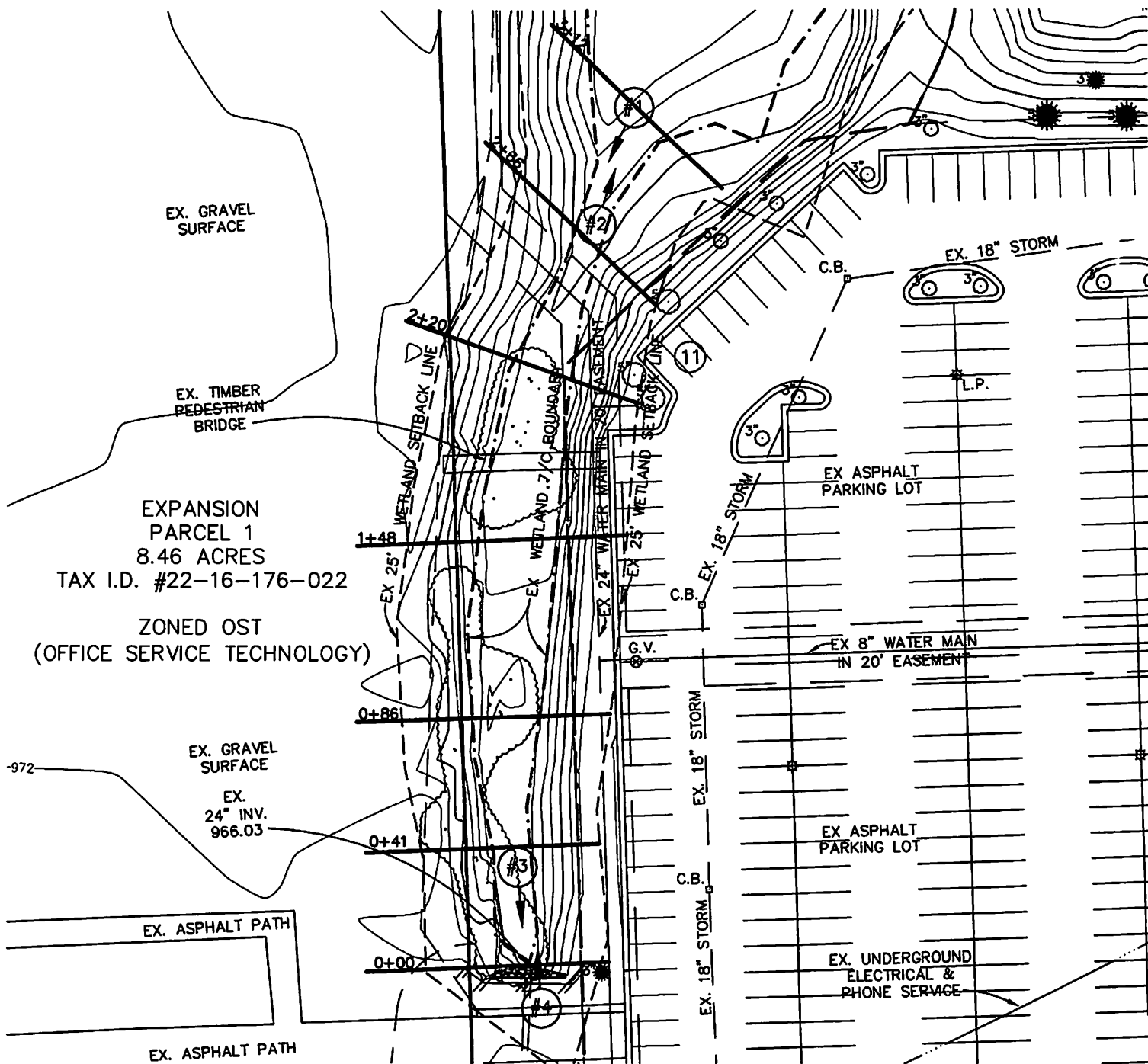
APPLICANT:
TBON, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

PROPOSED ACTIVITY:
FILLING 0.14 ACRES OF EXISTING WETLAND
& INSTALLATION OF 301'-24" STORM SEWER

DRAWING SCALE:
1" = 1000'

DATE: 06/15/16 SHEET 1 OF 9



NOTE: SITE WETLAND DELINEATION PERFORMED BY KING & MACGREGOR ENVIRONMENTAL, INC.

MICHIGAN STATE FAIR & SUBURBAN COLLECTION SHOWPLACE EXPANSION EXISTING CONDITIONS PLAN

LEGEND

#3 → PHOTOGRAPH # & DIRECTION

EXISTING CONDITIONS PLAN

SCALE: 1"=50'

BENCH MARKS

NOVI B.M. 16-2

RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD; 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 948.80

NOVI B.M. 16-7

CHISELED SQUARE ON EAST SIDE LIGHT POLE BASE; 125'± SOUTH OF THE C/L OF GRAND RIVER AND 940'± WEST OF C/L OF TAFT ROAD; ON WEST EDGE OF BIT PARKING LOT FOR GATSBY'S BAR. ELEVATION 963.19

B.M. #3

ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88



SCALE
1"=50'



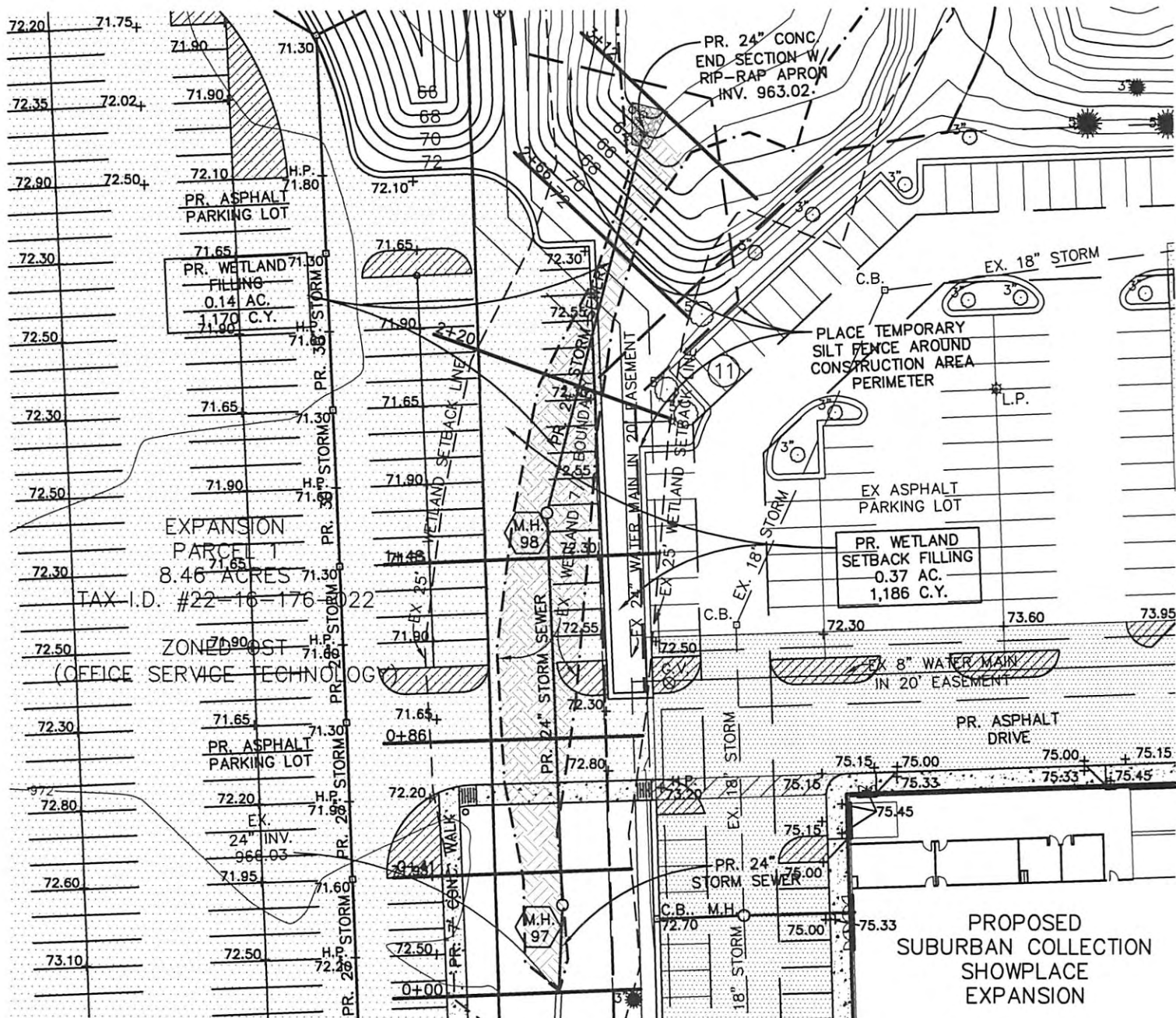
APPLICANT:
TBOB, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

PROPOSED ACTIVITY:
FILLING 0.14 ACRES OF EXISTING WETLAND
& INSTALLATION OF 301'-24" STORM SEWER

DRAWING SCALE:
1" = 50'

DATE: 06/15/16 SHEET 2 OF 9



WETLAND FILLING PLAN

SCALE: 1"=50'

MICHIGAN STATE FAIR & SUBURBAN COLLECTION SHOWPLACE EXPANSION PROPOSED GRADING PLAN

BENCH MARKS

NOVI B.M. 16-2

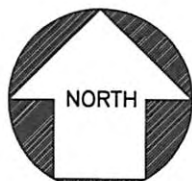
RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD; 400'± NORTH OF GRAND RIVER AVENUE.
ELEVATION 948.80

NOVI B.M. 16-7

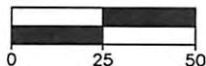
CHISELED SQUARE ON EAST SIDE LIGHT POLE BASE; 125'± SOUTH OF THE C/L OF GRAND RIVER AND 940'± WEST OF C/L OF TAFT ROAD; ON WEST EDGE OF BIT PARKING LOT FOR GATSBY'S BAR.
ELEVATION 963.19

B.M. #3

ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING.
ELEVATION 976.88



SCALE
1"=50'



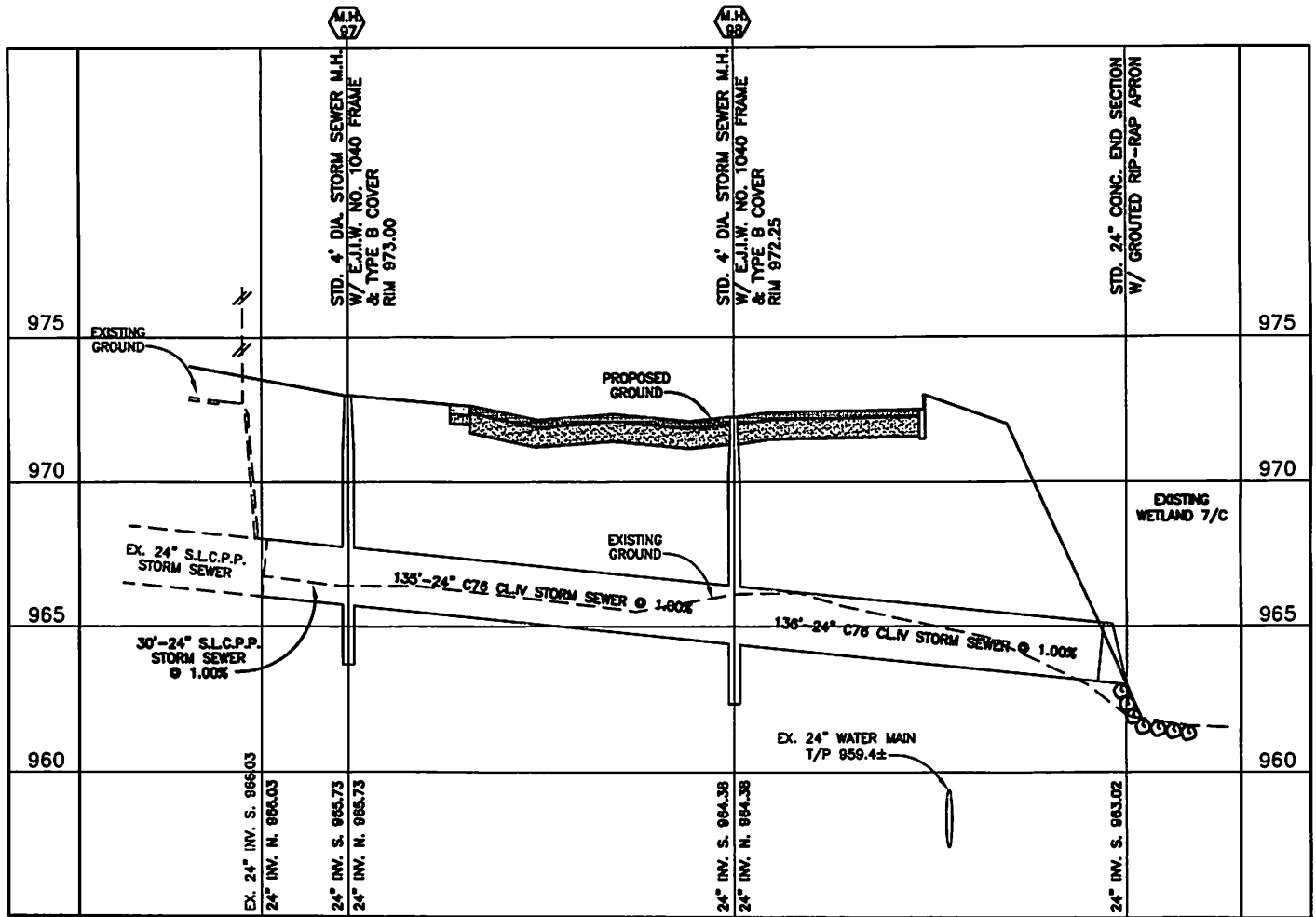
APPLICANT:
TBON, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

PROPOSED ACTIVITY:
FILLING 0.14 ACRES OF EXISTING WETLAND
& INSTALLATION OF 301'-24" STORM SEWER

DRAWING SCALE:
1" = 50'

DATE: 06/15/16 SHEET 3 OF 9



STORM SEWER PROFILE
 SCALE: 1"=60' HORIZONTAL
 1"=6' VERTICAL

BENCH MARKS

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- B.M. #3 ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88

**MICHIGAN STATE FAIR &
 SUBURBAN COLLECTION
 SHOWPLACE EXPANSION
 WETLAND STORM SEWER PROFILE**

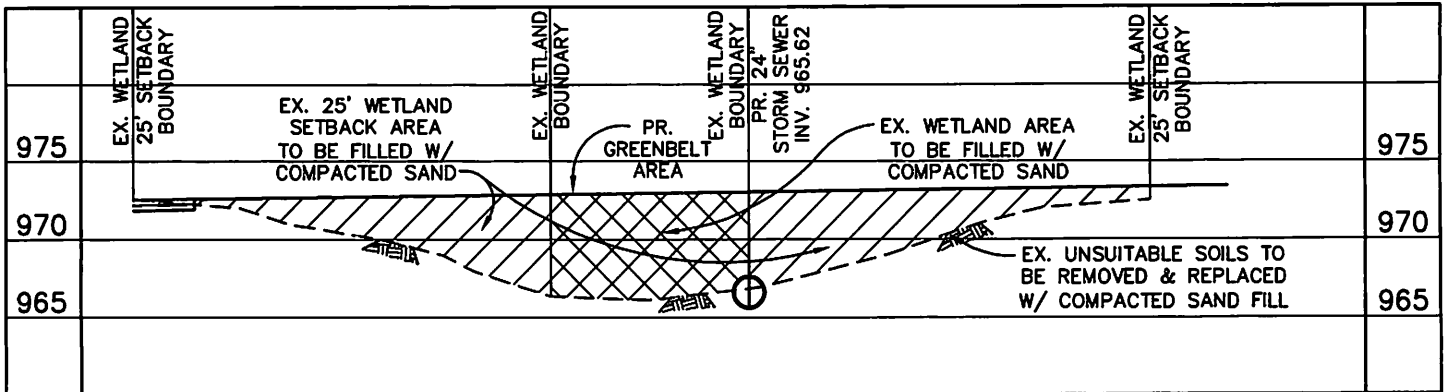
APPLICANT:
 TBN, LLC

WATERWAY:
 WETLAND 7/C
 SECTION 16, T.1N., R.8E.,
 CITY OF NOV, OAKLAND COUNTY, MICHIGAN

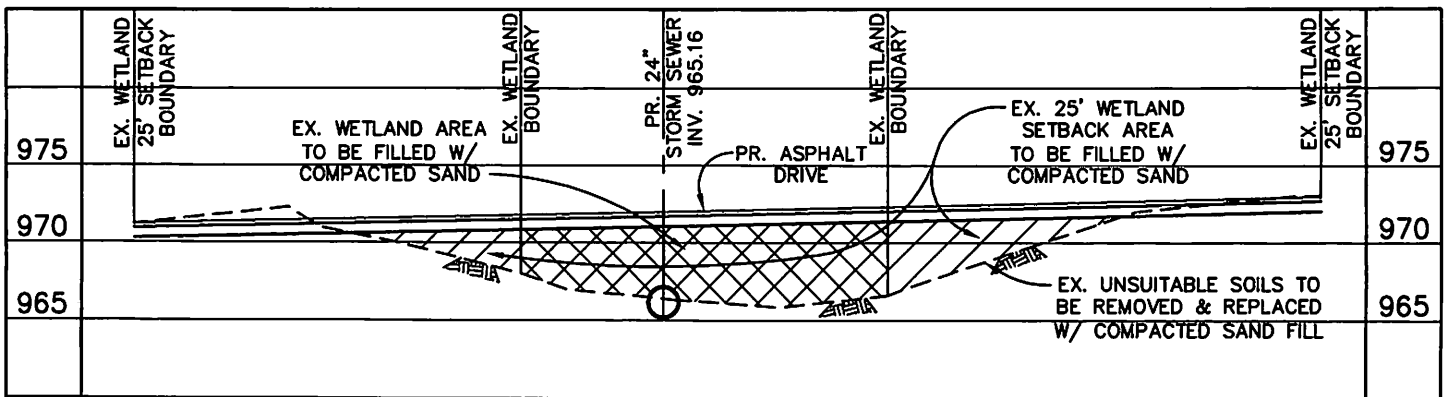
PROPOSED ACTIVITY:
 FILLING 0.14 ACRES OF EXISTING WETLAND & INSTALLATION OF 301'-24" STORM SEWER

DRAWING SCALE:
 1" = 60'

DATE: 06/15/16 SHEET 4 OF 9



**WETLAND 7/C CROSS SECTION
AT STATION 0+41
(LOOKING DOWNSTREAM)**



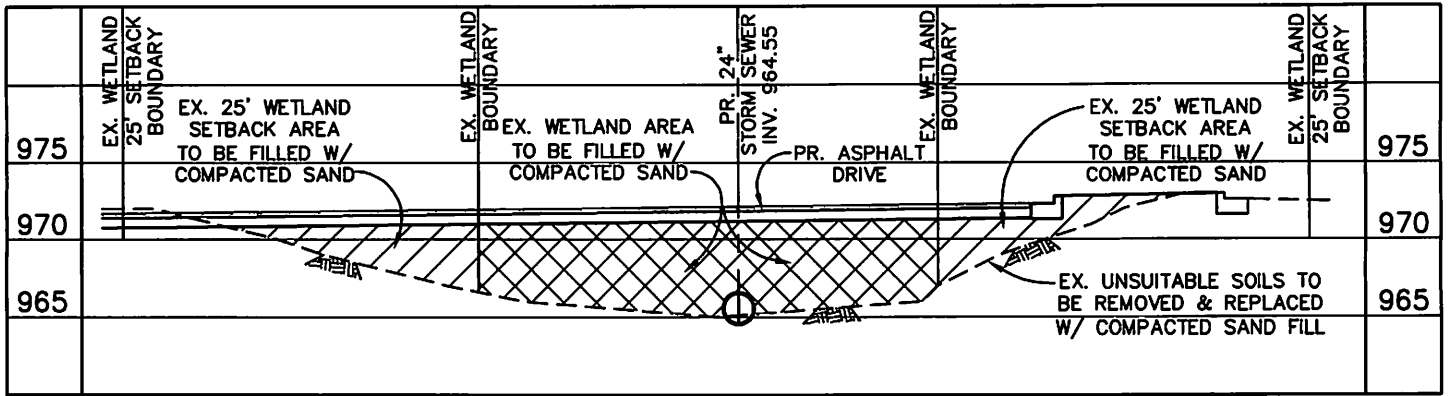
**WETLAND 7/C CROSS SECTION
AT STATION 0+86
(LOOKING DOWNSTREAM)**

**MICHIGAN STATE FAIR &
SUBURBAN COLLECTION
SHOWPLACE EXPANSION
WETLAND CROSS SECTIONS**

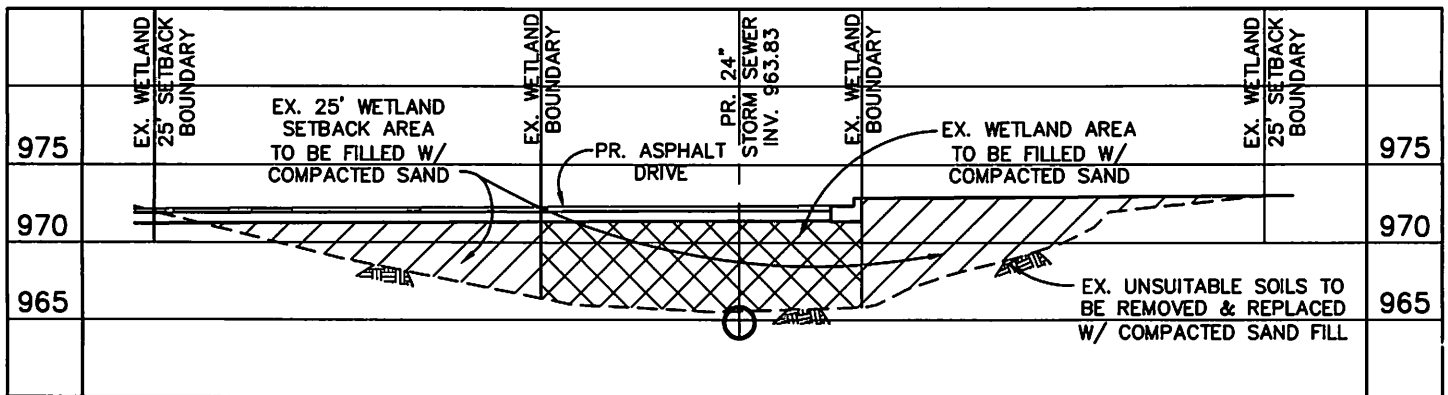
BENCH MARKS

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- B.M. #3 ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88

APPLICANT: TBON, LLC
WATERWAY: WETLAND 7/C SECTION 16, T.1N., R.8E., CITY OF NOVI, OAKLAND COUNTY, MICHIGAN
PROPOSED ACTIVITY: FILLING 0.14 ACRES OF EXISTING WETLAND & INSTALLATION OF 301'-24" STORM SEWER
DRAWING SCALE: 1" = 12'
DATE: 06/15/16 SHEET 5 OF 9



**WETLAND 7/C CROSS SECTION
AT STATION 1+48
(LOOKING DOWNSTREAM)**



**WETLAND 7/C CROSS SECTION
AT STATION 2+20
(LOOKING DOWNSTREAM)**

BENCH MARKS

- NOVI B.M. 16-2 RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD; 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 948.80
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- B.M. #3 ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88

**MICHIGAN STATE FAIR &
SUBURBAN COLLECTION
SHOWPLACE EXPANSION
WETLAND CROSS SECTIONS**

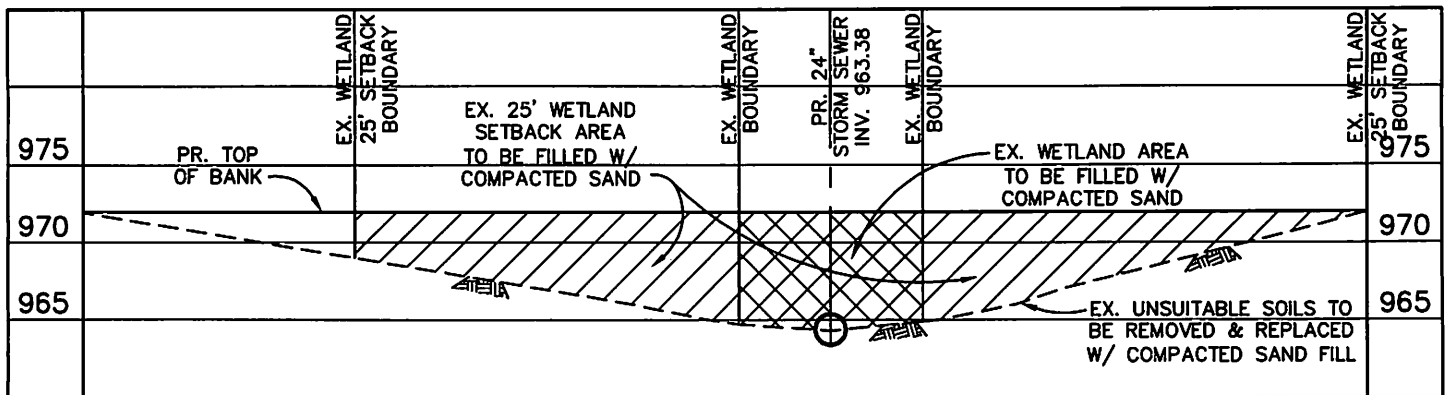
APPLICANT:
TBOH, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

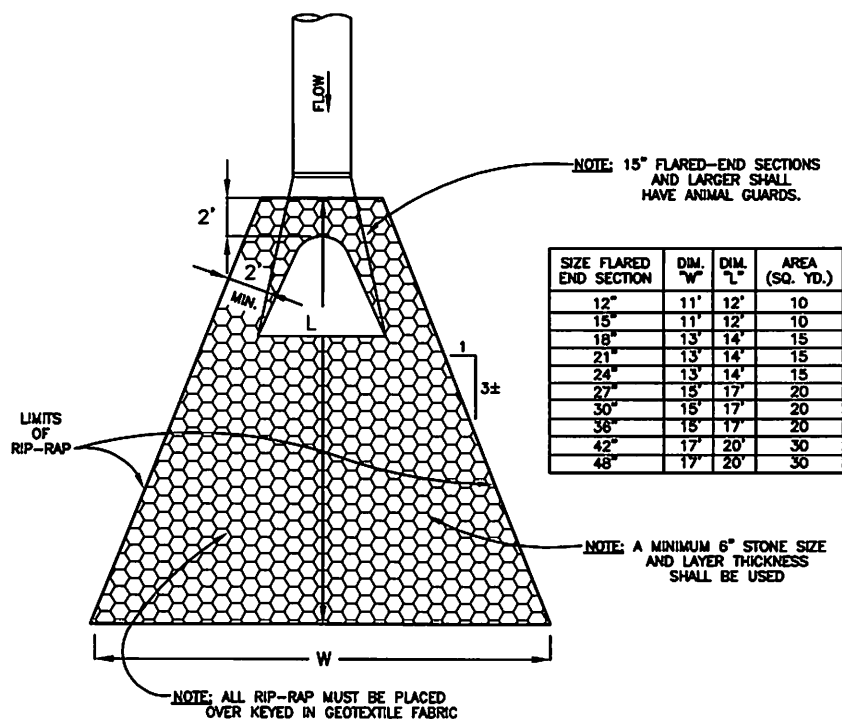
PROPOSED ACTIVITY:
FILLING 0.14 ACRES OF EXISTING WETLAND
& INSTALLATION OF 301'-24" STORM SEWER

DRAWING SCALE:
1" = 12'

DATE: 06/15/16 SHEET 6 OF 9



**WETLAND 7/C CROSS SECTION
AT STATION 2+66
(LOOKING DOWNSTREAM)**



**TYPICAL
RIP-RAP APRON
DETAIL**

**MICHIGAN STATE FAIR &
SUBURBAN COLLECTION
SHOWPLACE EXPANSION
WETLAND CROSS SECTION
& RIP-RAP APRON DETAIL**

BENCH MARKS

- NOV B.M. 16-2 RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD; 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 948.80
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- B.M. #3 ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88

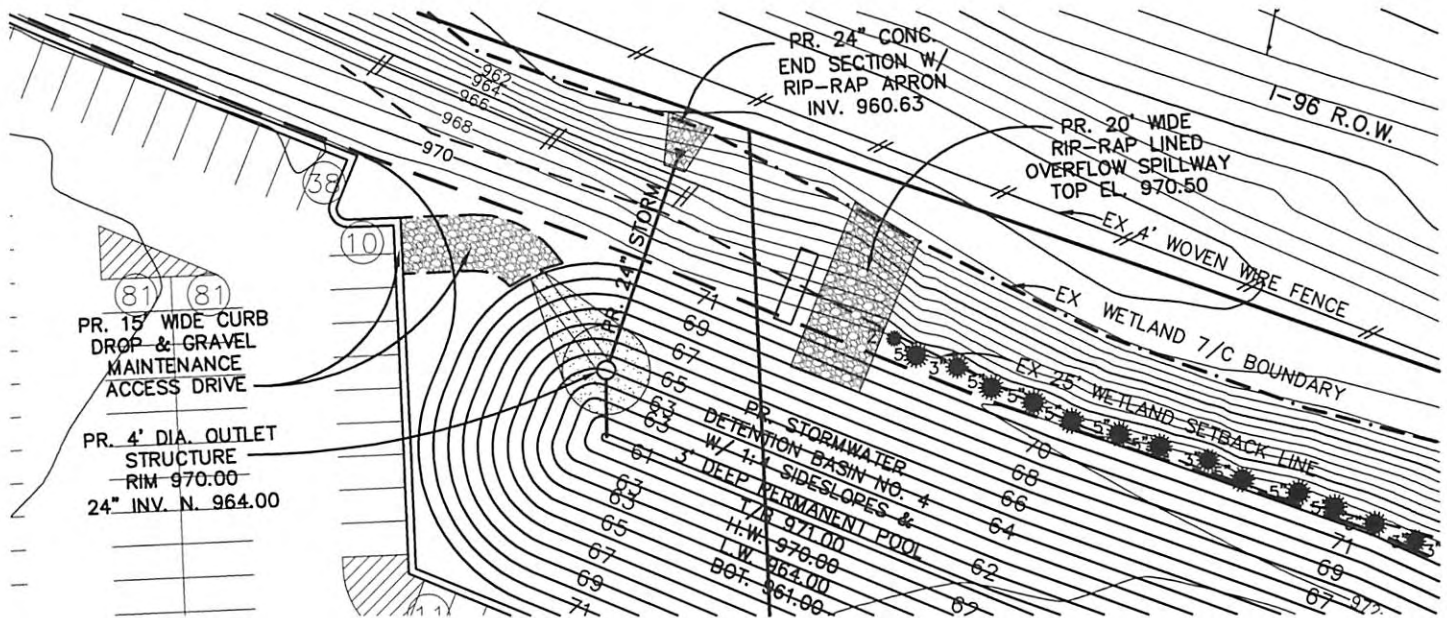
APPLICANT:
TBON, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOV,
OAKLAND COUNTY, MICHIGAN

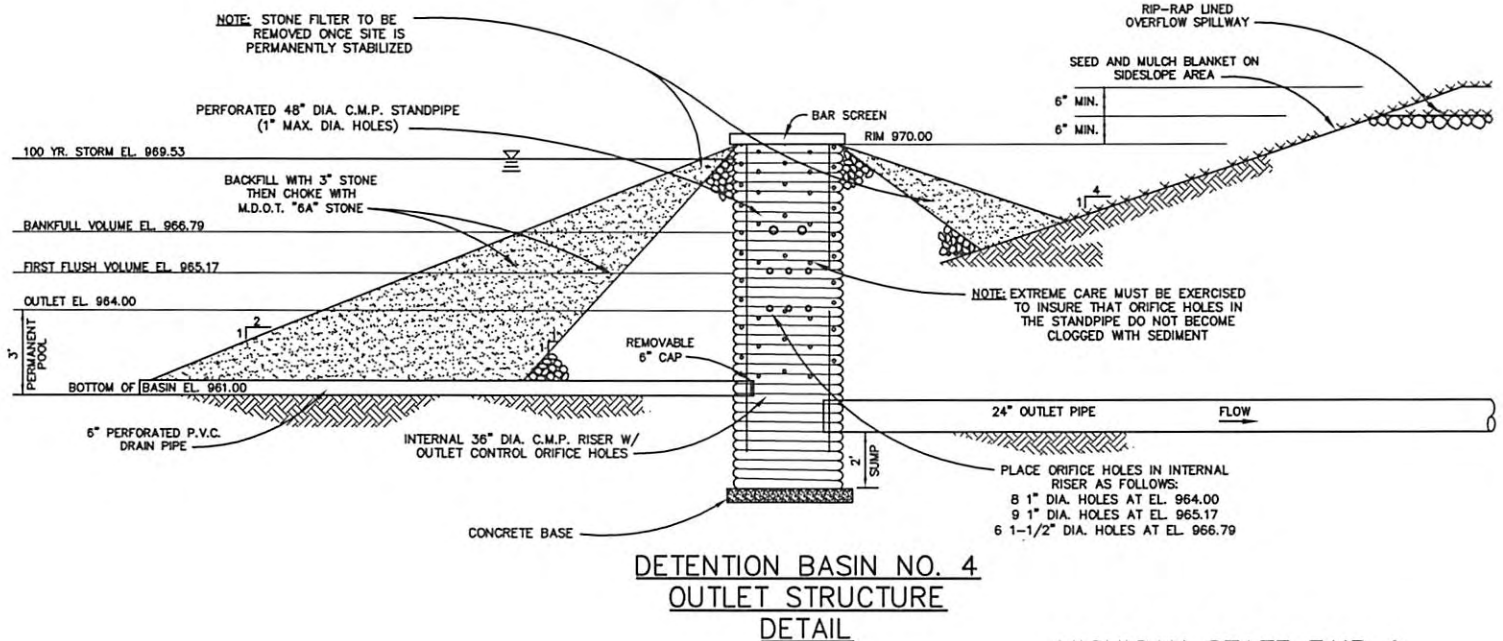
PROPOSED ACTIVITY:
FILLING 0.14 ACRES OF EXISTING WETLAND
& INSTALLATION OF 301'-24" STORM SEWER

DRAWING SCALE:
1" = 12'

DATE: 06/15/16 **SHEET** 7 OF 9



DETENTION BASIN NO. 4
OUTFALL STORM SEWER PLAN
 SCALE: 1"=50'



MICHIGAN STATE FAIR & SUBURBAN COLLECTION SHOWPLACE EXPANSION PROPOSED OUTLET PLAN

BENCH MARKS

NOVI B.M. 16-2

RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD; 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 948.80

NOVI B.M. 16-7

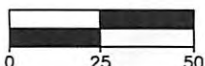
CHISELED SQUARE ON EAST SIDE LIGHT POLE BASE; 125'± SOUTH OF THE C/L OF GRAND RIVER AND 940'± WEST OF C/L OF TAFT ROAD; ON WEST EDGE OF BIT PARKING LOT FOR GATSBY'S BAR. ELEVATION 963.19

B.M. #3

ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88



SCALE
1"=50'



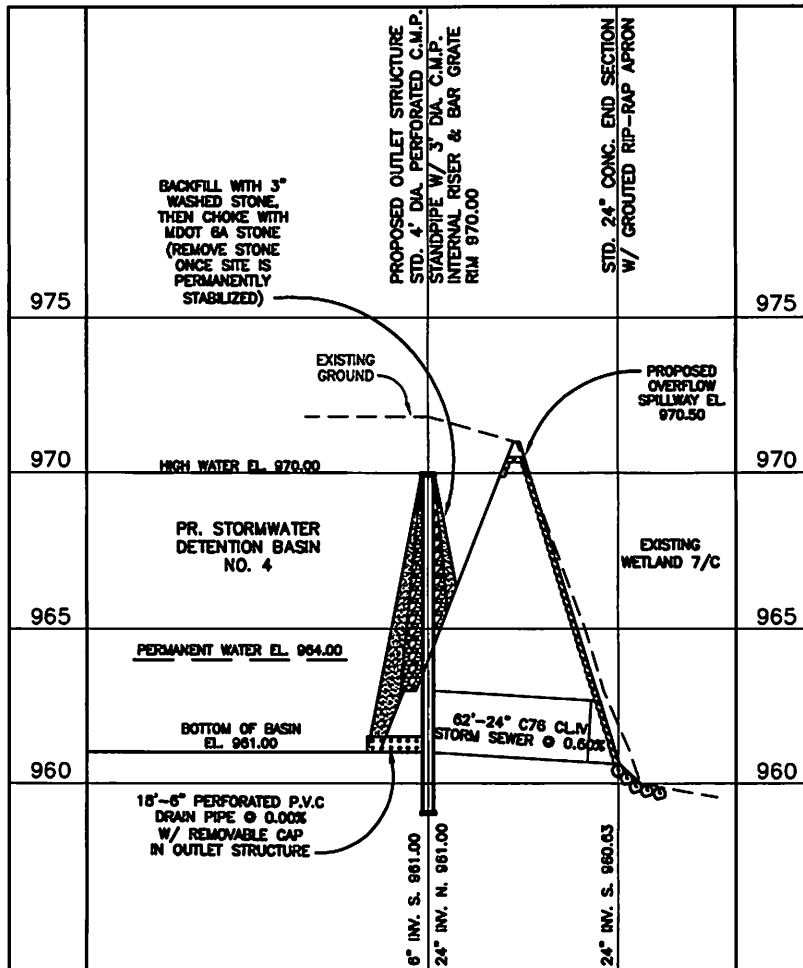
APPLICANT:
TBON, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

PROPOSED ACTIVITY:
INSTALLATION OF 24" DETENTION BASIN
OUTFALL STORM SEWER

DRAWING SCALE:
1" = 50'

DATE: 06/15/16 SHEET 8 OF 9



**DETENTION BASIN OUTFALL
STORM SEWER PROFILE**
SCALE: 1"=60' HORIZONTAL
1"=6' VERTICAL

BENCH MARKS

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**MICHIGAN STATE FAIR &
SUBURBAN COLLECTION
SHOWPLACE EXPANSION
OUTLET STORM SEWER PROFILE**

APPLICANT:
TBON, LLC

WATERWAY:
WETLAND 7/C
SECTION 16, T.1N., R.8E.,
CITY OF NOVI,
OAKLAND COUNTY, MICHIGAN

PROPOSED ACTIVITY:
INSTALLATION OF 24" DETENTION BASIN
OUTFALL STORM SEWER

DRAWING SCALE:
1" = 60'

DATE: 06/15/16 **SHEET** 9 OF 9



1.) EXISTING WETLAND 7/C @ PROPOSED END SECTION
LOOKING UPSTREAM



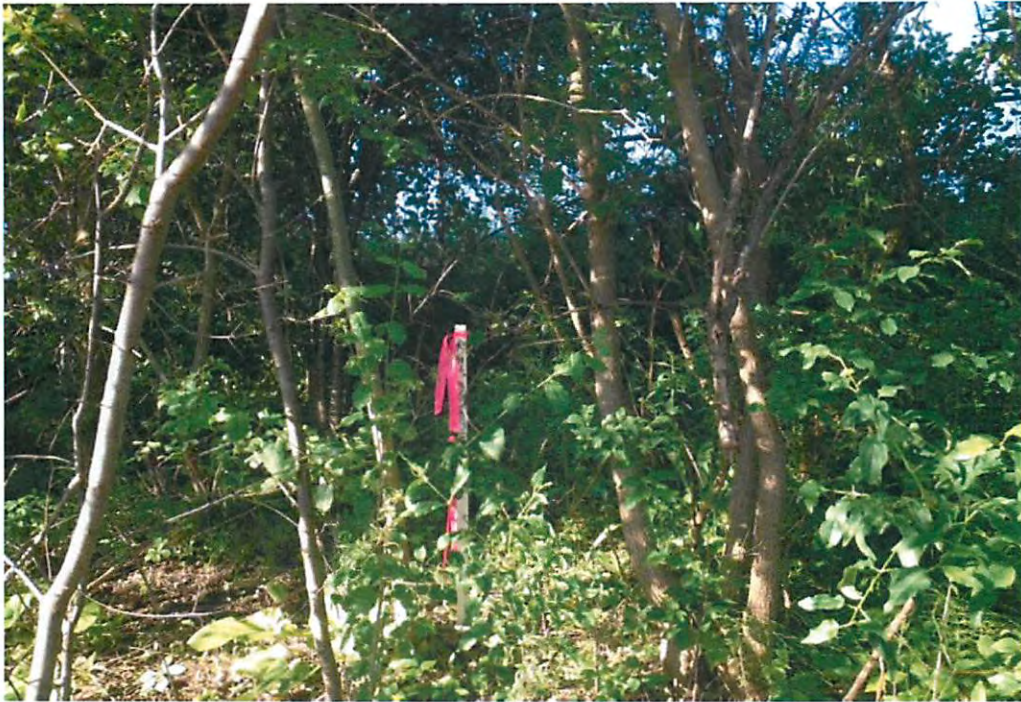
2.) EXISTING WETLAND 7/C @ PROPOSED END SECTION
LOOKING DOWNSTREAM



3.) EXISTING WETLAND 7/C @ EXISTING 24" OUTLET
(LOOKING UPSTREAM)



4.) EXISTING WETLAND 7/C @ EXISTING 24" OUTLET
(LOOKING DOWNSTREAM)



EXISTING WETLAND 7/C @ PROPOSED 24" DETENTION BASIN
OUTFALL END SECTION LOOKING UPSTREAM (SOUTH)



EXISTING WETLAND 7/C @ PROPOSED 24" DETENTION BASIN
OUTFALL END SECTION LOOKING DOWNSTREAM (NORTH)

PRELIMINARY GEOTECHNICAL EXPLORATION AND ENGINEERING REPORT



**PROPOSED 38-ACRE LIGHT INDUSTRIAL PARK
DEVELOPMENT
Novi, Michigan**

**Preliminary Geotechnical Exploration and
Engineering Report**

**Boco Enterprises
Novi, Michigan**

ETS Project No. D4602

June 16, 1998



Geotechnical, Environmental
& Materials Consultants

June 16, 1998

Mr. Blair Bowman
Boco Enterprises
43700 Expo Center Drive, Suite 101
Novi, Michigan 48375

Re: Preliminary Geotechnical Exploration and Engineering Report
Proposed 38-Acre Light Industrial Park Development
Novi, Michigan
ETS Project No. D4602

Dear Mr. Bowman:

We have completed the preliminary geotechnical exploration and engineering report for the proposed 38-Acre Parcel to be developed on the north side of Grand River Avenue, west of Taft Road, in Novi, Michigan. This report presents the results of our observations and analysis and our recommendations for subgrade preparation, foundation design, and construction considerations.

We appreciate the opportunity to assist you and the design team on this project. If you have any questions regarding this report, please do not hesitate to contact us.

Thank you very much for your continued use of our services.

Respectfully,

ENGINEERING & TESTING SERVICES, INC.

Susan H. Berth for JTA

Jefferey T. Anagnostou, P.E., C.P.G.
Technical Services Manager

3 pc: encl.

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EXECUTIVE SUMMARY

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APPENDIX

**Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602**

EXECUTIVE SUMMARY

Approximately 2 to 12 inches of topsoil was encountered at the boring locations. A silty fine sand layer was encountered to a depth of 2½ feet within Boring B-1. The underlying soils generally consisted of silty and sandy clay with occasional sand seams and layers to explored depth of 15 and 20 feet below the existing ground surface. Within Boring B-7, the silty clay was underlain by silty fine to coarse sand to the explored depth of 15 feet.

Groundwater seepage was encountered during drilling at approximate depths of 7 to 14½ feet below the existing ground surface in Borings B-1, B-6, and B-7. After the completion of drilling operations, the groundwater level was measured at approximate depths of 14 and 2 feet below the existing ground surface in Borings B-6 and B-7, respectively. Boring B-1 was reported to be dry after the completion of drilling operations. The remaining boring were reported to be dry both during and after the completion of drilling operations.

We understand it is planned to develop the parcel as a light industrial subdivision with light industrial office/warehouse structures without basements. In general, we believe the structures can be supported on spread footing type foundations extending 3½ to 5 feet below the existing ground surface and bearing on the native stiff to hard silty and sandy clays. We estimate individual spread footing foundations can be sized for net allowable soil pressures of approximately 2,500 to 3,500 pounds per square foot (psf) bearing on native stiff to hard silty and sandy clays. We estimate strip or wall footing foundations can be sized for allowable soil pressures of approximately 2,000 to 3,000 psf bearing on native stiff to hard silty and sandy clay.

Caving and sloughing of the near surface granular soils into the foundation excavations is anticipated in areas of surficial granular soils. In addition, groundwater seepage from perched water accumulations may also be encountered during foundation construction. We believe the anticipated groundwater seepage from perched accumulations can be controlled by normal sump pit and pumping procedures.

Final site grades were not available at the time our exploration was completed. Our observations and recommendations are based on final grades being close to existing grades. If significant cuts or fills are planned, the allowable soil bearing pressures may need to be revised. Also, groundwater seepage into the spread footing foundation excavations may take place if final grades are significantly lower than existing grades.

Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602

EXECUTIVE SUMMARY, Page 2

Do not consider this summary separate from the entire text of this report, with all the conclusions and qualifications mentioned herein. Details of our analysis and recommendations are discussed in the following sections and in the Appendix of this report.

REPORT PREPARED BY:

Susan H. Bertram, P.E.
Project Engineer

REPORT REVIEWED BY:

Jefferey T. Anagnostou, P.E., C.P.G.
Technical Services Manager

**Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602**

1. INTRODUCTION

We have completed the geotechnical exploration and engineering report for the proposed 38-Acre Light Industrial Park Development located in Novi, Michigan. Boco Enterprises retained Engineering & Testing Services, Inc. (ETS) to perform this exploration. This report presents the results of the exploration, including the boring logs and our recommendations for the foundation design and construction.

1.1 Project Description

The site is located along the north side of Grand River Avenue, south of the I-96 Expressway, and west of Taft Road in Novi, Michigan. We understand present plans include the development of a light industrial subdivision with construction of light industrial office/warehouse structures at the site. At the time this exploration was completed, the plans for the proposed parcel development were not yet finalized. We estimate structure loads may be light to moderate.

1.2 Scope of Geotechnical Services

Our scope of services for this project is as follows:

- A) Performing eight (8) soil borings to a depth of 15 feet each, located at the approximate locations shown on the Boring Location Plan included in the appendix.
- B) Performing appropriate testing including visual engineering classification, natural moisture content determinations, and unconfined compressive strength estimates on representative samples; and
- C) Geotechnical engineering analysis and preparation of this written engineering report. The written report includes recommendations regarding anticipated foundation types suitable for the soil conditions encountered, preliminary estimated allowable bearing pressure of the foundations, general recommendations concerning pavement subgrade preparation, and construction considerations related to foundation construction.

Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602

Boring B-1 was extended to a depth of 20 feet due to environmental considerations. The results of the environmental drilling and sampling will be presented in our Phase II Environmental Site Assessment report to be transmitted at a later date.

Environmental considerations were not included in the scope of services for this preliminary geotechnical report.

The field operations, laboratory testing, and engineering report preparation were performed under the direction and supervision of a registered professional engineer. These services were performed according to generally accepted standards and procedures in the practice of geotechnical engineering. If changes occur in the design, location, or concept of the project, the conclusions and recommendations contained in this report are not valid unless ETS reviews the changes. ETS will then confirm our recommendations or make changes in writing.

**Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602**

2. FIELD AND LABORATORY PROGRAM

2.1 Field Program

The number, depth, and location of the borings were determined by ETS in consultation with Boco Enterprises. The borings were located in the field based on a preliminary site plan provided by Boco Enterprises. The ground surface elevations at the boring locations were not available at the time our exploration was completed. Based on the contour elevations shown on the 7.5 Minute USGS Novi, Michigan and Salem, Michigan quadrangle topographic maps, the site area is located within approximate ground surface contour line Elevations 940 and 960 feet.

An all-terrain vehicle (ATV) mounted rotary drilling rig was used to perform the soil borings. Continuous flight hollow-stem augers were used to advance the bore holes and split-spoon samplers were used to obtain the soil samples by the Standard Penetration Test (SPT) method in general conformance with ASTM Standard D-1586. The number of blows required to drive the sampler 12 inches, after an initial seating of 6 inches, with a 140-pound hammer falling 30 inches is termed the Standard Penetration Resistance, N-value. A graphical representation of the N-values is given on the boring logs.

During the field operations, the drill crew maintained the log of the subsurface conditions, including changes in stratigraphy and observed groundwater levels. After completion of the drilling operations, the boreholes were backfilled with auger cuttings.

**Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602**

2.2 Laboratory Testing

The soil samples were placed in sealed containers in the field and brought to the laboratory for testing and classification. A geotechnical engineer classified the samples in general conformance with the Unified Soil Classification System.

Laboratory testing included natural moisture content determinations and unconfined compressive strength estimates of the split-spoon samples with a calibrated hand penetrometer. With a hand penetrometer, the unconfined compressive strength of a soil sample is estimated by measuring the resistance of the soil sample to penetration of a small, calibrated spring-loaded cylinder. The penetrometer can measure a maximum unconfined compressive strength of 4½ tons per square foot (tsf).

The results of the laboratory tests are indicated on the boring logs at the depths the samples were obtained. In cases where the hand penetrometer indicates the unconfined compressive strength is in excess of 4½ tsf, the results are plotted as open circles at 4½ tsf with a "+" sign to indicate the actual strength is greater than 4½ tsf.

We will hold the soil samples for 60 days from the date of this report. If you would like the samples, please notify us within this time frame.

**Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602**

3. SITE AND SUBSURFACE CONDITIONS

3.1 Site Conditions

The site is located along the north side of Grand River Avenue, south of the I-96 Expressway and west of Taft Road, in Novi, Michigan. At the time of our field exploration the site was generally heavily wooded with apparent wetland vegetation in the western portion of subject parcel. A small stream was observed to flow from east to west along the central portion of the southern property parcel. The site consisted of gently rolling hills and low-lying wetlands.

3.2 Soil Conditions

The soil conditions encountered at the boring locations can be summarized as follows. Approximately 2 to 12 inches of topsoil was encountered at the boring locations. A silty fine sand layer was encountered to a depth of 2½ feet within Boring B-1. The underlying soils generally consisted of silty and sandy clay with occasional sand seams and layers to the explored depth of 15 and 20 feet below the existing ground surface. Within Boring B-7, the silty clay was underlain by silty fine to coarse sand to the explored depth of 15 feet.

The silty and sandy clay encountered to a depth of 10 feet below the existing grade, was generally very stiff to hard with unconfined compressive strengths ranging from 2 to greater than 4½ tsf and natural moisture contents ranging from 10 to 22 percent. In Boring B-5, the sandy clay encountered to a depth of 5 feet was medium to stiff with unconfined compressive strengths ranging from ½ to 1¼ tsf and natural moisture contents ranging from 14 to 18 percent. The near surface silty sand encountered in Boring B-1 was medium dense with an N-value of 15 blows per foot. Below a depth of 10 feet, the silty and sandy clays were generally stiff to very stiff with unconfined compressive strengths ranging from 1 to 3½ tsf and natural moisture contents ranging from 10 to 14

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percent. The silty sand encountered below a depth of 7 feet in Boring B-7 was very loose to loose with N-values ranging from 4 to 9 blows per foot.

The stratification depths shown on the soil boring logs represent the soil conditions at the boring locations. Variations may occur between the borings. Additionally, the stratigraphic lines represent the approximate boundary between soil types; the transition may be more gradual than what is shown. We have prepared the boring logs on the basis of laboratory classification and testing as well as field logs of the explored soils.

The soil boring logs and a boring location plan are presented in the Appendix. The soil profiles described above are generalized descriptions of the conditions encountered at the boring location. Please consult the boring logs for more specific information.

3.3 Groundwater Level Observations

The driller looked for indications of groundwater during and after the performance of the soil borings. Groundwater seepage was encountered during drilling at approximate depths of 7 to 14½ feet below the existing ground surface in Borings B-1, B-6, and B-7. After the completion of drilling operations, the groundwater level was measured at approximate depths of 14 and 2 feet below the existing ground surface in Borings B-6 and B-7, respectively. Boring B-1 was reported to be dry after the completion of drilling operations. The remaining boring were reported to be dry both during and after the completion of drilling operations.

Predominantly cohesive soils, such as encountered at the site, require a long time for water to become stable in the bore hole. To determine the prevailing groundwater level, groundwater monitoring wells (piezometers) must be installed in the bore holes and monitored for an extended time. The depth at which the soil color changes from brown to gray is frequently indicative of the

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prevailing groundwater level. Based on the available soil and groundwater level information, we believe the prevailing groundwater level may be located at depths ranging from approximately 3½ to 14 feet below the existing ground surface.

Expect the prevailing groundwater level to vary due to changes in precipitation, evaporation, surface run-off, and other factors. The groundwater levels discussed herein, and shown on the boring logs, represent the conditions at the time of the measurements.

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4. ANALYSIS AND RECOMMENDATIONS

We have made our analysis based on the information developed during this exploration. The resulting recommendations are given in the following sections. If our assumptions or understandings are not correct or if conditions during construction are significantly different from those found in the site exploration, contact ETS immediately. ETS may need to re-evaluate the recommendations.

4.1 Subgrade Preparation

Strip the building areas of trees, topsoil, and other organic matter in their entirety. Thoroughly proofroll the resulting subgrade with a heavily loaded single-axle dump truck. Loose, soft, or unstable areas revealed during proofrolling should be stabilized by additional compaction, or removed and replaced with engineered fill. If significant instability of the subgrade occurs, it may be necessary to undercut the loose or soft fill material and stabilize the subgrade surface with a woven geotextile, such as Mirafi 500X or equivalent, and a crushed aggregate layer.

The natural moisture content of the surface sandy or silty clays may be higher than the optimum for compaction. It may be necessary to disc and dry these soils before attempting to compact and proofroll the subgrade surface in preparation for placement of engineered fill. After suitable drying, the subgrade surface may be stable or become stable from proofrolling compaction.

4.2 Engineered Fill Placement and Compaction

Any fill placed beneath on-grade structures should be an approved, environmentally clean material. The fill should also be free of organic matter, frozen soil, clods, or other harmful material. The fill material should not be placed on frozen subgrade. Spread the fill in level lifts, not exceeding 9

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inches in loose thickness, and compact the soil to a minimum of 95 percent of the maximum dry density as determined by ASTM Standard D1557 (Modified Proctor). All engineered fill should be placed at or near the optimum moisture content.

4.3 Foundations

As discussed previously, we understand it is planned to develop the parcel as a light industrial subdivision with light industrial office/warehouse structures without basements. In general, we believe the structures can be supported on spread footing type foundations extending 3½ to 5 feet below the existing ground surface and bearing on the native stiff to hard silty and sandy clays. We estimate individual spread footing foundations can be sized for net allowable soil pressures of approximately 2,500 to 3,500 pounds per square foot (psf) bearing on native stiff to hard silty and sandy clays. We estimate strip or wall footing foundations can be sized for allowable soil pressures of approximately 2,000 to 3,000 psf bearing on native stiff to hard silty and sandy clays.

Embed the spread footing foundations a minimum of 42 inches below final grade for protection against problems related to frost penetration during normal winters.

Final site grades were not available at the time our exploration was completed. Our observations and recommendations are based on final grades being close to existing grades. If significant cuts are planned, the allowable soil bearing pressures may need to be revised. Also, groundwater seepage into the spread footing foundation excavations may take place. Once the plans for the proposed development have been finalized, we recommend a more comprehensive geotechnical exploration be performed to properly ascertain the soil conditions and define the prevailing groundwater level at the site, particularly in the wetland areas.

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We recommend ETS be given the opportunity to review the plans once the structures and associated facilities plans are finalized and the structure loads known, to verify the final foundation design is consistent with the design considerations presented in this preliminary report.

We recommend the site preparation activities, engineered fill placement, and foundation construction of the proposed project be observed by an ETS representative. Our representative will perform the appropriate type and number of field tests to verify compliance with construction specifications and that the foundation bearing material is suitable.

4.4 Slab-On-Grade Support

We recommend the procedures described previously in the section under "Subgrade Preparation", be used to prepare the subgrade soil for floor slab support.

4.5 General Pavement Design Considerations

The pavement subgrade soils should be prepared as indicated in the Subgrade Preparation section of this report. After stripping or cutting to the design subgrade elevation, proofrolling and undercutting as necessary to achieve a stable subgrade, engineered fill can be placed to the design subgrade elevation in the areas where grade will be raised. Following these recommendations, we believe the treated subgrade will be adequate to provide proper pavement support. Long term performance will typically be a function of the quality of the subgrade at the time the paving is performed, and the quality, thickness, and strength of the pavement section. Therefore, it is important to provide proper subgrade preparation to obtain as long a pavement service life as possible.

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The pavement surface should be adequately sloped to promote good surface drainage and to reduce water infiltration into the base course. We recommend finger drains, as a minimum, be installed at all catch basin locations to provide drainage for surface water which may become trapped in the pavement aggregate base section.

Based on the subgrade conditions encountered at the site and our experience, we recommend using a CBR value of 3 and a modulus of subgrade reaction of 125 pounds per cubic inch (pci) in the design of flexible and rigid pavements, respectively.

4.6 Construction Considerations

Caving and sloughing of the surface granular soils into the foundation excavations is anticipated in areas of near surface granular soils. In addition, groundwater seepage from perched water accumulations may also be encountered during foundation construction. We believe the anticipated groundwater seepage from perched accumulations can be controlled by normal sump pit and pumping procedures.

All excavations should be safely sheeted, shored, sloped, or braced in accordance with MI-OSHA requirements. If material is stored or equipment is operated near an excavation, stronger shoring must be used to resist the extra pressure due to the superimposed loads. Care should always be exercised when excavating near existing buildings, roadways, or utilities to avoid undermining. In no case should excavations extend below the level of adjacent existing foundations unless underpinning of the foundations is planned. Abandoned utilities in the area of the proposed foundations should be removed or completely filled with grout.

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ETS Project No. D4602**

4.7 General Comments

ETS prepared this preliminary report according to generally accepted geotechnical engineering standards and procedures. The purpose of this report is to aid in the evaluation of this property and to help the design team of this project. If changes occur in the design, location, or concept of the project, the conclusions and recommendations contained in this report are not valid. The changes must be reviewed by ETS with the recommendations of this report modified or affirmed in writing by ETS.

We base the analyses and recommendations submitted in this report upon the data from the soil borings performed at the approximate location shown on the location diagram. This report does not reflect variations that may occur between the actual boring location and the actual structure location. The nature and extent of any such variations may not become clear until the time of construction. If significant variations then become evident, it may be necessary for us to re-evaluate our report recommendations.

When obtaining and testing samples and preparing this report, we followed procedures that represent reasonable and accepted practice in the geotechnical engineering profession. The field log is prepared during the drilling and sampling operations to describe the field observations, sampling depths, and other information. We frequently subject the samples from the field to additional testing and reclassification in the laboratory. Differences may exist between the field log and the final log. The engineer preparing the report reviews the field log, laboratory classifications, and test data, and then prepares the final boring log. We base our recommendations on the contents of the final log.

We recommend ETS be given the opportunity to review the final design plans and specifications as they relate to the recommendations presented in this report. The review is necessary to verify the

**Proposed 38-Acre Light Industrial Park Development
ETS Project No. D4602**

report conclusions and recommendations have been interpreted according to our intent and are properly incorporated into the design. Further, the review will verify subsequent changes to the project have not affected our recommendations. Without this review, we can not be held responsible for misinterpretation of our data, analysis and/or our recommendations, nor how these are incorporated in the final design.

We also recommend ETS observe all geotechnical related work, including foundation construction, subgrade preparation, and engineered fill placement. ETS will perform the appropriate testing to confirm the geotechnical conditions given in the report are found during construction.

The contract specifications should include the following:

"The contractor will, upon becoming aware of subsurface or latent physical conditions differing from those disclosed by the original soil investigation work, promptly notify the owner verbally to permit verification of the conditions, and in writing, as to the nature of the differing conditions. No claim by the contractor for any conditions differing from those anticipated in the plans and specifications and disclosed by the soil studies will be allowed unless the contractor has so notified the owner, verbally and in writing, as required above, of such differing subsurface conditions."

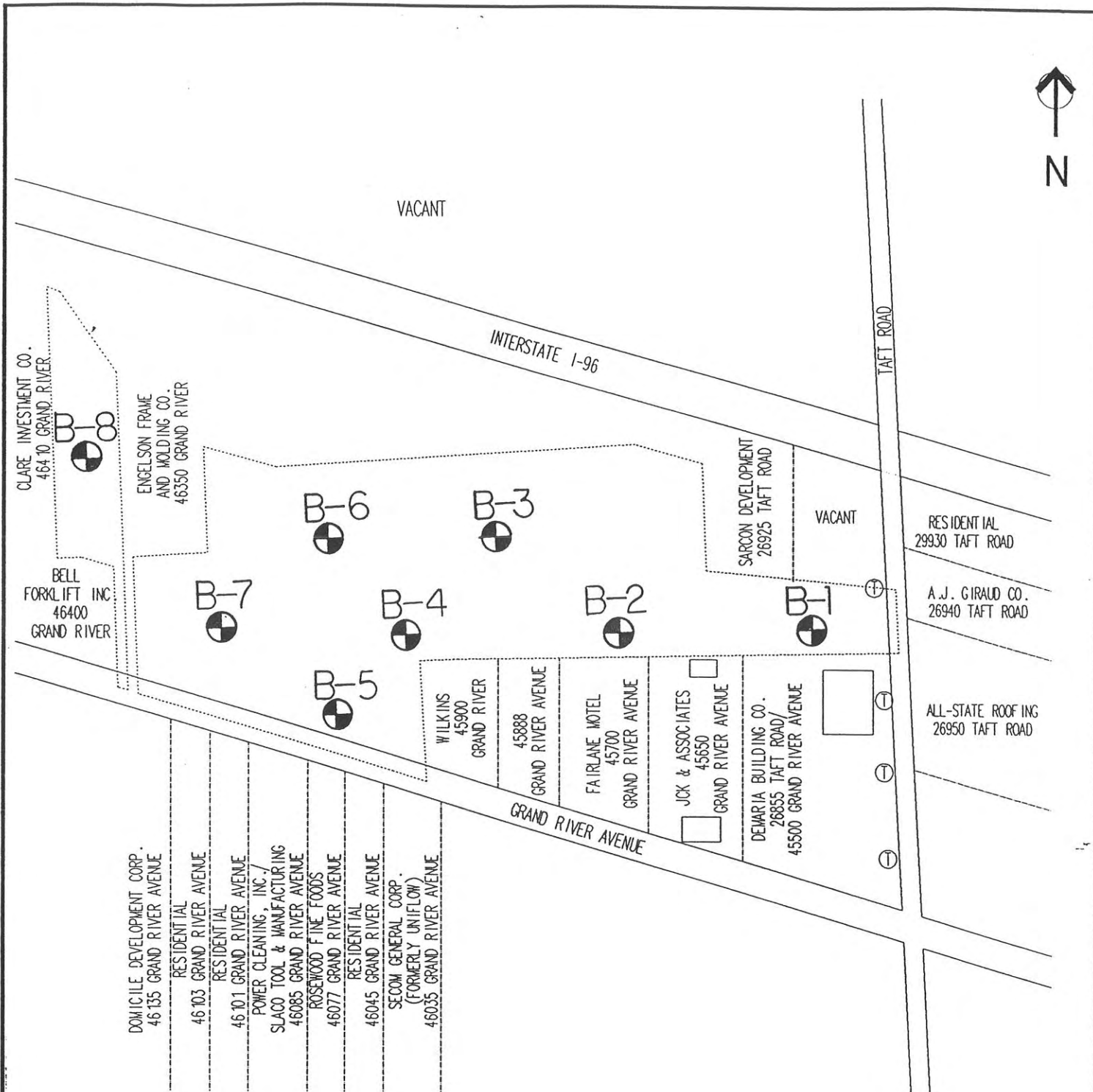
APPENDIX

1. FIGURE 1 - BORING LOCATION PLAN

2. GENERAL NOTES

3. BORING LOGS (B-1 THROUGH B-8)

4. UNIFIED SOIL CLASSIFICATION SYSTEM



⊙ - Soil Boring Location



Engineering & Testing Services, Inc.

Proposed 38-Acre Parcel Development
Novi, Oakland County, Michigan
BOCO Enterprises
ETS Project No. D4602

Figure No. 1

Boring Location Plan

SCALE : NOT TO SCALE CAD FILE NO.

DATE: June 11, 1998

45749 Helm Street, Plymouth, Michigan 48170



GENERAL NOTES

Drilling & Sampling Symbols

SS — Split Spoon — 1 3/8" I.D., 2" O.D., except where noted	HA — Hand Auger Boring
ST — Shelby Tube — 3" O.D., except where noted	BS — Bag Sample
PA — Power Auger	RC — Rock Core with diamond bit, NX size, except where noted
PS — Piston Sample — 3" diameter	RB — Roller Bit
WB — Wash Boring	N/A — Not applicable or available
WS — Wash Sample	

Standard Penetration Test "N" Value — Blows per foot after an initial 6 inch seating of a 140 pound hammer falling 30 inches on a 2 inch O.D. split spoon, except where noted.

Water Level Measurement Notation & Symbols

First	— When noted during drilling or sampling process
Completion	— After all drilling tools are removed from borehole
HR	— Number of hours after completion
N/R	— Not recorded
Dry	— No measurable water level found in borehole

Particle Sizes

Boulders	— Greater than 6" (152.4 mm)
Cobbles	— 3" to 6" (76.2 mm to 152.4 mm)
Gravel	— Coarse — 1/4" to 3" (19.05 mm to 76.2 mm)
Gravel	— Fine — (No. 4) 3/16" to 3/4" (4.75 mm to 19.05 mm)
Sand	— Coarse — No. 10 to No. 4 (2.00 mm to 4.75 mm)
Sand	— Medium — No. 40 to No. 10 (0.425 mm to 2.00 mm)
Sand	— Fine — No. 200 to No. 40 (0.074 mm to 0.425 mm)
Silt	— Minus No. 200 (0.005 mm to 0.074 mm)
Clay	— Less than 0.005 mm

Water levels indicated on the boring logs are the levels measured in the boring at the time indicated. The accurate determination of groundwater levels may not be possible with short term observations, especially in impervious soils. The level shown may fluctuate throughout the year with variations in precipitation, evaporation, runoff, and other hydrogeologic factors.

CLASSIFICATION

Cohesionless Soil

<u>Relative Density</u>	<u>"N" Value (Blows/ft)</u>
Very Loose	0 to 4
Loose	5 to 9
Medium Dense	10 to 29
Dense	30 to 49
Very Dense	50 to 79
Extremely Dense	Over 80

Soil Constituents

"Trace"	Less than 10%
"Trace to Some"	10% to 19%
"Some"	20% to 34%
"And"	35% to 50%

Cohesive Soil

<u>Consistency</u>	<u>Unconfined Compressive Strength (tons/sq. ft.)</u>
Very Soft	Less than 0.25
Soft	0.25 to 0.49
Medium	0.50 to 0.99
Stiff	1.00 to 1.99
Very Stiff	2.00 to 3.99
Hard	Greater than 4.00

Soil Description Terminology

If clay content is sufficient so that clay dominates soil properties then clay becomes the primary noun with other major soil constituent as modifier, i.e. silty clay. Other minor soil constituents may be added according to estimates of soil constituents present, i.e. silty clay, trace to some sand, trace gravel.

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-1		 ETS Engineering & Testing Services, Inc.	
		Sheet: 1 of 1					
Project: Proposed 38-Acre Development		Location: Novi, Oakland County, MI					

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot	○ Unconfined Compressive Strength (TSF)
				Description Of Material		● Natural Moisture Content P.L. % □ L.L. %	○ * Calibrated Hand Penetrometer (TSF)
				Surface Elevation:		0 20 40 60	0 2 4 6
						Scale: 40/inch	Scale: 4/inch
1SS				Driller reported 2" of TOPSOIL, brown			
				SILTY FINE SAND, trace gravel, medium dense, moist, brown (SM)	1		
2SS			5	SILTY CLAY, trace sand and gravel, occasional silt partings, hard, brown (CL)	2		○ * 4.5+
3SS					3		○ * 4.5+
4SS			10	SILTY CLAY, trace sand and gravel, hard, gray (CL)	4		○ * 4.5+
5SS			15	SILTY FINE SAND, medium dense, wet, gray (SM)	5		
				SILTY CLAY, trace sand and gravel, occasional sand seams, stiff, gray (CL)	6		
6SS			20	END OF BORING			

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual

Water Level Observation <u>14'5"</u> while drilling <u>Dry</u> at completion @ _____ hrs. after completion	Boring Started: 5-28-98 Boring Completed: 5-28-98 Rig: ATV-45	Drawn By: CJL Office: Detroit Foreman: J. Arsenault	Approved: <u>SB</u> File: D4602
Note: Boring backfilled with soil unless otherwise noted.			

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-2		 ETS Engineering & Testing Services, Inc.	
		Sheet: 1 of 1					
Project: Proposed 38-Acre Development				Location: Novi, Oakland County, MI			

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot	○ Unconfined Compressive Strength (TSF)
				Description Of Material		● Natural Moisture Content	○ Calibrated Hand Penetrometer (TSF)
						△ P.L.% □ L.L.%	× Undrained Shear Strength (KSF)
				Surface Elevation:	0 20 40 60 0 2 4 6 Scale: 40/inch Scale: 4/inch		
1SS				Driller reported 1" of SANDY TOPSOIL, brown	0.5	15	4.5+
2SS			5	SILTY CLAY, trace sand and gravel, occasional silt partings, occasional wet sand seams @ 7' and 9.5', hard to very stiff, brown (CL)	1	25	4.5+
3SS					2	20	
4SS			10		3	15	
5SS			15	SILTY CLAY, trace sand and gravel, very stiff, gray (CL) END OF BORING	4	15	

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual


Water Level Observation _____ Dry _____ while drilling _____ Dry _____ at completion _____ @ _____ hrs. after completion	Boring Started: 5-28-98 Boring Completed: 5-28-98 Rig: ATV-45	Drawn By: CJL Office: Detroit Foreman: J. Arsenault	Approved: SB File: D4602
Note: Boring backfilled with soil unless otherwise noted.			

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-3		 ETS Engineering & Testing Services, Inc.	
Project: Proposed 38-Acre Development		Sheet: 1 of 1		Location: Novi, Oakland County, MI			

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot	○ Unconfined Compressive Strength (TSF)
				Description Of Material		● Natural Moisture Content	○ Calibrated Hand Penetrometer (TSF)
						P.L.%	□ L.L.%
Surface Elevation:				Scale: 40/inch		Scale: 4/inch	
1SS				Driller reported 2" of SANDY TOPSOIL, brown	0		
2SS			5	SILTY CLAY, trace sand and gravel, occasional silt partings, hard to very stiff, mottled brown and gray (CL)	1		4.5+
3SS					2		4.5+
4SS			10	SILTY CLAY, trace sand and gravel, occasional silt partings, hard, brown (CL)	3		4.5+
5SS			15	SILTY CLAY, trace sand and gravel, occasional moist sand seams, stiff, gray (CL)	4		
				END OF BORING			

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual

Water Level Observation _____ Dry _____ while drilling _____ Dry _____ at completion _____ @ _____ hrs. after completion		Boring Started: 5-28-98 Boring Completed: 5-28-98 Rig: ATV-45		Drawn By: CJL Office: Detroit Foreman: J. Arsenault		Approved: SB File: D4602	
Note: Boring backfilled with soil unless otherwise noted.							

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-4		 Engineering & Testing Services, Inc.			
Project: Proposed 38-Acre Development		Location: Novi, Oakland County, MI							
Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot		⊗ "N" Blows Per Foot		○ Unconfined Compressive Strength (TSF)	
				Description Of Material		● Natural Moisture Content		○ * Calibrated Hand Penetrometer (TSF)	
				Surface Elevation:		P.L. % L.L. %		× Undrained Shear Strength (KSF)	
						0 20 40 60		0 2 4 6	
						Scale: 40/inch		Scale: 4/inch	
1SS				Driller reported 12" of TOPSOIL					
2SS			5	SILTY CLAY, trace to some sand, trace gravel, occasional silt partings, hard, mottled brown and gray (CL)		1		4.5+	
3SS						2		4.5+	
4SS			10			3		4.5+	
5SS			15	SILTY CLAY, trace sand and gravel, very stiff, gray (CL) END OF BORING		4		*	
Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual									
Water Level Observation ____ Dry _____ while drilling ____ Dry _____ at completion ____ @ _____ hrs. after completion				Boring Started: 6-1-98 Boring Completed: 6-1-98 Rig: CME-750		Drawn By: CJL Office: Detroit Foreman: D. Hotten		Approved: SB File: D4602	
Note: Boring backfilled with soil unless otherwise noted.									

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-5		 ETS Engineering & Testing Services, Inc.	
		Sheet: 1 of 1					
Project: Proposed 38-Acre Development		Location: Novi, Oakland County, MI					

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot	○ Unconfined Compressive Strength (TSF)
				Description Of Material		● Natural Moisture Content	○ Calibrated Hand Penetrometer (TSF)
Surface Elevation:				△ --- P.L. % ● --- L.L. % Scale: 40/inch		× Undrained Shear Strength (KSF) Scale: 4/inch	
1SS				Driller reported 2" of SANDY TOPSOIL, brown	0	10	1.5
2SS			5	SANDY CLAY, trace gravel, occasional sand seams, medium to stiff, brown (CL)	1	20	2.5
3SS			10	SILTY CLAY, trace sand and gravel, occasional silt partings, hard to very stiff, gray (CL)	2	30	4.5+
4SS			10		3	40	4.5+
5SS			15		4	50	4.5+
				END OF BORING			

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual

Water Level Observation _____ Dry _____ while drilling _____ Dry _____ at completion _____ @ _____ hrs. after completion	Boring Started: 5-28-98	Drawn By: CJL	Approved: SB
	Boring Completed: 5-28-98	Office: Detroit	File: D4602
	Rig: ATV-45	Foreman: J. Arsenault	
Note: Boring backfilled with soil unless otherwise noted.			

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-6		 ETS Engineering & Testing Services, Inc.	
		Sheet: 1 of 1					
Project: Proposed 38-Acre Development		Location: Novi, Oakland County, MI					

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot	○ Unconfined Compressive Strength (TSF)
				Description Of Material		● Natural Moisture Content	○ * Calibrated Hand Penetrometer (TSF)
						Surface Elevation:	△ --- P.L.% □ --- L.L.%
						0 20 40 60	0 2 4 6
						Scale: 40/inch	Scale: 4/inch
1SS				Driller reported 2" of SANDY TOPSOIL, brown			
2SS			5	SILTY CLAY, trace sand and gravel, occasional silt partings, very stiff to hard, mottled brown and gray (CL)	1		
3SS				SANDY CLAY, trace gravel, stiff, brown (CL)	2		
4SS			10	SILTY FINE SAND, some gravel, very moist, brown (SM)	3		
5SS			15	Driller reported SILTY CLAY, trace gravel, brown	4		
				Driller reported FINE SAND, trace gravel and clay, moist, brown and gray			
				SILTY CLAY, trace to some sand, trace gravel, stiff, mottled brown and gray (CL)			
				SANDY SILT, trace gravel and clay, medium dense, wet, gray (ML)			
				END OF BORING			

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual

Water Level Observation <u>14'1"</u> while drilling <u>14'</u> at completion @ _____ hrs. after completion	Boring Started: 5-28-98 Boring Completed: 5-28-98 Rig: ATV-45	Drawn By: CJL Office: Detroit Foreman: J. Arsenault	Approved: <u>SB</u> File: D4602
Note: Boring backfilled with soil unless otherwise noted.			

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-7		 ETS Engineering & Testing Services, Inc.	
Project: Proposed 38-Acre Development		Sheet: 1 of 1		Location: Novi, Oakland County, MI			

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot ● Natural Moisture Content △ P.L.% □ L.L.%	○ Unconfined Compressive Strength (TSF) ○ * Calibrated Hand Penetrometer (TSF) × Undrained Shear Strength (KSF)
				Description Of Material		Scale: 40/inch	Scale: 4/inch
				Surface Elevation:			
				Driller reported 2" of TOPSOIL			
1SS				SILTY CLAY, trace sand and gravel, occasional silt partings, very stiff to hard, mottled brown and gray (CL)	1		
2SS			5				
3SS							
4SS			10	SILTY FINE TO COARSE SAND, trace gravel, occasional clay lenses, loose to very loose, wet, gray (SM)	3		
5SS			15				
				END OF BORING			

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual

Water Level Observation _____ 7' _____ while drilling _____ 2' _____ at completion _____ @ _____ hrs. after completion		Boring Started: 6-1-98		Drawn By: CJL		Approved: SB	
		Boring Completed: 6-1-98		Office: Detroit		File: D4602	
		Rig: CME-750		Foreman: D. Hotton			
Note: Boring backfilled with soil unless otherwise noted.							

Client: BOCO Enterprises		ETS Project #: D4602		Boring Log Number: B-8		 ETS Engineering & Testing Services, Inc.	
		Sheet: 1 of 1					
Project: Proposed 38-Acre Development				Location: Novi, Oakland County, MI			

Sample No./Type	Sample Distance	Recovery	Depth (feet)	PCF Indicates Sample Dry Unit Weight in Pounds Per Cubic Foot	Depth (meters)	⊗ "N" Blows Per Foot	○ Unconfined Compressive Strength (TSF)
				Description Of Material		● Natural Moisture Content	○ Calibrated Hand Penetrometer (TSF)
						△ P.L.% □ L.L.%	× Undrained Shear Strength (KSF)
Surface Elevation:				Scale: 40/inch		Scale: 4/inch	
<p>Driller reported 2" of TOPSOIL</p>							
1SS				SILTY CLAY, trace sand and gravel, occasional silt partings, hard, brown (CL)	1	⊗	○ 4.5+
2SS			5		2	⊗	○ 4.5+
3SS					3	⊗	○
4SS			10		4	⊗	○
5SS			15			⊗	○
END OF BORING							

Note: The stratification lines indicated herein are approximate; In-situ the transition between soil types may be gradual

Water Level Observation _____ Dry _____ while drilling _____ Dry _____ at completion _____ @ _____ hrs. after completion		Boring Started: 6-1-98 Boring Completed: 6-1-98 Rig: CME-750		Drawn By: CJL Office: Detroit Foreman: D. Hotton		Approved: SB File: D4602	
Note: Boring backfilled with soil unless otherwise noted.							

Unified Soil Classification



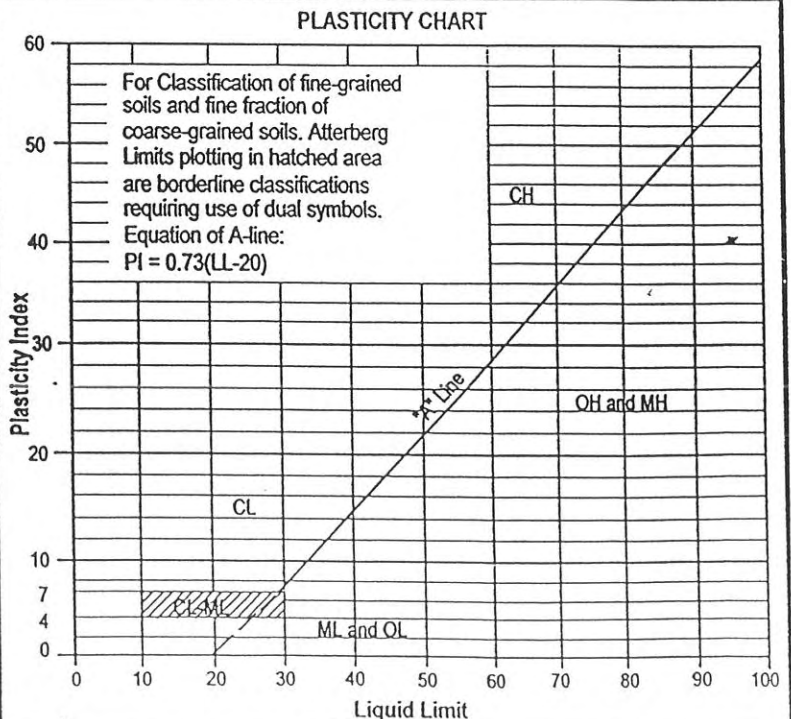
Major Divisions		Group Symbols		Typical Names		Laboratory Classification Criteria			
Coarse Grained Soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean Gravels (Little or no fines)		GW		$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3			
				GP		Not meeting all gradation requirements for GW.			
		Gravels with fines (Appreciable amount of fines)	GM	d	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below "A" line or PI less than 4		Above "A" line with PI between 4 and 7 are borderline cases requiring use of dual symbols.	
				u					
	GC		Clayey gravels, gravel-sand-clay mixtures		Atterberg limits above "A" line with PI greater than 7				
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean Sands (Little or no fines)		SW		$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3			
				SP		Not meeting all gradation requirements for SW.			
		Sands with fines (Appreciable amount of fines)	SM	d	Silty sands, sand-silt mixtures	Atterberg limits below "A" line or PI less than 4		Limits plotting in hatched zone with PI between 4 and 7 are borderline cases requiring use of dual symbols.	
				u					
		SC		Clayey sands, sand-clay mixtures		Atterberg limits above "A" line with PI greater than 7			

Determine percentage of sand and gravel from grain-size curve.
Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse grained soils are classified as follows:
Less than 5%.....GW, GP, SW, SP
More than 12%.....GM, GC, SM, SC
5 to 12%.....Borderline cases requiring dual symbols

Fine Grained Soils (More than half of material is smaller than No. 200 sieve size)	Silt and Clays (liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
	Silt and Clays (liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
	Highly Organic Soils	Pt	Peat and other highly organic soils

PLASTICITY CHART

For Classification of fine-grained soils and fine fraction of coarse-grained soils. Atterberg Limits plotting in hatched area are borderline classifications requiring use of dual symbols.
Equation of A-line:
 $PI = 0.73(LL - 20)$





TP-33

4

7-11

TP-13

11

2

2



TP-38

TB-112

P-6

C-8

1C-31

TP-36

4. 由

IP-35

P-3

B-105

TP-17

3-104+

—109—

TP-18

TP-19

TP-20

1B-2

- PROPERTY LINE

39



NTH Consultants, Ltd.
Infrastructure Engineering
and Environmental Services

NTH SOIL BORINGS
NEW CONSTRUCTION

Report On:

**Geotechnical Investigation
Proposed Novi Expo Center
Novi, Michigan**

Prepared For:

**Clayco Construction Company, Inc.
Livonia, Michigan**

**NTH Project No. 15-030094-00
February 19, 2003**

Commitment • Innovation • Excellence



NTH Consultants, Ltd.

Infrastructure Engineering
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Mr. Donald J. Webb, P.E.
Clayco Construction Company, Inc.
19500 Victor Parkway, Suite 375
Livonia, Michigan 48152

February 19, 2003
Project No.: 15-030094-00

Re: Report on Geotechnical Investigation
Proposed Novi Expo Center
Novi, Michigan

Dear Mr. Webb:

We are pleased to submit this report on geotechnical investigation performed for the proposed Novi Expo Center in Novi, Michigan. We performed this investigation in accordance with the agreed-upon scope of work outlined in our Proposal No. P-20030075-F, dated January 14, 2003.

We appreciate the opportunity to have been of service to you, and we look forward to participating in the construction phase of this project. If you have any questions, or require additional information, please contact us.

Sincerely,

NTH Consultants, Ltd.

A handwritten signature in black ink, reading 'Peter A. Margules'.

Peter A. Margules, P.E.
Project Engineer

A handwritten signature in black ink, reading 'Hosam S. Yaldo'.

Hosam S. Yaldo, P.E.
Project Manager

PAM/HSY/mam

Attachments



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LOG OF HAND AUGER BORINGS	FIGURE NO. 13
TABULATION OF LABORATORY TEST DATA	FIGURE NO. 14



1.0 INTRODUCTION

This report presents the results of a geotechnical investigation performed at the site of the proposed Novi Expo Center in Novi, Michigan. The purpose of the investigation was to explore and evaluate general subsurface conditions at the site and provide recommendations for earthwork, building foundations, floor slabs, and pavements, as well as other important site development considerations.

The data obtained during this investigation along with our evaluations, analyses, and recommendations are presented in subsequent sections of this report.

2.0 SITE CONDITIONS

The project site is located on the north side of Grand River Avenue, and the west side of Taft Road, in Section 16 of the City of Novi, Michigan. As shown on the Test Boring Location Plan, Plate 1, the site consists of an irregularly-shaped parcel covering approximately 54 acres. The overall plan dimensions of the site are approximately 1340 feet (east-west) by 930 feet (north-south). In addition to the two roads, the site is bordered by Interstate 96 (I-96) to the north and by private parcels to the west and southeast.

An existing single-story building at 46350 Grand River Avenue is located in the west-central portion of the site. Access to the building is provided by an existing paved driveway that extends north from Grand River Avenue to the building along the southern portion of the west property boundary. The northwestern portion of the site is currently occupied by a rest area maintained by the Michigan Department of Transportation (MDOT) and accessed from eastbound I-96. The remaining portions of the site are undeveloped. The eastern portion of the site is primarily covered by woods. The undeveloped parts of the western portion of the site are covered by areas of grass, weeds, and trees. Several wetland areas, ranging in size up to approximately 3 acres, are located throughout the site. The available information indicates that a borrow pit covering approximately 1.2 acres is located in the north-central portion of the site. We understand that the borrow pit was created by MDOT during the construction of the nearby expressway.



The ground surface topography is generally undulating, with some areas ranging from fairly flat to gently sloping. Based on information presented on a preliminary wetland mitigation plan made available to us, the ground surface ranges from about Elevation 980 near the middle of the western site boundary to approximately Elevation 928 at the edge of a wetland area located near the northeast corner of the site.

3.0 PROPOSED DEVELOPMENT

We understand that current plans for the project include construction of one building approximately 26 feet in height, along with associated driveway and parking areas. The available information indicates that the footprint of the building will be on the order of 319,000 square feet in plan area. The building is planned to be a slab-on-grade structure without a basement. The typical bay size is expected to be on the order of 60 feet by 60 feet. Column loads are expected to be similar to those of a single-story warehouse of similar bay size; however, no additional loads from heavy equipment or overhead cranes are anticipated. As such, for purposes of this report we assume that building loads will be moderate. The available information also indicates that the proposed building will incorporate eight below-grade truck wells.

We understand that the existing building will remain, and that the new construction will abut the east side of the existing building. The current site layout information indicates that the building will be located at the northern end of the largest existing wetland on the site, and that a second small wetland is also located within the proposed building footprint. The remainder of the largest wetland area, as well as some of the smaller wetland areas, are located within proposed pavements. The project will include mitigation of wetland areas that will be removed as part of the development. At present, no development is planned for the eastern end of the site; however, this area may be used for future development.

4.0 PREVIOUS INVESTIGATION BY OTHERS

Engineering & Testing Services, Inc. (ETS) performed a preliminary geotechnical investigation of a proposed 38-acre parcel encompassing the eastern, central, and southern portions of the



current site in 1988. The results of the ETS investigation were presented to Boco Enterprises in a report entitled "Preliminary Geotechnical Exploration and Engineering Report; Proposed 38-Acre Light Industrial Park Development; Novi, Michigan," ETS Project No. D4602, dated June 16, 1988.

Subsoil conditions encountered during the ETS investigation generally consist of a layer of topsoil 2 to 12 inches thick underlain by layers of silty clay or sandy clay soils that extend to the explored depths. Occasional sand seams and layers were encountered within the predominantly cohesive subsoils. Groundwater was encountered at depths ranging from about 7 to 14½ feet below existing ground surface at three of the eight locations explored by ETS.

5.0 CURRENT FIELD INVESTIGATION

Subsurface conditions at the site were explored by NTH by drilling twelve test borings, designated as TB-101 through TB-112, at the approximate locations shown on the Test Boring Location Plan, Plate 1. The test borings were located in the field by NTH by reference to existing surface features using unsophisticated methods, and were not surveyed. As such, the locations shown on Plate 1 are considered to be approximate. It should be noted that this investigation did not include areas currently used by MDOT since we were not provided authorization for access. Also, as indicated earlier in this report, no development is currently planned for the eastern portion of the site, and as such, this area was not included in the present investigation.

The test borings were drilled by American Drilling and Testing Company under the full-time observation of a staff engineer with our firm. The borings were drilled using a CME 550X all-terrain rotary drilling rig, and were extended to depths ranging from about 5 to 15 feet below existing ground surface. Continuous flight, hollow-stem augers having an inside diameter of 2¼ inches were used to advance the borings to the explored depths.

Within each test boring, soil samples were obtained at intervals of 2.5 feet within the upper 10 feet and at intervals of 5 feet below that depth. These samples were collected using a split-barrel sampler by the Standard Penetration Test method (ASTM D 1586), described on the attached



General Notes, Plate 2. The soil samples recovered from the test borings were sealed in glass containers and transported to our laboratory for further classification and testing. We will retain these samples for 60 days after the date of this report. At that time, we will dispose of the samples unless we are otherwise instructed.

After the completion of drilling, and following subsequent groundwater level observations, the test borings were backfilled with the excavated soil cuttings.

To explore the subsoil conditions within the wetland areas, our field representative drilled six hand auger borings, designated as HAB-1 through HAB-6, at the approximate locations shown on Plate 1. In addition, our field engineer probed the ground surface using a shovel at nine locations, designated as P-1 through P-9, in order to determine the topsoil thickness at other locations across the site. Soil samples were not collected in the hand auger borings or probed locations. Upon completion, the hand auger borings and soil probes were backfilled with the excavated soils.

6.0 PRESENTATION OF DATA

We have evaluated the soil and groundwater conditions encountered in the test borings and have presented these conditions in the form of individual Logs of Test Boring, Figure Nos. 1 through 12 of the Appendix. In addition to subsoil stratification, the test boring logs present Standard Penetration Test results, observed groundwater levels, drilling and sampling information, and other pertinent data. Subsoil conditions encountered in the hand auger borings are presented on the Log of Hand Auger Borings, Figure No. 13. Topsoil thicknesses encountered at the soil probe locations are also presented on Figure No. 13. General Notes defining the nomenclature used on the logs and within the text of this report are presented on Plate 2. Elevations shown on the test boring and hand auger boring logs were estimated based on information presented on an available topographic site plan, and were not surveyed. As such, these elevations are considered to be approximate. We have prepared the test boring logs on the basis of field classification supplemented by laboratory testing.



The stratification indicated on the boring logs represents the subsurface conditions at the actual explored locations. Variations in subsurface conditions may occur between these locations. In addition, the stratigraphic lines represent the approximate boundary between soil types. The transition from one soil type to another may be more gradual than indicated.

7.0 LABORATORY TESTING

Representative soil samples obtained from the test borings were subjected to laboratory testing to determine pertinent engineering characteristics of the subsoils. The testing program included the determination of natural moisture content, dry density, and unconfined compressive strength of selected cohesive samples. The results of laboratory tests are presented on the Tabulation of Laboratory Test Data, Figure No. 14, and on the respective Logs of Test Boring.

In addition to laboratory testing, field pocket penetrometer measurements were also made on cohesive soil samples obtained from the test borings and hand auger borings as an aid in evaluating their unconfined compressive strengths. The pocket penetrometer values are also indicated on the Logs of Test Boring.

8.0 SUBSOIL CONDITIONS AND EVALUATIONS

On the basis of the information developed during the course of this investigation, the subsoils at the site exhibit some variation, but generally consist of a layer of topsoil underlain by layers of native cohesive soils to the explored depths. Within the predominantly cohesive subsoils, occasional layers of granular soils were encountered at the explored locations.

Topsoil was encountered in each of the test borings to depths generally ranging from about 6 to 12 inches; however, at two of the test boring locations topsoil was encountered to a depth of about 18 inches. At the soil probe locations, the topsoil layer was encountered to depths ranging from about 2 to 10 inches; however, at most of the probe locations the thickness of topsoil ranged from about 4 to 9 inches. Topsoil was encountered at one hand auger boring location to a depth



of about 6 inches. The topsoil generally consists of brown or dark brown silty sand or silty clay soils with roots and other organic matter.

Within the wetland areas where topsoil is not present, peat and other dark-colored soils that contain appreciable amounts of organic matter were encountered to depths ranging from about 4 to 20 inches below existing ground surface. Where relatively thin peat deposits were encountered, and at the location where topsoil was encountered, the upper soil are underlain by soft silty clay soils to depths ranging from about 10 to 20 inches.

Underlying the surficial topsoil, and underlying the peat, other organic, and near-surface soft silty clay soils within the wetland areas, predominantly cohesive strata consisting of native silty clay soils were encountered to the explored depths of the test borings. The silty clay soils exhibit consistencies ranging from stiff to hard; however, most of the cohesive soils exhibit very stiff to hard consistency.

Within the predominantly cohesive subsoils, layers of native granular soils were occasionally encountered at various depths. The native granular soils consist of silty sand and occasionally sand soils that generally are in a medium compact condition. However, layers of loose silty sand and sand were encountered in TB-104 and TB-109 to depths ranging from about 2 to 3 feet. The native granular soil layers appear to be isolated and discontinuous. Substantial layers of medium compact silty sand soils were encountered in TB-102 extending from directly below the topsoil at a depth of about 1 foot to a depth of roughly 9½ feet.

Based on visual observations, the surface topsoil is moderately organic and, as such, is not considered suitable for the support of building foundations, floor slabs, or pavements, nor is the topsoil considered suitable for engineered fill. However, this material can be used for landscaping in non-structural areas.

Within the wetland areas, the existing peat and other soils containing significant amounts of organic matter, as well as the soft silty clay soils, are not considered suitable for the support of building foundations, floor slabs, or pavements, nor are these materials considered suitable for



engineered fill. Based on the conditions encountered in the hand auger borings, we anticipate that roughly 11 to 20 inches of unsuitable materials will need to be removed from the existing wetland areas as part of the site preparation operations. Furthermore, we expect that the approximate average value of the thickness of unsuitable materials will be closer to 20 inches than to the middle of the range indicated above in most areas of the existing wetlands. It should be noted that deeper peat and soft clay deposits may exist in areas between those explored with the hand auger borings.

The stiff to hard cohesive soils and medium compact to granular soils underlying the topsoil and other unsuitable near-surface soils are considered suitable for the direct support of moderate foundation loads of the type anticipated for this project.

9.0 GROUNDWATER CONDITIONS AND CONTROL

Groundwater level readings were made in each of the borings during drilling and at the completion of drilling operations. Groundwater was initially encountered at a depth of roughly 13½ feet within TB-103 and TB-107. Upon completion, groundwater was observed at a depth of about 11½ feet within TB-107, but TB-103 was dry. In addition, the remaining borings were dry during drilling and upon completion. It should be noted that groundwater was generally encountered in granular layers and seams within the predominantly cohesive strata.

Within the wetland areas, groundwater was encountered at depths ranging from about 1 to 2 feet below existing ground surface. In addition, our field representative noted the presence of ice covering selected areas of the wetlands at the time of our field exploration. As such, and based on the designation of these areas as wetlands, we expect that the groundwater level within the wetland areas will be higher during certain times of the year.

Based on the data obtained during this investigation, we do not anticipate that significant groundwater related problems will be encountered in relatively shallow construction excavations at most locations at the site. Groundwater infiltration and surface water accumulations in excavations that terminate within cohesive soils and in granular soils above the water table are



expected to be controllable with pumping from properly constructed sumps. The early installation of site underground utilities, and particularly the storm drainage system, is expected to help control near-surface groundwater in the vicinity of the existing wetlands that are to be removed.

10.0 SITE PREPARATION

Details regarding grading across the entire site were not available at the writing of this report; however, information on the proposed building finished floor level relative to the existing ground surface indicates that up to about 5 feet of fill and 2 feet of cut will be require to reach finished floor elevation. For purposes of this report, we have assumed that finished grades in other areas of the site generally will be within a few feet of existing grades. Regardless of the amount of earthwork required, we recommend that all earthwork operations be performed under adequate specifications and be properly monitored in the field.

At the start of earthwork operations, the existing surface vegetation should be cleared and the surficial topsoil, peat, and any other organic or soft soils revealed by site clearing operations and in existing wetland areas within the development area should be removed in their entirety from within the proposed building and pavement areas. Any existing structures or part thereof designated for demolition should be removed along with their foundations as well as underground utilities and septic field, where they exist. Also, surface pavement that may exist in the MDOT-occupied portion of the property must be removed from within proposed building and pavement areas.

The subgrade resulting from the removal of topsoil, unsuitable soils, and other materials is expected to consist primarily of cohesive soils of varying consistencies and, to a lesser extent, granular soils of varying relative densities. Therefore, the entire subgrade within proposed fill areas should be thoroughly proof-rolled with a heavy rubber-tired vehicle such as a loaded scraper or loaded front-end loader. Any areas that exhibit excessive movement or instability during proof-rolling should be stabilized by aeration, drying, and recompaction, if weather conditions are favorable, or by removal of the yielding soils and replacement with engineered fill.



In addition to the proof-rolling operation, areas of exposed granular subgrade soils should be thoroughly proof-compacted using a medium weight, smooth drum vibratory roller making a minimum of ten passes in each of two perpendicular directions. This is intended to densify any near-surface loose granular soils, or granular soils that have been disturbed by site clearing and grading operations, thereby improving their load supporting capability.

Material for backfill or engineered fill required to achieve design grades should preferably consist of clean and well-graded granular soils. However, the on-site soils that are free of organic matter debris, and excessive moisture may be used for engineered fill materials provided that they are placed under favorable weather conditions to control moisture. Due to the relatively high moisture contents of some of the on-site clayey soils in some locations, significant periods of drying may be required before these soils can be properly compacted as engineered fill.

Fill should be placed in uniform horizontal layers that are not more than 12 inches in loose thickness and compacted to achieve a density of at least 95 percent of the maximum dry density as determined by the Modified Proctor compaction test (ASTM D 1557). All fill material should be placed and compacted at or near the optimum moisture content. Frozen material should not be used as fill, nor should fill be placed on a frozen subgrade.

In general, the site conditioning procedures discussed above are expected to result in fairly stable subgrade conditions throughout most of the site. However, the on-site soils, and in particular the cohesive soils, are expected to be sensitive to disturbance when wet or when subjected to construction activities. We recommend that the site grading be maintained so as to provide for rapid runoff of precipitation to reduce the potential for water infiltration. If instability occurs despite these precautions, additional corrective procedures may be required, such as localized stabilization or undercutting and replacement with an approximately 12-inch layer of crushed stone or crushed concrete.



11.0 FOUNDATION RECOMMENDATIONS AND SITE CLASSIFICATION

Based on an evaluation of the subsurface data developed during the course of this investigation, we recommend that the proposed building be supported on a system of conventional spread and/or strip footings bearing on suitable native soils below the topsoil. Footings that bear upon the native stiff to hard cohesive soils, the native medium compact granular soils, or a pad of properly constructed and monitored engineered fill may be designed on the basis of a net allowable soil bearing pressure of 4000 pounds per square foot (psf). All strip footings should be at least 12 inches in width, and isolated spread footings should be at least 18 inches in their least dimension, regardless of the resulting bearing pressure.

Exterior footings should be established at a depth of at least 3.5 feet below exposed finished grade for protection against frost penetration. Interior footings not exposed to freezing conditions either during or after construction may be established at a shallower depth provided that suitable bearing soils are present. The determination of the required depth of excavation at each footing location should be performed by a qualified representative of the geotechnical engineer. All foundation excavations should be checked and tested to verify that adequate in-situ soil bearing pressures, compatible with the design value, are achieved.

Extreme care should be exercised when making excavations close to the existing building to prevent undermining or damage to the supported facilities. If excavations must be extended deeper than the existing foundations, provisions should be made either to underpin the existing foundations or to provide a lateral support system to prevent movement of the existing structure during nearby excavation.

Adjacent spread footings at different levels should be designed and constructed so that the least lateral distance between them is equal to or greater than the difference in their bearing levels. To achieve a change in the level of a strip footing, we recommend that the footing be gradually stepped at a grade no steeper than two units horizontal to one unit vertical.



If the recommendations outlined in this report are followed, total and differential settlements for the completed building are estimated to be within approximately 1 inch and ½ inch, respectively.

We recommend that all footings be suitably reinforced to reduce the effects of normal differential settlements associated with local variations in subsoil conditions. Furthermore, the new building should be structurally separated from the existing building to allow for independent movement.

Based on our review of the conditions encountered in the test borings, as well as our knowledge of regional geology in the area, the site may be classified as Site Class D in accordance with the definitions given in Section 1615.1.1 of the 2000 International Building Code.

12.0 SUPPORT OF FLOOR SLABS

The subgrade resulting from the satisfactory completion of site preparation operations can be used for the support of building floor slabs. We recommend that all concrete floor slabs be suitably reinforced and separated from the foundation system to allow for independent movement. If the floor slab is planned to be covered with tile or other materials that are sensitive to moisture changes, consideration should be given to the use of a 4-inch thick layer of sand underlain by a plastic sheet vapor barrier beneath the floor slab.

13.0 PAVEMENT RECOMMENDATIONS

13.1 SUBGRADE CONDITIONS

The subgrade resulting from the proper completion of site preparation operations can be used for the support of conventional flexible (asphalt) or rigid (concrete) pavements. The pavement subgrade soils are expected to consist primarily of silty clay and, to a lesser extent, sand and silty sand soils. The clayey soils are classified as CL, the sand soils are classified as SP, and the silty sand soils are classified as SM, according to the Unified Soil Classification System. While the sand soils are likely to have acceptable drainage characteristics and are only slightly susceptible to frost penetration, the silty clay and silty sand soils generally have fair to poor drainage characteristics and are considered to be susceptible to frost penetration. With proper



conditioning, we anticipate that an effective California Bearing Ratio (CBR) value of about 6 can be achieved with these soils.

13.2 DESIGN DATA

We have developed four separate pavement designs that include two pavement uses, light duty and heavy duty, and service lives of 10 years and 15 years, for each. For each design we utilized a subgrade CBR value of 6 percent, based on estimated soil support values; a design reliability of 90 percent; standard deviation of 0.45; and a loss of serviceability of 2.0.

13.3 LIGHT-DUTY PAVEMENT

For the light duty section, traffic is assumed to be primarily automobile loads with occasional light to medium truck traffic. Based on information you provided, the facility may be occupied approximately 4 out of 7 days per week. It is understood that the exposition facility can accommodate approximately 4000 persons and the banquet facility can accommodate 1600 persons. Based on the assumed traffic mix, we estimate a 10-year ESAL value of approximately 13,100. The 15-year ESAL value for the same mix of traffic is approximately 20,200.

The estimated traffic loading and the above design parameters were input into an AASHTO-based program. Based on this analysis, we recommend the following cross-sections:

10-Year Service Life

- 1.5 inches of MDOT 3C bituminous wearing course over
- 1.5 inches of MDOT 4C bituminous leveling course over
- 6 inches of MDOT 21AA compacted crushed aggregate base course over
- prepared subgrade

15-Year Service Life

- 1.5 inches of MDOT 3C bituminous wearing course over
- 1.5 inches of MDOT 4C bituminous leveling course over
- 8 inches of MDOT 21AA compacted crushed aggregate base course over



- prepared subgrade

13.4 HEAVY-DUTY PAVEMENT

We understand that a heavy-duty pavement section will be specified for the “ring-road”, which provides access to the eight truck dock wells, the five at-grade service doors, and general access within and around the facility. In addition, we have assumed that there are approximately 2 shows per week, with in/out traffic, and that five trucks would access each of the thirteen service doors per show. This traffic loading, in combination with other site traffic such as delivery, refuse pick-up, and food service, as well as automobile traffic as presented above, would constitute the combined traffic for the “ring-road”. Based on this predicted traffic loading, we estimate that the 10-year ESAL value would be approximately 474,000, and the 15-year ESAL value would be approximately 730,000 for the “ring-road”.

Based on analysis with an AASHTO-based program, we recommend the following heavy-duty pavement sections:

10-Year Service Life

- 2.0 inches of MDOT 3C bituminous wearing course over
- 2.5 inches of MDOT 4C bituminous leveling course over
- 10 inches of MDOT 21AA compacted crushed aggregate base course over
- prepared subgrade

15-Year Service Life

- 1.5 inches of MDOT 3C bituminous wearing course over
- 3.5 inches of MDOT 4C bituminous leveling course placed in two lifts over
- 10 inches of MDOT 21AA compacted crushed aggregate base course over
- prepared subgrade

13.5 ADDITIONAL CONSIDERATIONS

Design for drainage is of the utmost importance to reduce detrimental effects that may shorten the serviceable life of the pavement. The pavement surface should be properly sloped to promote



effective surface drainage and to prevent water ponding on the surface. We recommend that a minimum slope of 1 percent and preferably 1.5 percent be provided. In addition, the pavement subgrade should be similarly sloped to provide effective subsurface drainage.

It is recommend that “stub” or “finger” drains be provided around all catch basins and at other low parts of the pavement to minimize the accumulation of water within the subgrade soils. The subdrains should be protected with filter fabric and coarse aggregates to prevent the migration of soil fines into the drains.

At dumpster pick-up locations and truck wells, the pavement will be subjected to heavy concentrated wheel loads. This frequently results in rutting of asphalt pavements and ultimately in failure. Therefore, we recommend that a concrete pavement of at least 8 inches be used in these areas.

As previously mentioned, the cohesive soils are considered to be susceptible to disturbance from construction traffic, particularly during wet weather. If instability occurs, consideration should be given to stabilizing the disturbed soils by undercutting and backfilling with engineered fill, placing a stabilizing layer of coarse aggregate such as 1 to 3-inch crushed aggregate or crushed concrete, or using stabilization-grade geotextiles or geogrids.

14.0 TEMPORARY EXCAVATIONS

Any excavations deeper than 5 feet, such as those that could be needed for underground utilities at the site, should be properly sloped or otherwise structurally retained to provide stable and safe working conditions. In areas where there is inadequate space to allow for proper side slopes for trenches and other excavations, vertical walls with properly designed and installed lateral bracing, or a combination of slopes and braced vertical walls may be used. In all cases, Michigan Department of Consumer and Industry Services requirements, *i.e.*, the Michigan Occupational Safety and Health Act (known as MIOSHA) and related regulations, must be followed and adequate protection provided for workers and adjacent structures.



Construction traffic and excavated material stockpiles should be kept away from excavations a minimum distance equal to the full depth of the excavation, unless the resulting surcharge loads are accounted for in the design of the lateral bracing system. The contractor's proposed excavations, support systems, and sequence of construction should be reviewed by a qualified engineer prior to allowing the contractor to commence work.

15.0 LATERAL EARTH PRESSURES

The below-grade walls for the truck wells are anticipated to be constructed of reinforced concrete that will be formed and backfilled. The concrete walls are expected to be relatively rigid, but are not expected to be restrained against movement at the top and will be able to rotate. As such, if some movement of the top of wall is acceptable, the walls may be designed on the basis of "active" earth pressure conditions. Accordingly, based on an average active earth pressure coefficient of 0.33, an equivalent fluid pressure of 40 pounds per square foot per foot of depth (psf/ft) should be used for design of the walls, provided that subdrains are used to prevent the development of hydrostatic pressures on the walls, and 85 psf/ft if subdrains are not provided. If it is desired to limit the movement of the below-grade walls, "at rest" earth pressure conditions should be used. Equivalent fluid pressures of 60 psf/ft and 95 psf/ft should be used for the design of below-grade walls with or without subdrains, respectively, considering at rest earth pressure conditions.

Fill placed against below-grade walls should consist of granular soil with less than 10 percent passing the No. 200 sieve. It should be noted that surcharge loads applied behind walls can impose additional lateral pressures on below-grade walls. If the below-grade walls are subjected to such surcharge loads, they should be considered in the wall design. Horizontal loads resulting from vertical surcharge and foundation loads may be estimated as 50 percent of the vertical loading for the truck well walls.

Lateral earth pressures are also significantly influenced by the type and intensity of backfill operations. Therefore, we recommend that only relatively small compaction equipment be used to compact backfill placed against below-grade walls.



To resist the applied lateral earth and surcharge loading, an ultimate interface friction factor of 0.40 may be used between the base of the wall foundation and the stiff to hard silty clay soils, or the medium compact sand or silty sand soils. However, the horizontal stress at the foundation / bearing soil interface should not exceed an allowable adhesion value of 600 psf.

16.0 DATA REVIEW AND FIELD MONITORING

The evaluations and recommendations presented in this report relative to site preparation and building foundations have been formulated on the basis of the information provided and/or the assumptions stated herein relating to the proposed development. Any significant changes in this information should be brought to our attention for review with respect to the prevailing subsurface conditions.

Experience indicates that the actual subsoil conditions at a site may vary from those generalized on the basis of test borings made at specific locations. Therefore, we recommend that NTH Consultants, Ltd. be retained to provide soil engineering services during the site preparation, excavation, and foundation phases of the proposed project. This is to observe compliance with the design concepts, specifications, and recommendations. Also, field monitoring allows design changes to be made in a timely manner in the event that subsurface conditions differ from those anticipated prior to the start of construction.

17.0 ADDITIONAL INVESTIGATION

As indicated earlier in this report, we did not explore the portion of the site currently occupied by MDOT because authorization to access this area was not provided. Accordingly, we recommend that additional investigation be performed in the MDOT-occupied portion of the site once access to the area has been secured, in order to supplement the data and recommendations developed during the current investigation.



18.0 LIMITATIONS

This report is intended for specific use in the design of the proposed Novi Expo Center in the City of Novi, Michigan, as described in this report. It should be noted that the recommendations presented in this report may be subject to change following the availability of additional data regarding the proposed building construction. The work was performed in accordance with the prevailing standard of practice in this area at the time the work was performed. No other warranty, express or implied, is provided or intended.

The scope of the present investigation was limited to an evaluation of subsurface conditions for the support of building foundations, floor slabs, pavements, and other related aspects of development. No environmental, hydrological, chemical testing or analyses were performed as part of this geotechnical investigation.

Respectfully submitted,

NTH Consultants, Ltd.

A handwritten signature in black ink, reading 'Peter A. Margules'.

Peter A. Margules, P.E.
Project Engineer

A handwritten signature in black ink, reading 'Hosam S. Yaldo'.

Hosam S. Yaldo, P.E.
Project Manager



APPENDIX

NTH Consultants, Ltd.

A Neyer, Tiseo & Hindo Company

GENERAL NOTES

TERMINOLOGY

Unless otherwise noted, all terms utilized herein refer to the Standard Definitions presented in ASTM D 653.

PARTICLE SIZES

Boulders	- Greater than 12 inches (305mm)
Cobbles	- 3 inches (76.2mm) to 12 inches (305mm)
Gravel - Coarse	- 3/4 inches (19.05 mm) to 3 inches (76.2mm)
Gravel - Fine	- No. 4 - 3/16 inches (4.75mm) to 3/4 inches (19.05 mm)
Sand - Coarse	- No. 10 (2.00mm) to No. 4 (4.75mm)
Sand - Medium	- No. 40 (0.425mm) to No. 10 (2.00mm)
Sand - Fine	- No. 200 (0.074mm) to No. 40 (0.425mm)
Silt	- 0.005mm to 0.074mm
Clay	- Less than 0.005mm

CLASSIFICATION

The major soil constituent is the principal noun, i.e., clay, silt, sand, gravel. The second major soil constituent and other minor constituents are reported as follows:

Second Major Constituent (percent by weight)	Minor Constituents (percent by weight)
Trace - 1 to 12%	Trace - 1 to 12%
Adjective - 12 to 35% (clayey, silty, etc.)	Little - 12 to 23%
And - Over 35%	Some - 23 to 33%

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, clay becomes the principal noun with the other major soil constituent as modified; i.e., silty clay. Other minor soil constituents may be included in accordance with the classification breakdown for cohesionless soils; i.e., silty clay, trace of sand, little gravel.

<u>Consistency</u>	<u>Unconfined Compressive Strength (psf)</u>	<u>Approximate Range of (N)</u>
Very Soft	Below 500	0 - 2
Soft	500 - 1000	3 - 4
Medium	1000 - 2000	5 - 8
Stiff	2000 - 4000	9 - 15
Very Stiff	4000 - 8000	16 - 30
Hard	8000 - 16000	31 - 50
Very Hard	Over 16000	Over 50

Consistency of cohesive soils is based upon an evaluation of the observed resistance to deformation under load and not upon the Standard Penetration Resistance (N).

COHESIONLESS SOILS

<u>Density Classification</u>	<u>Relative Density %</u>	<u>Approximate Range of (N)</u>
Very Loose	0 - 15	0 - 4
Loose	16 - 35	5 - 10
Medium Compact	36 - 65	11 - 30
Compact	66 - 85	31 - 50
Very Compact	86 - 100	Over 50

Relative density of cohesionless soils is based upon the evaluation of the Standard Penetration Resistance (N), modified as required for depth effects, sampling effects, etc.

SAMPLE DESIGNATIONS

AS - Auger Sample - directly from auger flight
BS - Miscellaneous Sample - bottle or bag
S - Split Spoon Sample - ASTM D 1586
LS - Split Spoon Sample S with Liner Insert 3 inches in length
ST - Shelby Tube Sample - 3 inch diameter unless otherwise noted
PS - Piston Sample - 3 inch diameter unless otherwise noted
RC - Rock Core - NX core unless otherwise noted
CS - Continuous Sample - from rock core barrel or continuous sampling device
VS - Vane Shear

STANDARD PENETRATION TEST (ASTM D 1586) - A 2.0" outside-diameter, 1-3/8" inside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven three successive 6-inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).

LOG OF TEST BORING NO: TB-101



NTH CONSULTANTS, LTD.

Project Name: *Proposed Novi Expo Center*

NTH Proj. No: 15-030094-00

Project Location: *Novi, Michigan*Checked By: *JAM*

SUBSURFACE PROFILE					SOIL SAMPLE DATA					
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 968+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNU READING (ppm)
965		TOPSOIL: Brown SILTY SAND	0.5							
		Medium Compact Brown SAND with Trace of Silt	1.5		6 5 7					
		Hard Brown SILTY CLAY with Trace of Sand and Gravel		LS-1		12	12.0	128.4	8500*	
			5.0	LS-2	5 8 10	18			9000*	
		END OF BORING								
960										
			10							
955										
			15							
950										
			20							
945										
			25							
940										
			30							
935										
			35							

Total Depth: 5 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:

No groundwater encountered;
 borehole dry upon completion.

Notes:

* - Pocket Penetrometer Value

Drilling Method:

CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.

Plugging Procedure:

Borehole backfilled with excavated material.

FIGURE NO. 1

LOG OF TEST BORING NO: TB-102

Project Name: *Proposed Novi Expo Center*





Project Location: *Novi, Michigan*



NTH CONSULTANTS, LTD.

NTH Proj. No: 15-030094-00

Checked By: *NAM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 976+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
975		TOPSOIL: Dark Brown SILTY SAND	1.0	LS-1	4 6 11	17				
		Medium Compact Brown SILTY SAND with Trace of Clay and Root Fibers	2.0							
		Medium Compact Brown SILTY SAND with Trace of Clay and Gravel	5.5	LS-2	6 11 12	23	7.3	109.3		
970										
		Medium Compact Brown SILTY SAND with Trace of Gravel	9.5	LS-3	6 7 9	16				
		Very Stiff to Hard Gray SILTY CLAY with Trace to Little Sand, Trace of Gravel	10	LS-4	4 5 7	12			9000*	
965										
			15.0	LS-5	4 7 10	17			7000*	
960		END OF BORING	15							
			20							
955										
			25							
950										
			30							
945										
			35							
940										

Total Depth: 15 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:
 No groundwater encountered;
 borehole dry upon completion.

Notes:
 * - Pocket Penetrometer Value

Drilling Method:
 CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.

Plugging Procedure:
 Borehole backfilled with excavated material.

FIGURE NO. 2

LOG OF TEST BORING NO: TB-103

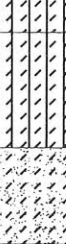


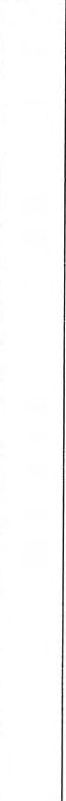


NTH CONSULTANTS, LTD.

Project Name: *Proposed Novi Expo Center*Project Location: *Novi, Michigan*

NTH Proj. No: 15-030094-00

Checked By: *RAM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA							
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 976+/-		DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNU READING (ppm)
975		TOPSOIL: Brown SILTY CLAY with Trace to Little Sand		1.0		4					
		Hard Brown SILTY CLAY with Little Sand		4.0	LS-1	8 13	21			>9000*	
						9 19					
970		Compact Brown SILTY SAND with Trace of Gravel		5	LS-2	21	40	4.3	116.3		
				6.5		7 8					
					LS-3	11	19	10.6	134.7	7780	
						5 6					
965		Very Stiff Brown SILTY CLAY with Trace to Little Sand and Trace of Gravel		10	LS-4	10	16			7500*	
						6 7					
				14.2							
		Medium Compact Gray SILTY SAND with Trace of Gravel		15.0	LS-5	7	14				
960		END OF BORING									
				20							
955											
				25							
950											
				30							
945											
			35								
940											

Total Depth: 15 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:

Groundwater encountered at 13.5 ft bgs;
borehole dry upon completion.

Notes:

* - Pocket Penetrometer Value

Drilling Method:

CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
hollow-stem augers to end of boring.

Plugging Procedure:

Borehole backfilled with excavated material.


FIGURE NO. 3

Project Name: *Proposed Novi Expo Center*

NTH Proj. No: 15-030094-00

Project Location: *Novi, Michigan*

Checked By: *Pam*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 971+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
970		TOPSOIL: Brown SILTY SAND 0.5	5	LS-1	3 3 7	10			8500*	
		Loose Brown SILTY SAND with Trace of Gravel 2.0								
		Hard Brown SILTY CLAY with Trace to Little Sand and Trace of Gravel 6.5		LS-2	5 14 26	40	16.3	115.3	>9000*	
965										
		Hard Gray SILTY CLAY with Trace of Sand and Gravel 9.3		LS-3	7 13 15	28			9000*	
	Hard Brown SILTY CLAY with Trace to Little Sand and Trace of Gravel 15.0	10	LS-4	8 22 33	55			>9000*		
960										
			15	LS-5	5 6 9	15			9000*	
955	END OF BORING									
950										
			20							
945										
			25							
940										
			30							
			35							
935										

Total Depth: 15 FT
Drilling Date: 02/03/03
Inspector: M. Agbulos
Contractor: American Testing & Drilling Company
Driller: B. Rumpz

Water Level Observation:

*No groundwater encountered;
borehole dry upon completion.*

Notes:

* - Pocket Penetrometer Value

Drilling Method:

CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter, hollow-stem augers to end of boring.

Plugging Procedure:

Borehole backfilled with excavated material.

LOG OF TEST BORING NO: TB-105




NTH CONSULTANTS, LTD.

Project Name: *Proposed Novi Expo Center*

NTH Proj. No: 15-030094-00

Project Location: *Novi, Michigan*Checked By: *RAM*

SUBSURFACE PROFILE					SOIL SAMPLE DATA						
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 974+/-		DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
970		TOPSOIL: Brown SILTY CLAY with Little Sand and Trace of Root Fibers		1.0		4					
		Hard Brown SILTY CLAY with Trace to Little Sand and Trace of Gravel			LS-1	6 9	15	13.4		>9000*	
						10 19 30					
		END OF BORING		5.0	5	LS-2	30	49		>9000*	
965											
				10							
960											
				15							
955											
				20							
950											
				25							
945											
				30							
940											
				35							

Total Depth: 5 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:
 No groundwater encountered;
 borehole dry upon completion.

Notes:
 * - Pocket Penetrometer Value

Drilling Method:
 CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.

Plugging Procedure:
 Borehole backfilled with excavated material.

FIGURE NO. 5

LOG OF TEST BORING NO: TB-106



NTH CONSULTANTS, LTD.

Project Name: *Proposed Novi Expo Center*

NTH Proj. No: 15-030094-00

Project Location: *Novi, Michigan*

Checked By: *NM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 980+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
		TOPSOIL: Brown SILTY SAND with Trace of Root Fibers	0.5		8					
		Hard Brown SILTY CLAY with Trace to Little Sand, Trace of Gravel	3.0	LS-1	14	24	15.2	111.7	>9000*	
975		Medium Compact Brown SILTY SAND with Trace of Gravel	5.0	LS-2	7	13				
		END OF BORING								
970			10							
965			15							
960			20							
955			25							
950			30							
945			35							

Total Depth: 5 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:
 No groundwater encountered;
 borehole dry upon completion.

Notes:
 * - Pocket Penetrometer Value

Drilling Method:
 CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.

Plugging Procedure:
 Borehole backfilled with excavated material.

LOG OF TEST BORING NO: TB-107



NTH CONSULTANTS, LTD.

Project Name: *Proposed Novi Expo Center*

NTH Proj. No: 15-030094-00

Project Location: *Novi, Michigan*Checked By: *JAM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT.)	PRO- FILE	GROUND SURFACE ELEVATION: 974+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD. PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP. ST. (psf)	HNU READING (ppm)
970		TOPSOIL: Dark Brown SILTY SAND with Trace of Root Fibers	1.5		18					
		Hard Brown SILTY CLAY with Little Sand and Trace of Gravel	3.0	LS-1	17 6	23			9000*	
965		Medium Compact Brown SILTY SAND with Trace of Gravel	5.5	LS-2	4 7 7	14	6.7	105.3		
				LS-3	4 8 14	22	14.5	121.4	11340	
960		Hard Brown and Gray SILTY CLAY with Trace of Sand and Gravel	10	LS-4	7 12 19	31			>9000*	
955		Medium Compact Gray SILTY SAND	14.0		7 8 6					
		END OF BORING	15.0	LS-5		14			6000*	
950										
			20							
945										
			25							
940										
			30							
			35							

Total Depth: 15 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:

Groundwater encountered 13.5 ft bgs;
 at 11.6 ft bgs upon completion.

Notes:

* - Pocket Penetrometer Value

Drilling Method:

CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.

Plugging Procedure:

Borehole backfilled with excavated material.

FIGURE NO. 7

LOG OF TEST BORING NO: TB-108

Project Name: *Proposed Novi Expo Center*

Project Location: *Novi, Michigan*



NTH CONSULTANTS, LTD.

NTH Proj. No: *15-030094-00*

Checked By: *TAM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 971+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNU READING (ppm)
970		TOPSOIL: Brown SILTY CLAY with Trace to Little Sand, Trace of Root Fibers and Vegetation 1.5			4					
				LS-1	4					
		Stiff to Very Stiff Brown and Gray SILTY CLAY with Trace of Sand 4.5			7	11			5000*	
					4					
			5	LS-2	4	8	24.2	105.3	3480	
965					4					
		Stiff to Very Stiff Brown and Gray SILTY CLAY with Trace of Sand and Occasional Sand Seams 9.5		LS-3	2					
					5	10			5000*	
					5					
			10	LS-4	3					
					3					
960		Loose Gray SILTY SAND 12.0			4					
					5					
		Very Stiff Gray SILTY CLAY with Trace of Sand and Gravel 15.0		LS-5	7	12			5000*	
		END OF BORING	15							
955										
			20							
950										
			25							
945										
			30							
940										
			35							
935										

Total Depth: *15 FT*
 Drilling Date: *02/03/03*
 Inspector: *M. Agbulos*
 Contractor: *American Testing & Drilling Company*
 Driller: *B. Rumpz*

Water Level Observation:

*No groundwater encountered;
 borehole dry upon completion.*

Notes:

** - Pocket Penetrometer Value*

Drilling Method:

*CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.*

Plugging Procedure:

Borehole backfilled with excavated material.

LOG OF TEST BORING NO: TB-109

Project Name: *Proposed Novi Expo Center*

Project Location: *Novi, Michigan*



NTH CONSULTANTS, LTD.

NTH Proj. No: *15-030094-00*

Checked By: *JAM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT)	PRO-FILE	GROUND SURFACE ELEVATION: 972+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD. PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP. ST. (psf)	HNU READING (ppm)
		TOPSOIL: Brown SILTY SAND	0.5		5					
970		Loose Brown SAND with Trace of Silt, Gravel and Roots	3.0	LS-1	5 4	9				
		Hard Brown SILTY CLAY with Little Sand	5.5	LS-2	6 7 10	17			>9000*	
965				LS-3	6 7 7	14	12.5	115.3	5000*	
		Stiff to Very Stiff Brown SILTY CLAY with Trace to Little Sand and Trace of Gravel	10	LS-4	5 5 6	11			5000*	
960										
		END OF BORING	15.0	LS-5	5 5 7	12			3500*	
955										
			20							
950										
			25							
945										
			30							
940										
			35							

Total Depth: *15 FT*
 Drilling Date: *02/03/03*
 Inspector: *M. Agbulos*
 Contractor: *American Testing & Drilling Company*
 Driller: *B. Rumpz*

Water Level Observation:
*No groundwater encountered;
 borehole dry upon completion.*

Notes:
 * - Pocket Penetrometer Value

Drilling Method:
*CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.*

Plugging Procedure:
Borehole backfilled with excavated material.

LOG OF TEST BORING NO: TB-110



NTH CONSULTANTS, LTD.

Project Name: *Proposed Novi Expo Center*

NTH Proj. No: 15-030094-00

Project Location: *Novi, Michigan*Checked By: *MM*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT.)	PRO- FILE	GROUND SURFACE ELEVATION: 973+-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
970		TOPSOIL: Dark Brown SILTY SAND with Trace of Root Fibers	1.0		6					
		Very Stiff Brown SILTY CLAY with Trace of Sand	3.0	LS-1	5 9	14			5500*	
		Hard Brown SILTY CLAY with Little Sand and Trace of Roots	5.0		9 18					
		END OF BORING	5	LS-2	24	42			9000*	
965										
			10							
960										
			15							
955										
			20							
950										
			25							
945										
			30							
940										
			35							

Total Depth: 5 FT
 Drilling Date: 02/03/03
 Inspector: M. Agbulos
 Contractor: American Testing & Drilling Company
 Driller: B. Rumpz

Water Level Observation:
 No groundwater encountered;
 borehole dry upon completion.

Notes:
 * - Pocket Penetrometer Value

Drilling Method:
 CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.

Plugging Procedure:
 Borehole backfilled with excavated material.

FIGURE NO. 10

LOG OF TEST BORING NO: TB-111

Project Name: *Proposed Novi Expo Center*

Project Location: *Novi, Michigan*



NTH CONSULTANTS, LTD.

NTH Proj. No: *15-030094-00*

Checked By: *Am*

SUBSURFACE PROFILE					SOIL SAMPLE DATA							
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 971+/-			DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
970	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></d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Total Depth: *5 FT*
 Drilling Date: *02/03/03*
 Inspector: *M. Agbulos*
 Contractor: *American Testing & Drilling Company*
 Driller: *B. Rumpz*

Water Level Observation:
*No groundwater encountered;
 borehole dry upon completion.*

Notes:
** - Pocket Penetrometer Value*

Drilling Method:
*CME-550-X all terrain drilling rig with 2-1/4-inch inside-diameter,
 hollow-stem augers to end of boring.*

Plugging Procedure:
Borehole backfilled with excavated material.

LOG OF TEST BORING NO: TB-112

Project Name: *Proposed Novi Expo Center*

Project Location: *Novi, Michigan*



NTH CONSULTANTS, LTD.

NTH Proj. No: *15-030094-00*

Checked By: *Sam*

SUBSURFACE PROFILE				SOIL SAMPLE DATA						
ELEV. (FT)	PRO- FILE	GROUND SURFACE ELEVATION: 971+/-	DEPTH (FT.)	SAMP. TYPE/ NO.	BLOWS/ 6"	STD.PEN. RESIST. (N)	MOIST. CONT. (%)	DRY DENS. (pcf)	UNCONF. COMP.ST. (psf)	HNu READING (ppm)
970		TOPSOIL: Dark Brown SILTY SAND with Trace of Root Fibers	1.0		4					
		Hard Brown SILTY CLAY with Trace to Little Sand and Trace of Gravel		LS-1	6 7	13	13.2		8000*	
					5 12 19	31			>9000*	
		END OF BORING	5.0	LS-2						
965										
			10							
960										
			15							
955										
			20							
950										
			25							
945										
			30							
940										
			35							
935										

Total Depth: *5 FT*
 Drilling Date: *02/03/03*
 Inspector: *M. Agbulos*
 Contractor: *American Testing & Drilling Company*
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Water Level Observation:
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PROJECT NO: 15-030094-00		NTH CONSULTANTS, LTD.		SHEET 1 OF 2	
LOG OF HAND AUGER BORINGS					
HAB NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS	
HAB-1	967±	0.0 – 1.3 1.3 – 1.5	DARK BROWN PEAT BROWN SILTY SAND [GROUNDWATER ENCOUNTERED AT 1.3± FEET]		
HAB-2	970±	0.0 – 0.3 0.3 – 1.7 1.7 – 4.5	PEAT BLACK SILTY CLAY WITH TRACE OF SAND STIFF GRAY SILTY CLAY WITH TRACE OF SAND AND ORGANIC MATTER [GROUNDWATER ENCOUNTERED AT 2.0± FEET]		
HAB-3	969±	0.0 – 0.3 0.3 – 0.8 0.8 – 1.6 1.6 – 3.2 3.2 – 3.4	PEAT SOFT BROWN SILTY CLAY WITH TRACE OF SAND DARK BROWN AND BLACK SILTY CLAY WITH TRACE OF SAND AND ORGANIC MATTER BROWN AND GRAY SILTY CLAY WITH TRACE OF SAND SAND [GROUNDWATER ENCOUNTERED AT 1.2± FEET]		
HAB-4	969±	0.0 – 1.5 1.5 – 2.6 2.6 – 3.0	BROWN AND BLACK SILTY CLAY WITH TRACE OF SAND AND ORGANIC MATTER STIFF GRAY SILTY CLAY WITH TRACE OF SAND AND ORGANIC MATTER BROWN AND GRAY SILTY SAND [GROUNDWATER ENCOUNTERED AT 2.0± FEET]	PP = 1.5	
HAB-5	970±	0.0 – 0.3 0.3 – 0.9 0.9 – 4.3 4.3 – 4.5	PEAT SOFT BROWN SILTY CLAY WITH TRACE OF SAND STIFF BROWN AND GRAY SILTY CLAY WITH TRACE OF SAND AND ORGANIC MATTER SAND [GROUNDWATER ENCOUNTERED AT 1.0± FEET]		
HAB-6	970±	0.0 – 0.5 0.5 – 1.7 1.7 – 4.0	TOPSOIL SOFT BROWN SILTY CLAY STIFF BROWN AND GRAY SILTY CLAY WITH TRACE OF SAND [GROUNDWATER ENCOUNTERED AT 1.0± FEET]		
P-1	972±	0.0 – 0.3	TOPSOIL: DARK BROWN SILTY SAND		
P-2	972±	0.0 – 0.7	TOPSOIL: DARK BROWN SILTY SAND		
P-3	967±	0.0 – 0.4	TOPSOIL: BROWN SILTY SAND		
P-4	965±	0.0 – 0.2	TOPSOIL: BROWN SILTY SAND		
NOTES: [1] HAND AUGER BORINGS BACKFILLED WITH EXCAVATED SOIL MATERIALS. [2] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION. [3] PP IS POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT (TSF). [4] DEPTHS AT WHICH GROUNDWATER WAS ENCOUNTERED ARE APPROXIMATE.					
DRILLED BY: M. AGBULOS		DATE: JANUARY 29, 2003		FIGURE NO: 13	

PROJECT NO: 15-030094-00			NTH CONSULTANTS, LTD.		SHEET 2 OF 2	
LOG OF HAND AUGER BORINGS						
HAB NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION		REMARKS	
P-5	971±	0.0 – 0.3	TOPSOIL: DARK BROWN SILTY SAND			
P-6	973±	0.0 – 0.5	TOPSOIL: BROWN SILTY SAND			
P-7	972±	0.0 – 0.8	TOPSOIL: DARK BROWN SILTY SAND			
P-8	978±	0.0 – 0.5	TOPSOIL: BROWN SILTY SAND			
P-9	972±	0.0 – 0.7	TOPSOIL: BROWN SILTY SAND			
NOTES: [1] HAND AUGER BORINGS BACKFILLED WITH EXCAVATED SOIL MATERIALS. [2] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION. [3] PP IS POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT (TSF). [4] DEPTHS AT WHICH GROUNDWATER WAS ENCOUNTERED ARE APPROXIMATE.						
DRILLED BY: M. AGBULOS			DATE: JANUARY 29, 2003		FIGURE NO: 13	

TABULATION OF LABORATORY TEST DATA

BORING / Test Pit / PROBE DESIGNATION	SAMPLE NUMBER	DEPTH OF SAMPLE TIP (FT)	ELEVATION OF SAMPLE TIP (FT)	UNCONFINED COMPRESSIVE STRENGTH (PSF)	FAILURE STRAIN (%)	NATURAL WATER CONTENT (% OF DRY WEIGHT)	IN-PLACE DRY DENSITY (LBS/CU.FT)	PERMEABILITY (CM/SEC)	PARTICLE SIZE DISTRIBUTION (%)							ATTERBERG LIMITS (%)			APPARENT SPECIFIC GRAVITY	LOSS ON IGNITION (%)	UNIFIED SOIL CLASSIFICATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
									COLLOIDS	CLAY	SILT	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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GENERAL NOTES

TERMINOLOGY

Unless otherwise noted, all terms utilized herein refer to the Standard Definitions presented in ASTM D 653.

PARTICLE SIZES

Boulders	- Greater than 12 inches (305mm)
Cobbles	- 3 inches (76.2mm) to 12 inches (305mm)
Gravel - Coarse	- 3/4 inches (19.05 mm) to 3 inches (76.2mm)
Fine	- No. 4 - 3/16 inches (4.75mm) to 3/4 inches (19.05 mm)
Sand - Coarse	- No. 10 (2.00mm) to No. 4 (4.75mm)
Medium	- No. 40 (0.425mm) to No. 10 (2.00mm)
Fine	- No. 200 (0.074mm) to No. 40 (0.425mm)
Silt	- 0.005mm to 0.074mm
Clay	- Less than 0.005mm

CLASSIFICATION

The major soil constituent is the principal noun, i.e., clay, silt, sand, gravel. The second major soil constituent and other minor constituents are reported as follows:

Second Major Constituent (percent by weight)	Minor Constituents (percent by weight)
Trace - 1 to 12%	Trace - 1 to 12%
Adjective - 12 to 35% (clayey, silty, etc.)	Little - 12 to 23%
And - Over 35%	Some - 23 to 33%

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, clay becomes the principal noun with the other major soil constituent as modified; i.e., silty clay. Other minor soil constituents may be included in accordance with the classification breakdown for cohesionless soils; i.e., silty clay, trace of sand, little gravel.

<u>Consistency</u>	<u>Unconfined Compressive Strength (psf)</u>	<u>Approximate Range of (N)</u>
Very Soft	Below 500	0 - 2
Soft	500 - 1000	3 - 4
Medium	1000 - 2000	5 - 8
Stiff	2000 - 4000	9 - 15
Very Stiff	4000 - 8000	16 - 30
Hard	8000 - 16000	31 - 50
Very Hard	Over 16000	Over 50

Consistency of cohesive soils is based upon an evaluation of the observed resistance to deformation under load and not upon the Standard Penetration Resistance (N).

COHESIONLESS SOILS

<u>Density Classification</u>	<u>Relative Density %</u>	<u>Approximate Range of (N)</u>
Very Loose	0 - 15	0 - 4
Loose	16 - 35	5 - 10
Medium Compact	36 - 65	11 - 30
Compact	66 - 85	31 - 50
Very Compact	86 - 100	Over 50

Relative density of cohesionless soils is based upon the evaluation of the Standard Penetration Resistance (N), modified as required for depth effects, sampling effects, etc.

SAMPLE DESIGNATIONS

- AS - Auger Sample - directly from auger flight
- BS - Miscellaneous Sample - bottle or bag
- S - Split Spoon Sample - ASTM D 1586
- LS - Split Spoon Sample S with Liner Insert 3 inches in length
- ST - Shelby Tube Sample - 3 inch diameter unless otherwise noted
- PS - Piston Sample - 3 inch diameter unless otherwise noted
- RC - Rock Core - NX core unless otherwise noted
- CS - Continuous Sample - from rock core barrel or continuous sampling device
- VS - Vane Shear

STANDARD PENETRATION TEST (ASTM D 1586) - A 2.0" outside-diameter, 1-3/8" inside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140-pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven three successive 6-inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).

LOG OF TEST PITS

TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS
TP-1	976 ±	0.0-0.4 0.4-1.0 1.0-2.0 2.0-4.0	PAVEMENT: ASPHALT TOPSOIL: BROWN SILTY SAND WITH ROOTS BROWN SILTY SAND WITH ROOTS BROWN SAND WITH TRACE OF SILT & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 3.0 FT BGS
TP-2	972 ±	0.0-0.3 0.3-3.5	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS BROWN SILTY SAND WITH TRACE OF GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 3.5 FT BGS
TP-3	974 ±	0.0-0.5 0.5-2.0 2.0-3.0	TOPSOIL: BROWN SILTY SAND WITH TRACE OF CLAY & ROOTS STIFF BROWN SILTY CLAY WITH TRACE OF SAND & ROOTS VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS BS-2 @ 3.0 FT BGS; PP = 2.0
TP-4	974 ±	0.0-1.0 1.0-1.5 1.5-2.5	TOPSOIL: BROWN SILTY SAND WITH ROOT FIBERS BROWN SAND WITH TRACE TO LITTLE GRAVEL VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS BS-2 @ 2.5 FT BGS; PP = 3.0
TP-5	976 ±	0.0-0.3 0.3-2.5 2.5-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS BROWN SAND WITH TRACE OF SILT & GRAVEL HARD BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.5 FT BGS PP = 4.5
TP-6	974 ±	0.0-1.0 1.0-2.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS BROWN SAND WITH TRACE OF SILT & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.5 FT BGS
TP-7	971 ±	0.0-1.0 1.0-2.0	TOPSOIL: BROWN SILTY SAND WITH TRACE OF CLAY & ROOTS VERY STIFF TO HARD BROWN SILTY CLAY WITH TRACE OF SAND & OCCASIONAL SAND SEAMS [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.8 FT BGS PP = 4.0

NOTES:

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- [2] TEST PIT EXCAVATION INSPECTED BY M. AGBULOS OF NTH CONSULTANTS, LTD.
- [3] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION.
- [4] PP = POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT
- [5] BGS = BELOW GROUND SURFACE

LOG OF TEST PITS

TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS
TP-8	971 ±	0.0-0.5 0.5-1.5 1.5-4.0 4.0-5.5	TOPSOIL: BROWN SILTY CLAY WITH TRACE TO LITTLE SAND & TRACE OF ROOTS MEDIUM BROWN & GRAY SILTY CLAY WITH LITTLE SAND & TRACE OF ROOTS VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND HARD GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS PP = 2.5 PP = 4.0
TP-9	977 ±	0.0-0.3 0.3-1.5 1.5-2.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS VERY STIFF BROWN SILTY CLAY WITH TRACE TO LITTLE SAND & TRACE OF ROOT FIBERS VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS PP = 2.0 PP = 2.5
TP-10	970 ±	0.0-1.5 1.5-2.0 2.0-4.0 4.0-5.0	TOPSOIL: DARK BROWN & BLACK SILTY CLAY WITH TRACE OF SAND, ROOTS & ORGANIC MATTER SOFT GRAY SILTY CLAY WITH TRACE OF SAND VERY STIFF GRAY SILTY CLAY WITH TRACE OF SAND & ROOT FIBERS BROWN & GRAY SILTY SAND [GROUNDWATER ENCOUNTERED AT 4.0 FT BGS]	BS-1 @ 1.0 FT BGS BS-2 @ 1.5 FT BGS; PP < 0.5 BS-3 @ 3.0 FT BGS; PP = 2.0
TP-11	970 ±	0.0-2.0 2.0-5.5 5.5-6.0	TOPSOIL: DARK BROWN SILTY CLAY WITH TRACE TO LITTLE ORGANIC MATTER MEDIUM TO STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & ROOT FIBERS GRAY SAND WITH TRACE OF SILT [GROUNDWATER ENCOUNTERED AT 4.0 FT BGS]	BS-1 @ 1.0 FT BGS PP = 1.0
TP-12	970 ±	0.0-2.0 2.0-3.5	TOPSOIL: DARK BROWN SILTY CLAY WITH ROOT FIBERS & ORGANIC MATTER STIFF TO VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS PP = 2.0
TP-13	970 ±	0.0-0.3 0.3-1.0 1.0-2.5	TOPSOIL: MOTTLED BROWN SILTY SAND WITH TRACE OF CLAY, ROOTS & ORGANIC MATTER VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND BROWN SILTY SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.3 FT BGS PP = 3.25

NOTES:

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- [4] PP = POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT
- [5] BGS = BELOW GROUND SURFACE

EXCAVATED BY: J & G EXCAVATING, INC.

DATE: NOVEMBER 14 & 17, 2003

FIGURE NO: 1

LOG OF TEST PITS

TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS
TP-14	970 ±	0.0-1.3 1.3-2.0 2.0-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS & ORGANIC MATTER BROWN & GRAY SILTY SAND GRAY SILTY SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.5 FT BGS
TP-15	970 ±	0.0-2.0 2.0-3.0 3.0-3.5 3.5-11.5 11.5-12.0	TOPSOIL: DARK BROWN & BLACK SILTY SAND WITH ROOTS & ORGANIC MATTER BROWN & GRAY SILTY SAND GRAY SILTY SAND SOFT GRAY SILTY CLAY WITH TRACE OF SAND & ORGANIC MATTER GRAY SILTY SAND [GROUNDWATER ENCOUNTERED AT 2.0 FT BGS]	BS-1 @ 1.5 FT BGS BS-2 @ 3.0 FT BGS BS-3 @ 10.0 FT BGS BS-4 @ 11.5 FT BGS
TP-16	970 ±	0.0-2.5 2.5-3.0 3.0-6.5	TOPSOIL: DARK BROWN & BLACK SILTY SAND WITH ROOTS & ORGANIC MATTER GRAY SILTY SAND SOFT GRAY SILTY CLAY WITH TRACE OF SAND & ORGANIC MATTER [GROUNDWATER ENCOUNTERED AT 2.5 FT BGS]	BS-1 @ 1.0 FT BGS BS-2 @ 4.0 FT BGS; PP < 0.5
TP-17	970 ±	0.0-1.5 1.5-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS & ORGANIC MATTER STIFF TO VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & OCCASIONAL SAND SEAMS [NO GROUNDWATER ENCOUNTERED]	PP = 2.0
TP-18	972 ±	0.0-1.0 1.0-4.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS BROWN SILTY SAND [NO GROUNDWATER ENCOUNTERED]	
TP-19	950 ±	0.0-1.0 1.0-3.0 3.0-7.0 7.0-11.0	TOPSOIL: DARK BROWN SILTY SAND WITH TRACE OF CLAY & ROOT FIBERS MEDIUM TO STIFF BROWN SILTY CLAY WITH TRACE OF SAND & ROOT FIBERS HARD BROWN & GRAY SILTY CLAY WITH TRACE OF SAND GRAY SILTY SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.5 FT BGS; PP = 1.0

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- [5] BGS = BELOW GROUND SURFACE

EXCAVATED BY: J & G EXCAVATING, INC.

DATE: NOVEMBER 14 & 17, 2003

FIGURE NO: 1

LOG OF TEST PITS

TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS
TP-20	952 ±	0.0-1.0 1.0-3.5 3.5-12.0 12.0-13.5	TOPSOIL: DARK BROWN SILTY SAND WITH TRACE OF CLAY, ROOTS & ORGANIC MATTER STIFF BROWN SILTY CLAY WITH TRACE TO LITTLE SAND & TRACE OF ROOT FIBERS HARD BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & OCCASIONAL SAND SEAMS VERY STIFF GRAY SILTY CLAY WITH TRACE OF SAND & GRAVEL [NO GROUNDWATER ENCOUNTERED]	PP = 1.0 BS-1 @ 6.0 FT BGS; PP > 4.5 BS-2 @ 12.0 FT BGS BS-3 @ 13.5 FT BGS; PP = 3.25
TP-21	952 ±	0.0-1.0 1.0-3.5 3.5-10.0 10.0-12.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS & ORGANIC MATTER STIFF BROWN SILTY CLAY WITH TRACE TO LITTLE SAND & TRACE OF ROOT FIBERS HARD BROWN & GRAY SILTY CLAY WITH TRACE TO LITTLE SAND & OCCASIONAL SAND SEAMS VERY STIFF GRAY SILTY CLAY WITH TRACE OF SAND & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 5.0 FT BGS; PP > 4.5 BS-2 @ 10.0 FT BGS; PP = 3.5
TP-22	978 ±	0.0-1.0 1.0-2.0 2.0-4.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS & ORGANIC MATTER BROWN SILTY SAND WITH TRACE OF ROOT FIBERS STIFF BROWN SILTY CLAY WITH LITTLE SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.5 FT BGS BS-2 @ 1.5 FT BGS BS-3 @ 3.0 FT BGS
TP-23	976 ±	0.0-0.7 0.7-1.0 1.0-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS BROWN SILTY SAND WITH TRACE OF GRAVEL BROWN SAND WITH TRACE OF SILT & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.5 FT BGS BS-2 @ 2.0 FT BGS
TP-24	972 ±	0.0-1.5 1.5-2.5 2.5-3.5	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS & ORGANIC MATTER STIFF BROWN SILTY CLAY WITH LITTLE SAND BROWN & GRAY SILTY SAND WITH TRACE OF GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.5 FT BGS BS-2 @ 2.0 FT BGS
TP-25	970 ±	0.0-2.0 2.0-5.0 5.0-7.0	TOPSOIL: BLACK ORGANIC CLAY WITH TRACE TO LITTLE SILT & SAND MEDIUM GRAY SILTY CLAY WITH TRACE OF SAND, GRAVEL & ORGANIC MATTER GRAY SANDY SILT WITH TRACE OF CLAY [GROUNDWATER ENCOUNTERED AT 2.0 FT BGS]	BS-1 @ 1.0 FT BGS BS-2 @ 3.0 FT BGS; PP = 0.5

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- [5] BGS = BELOW GROUND SURFACE

EXCAVATED BY: J & G EXCAVATING, INC.

DATE: NOVEMBER 14 & 17, 2003

FIGURE NO: 1

LOG OF TEST PITS

TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS
TP-26	970 ±	0.0-1.0 1.0-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS & ORGANIC MATTER VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS PP = 3.5
TP-27	980 ±	0.0-0.8 0.8-6.5 6.5-8.0	TOPSOIL: BROWN SANDY CLAY WITH TRACE OF ROOT FIBERS & ORGANIC MATTER STIFF TO VERY STIFF BROWN SANDY CLAY WITH TRACE OF SILT & ROOT FIBERS BROWN & GRAY SILTY SAND WITH TRACE OF CLAY & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 3.0 FT BGS; PP = 2.0 BS-2 @ 7.0 FT BGS
TP-28	969 ±	0.0-0.5 0.5-4.0	TOPSOIL: BROWN SILTY SAND WITH ROOTS BROWN SILTY SAND WITH TRACE OF GRAVEL & ROOT FIBERS [GROUNDWATER ENCOUNTERED AT 3.5 FT BGS]	BS-1 @ 3.0 FT BGS
TP-29	968 ±	0.0-1.0 1.0-3.0	TOPSOIL: BROWN SILTY SAND WITH TRACE OF CLAY & ROOTS BROWN SAND WITH TRACE OF SILT & GRAVEL [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 3.0 FT BGS
TP-30	968 ±	0.0-1.0 1.0-4.0	TOPSOIL: BLACK SILTY SAND WITH TRACE OF CLAY & ORGANIC MATTER BROWN SILTY SAND WITH TRACE OF GRAVEL [GROUNDWATER ENCOUNTERED AT 1.5 FT BGS]	BS-1 @ 3.5 FT BGS
TP-31	972 ±	0.0-1.0 1.0-2.0	TOPSOIL: DARK BROWN SILTY CLAY WITH TRACE OF SAND & ROOT FIBERS HARD BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 0.5 FT BGS PP = 4.0
TP-32	971 ±	0.0-0.5 0.5-1.5	TOPSOIL: DARK BROWN SILTY SAND WITH ROOT FIBERS VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.0 FT BGS; PP = 2.5

NOTES:

- [1] TEST PITS BACKFILLED WITH EXCAVATED MATERIAL.
- [2] TEST PIT EXCAVATION INSPECTED BY M. AGBULOS OF NTH CONSULTANTS, LTD.
- [3] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION.
- [4] PP = POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT
- [5] BGS = BELOW GROUND SURFACE

EXCAVATED BY: J & G EXCAVATING, INC.

DATE: NOVEMBER 14 & 17, 2003

FIGURE NO: 1

PROJECT NO: 15-030094-01			NTH CONSULTANTS, LTD.		SHEET 6 OF 8	
LOG OF TEST PITS						
TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION		REMARKS	
TP-33	976 ±	0.0-0.2 0.2-1.5 1.5-2.0	TOPSOIL: DARK BROWN SILTY CLAY WITH TRACE OF GRAVEL & ROOT FIBERS BROWN SAND WITH TRACE OF SILT & GRAVEL HARD GRAY SILTY CLAY WITH TRACE OF SAND & GRAVEL [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 1.0 FT BGS PP = 4.0	
TP-34	978 ±	0.0-0.8 0.8-2.0 2.0-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS & ORGANIC MATTER STIFF TO VERY STIFF BROWN SANDY CLAY WITH TRACE OF SILT & ROOT FIBERS HARD BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 1.5 FT BGS; PP = 2.0 BS-2 @ 3.0 FT BGS; PP > 4.5	
TP-35	966 ±	0.0-1.5 1.5-2.5 2.5-4.5	TOPSOIL: BROWN SILTY SAND WITH ROOTS STIFF TO VERY STIFF BROWN SANDY CLAY WITH TRACE OF SILT & ROOT FIBERS HARD BROWN SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 1.0 FT BGS BS-2 @ 2.0 FT BGS; PP = 2.0 PP > 4.5	
TP-36	965 ±	0.0-1.0 1.0-2.5 2.5-3.5	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS STIFF TO VERY STIFF BROWN SANDY CLAY WITH TRACE OF SILT VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]		PP = 2.0 BS-1 @ 3.0 FT BGS; PP = 2.5	
TP-37	968 ±	0.0-1.0 1.0-2.0 2.0-2.5	TOPSOIL: DARK BROWN SILTY CLAY WITH TRACE OF SAND & ROOTS STIFF TO VERY STIFF BROWN SANDY CLAY WITH TRACE OF SILT HARD BROWN SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 0.5 FT BGS BS-2 @ 1.5 FT BGS; PP = 2.0 PP > 4.5	
TP-38	965 ±	0.0-2.0 2.0-3.5 3.5-6.5 6.5-8.0	TOPSOIL: BLACK SILTY SAND WITH ROOTS & ORGANIC MATTER DARK BROWN SILTY SAND WITH TRACE OF ROOT FIBERS & ORGANIC MATTER BROWN & GRAY SILTY SAND WITH TRACE OF CLAY STIFF TO VERY STIFF GRAY SILTY CLAY WITH TRACE OF SAND [GROUNDWATER ENCOUNTERED AT 3.0 FT BGS]		BS-1 @ 1.0 FT BGS BS-2 @ 3.5 FT BGS PP = 2.0	
NOTES: [1] TEST PITS BACKFILLED WITH EXCAVATED MATERIAL. [2] TEST PIT EXCAVATION INSPECTED BY M. AGBULOS OF NTH CONSULTANTS, LTD. [3] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION. [4] PP = POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT [5] BGS = BELOW GROUND SURFACE						
EXCAVATED BY: J & G EXCAVATING, INC.			DATE: NOVEMBER 14 & 17, 2003		FIGURE NO: 1	

PROJECT NO: 15-030094-01			NTH CONSULTANTS, LTD.		SHEET 7 OF 8	
LOG OF TEST PITS						
TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION		REMARKS	
TP-39	967 ±	0.0-1.0 1.0-2.0 2.0-3.0	TOPSOIL: BROWN SILTY SAND WITH ROOTS BROWN SANDY CLAY WITH TRACE OF SILT & GRAVEL VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & GRAVEL [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 0.5 FT BGS PP = 2.75	
TP-40	964 ±	0.0-1.5 1.5-2.0 2.0-5.0 5.0-6.0	TOPSOIL: BLACK SILTY SAND WITH ROOTS & ORGANIC MATTER BROWN SILTY SAND BROWN & GRAY SILTY SAND WITH TRACE OF CLAY MEDIUM GRAY SILTY CLAY WITH TRACE OF SAND, GRAVEL & ORGANIC MATTER [GROUNDWATER ENCOUNTERED AT 2.0 FT BGS]		BS-1 @ 4.0 FT BGS BS-2 @ 6.0 FT BGS; PP = 0.5	
TP-41	964 ±	0.0-2.0 2.0-4.0 4.0-6.0 6.0-6.5	TOPSOIL: BLACK SILTY SAND WITH ROOTS & ORGANIC MATTER MEDIUM TO STIFF BROWN & GRAY SILTY CLAY WITH LITTLE SAND MEDIUM GRAY SILTY CLAY WITH TRACE OF SAND & ORGANIC MATTER GRAY SILTY SAND WITH TRACE OF CLAY [GROUNDWATER ENCOUNTERED AT 2.0 FT BGS]		PP = 0.75 BS-1 @ 5.0 FT BGS; PP = 0.5 BS-2 @ 6.5 FT BGS	
TP-42	967 ±	0.0-1.0 1.0-1.5 1.5-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS BROWN SILTY SAND VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & ROOT FIBERS [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 0.5 FT BGS BS-2 @ 2.0 FT BGS; PP = 3.5	
TP-43	971 ±	0.0-1.0 1.0-2.0 2.0-3.0	TOPSOIL: DARK BROWN SILTY SAND WITH ROOTS STIFF TO VERY STIFF BROWN SILTY CLAY WITH TRACE TO LITTLE SAND VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND [NO GROUNDWATER ENCOUNTERED]		BS-1 @ 1.5 FT BGS; PP = 1.5 PP = 2.5	
TP-44	972 ±	0.0-1.7 1.7-4.0 4.0-6.0 6.0-7.0 7.0-7.5	TOPSOIL: DARK BROWN & BLACK SILTY SAND WITH TRACE OF CLAY, ROOT FIBERS & ORGANIC MATTER VERY STIFF BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & GRAVEL BROWN SAND WITH TRACE OF SILT STIFF TO VERY STIFF GRAY SILTY CLAY WITH TRACE OF SAND & ORGANIC MATTER GRAY SAND WITH TRACE OF SILT & GRAVEL [GROUNDWATER ENCOUNTERED AT 4.0 FT BGS]		BS-1 @ 1.0 FT BGS BS-2 @ 2.0 FT BGS; PP = 2.0 BS-3 @ 6.5 FT BGS; PP = 2.0	
NOTES:						
[1] TEST PITS BACKFILLED WITH EXCAVATED MATERIAL.						
[2] TEST PIT EXCAVATION INSPECTED BY M. AGBULOS OF NTH CONSULTANTS, LTD.						
[3] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION.						
[4] PP = POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT						
[5] BGS = BELOW GROUND SURFACE						
EXCAVATED BY: J & G EXCAVATING, INC.			DATE: NOVEMBER 14 & 17, 2003		FIGURE NO: 1	

PROJECT NO: 15-030094-01

NTH CONSULTANTS, LTD.

SHEET 8 OF 8

LOG OF TEST PITS

TEST PIT NO.	GROUND SURFACE ELEV.	DEPTH (FT)	SOIL DESCRIPTION	REMARKS
TP-45	966 ±	0.0-1.0 1.0-2.0 2.0-3.0	TOPSOIL: BROWN SILTY SAND WITH ROOTS BROWN SILTY SAND WITH TRACE OF CLAY HARD BROWN & GRAY SILTY CLAY WITH TRACE OF SAND & ROOT FIBERS [NO GROUNDWATER ENCOUNTERED]	BS-1 @ 1.5 FT BGS PP = 4.0

NOTES:

- [1] TEST PITS BACKFILLED WITH EXCAVATED MATERIAL.
- [2] TEST PIT EXCAVATION INSPECTED BY M. AGBULOS OF NTH CONSULTANTS, LTD.
- [3] SOIL CLASSIFICATION BASED SOLELY ON VISUAL OBSERVATION.
- [4] PP = POCKET PENETROMETER VALUE IN TONS PER SQUARE FOOT
- [5] BGS = BELOW GROUND SURFACE

EXCAVATED BY: J & G EXCAVATING, INC.

DATE: NOVEMBER 14 & 17, 2003

FIGURE NO: 1

PRELIMINARY
GEOTECHNICAL EXPLORATION
AND
ENGINEERING REPORT



FOR THE PROPOSED:

SITE DEVELOPMENT
46700 & 46404 GRAND RIVER AVE.
CITY OF NOVI
OAKLAND COUNTY, MICHIGAN

PREPARED FOR:

SERVMAN, LLC
46100 GRAND RIVER AVENUE
NOVI, MICHIGAN 48374-1317

BY:

PROFESSIONAL SERVICE INDUSTRIES, INC.
45749 HELM STREET
PLYMOUTH, MICHIGAN 48170
(734) 453-7900

MAY 23, 2014

PSI PROJECT NO. 0381570A

**PRELIMINARY GEOTECHNICAL EXPLORATION AND ENGINEERING REPORT
PROPOSED SITE DEVELOPMENT – 46700 & 46404 GRAND RIVER AVENUE
CITY OF NOVI, OAKLAND COUNTY, MICHIGAN**

EXECUTIVE SUMMARY

PSI has completed our preliminary geotechnical exploration and engineering report for the proposed site development to be constructed at 46700 & 46404 Grand River Avenue in the city of Novi, Oakland County, Michigan. PSI understands that additional explorations were performed to identify subsurface soil conditions at the former Anglin Civil Constructors Ltd property located at 46700 Grand River Avenue and property owned by Acme Construction Company at address 46404 Grand River Avenue in the city of Novi, Oakland County, Michigan. PSI understands that the Anglin Civil Constructors site is currently an undeveloped lot approximately 20 acres in size and is being used as a storage yard for Anglin Civil Constructors Ltd.

Based on conversations with Suburban Collection Showplace personal, PSI understands the project site may be used to expand the existing Suburban Collection Showplace and may consist of the construction of a two-story steel-framed building structure with concrete slab-on-grade floor and no basement. Specific details relative to the size and location of the proposed building footprint(s) and the anticipated wall and column loads were not provided. For the purposes of our analysis, PSI assumes that the wall loads supported on the perimeter continuous foundations may be less than 4 kips per lineal foot (klf) and the column loads will not exceed 100 kips. In addition, PSI assumes that the slab-on-grade loading will not exceed about 150 pounds per square foot. A total of twelve (12) soil test borings were performed within the proposed development area and selected samples were tested in the laboratory.

Deleterious old fill consisting predominately of discolored dark brown, brown and black sandy clay, silty clay and sand with variable percentages of asphalt, sand, concrete, brick, wood and organics was encountered at Borings B-1 through B-12. The old fill extended to depths ranging from approximately 4 to 19.5 feet below the existing ground surface at the locations of Borings B-1 through B-12. A stratum of dark brown to black amorphous peat was encountered at the locations of Borings B-10 and B-12 below the old fill layer. The peat stratum extended to depths ranging from approximately 9.5 to 24 feet below the existing ground surface. A stratum of apparently native mottled brown and gray to mottled brown, orangish brown and gray sandy clay with variable percentages of sand was encountered below the fill at the locations of Borings B-1, B-2, B-3, B-8, B-9 and B-11. The mottled sandy clay stratum extended to depths ranging from approximately 12 to 34 feet below the existing ground surface at the location of Borings B-1, B-2, B-8, B-9 and B-11 and through the final explored depths of approximately 15 feet below the ground surface at the locations of Boring B-3. A stratum of apparently native brown and yellowish brown to gray, and dark gray fine to fine to coarse silty sand was encountered below and interbedded within the mottled and gray sandy clay stratum at the locations of Boring B-1, B-2, B-6, B-8, B-9, B-10 and B-12. In



addition, the silty sand encountered below the amorphous peat at the location of Boring B-12 had trace amounts of organics. The silty sand strata extended to depths ranging from approximately 19.5 to 35 feet at the locations of Borings B-2, B-6, B-8, B-9, B-10 and B-12 and through the final explored depth of Boring B-1 of approximately 15 feet below the existing ground surface. A stratum of gray sandy clay with variable percentages of sand was encountered below the mottled sandy clay and silty sand strata at the locations of Borings B-2, B-4, B-5, B-6, B-8, B-9, B-10, B-11 and B-12. The gray sandy clay stratum extended through the final explored depths of the borings of approximately 15 and 40 feet below the ground surface.

As noted above, deleterious old fill consisting predominately of discolored dark brown, brown and black sandy clay, silty clay and sand with variable percentages of asphalt, sand, concrete, brick, wood and organics was encountered at Borings B-1 through B-12. The old fill extended to depths ranging from approximately 4 to 19.5 feet below the existing ground surface at the locations of Borings B-1 through B-12. A stratum of dark brown to black amorphous peat was encountered at the locations of Borings B-10 and B-12 below the old fill layer. The peat stratum extended to depths ranging from approximately 9.5 to 24 feet below the existing ground surface. The Loss-On-Ignition (LOI) or organic contents of the tested sample from boring B-10 was 41.5 percent (which is very high). These variable N-values suggests that the fill was not placed in a controlled manner. It would not be unusual for the thickness, composition and density of the near-surface fill materials to vary from that encountered at the individual boring locations. In PSI's opinion, the existing deleterious old fill and organic soils are not considered suitable for direct support of the proposed structure on a conventional shallow foundation system. In addition poor pavement performance including faulting, cracking and a reduced service life should be anticipated where the proposed site pavements are place directly over the existing old fill materials. If it is desired to support the proposed building on conventional shallow foundations, ground improvement will be required.

In PSI's opinion, one of the most feasible methods of ground improvement at this site (from a relative constructability, engineering and cost standpoint) is to leave the old fill and organic soils in-place and support the proposed building on conventional shallow spread footing foundations following the installation of Rammed-Aggregate Piers (RAP)/Geo-Piers or stone columns.

This site improvement method may likely be performed at a lower cost and within a quicker construction timeline than conventional mass excavation and replacement of the existing old fill materials. RAP/Geo-Piers will also provide uniform support for the proposed structure reducing total and differential settlement and will eliminate the uncertainty associated with supporting the building structure and it's floor slab directly on the old fill and organics soils. The installation of RAP/Geo-Piers or stone columns will also reduce the amount of potentially environmentally sensitive excavated fill and organic soils that has to be removed to an appropriate off-site disposal location if the owner decides to perform mass excavation and removal of the unsuitable soils from below the proposed building

structure footprint.

RAP/Geo-pier elements are typically installed by either drilling a 20 to 30-inch diameter cavity or driving a variable-diameter mandrel into the soil, displacing the soil laterally to form a cavity. The cavity is filled by ramming thin lifts of aggregate within the cavity. During the installation process, high frequency impact ramming energy applied to each lift both densifies the aggregate and surrounding soil and forces the aggregate laterally into the sidewalls of the hole further stiffening the stabilized composite soil mass. PSI estimates that the RAP/Geo-Pier elements would be installed through the fill and into the underlying stiff to hard silty/sandy clay soils through a RAP/Geo-Pier shaft length of approximately 20 to 25 feet. PSI anticipates that the RAP/Geo-Pier elements will be installed along the proposed building's perimeter load-bearing walls, below the isolated interior column locations and on a grid pattern below the proposed floor slab. RAP/Geo-Pier or stone column elements are generally designed and installed by a design-build specialty contractor. PSI would be pleased to work with an installation contractor to better define the feasibility and scope of work for this site and to provide a specific allowable bearing capacity and estimated settlement for use in the foundation design as well as the associated costs.

Based on the borings performed, the site also appears suitable for support of the proposed structure on a drilled pier or caisson foundation. The vertical loads will be supported predominately by end-bearing. PSI estimates that an **allowable end bearing capacity of 6 ksf** is achievable for use in the design of drilled pier or caisson foundations where socketed a minimum of 5 feet or one pile diameter (whichever is greater) into the stiff to very stiff sandy clay at or below a depth of approximately 30 feet below the existing ground surface. However, an acceptable foundation elevation may vary due to the depth and type of soils encountered at this project site and therefore PSI should be consulted for further recommendations once the location(s) of the proposed structure(s) have been finalized.

In order to act as a deep foundation element, PSI recommends the length of the drilled pier be a minimum of 4 times the shaft diameter. Also, a minimum shaft diameter of 30 inches is recommended to facilitate cleaning and inspection.

PSI estimates that settlement of the native bearing soils due to load transferred to the tip of properly installed drilled pier or caisson should be on the order of $\frac{1}{2}$ inch or less for the anticipated pile diameter, bearing pressure and length outlined above. Additional movement will occur within the drilled pier due to elastic deformation of the caisson concrete. The elastic deformation is dependent on the strength or Modulus of Elasticity of the concrete (E), the length of the pier (L), the cross sectional area of the pile (A) and the applied compression load at the top of the pile (P) and is expressed by the formula $S = PL/AE$.

Based on the borings performed, uncontrolled old fill materials are also anticipated to be present below the proposed pavements. Uncontrolled fills, especially those containing organics and deleterious materials, may experience poor pavement performance including



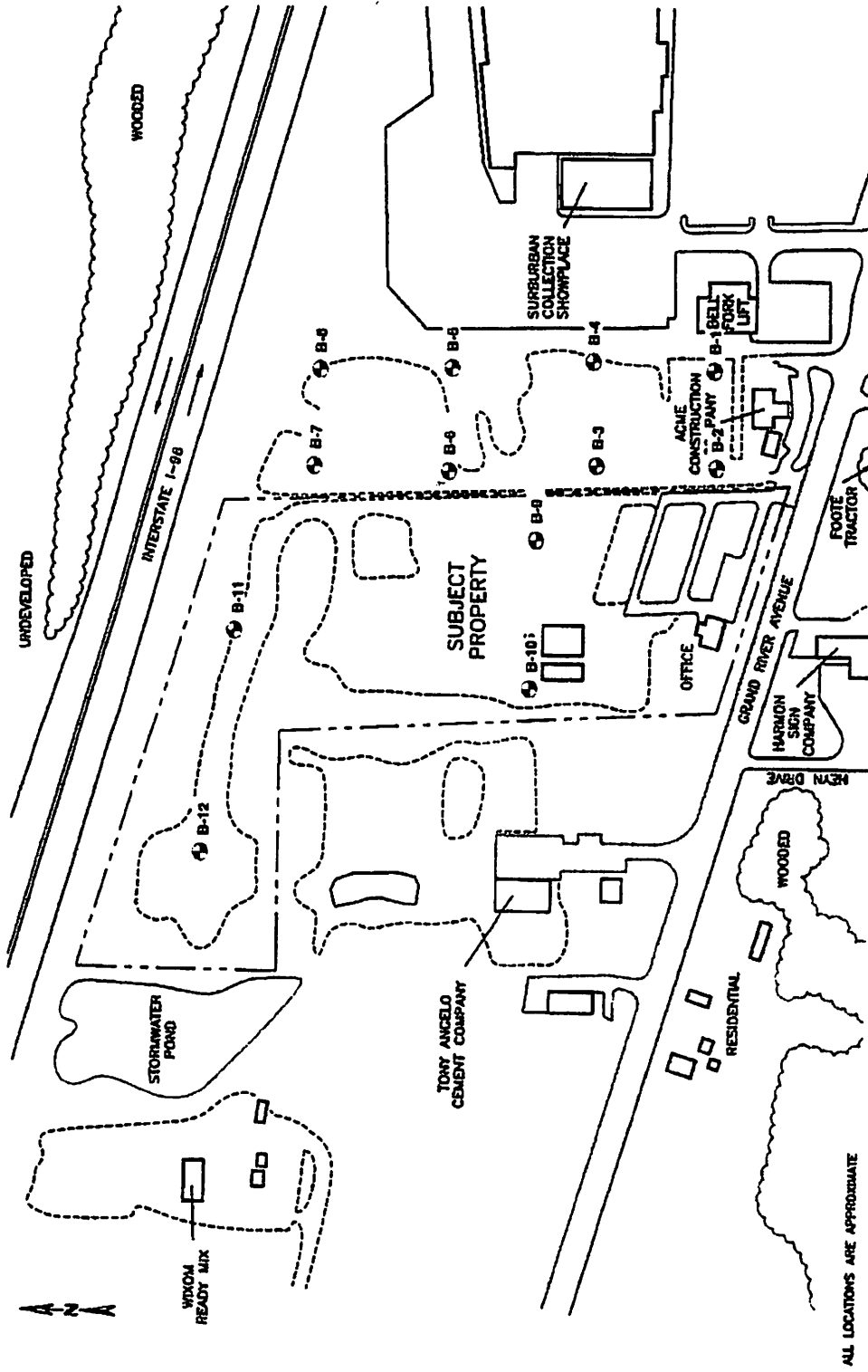
faulting, cracking and a reduced service life where the proposed site pavements are placed directly over the existing old fill materials. Therefore, mass excavation and removal of the existing old fill in its entirety from below the pavement may not be a viable option. However, if the owner is willing to accept the risk in doing so, a portion of the existing old fill may remain in-place below the proposed site pavements. The risk of poor pavement performance can be reduced (but not completely eliminated) by partial depth undercutting of the critical upper 2 to 3 foot section of the subgrade and replacement of the existing old fill and organic-containing native soils with clean imported engineered fill. Risk remains of poor pavement performance due to the inherent uncertainty associated with supporting the pavements over existing old fill or discolored, organic-containing native soils, which the Owner must recognize and accept if some or the entire fill thickness is left in place.

To reduce the risk of poor pavement performance to an acceptable level of anticipated performance, PSI recommends that the pavement section be supplemented with TENSAR TX 160 Geogrid or equivalent to improve the performance and serviceable life of the pavement (for both flexible and rigid pavements). Placement of Geogrid at the subgrade/aggregate base course interface will improve the strength of the subgrade soils resulting in an increase in the trafficking capacity or the number of 18-kip ESAL's that the pavement sections can support over the life of the pavement. Placement of a layer of Geogrid directly over the existing old fill in the bottom of the undercut will further help stabilize localized areas of subgrade instability and enhance pavement performance, however, may not eliminate it to its entirety.

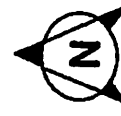
The recommendations submitted in this report are considered to be preliminary and are based on the available subsurface information obtained by PSI and the project information furnished by Servman, LLC. Prior to final design and construction, additional borings may be required to verify the soil conditions and to determine if changes in the earthwork, subgrade preparation and preliminary foundation design parameter recommendations presented herein are required. If additional soil borings, laboratory testing and engineering analysis are not performed, PSI will not be responsible for the implementation of its preliminary recommendations.

This Executive Summary should not be considered separately from the entire text of this preliminary report with all the conclusions and qualifications mentioned herein. Details of our preliminary analysis and recommendations are given in the following sections of this preliminary report.

BORING LOCATION PLAN



ALL LOCATIONS ARE APPROXIMATE



LEGEND:

⊕ - APPROXIMATE BORING LOCATION

PROJECT NAME:

PROPOSED SITE DEVELOPMENT - FORMER ANGLEN CIVIL CONSTRUCTORS
 & ACME CONSTRUCTION COMPANY PROPERTIES
 CITY OF NOVI, OAKLAND COUNTY, MICHIGAN

PROJECT NUMBER
 0381570A

Figure No.
 3

Date: May 23, 2014



DATE STARTED: 3/24/14 DRILL COMPANY: PSI, Inc.
 DATE COMPLETED: 3/24/14 DRILLER: J. Arsenault LOGGED BY: K. Dubnicki
 COMPLETION DEPTH: 15.5 ft DRILL RIG: CME 45
 BENCHMARK: N/A DRILLING METHOD: 3.25" HSA
 ELEVATION: N/A SAMPLING METHOD: 2" SS
 LATITUDE: HAMMER TYPE: Automatic
 LONGITUDE: EFFICIENCY: 78%
 STATION: N/A OFFSET: N/A REVIEWED BY: A. Cekic
 REMARKS: Borehole backfilled with auger cuttings upon completion

BORING B-1

Water: While Drilling 6.5 feet
 Upon Completion 4 feet
 Delay Wet Cave @ 8'

BORING LOCATION:
 See Boring Location Plan

Acme Construction Company Property

Elevation (feet)	Depth (feet)	Graphic Log	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft	Additional Remarks
0					FILL - SAND, fine to medium, with silt, asphalt and gravel, dark brown, moist					
			1	10	FILL - CLAYEY SAND, fine to medium, with silt, trace clay, dark brown, moist		20, 42, 16 N=58	11		
5			2	18	FILL - SAND, fine to medium, trace organics and gravel, dark brown, moist		3, 3, 3 N=6	17		
			3	3	FILL - CLAYEY SAND, fine to medium, with silt, mottled brown and yellowish brown, moist to wet		1, 1, 2 N=3	21		
10			4	18	SANDY CLAY, trace gravel, mottled brown and dark brown, moist, very stiff	CL	3, 5, 7 N=12	13		Op = 20 tsf
			5	18	SANDY CLAY - trace gravel, brown, moist, hard	CL	5, 7, 11 N=18	11		Op = 40 tsf
15			6	18	SILTY SAND - fine to coarse, brown, wet, medium dense End of Boring	SM	6, 8, 8 N=16	20		



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900

PROJECT NO.: 0381570A
 PROJECT: Proposed Site Development
 LOCATION: 46700 & 46404 Grand River Ave
 City of Novi
 Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

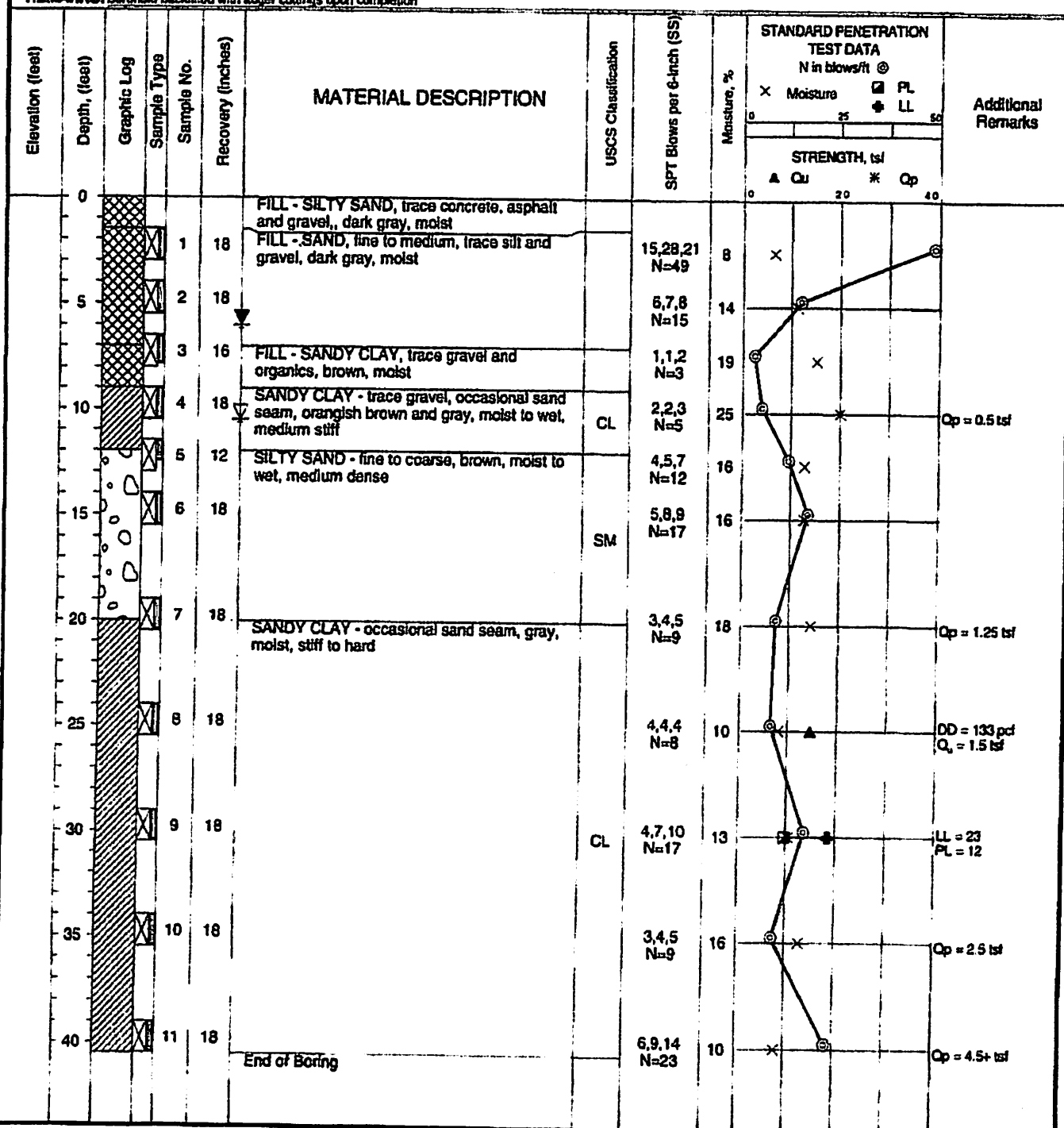
DATE STARTED: 3/24/14
 DATE COMPLETED: 3/24/14
 COMPLETION DEPTH: 40.5 ft
 BENCHMARK: N/A
 ELEVATION: N/A
 LATITUDE: N/A
 LONGITUDE: N/A
 STATION: N/A OFFSET: N/A
 REMARKS: Borehole backfilled with auger cuttings upon completion

DRILL COMPANY: PSI, Inc.
 DRILLER: J. Arsenault LOGGED BY: K. Dubnicki
 DRILL RIG: CME 45
 DRILLING METHOD: 3.25" HSA
 SAMPLING METHOD: 2" SS
 HAMMER TYPE: Automatic
 EFFICIENCY: 78%
 REVIEWED BY: A. Cokic

BORING B-2

Water: ☒ While Drilling 10.5 feet
☒ Upon Completion 6 feet
☒ Delay Wet Cave @ 14'

BORING LOCATION:
 See Boring Location Plan
 Acme Construction Company Property



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900

PROJECT NO.: 0381570A
 PROJECT: Proposed Site Development
 LOCATION: 46700 & 46404 Grand River Ave
 City of Novi
 Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 3/24/14
 DATE COMPLETED: 3/24/14
 COMPLETION DEPTH: 15.5 ft
 BENCHMARK: N/A
 ELEVATION: N/A
 LATITUDE:
 LONGITUDE:
 STATION: N/A OFFSET: N/A
 REMARKS: Borehole backfilled with auger cuttings upon completion

DRILL COMPANY: PSI, Inc.
 DRILLER: J. Arsenault
 DRILL RIG: CME 45
 DRILLING METHOD: 3.25" HSA
 SAMPLING METHOD: 2" SS
 HAMMER TYPE: Automatic
 EFFICIENCY: 78%
 REVIEWED BY: A. Cekic

BORING B-3

Water: ☒ While Drilling Dry feet
☒ Upon Completion Dry feet
☒ Delay Dry Cave @ 3'

BORING LOCATION:
 See Boring Location Plan

Acme Construction Company Property

Elevation (feet)	Depth (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft	Additional Remarks
	0					FILL - SAND, trace brick, concrete and asphalt, dark brown, moist					
				1	18	FILL - SILTY SAND, trace organics and brick, dark brown, moist		10, 14, 12 N=26	12		
	5			2	16	SANDY CLAY - trace gravel, brownish gray, moist, very stiff	CL	5, 5, 6 N=11	13		Op = 3.0 tsf
				3	0			4, 4, 5 N=9	17		
	10			4	18	SANDY CLAY - mottled brown, orangish brown and gray, moist, very stiff to hard	CL	2, 4, 6 N=10	11		Op = 3.0 tsf
				5	18			5, 7, 8 N=15	11		Op = 4.5+ tsf
	15			6	18			7, 8, 11 N=19	12		Op = 4.5+ tsf
						End of Boring					



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900

PROJECT NO.: 0381570A
 PROJECT: Proposed Site Development
 LOCATION: 46700 & 46404 Grand River Ave
 City of Novi
 Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 3/25/14
 DATE COMPLETED: 3/25/14
 COMPLETION DEPTH: 40.5 ft
 BENCHMARK: N/A
 ELEVATION: N/A
 LATITUDE:
 LONGITUDE:
 STATION: N/A OFFSET: N/A
 REMARKS: Borehole backfilled with auger cuttings upon completion

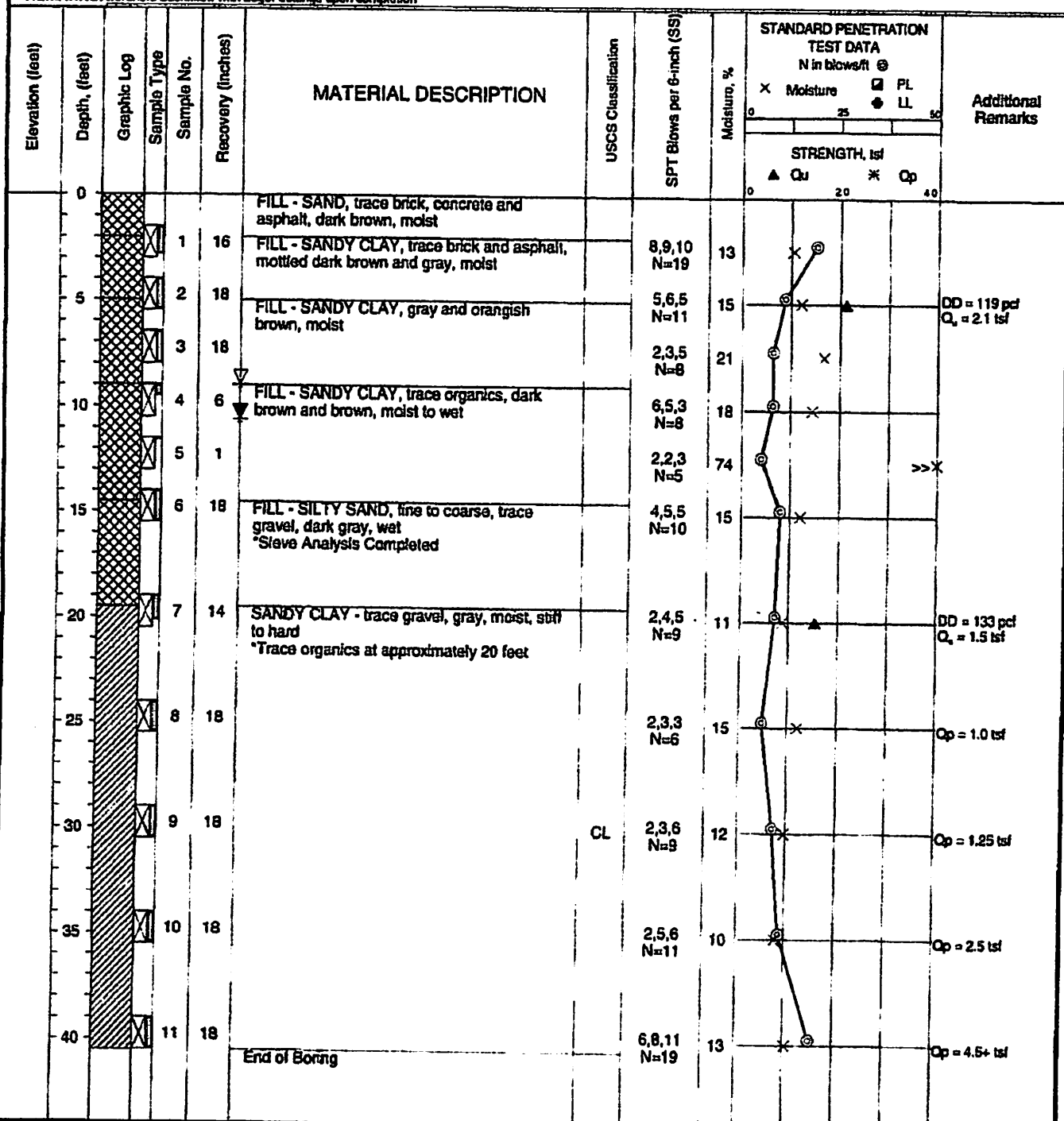
DRILL COMPANY: PSI, Inc.
 DRILLER: J. Arsenault
 DRILL RIG: CME 45
 DRILLING METHOD: 3.25" HSA
 SAMPLING METHOD: 2" SS
 HAMMER TYPE: Automatic
 EFFICIENCY: 78%
 REVIEWED BY: A. Cekic

BORING B-4

Water: While Drilling 9 feet
 Upon Completion 10.6 feet
 Delay Wet Cave @ 14.6'

BORING LOCATION:
 See Boring Location Plan

Acme Construction Company Property



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900

PROJECT NO.: 0381570A
 PROJECT: Proposed Site Development
 LOCATION: 46700 & 48404 Grand River Ave
 City of Novi
 Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 3/25/14	DRILL COMPANY: PSI, Inc.	BORING B-5
DATE COMPLETED: 3/25/14	DRILLER: J. Arsanault LOGGED BY: K. Dubnicki	
COMPLETION DEPTH: 15.5 ft	DRILL RIG: CME 45	Water: <input checked="" type="checkbox"/> While Drilling 6.5 feet
BENCHMARK: N/A	DRILLING METHOD: 3.25" HSA	<input checked="" type="checkbox"/> Upon Completion 4 feet
ELEVATION: N/A	SAMPLING METHOD: 2" SS	<input checked="" type="checkbox"/> Delay Wet Cave @ 12.6'
LATITUDE:	HAMMER TYPE: Automatic	BORING LOCATION: See Boring Location Plan
LONGITUDE:	EFFICIENCY: 78%	Acme Construction Company Property
STATION: N/A OFFSET: N/A	REVIEWED BY: A. Cakic	
REMARKS: Borehole backfilled with auger cuttings upon completion		

Elevation (feet)	Depth (feet)	Graphic Log	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft @	Additional Remarks
									x Moisture PL LL STRENGTH: tsf ▲ Cu * Op	
0	0		1	18	FILL - SAND, trace brick, concrete and asphalt, dark brown, moist		25,16,7 N=23	35		
	1		2	18	FILL - CLAYEY SAND, trace brick and wood, grayish brown, moist		6,6,4 N=10	16		
	2		3	18	FILL - SILTY CLAY, trace sand, gray, moist		5,3,4 N=7	21		
	3		4	12	FILL - SANDY CLAY, trace brick, concrete and organics, trace gravel, dark brown and brown, moist		4,5,8 N=13	17		
	4		5	12	*Hydrocarbon Oder at approximately 10 feet		2,2,15 N=17	18		
	5		6	14	SANDY CLAY - gray, moist, very stiff	CL	4,3,7 N=13	20		Op = 2.5 tsf
	6				End of Boring					



Professional Service Industries, Inc.
45749 Helm Street
Plymouth, MI 48170
Telephone: (734) 453-7900

PROJECT NO.: 0381570A
PROJECT: Proposed Site Development
LOCATION: 46700 & 46404 Grand River Ave
City of Novi
Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

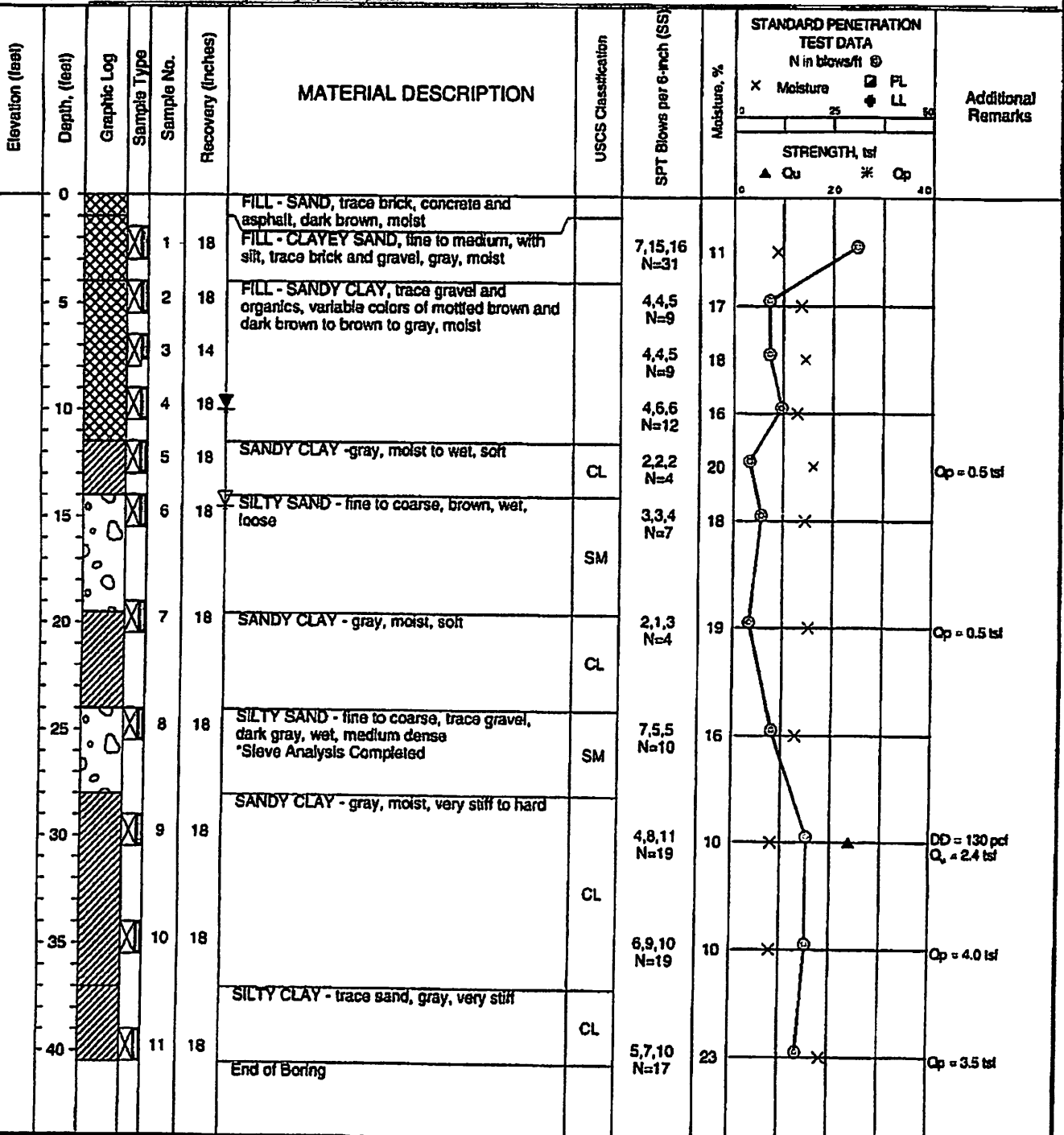
DATE STARTED: 3/26/14 **DRILL COMPANY:** PSI, Inc.
DATE COMPLETED: 3/26/14 **DRILLER:** J. Arsenaud **LOGGED BY:** K. Dubnicki
COMPLETION DEPTH: 40.5 ft **DRILL RIG:** CME 45
BENCHMARK: N/A **DRILLING METHOD:** 3.25" HSA
ELEVATION: N/A **SAMPLING METHOD:** 2" SS
LATITUDE: **HAMMER TYPE:** Automatic
LONGITUDE: **EFFICIENCY:** 78%
STATION: N/A **OFFSET:** N/A **REVIEWED BY:** A. Cekic

BORING B-6

Water
 ▽ White Drilling 14.5 feet
 ▽ Upon Completion 10 feet
 ▽ Delay Wet Cave @ 16'

BORING LOCATION:
 See Boring Location Plan

Acme Construction Company Property



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900

PROJECT NO.: 0381570A
PROJECT: Proposed Site Development
LOCATION: 46700 & 46404 Grand River Ave
 City of Novi
 Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

DATE STARTED: 3/26/14 DRILL COMPANY: PSI, Inc.
 DATE COMPLETED: 3/26/14 DRILLER: J. Arsenault LOGGED BY: K. Dubnicki
 COMPLETION DEPTH: 15.5 ft DRILL RIG: CME 45
 BENCHMARK: N/A DRILLING METHOD: 3.25" HSA
 ELEVATION: N/A SAMPLING METHOD: 2" SS
 LATITUDE: HAMMER TYPE: Automatic
 LONGITUDE: EFFICIENCY: 78%
 STATION: N/A OFFSET: N/A REVIEWED BY: A. Cakic
 REMARKS: Borehole backfilled with auger cuttings upon completion

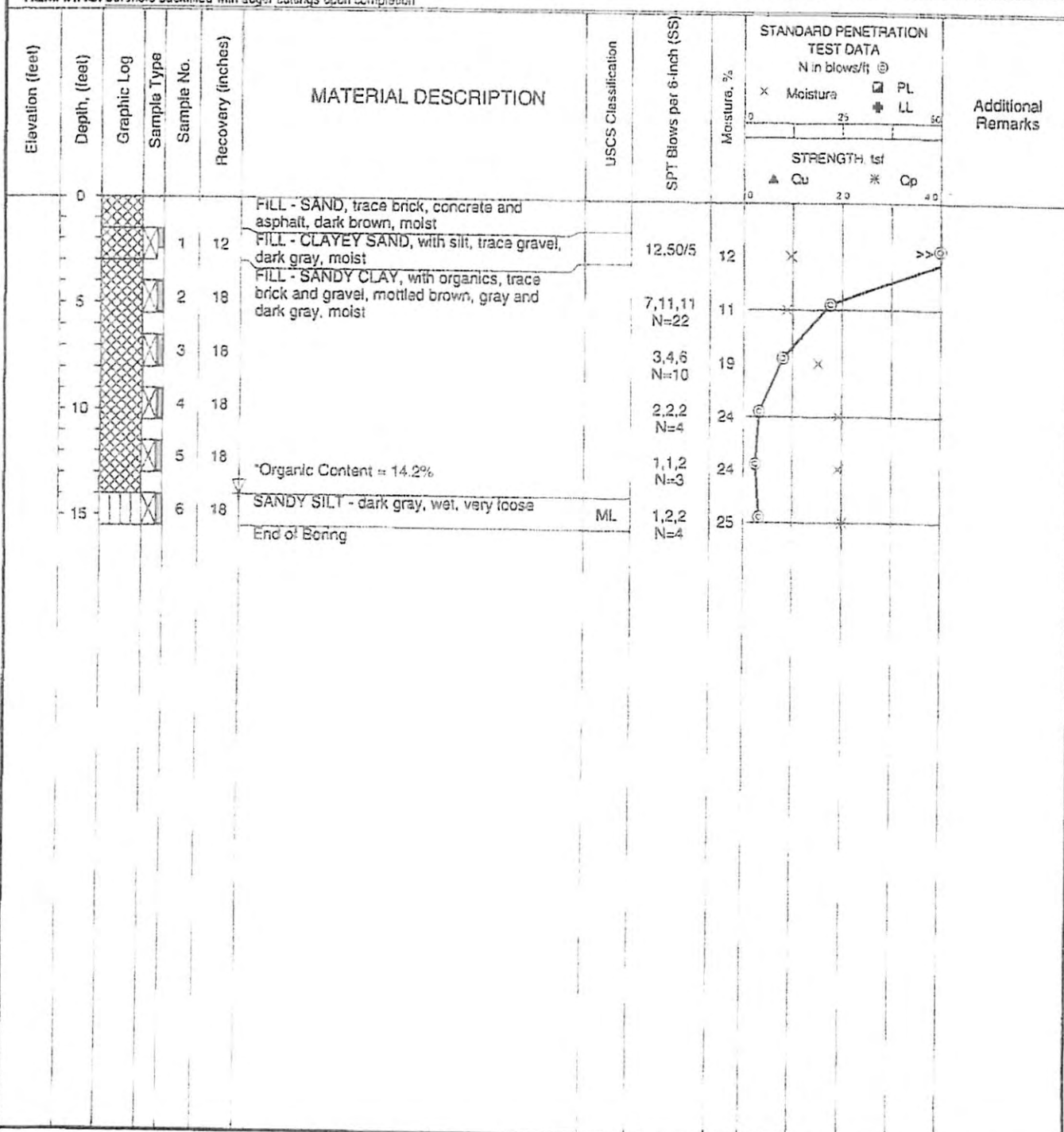
BORING B-7

Water
 ▽ While Drilling 14 feet
 ▽ Upon Completion Dry feet
 ▽ Delay Dry Cava @ 3'

BORING LOCATION:

See Boring Location Plan

Acme Construction Company Property



Professional Service Industries, Inc.
 45749 Helm Street
 Plymouth, MI 48170
 Telephone: (734) 453-7900

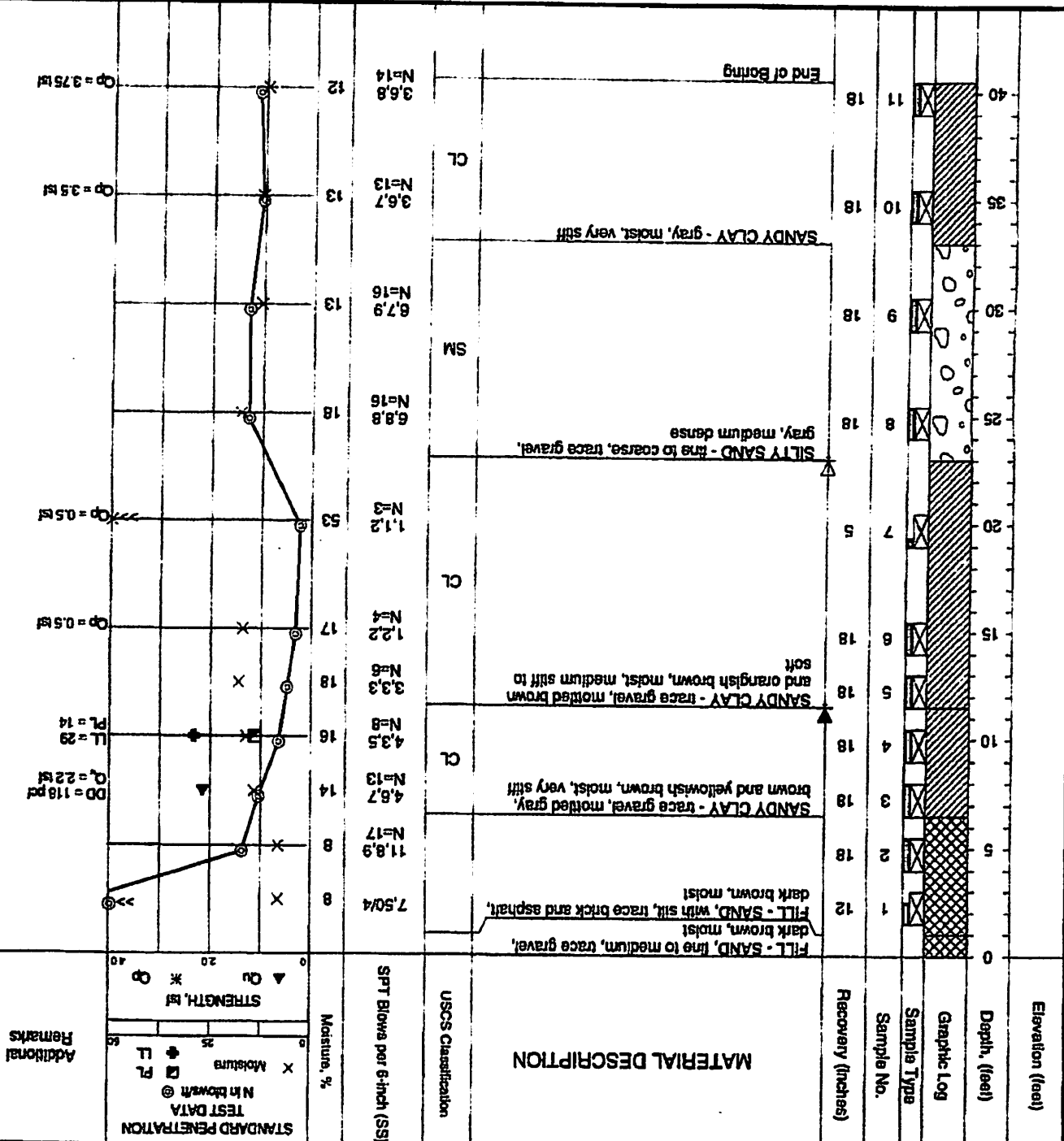
PROJECT NO.: 0381570A
 PROJECT: Proposed Site Development
 LOCATION: 46700 & 46404 Grand River Ave
 City of Novi
 Oakland County, Michigan



Professional Service Industries, Inc.
45749 Helm Street
Plymouth, MI 48170
Telephone: (734) 453-7900

PROJECT NO.: 0391570A
PROJECT: Proposed Site Development
LOCATION: 46700 & 46404 Grand River Ave
City of Novi
Oakland County, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.



DATE STARTED: 3/25/14		DRILL COMPANY: PSI, Inc.	
DATE COMPLETED: 3/25/14		DRILLER: J. Arsenault	
COMPLETION DEPTH: 40.5 ft		LOGGED BY: K. Dubnicki	
BENCHMARK: N/A		DRILLING METHOD: 3.25" HSA	
ELEVATION: N/A		SAMPLING METHOD: 2" SS	
LATITUDE: N/A		HAMMER TYPE: Automatic	
LONGITUDE: N/A		EFFICIENCY: 78%	
STATION: N/A		REVIEWED BY: A. Celko	
REMARKS: Borehole backfilled with sugar cuttings upon completion			

BOILING LOCATION: Wet Cave @ 20.5'	Water
Upon Completion	White Drilling
Delay	See Boring Location Plan
BOILING LOCATION: Acme Construction Company Property	

BOILING B-8

MAJOR EVENT TRAFFIC PLAN (METP)

June 22, 2016

Mr. Blair Bowman
Suburban Showplace Collection
46100 Grand River
Novi, MI 48374

VIA EMAIL

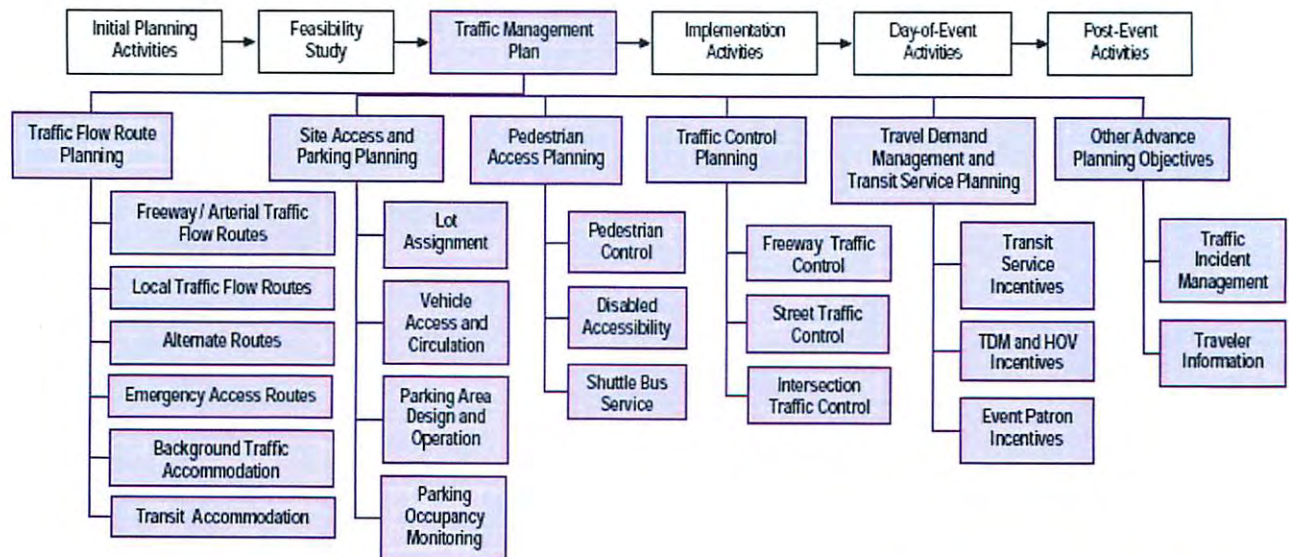
**RE: Proposed Expansion Suburban Collection Showplace
City of Novi, Michigan**

Dear Mr. Bowman:

The professional staff of Fleis & VandenBrink (F&V) have reviewed the proposed development plans for the Suburban Collection Showplace and the traffic volume data collected during the Detroit Comic Con Event in May 2016. Based on this information, we offer the following comments and observations for consideration.

The proposed development includes the expansion of the existing site to provide more indoor and outdoor exhibit space. This expansion is not expected to draw additional visitors to the site, but will provide more opportunity and space for additional and larger exhibits. A Traffic Impact Study (TIS) for the proposed site would essentially evaluate the existing conditions, therefore a TIS is not recommended. A TIS is not the appropriate measure to mitigate the site traffic for the proposed site expansion, however a formal Traffic Management Plan (TMP) should be provided for the Suburban Showplace Collection.

A TMP is developed through a formal stakeholder review process that includes evaluating traffic, parking, and pedestrian operations both on- and off- site, and developing management techniques to mitigate event operational problems. The Federal Highway Administration (FHWA) has developed the following outline to assist in the development of a TMP for event management:



The Suburban Collection Showplace has started the development of TMP and F&V recommends that this information is used as a platform to establish a formal TMP for the site. The process should begin with the establishment of a Stakeholder Committee. The Committee should include representation from the following:

- **Traffic Operations Agencies:** MDOT, RCOC, SEMTOC, City of Novi
- **Law Enforcement Agencies:** MSP, City of Novi PD, Oakland County Sherriff
- **Event Organizer:** Suburban Showplace Collection

These groups represent the core stakeholders who will be responsible for the development and implementation of the TMP.

If you have any questions, please do not hesitate to contact us at your convenience.

Sincerely,

FLEIS & VANDENBRINK



Michael J. Labadie, PE
Group Manager

JMK/mjl

Expansion Suburban Collection Showplace / Michigan State Fairgrounds

MAJOR EVENT TRAFFIC PLAN (METP)



NOTIFY - COMMUNICATE – PLAN – IMPLEMENT – REVIEW
Improve!

Prepared for the City of Novi
Site Plan Submittal Process
June 21, 2016

Outline of Major Event Traffic Plan Program--Suburban Collection Showplace/Michigan State Fairgrounds

Introduction and Opening Summary:

A historical summary of the Novi Expo operations and the newly constructed Showplace operations and related traffic issues and improvements should be provided. Of particular importance, is the historical issues relating to the poor ingress and egress at the former Novi Expo site with one point of access and very limited parking creating regular traffic backups and congestion issues up until the relocation in 2005. With the construction of the new facility an extraordinary amount of traffic planning and future road improvement programming, was engaged in and ultimately completed. These include but are not limited to having three distinct entrance and exit points, to the new Showplace grounds with the main entrance being fully signalized and an additional service exit/entrance from Taft Road. The original development included the installation of a turning lane along the north side of Grand River from the main entrance at the east all the way to the west entrance. In addition, the Showplace project and the economic development it promised, was used as a catalyst for over five million dollars of additional road funding dedicated for the improvement of Grand River to a full five-lane section with a dedicated left hand turn lane. This funding along with the interchange improvements at Beck, Wixom and I-96 as well as the intersection improvements at Grand River and Novi Road and the reconstruction of the "humpback" railroad bridge over the CSX railway completed a three+ mile section of improvement to the Grand River corridor with the Showplace located directly in the middle. Since its original development and opening in 2005, and its subsequent expansion along with the addition of the Hyatt Place Hotel in 2013 the Showplace has continued to attract literally hundreds of events annually and operates with little or only modest traffic impacts with the vast majority of the time. In the last eleven years, and only in recent years, one major event (the Motor City Comic-Con), has provided traffic movement challenges. These challenges have arisen not only due to the large number of overall attendees and increase in popularity of the event, as importantly the short-duration of time in which the peak amount of attendance occurs and average length of stay of the attendees. In 2016, a major coordination effort was undertaken between Michigan Department of Transportation, Michigan State Police, Oakland Road County Commission, Novi Police, City of Novi Administration and Showplace event producer/staff to address and minimize traffic congestion issues. At the core of this planning effort is the basis that the Showplace operations and infrastructure can adequately handle the vast majority of current and future proposed events with little to no planning efforts. However, it is understood that in certain instances like Comic-Con and any other future events that would near a comic-con like threshold that is incumbent upon the Showplace administration to notify and engage in a Major Event Traffic Plan (METP) Program.

In conclusion, it is important to note that at this time, within the current schedule and future booking schedule no events other than the Motor City Comic-Con and to a lesser extent, the Fifth Third Bank Michigan State Fair, are expected to require the invocation of the METP! The events currently slated for the expansion space would provide for the growth of existing events with the most critical growth needs being that of trade and industry style events which have large floor space requirements but very small amounts of attendance as compared to major consumer style events.

METP Structure:

Normal Showplace Operations:

Use of Current Entrances and Exits Only:

As indicated in the opening summary, the significant amount of parking and infrastructure enjoyed by the Showplace is adequate to handle and provide for the vast majority of events that will be schedule now and into the future. During these times of normal operations the Showplace will function utilizing its current entrances and exits only. Going forward, the entrances utilized during normal operation shall be "Gate 1," which is the main east signalized entrance, and "Gate 2" which is the current west entrance serving as the common drive for Belfor truck and the Showplace. In addition, the center curb-cut into the south lots will be used as an exit-only and the Taft Road service drive will continue to be used in that capacity as well. Even in the case of major consumer events currently scheduled such as Outdoorama, the Women's Show, the Golf Show, Snowmobile Show, etc., these entrances will be sufficient and continue to service the inflow and outflow in an organized fashion for these events.

New Expanded Surfaced Parking Areas:

A key part of the new expansion plan is to increase substantially overall surfaced parking even considering the elimination of ____ spaces relating to the expansion of the facility itself. Access to the newly expanded parking areas immediately west of the Showplace site will be via predominately the west entrance, Gate 2. The versatility and flexibility needed from the surfaced areas necessitate certain variances from traditional parking lot standards and we will be working with the City to develop the most useful and user-friendly combination throughout the finalization of the site-planning process.

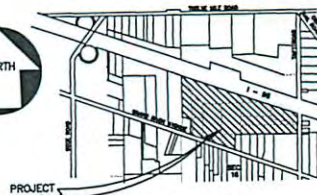
Implementation of the METP:

If any future potential event is expected to have certain thresholds of overall attendance, however, more importantly, peak amounts of vehicle trips, the Showplace administration shall notify the city administration and initiate the METP procedures. To assist in establishing this threshold and trigger mechanism, we have included the trip generation information and car counts from the peak Saturday time frames from the 2016 Motor City Comic-Con. We have also included some of the correspondence/communications between the various agencies relating to the planning effort, the implementation, and the ultimate results of the 2016 effort. We are proposing that a peak period demand of 80% of the traffic experienced during Comic-Con would trigger the need and use of the METP.

Summary of Key Elements of the METP:

1. Determination that threshold is likely to be met.
2. Showplace notifies the City of the future event.
3. Notification goes out to all coordinating agencies and organizations, including but not limited to the, Michigan Department of Transportation, Michigan State Police, Oakland County Road Commission, Novi Police/Public Safety, City of Novi Administration, Suburban Collection Showplace staff and event producers.

4. Depending on the level and duration of the expected traffic volumes, the plan will include opening of such other gates/entrances to the west, including "Gate 3" and "Gate 4" identified in the attached overall site plan.
5. If determined to be either necessary or beneficial, additional ancillary overflow lots in and around the Showplace/fairgrounds may be utilized. These overflow lots will be natural/grass surfaced lots and when appropriate will be operated by charitable and community organizations with a portion or all of the proceeds (if any charge is made for the use of the parking lots) going to these charity/community organizations.
6. If determined to be either necessary or beneficial and subject to availability, shuttle lots may be utilized including but not limited to coordination with the Novi Public Schools for use of any available school parking lot area.
7. Coordination and optimization of all signal timing within the reasonable geographic area through communication with Oakland County Road Commission Signalization Department.
8. If determined to be either necessary and or beneficial, coordination of active physical traffic control by appropriate department personnel. Examples may include ramps on I-96, overpasses and intersections, and potentially entrances/exits at the Showplace itself.
9. Coordination of appropriate, allowable messages delivered through the DMS Message System (MDOT highway, large reader board).
10. A pre-implementation meeting will be held prior to any event requiring the METP and a post-event meeting/follow up will be held to identify any points of concern or adjustments that may be required.
11. **A final core element to this approach is that it is clearly understood in the event of experience related to a particular event or continuing regular reoccurring issues being associated with future, major events additional improvements to the plan and/or infrastructure may be required. An example of which would be the installation of additional turning lanes at or near the westerly gates. Another potential would be with a significant amount of new major events requiring department personnel, a Cost/Services Plan may need to be developed.**



LOCATION MAP
SCALE: 1"=2000'



SCALE
1"=150'



LEGEND

- EXISTING ELEVATION
- PROPOSED ELEVATION (ADD 900 FEET)
- EXISTING CONTOUR
- EXISTING CONTOUR PER PREVIOUS PLAN
- U.P. - UTILITY POLE
- GUY - GUY WIRE
- T.S. - TRAFFIC SIGN
- HYD. - FIRE HYDRANT
- G.V. - GATE VALVE
- C.B. - CATCH BASIN
- M.H. - MAN-HOLE
- L.P. - LIGHT POLE
- F.M. - FOUND MONUMENT
- F.I. - FOUND IRON
- S.I. - SET IRON
- G.L. - GROUND LIGHT
- B.P. - BUMPER POST
- T.S.P. - TRAFFIC SIGNAL POLE
- T.P. - TRUCK PARKING AREA
- L.A. - LOADING AREA

BENCH MARKS

- B.M. 15-2 RAILROAD SPIKE IN EAST SIDE POWER POLE ON WEST SIDE OF TAFT ROAD, 400'± NORTH OF GRAND RIVER AVENUE. ELEVATION 948.50
- B.M. 15-7 CHISELED SQUARE ON EAST SIDE LIGHT POLE BASE, 125'± SOUTH OF THE C/L OF GRAND RIVER AND 840'± WEST OF C/L OF TAFT ROAD, ON WEST EDGE OF BIT PARKING LOT FOR GATSBY'S BAR. ELEVATION 963.19
- B.M. #3 ARROW ON HYDRANT LOCATED 56'± SOUTH AND 89'± WEST OF THE SOUTHEAST CORNER OF THE SHOWPLACE BUILDING. ELEVATION 976.88

GENERAL SITE DATA

SITE AREA: 2,380,780 S.F. OR 54.862 AC.
NET AREA: 2,374,986 S.F. OR 54.522 AC.
SITE ZONING: EDI (EXPOSITION OVERLAY DISTRICT) OVER OST (OFFICE SERVICE TECHNOLOGY)
BUILDING AREA:
EXISTING RICK & DRIVE BUILDING: 2,519 S.F.
EXISTING HOTEL BUILDING: 45,348 S.F.
PROPOSED SHOWPLACE BUILDING: 250,510 S.F.
TOTAL BUILDING AREA: 278,377 S.F.
BUILDING HEIGHT:
EXISTING RICK & DRIVE BUILDING: 20' MAXIMUM (1 STORY)
EXISTING HOTEL BUILDING: 42'-0" TO PARAPET (4 STORY)
EXISTING SHOWPLACE BUILDING: 44' MAXIMUM (1 STORY)
PROPOSED SHOWPLACE ADDITION: 30'-0" TO PARAPET (1 STORY)
SITE FLOOR AREA RATIO: 510,785 S.F./2,374,986 S.F. = 21.51%
SITE PARKING REQUIRED PER ORDINANCE:
EXISTING EXPOSITION HALL: 208,000 S.F./120 S.F. = 1748 SPACES
EXISTING CONFERENCE HALL/SHOWHALL: 5400 PEOPLE/3 = 136 SPACES
EXISTING HOTEL: 128 ROOMS + 8 EMPLOYEES = 136 SPACES
(HOTEL OCCUPANCY SHOULD BE ADJUSTED FOR IN OTHER USES)
PROPOSED EXPOSITION HALL ADDITION: 80,660 S.F./120 S.F. = 756 SPACES
PROPOSED CONFERENCE/SHOWHALL ADDITION: 1500 PEOPLE/3 = 500 SPACES
TOTAL PARKING REQUIRED: 2,377 SPACES (INCL. 50 S.F.)
SITE PARKING PROVIDED:
EXISTING PARKING SPACES: 2,878 SPACES (INCL. 50 S.F.)
LESS ELIMINATED SPACES: -607 SPACES (INCL. 12 S.F.)
PLUS PROPOSED SPACES: +552 SPACES (INCL. 24 S.F.)
TOTAL PROPOSED ON-SITE PARKING: 2,823 SPACES (INCL. 71 S.F.)
PROPOSED ADJACENT OFF-SITE PARKING: +1640 SPACES
PROPOSED AVAILABLE OFF-SITE PARKING: 2,153 SPACES
TOTAL AVAILABLE PARKING: 4,976 SPACES
SITE SOILS: METER LOAMY SAND, Houghton & Adrian MUCKS, MARLETTE SANDY LOAM AND BROOKSTONE & COLWOOD LOAM BASED ON SOIL CONSERVATION SERVICE MAPS
SITE WETLANDS: REGULATED WETLANDS EXIST ON THE SITE PER THE CITY OF NOB WETLANDS MAP & PREVIOUSLY APPROVED SITE PLANS. CURRENTLY PROPOSED CONSTRUCTION INCLUDES FILLING OF 0.14 ACRES OF EXISTING DITCH WETLAND AREA ALONG WESTLY PROPERTY LINE.
SITE WOODLANDS: REGULATED WOODLANDS EXIST ON THE SITE WITHIN THE 1-86 CONSERVATION EASEMENT AREA FOR THE CITY OF NOB WOODLANDS MAP & PREVIOUSLY APPROVED SITE PLANS. NO CONSTRUCTION IS CURRENTLY PROPOSED WITHIN REGULATED WOODLAND AREAS.
SITE FLOODPLAIN: FOR NATIONAL FLOOD INSURANCE RATE MAPS, NUMBER 28125C06077 & 28125C06078, CITY OF NOB, OAKLAND COUNTY, MICHIGAN DATED SEPTEMBER 28, 2004, SUBJECT PARCEL IS INDICATED AS ZONE X - AREAS DETERMINED TO BE OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN.

SHEET INDEX

- C-1 PRELIMINARY OVERALL MASTER SITE PLAN
- C-2 PRELIMINARY SITE LAYOUT PLAN
- C-3 PRELIMINARY SITE DEMOLITION PLAN
- C-5 PRELIMINARY SOUTHERLY SITE ENGINEERING PLAN
- C-6 PRELIMINARY NORTHERLY SITE ENGINEERING PLAN
- C-7 PRELIMINARY SITE STORMWATER MANAGEMENT PLAN
- C-8 PRELIMINARY SITE STORMWATER MANAGEMENT CALCULATIONS
- C-9 PRELIMINARY SITE ENGINEERING DETAILS
- TS-1 OVERALL EXISTING CONDITIONS PLAN
- TS-2 SHOWPLACE EXISTING CONDITIONS PLAN
- TS-3 SOUTHERLY SITE TOPOGRAPHIC SURVEY
- TS-4 NORTHERLY SITE TOPOGRAPHIC SURVEY



72 HOURS
BEFORE YOU DO
CALL MISS DICK
1-800-462-7171
(FALL 2004)

PRELIMINARY OVERALL MASTER SITE PLAN

Environmental engineers, Inc.
18620 WEST TEN MILE ROAD SOUTHFIELD, MICHIGAN 48075
PHONE: 248/424-9510 FAX: 248/424-2954

CLIENT PROJECT NO. PROJECT NO. 1808
DATE ISSUED 04/18/18
SHEET NO. C-1

CLIENT:
TBOB, LLC
48100 GRAND RIVER AVE.
NOVI, MICHIGAN 48375
PHONE: 248/348-5600

Executive Assistant

From: Barr, Mary Ann (MDOT) <BarrM4@michigan.gov>
Sent: Thursday, May 12, 2016 11:15 AM
To: Aaron Staup (astaup@cityofnovi.org); Amanda Kulikowski (akulikowski@cityofnovi.org); Blair Bowman; Bob Bowman; Brian Morley (Brian.Morley@glengineering.com); Brian Woloski (bwoloski@cityofnovi.org); Carissa Markel (cmarkel@rcoc.org); Carl Berry (cberry@dada.org); Cross, Diane (MDOT); DeFauw, Courtney (MDOT); Dipietro, Paul (MSP); Galindo, Steve (MDOT); Gill, Sarah (MDOT); Hancock, Daniel (MSP); Harold Kuhn (hkuhn@dada.org); Ison, Walter (MDOT); Jeff St. Pierre (jeffstpierre@comcast.net); Jessica Fiore-Lucas (fiore.lucas@yahoo.com); Keith Wuotinen (kwuotinen@cityofnovi.org); Kerley, Sean (MDOT); Laura Rochow; Mark Koskinen (mark.koskinen@aecom.com); Mary Ann Barr; Michael Goldman (michaelg@motorcitycomics.com); Mike Lucas (mlucas95@yahoo.com); Mueller, Eric (MDOT); Parker, Jonathan (MDOT); Parwaiz Nur; Rachel Jones (rjones@rcoc.org); Randall S. Coleman (rcoleman@dada.org); Shelby Collins; Swan, Barbara (MDOT); Zabel, Marjorie (MDOT)
Subject: Motor City Comic Con Roundup 2016 *Resending*
Attachments: 2016 Motor City Comic Con Showplace Parking .pdf; 2016 Motor City Comic Con Contact Sheet.pdf; 2016 Motor City Comic Con Meeting Sign In 4.21.16.pdf
Follow Up Flag: Follow up
Flag Status: Completed

Good Afternoon,

Comic Con is here and every year of the Comic Con brings us new challenges. You'll recall in 2015 we had our focus on event parking.

We gotta hand it to the Showplace as they have stepped up and added additional lots and options for parking that will be a huge benefit! Attached to this email is the 2016 Motor City Comic Con Showplace Parking for reference. If you have any questions about parking for the event please use the attached 2016 Motor City Comic Con Contact Sheet to locate the proper contacts. Additionally we have attached contact resources in the 2016 Motor City Comic Con Meeting Sign In 4.21.16 from our meeting in April.

The Revive275 project will no doubt affect ingress and egress traffic on I-96, I-696 and I-275. If you have any questions or concerns about the project's effect on Comic Con Traffic please call the 24/7 Hot Line (248) 275-9248. This line is answered live by Brian Morley. Brian has the authority to take your questions and concerns directly to the project team for resolution. He is a great resource for all things Revive275. <http://www.revive275.com/> or <http://mdotnetpublic.state.mi.us/drive/Default.aspx>

Due the closure of southbound I-275 from I-696 to M-14, the I-96/Beck Rd Interchange has become a very popular detour (turnaround) location. Because of this SEMTOC will be messaging for event traffic to use Wixom Rd. We hope that this will help to disburse the traffic off on I-96. With all the new parking options we do not believe that messaging for "full" lots will be necessary for this event.

We have scheduled an additional Freeway Courtesy Patrol van for patrol on Saturday from 10am-4pm. The van will run a loop on I-96 between Kensington Rd and M-5. As well as I-696 from M-5 to Telegraph. This will allow for assistance to get stranded motorists off the road quickly. If needed the FCP van can assist with short-term traffic control as the van is equipped with an arrow board. Contact information for the FCP is on the 2016 Motor City Comic Con Contact Sheet.

We are committed to doing all we can to make this year's event a success. Please let us know if we can be of additional assistance!

Thank you,

Mary Ann Barr
MDOT-SEMTOC Mobility Coordinator
Mobile: 248-996-5515
Barrm4@michigan.gov

2016 NEW AND IMPROVED PARKING OPTIONS AND PRICING

**MOTOR CITY
COMIC CON 2016**



DIRECT ON SITE SURFACED PARKING: \$10 FOR REGULAR VEHICLES AND \$30 FOR LARGE VEHICLES

**WEST LOTS: \$7 - LOCATED DIRECTLY WEST OF THE SUBURBAN COLLECTION SHOWPLACE
DIRECT ACCESS ONTO GRAND RIVER, THE PARKING SPACES WILL BE OF A GRAVEL SURFACE NATURE**

**GRASS SURFACE PARKING OPTIONS: \$5 - THERE WILL BE SEVERAL GRASS PARKING LOT OPTIONS
AVAILABLE ACROSS FROM THE SHOWPLACE AND EAST OF THE SHOWPLACE ALONG GRAND RIVER.**

**ALL OF THESE LOTS ARE CASH ONLY AND AVAILABLE ON A FIRST-COME FIRST-SERVE BASIS AND
ON AN AS IS BASIS ON SATURDAY & SUNDAY ONLY, SUBJECT TO AVAILABILITY.**

**THE SUBURBAN COLLECTION SHOWPLACE IS NOT RESPONSIBLE FOR ANY LOSS, DAMAGE OR OTHER
LIABILITY ARISING OUT OF THE USE AND PARKING WITHIN THESE LOTS. SOME OF THE GRASS
SURFACE PARKING AREAS MAY BE RUN BY UNRELATED THIRD-PARTY'S AND
SUBURBAN COLLECTION SHOWPLACE IS NOT RESPONSIBLE FOR THE OPERATIONS OF THESE LOTS
IN ANY FORM OR MANNER.**

*****GRASS LOTS MAY NOT BE THESE EXACT LOCATIONS, THIS MAP IS JUST AN EXAMPLE. PLEASE
LOOK FOR SIGNAGE FOR THESE LOTS AS YOU ARRIVE AT THE EVENT.*****

An aerial photograph of a city street, likely in Detroit, with a large, stylized yellow and black text overlay that reads "MOTOR CITY COMIC CON 2016". The text is in a bold, comic-book style font with a black outline and a yellow fill. The background shows a street with buildings and trees.



**Show times:**

Friday from 12:30P – 7:00P
Saturday from 10:30A – 7:00P
Sunday from 10:30A – 5:00P



46100 Grand River Ave, Novi, MI 48374

Contact Sheet

Suburban Collection Showplace		
1 st	Blair Bowman Jr	248-760-4112
2 nd	Jeff St. Pierre	248-931-4758
3 rd	Brian Starrs	248-202-7300
4 th	Bob Bowman	248-974-9550
5 th	Blair Bowman Sr	248-807-8040

Novi Police Department		
1 st	Sgt Brian Woloski	248-921-9828
2 nd	Sgt Amanda Kulikowski	248-727-3835
3 rd	Lt Keith Wuotinen	248-444-2847
4 th	Dispatch direct (non-public)	248-348-0911

FCP-Freeway Courtesy Patrol		
1 st	SEMTOC (FCP Dispatch)	313-965-0777
2 nd	Joe Ball (FCP Driver)	313-229-1696
3 rd	Mike Lucas (FCP Supervisor)	586-864-8856

MDOT-Michigan Department of Transportation		
SEMTOC-Southeast Michigan Transportation Operations Center		
1 st	Mary Ann Barr	248-996-5515
2 nd	Marji Zabel	248-228-0417
3 rd	Sarah Gill	248-867-6841



Motor City Comic Convention
Meeting Sign In
Thursday 4-21-2016 12pm-1pm

Name	Agency	Phone	E-mail
Shelby Collins	Suburban Collection Showplace	248-348-5600 ext. 246	scollins@suburbanshowplace.com
Aaron Staup	City of Novi	248 347-3270	astaup@cityofnovi.org
Blair Burman	S.C.S.	248-760-4112	blair@suburbanshowplace.com
Paul DiPietro	MSP	313 477 3199	dipietro@michigan.gov
Kerth Wughtinen	NOVI PD	248 347-0553	KWughtinen@cityofnovi.org
Dan Hancock	MSP	313-237-7466	HANCOCKD@MICHIGAN.GOV
Mark Koskinen	AECOM	248-794-3905	MARK.KOSKINEN@AECOM.COM
Bob Bowman	Suburban Collection Showplace	248 974-9550	bbowman@suburbanshowplace.com
Laura Rochow	Suburban Coll Showplace	248-207-8043	lrochow@suburbanshowplace.com
Jeff St. Pierre	Suburban Coll Showplace	248-931-4758	Jeffstpierre@concast.net
Carissa Markel	RCOC	586-212-8877 248-858-4739	cmarkel@rcoc.org



Motor City Comic Convention
Meeting Sign In
Thursday 4-21-2016 12pm-1pm

Name	Agency	Phone	E-mail
RACHEL JONES	RCOC	248-858-7250	rjones@rcoc.org
Marii Zabel	MDOT	248-228-6417	zabelm@michigan.gov
COURNEY DEFLOW	MDOT-Oakland	248-451-2424	deflowc@michigan.gov
MICHAEL GOLDMAN	MOTOR CITY COMICS CON	248 767 7366 CELL	
LANDAU S COLEMAN	NAIAS	248 426 8059 OFF	MICHAEL@MOTORCITYCOMICS.COM
HAROLD KUHN	NAIAS	313 999 6524	RCOLEMAN@DADA.ORG
AMANDA KULIKOWSKI	NOVI PD	248 722 4309	H KUHN@DADA.ORG
Brian Woloski	NOVI P.D.	248 727 3835	akulikowski@cityofnovi.org
		248-921-9826	bwoloski@cityofnovi.org

Executive Assistant

Subject: 2016 Motor City Comic Con After-Action
Location: Suburban Collection Showplace, 46100 Gradn River Ave, Novi MI 48374

Start: Tue 5/24/2016 1:00 PM
End: Tue 5/24/2016 2:00 PM
Show Time As: Tentative

Recurrence: (none)

Organizer: Barr, Mary Ann (MDOT)

Here are the agenda and documents for todays after action meeting.



Please join us at 1:00 PM on Tuesday May 24, 2016 at the Suburban Collection Showplace to discuss how traffic and parking resulted during this year's Motor City Comic Con.

An agenda in the works, so let us know if you have any particular topic that needs to be discussed and it will be included. A display board will also be available if you have information on a jump drive that you would like to display.

Thank you,

Mary Ann Barr
MDOT-SEMTOC Mobility Coordinator
Mobile: 248-996-5515
Barrm4@michigan.gov



Motor City Comic
Con After Act...



After Action
Comic Con Tim...



RITIS Comic Con
2016.pptx


Suburban Collection Showplace, 46100 Grand River Ave, Novi, MI 48374

- Introductions
- Ingress Freeway traffic
- Arterial traffic
- Traffic Signal Timing
- Egress Traffic
- Overview
 - What worked well?
 - Where can we improve?



**MOTOR CITY
COMIC CON 2016**
pop culture-it's what we do!

May 13, 14 & 15, 2016
Fri: 12:30p-7:00p • Sat: 10:30a-7:00p • Sun: 10:30a-5:00p
For more info visit:
MotorCityComicCon.com

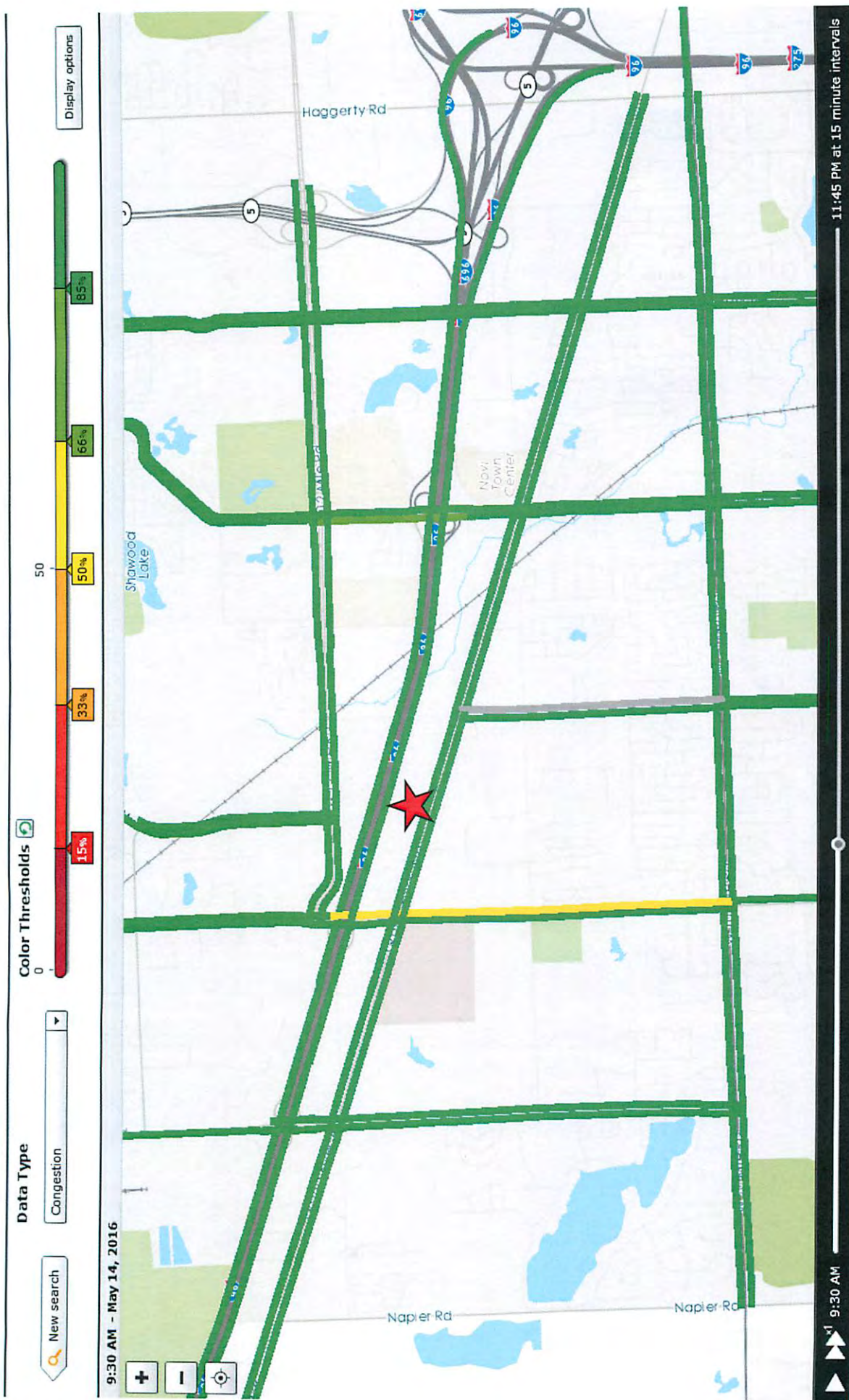
 **SUBURBAN COLLECTION
SHOWPLACE**
Novi, Michigan

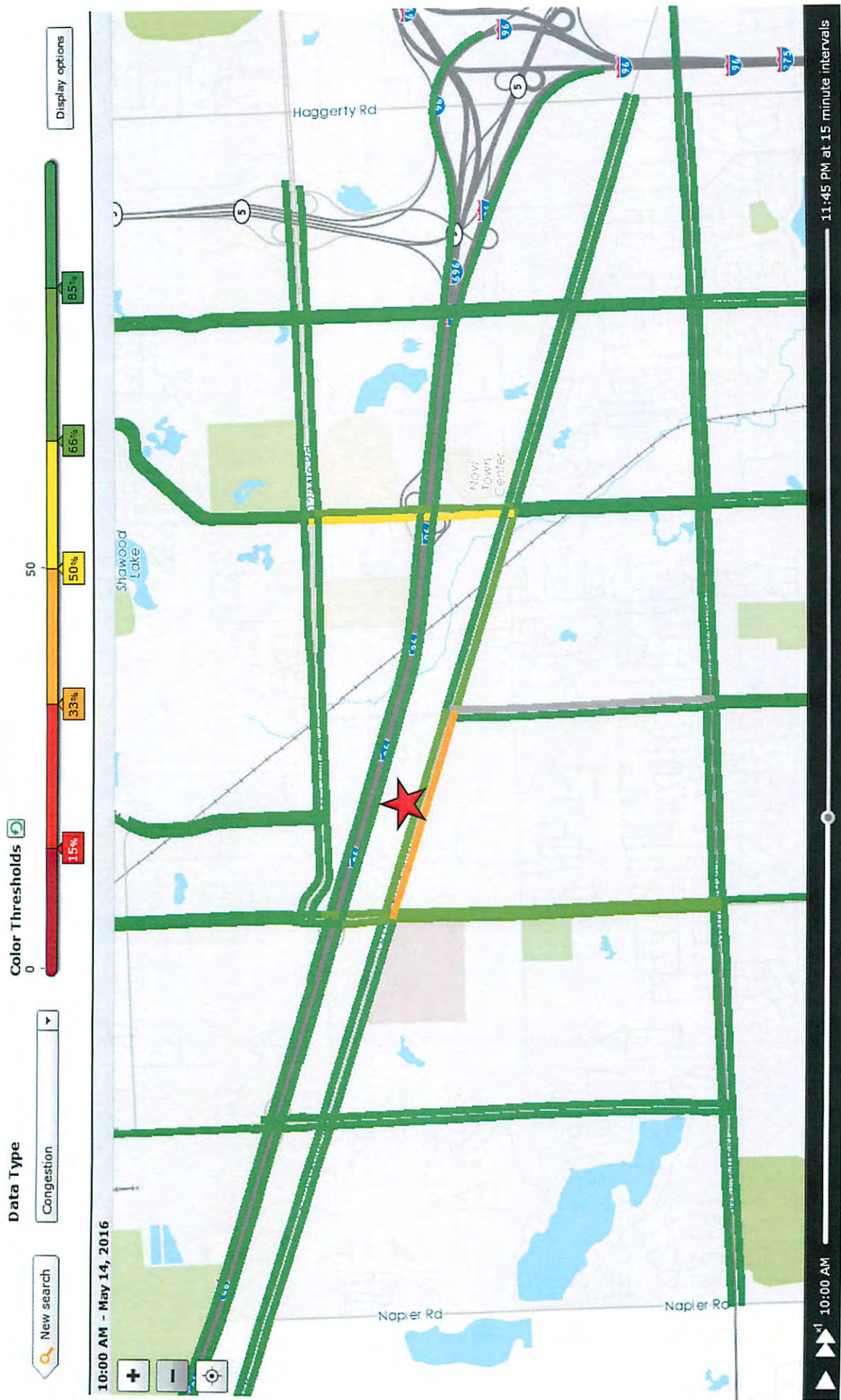
<u>Date</u>	<u>Time</u>	<u>Source</u>	<u>Description</u>
Friday, May 13, 2016	11:30 AM	SEMTOC	DMS Message Response Plan Activated
Friday, May 13, 2016	12:30 PM	Suburban Collection Showplace	Comic Con Open
Friday, May 13, 2016	2:00 PM	SEMTOC	Video WB I-96 from I-696 to Novi Rd, no delays
Friday, May 13, 2016	4:00 PM	SEMTOC	Minor Incident, NB M5 to WB I96
Friday, May 13, 2016	4:30 PM	SEMTOC	Video EB I-96 at Novi Rd, crash, no delays
Friday, May 13, 2016	5:00 PM	SEMTOC	High Impact Incident, EB I-96 at Novi Rd, only right lane open
Friday, May 13, 2016	6:00 PM	SEMTOC	DMS Message Response Plan Terminated
Friday, May 13, 2016	6:30 PM	SEMTOC	Video WB I-94 at M-39, Waldo found
Friday, May 13, 2016	7:00 PM	Suburban Collection Showplace	Comic Con Closed
Saturday, May 14, 2016	9:00 AM	Novi PD via the I-275 Hot Line	Request to check signal timing at Grand River and Beck Rd
Saturday, May 14, 2016	9:30 AM	SEMTOC	DMS Message Response Plan Activated
Saturday, May 14, 2016	10:00 AM	FCP	Mechanical Assist, WB I-696 at Grand River
Saturday, May 14, 2016	10:30 AM	Suburban Collection Showplace	Comic Con Open
Saturday, May 14, 2016	10:30 AM	FCP	Tire Change, EB M-5 at Drake
Saturday, May 14, 2016	11:00 AM	FCP	Abandoned vehicle marked, EB M-5 at Farminton Rd
Saturday, May 14, 2016	11:00 AM	FCP	Has spotted MSP assisting with ramp traffic control on I-96
Saturday, May 14, 2016	11:30 AM	FCP	Abandoned vehicle marked, WB M-5 at Farminton Rd
Saturday, May 14, 2016	12:30 PM	SEMTOC to RCO	Request to check signal timing at Novi Rd and I-96 & Crescent
Saturday, May 14, 2016	1:00 PM	SEMTOC	Video SB Novi Rd at I-96, Crescent, Grand River
Saturday, May 14, 2016	1:00 PM	FCP	Multiple Assists, EB I-696 at Orchard Lake
Saturday, May 14, 2016	3:00 PM	SEMTOC	Video WB I-696 at WB I-96, crash, no delays
Saturday, May 14, 2016	3:00 PM	SEMTOC	Image WB I-96 exit Novi Rd, light volume, no delays

<u>Date</u>	<u>Time</u>	<u>Source</u>	<u>Decription</u>
Saturday, May 14, 2016	3:00 PM	SEMTOC	Image WB I-96 at Beck Rd, moderate volume, no delays
Saturday, May 14, 2016	3:00 PM	SEMTOC	Image EB I-96 exit Wixom, light volume, no delays
Saturday, May 14, 2016	3:00 PM	SEMTOC	Image WB I-96 exit Wixom, light volume, no delays
Saturday, May 14, 2016	3:00 PM	FCP	Mechanical Assist, WB I-696 at Farmington Rd
Saturday, May 14, 2016	3:00 PM	FCP	Mechanical Assist, WB I-696 at Farmington Rd
Saturday, May 14, 2016	3:30 PM	FCP	Mechanical Assist, EB I-696 at Orchard Lake
Saturday, May 14, 2016	4:00 PM	SEMTOC	Image WB I-96 exit Wixom, rain, no delays
Saturday, May 14, 2016	4:00 PM	SEMTOC	Imagex2 EB I-96 from Novi Rd to I-696/M-5, moderate volume, slow
Saturday, May 14, 2016	4:00 PM	SEMTOC	Image Novi Rd south of I-96, heavy volume
Saturday, May 14, 2016	4:00 PM	SEMTOC	Image Novi Rd north of I-96, heavy volume
Saturday, May 14, 2016	4:00 PM	SEMTOC	Image EB I-96 exit to Novi Rd, light volume, no delays
Saturday, May 14, 2016	4:00 PM	SEMTOC	Image WB I-96 exit to Beck Rd, light volume, no delays
Saturday, May 14, 2016	4:00 PM	SEMTOC	Image I-96 at Beck Rd, moderate volume, no delays
Saturday, May 14, 2016	4:00 PM	SEMTOC	Rain detected on the I-96 cameras in Oakland County
Saturday, May 14, 2016	6:00 PM	SEMTOC	DMS Message Response Plan Terminated
Saturday, May 14, 2016	7:00 PM	Suburban Collection Showplace	Comic Con Closed
Sunday, May 15, 2016	9:30 AM	SEMTOC	DMS Message Response Plan Activated
Sunday, May 15, 2016	10:30 AM	Suburban Collection Showplace	Comic Con Open
Sunday, May 15, 2016	1:00 PM	SEMTOC	Operator reports no traffic back-up issues detected on camera related to Comic Con
Sunday, May 15, 2016	4:00 PM	SEMTOC	DMS Message Response Plan Terminated
Sunday, May 15, 2016	5:00 PM	Suburban Collection Showplace	Comic Con Closed

Saturday 5/14/16

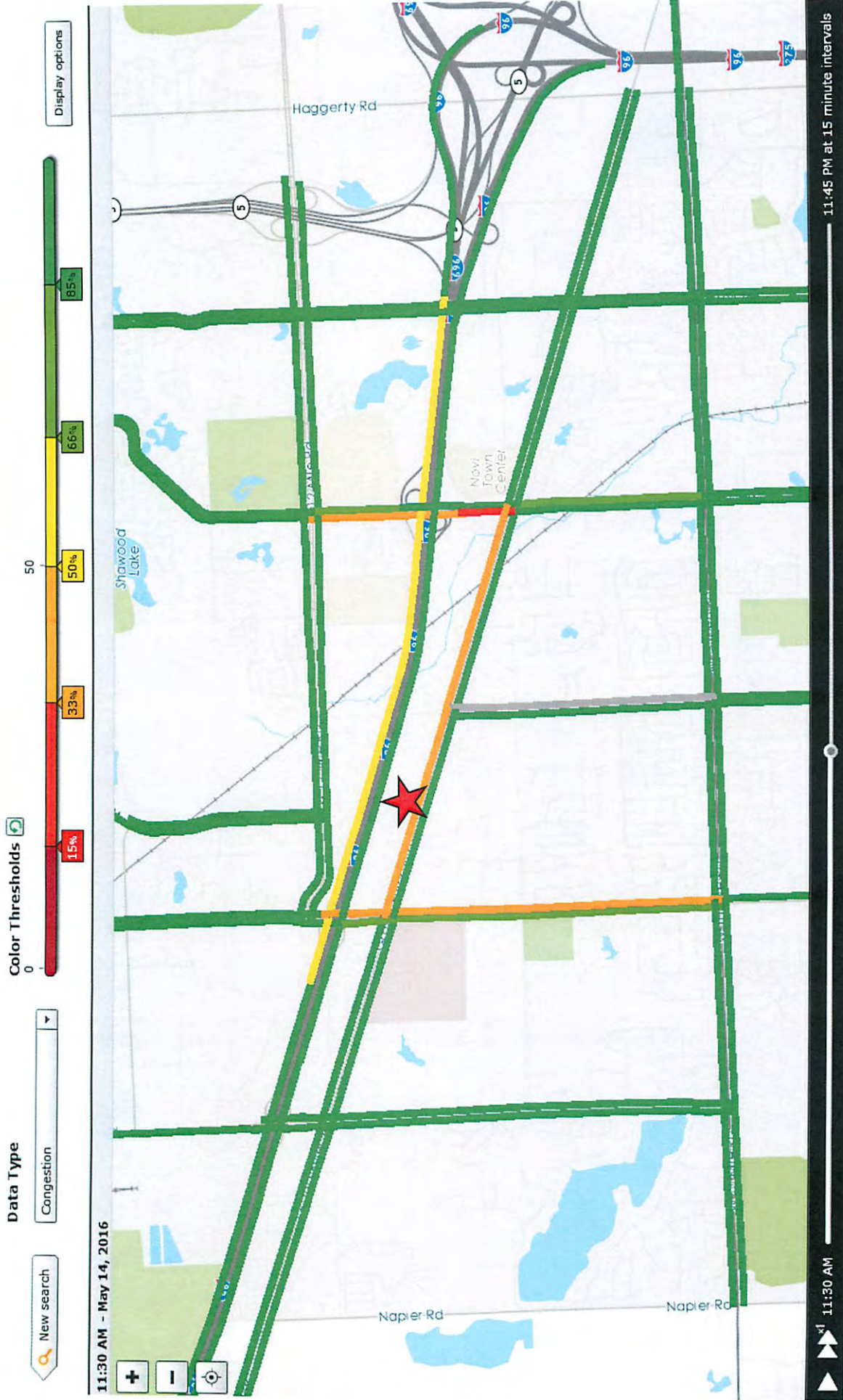
Congestion













New search

Data Type

Congestion

Color Thresholds

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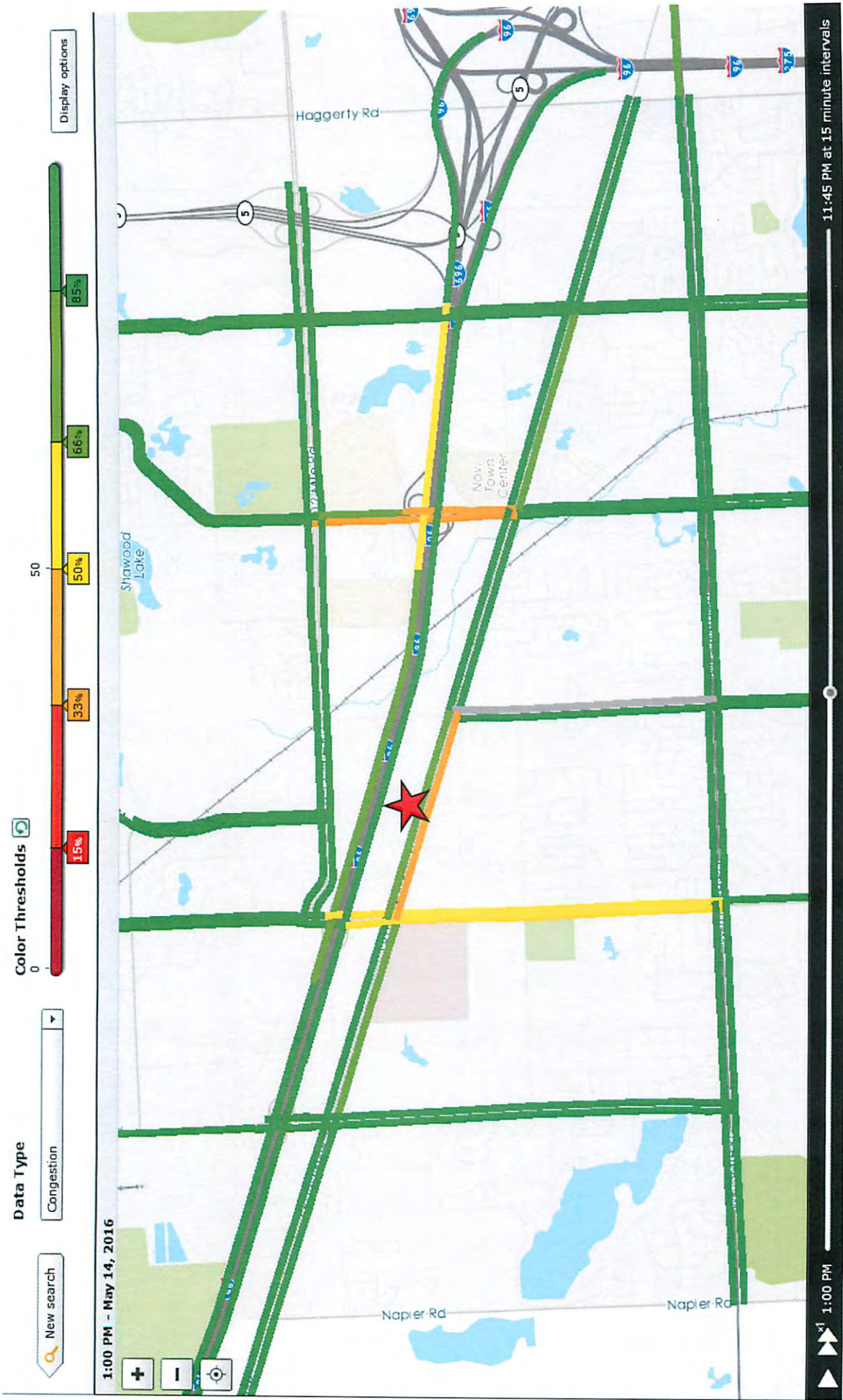
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Display options



12:30 PM

11:45 PM at 15 minute intervals



New search

Data Type

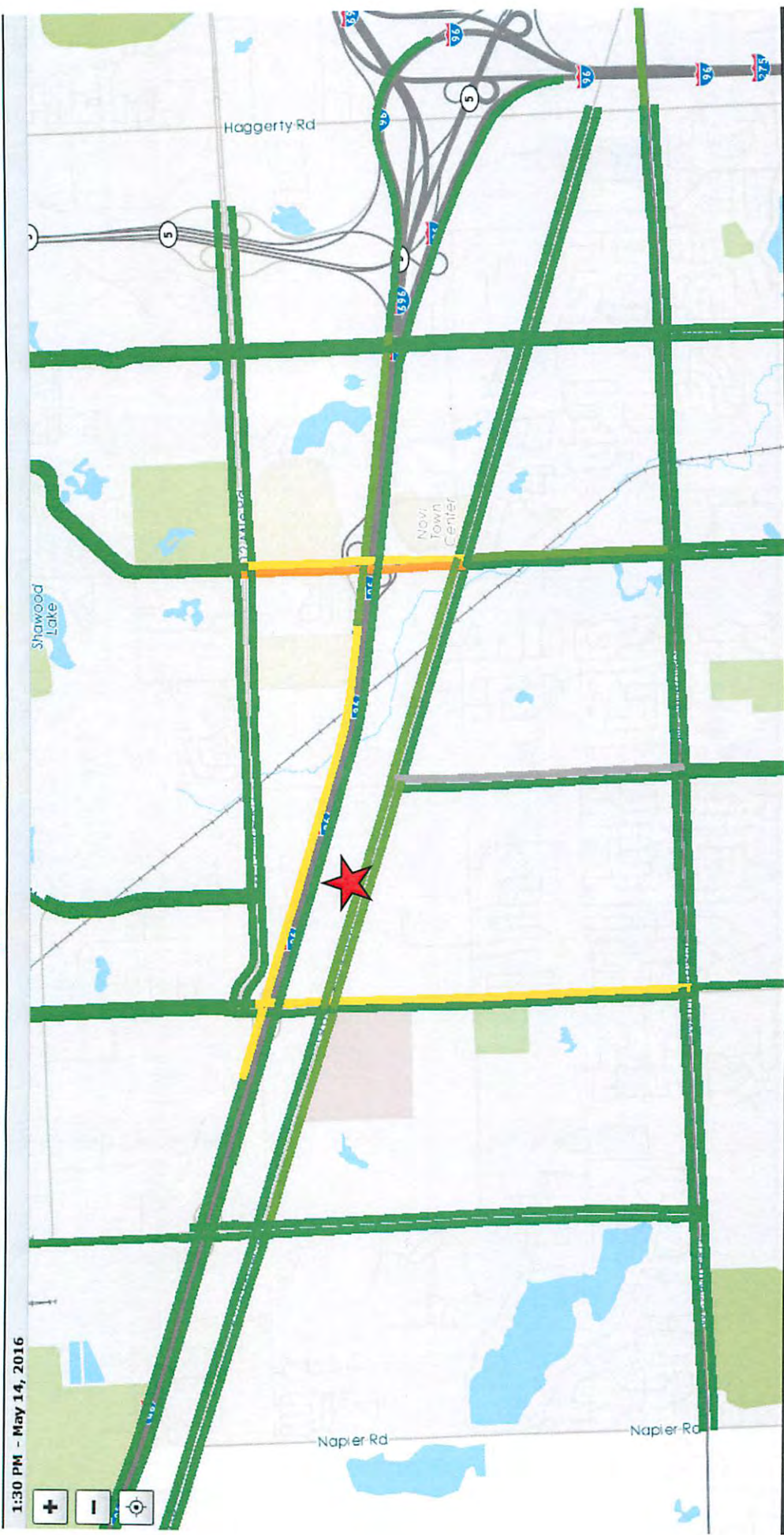
Congestion

Color Thresholds

0 50 100

15% 33% 50% 66% 85%

Display options



1:30 PM - May 14, 2016

11:45 PM at 15 minute intervals

Data Type

New search

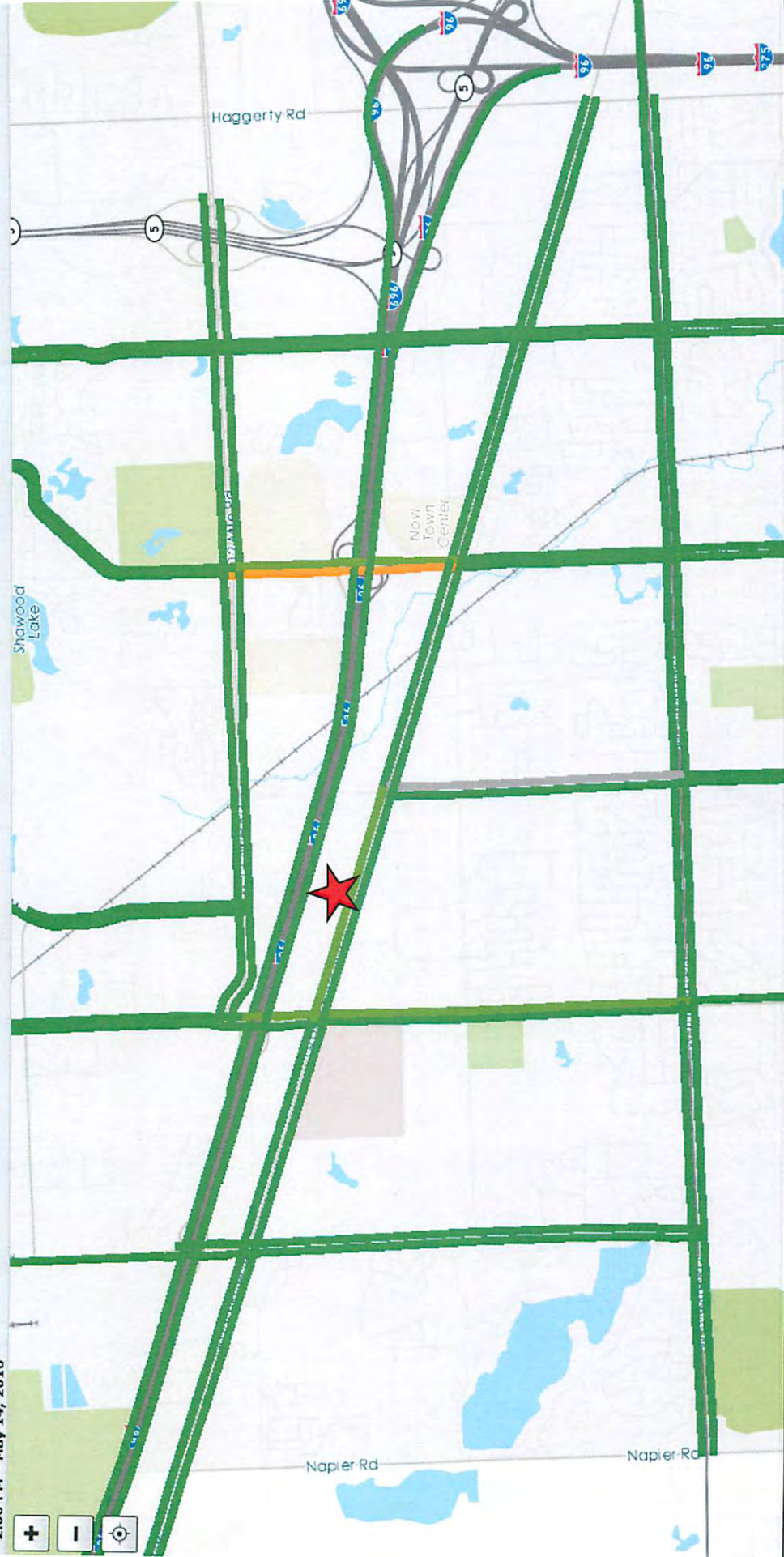
Congestion

Color Thresholds



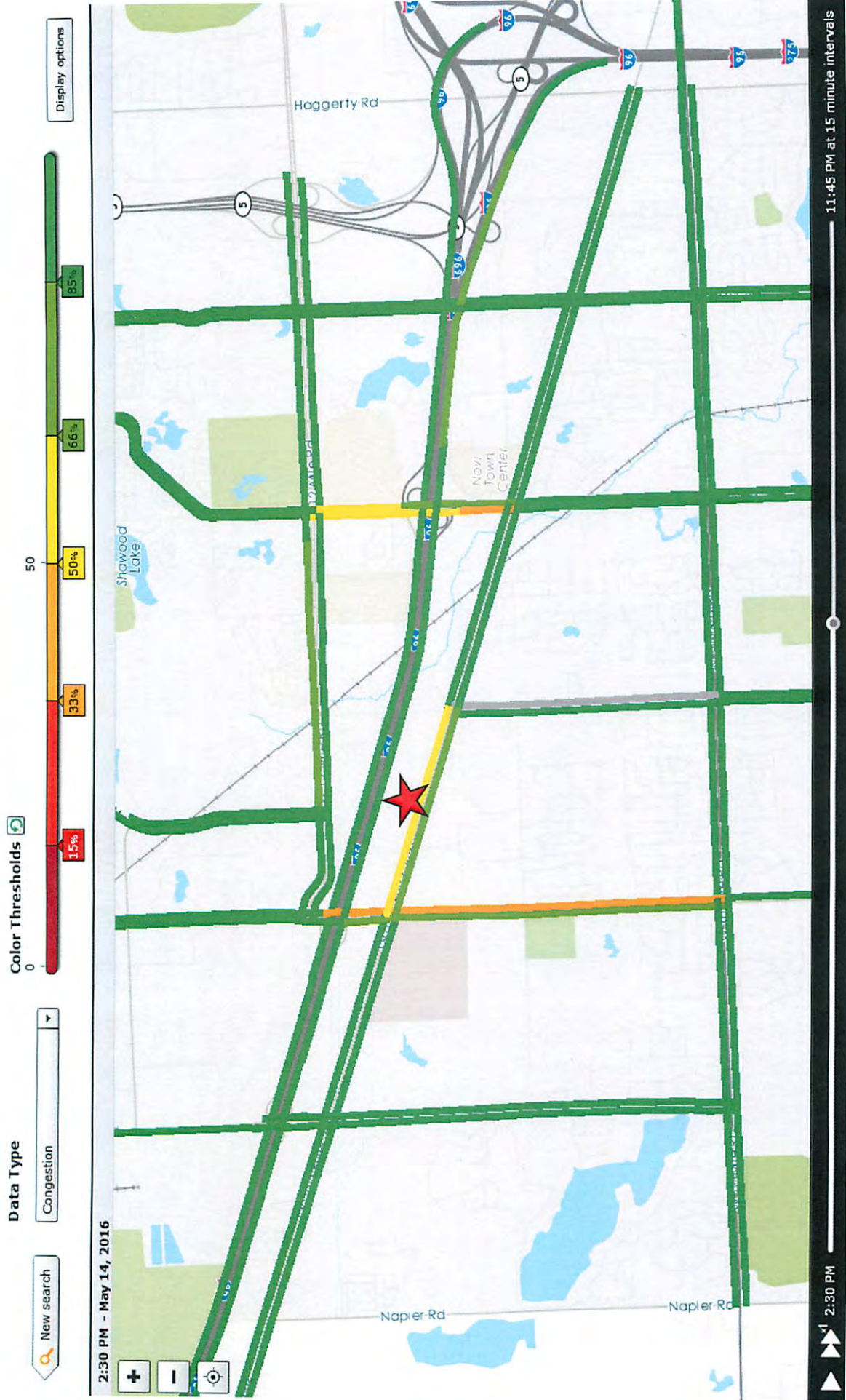
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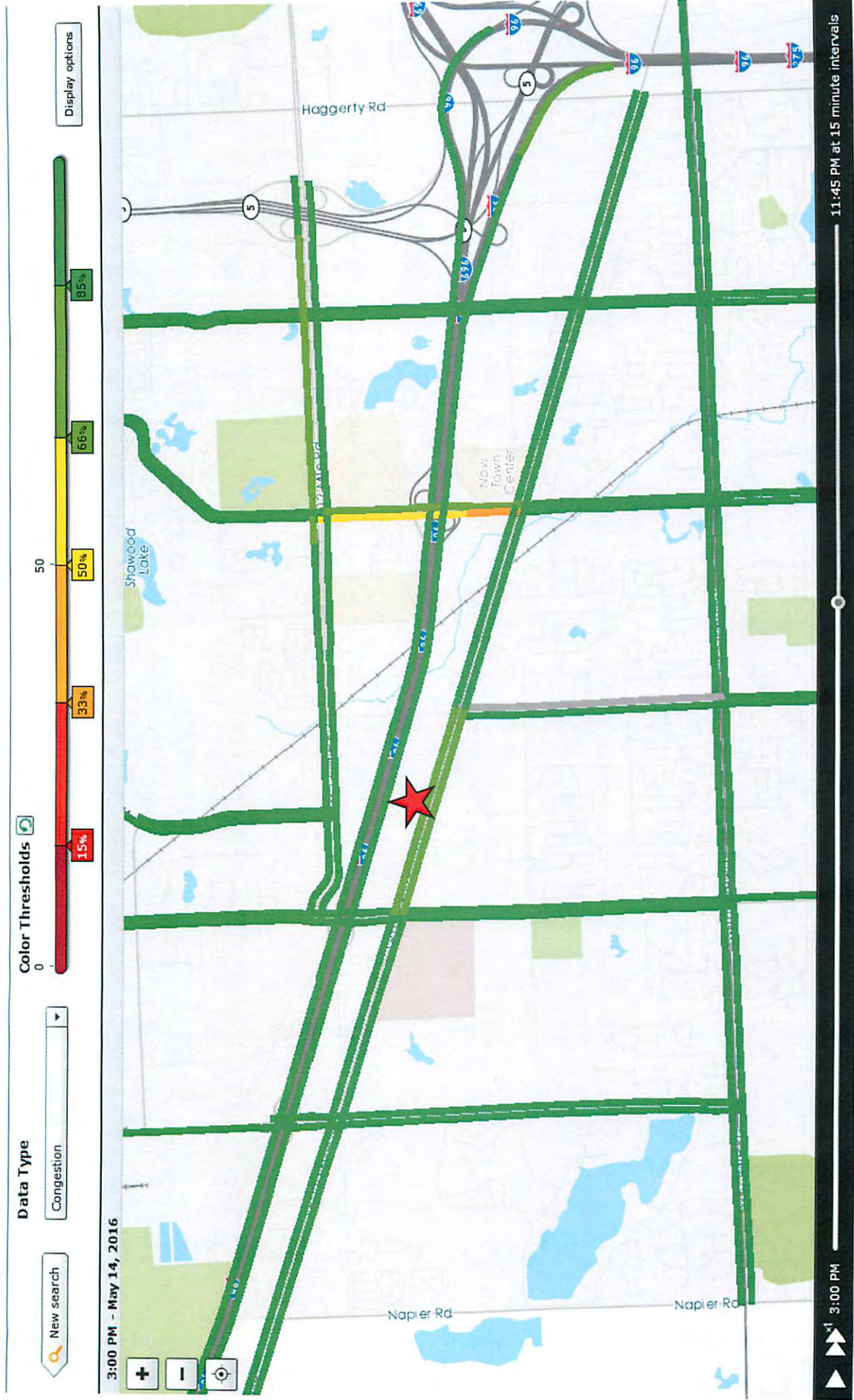
2:00 PM - May 14, 2016



2:00 PM

11:45 PM at 15 minute intervals





Saturday 5/16/15 vs.
Saturday 5/14/16
Congestion

New search

Data Type

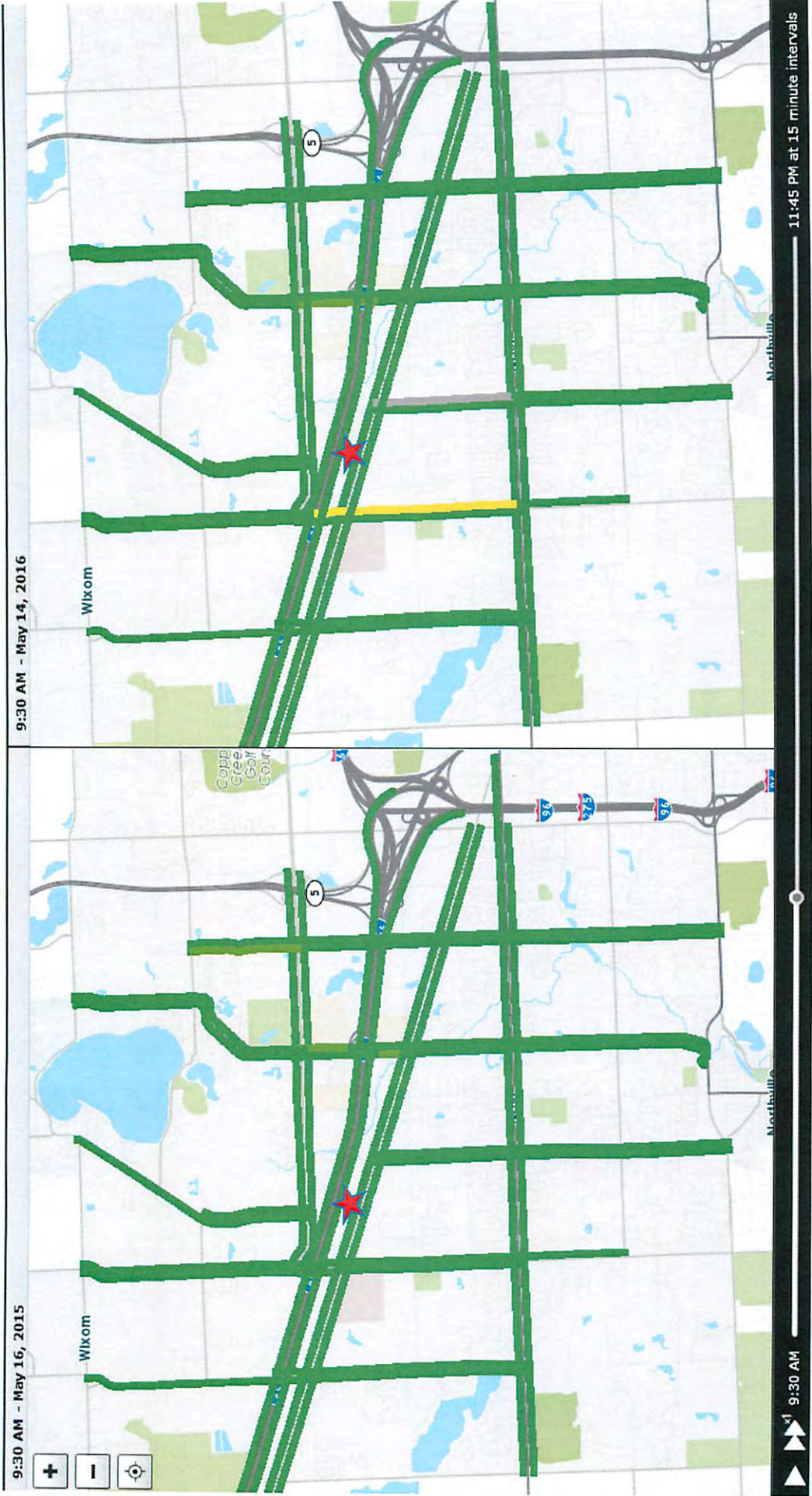
Congestion

Color Thresholds

0 50

15% 33% 50% 66% 85%

Display options



New search

Zoom out

+

-

Color Thresholds

0

15%

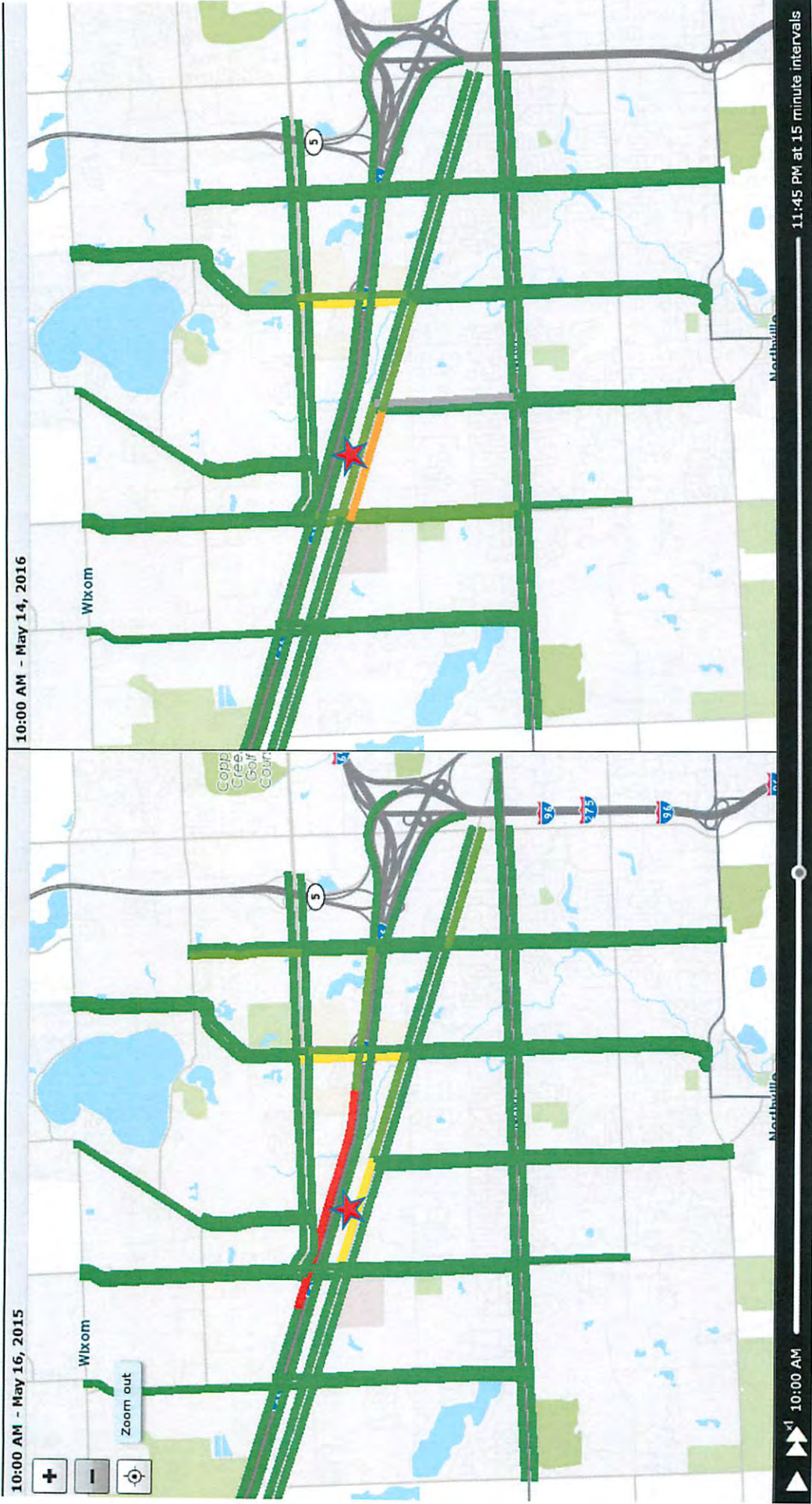
33%

50%

66%


85%

Display options



New search

Congestion

Color Thresholds 

Display options

0

15%

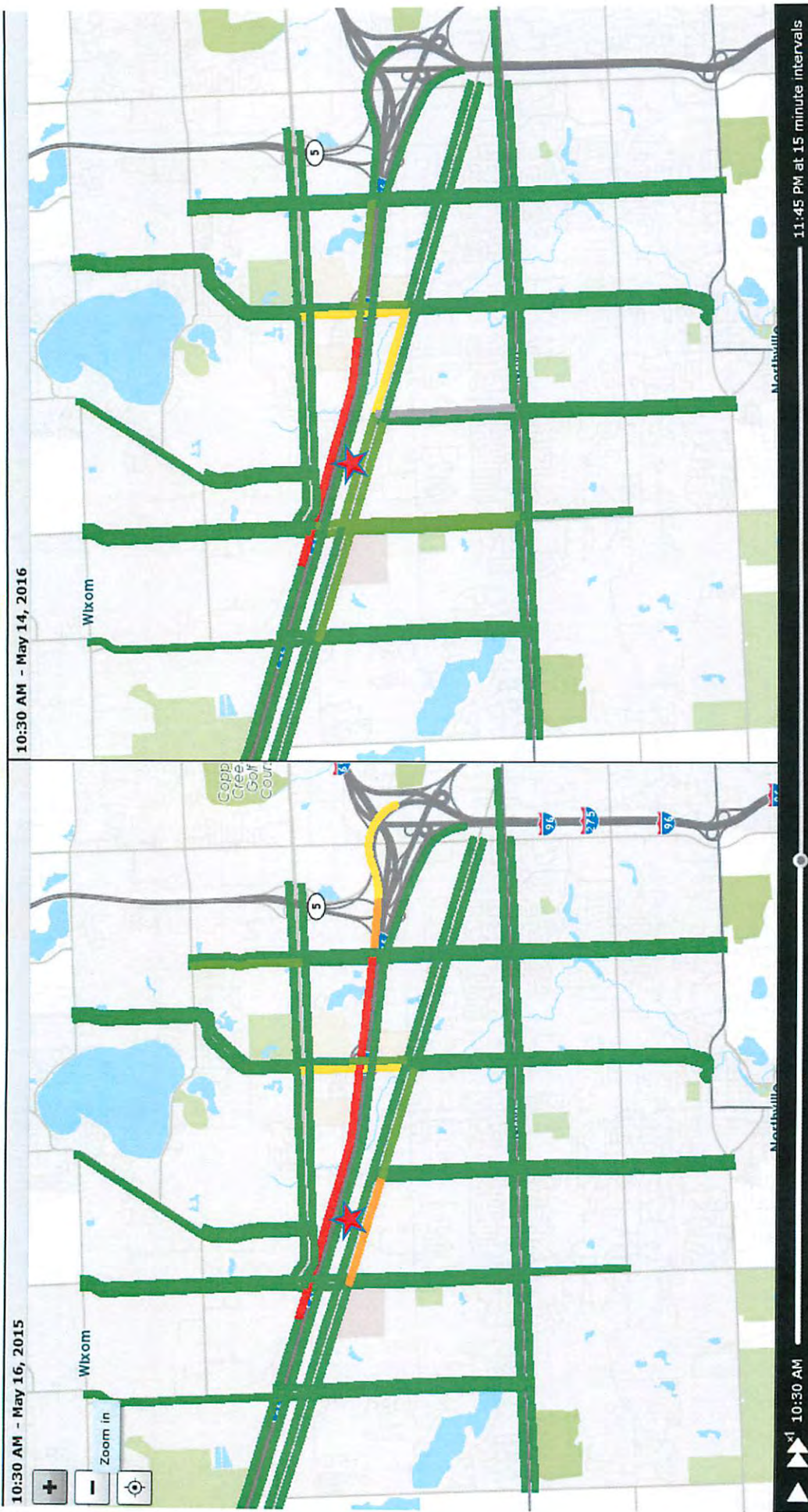
33%

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New search

Data Type

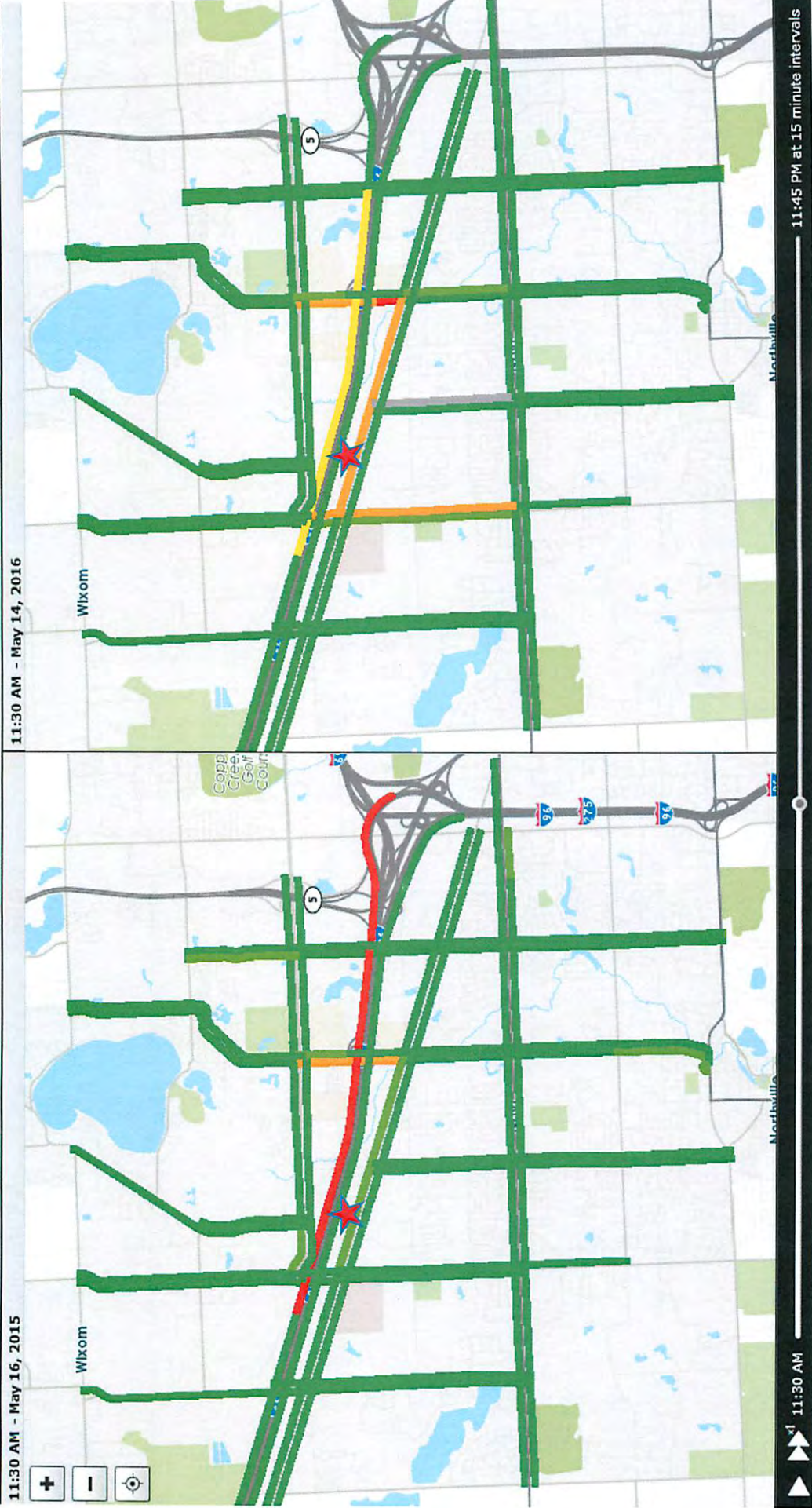
Congestion

Color Thresholds

050

15%33%50%66%85%

Display options



New search

Color Thresholds

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15%

33%

50%

66%

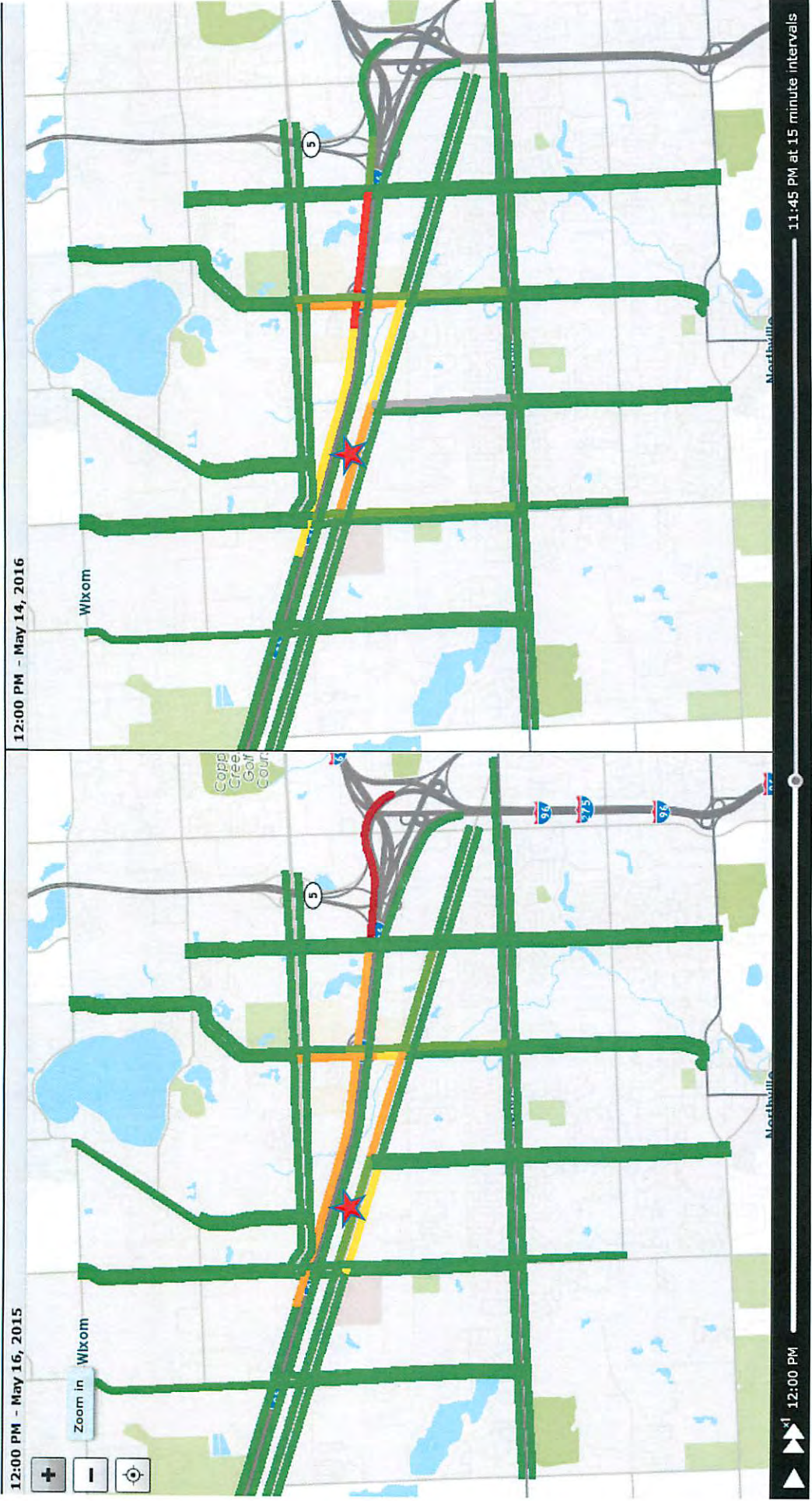
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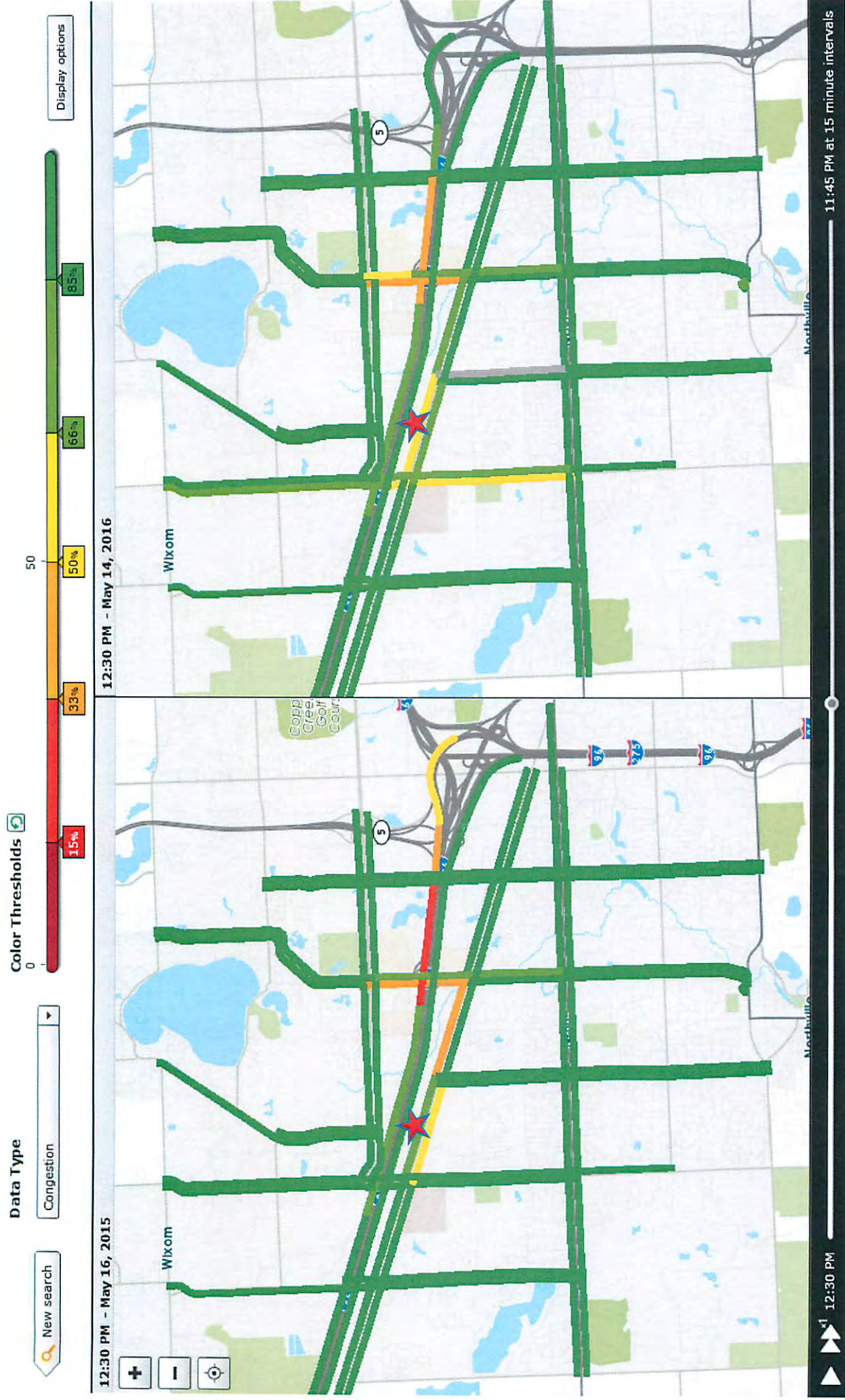
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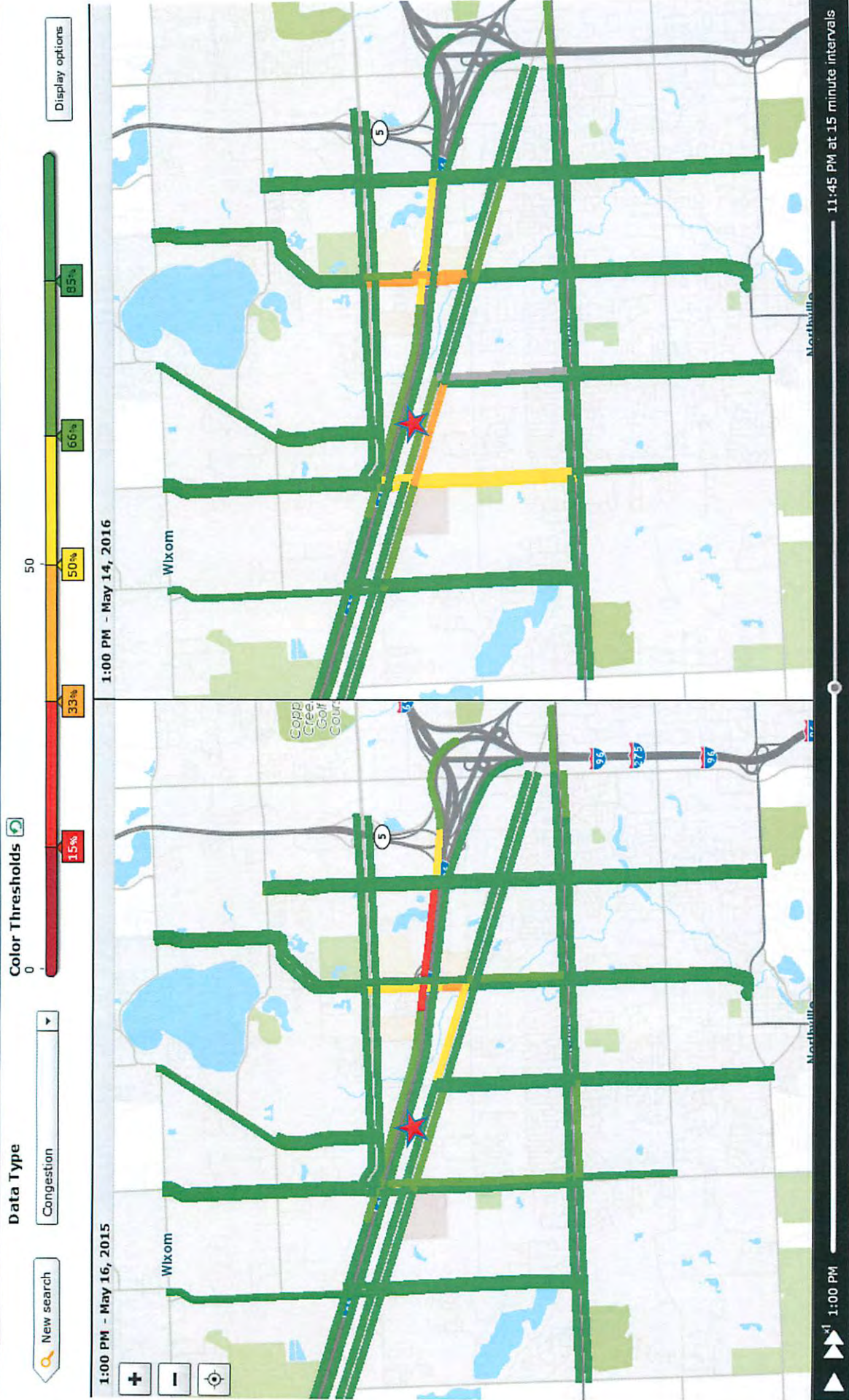
Display options

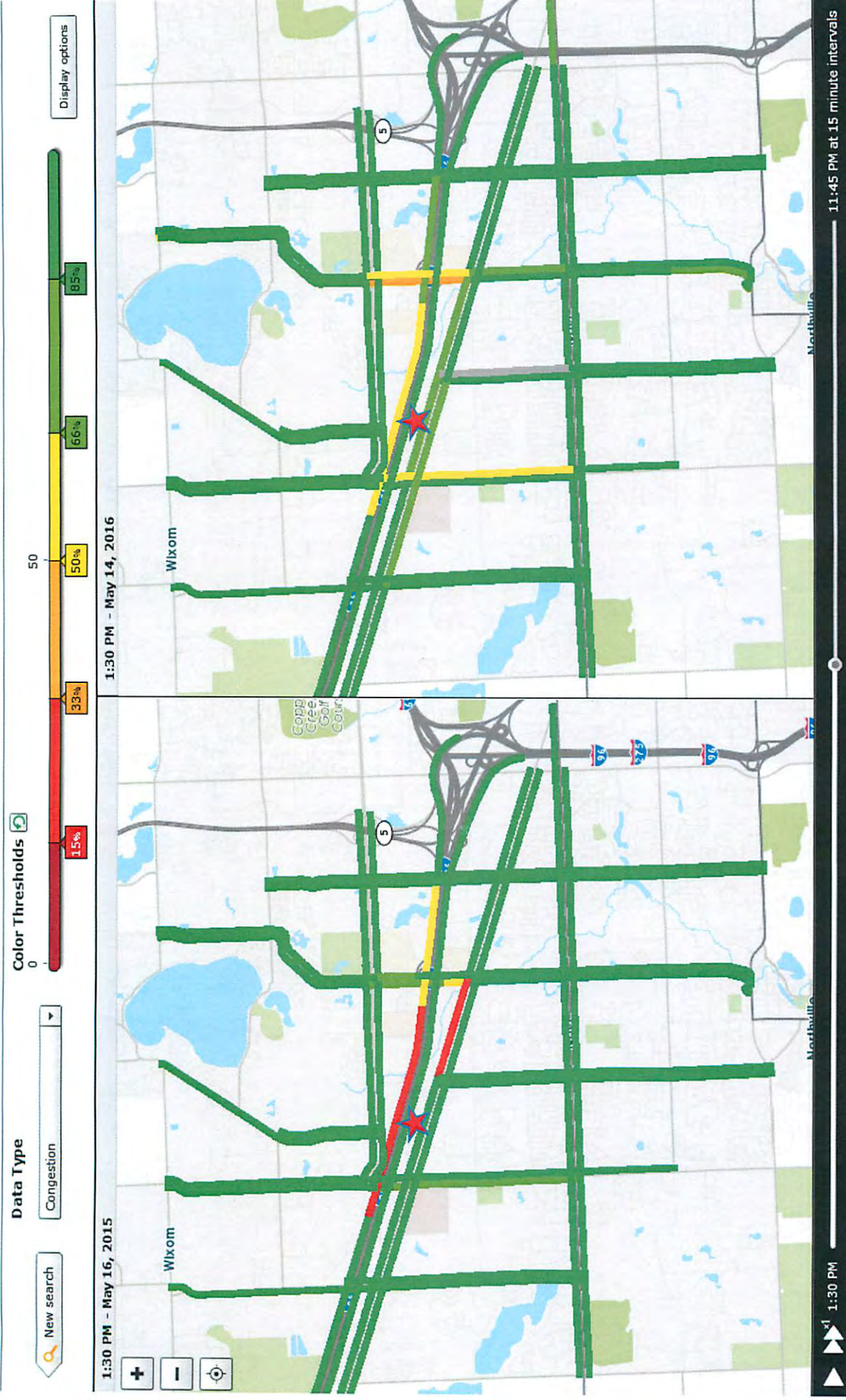
Data Type

Congestion









New search

Data Type

Congestion

Color Thresholds

0 50 85%

15% 33% 50% 66% 85%

Display options

