

BASELINE ENVIRONMENTAL ASSESSMENT
APPROXIMATE 0.892-ACRE PARCEL
5800 MICHIGAN AVENUE AND 3951 CAMPBELL STREET
DETROIT, WAYNE COUNTY, MICHIGAN

AUGUST 8, 2022

MICHIGAN DEPARTMENT OF ENVIRONMENT GREAT LAKES AND ENERGY
REMEDATION DIVISION
SOUTHEAST MICHIGAN DISTRICT OFFICE
27700 DONALD COURT
WARREN, MICHIGAN 48092-2793

AND

5800 LDHA LP
1920 25TH STREET
SUITE A
DETROIT, MICHIGAN 48216



Baseline Environmental Assessment Submittal Form

This form is for submittal of a Baseline Environmental Assessment (BEA), as defined by Part 201, Environmental Remediation and Part 213, Leaking Underground Storage Tanks, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, for the purpose of establishing an exemption to liability pursuant to Section 20126(1)(c) and Section 21323a(1)(b) for a new owner or operator of property that is a facility as defined by Section 20101(1)(s) or Property as defined by Section 21303(d). The BEA report must be conducted either prior to or within 45 days after becoming the owner or operator, whichever is earliest. This form and the BEA report must be submitted prior to or within 6 months of becoming the owner or operator whichever is earliest. A separate BEA is required for each legal entity that is or will be a new owner or operator of the property. To maintain the exemption to liability, the owner and operator must also disclose the BEA to any subsequent purchaser or transferee before conveying interest in the property pursuant to Section 20126(1)(c) and Section 21323a(1)(b).

DUE CARE: An owner or operator of a facility or Property also has due care obligations under Section 20107a and Section 21304c with respect to any existing contamination. Documentation of due care evaluations, all conducted response activities, and compliance with 7a or 4c need to be available to EGLE, but not submitted, within 8 months of becoming the owner or operator of a facility and/or Property.

Section A: Legal Entity Information

Name of legal entity that does or will own/operate property:	Contact for BEA questions if different from submitter, Name & Title:
5800 LDHA LP	Douglas M. McDowell, Vice President
Mailing Address:	Company:
1920 25 th Street, Suite A	McDowell & Associates
City, State and Zip Code:	Address:
Detroit, MI 48216-1435	21355 Hatcher Avenue
Contact Person (Name and Title):	City, State and Zip Code:
Timothy Thorland, Assistant Vice President	Ferndale, MI 48220
Telephone Number:	Telephone Number:
(248) 914-5223	(248) 399-2066
Email Address:	Email Address:
tthorland@swsol.org	doug.mcdowell@mcdowasc.com

Section B: Property Information

Name of Property:	County:												
0.892 Acre Vacant Parcel	Wayne												
Street Address(es) of Property:	City/Village/Township:												
5800 Michigan Avenue and 3951 Campbell Street	Detroit												
City, State and Zip Code:	Township, Section and Range:												
Detroit, MI 48210	T 2S, R 11E, S 11												
Property Tax ID (include all applicable IDs):	Decimal Degrees Latitude and Longitude												
16001706-8, 16014695	42.33157921761778, -83.11471301286157												
Address(es) according to tax records, if different than above:	Collection Method:												
	Survey <input type="checkbox"/> GPS <input type="checkbox"/> Interpolation <input checked="" type="checkbox"/>												
Status of submitter relative to the property (check all that apply)	Reference Point for Latitude and Longitude:												
<table style="width: 100%; border: none;"> <tr> <td></td> <td style="text-align: center;">Former</td> <td style="text-align: center;">Current</td> <td style="text-align: center;">Prospective</td> </tr> <tr> <td>Owner</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>Operator</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>		Former	Current	Prospective	Owner	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Operator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Center of site <input checked="" type="checkbox"/> Main/front door <input type="checkbox"/> Front gate/main entrance <input type="checkbox"/> Other <input type="checkbox"/>
	Former	Current	Prospective										
Owner	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Operator	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>										

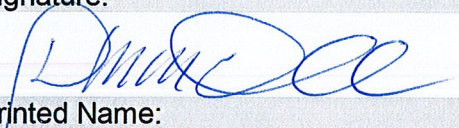
Section C: Source of Contamination at the Property			Enter ID #
Facility - regulated pursuant to Part 201:	New <input type="checkbox"/>	Existing <input checked="" type="checkbox"/>	Existing 201 EGLE ID number: 82008002
Property - regulated pursuant to Part 213:	New <input type="checkbox"/>	Existing <input type="checkbox"/>	Existing 213 EGLE ID number:
(check all that are known to apply):			
Source other than Part 201 or Part 213, or source unknown			<input type="checkbox"/>
Oil or gas production and development regulated pursuant to Part 615 or 625			<input type="checkbox"/>
Licensed landfill regulated pursuant to Part 115			<input type="checkbox"/>
Licensed hazardous waste treatment, storage, or disposal facility regulated pursuant to Part 111			<input type="checkbox"/>

Section D: Applicable Dates (provide date for all that are relevant):	MM/DD/YYYY
Date All Appropriate Inquiry (AAI) Report or Phase I Environmental Assessment Report completed:	06/30/2022
Date Baseline Environmental Assessment Report conducted:	08/08/2022
Date submitter first became the owner:	
Date submitter first became the operator:	
Date submitter first became the operator (if prior to ownership):	
Anticipated date of becoming the owner for prospective owners:	9/30/2022
Anticipated date of becoming the operator for prospective operators:	9/30/2022
If former owner or operator of this property, prior dates of being the owner or operator:	

Section E: Check the appropriate response to each of the following questions:	YES	NO
1. Is the property at which the BEA was conducted a "facility" as defined by Section 20101(1)(s) or a Property as defined by Section 21303(d)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Was the All Appropriate Inquiry (AAI) or Phase I Environmental Assessment Report completed in accordance with Section 20101(1)(f) and or 21302(1)(b)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Was the BEA, including the sampling, conducted either prior to or within 45 days of the date of becoming the owner, operator, or of foreclosure, whichever is earliest?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Is this BEA being submitted to the department within 6 months of the submitter first becoming the owner or operator, or foreclosing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Does the BEA provide sufficient rationale to demonstrate that the data is reliable and relevant to define conditions at the property at the time of purchase, occupancy, or foreclosure, even if the BEA relies on studies of data prepared by others or conducted for other purposes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Does this BEA contain the legal description of the property addressed by the BEA?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Does this BEA contain the environmental analytical results, a detailed, scaled map (not aerial photo) showing the sample locations, and the basis for the determination that the property is a facility as defined by Section 20101(1)(s) or the basis for the determination that the property is a Property as defined by Section 21303(d)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>


Section F: Environmental Consultant Signature:

I certify to the best of my knowledge and belief, that this BEA and all related materials are true, accurate, and complete. I certify that the property is a facility as defined by Section 20101(1)(s) or a Property as defined by Section 21303(d) and have provided the sampling and analyses that support that determination. I certify that any exceptions to, or deletions from, the All Appropriate Inquiry Rule are described in Section 1 of the BEA report.

Signature: 	Date: 8/10/2022
Printed Name: Douglas M. McDowell	Company: McDowell & Associates
Mailing Address: 21355 Hatcher Avenue	City, State and Zip Code: Ferndale, MI 48220
Telephone Number: (248) 399-2066	Email Address: doug.mcdowell@mcdowasc.com

Section G: Legal Entity Signature:

With my signature below, I certify that to the best of my knowledge and belief, this BEA and all related materials are true, accurate, and complete.

Signature: 	Date: 8.10.2022
Printed Name: Timothy Thorland	Title and relationship of signatory to submitter: Assistant Vice President
Mailing Address: 1920 25 th Street, Suite A	City, State and Zip Code: Detroit, MI 48216-1435
Telephone Number: (248) 914-5223	Email Address: tthorland@swsol.org

This form should be submitted to EGLE Remediation & Redevelopment Division District Office for the county in which the property is located, unless the response activity is related to a facility that is regulated by another EGLE Division. An office map is located at www.michigan.gov/EGLErrd. The BEA report and submittal form should be addressed to the field operations contact, located via the [EGLE-RRD contact map](#). If regulated by another division, contact should be made with that division for information on where to submit the form and report.

For information or assistance on this publication, please contact the (program), through EGLE Environmental Assistance Center at 800-662-9278. This publication is available in alternative formats upon request.

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This form and its contents are subject to the Freedom of Information Act and may be released to the public.

CONTENTS OF BASELINE ENVIRONMENTAL ASSESSMENT REPORT

1. Introduction and Discussion:
 - a. Owner/operator information (name, mailing address, etc.).
 - b. Intended use of property (i.e., residential, institutional, industrial, gas station, commercial, etc.).
 - c. Executive summary of All Appropriate Inquiry (AAI) or ASTM Phase I Environmental Site Assessment (ESA) if available or a short summary of the findings and opinions of the AAI and the conditions indicative of releases or threatened releases of hazardous substances; or recognized environmental conditions identified in a Phase I Environmental Assessment.
 - d. Any exceptions to, or deletions from, the AAI Rule 40 CFR 312 or ASTM E1527-13.
 - e. Discussion of data gaps identified in the AAI or ASTM Phase I ESA and how they affect this BEA.
 - f. Discussion of the sampling completed, including the purpose and methods. If the data was not collected by the submitter or environmental professional, the demonstration that the data is reliable and relevant to define the conditions at the property.
 - g. The general location(s) of the known contamination on the property including the environmental media affected.
 - h. The basis for the conclusion that the property is a facility (Part 201) and/or a Property (Part 213).
2. Property Information
 - a. Legal description of property.
 - b. Survey map(s) (not aerial photographs) accurately depicting the property boundaries, property tax ID(s), and, if applicable, each parcel boundaries. If a legal description simply references a lot or plat, include a copy of the subdivision plat showing this property. A legal boundary survey by a licensed surveyor is required if the property covered by the BEA is greater or less than the legal property description(s). A legal survey is highly recommended when the property description is complex, has recently changed, multiple parcels are included in one BEA, or other situations where the exact property the BEA covers may be an issue when relying on the BEA for liability protection in the future.
 - c. Scaled, detailed site map(s) (**not aerial photographs or maps**) with site structures, sample locations and depths, and detected contaminant concentrations.
 - d. Scaled area map showing property in relation to surrounding area (such as topographic or aerial maps).
 - e. Property location: Street/City/State/Zip.
 - f. Spatial data required on form: County; City/Village/Township that is the governmental unit with jurisdiction; Town, Range, Section, Quarter and Quarter-Quarter Section; latitude and longitude coordinates including the information on how those were obtained.
3. Facility or Property Status
 - a. Table listing the hazardous substances, CAS Number, concentrations, sample location(s) and depths, and media affected, that are known to exceed residential criteria at the property.
 - b. Laboratory analytical data sheets and chain-of-custody documents.
4. Identification of the author of the BEA
 - a. Name, qualifications as an environmental consultant, company, contact information, etc.
5. AAI Report or ASTM Phase I ESA
 - a. The report must consider hazardous substances as defined by Section 20101(1)(y) and/or regulated substances as defined by Section 21303(g).
6. References (other than those already included in the AAI or ASTM Phase I ESA).

FOR SUBMITTAL TO EGLE

- Phase I ESA: Do **NOT** include the environmental database search report (e.g., EDR Radius Map Report) or copies of EGLE files.
- Phase I ESA: DO include all historical aerial photographs, Sanborn Fire Insurance maps, etc.
- Do **NOT** submit copies of documents that already exist in EGLE district office files.
- DO provide copies of pertinent information and a reference to the location of the complete information within the EGLE file. *Example: include data tables and maps in the BEA but only reference the supporting analytical reports located in EGLE files by providing the file name, facility or site number, report name, and report date.*
- Remove from the BEA and any attachments any *personally identifiable information* prior to submittal to EGLE.

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1.0 INTRODUCTION AND DISCUSSION

This Baseline Environmental Assessment (BEA) has been completed an irregular-shaped parcel containing approximately 0.892 acres of land located at 5800 Michigan Avenue and 3951 Campbell Street in Detroit, Wayne County, Michigan. A Site Location Map, which shows the approximate location of the subject property, accompanies this report as Attachment I.

The subject property is currently vacant land. 5800 LDHA LP intends to acquire interest in the property on or after September 30, 2022 and to develop the property for mixed-use. Remedial activities are planned prior to development and construction activities.

The subject property has been identified as a “facility” based on the presence metals and PNAs in soil above EGLE Generic Residential Criteria and/or EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels.

This BEA was completed by McDowell & Associates on behalf of 5800 LDHA LP. Any representation in this report as to the future intended use or uses of the subject property has been indicated by 5800 LDHA LP. McDowell & Associates is not in control of future uses of the subject property.

This BEA was completed in accordance with Part 201 of the Natural Resources and Environmental Protection Act 451 of 1994, as amended, for the purpose of establishing an exemption to liability pursuant to Section 201126(1)(c) for a new owner or operator of a property that is a facility as defined by Section (1)(r).

1.1 PREVIOUS REPORTS

McDowell & Associates has been provided or obtained the following reports for the subject property:

Title	Author	Date	Property	Relevant Information
Phase I ESA	AEMG	11/1/2010	SP and adjoining land to the north and west	Eight RECs identified on that property. Included in 2014 BEA.
Phase II ESA	AKT Peerless	1/7/2011	SP and adjoining land to the north and west	Geophysical completed. Seven borings made on the SP. Included in 2014 BEA.
Phase I ESA	PME	11/22/2013	SP and adjoining land to the north and west	Two RECs identified on that property. Included in 2014 BEA.
Phase II ESA*	PME	3/31/2014	SP and adjoining land to the north and west	Nine borings made on the SP. Included in 2014 BEA.
BEA	PME	3/31/2014	Subject property	SP identified as a “facility” based on benzo(a)pyrene

Title	Author	Date	Property	Relevant Information
				and lead in soil above EGLE Generic Residential Direct Contact Criteria.
Phase I ESA	PME	1/15/2021	SP and adjoining land to the north	One REC identified.
Phase II ESA	PME	3/25/2022	SP and adjoining land to the north	11 soil borings made on the SP and three soil gas points installed. 22 soil samples and 3 soil gas samples submitted for testing.
Phase I ESA	PME	6/30/2022	SP and adjoining land to the north	Summarized reports referenced above. One REC identified. Refer below.
Subsurface Investigation	McDowell	8/6/2022	SP and adjoining land to the north and west	One test pit and 24 soil borings made on the property. Lead and mercury identified above relevant EGLE Direct Contact Criteria.

SP- subject property

REC- recognized environmental condition

AEMG- Advanced Environmental Management Group (AEMG)

PME- PM Environmental, Inc.

*not provided. Select information related to 5800 Michigan Avenue included in the 2014 BEA

All Appropriate Inquiry- 2022 Phase I ESA

PM Environmental completed a Phase I ESA on June 30, 2022 on behalf of Wayne County Brownfield Redevelopment Authority. At the time of that report, the subject property was reported as vacant land. That report identified the following recognized environmental condition (REC) in connection with the subject property:

- “The subject property at 5800 Michigan Avenue was historically occupied by gasoline dispensing operations from between 1910 and 1921 until at least 1949 and vulcanizing operations from between 1910 and 1924 until between 1941 and 1949. Previous site assessment activities completed between 2011 and 2022 document soil contamination has been identified on the subject property above the current Part 201 Generic Cleanup Criteria (GCC). Additionally, soil concentrations of select VOCs were identified exceeding Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) developed for the subject property. Based on these analytical results and completion of a BEA, the subject property at 5800 Michigan Avenue has been classified as a “facility,” as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.”

A copy of that report, excluding the SERS Report and prior BEA, is attached.

2.0 PROPERTY INFORMATION

The subject property is approximately 0.892 acres of land located at 5800 Michigan Avenue and 3951 Campbell Street in Detroit, Wayne County, Michigan (Parcel IDs 16/001706-8, 16/014695). A legal description for the subject property and Alta Survey are appended to this report as Attachments II and III.

The property location and spatial data are presented on the accompanying BEA Submittal Form.

An Exceedance Location Map, which shows soil boring and sample locations and known exceedance concentrations, accompanies this report as Attachment IV.

A Site Sketch, which depicts site features and shows the subject property in relation to surrounding areas, accompanies this report as Attachment V.

3.0 FACILITY STATUS

The accompanying Tables 1 through 4 summarize recent chemical test results in comparison to current EGLE Generic Residential Criteria (December 2013) and Site-Specific Volatilization to Indoor Air Criteria (SSVIAC).

The following compounds were detected in soil on the subject property above applicable EGLE Generic Residential Criteria and SS VIAC Screening Levels:

Compound	Matrix	Samples	Maximum Concentration	Criteria Exceeded
Acenaphthylene	Soil	CO-SB-12, SB-8, SB-14, SB-16	400 ug/kg	SSVIAC
Benzo(a)pyrene	Soil	CO-SB-12, SB-7, SB-8, SB-14, SB-16, SB-17, SB-18, SB-20, SB-21, SB-23	8,900 ug/kg	DC
Fluoranthene	Soil	CO-SB-12, SB-7, SB-8, SB-14, SB-16, SB-17, SB-18, SB-20, SB-21, SB-23	20,900 ug/kg	GSI
Lead	Soil	SB-8, SB-18, SB-20, SB-22, SB-23, 2a, 107b, 116b, 117c, 124c	5,270,000 ug/kg	DC, DW
Mercury	Soil	SB-2, 2a	219 ug/kg	GSI, SSVIAC
2-Methylnaphthalene	Soil	SB-21	2,400 ug/kg	SS VIAC
Naphthalene	Soil	SB-7, SB-8, SB-13, SB-16, SB-20, SB-21, SB-23	3,000 ug/kg	GSI, SSVIAC

Compound	Matrix	Samples	Maximum Concentration	Criteria Exceeded
Phenanthrene	Soil	CO-SB-12, SB-2, SB-7, SB-8, SB-14, SB-16, SB-17, SB-18, SB-20, SB-21, SB-23	18,000 ug/kg	GSI, SSVIAC
Zinc	Soil	SB-8	217,000 ug/kg	GSI

GSI- Groundwater Surface Water Interface

DW – Drinking Water

DC- Direct Contact

An Exceedance Location Map, which shows soil boring and sample locations and known relevant exceedance concentrations, accompanies this report as Attachment IV. Sample locations which did not show detectable contamination above relevant EGLE Generic Residential Criteria are also shown.

These data are considered sufficient to define conditions at the property for the purposes of the BEA.

4.0 LIKELIHOOD OF OTHER CONTAMINATION

Phase II ESAs completed for the subject property by others were reportedly completed to investigate RECs identified in Phase I ESAs for the property. It is possible that the property has been impacted at other areas from past uses and from off-site.

5.0 IDENTIFICATION OF THE AUTHOR OF THE BEA

This Baseline Environmental Assessment (BEA) was authored by Jennifer Lagerbohm, M.S., CHMM and reviewed by Douglas M. McDowell, M.S., P.E. with McDowell & Associates located at 21355 Hatcher Avenue in Ferndale, Michigan 48220.

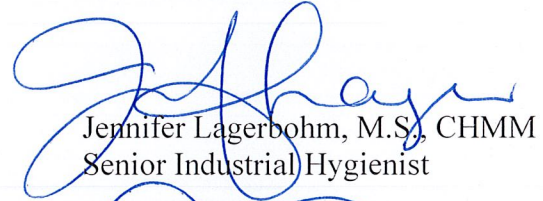
Jennifer Lagerbohm and Douglas M. McDowell meet the definition of Environmental Professionals as defined in 312.10 of 40 CFR 312. Copies of our résumés are attached.

The author of this BEA can be reached by phone at (248) 399-2066 or by email: jennifer.lagerbohm@mcdowasc.com.

Should you have any questions, please do not hesitate to contact us.

Very truly yours,

McDOWELL & ASSOCIATES



Jennifer Lagerbohm, M.S., CHMM
Senior Industrial Hygienist



Douglas M. McDowell, M.S., P.E.
Vice President

JL/jl

6.0 PHASE I AND II ENVIRONMENTAL SITE ASSESSMENTS

A Phase I ESA was completed for the subject property and adjoining land to the north by PM Environmental on June 30, 2022. A copy of that report is attached, with the exception of the SERS Report database search. That report also includes excerpts from prior Phase II ESA reports completed for the property. Excerpts from McDowell & Associates' Subsurface Investigation are also attached.

A previous Baseline Environmental Assessment was prepared for the subject property by PM Environmental on March 31, 2014 (BEA B201406057LV). Information from that prior BEA has not been reproduced for this report.

7.0 LIMITATIONS

This BEA was completed by McDowell & Associates on behalf of 5800 LDHA LP.

Any representation in this report as to the future intended use or uses of the subject property has been indicated by 5800 LDHA LP. McDowell & Associates is not in control of future uses of the subject property.

8.0 REFERENCES

- Table 1 - Summary of Metals Chemistry Results (Soil)
- Table 2 - Summary of PNAs Chemistry Results (Soil)
- Table 3 - Summary of Detected VOCs Chemistry Results (Soil)
- Table 4 - Summary of Detected VOCs Chemistry Results (Soil Gas)

- Attachment I - Site Location Map
- Attachment II - Legal Description of Subject Property
- Attachment III - Alta Survey
- Attachment IV - Soil Exceedance Map
- Attachment V - Site Sketch
- Attachment VI - Phase I ESA (6/30/2022, by PME)
- Attachment VII - Subsurface Investigation (8/6/2022 by McDowell, excerpts only)
- Attachment VIII - Résumés

Table 1

Summary of Metals Chemistry Results (Soil)

TABLE 1 - SUMMARY OF METALS CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Depth	Arsenic 7440382	Barium 7440393	Cadmium 7440439	Total Chromium 18540299	Copper 7440508
CO-SB-1	12/17/2010	AKT Peerless	4-6'	NT	NT	210	2,310	NT
CO-SB-1	12/17/2010	AKT Peerless	10-12'	NT	NT	<200	3,260	NT
CO-SB-2	12/17/2010	AKT Peerless	4-6'	NT	NT	<200	3,030	NT
CO-SB-2	12/17/2010	AKT Peerless	10-12'	NT	NT	<200	3,860	NT
CO-SB-3	12/17/2010	AKT Peerless	1-3'	NT	NT	340	3,450	NT
CO-SB-3	12/17/2010	AKT Peerless	4-6'	NT	NT	<200	2,730	NT
CO-SB-4	12/17/2010	AKT Peerless	2-4'	NT	NT	420	3,570	NT
CO-SB-5	12/17/2010	AKT Peerless	2-4'	1,240	53,800	210	2,790	8,100
SB-1	12/18/2013	PM Environmental	1-2'	2,820	58,400	520	8,710	16,400
SB-2	12/18/2013	PM Environmental	3-4'	1,950	55,400	390	4,890	20,300
SB-3	12/18/2013	PM Environmental	4-5'	1,410	81,200	290	2,710	12,100
SB-8	12/18/2013	PM Environmental	2-3'	2,880	83,100	550	1,750	61,200
SB-14	12/19/2013	PM Environmental	2.5-3.5'	850	69,800	<200	3,150	6,200
SB-15	12/19/2013	PM Environmental	5-6'	1,620	88,600	220	2,840	7,500

EGLE Statewide	Arsenic 7440382	Barium 7440393	Cadmium 7440439	Total Chromium 18540299	Copper 7440508
Default Background Levels	5,800	75,000	1,200	18,000	32,000
EGLE Generic Residential					
Groundwater Protection Criteria	4,600/4,600	1,300,000/440,000(7)	6,000/3,600(7)	30,000/3,300	5,800,000/75,000(7)
EGLE Generic Residential					
Ambient Air Inhalation Criteria	720,000	330,000,000	1,700,000	260,000	130,000,000
EGLE Generic Non-Residential					
Ambient Air Inhalation Criteria	910,000	150,000,000	2,200,000	240,000	59,000,000
EGLE Generic Residential					
Direct Contact Criteria	7,600	37,000,000	550,000	2,500,000	20,000,000
EGLE Generic Non-Residential					
Direct Contact Criteria	37,000	130,000,000	2,100,000	9,200,000	73,000,000

Sample	Date	Source	Depth	Total Lead 7439921	Mercury 7439976	Selenium 7782492	Silver 7440224	Zinc 7440666
CO-SB-1	12/17/2010	AKT Peerless	4-6'	12,900	NT	NT	NT	NT
CO-SB-1	12/17/2010	AKT Peerless	10-12'	4,850	NT	NT	NT	NT
CO-SB-2	12/17/2010	AKT Peerless	4-6'	8,750	NT	NT	NT	NT
CO-SB-2	12/17/2010	AKT Peerless	10-12'	5,430	NT	NT	NT	NT
CO-SB-3	12/17/2010	AKT Peerless	1-3'	2,740	NT	NT	NT	NT
CO-SB-3	12/17/2010	AKT Peerless	4-6'	6,280	NT	NT	NT	NT
CO-SB-4	12/17/2010	AKT Peerless	2-4'	1,210	NT	NT	NT	NT
CO-SB-5	12/17/2010	AKT Peerless	2-4'	1,590	<50	<500	<200	24,100
SB-1	12/18/2013	PM Environmental	1-2'	3,140	73	<400	<200	50,600
SB-2	12/18/2013	PM Environmental	3-4'	5,350	163	<400	<200	59,000
SB-3	12/18/2013	PM Environmental	4-5'	1,350	<50	<400	<200	47,900
SB-8	12/18/2013	PM Environmental	2-3'	690,000	111	<400	<200	217,000
SB-14	11/22/2021	PM Environmental	3-4'	187,000	NT	NT	NT	NT
SB-14	11/22/2021	PM Environmental	5-6'	7,580	NT	NT	NT	NT
SB-15	11/22/2021	PM Environmental	2.5-3.5'	26,700	NT	NT	NT	NT
SB-15	11/22/2021	PM Environmental	5-6'	8,270	NT	NT	NT	NT
SB-16	11/22/2021	PM Environmental	3-4'	61,200	NT	NT	NT	NT
SB-16	11/22/2021	PM Environmental	5-6'	12,200	NT	NT	NT	NT
SB-17	11/22/2021	PM Environmental	3.5-4.5'	47,200	NT	NT	NT	NT
SB-17	11/22/2021	PM Environmental	5-6'	17,600	NT	NT	NT	NT
SB-18	11/22/2021	PM Environmental	2.5-3.5'	1,290,000	NT	NT	NT	NT
SB-18	11/22/2021	PM Environmental	5-6'	13,700	NT	NT	NT	NT
SB-19	11/22/2021	PM Environmental	3-4'	47,400	NT	NT	NT	NT
SB-19	11/22/2021	PM Environmental	5-6'	11,900	NT	NT	NT	NT
SB-20	11/22/2021	PM Environmental	3-4'	857,000	NT	NT	NT	NT
SB-20	11/22/2021	PM Environmental	5-6'	375,000	NT	NT	NT	NT
SB-21	11/22/2021	PM Environmental	2.5-3.5'	214,000	NT	NT	NT	NT
SB-21	11/22/2021	PM Environmental	5-6'	10,000	NT	NT	NT	NT
SB-22	11/22/2021	PM Environmental	2.5-3.5'	751,000	NT	NT	NT	NT
SB-22	11/22/2021	PM Environmental	5-6'	10,500	NT	NT	NT	NT
SB-23	11/22/2021	PM Environmental	2.4-3.5'	1,530,000	NT	NT	NT	NT
SB-23	11/22/2021	PM Environmental	5-6'	20,700	NT	NT	NT	NT
2a	7/15/2022	McDowell	0'- 1'	589,000	219	NT	NT	NT
102a	7/21/2022	McDowell	1'- 2'	2,200	NT	NT	NT	NT
102b	7/21/2022	McDowell	2'- 2'6"	355,000	NT	NT	NT	NT
104a	7/21/2022	McDowell	1'- 2'	2,880	NT	NT	NT	NT
104b	7/21/2022	McDowell	2'- 3'	233,000	NT	NT	NT	NT
107a	7/21/2022	McDowell	0'- 1'	2,830	NT	NT	NT	NT
107b	7/21/2022	McDowell	2'- 2'6"	485,000	NT	NT	NT	NT
107c	7/21/2022	McDowell	3'- 3'6"	263,000	NT	NT	NT	NT
108a	7/21/2022	McDowell	1'- 2'	3,030	NT	NT	NT	NT
108b	7/21/2022	McDowell	3'- 3'6"	369,000	NT	NT	NT	NT
111c	7/21/2022	McDowell	2'- 3'	145,000	NT	NT	NT	NT
112a	7/21/2022	McDowell	1'- 2'	4,120	NT	NT	NT	NT
113a	7/21/2022	McDowell	1'- 2'	2,810	NT	NT	NT	NT
114c	7/21/2022	McDowell	2'- 3'	151,000	NT	NT	NT	NT
116b	7/21/2022	McDowell	2'- 3'	517,000	NT	NT	NT	NT
116c	7/21/2022	McDowell	3'6"- 4'	12,300	NT	NT	NT	NT
117b	7/21/2022	McDowell	1'- 2'	2,780	NT	NT	NT	NT
117c	7/21/2022	McDowell	3'- 4'	1,130,000	NT	NT	NT	NT
117d	7/21/2022	McDowell	4'6"- 5'6"	138,000	NT	NT	NT	NT
118d	7/21/2022	McDowell	6'- 7'	279,000	NT	NT	NT	NT
119c	7/21/2022	McDowell	4'- 5'	164,000	NT	NT	NT	NT
122c	7/21/2022	McDowell	3'6"- 4'6"	12,400	NT	NT	NT	NT
123c	7/21/2022	McDowell	3'6"- 4'6"	194,000	NT	NT	NT	NT
124c	7/21/2022	McDowell	3'6"- 4'6"	5,270,000	NT	NT	NT	NT

EGLE Statewide	Total Lead 7439921	Mercury 7439976	Selenium 7782492	Silver 7440224	Zinc 7440666
Default Background Levels	21,000	130	410	1,000	47,000
EGLE Residential Volatilization to Indoor					
Air Pathway (VIAP) Screening Level		22			
EGLE Generic Residential					
Groundwater Protection Criteria	700,000/5,100,000(7)	1,700/50	4,000/400	4,500/100	2,400,000/169,000(7)
EGLE Generic Residential					
Ambient Air Inhalation Criteria	100,000,000	52,000 (48,000-indoor)	130,000,000	6,700,000	ID
EGLE Generic Non-Residential					
Ambient Air Inhalation Criteria	44,000,000	62,000 (89,000-indoor)	59,000,000	2,900,000	ID
EGLE Generic Residential					
Direct Contact Criteria	400,000	160,000	2,600,000	2,500,000	170,000,000
EGLE Generic Non-Residential					
Direct Contact Criteria	900,000	580,000	9,600,000	9,000,000	630,000,000

NOTES:

- All values expressed in ug/kg
- Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Criteria from Table 2. Soil: Residential, and Table 3. Soil: Nonresidential. Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels," dated December 30, 2013.
EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels, dated September 4, 2020.
- Most rigorous of Ambient Air Criteria presented.
- Groundwater Protection Criteria presented as Drinking Water/Ground Water Surface Water Interface (GSI)
- Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
- "ID" = EGLE indicates inadequate data to develop criterion.
- EGLE indicates that some chemical-specific GSI criteria are based upon the hardness of the receiving waters, and for the purpose of evaluating the potential need for remedial activities, EGLE allows an estimated hardness value of 150 mg/L to be used. Final determination of compliance with criteria must be based on site specific hardness.
The estimated GSI value shown is not protective of surface water used as a drinking water source.
- Boldface values exceed EGLE Statewide Default Background Levels or Facility-Specific Background Levels.
- Values shown thus exceed Statewide Default and EGLE Generic Residential Groundwater Protection Criteria.
- Values shown thus exceed Statewide Default and EGLE Generic Residential Direct Contact Criteria.
- Unrestricted Site Specific Volatilization to Indoor Air Criteria from EGLE Memo dated 03/21/2022.

Table 2

Summary of PNAs Chemistry Results (Soil)

TABLE 2 - SUMMARY OF PNAs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Acenaphthene 83329	Acenaphthylene 208968	Anthracene 120127	Benzo(a)anthracene 56553	Benzo(a)pyrene 50328	Benzo(b)fluoranthene 205992
CO-SB-1	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-1	12/17/2010	AKT Peerless	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT Peerless	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT Peerless	1-3'	<300	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-4	12/17/2010	AKT Peerless	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT Peerless	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-6	12/17/2010	AKT Peerless	2-4'	<300	<300	<300	800	<300	600
CO-SB-6	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-12	12/17/2010	AKT Peerless	2-4'	500	400	1,600	4,200	3,700	3,700
SB-1	12/18/2013	PM Environmental	1-2'	<300	<300	<300	700	600	1,110
SB-1	12/18/2013	PM Environmental	8-9'	<300	<300	<300	900	1,000	1,800
SB-2	12/18/2013	PM Environmental	3-4'	<300	<300	500	1,200	1,100	1,800
SB-3	12/18/2013	PM Environmental	4-5'	<300	<300	<300	<300	<300	<300
SB-4	12/18/2013	PM Environmental	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-5	12/18/2013	PM Environmental	1-2'	<300	<300	<300	<300	300	500
SB-6	12/18/2013	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-7	12/18/2013	PM Environmental	3-4'	900	<300	1,900	3,500	3,400	6,100
SB-8	12/18/2013	PM Environmental	2-3'	2,200	400	3,900	9,300	8,900	15,800
SB-9	12/18/2013	PM Environmental	2-3'	<300	<300	<300	<300	<300	<300
SB-14	11/22/2021	PM Environmental	3-4'	700	400	2,000	6,400	6,500	11,900
SB-14	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-15	11/22/2021	PM Environmental	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-15	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-16	11/22/2021	PM Environmental	3-4'	800	400	2,600	7,600	6,400	12,300
SB-16	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-17	11/22/2021	PM Environmental	3.5-4.5'	400	<300	1,200	3,500	3,400	<300
SB-17	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	6,000
SB-18	11/22/2021	PM Environmental	2.5-3.5'	400	<300	1,200	3,900	3,700	<300
SB-18	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	6,600
SB-19	11/22/2021	PM Environmental	3-4'	<300	<300	<300	<300	<300	400
SB-19	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	500
SB-20	11/22/2021	PM Environmental	3-4'	<300	<300	400	1,100	1,000	<300
SB-20	11/22/2021	PM Environmental	5-6'	1,800	<300	2,600	4,500	4,200	1,900
SB-21	11/22/2021	PM Environmental	2.5-3.5'	600	<300	2,700	4,400	3,900	7,200
SB-21	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	7,400
SB-22	11/22/2021	PM Environmental	2.5-3.5'	<300	<300	<300	900	900	<300
SB-22	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	1,800
SB-23	11/22/2021	PM Environmental	2.4-3.5'	1,100	<300	2,600	7,100	6,900	<300
SB-23	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	13,400
2a	7/15/2022	McDowell	0'- 1'	<300	<300	<300	800	800	1,300
103d	7/21/2022	McDowell	5'- 6'	<300	<300	<300	<300	<300	<300
EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels				200,000	DATA	13,000,000	160,000	NA	NA
Unrestricted Site Specific Volatilization to Indoor Air Criteria				200,000	DATA	13,000,000	160,000	NA	NA
EGLE Generic Non-Residential Groundwater Protection Criteria				880,000/8,700	17,000/ID	41,000/ID	NLL/NLL	NLL/NLL	NLL/NLL
EGLE Generic Non-Residential Indoor Air Inhalation Criteria				350,000,000	3,000,000	1,000,000,000	NLV	NLV	ID
EGLE Generic Non-Residential Ambient Air Inhalation Criteria				97,000,000	2,700,000	1,600,000,000	NLV (ID)	1,900,000	ID
EGLE Generic Residential Direct Contact Criteria				41,000,000	1,600,000	230,000,000	20,000	2,000	20,000
EGLE Generic Non-Residential Direct Contact Criteria				130,000,000	5,200,000	730,000,000	80,000	8,000	80,000

TABLE 2 - SUMMARY OF PNAs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Benzo(g,h,i)perylene 191242	Benzo(k)fluoranthene 207089	Chrysene 218019	Dibenzo(a,h)anthracene 53703	Fluoranthene 206440	Fluorene 86737
CO-SB-1	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-1	12/17/2010	AKT Peerless	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT Peerless	10-12'	<300	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT Peerless	1-3'	<300	<300	<300	<300	500	<300
CO-SB-3	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-4	12/17/2010	AKT Peerless	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT Peerless	2-4'	<300	<300	<300	<300	<300	<300
CO-SB-5	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300	<300
CO-SB-11	12/17/2010	AKT Peerless	7-9'	NS	NS	NS	NS	NS	NS
CO-SB-11	12/17/2010	AKT Peerless	13-15'	NS	NS	NS	NS	NS	NS
CO-SB-12	12/17/2010	AKT Peerless	2-4'	1,000	3,600	4,200	<300	8,600	700
SB-1	12/18/2013	PM Environmental	1-2'	300	1,200	700	<300	1,400	<300
SB-1	12/18/2013	PM Environmental	8-9'	400	2,000	1,000	<300	1,700	<300
SB-2	12/18/2013	PM Environmental	3-4'	600	2,000	1,200	<300	3,200	<300
SB-3	12/18/2013	PM Environmental	4-5'	<300	<300	<300	<300	<300	<300
SB-4	12/18/2013	PM Environmental	2.5-3.5'	<300	<300	<300	<300	<300	<300
SB-5	12/18/2013	PM Environmental	1-2'	<300	600	<300	<300	500	<300
SB-6	12/18/2013	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-7	12/18/2013	PM Environmental	3-4'	1,100	6,800	3,500	400	8,800	1,000
SB-8	12/18/2013	PM Environmental	2-3'	2,900	17,600	9,300	<300	20,900	2,600
SB-9	12/18/2013	PM Environmental	2-3'	<300	<300	<300	<300	<300	<300
SB-14	11/22/2021	PM Environmental	3-4'	2,500	13,400	6,800	300	13,000	700
SB-14	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-15	11/22/2021	PM Environmental	2.5-3.5'	<300	300	<300	<300	400	<300
SB-15	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-16	11/22/2021	PM Environmental	3-4'	2,000	13,800	7,300	<300	14,600	900
SB-16	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-17	11/22/2021	PM Environmental	3.5-4.5'	1,200	6,700	3,500	<300	7,400	500
SB-17	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-18	11/22/2021	PM Environmental	2.5-3.5'	1,500	7,400	4,100	<300	8,300	400
SB-18	11/22/2021	PM Environmental	5-6'	<300	400	<300	<300	600	<300
SB-19	11/22/2021	PM Environmental	3-4'	<300	600	<300	<300	500	<300
SB-19	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-20	11/22/2021	PM Environmental	3-4'	400	2,100	1,100	<300	2,200	<300
SB-20	11/22/2021	PM Environmental	5-6'	2,000	8,200	4,700	<300	10,500	2,100
SB-21	11/22/2021	PM Environmental	2.5-3.5'	1,100	8,200	4,400	<300	10,000	1,100
SB-21	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-22	11/22/2021	PM Environmental	2.5-3.5'	500	2,100	1,100	<300	1,800	<300
SB-22	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
SB-23	11/22/2021	PM Environmental	2.4-3.5'	2,100	15,100	7,200	300	14,200	1,400
SB-23	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300	<300
2a	7/15/2022	McDowell	0'- 1'	400	1500	800	<300	1,800	<300
103d	7/21/2022	McDowell	5'- 6'	<300	<300	<300	<300	<300	<300
EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels				NA	NA	NA	NA	NA	470,000
EGLE Generic Residential Groundwater Protection Criteria				NLL/NLL	NLL/NLL	NLL/NLL	NLL/NLL	730,000/5,500	390,000/5,300
EGLE Generic Residential Indoor Air Inhalation Criteria				NLV	NLV (ID)	ID	NLV	1,000,000,000	580,000,000
EGLE Generic Residential Ambient Air Inhalation Criteria				800,000,000	NLV (ID)	ID	NLV (ID)	740,000,000	130,000,000
EGLE Generic Non-Residential Ambient Air Inhalation Criteria				350,000,000	NLV (ID)	ID	NLV (ID)	880,000,000	150,000,000
EGLE Generic Residential Direct Contact Criteria				2,500,000	200,000	2,000,000	2,000	46,000,000	27,000,000
EGLE Generic Non-Residential Direct Contact Criteria				7,000,000	800,000	8,000,000	8,000	130,000,000	87,000,000

TABLE 2 - SUMMARY OF PNAs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	Indeno(1,2,3-cd)pyrene 193395	2-Methylnaphthalene 91576	Naphthalene 91203	Phenanthrene 85018	Pyrene 129000
CO-SB-1	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300
CO-SB-1	12/17/2010	AKT Peerless	10-12'	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300
CO-SB-2	12/17/2010	AKT Peerless	10-12'	<300	<300	<300	<300	<300
CO-SB-3	12/17/2010	AKT Peerless	1-3'	<300	<300	<300	<300	400
CO-SB-3	12/17/2010	AKT Peerless	4-6'	<300	<300	<300	<300	<300
CO-SB-4	12/17/2010	AKT Peerless	2-4'	<300	<300	<300	<300	<300
CO-SB-10	12/17/2010	AKT Peerless	3-5'	NS	NS	NS	NS	NS
CO-SB-10	12/17/2010	AKT Peerless	12-14'	NS	NS	NS	NS	NS
CO-SB-11	12/17/2010	AKT Peerless	7-9'	NS	NS	NS	NS	NS
CO-SB-11	12/17/2010	AKT Peerless	13-15'	NS	NS	NS	NS	NS
CO-SB-12	12/17/2010	AKT Peerless	2-4'	1,000	<300	<300	6,500	8,000
SB-1	12/18/2013	PM Environmental	1-2'	<300	<300	<300	700	1,200
SB-1	12/18/2013	PM Environmental	8-9'	400	<300	<300	1,000	1,700
SB-2	12/18/2013	PM Environmental	3-4'	500	<300	<300	2,400	2,800
SB-3	12/18/2013	PM Environmental	4-5'	<300	<300	<300	<300	<300
SB-4	12/18/2013	PM Environmental	2.5-3.5'	<300	<300	<300	<300	<300
SB-5	12/18/2013	PM Environmental	1-2'	<300	<300	<300	<300	500
SB-6	12/18/2013	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-7	12/18/2013	PM Environmental	3-4'	1,000	<300	500	8,700	9,400
SB-8	12/18/2013	PM Environmental	2-3'	2,800	1,100	300	18,000	18,500
SB-9	12/18/2013	PM Environmental	2-3'	<300	<300	<300	<300	<300
SB-14	11/22/2021	PM Environmental	3-4'	2,500	<300	<300	8,100	13,500
SB-14	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-15	11/22/2021	PM Environmental	2.5-3.5'	<300	<300	<300	400	400
SB-15	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-16	11/22/2021	PM Environmental	3-4'	2,000	<300	400	9,600	18,000
SB-16	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-17	11/22/2021	PM Environmental	3.5-4.5'	1,200	<300	<300	4,300	7,500
SB-17	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-18	11/22/2021	PM Environmental	2.5-3.5'	1,400	<300	<300	5,000	8,800
SB-18	11/22/2021	PM Environmental	5-6'	<300	<300	<300	700	600
SB-19	11/22/2021	PM Environmental	3-4'	<300	<300	<300	<300	600
SB-19	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-20	11/22/2021	PM Environmental	3-4'	300	<300	<300	1,400	2,200
SB-20	11/22/2021	PM Environmental	5-6'	1,900	1,000	3,000	12,400	9,800
SB-21	11/22/2021	PM Environmental	2.5-3.5'	1,100	<300	500	10,000	10,900
SB-21	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-22	11/22/2021	PM Environmental	2.5-3.5'	400	<300	<300	900	1,900
SB-22	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
SB-23	11/22/2021	PM Environmental	2.4-3.5'	2,200	500	1,000	12,100	15,100
SB-23	11/22/2021	PM Environmental	5-6'	<300	<300	<300	<300	<300
2a	7/15/2022	McDowell	0'- 1'	300	<300	<300	1,000	1,600
103d	7/21/2022	McDowell	5'- 6'	<300	<300	<300	<300	<300

EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels	NA	1,700	67	1,700	25,000,000
Unrestricted Site Specific Volatilization to Indoor Air Criteria	NA	1,700	67	1,700	25,000,000
EGLE Generic Non-Residential Groundwater Protection Criteria	NLL/NLL	170,000/4,200	100,000/730	160,000/2,100	480,000/ID
EGLE Generic Residential Indoor Air Inhalation Criteria	NLV	2,700,000	250,000	2,800,000	1,000,000,000
EGLE Generic Non-Residential Indoor Air Inhalation Criteria	NLV	4,900,000	470,000	5,100,000	1,000,000,000
EGLE Generic Residential Ambient Air Inhalation Criteria	NLV (ID)	1,500,000	300,000	160,000	650,000,000
EGLE Generic Non-Residential Ambient Air Inhalation Criteria	NLV (ID)	1,800,000	350,000	190,000	780,000,000
EGLE Generic Residential Direct Contact Criteria	20,000	8,100,000	16,000,000	1,600,000	29,000,000
EGLE Generic Non-Residential Direct Contact Criteria	80,000	26,000,000	52,000,000	5,200,000	84,000,000

- NOTES:
- All values expressed in µg/kg
 - Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Criteria from Table 2, Soil: Residential, and Table 3, Soil: Nonresidential, Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels, dated December 30, 2013. EGLE VIAP Screening Levels dated September 4, 2020.
 - Most rigorous of Ambient Air Criteria presented.
 - Groundwater Protection Criteria presented as Drinking Water/Ground Water Surface Water Interface (GSI)
 - Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
 - "ID" = EGLE indicates inadequate data to develop criterion.
 - "NLL" = EGLE indicates not likely to leach.
 - "NLV" = EGLE indicates not likely to volatilize.
 - NA- not applicable.
 - DATA indicates insufficient physical chemical parameters to calculate a health-based SS VIAC. If detections are present, health-based soil vapor SS VIAC should be used to evaluate risk.
 - Boldfaced values exceed EGLE Generic Residential Groundwater Protection Criteria.
 - Values shown thus exceed EGLE Generic Residential Direct Contact Criteria.
 - Values shown thus exceed EGLE SS VIAC.
 - Unrestricted Site Specific Volatilization to Indoor Air Criteria from EGLE Memo dated 03/21/2022.

Table 3

Summary of Detected VOCs Chemistry Results (Soil)

TABLE 3 - SUMMARY OF DETECTED VOCs CHEMISTRY RESULTS (Soil)

Sample	Date	Source	Description	2-Methylnaphthalene 91576	Naphthalene 91203
CO-SB-1	12/17/2010	AKT Peerless	4-6'	ND	ND
CO-SB-1	12/17/2010	AKT Peerless	10-12'	ND	ND
CO-SB-2	12/17/2010	AKT Peerless	4-6'	ND	ND
CO-SB-2	12/17/2010	AKT Peerless	10-12'	ND	ND
CO-SB-3	12/17/2010	AKT Peerless	1-3'	ND	ND
CO-SB-3	12/17/2010	AKT Peerless	4-6'	ND	ND
CO-SB-4	12/17/2010	AKT Peerless	2-4'	ND	ND
CO-SB-5	12/17/2010	AKT Peerless	2-4'	ND	ND
CO-SB-5	12/17/2010	AKT Peerless	4-6'	ND	ND
CO-SB-6	12/17/2010	AKT Peerless	2-4'	ND	ND
CO-SB-6	12/17/2010	AKT Peerless	4-6'	ND	ND
CO-SB-12	12/17/2010	AKT Peerless	2-4'	ND	ND
SB-1	12/18/2013	PM Environmental	1-2'	ND	ND
SB-1	12/18/2013	PM Environmental	8-9'	ND	ND
SB-2	12/18/2013	PM Environmental	3-4'	ND	ND
SB-3	12/18/2013	PM Environmental	4-5'	1,180	ND
SB-4	12/18/2013	PM Environmental	2.5-3.5'	ND	ND
SB-5	12/18/2013	PM Environmental	1-2'	ND	ND
SB-6	12/18/2013	PM Environmental	5-6'	ND	ND
SB-7	12/18/2013	PM Environmental	3-4'	ND	ND
SB-8	12/18/2013	PM Environmental	2-3'	ND	610
SB-9	12/18/2013	PM Environmental	2-3'	ND	ND
SB-13	11/22/2021	PM Environmental	3-4'	100	ND
SB-13	11/22/2021	PM Environmental	4.5-5.5'	700	500
SB-14	11/22/2021	PM Environmental	3-4'	ND	ND
SB-14	11/22/2021	PM Environmental	5-6'	ND	ND
SB-15	11/22/2021	PM Environmental	2.5-3.5'	ND	ND
SB-15	11/22/2021	PM Environmental	5-6'	ND	ND
SB-16	11/22/2021	PM Environmental	3-4'	ND	ND
SB-16	11/22/2021	PM Environmental	5-6'	ND	ND
SB-17	11/22/2021	PM Environmental	3.5-4.5'	ND	ND
SB-17	11/22/2021	PM Environmental	5-6'	ND	ND
SB-18	11/22/2021	PM Environmental	2.5-3.5'	ND	ND
SB-18	11/22/2021	PM Environmental	5-6'	ND	ND
SB-19	11/22/2021	PM Environmental	3-4'	ND	ND
SB-19	11/22/2021	PM Environmental	5-6'	ND	ND
SB-20	11/22/2021	PM Environmental	3-4'	ND	ND
SB-20	11/22/2021	PM Environmental	5-6'	ND	ND
SB-21	11/22/2021	PM Environmental	2.5-3.5'	2,400	6,700
SB-21	11/22/2021	PM Environmental	5-6'	ND	ND
SB-22	11/22/2021	PM Environmental	2.5-3.5'	ND	ND
SB-22	11/22/2021	PM Environmental	5-6'	ND	ND
SB-23	11/22/2021	PM Environmental	2.4-3.5'	200	ND
SB-23	11/22/2021	PM Environmental	5-6'	ND	ND
103d	7/21/2022	McDowell	5'- 6'	ND	ND
EGLE Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels				1,700	67
Unrestricted Site Specific					
Volatilization to Indoor Air Criteria				1,700	67
EGLE Generic Residential					
Groundwater Protection Criteria				170,000/4,200	100,000/730
EGLE Generic Residential					
Indoor Air Inhalation Criteria				4,900,000	470,000
EGLE Generic Residential					
Ambient Air Inhalation Criteria				1,800,000	350,000
EGLE Generic Residential					
Direct Contact Criteria				26,000,000	52,000,000

NOTES:

- All values expressed in µg/kg
- Michigan Department of Environment, Great Lakes, and Energy (EGLE) Generic Criteria from Table 2. Soil: Residential, and Table 3. Soil: Nonresidential. Part 201 Generic Cleanup Criteria and Screening Levels/Part 213 Risk-Based Screening Levels," dated December 30, 2013. EGLE VIAP Screening Levels dated September 4, 2020.
- Most rigorous of Ambient Air Criteria presented.
- Groundwater Protection Criteria presented as Drinking Water/Ground Water Surface Water Interface (GSI)
- Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
- Unrestricted Site Specific Volatilization to Indoor Air Criteria from EGLE Memo dated 03/21/2022.
- Boldfaced values exceed EGLE Generic Residential Drinking Water Groundwater Protection Criteria.
- Values shown thus 610 exceed EGLE Unrestricted SS VIAC.
- ND- not detected.
- "ID" = EGLE indicates inadequate data to develop criterion.

Table 4

Summary of Detected VOCs Chemistry Results (Soil Gas)

TABLE 4- SUMMARY OF VOLATILE ORGANICS CHEMISTRY RESULTS (Soil Gas)

Sample	Date	Depth	Acetone 67641	Benzene 71432	2-Butanone (MEK) 78933	t-Butyl Alcohol 75650	Carbon Disulfide 75150	Chloromethane 74873	Cyclohexane 110827
SG-1	12/18/2013	1'	52.7	2.8	9.4	2.7	<2.5	0.89	<2.8
SG-8	12/18/2013	2'	112	2.7	7.4	2.5	2.6	1.2	1.3
SG-9	12/18/2013	2'	36.8	4.8	2.9	<2.4	<2.5	1.3	<2.8
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)
SG-14	11/23/2021	5'	<48	<6.4	<59	<30	<16	<41	<6.9
SG-20	11/23/2021	5'	120	<6.4	<59	<30	19	<41	17
EGLE Residential Soil Vapor Volatilization to Indoor Air Pathway (VIAP) Screening Levels			1,000,000	110	170,000	2,500	24,000	3,100	210,000
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			1,000,000	110	170,000	2,500	24,000	3,100	210,000

Sample	Date	Depth	Dichlorodifluoromethane 75718	1,3-Dichlorobenzene 541731	Ethanol 64174	Ethylbenzene 100414	Ethyl Acetate 141786	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113) 76131	n-Heptane 142825
SG-1	12/18/2013	1'	3.4	<4.8	30.9	3.3	46.4	881	2.8
SG-8	12/18/2013	2'	2.9	9.6	20	3.3	<2.9	110	3.7
SG-9	12/18/2013	2'	2.9	6.0	19.6	3.4	16	95.0	4.9
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	7.300	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)
SG-14	11/23/2021	5'	<9.9	<12	27,000	<8.7	<72	<15	<8.2
SG-20	11/23/2021	5'	<9.9	<12	12,000	<8.7	<72	<15	33
EGLE Residential Soil Vapor Volatilization to Indoor Air Pathway (VIAP) Screening Levels			11,000	100	630,000	340	NL	660,000	120,000
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			11,000	100	630,000	340	NL	660,000	120,000

Sample	Date	Depth	n-Hexane 110543	Isopropyl Alcohol 67630	Methylene Chloride 75092	Propylene 115071	Tetrachloroethylene 127184	Tetrahydrofuran 109999
SG-1	12/18/2013	1'	21	135	76.1	<3.4	1.2	7.7
SG-8	12/18/2013	2'	30	1240	106	18.4	2.6	1.2
SG-9	12/18/2013	2'	27	777	73.3	12	1.8	1.8
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)
SG-14	11/23/2021	5'	11	<49	<17	<170	<14	<5.9
SG-20	11/23/2021	5'	49	<49	<17	<170	<14	<5.9
EGLE Residential Soil Vapor Volatilization to Indoor Air Pathway (VIAP) Screening Levels			24,000	7,000	21,000	NL	1,400	70,000
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			24,000	7,000	21,000	NL	1,400	70,000

Sample	Date	Depth	Trichloroethylene 79016	Trichlorofluoromethane 75694	1,2,4-Trimethylbenzene 95636	2,2,4-Trimethylpentane 540841	Toluene 108883	Xylenes 1330207
SG-1	12/18/2013	1'	0.86	2.4	2.5	2.0	19	16
SG-8	12/18/2013	2'	<0.86	2.4	2.2	<3.7	18	16
SG-9	12/18/2013	2'	<0.86	<4.5	2.3	<3.7	28	17
SG-13	11/23/2021	7.5'	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	<250 (TO-17)	290	<250 (TO-17)
SG-14	11/23/2021	5'	<11	<11	<9.8	<9.3	<7.5	<26
SG-20	11/23/2021	5'	<11	<11	<9.8	<9.3	<7.5	<26
EGLE Residential Soil Vapor Volatilization to Indoor Air Pathway (VIAP) Screening Levels			67	15,000	2,100	120,000	170,000	7,600
EGLE-Provided Site-Specific Volatilization to Indoor Air Criteria (SS VIAC, 3/21/2022)			67	15,000	2,100	120,000	170,000	7,600

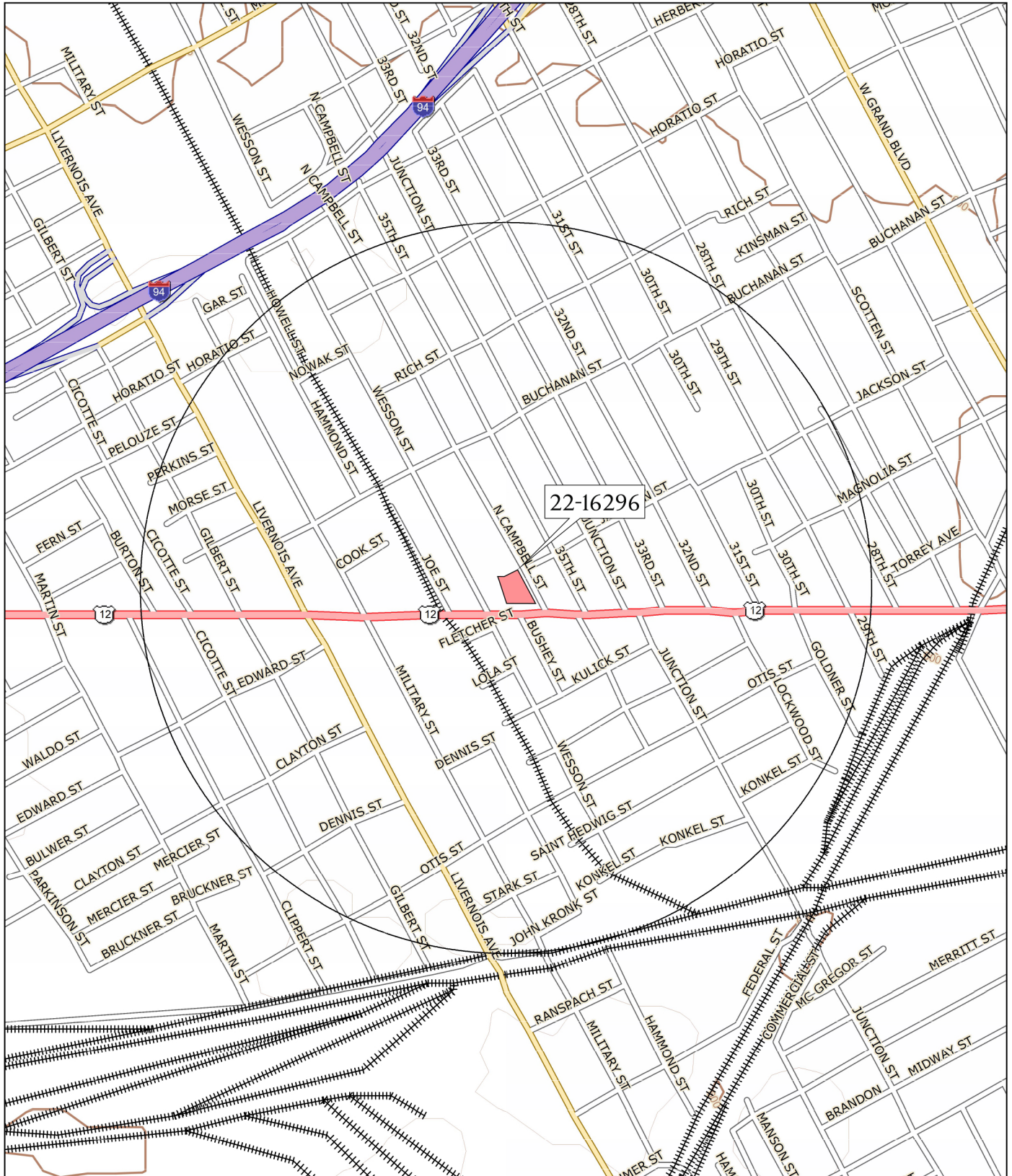
NOTES:

- All values shown in micrograms per cubic meter (ug/m3).
- Chemical Abstract Service (CAS) Numbers are presented below chemicals as provided by EGLE.
- EGLE Residential VIAP Screening Levels from EGLE Guidance Document for the Vapor Intrusion Pathway, Appendix D (September 4, 2020).
- EGLE Site-Specific Volatilization to Indoor Air Criteria (SS VIAC) dated March 21, 2022.
- NL - not listed with screening level or SS VIAC

Attachment I

Site Location Map

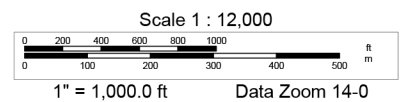
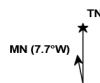
SITE LOCATION MAP



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Attachment II

Legal Description of Subject Property

5800 MICHIGAN AVE 48210 (Property Address)

Parcel Number: 16001706-8



Item 1 of 2 [2 Images / 0 Sketches](#)

Property Owner: SOUTHWEST HOUSING SOLUTIONS CORP

Summary Information

> Assessed Value: \$38,300 | Taxable Value: \$38,300 > Property Tax information found

Owner and Taxpayer Information

Owner	SOUTHWEST HOUSING SOLUTIONS CORP 1920 25TH STREET DETROIT, MI 48216	Taxpayer	SEE OWNER INFORMATION
--------------	---	-----------------	-----------------------

General Information for Tax Year 2022

Property Class	202 COMMERCIAL-VACANT	Unit	01 CITY OF DETROIT
School District	DETROIT CITY SCHOOL DISTRICT	Assessed Value	\$38,300
WARD#	16	Taxable Value	\$38,300
HOPE#	5	State Equalized Value	\$38,300
PP CODE#	Not Available	Date of Last Name Change	07/21/2015
RELATED #	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
COUNCIL#	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information

Homestead Date No Data to Display

Principal Residence Exemption	June 1st	Final
2022	0.0000 %	-
2021	0.0000 %	0.0000 %

Land Information

Zoning Code	B4	Total Acres	0.832
Land Value	\$76,619	Land Improvements	\$0
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	Not Available	Mortgage Code	No Data to Display
Lot Dimensions/Comments	Not Available	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
Lot 1	203.00 ft	179.00 ft
Total Frontage: 203.00 ft		Average Depth: 179.00 ft

Legal Description

N MICHIGAN S 235.45 FT ON E LINE BG S 204.47 FT ON W LINE OF ALL THAT PT OF P C 171 & LOT 6 LYG N & ADJ MICHIGAN AVENUE AND ADJ LOT 5 SUB OF PT P C 171 L12 P24 PLATS, W C R 16/85 202.68 IRREG

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
03/17/2014	\$1.00	PTA	GAPPY, JOEY & HENNIFER	CARDIFF PROPERTIES, LLC	MULTI PARCEL SALE	

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
03/17/2014	\$1.00	PTA	CARDIFF PROPERTIES LLC	SOUTHWEST HOUSING SOLUTIONS CORP	MULTI PARCEL SALE	51644/468

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3951 CAMPBELL 48209 (Property Address)

Parcel Number: 16014695.



Item 1 of 2 [2 Images / 0 Sketches](#)

Property Owner: SOUTHWEST HOUSING SOLUTIONS CORP

Summary Information

> Assessed Value: \$100 | Taxable Value: \$100 > Property Tax information found

Owner and Taxpayer Information

Owner	SOUTHWEST HOUSING SOLUTIONS CORP 1920 25TH STREET STE. A DETROIT, MI 48216	Taxpayer	SEE OWNER INFORMATION
--------------	--	-----------------	-----------------------

General Information for Tax Year 2022

Property Class	402 RESIDENTIAL-VACANT	Unit	01 CITY OF DETROIT
School District	DETROIT CITY SCHOOL DISTRICT	Assessed Value	\$100
WARD#	16	Taxable Value	\$100
HOPE#	5	State Equalized Value	\$100
PP CODE#	Not Available	Date of Last Name Change	11/03/2016
RELATED #	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
COUNCIL#	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information

Homestead Date No Data to Display

Principal Residence Exemption	June 1st	Final
2022	0.0000 %	-
2021	0.0000 %	0.0000 %

Land Information

Zoning Code	B4	Total Acres	0.060
Land Value	\$220	Land Improvements	\$0
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	Not Available	Mortgage Code	No Data to Display
Lot Dimensions/Comments	Not Available	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
Lot 1	3.00 ft	869.00 ft
Total Frontage: 3.00 ft		Average Depth: 869.00 ft

Legal Description

W--N CAMPBELL ALL THAT PT OF 6 DESC AS FOLS BEG AT PTE IN W LINE OF CAMPBELL AVE DIST N 27D 19M W 273.25 FT ALG SD LINE FROM N LINE OF MICHIGAN AVE TH S 27D 19M E 37.8 FT TH S 67D 33M 53S W 43.62 FT TH N 89D 08M 26S W 71.42 FT TH ELY 106.00 FT TO PTE OF BEG SUB OF PT OF P C 171 L12 P24 PLATS, W C R 16/85 37.80 IRREG

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
08/03/2012	\$648.00	PTA	CITY OF DETROIT	SOUTHWEST HOUSING SOLUTIONS, CORP.	12-FROM LENDING INSTITUTION NOT EXPOSED	50094-350

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
02/17/2004	\$1,000.00	QC	CITY OF DETROIT-P&DD	CARDIFF PROPERTIES LLC	12-FROM LENDING INSTITUTION NOT EXPOSED	

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Attachment III

Alta Survey

ZONING DATA

(FROM CITY OF DETROIT ZONING ORDINANCE, DATED NOV. 21, 2012)
ZONED: R1 (SINGLE-FAMILY RESIDENTIAL DISTRICT)
SETBACKS: (PARKING)
FRONT - 20' OR EQUAL TO THE FRONT SETBACK ON THE ADJOINING LOT
SIDE - 10'
REAR - N/A

CERTIFICATION

I HEREBY CERTIFY TO:
SOUTHWEST HOUSING SOLUTIONS CORPORATION,
A MICHIGAN NON-PROFIT CORPORATION
FIRST AMERICAN TITLE INSURANCE COMPANY
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE "2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS.

Raymond J. Donnelly
RAYMOND DONNELLY, PS 21563 (MICH)

SCHEDULE B-II EXCEPTIONS

- FIRST AMERICAN TITLE INSURANCE COMPANY
TITLE COMMITMENT NO. 643989 REVISION A
EFFECTIVE DATE: NOV. 12, 2013 (DATE PRINTED 12-10-13)
ITEM 1. CERTIFICATE OF FORTITUDE FOR 2011 TAXES AS DISCLOSED BY INSTRUMENT DATED MARCH 1, 2013, RECORDED MARCH 13, 2013, IN LIBER 50573, PAGE 1126, AS TO PARCEL 3. (NOT PLOTTABLE)
ITEM 2. INTEREST OF SOUTHWEST HOUSING SOLUTIONS, AS DISCLOSED BY QUIT CLAIM RECORDED IN LIBER 48597, PAGE 729, AS TO PARCEL 5. (NOT PLOTTABLE)
ITEM 3. ANY CLAIM ARISING FROM A PARTY OCCUPYING THE INSURED PROPERTY WHICH WOULD REQUIRE THE INSURED TO COMMENCE AN ACTION FOR EVICTION, AS TO PARCELS 5, 6, 7 AND 8. (NOT PLOTTABLE)
ITEM 4. SUBJECT TO A VISIBLE OR RECORDED EASEMENT OR RIGHT-OF-WAY, PRIVATE DEED RESTRICTIONS, FUTURE INSTALLMENTS OF SPECIAL ASSESSMENTS, CERTAIN ENVIRONMENTAL LIENS AND OIL AND GAS INTERESTS MORE FULLY DESCRIBED BY SECTION 78X OF THE GENERAL PROPERTY TAX ACT, AND REVERTER RIGHTS IF ANY CONTAINED IN THE DEED EXECUTED BY THE FOREGOING GOVERNMENTAL UNIT, AS TO PARCELS 5, 6, 7 AND 8. (NOT PLOTTABLE)
ITEM 5. INTEREST OF CITY HOUSES, LLC, A MICHIGAN LIMITED LIABILITY COMPANY, AS DISCLOSED BY QUIT CLAIM RECORDED IN LIBER 47908, PAGE 1469, AS TO PARCEL 4. (NOT PLOTTABLE)
ITEM 6. OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 20159, PAGE 250, LIBER 22791, PAGE 473, LIBER 23276, PAGE 138 AND IN LIBER 23804, PAGE 440, AS TO PARCEL 1. (NOT PLOTTABLE - BLANKET IN NATURE OVER LOTS 2, 3 AND 4 OF PARCEL 1)
ITEM 7. TERMS AND CONDITIONS OF DEED RECORDED IN LIBER 21307, PAGE 671, AS TO PARCEL 1. (NOT PLOTTABLE)
ITEM 8. TERMS AND CONDITIONS OF DEED RECORDED IN LIBER 50179, PAGE 651, AS TO PARCEL 5. (NOT PLOTTABLE)
ITEM 9. ANY RIGHTS, TITLE INTEREST OR CLAIM THEREOF TO THAT PORTION OF THE LAND TAKEN, USED OR GRANTED FOR STREETS, ROADS OR HIGHWAYS, AS TO PARCEL 3. (NOT PLOTTABLE)
ITEM 10. RIGHTS OF TENANTS, IF ANY, UNDER ANY UNRECORDED LEASES. (NOT PLOTTABLE)
ITEM 11. LIEN FOR OUTSTANDING WATER OR SEWER CHARGES, IF ANY. (NOT PLOTTABLE)
ITEM 12. ANY LIEN RELATING TO THE INSPECTION, DEMOLITION OR REMOVAL OF ANY IMPROVEMENT THAT HAS BEEN OR IS PRESENTLY LOCATED ON THE PROPERTY. (NOT PLOTTABLE)
ITEM 13. LIEN RESULTING FROM THE ELIGIBLE TAX REVERTED PROPERTY SPECIFIC TAX AS DESCRIBED IN MCL 211.1025(1). (NOT PLOTTABLE)
ITEM 14. INTEREST OF TAMARA MARIE WELLS, AS DISCLOSED BY QUIT CLAIM DEED RECORDED IN LIBER 30027, PAGE 218, AS TO PARCEL 8. (NOT PLOTTABLE)
ITEM 15. INTEREST OF CARDIFF PROPERTIES, LLC, A MICHIGAN LIMITED LIABILITY COMPANY, AS DISCLOSED BY QUIT CLAIM DEED RECORDED IN LIBER 40365, PAGE 1977, AS TO PARCELS 6 AND 7. (NOT PLOTTABLE)
ITEM 16. OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 20888, PAGE 693, REGISTER #051879, AS TO PARCEL 7. (NOT PLOTTABLE - BLANKET IN NATURE OVER THE NORTH 27' OF LOT 6, PARCEL 7)
ITEM 17. OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 25601, PAGE 506, AS TO PARCEL 8. (NOT PLOTTABLE - BLANKET IN NATURE OVER LOT 11, PARCEL 8)
ITEM 18. OIL, GAS, MINERAL, AND ABORIGINAL ANTIQUITIES RESERVED BY THE STATE OF MICHIGAN, AND THE TERMS, COVENANTS AND PROVISIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 27889, PAGE 76, AS TO PARCEL 6. (NOT PLOTTABLE - BLANKET IN NATURE OVER PART OF LOT 6, PARCEL 6)
ITEM 19. TERMS AND CONDITIONS CONTAINED IN QUIT CLAIM DEED AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 28299, PAGE 271, AS TO PARCEL 8. (NOT PLOTTABLE)
ITEM 20. TERMS AND CONDITIONS CONTAINED IN QUIT CLAIM DEED AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 30027, PAGE 218, AS TO PARCEL 8. (NOT PLOTTABLE)
ITEM 21. TERMS AND CONDITIONS CONTAINED IN QUIT CLAIM DEED AS DISCLOSED BY INSTRUMENT RECORDED IN LIBER 50094, PAGE 350, AS TO PARCELS 6 AND 7. (NOT PLOTTABLE)
ITEM 22 THROUGH 32. TAX INFORMATION. (PARCEL I.D. NUMBERS SHOWN ON DRAWING)

LOCATION MAP



LEGEND

- ABBREVIATIONS
FI FOUND IRON ROD
FIP FOUND IRON PIPE
FM FOUND CONCRETE MONUMENT
SI SET IRON ROD
SMN SET MAG. NAIL
C CALCULATED
M MEASURED
R RECORD
CLF CHAIN LINK FENCE
CB CATCH BASIN
CO CLEAN OUT
DS DOWNSPOUT
ENCR ENCROACHMENT
FF FINISHED FLOOR
G.V.W. GATE VALVE & WELL
HYD HYDRANT
INL INLET
IE INVERT ELEVATION
LP LIGHT POLE
MH MANHOLE
N/S NOT TO SCALE
OH OVERHEAD
SB SOIL BORING
TC TOP OF CURB
UG UNDERGROUND
UP UTILITY POLE

- SYMBOLS
C CABLE
E ELECTRIC
F FENCE
G GAS
GW GUY WIRE & ANCHOR
SS SANITARY SEWER
SSW STORM SEWER
T TELEPHONE
TC TRAVELER/CONTROL POINT
W WATER MAIN

REVISIONS

Table with 2 columns: Description, Date/Version. No entries listed.

SEAL



Raymond J. Donnelly & Associates, Inc.
Land Surveying, Mapping
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PROJECT NAME
ALTA/ACSM
LAND TITLE SURVEY
5800 MICHIGAN AVE.
DETROIT, MI

CLIENT
SOUTHWEST HOUSING SOLUTIONS CORPORATION

1920 25TH STREET, SUITE A
DETROIT, MI 48216

Table with 3 columns: DRAWN BY, DATE, SCALE. Row 1: J.E.K., 12-12-13, 1"=20'. Row 2: PROJECT, SHEET. Row 3: 2013-078, 1 OF 1.

FLOOD PLAIN DATA

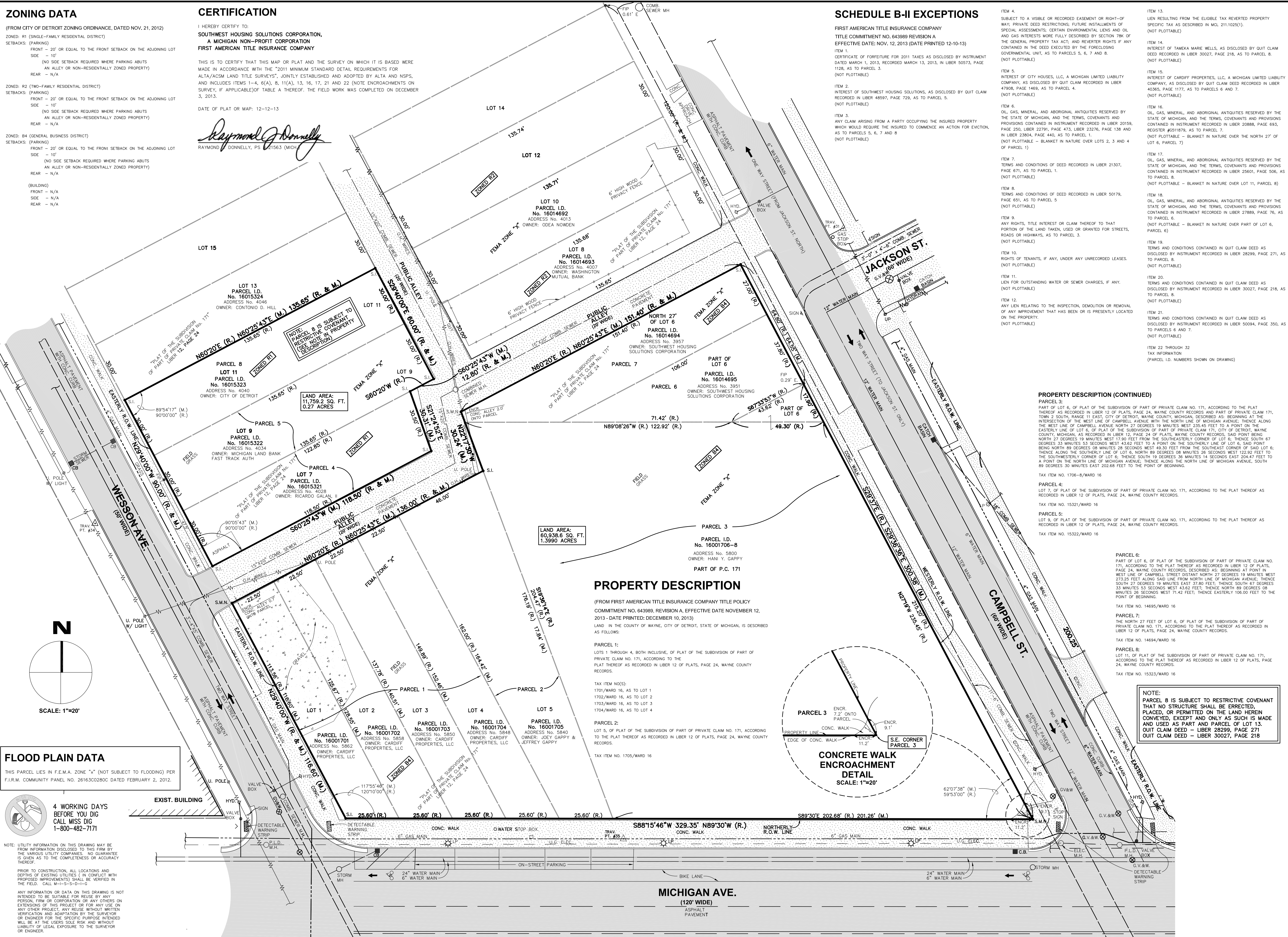
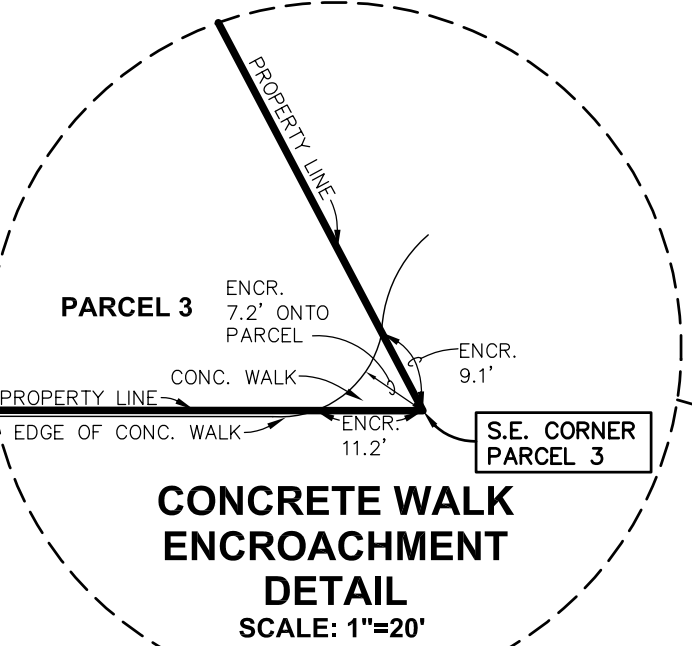
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PROPERTY DESCRIPTION

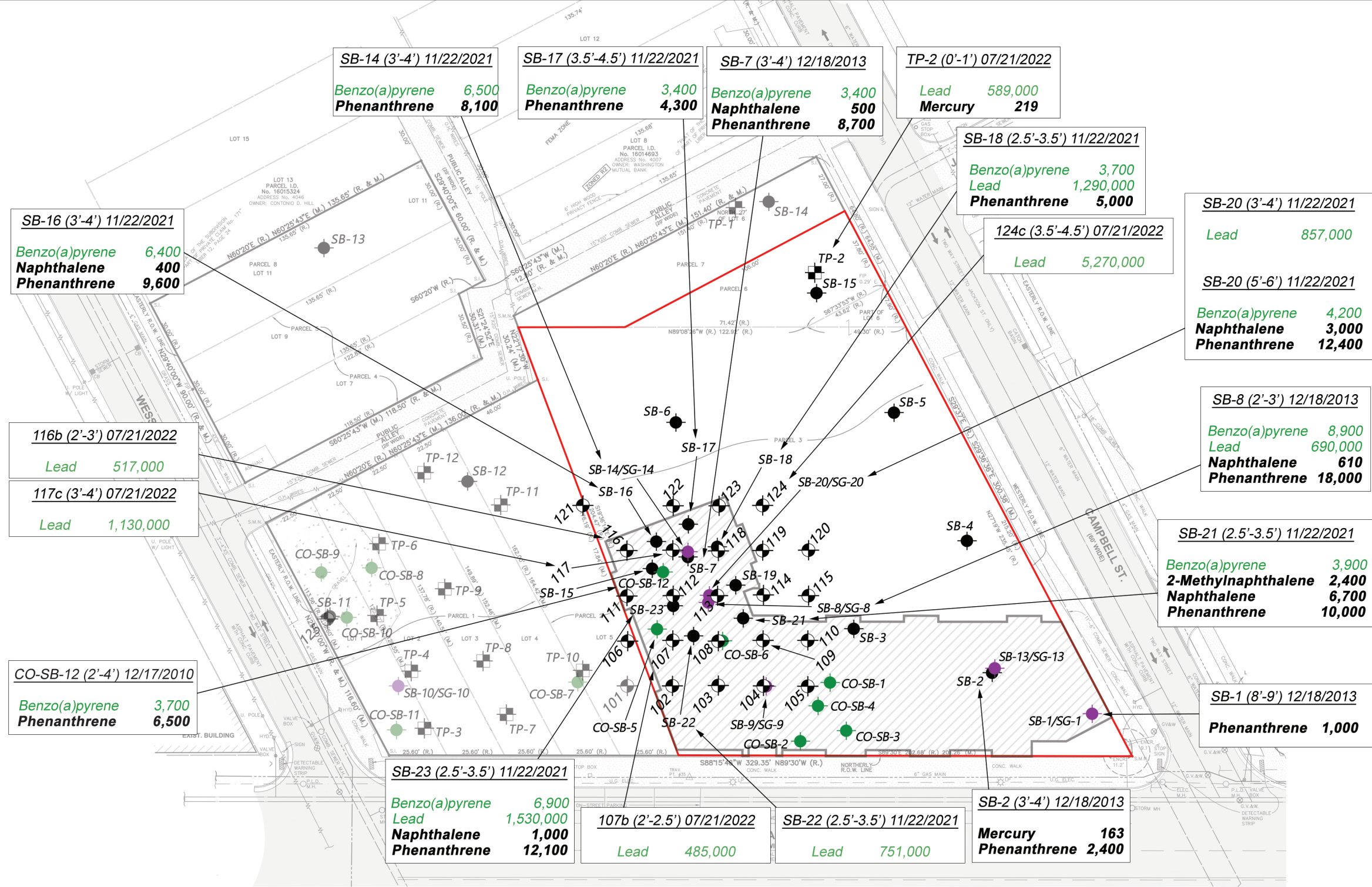
(FROM FIRST AMERICAN TITLE INSURANCE COMPANY TITLE POLICY COMMITMENT NO. 643989, REVISION A, EFFECTIVE DATE NOVEMBER 12, 2013 - DATE PRINTED: DECEMBER 10, 2013)
LAND IN THE COUNTY OF WAYNE, CITY OF DETROIT, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:
PARCEL 1: LOTS 1 THROUGH 4, BOTH INCLUSIVE, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.
TAX ITEM NO. 1705/WARD 16
PARCEL 2: LOT 5, OF PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS.
TAX ITEM NO. 1705/WARD 16



Attachment IV

Soil Exceedance Map

SOIL EXCEEDANCE MAP



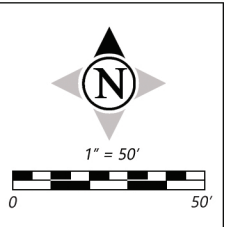
LEGEND

- ☒ TEST PIT (M & A 2022)
- ⊕ SOIL BORING (M & A 2022)
- SOIL BORING (PME 2014/2021)
- SOIL BORING/SOIL GAS (PME 2014)
- SOIL BORING (AKT 2011)
- APPROXIMATE PROPERTY BOUNDARY

BOLD - > SSVIAC (UNRESTRICTED SITE SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA)
GREEN - > DC (DIRECT CONTACT)

NOTES:

- ALL VALUES EXPRESSED IN ug/kg
- BASE MAP BY RJD SURVEYORS
- ALL LOCATIONS APPROXIMATE



Attachment V

Site Sketch

SITE SKETCH



LEGEND

— APPROXIMATE PROPERTY BOUNDARY

NOTES:

- ALL LOCATIONS APPROXIMATE
- 2021 AERIAL PHOTOGRAPH



Attachment VI

Phase I ESA (6/30/2022)



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PHASE I ENVIRONMENTAL SITE ASSESSMENT

Vacant Land

5800 Michigan Avenue and 3951-3957 North Campbell Street
Detroit, Michigan

PM Project Number 01-13496-0-0001

EPA Grant No. BF-00E02726; Hazardous Grant

Prepared for:

Wayne County Brownfield Redevelopment Authority

500 Griswold Street, 28th Floor

Detroit, Michigan 48226

Prepared by:

PM Environmental

4080 West Eleven Mile Road

Berkley, Michigan 48072

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Oak Park

June 30, 2022

Ms. Annie Mendoza
Wayne County Brownfield Redevelopment Authority
500 Griswold Street, 28th Floor
Detroit, Michigan 48226

**Re: Phase I Environmental Site Assessment of the Vacant Land
Located at 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan
PM Environmental, Inc. Project No. 01-13496-0-0001
EPA Grant No. BF-00E02726; Hazardous Grant**

Dear Ms. Mendoza

Please find enclosed the Phase I Environmental Site Assessment for the subject property dated June 30, 2022 to the Michigan State Housing Development Authority.

It is my understanding that the information contained in the Phase I Environmental Site Assessment will be used by the Authority in considering proposed financing of residential development of the property and, furthermore, that the Authority may rely upon the Phase I Environmental Site Assessment as if it were issued to the Authority.

I **represent** that the attached is a true, correct, and complete copy of the Phase I Environmental Site Assessment for the above captioned property and that the report represents my professional opinion of the site as of this date and that I meet the definition of an Environmental Professional as defined in Section 312.10 of 40 CFR 312. I also **represent** that the Phase I Environmental Site Assessment including the evaluation, recommendations, and conclusions as of this date has been performed in conformance with the scope and limitations of the ASTM Practice E1527-13, ASTM Practice E 2600-15, and MSHDA's Environmental Review Requirements for 2022.

If you have any questions related to this report, please do not hesitate to contact our office at 800.313.2966.

Sincerely,
PM ENVIRONMENTAL, INC.

Peter S. Bosanic, P.E., EP
Principal

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ADOBE ATTACHMENT TAB

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	11/10/2010	Advanced Environmental Management Group (AEMG)
Phase II ESA	1/7/2011	AKT Peerless (AKT)
Phase I ESA	11/22/2013	PM
Phase II ESA	3/31/2014	
Baseline Environmental Assessment (BEA)		
Phase I ESA	1/15/2021	
Phase II ESA	4/6/2022	

SECTION 1.0: EXECUTIVE SUMMARY

Section 1.1: Phase I ESA Summary and Conclusions

PM Environmental, Inc., (PM) has completed a Phase I Environmental Site Assessment (ESA) of the Vacant Land located at 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan (hereafter referred to as the “subject property”). This Phase I ESA was conducted in general accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} (2) guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13) (3) guidelines established by the ASTM in the *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions / Designation E 2600-15* (ASTM Practice E 2600-15) and (4) Michigan State Housing Development Authority’s (MSHDA’s) Environmental Review Requirements for 2022.

THE REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF WAYNE COUNTY BROWNFIELD REDEVELOPMENT AUTHORITY, 5800 LDHA LP, SOUTHWEST HOUSING SOLUTIONS CORPORATION, AND THE MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY, EACH OF WHOM MAY RELY ON THE REPORT’S CONTENTS.

Main Cross Street(s)/Location	Located north of Michigan Avenue, east of Wesson Street, and west of Campbell Street, Detroit, Wayne County, Michigan
Number of Parcels and Acreage	Three parcels totaling 0.98 acres
Number of Building(s) and Square Footage	No buildings or structures present
Current Property Use	Vacant land with no current business operations

Reasonably ascertainable records for the subject property extended back to approximately 1884. Data failure occurred prior to that date. However, PM did not identify any significant data gaps during the completion of this Phase I ESA.

Standard and other historical sources were able to document the first developed use of the subject property occurred prior to 1884 with a hotel and associated outbuilding in the southeastern portion and a dwelling in the southern portion. Four additional dwellings were constructed in the eastern portion between 1884 and 1910. The southwestern storefront received an eastern addition and the former dwelling and structures in the southern and southeastern portions were demolished between 1910 and 1924 when a bowling alley building and storefront were constructed. A gasoline dispensing station was also constructed in the southern portion between 1910 and 1924 with one gasoline UST depicted in Sanborn maps. By 1941, three USTs were depicted in Sanborn maps east of the gasoline dispensing station, and by 1949, the gasoline dispensing station was demolished. The dwellings were demolished between the 1950s and 1970s, and the bowling alley building was demolished between 1999 and 2002. The subject property has consisted of vacant land since that time.

The subject property at 5800 Michigan Avenue was formerly occupied by gasoline dispensing station and vulcanizing operations and the subject property was historically occupied by various commercial and/or retail businesses or used for residential purposes. PM previously completed a

Phase II ESA and BEA at the subject property, which included borings in the area of the former gasoline dispensing and vulcanizing operations. Refer to the Recognized Environmental Condition (REC) bullet below for additional information.

Below is a Summary Table presenting PM's recommended actions for the subject property. PM's Findings, Opinions, and Recommendations are present in Section 8.1-8.4. In addition, any potential Non-ASTM scope related concerns identified associated with the subject property are included. Affirmative answers are further discussed below the table:

Summary Table		
Assessment Topic	Section	Recommended Action
De Minimis Condition	8.1.1	No Further Action
Historical Recognized Environmental Condition (HREC)	8.1.2	No Further Action
Recognized Environmental Condition (REC)	8.1.3	See Below
Controlled Recognized Environmental Condition (CREC)	8.1.4	No Further Action
Significant Data Gap	8.4	No Further Action
Potential Unsuitable Fill Material	5.4.3	See Below
Asbestos Containing Materials (ACM)	9.1	No Further Action
Lead Based Paint (LBP)	9.2	No Further Action
Radon Gas	9.3	No Further Action
100-Year Floodplain	9.4	No Further Action
Potential Wetlands	9.5	No Further Action
Electromagnetic Fields, Antennae, Arrays	9.6	No Further Action
High Pressure Buried Gas Mains	9.7	No Further Action
Noise Assessment	9.8	See Below
Vapor Encroachment	9.9	See Below
Onsite or Adjoining Blast Hazard	9.10	No Further Action

Recognized Environmental Condition

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Vacant Land located at 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan, the subject property. Any exceptions to, or deletions from, this practice are described in Sections 2.4 and 2.5 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except the following:

- The subject property at 5800 Michigan Avenue was historically occupied by gasoline dispensing operations from between 1910 and 1921 until at least 1949 and vulcanizing operations from between 1910 and 1924 until between 1941 and 1949. Previous site assessment activities completed between 2011 and 2022 document soil contamination has been identified on the subject property above the current Part 201 Generic Cleanup Criteria (GCC). Additionally, soil concentrations of select VOCs were identified exceeding Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) developed for the subject property. Based on these analytical results and completion of a BEA, the subject property at 5800 Michigan Avenue has been classified as a "facility," as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.

Potential Unsuitable Fill Material: The subject property formerly contained five residential dwellings and commercial buildings located throughout the property, which were demolished at various times between the 1920s and 1970s. It is PM's experience that a common practice was to demolish the building into the basement and leave all building materials present. Building materials associated with the former buildings may have been pushed into the basement during and/or after demolition and utilized as fill material. Although it does not represent a REC, the potential exists for construction debris and fill material to be present associated with these former buildings.

Noise Assessment: Using the HUD DNL calculator, the following is a summary of the findings of the Desktop Noise Assessment.

NAL #	Combined Source DNL (dB)	Category
1 (southeast corner of proposed building)	73	Normally Unacceptable
2 (northwest corner of proposed building)	67	Normally Unacceptable

All sites whose environmental or community noise exposure exceeds the day night average sound level (DNL) of 65 decibels (dB) are considered noise-impacted areas. For new construction that is proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required by HUD environmental criteria and standards contained in Subpart B (Noise Abatement and Control) of 24 CFR Part 51. The interior standard is 45 dB.

The "Normally Unacceptable" noise zone includes community noise levels from above 65 dB to 75 dB. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dB but does not exceed 70 dB, or a minimum of 10 dB of additional sound attenuation if the day-night average sound level is greater than 70 dB but does not exceed 75 dB (HUD generally gives a 1 dB variance up to 76 dB).

PM was provided a completed Sound Transmission Classification Assessment Tool (STraCAT) form provided by the project architect. Current noise DNLs were calculated as 74 dB (using the noise assessment completed in 2021, which was slightly higher due to inaccurate CAADT data). According to the STraCAT form, based on the proposed building materials, the average interior noise level for the proposed building was calculated to be below 45 dB with a combined attenuation of 34.83 dB. Based on this information, no additional investigation is warranted.

Vapor Encroachment: The Tier I and non-invasive Tier II Vapor Encroachment Screen (VES) did not reveal any Vapor Encroachment Conditions (VECs) in association with the target property and/or nearby/adjointing properties; with the exception of those identified as RECs above.

Conclusions and Recommendations

PM has performed an Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E-1527-13, ASTM Practice E 2600-15 and MSHDA Environmental Review Requirements for 2022 of the Vacant Land located at 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan. Any exceptions to or deletions from this practice are described in the Limitations section of this report. These RECs have been

brought to the attention of the client within the requirements of the ASTM Standard Designation E-1527-2013.

This REC has been brought to the attention of the client within the requirements of the ASTM Standard Designation E-1527-13.

PM recommends completion of a Response Activity Plan (ResAP) that will require approval by EGLE. Additional investigation may be needed to complete the ResAP.

Section 1.2: Identified Data Gaps

Reasonably ascertainable records reviewed as part of this Phase I ESA documented the use of the property back to 1884. Data failure occurred prior to that date. In PM's professional opinion, this data failure does not represent a significant data gap.

Section 1.3: Identified Liens or Activity and Use Limitations

The Client did not report any: (1) environmental cleanup liens against the subject property that are filed or recorded under federal, tribal, state, or local law; or (2) activity and use limitations (AULs), such as engineering controls, land use restrictions or institutional controls, that are in place at the subject property and/or have been filed or recorded in a registry under federal, tribal, state, or local law.

The summary presented above is general in nature and should not be considered apart from the entire text of the report, which contains the qualifications, considerations and subject property details mentioned herein. Details of findings and conclusions are elaborated upon in this report.

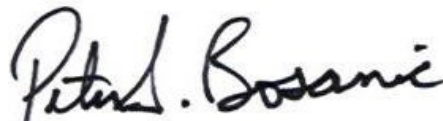
This report has been reviewed for its completeness and accuracy. Please feel free to contact our office at 800.313.2966 to discuss this report.

Report Prepared By:



David Balash
Staff Consultant

Report Reviewed By:



Peter S. Bosanic, P.E., EP
Principal

SECTION 2.0: INTRODUCTION

PM Environmental, Inc. (PM) was retained to conduct a Phase I Environmental Site Assessment (ESA) of Proposed 5800 LDHA LP Apartments located 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan (subject property). This Phase I ESA was conducted in general accordance with (1) the United States Environmental Protection Agency (USEPA) Standards and Practices for All Appropriate Inquiries {(AAI), 40 CFR Part 312} (2) guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process / Designation E 1527-13* (ASTM Standard Practice E 1527-13) (3) guidelines established by the ASTM in the *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions / Designation E 2600-15* (ASTM Practice E 2600-15) and (4) MSHDA's Environmental Review Requirements for 2022.

Section 2.1: Purpose

The purpose of this Phase I ESA was to evaluate the current and historical conditions of the subject property in an effort to identify recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs), and historical recognized environmental conditions (HRECs) in connection with the subject property. This Phase I ESA is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs, CRECs, and HRECs in connection with the subject property.

Section 2.2: Detailed Scope of Services

PM's scope-of-services is based on its proposal dated July 30, 2021, and the terms and conditions of that agreement. This Phase I ESA included the following:

- An inquiry of environmental conditions by an environmental professional.
- A review of specialized knowledge reported by the Client.
- A review of public and historical records, including those maintained by federal, state, tribal, and local government agencies.
- Interviews with regulatory officials and personnel associated or knowledgeable with the subject property, including as appropriate past and present owners, or neighbors if the property is abandoned.
- A reconnaissance of the subject property and adjoining properties.

Section 2.3: Significant Assumptions

During this Phase I ESA, PM made the following significant assumptions:

- PM assumed that the information provided by Environmental Data Resources (EDR) in the regulatory database report is an accurate and complete representative summary of the information contained in the referenced regulatory agency records, except when such information is obviously contradicted by other data.
- PM assumed that the information used to prepare this assessment that was obtained from ostensibly knowledgeable individuals, regulatory agency representatives, or other secondary

sources was an accurate and complete representative summary of the information possessed by those individuals, representatives, or sources.

Section 2.4: Limitations and Exceptions

There are no deviations from the ASTM Standard. Non-ASTM Scope considerations are included in Section 9.0. Any physical limitations identified during the completion of this report are referenced in Section 6.1.

Due to changing environmental regulatory conditions and potential on-site or adjacent activities occurring after this assessment, the client may not presume the continuing applicability to the subject property of the conclusions in this assessment for more than 180 days after the report's issuance date, per ASTM Standard Practice E 1527-13.

To the best of PM's knowledge, no special terms or conditions apply to the preparation of this Phase I ESA that would deviate the scope of work from the ASTM Standard Practice E 1527-13.

PM was not provided with a copy of the recorded land title records for subject property by the client and was not requested to complete a title search. Therefore, PM cannot comment on any potential relevant information that may have been obtained through review of these records.

Section 2.5: Special Terms and Conditions

To the best of PM's knowledge, no special terms or conditions apply to the preparation of this Phase I ESA.

Section 2.6: User Reliance

PM HAS PREPARED THIS REPORT FOR THE EXCLUSIVE USE OF WAYNE COUNTY BROWNFIELD REDEVELOPMENT AUTHORITY, 5800 LDHA LP, SOUTHWEST HOUSING SOLUTIONS CORPORATION, AND THE MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY, EACH OF WHOM MAY RELY ON THE REPORT'S CONTENTS.

PM acknowledges that these parties may rely on the contents and conclusions presented in this report. Unless stated otherwise in writing, PM makes no other warranty, representation, or extension of reliance upon the findings of this report to any other entity or third party.

SECTION 3.0: SUBJECT PROPERTY DESCRIPTION

Section 3.1: Location and Legal Description

Main Cross Streets/Location	Located north of Michigan Avenue, east of Wesson Street, and west of Campbell Street, Detroit, Wayne County, Michigan
Number of Parcels and Acreage	Three parcels totaling 0.98 acres
Number of Building(s) and Square Footage	No buildings or structures present
Current Property Use	Vacant land with no current business operations
Proposed Property Use	One four-story mixed-use commercial and residential building

The legal description of the subject property is presented in Section 10.4. Photographs taken during PM's subject property reconnaissance are provided in Section 10.3.

Section 3.2: Subject Property and Vicinity Characteristics

The subject property is currently vacant land and is located in an area of Detroit that is characterized by residential and commercial properties.

Section 3.3: Current Use of the Subject Property

The subject property is currently vacant land.

Section 3.4: Descriptions of Structures, Roads, and Other Improvements on the Subject Property

The subject property is currently vacant land consisting of groomed grass.

Section 3.4.1: Municipal Water/Water Wells

The subject property is not currently connected to municipal water; however, municipal water is available to the subject property. PM attempted to obtain an initial tap date from the City of Detroit Water and Sewerage Department; however, were informed no tap records were available for the subject property. Review of Sanborn maps indicates that municipal water has been available to the subject property since at least 1884. Based on this information and the highly urban area, the former buildings on the subject property were likely tapped to municipal water during construction. No records of private water wells have been identified through review of reasonably ascertainable information.

Section 3.4.2: Sanitary Sewer/Septic System

The subject property is not currently connected to municipal sewer; however, municipal sewer is available to the subject property. PM attempted to obtain an initial tap date from the City of Detroit Water and Sewerage Department; however, were informed no tap records were available for the subject property. Review of municipal sewer maps indicates municipal sewer has been available in the vicinity of the subject property since at least 1890. Based on this information and the highly urban area, the former buildings on the subject property were likely tapped to municipal sewer during construction. No records of private septic systems have been identified through review of reasonably ascertainable information.

Section 3.4.3: Storm Sewer/Storm Water Detention Ponds

PM did not observe storm water catch basins on the subject property. Onsite storm water likely discharges to the ground surface, Campbell Street and/or Michigan Avenue. No sheen or evidence of poor waste management practices was observed during the site reconnaissance. No storm water detention ponds were observed on the subject property parcels during the site reconnaissance.

Section 3.4.4: Heat Source

The subject property is not currently connected to natural gas; however, natural gas supplied by DTE Energy is available to the subject property. Review of the natural gas main distribution map indicates natural gas has been available to the subject property area since at least 1903. Additionally, review of available City of Detroit Department of Buildings, Safety Engineering and Environmental Department (BSEED) records documents coal was historically used at 3957 Campbell Street in at least 1945. Alternative heat sources prior to natural gas use likely included wood and coal burning stoves. Based upon this information, the former dwellings and buildings were most likely heated with natural gas in at least 1903.

PM was unable to determine the heat source used at the subject property prior to 1903. No documentation of fuel oil use was identified during review of reasonably ascertainable records, and no visual evidence of fuel oil use was identified during the site reconnaissance. There is the potential for a fuel oil aboveground storage tank (AST) or underground storage tank (UST) to have been used at the property and for a release to have occurred. However, based upon PM's experience, the risk of a release associated with a potential fuel oil UST is low. If a fuel oil UST is discovered in the future and/or evidence of a release of historical fuel oil is identified, further evaluation may be necessary.

MSHDA requirements specify that natural gas transmission lines that have an operational pressure of 400 psi or higher and a diameter of four inches or greater must comply with MSHDA's setback requirements. Natural gas is supplied through a low pressure, four inch main (2 pounds per square inch (psi)), which is located in the right-of-way to the east of the subject property. Since the operational pressure is below 400 psi, calculation of setback distances was not completed.

Section 3.5: Current Uses of Adjoining Properties

A visual inspection of the adjoining properties was made from the subject property and public thoroughfares. Color photographs are included within Section 10.3. Refer to Section 5.5 for details on historical usage. Refer to the paragraphs below for additional information.

North Adjoining Properties

The north adjoining properties are currently residential or vacant land.

East Adjoining Properties, across North Campbell Street

The east adjoining property, identified as 5716 Michigan Avenue, is occupied by Covenant Community Care.

The remaining east adjoining properties are currently residential.

South Adjoining Properties, across Michigan Avenue

The southeast adjoining property, identified as 5715 Michigan Avenue, is occupied by the Social Security Administration.

The south adjoining property, identified as 5831-5833 Michigan Avenue, is occupied by a vacant commercial building.

The south adjoining properties, identified as 5837-5841 Michigan Avenue, are currently vacant land.

The south adjoining property, identified as 5845-5849 Michigan Avenue, is occupied by a vacant commercial building.

West Adjoining Properties

The west adjoining properties are currently vacant land.

SECTION 4.0: USER PROVIDED INFORMATION

The ASTM Standard defines a User as “the party seeking to use Practice E 1527 to complete an environmental site assessment. A User may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The User has specific obligations for completing a successful application of this practice as outline in Section 6 (of the ASTM Standard E-1527-13).

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small business Liability relief and Brownfield’s Revitalization Act of 2001 (the “Brownfield’s Amendments”), the User must provide certain information (if available) included on the User Questionnaire to the environmental professional. Failure to provide this information could result in a determination that “all appropriate inquiry” is not complete.

PM provided a copy of MSHDA’s User’s Environmental Questionnaire and Disclosure Statement to the client but did not receive a response within the time constraints of this report. PM previously provided Mr. Daniel Loacano (i.e., the User) with a user questionnaire as part of the 2021 Phase I ESA, which was completed and returned to PM. None of the questions were answered in the affirmative or in a manner that would suggest the potential for RECs by Mr. Loacano. No other specialized knowledge or experience of the subject property was provided to PM by the User.

Section 4.1: Title Records

A chain of title was not conducted for the subject property. PM utilized aerial photography, city directories, assessing information, and interviews with individuals knowledgeable of the subject property area as sources to determine the historical use of the subject property (see Section 10.4). Information from these sources is referenced throughout this report.

The Client did not provide recorded land title records to PM for review. The subject property was occupied by gasoline dispensing station operations from between 1910 and 1921 until at least 1949, and vulcanizing operations from between 1910 and 1924 until between 1941 and 1949. Refer to Sections 5.2.3 and 5.4.3 for additional information.

Section 4.2: Environmental Liens or Activity and Use Limitations

The User did not report any: (1) environmental cleanup liens against the subject property that are filed or recorded under federal, tribal, state, or local law; or (2) activity and use limitations (AULs), such as engineering controls, land use restrictions or institutional controls, that are in place at the subject property and/or have been filed or recorded in a registry under federal, tribal, state, or local law.

PM reviewed the Part the 201 Enforcement Liens list available through the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division (RRD), for information about environmental liens on the subject property. There was no information regarding environmental liens encumbering the subject property, or any pending, threatened, or past environmental litigation, environmental administrative procedures, or notices from government entities regarding possible violations of environmental law or possible environmental liability.

PM has not identified any record of activity and use limitations or institutional controls or engineering controls associated with the subject property through review of reasonable ascertainable records.

Section 4.3: Specialized Knowledge

The User did not report specialized knowledge or experience, actual knowledge, or commonly known or reasonable ascertainable information that is material to identifying recognized environmental conditions in connection with the subject property, except as conveyed in the following reports, which respectively document previous environmental investigations of the subject property:

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	11/10/2010	Advanced Environmental Management Group (AEMG)
Phase II ESA	1/7/2011	AKT Peerless (AKT)
Phase I ESA	11/22/2013	PM
Phase II ESA	3/31/2014	
Baseline Environmental Assessment (BEA)		
Phase I ESA	1/15/2021	
Phase II ESA	4/6/2022	

The contents of the previous environmental reports are summarized and discussed in Section 5.2.3.

Section 4.4: Commonly Known or Reasonably Ascertainable Information

The User did not report knowledge of any commonly known or reasonably ascertainable information within the local community that is material to RECs in connection with the subject property.

Section 4.5: Valuation Reduction for Environmental Issues

The User did not report knowledge of, or reason to anticipate, a reduction in the value of the subject property for environmental issues.

Section 4.6: Owner, Property Manager, and Occupant Information

The User did not report knowledge relevant information from the owner, property manager, or occupants.

Section 4.7: Reason for Performing this Phase I ESA

According to the User, this Phase I ESA was conducted to fulfill MSHDA's requirements as part of an application for a MSHDA tax credit.

Section 4.8: Other

The User did not provide PM with any additional information pertaining to the subject property.

SECTION 5.0: RECORDS REVIEW

Section 5.1: Standard Environmental Record Sources

PM retained EDR to provide current regulatory database information compiled by a variety of federal and state regulatory agencies. A copy of the database report is included in Section 10.5. The purpose of obtaining this data was to evaluate potential environmental risks associated with the subject property, adjoining sites, and other sites that are (1) identified on target lists, and (2) within varying distances of up to one mile from the subject property. PM reviewed the following federal and state databases for such listings within the indicated search radii.

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	National Priority List (NPL) Sites	1 mile	0
Federal	Delisted National Priority List (DNPL) Sites	½ mile	0
Federal	Superfund Enterprise Management System (SEMS) (formerly CERCLIS – renamed in 2015) Sites	½ mile	1
Federal	SEMS-Archive Sites (formerly CERLIS-NFRAP – renamed 2015)	½ mile	0
Federal	Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Sites	1 mile	1
Federal	RCRA non-CORRACTS Treatment, Storage or Disposal Facilities (TSDF) Sites	½ mile	0
Federal	RCRA Large Quantity Generators (LQG) Sites	subject property and adjoining properties	0
Federal	RCRA Small Quantity Generators (SQG) Sites	subject property and adjoining properties	1
Federal	RCRA Very Small Quantity Generators (VSQG) Sites	subject property and adjoining properties	0
Federal	RCRA Non-Generators (NON-GEN) Sites	subject property and adjoining properties	1
Federal	Institutional Control / Engineering Control Registries	subject property	0

Type	Regulatory Agency Database	Approximate Minimum Search Distance (AMSD)	Number of Sites within AMSD
Federal	Environmental Response and Notification System (ERNS)	subject property	0
State & Tribal	Hazardous Waste Sites (HWS) (equivalents to NPL and CERCLIS)	1 mile	0
State & Tribal	Solid Waste Facilities/Landfill Sites (SWF/LF)	½ mile	0
State & Tribal	Leaking Underground Storage Tank (LUST) Sites	½ mile	9
State & Tribal	Registered Underground Storage Tank (UST) Sites	subject property and adjoining properties	0
State & Tribal	Institutional Control / Engineering Control Registries	subject property	0
State & Tribal	Brownfield Sites	½ mile	6
State & Tribal	Michigan Inventory of Facilities (Includes Part 201 Sites and Baseline Environmental Assessment {BEA} Sites)	½ mile	47
Either	Unmappable Database Listings (a.k.a. Orphan Sites)	database-dependent	1

Section 5.1.1: Subject Property and Occupant Listings

Children’s Outreach and Southwest Housing Solutions Corporation – The subject property is identified on the Michigan Inventory of Facilities as a BEA site and a U.S. Brownfields site. Refer to Sections 5.2.3 and 5.4.3 for additional information.

Section 5.1.2: Adjoining and Nearby Sites

PM’s review of the referenced databases also considered the potential or likelihood of contamination from adjoining and nearby sites. To evaluate which of the adjoining and nearby sites identified in the regulatory database report present an environmental risk to the subject property, PM considered the following criteria:

- The type of database on which the site is identified.
- The topographic position of the identified site relative to the subject property.
- The direction and distance of the identified site from the subject property.
- Local soil conditions in the subject property area.
- The known or inferred groundwater flow direction in the subject property area.
- The status of the respective regulatory agency-required investigation(s) of the identified site, if any.
- Surface and subsurface obstructions and diversions (i.e., buildings, roads, sewer systems, utility service lines, rivers, lakes, and ditches) located between the identified site and the subject property.

Only those sites that are judged to present a potential environmental risk to the subject property and/or warrant additional clarification are further evaluated. Using the referenced criteria, and based upon a review of readily available information contained within the regulatory database report, PM did not identify adjoining (i.e., bordering) or nearby sites (i.e., properties within a ¼-mile radius) listed in the regulatory database report that were judged to present a potential environmental risk to the subject property, with the exception of the following:

5716 Partners and Genoa A QOL Healthcare Company LLC – This site is identified as 5716-5728 Michigan Avenue and is the east adjoining property. Review of the regulatory database indicates this site is identified as a RCRA VSQG of hazardous waste since 2015 with no reported violations and is a BEA site. PM attempted to review RCRA file information; however, were informed by a representative that no records were available for the property. PM reviewed the 2009 BEA completed to assess former factory and manufacturing operations, and automotive repair and dry cleaning operations; and dry cleaning operations at a north adjoining property. Analytical results indicate soil contamination was detected above Part 201 Drinking Water Protection (DWP), Groundwater Surface Water Interface Protection (GSIP), and Direct Contact (DC) cleanup criteria. No groundwater was encountered. Based on the regional clay geology with insufficient groundwater to act as a transport mechanism, PM has not identified this site as a REC.

City of Detroit – This site is identified as the intersection of Michigan Avenue and Campbell Street located southeast of the subject property. Review of the regulatory database indicates this site is identified as a RCRA non-generator of hazardous waste since 2008 with no reported violations. PM attempted to review EGLE file information; however, a representative indicated that no records were available for the property. Review of information available online through the EGLE Waste Data System (WDS) website indicates the listing is associated with a gasoline spill resulting from an automotive accident on Michigan Avenue in 2008. No additional information was available. Based on the small amount of gasoline spilled and regional clay geology with insufficient groundwater to act as a transport mechanism, PM has not identified this site as a REC.

Southwest Housing Solutions Corporation – This site is identified as 5862 Michigan Avenue and is located within one-eighth of a mile west of the subject property. Review of the regulatory database indicates this site is identified on the Michigan Inventory of Facilities as a BEA site. PM reviewed the 2014 BEA that was completed to assess former fuel oil use, the potential for fill materials, the potential for orphan USTs, and former dry cleaning operations. Concentrations of Tetrachloroethylene (PCE) were detected above current Part 201 Residential and Nonresidential DWP and GSIP cleanup criteria in soil samples collected in the western portion, north of a former dry cleaner located at the northeast corner of Michigan Avenue and Wesson Street. No groundwater was encountered and the PCE was delineated in the direction of the subject property. Based on the delineation of the PCE impacts toward the subject property and regional clay geology with insufficient groundwater to act as a transport mechanism, PM has not identified this site as a REC.

Grocery Store Property and Prince Valley Real Estate, LLC – This site is identified as 5931 Michigan Avenue and is located within one-eighth of a mile west of the subject property. Review of the regulatory database indicates this site is identified as a BEA site. PM reviewed the 2013 BEA that was completed to further assess previously identified soil contamination. Analytical results indicate soil contamination was detected above the current Part 201 Groundwater Contact Protection (GCP), Volatile Soil Inhalation (VIS), DWP, GSIP, and DC cleanup criteria. No groundwater was encountered. Based on distance from the subject property (approximately 210 feet across Michigan Avenue) and regional clay geology with insufficient groundwater to act as a transport mechanism, PM has not identified this site as a REC.

Pitstop 1-Fill-Up – This site is identified as 5938 Michigan Avenue and is located within one-eighth of a mile west of the subject property. Review of the regulatory database indicates this site is identified as an open LUST site with one release reported in 2003 and is a Brownfields site. PM reviewed available EGLE file information, which included documentation that a release was

confirmed in August 2003. No additional information was available within the records reviewed. Based on distance from the subject property to the nearest former UST basin (approximately 260 feet across Wesson Street) and regional clay geology with insufficient groundwater to act as a transport mechanism, PM has not identified this site as a REC.

Section 5.2: Additional Environmental Records Sources

The objective of reviewing historical sources is to: (1) develop a history of previous uses or specific occupancies of the subject property, (2) identify those uses or specific occupancies that are likely to have led to potential environmental concerns at the subject property, and to the extent identifiable, at adjoining properties, and (3) identify obvious uses of the subject property from the present, back to the property's *obvious* first developed use, or back to 1940, whichever is earlier. Further, the historical review was completed to assess whether operations were conducted that involved the use, storage and/or disposal of hazardous waste, hazardous substances, and/or petroleum products.

An understanding of the subject property was obtained from reasonably ascertainable standard and other historical sources extending back to 1884. Data failure occurred prior to that date. Interviewees provided independent knowledge of subject property and surrounding area usage which in turn provided information confirming historical subject property and general adjoining and surrounding land usage. See Sections 5.4.3 and 5.5 for specific documentation of standard and other historical sources consulted and availability of these sources. The history of the subject property and adjoining and surrounding areas, which was able to be derived from standard historical sources and other sources to satisfy the ASTM standard requirements for uses of a property (except those excluded by data failure), have been described within the text of this report.

Section 5.2.1: Assessing Department/Building Department Records

Reasonably ascertainable online assessment information provided by the City of Detroit Office of the Assessor was obtained and reviewed. Assessing records document that the subject property consists of three parcels totaling 0.98 acres of vacant land. PM submitted a Freedom of Information Act (FOIA) request to the FOIA Coordinator at the City of Detroit Law Department to review historical assessing records for the subject property. PM did not receive a response within the time constraints of this report. However, PM reviewed historical assessing records during the 2013 Phase I ESA and historical field cards were included in the records reviewed, which provided historical information about former buildings. The table below documented the parcel address, year of construction, square footage, heat source, if a basement was present, and any additional information, if known/available. Copies of available assessment records for the subject property and the current legal descriptions are included in Section 10.4.

Assessing Department Information

Address	Structure	Year constructed	Heat source	Basement	Additional information
5800 Michigan Avenue	Store and loft	1914, additions in 1919 and 1923	Gas blower	Partial	Prince Valley Market 1976-1985; fire destroyed building 9/29/1999; permit to wreck and remove debris 6/20/2000
3951 North Campbell Street	Dwelling	1900	Gas burner, stove	Partial	Permit to wreck and remove debris 6/22/1989
3957 North Campbell Street	Dwelling	1900	Gas burner	Partial	None

Reasonably ascertainable building information provided by City of Detroit BSEED was obtained and reviewed. Records reviewed document several permits regarding the construction, interior alterations, demolition, or repairs associated with several of the former dwellings and/or buildings. Specifically, records document the subject property was formerly occupied by a gasoline dispensing station in at least 1921 (historically identified as 5828-5830 Michigan Avenue). Additionally, records reviewed document the construction of a coal shed at 3957 Campbell Street in 1945. No other relevant information that would be considered as an environmental concern was identified within the Building Department files reviewed.

PM also reviewed City of Detroit BSEED oil and gas records for the subject property. However, no records were available for the subject property.

Section 5.2.2: Zoning Department Records

PM reviewed the City of Detroit zoning map. The subject property is currently zoned “B-4: General Business District.” PM’s review did not identify potential environmental concerns associated with the subject property based on its current zoning.

Section 5.2.3: Previous Site Investigations

PM reviewed the following previous environmental reports for the subject property. Relevant portions of the reports are included in the Adobe Attachment Tab.

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	11/10/2010	Advanced Environmental Management Group (AEMG)
Phase II ESA	1/7/2011	AKT Peerless (AKT)
Phase I ESA	11/22/2013	PM
Phase II ESA		
Baseline Environmental Assessment (BEA)	3/31/2014	
Phase I ESA	1/15/2021	
Phase II ESA	4/6/2022	

2010 Phase I ESA

At the time of the 2010 Phase I ESA, the subject property consisted of vacant land with scattered debris throughout. AEMG documented similar historical information as included in this Phase I ESA, and the following historical use RECs were identified: gasoline dispensing station with potential orphan USTs (5830 Michigan Avenue), vulcanizing (5836 Michigan Avenue), greenhouse (west adjoining property), dry cleaning (west adjoining property), photo developing (west adjoining property), automotive parking (west adjoining property); potential fuel oil use (west adjoining property); negative impacts from potential chemicals associated with a fire at 4034-4038 Wesson Street (west adjoining property); and a REC associated with the presence of construction debris and materials throughout the property. AEMG recommended an additional investigation be completed to assess the RECs.

2011 Phase II ESA

The 2011 Phase II ESA evaluated the RECs identified in AEMG's Phase I ESA, and consisted of: (1) conducting a geophysical survey in the southern portion of the subject property, (2) advancing 12 soil borings, and (3) collecting 22 soil samples for laboratory analysis of volatile organic compounds (VOCs), polynuclear aromatic compounds (PNAs), polychlorinated biphenyls (PCBs), diesel range organics (DRO), gasoline range organics (GRO), herbicides, pesticides, and Michigan 10 Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc).

Geology encountered during the investigation consisted of fill material to 5.0 feet bgs consisting of sand and clay with varying amounts of silt, gravel, and masonry debris, underlain by clay to 20.0 feet bgs, the maximum depth explored. Groundwater was not encountered to 20.0 feet bgs, the maximum depth explored. Soil boring logs were not included in the report provided to PM; however, soil borings were limited to the southern-central and southwestern portions of the 5800 Michigan Avenue parcel.

The geophysical survey identified an anomaly in the northwest portion of 5800 West Michigan Avenue. AKT concluded that the anomaly may be a potential former septic tank; however, this was not confirmed. In addition, the geophysical survey was conducted using electromagnetic (EM) induction, and not ground penetrating radar (GPR), which is a more accurate method. The soil analytical results documented benzo(a)pyrene above current Part 201 Residential DC cleanup criteria in the soil sample collected in the northwestern portion of the subject property at 5800 Michigan Avenue, which was advanced adjacent to the anomaly identified during the EM scan.

2013 Phase I ESA

The 2013 Phase I ESA was completed for the subject property and west adjoining properties. At the time of the Phase I ESA, the subject property was vacant land. Similar historical information was documented as in this Phase I ESA. The following RECs were identified.

- Previous reports completed for the subject property in 2010 and 2011 identified the potential for former fuel oil use and associated USTs as a REC. Additionally, the potential for fill materials to be present associated with the former buildings and dwellings was identified as a REC. No subsurface investigations, including a geophysical survey, were

conducted in the central and northern portions of the subject property to assess potential fill material within former basements and potential orphan USTs and/or fuel oil use. The potential exists for contamination to be present in these areas and/or for orphan tanks to be present.

- The 2011 subsurface investigation completed by AKT was not adequate to assess the former vulcanizing operations (5836 Michigan Avenue), gasoline dispensing operations (5830 Michigan Avenue), and former dry-cleaning operations (west adjoining property). In addition, no further assessment of an anomaly (most likely associated with an orphan UST) detected through a geophysical survey using EM induction, in the northwest portion of 5800 Michigan Avenue, was conducted. The potential exists for additional contamination to be present in the areas that were not previously, or not adequately, assessed.

2014 Phase II ESA

The 2014 Phase II ESA was completed for the 3951-3957 Campbell Street subject property and the west adjoining properties. The Phase II ESA evaluated the RECs identified in PM's 2013 Phase I ESA, and consisted of: (1) conducting a geophysical survey of the subject property and west adjoining properties, (2) advancing four soil borings, and (3) collecting four soil samples for laboratory analysis of VOCs, PNAs, PCBs, and Michigan 10 Metals.

Geology encountered during the investigation consisted of clayey sand to 6.0 feet bgs, underlain by clay to 20.0 feet bgs, the maximum depth explored. Groundwater was not encountered to 20.0 feet bgs, the maximum depth explored. Fill materials consisting of trace gravel and brick were encountered at approximately 4.0 feet bgs in the southern portion of the 5800 Michigan Avenue subject property. Fill materials were not encountered in the soil borings completed for the Campbell Street parcels in the northern portion.

No anomalies consistent with orphan USTs were identified during the geophysical survey investigation. No concentrations of VOCs, PNAs, or PCBs were detected in any of the soil samples collected from the subject property above laboratory method detection limits (MDLs). No concentrations of metals were detected in any of the soil samples collected from the subject property above laboratory MDLs, Statewide Default Background Levels (SDBLs), or the most restrictive Part 201 Generic Cleanup Criteria (GCC). Based on the analytical results, the 3951-3957 Campbell Street subject properties do not meet the definition of a "facility" as defined under P.A. 451 of Part 201. The RECs identified in the 2013 Phase I ESA were adequately assessed, and no further investigation of the 3951-3957 Campbell Street parcels was recommended.

2014 BEA

The 2014 subsurface investigation, which is summarized in the BEA, was completed for the 5800 Michigan Avenue subject property. The subsurface investigation evaluated the RECs identified in PM's 2013 Phase I ESA, and consisted of: (1) conducting a geophysical survey of the subject property, (2) advancing nine soil borings and three temporary soil gas points, and (3) collecting 10 soil samples for laboratory analysis of VOCs, PNAs, PCBs, and Michigan 10 Metals, and collection of three soil gas samples for laboratory analysis of VOCs.

No anomalies consistent with the presence of orphan USTs were identified during the geophysical survey investigation. During the completion of the geophysical survey, PM identified a disturbance in the vicinity of the anomaly identified by AKT. A hand auger was advanced to 5.0 feet bgs followed by a Geoprobe soil boring to 15.0 feet bgs to determine the nature of the disturbance. No evidence of an orphan UST was encountered. Based on the geophysical survey and soil boring completed by PM in the area of AKT's anomaly, no orphan USTs are believed to be present in this area. Concentrations of benzo(a)pyrene were detected in three soil samples collected in the western-central portion of the property above current Part 201 Residential and Nonresidential DC cleanup criteria. Lead was also detected from one soil sample collected in the northwestern portion of the property above current Part 201 Residential and Nonresidential DC. No additional PNA, VOCs, PCBs, metals, or PNAs were detected in the remaining soil samples collected from the subject property above laboratory MDLs and/or below the most restrictive Part 201 GCC and/or State Default Background Levels (SDBLs). No soil gas samples were detected above former Part 201 Residential Vapor Intrusion Screening Levels. However, concentrations of phenanthrene were detected in soil samples collected in the southeastern and western portions of the property above the current EGLE Residential Volatilization to Indoor Air Pathway (VIAP) screening levels.

Based on the concentrations of benzo(a)pyrene and lead in soil exceeding the Part 201 GCC on the subject property parcel identified as 5800 Michigan Avenue, a BEA was completed and submitted to the Michigan Department of Environmental Quality (MDEQ, now EGLE), on behalf of Southwest Housing Solutions Corporation.

2021 Phase I ESA

At the time of the 2021 Phase I ESA, the subject property consisted of vacant land. PM documented similar historical information as included in this Phase I ESA and identified a REC for the previously identified soil contamination and "facility" status of the subject property.

2022 Phase II ESA

PM completed additional subsurface investigation activities at the subject property in November 2021 that consisted of the advancement of 11 soil borings, installation of three temporary soil gas points, and the collection of 22 soil samples and three soil gas samples to further assess the previously identified contamination identified on the subject property during the previous site investigations. The soil samples were submitted for laboratory analysis of VOCs, PNAs, and lead and the soil gas samples were submitted for laboratory analysis of VOCs. Analytical results documented soil concentrations of benzo(a)pyrene, fluoranthene, naphthalene, phenanthrene, and lead were identified in soil exceeding the current Part 201 GCC. PM also developed Site-Specific Volatilization to Indoor Air Criteria (SSVIAC) for the subject property in association with EGLE. Based on the developed criteria for the subject property, soil concentrations of naphthalene, phenanthrene, and 2-methylnaphthalene were identified exceeding the SSVIAC. However, no concentrations of VOCs, SVOCs, PNAs, or mercury were identified in any of the soil gas samples exceeding laboratory MDLs and/or the SSVIAC for the proposed residential slab-on-grade building with an elevator pit.

Based on these analytical results and completion of a BEA, the subject property at 5800 Michigan Avenue has been classified as a "facility," as defined by Part 201 of P.A. 451 of

the Michigan Natural Resources Environmental Protection Act (NREPA), as amended, which represents a REC.

Section 5.3: Physical Setting Source(s)

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		SOURCE
Topography: Refer to Figure 1 for an excerpt of the Topographic Map		
<i>Site Elevation</i>	594 feet above mean sea level (msl)	United States Geological Survey Division (U.S.G.S.) 7.5-Minute Topographic Map of the Detroit, Michigan Quadrangle, 1968 (photo revised in 1973 and 1980)
<i>Topographic Gradient</i>	South-southwest	
<i>Closest Surface Water</i>	The Detroit River located approximately 2.20 miles southeast of the subject property at an elevation of 585 feet above msl	
General Soil Characteristics: Refer to Section 10.4 for a copy of the soil survey map and soil type descriptions		
<i>Soil Type</i>	Blount-Urban land complex, 0 to 4 percent slopes	United States Department of Agriculture, Custom Soil Resource Report for Wayne County, Michigan (survey area data: September 7, 2021)
<i>Description</i>	A typical Blount soil profile consists of sandy loam to 9.0 inches bgs, loam to 12.0 inches bgs, clay to 31.0 inches bgs, clay loam to 37.0 inches bgs, underlain by clay to 80.0 inches bgs. The soil is somewhat poorly drained with the water table between 2.0 and 31.0 inches bgs. The risk of corrosion is high for uncoated steel and low for concrete. Urban land consists of areas covered by buildings, parking lots, streets, sidewalks, driveways, railroad yards, industrial complexes and other structures. A typical soil profile is not defined. Permeability and the available water capacity vary.	
<i>Soil Type</i>	Urban land-Riverfront complex, dense substratum, 0 to 4 percent slopes	
<i>Description</i>	A typical Riverfront soil profile consists of sandy loam to 6.0 inches bgs, very artificial sandy loam to 16.0 inches bgs, gravelly-artificial loam to 46.0 inches bgs, very artificial loam to 68.0 inches bgs, underlain by clay to 80.0 inches bgs. The soil is well drained with the water table more than 80.0 inches bgs. The risk of corrosion is low for uncoated steel and concrete. Urban land is described above.	

PHYSICAL SETTING INFORMATION FOR THE SUBJECT PROPERTY AND SURROUNDING AREA		SOURCE
Area Specific Geology/Hydrogeology Characteristics:		
<i>Geology</i>	Geology consists of sand, gravelly sand, and fill material (silt, gravel, and masonry debris) to 6.0 feet bgs, underlain by clay to 20.0 feet bgs, the maximum depth explored	Previous site investigations for the subject property (2011-2022)
<i>Hydrogeology</i>	Groundwater was not encountered to 20.0 feet bgs, the maximum depth explored	
Oil and Gas Wells:		
<i>Current Oil and Gas Wells on Subject Property</i>	None identified	The EGLE Geologic Survey Division (GSD) web site
<i>Historical Oil and Gas Wells on Subject property</i>	None identified	

Section 5.4: Historical Use Information on the Subject Property

Section 5.4.1: Aerial Photographs and Sanborn Map Coverage for the Subject Property

PM reviewed reasonably ascertainable aerial photographs for the subject property area. The sources and years reviewed are identified in the table below. Relevant aerial photographs are included in Section 10.4.

PM reviewed reasonably ascertainable Sanborn Fire Insurance Maps for the subject property area, which were obtained from EDR. The sources and years reviewed are identified in the table below. Relevant Sanborn Maps are included in Section 10.4.

The following table summarizes the sources reviewed and the information obtained about the subject property from these sources. Information obtained about the adjoining properties from these sources is summarized in Section 5.5.

Aerial Photographs and Sanborn Maps Summary

Year and Source	Summary of Information
1884 Sanborn Map (EDR)	A horse shed and associated barn and storage structures, bowling alley and a dwelling are depicted in the southeastern portion, and an additional building is depicted in the southwestern portion, identified as A.R. Sink's 3 Mile House. Michigan Avenue is depicted to the south.
1897 Sanborn Map (EDR)	The existing dwelling has been converted into a storefront and hotel. Three additional dwellings and associated outbuildings are depicted in the northern portion. Campbell Avenue is depicted to the east. Otherwise, similar to the previous Sanborn year.
1910 Sanborn Map (EDR)	An additional dwelling has been constructed in the eastern portion and an additional outbuilding in the southern portion. Otherwise, similar to the previous Sanborn year.

Year and Source	Summary of Information
1924 Sanborn Map (EDR)	The former dwelling and structures in the southeastern portion are no longer depicted, and a new storefront and bowling alley building is visible in the southeastern portion. An addition has been constructed to the southwestern storefront which is identified as vulcanizing operations. Lastly, a gasoline dispensing station is depicted east of the vulcanizing building with one gasoline UST depicted east of the dispensing station. Otherwise, similar to the previous Sanborn year.
1937 Aerial (EDR)	Due to scale and resolution definitive details could not be determined, however, appears similar to the previous aerial year.
1941 Sanborn Map (EDR)	The previously identified gasoline UST is no longer depicted; however, three gasoline USTs are depicted east of the filling station, north of the previously identified UST.
1949 Aerial (EDR)	Similar to the previous Sanborn year; however, the gasoline dispensing station appears to have been demolished.
1950 Sanborn Map (EDR)	Similar to the previous aerial year.
1952 Sanborn Map (EDR)	Similar to the previous aerial and Sanborn years.
1957 Sanborn Map (EDR)	Two of the dwellings along Campbell Street have been demolished and the bowling alley building is depicted as a storefront.
1961 Sanborn Map (EDR)	Similar to the previous Sanborn year.
1972 Aerial (EDR)	Similar to the previous Sanborn year.
1978 Sanborn Map (EDR)	One of the dwellings along Campbell Street has been demolished. Otherwise, similar to the previous Sanborn year.
1983 Sanborn Map (EDR)	Similar to the previous Sanborn year.
1985 Aerial (EDR)	Similar to the previous Sanborn year.
1989 Sanborn Map (EDR)	The remaining dwelling along Campbell Street has been demolished. Otherwise, similar to the previous aerial and Sanborn year.
1992 Sanborn Map (EDR)	Similar to the previous aerial and Sanborn years.
1996 Sanborn Map (EDR)	Similar to the previous aerial and Sanborn years.
1999 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
2002 Sanborn Map (EDR)	The large storefront building (formerly identified as a bowling alley) has been demolished. Appears similar to the current layout.
2005 Aerial (EDR)	Similar to the previous Sanborn year.
2010 Aerial (EDR)	Similar to the previous aerial and Sanborn years.
2014 Aerial (USGS)	Similar to the previous aerial and Sanborn years.
2018 Aerial (USGS)	Similar to the previous aerial and Sanborn years.

A summary of this information along with other historical sources is included in Section 5.4.3.

Section 5.4.2: Local Street Directories for the Subject Property

Reasonably ascertainable local street directories for Detroit, Michigan were researched. Directories were available from 1891 to 2014. It should be noted that prior to 1921, the address numbers in Detroit changed, and therefore listings for the former address ranges prior to 1921 when available are provided. Directories were researched in at least five-year increments, when

available. It should not be construed that the earliest date represented is the initial date of occupancy.

PM also reviewed listings for adjoining commercial properties. Information from the listings reviewed is included in Section 5.5.

Subject Property: 5800 Michigan Avenue

2014-2004	Not Listed
2000	Paramount Supermarket Prince Valley Ford Center
1995	Paramount Supermarket Prince Valley Ford Center Western Union
1990-1978	Paramount Supermarket Prince Valley Ford Center
1973-1972	No Phone
1968-1967	A&P Food Stores
1964-1960	National Food Stores
1956-1946	Not Listed
1941-1936	Alcona Recreation Company
1931	Milady Hat Shop
1926	Granada Restaurant
1921	Residential
1916-1891	See Historical Address

Historical Subject Property: 5802-5836 Michigan Avenue

5802 Michigan Avenue

2014-1946	Not Listed
1943	Alcona Recreation Company, bowling
1935	Kock and Steel, grocery
1931-1930	Vacant
1926-1925	Residential
1921-1892	Not Listed
1891	Michigan Avenue Not Listed in Research Resource

5804 Michigan Avenue

2014-1946	Not Listed
1943	Alcona Recreation Company, bowling
1935-1892	Not Listed
1891	Michigan Avenue Not Listed in Research Resource

5806 Michigan Avenue

2014-1946	Not Listed
1943	Alcona Recreation Company, bowling

1935 Sobolak Peter M., restaurant
1931-1930 Branchick Geo, barber
1926-1892 Not Listed
1891 Michigan Avenue Not Listed in Research Resource

5808 Michigan Avenue

2014-1960 Not Listed
1956-1955 Alcona Recreation Company Inc.
Alcona Recreation Company Office
1952-1951 Alcona Recreation
1950-1946 Alcona Recreation Office
1943 Alcona Recreation Company, bowling
1935-1930 Alcona Recreation Company Inc. Bowling
1926-1925 Kock Otto A., bowling
1921-1892 Not Listed
1891 Michigan Avenue Not Listed in Research Resource

5830 Michigan Avenue

2014-1936 Not Listed
1935 Pure Steven, filling station
1931-1892 Not Listed
1891 Michigan Avenue Not Listed in Research Resource

5836 Michigan Avenue

2014-1943 Not Listed
1935 Pure Steven, tires
1931-1925 Kock Rudolph, supplies
1921-1892 Not Listed
1891 Michigan Avenue Not Listed in Research Resource

Historical Subject Property: 3919-3947 Campbell Street

3943 Campbell Street

2014-1958 Not Listed
1954-1931 Residential
1926-1891 Not Listed

3947 Campbell Street

2014-1958 Not Listed
1954-1953 Residential
1952-1931 Not Listed
1926-1891 Not Listed

Pre-1921 Subject Property: 1640-1648 Michigan Avenue

1640 Michigan Avenue

2014-1921	See Current Address
1916-1911	Kock, saloon Strinksky, barber
1906	Koch, sin
1902	Coopersmith, saloon
1897	Schulz, saloon
1892	Kock, grocer

1646 Michigan Avenue

2014-1921	See Current Address
1916	Stanley, sale stable
1911-1892	Not Listed

1648 Michigan Avenue

2014-1921	See Current Address
1916-1911	Levy, general store
1906	Korn, dry goods
1902-1892	Bauer, clothing

Pre-1921 Subject Property: 1265-1287 Campbell Street

1275 Campbell Street

2014-1921	See Current Address
1916	Strinsky A., barber
1911-1891	Not Listed

1285 Campbell Street

2014-1921	See Current Address
1916-1906	Residential
1901-1891	Not Listed

1287 Campbell Street

2014-1921	See Current Address
1916-1901	Residential
1896-1891	Not Listed

Subject Property: 3951 Campbell Street

2014-1968	Not Listed
1964-1963	No Phone

1959-1953	Residential
1952-1947	Not Listed
1941-1931	Residential
1926-1921	Not Listed
1916-1891	See Historical Address

Pre-1921 Subject Property: 1289 Campbell Street

2014-1921	See Current Address
1916-1896	Residential
1891	Street Range Not Listed

Subject Property: 3957 Campbell Street

2014-1968	Not Listed
1964-1953	Residential
1952-1951	Not Listed
1948-1931	Residential
1926-1921	Not Listed
1916-1891	See Historical Address

Pre-1921 Subject Property: 1291 Campbell Street

2014-1921	See Current Address
1916-1896	Residential
1891	Street Range Not Listed

A summary of this information along with other historical sources is included in Section 5.4.3.

Section 5.4.3: Summary of Historical Use for the Subject Property

Standard and other historical sources were able to document the first developed use of the subject property occurred prior to 1884 with a hotel and associated outbuilding in the southeastern portion and a dwelling in the southern portion. Four additional dwellings were constructed in the eastern portion between 1884 and 1910. The southwestern storefront received an eastern addition and the former dwelling and structures in the southern and southeastern portions were demolished between 1910 and 1924 when a bowling alley building and storefront were constructed. A gasoline dispensing station was also constructed in the southern portion between 1910 and 1924 with one gasoline UST depicted in Sanborn maps. By 1941, three USTs were depicted in Sanborn maps east of the gasoline dispensing station, and by 1949, the gasoline dispensing station was demolished. The dwellings were demolished between the 1950s and 1970s, and the bowling alley building was demolished between 1999 and 2002. The subject property has consisted of vacant land since that time.

The subject property at 5800 Michigan Avenue was formerly occupied by gasoline dispensing station and vulcanizing operations and the subject property was historically occupied by various commercial and/or retail businesses or used for residential purposes. PM previously completed a Phase II ESA and BEA at the subject property, which included borings in the area of the former gasoline dispensing and vulcanizing operations. The subject property at 5800 Michigan Avenue

is designated as a “facility” parcel which PM has identified as a REC. Refer to Section 5.2.3 for a summary of the previous reports completed at the subject property.

The subject property formerly contained five residential dwellings and commercial buildings located throughout the property, which were demolished at various times between the 1920s and 1970s. It is PM’s experience that a common practice, was to demolish the building into the basement and leave all building materials present. Building materials associated with the former buildings may have been pushed into the basement during and/or after demolition and utilized as fill material. Although it does not represent a REC, the potential exists for construction debris and fill material to be present associated with these former buildings.

Section 5.5: Historical Use Information on the Adjoining Properties

The same aerial photographs and Sanborn Maps described in Section 5.4.1 and city directories from Section 5.4.2 were obtained and reviewed for the adjoining properties. The following paragraphs provide information about the adjoining properties obtained during the site reconnaissance and through review of reasonably ascertainable information.

North Adjoining Properties

Review of historical sources indicates that the north adjoining properties have historically consisted of residential or vacant land.

East Adjoining Properties, across North Campbell Street

Review of historical sources indicates that the east adjoining property, identified as 5716 Michigan Avenue was developed prior to 1897 with a storefront. An additional storefront and dwelling were constructed between 1897 and 1910, and between 1910 and 1924, an additional storefront was constructed in the western portion; a portion of the current building was constructed as a manufacturing building; and a factory building was constructed in the central and eastern portions of the property. The eastern factory building was demolished between 1961 and 1978, and the remaining dwelling and buildings were demolished in the 1990s. A portion of the current building was demolished and the current western portion of the building was constructed between 2010 and 2012. The property was historically occupied by various manufacturing operations from at least 1910 until at least 1926, and various restaurants, commercial and retail businesses, a furniture business and warehouse, an automotive repair operation, and a music school, and has been occupied by a medical center and offices since approximately 2010. Additionally, this property was occupied by a dry-cleaner in at least 1946. This site is identified in the regulatory database. Refer to Section 5.1.2 for additional information.

Review of historical sources indicates that the remaining east adjoining properties have historically consisted of residential or vacant land.

South Adjoining Properties, across Michigan Avenue

Review of historical sources indicates the southeast adjoining property, identified as 5715 Michigan Avenue, was developed prior to 1897 with multiple dwellings. A storefront was constructed in the eastern portion between 1897 and 1910, and the entire property was developed with several storefronts, a filling station, a theatre, and a bakery between 1910 and 1924. The

filling station was removed and a storefront was constructed in its former footprint. The bakery building was demolished between 1961 and 1972, and the remaining buildings were demolished between 1983 and 1985. The property was used as a parking lot until the construction of the current building between 1999 and 2002. The property was historically occupied by various storefronts, retail and commercial businesses, restaurants, a theatre, a grocery store, and professional offices, and has been occupied by professional offices since at least 2002. Additionally, the property was occupied by a gasoline dispensing station in at least 1924. Based on the regional clay geology, lack of groundwater to act as a transport mechanism, and redevelopment of the property and limited time frame the property was occupied by gasoline dispensing operations, PM has not identified this property as a REC.

Review of historical sources indicates the south adjoining property, identified as 5831-5833 Michigan Avenue, was developed between 1910 and 1921 with a portion of the current building, on previously vacant land. A portion of the building was demolished between 1924 and 1941. The property was historically occupied by various storefronts, a sewing machine company, and an animal hospital since at least 1921. No historical dry-cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

Review of historical sources indicates the south adjoining property, identified as 5837-5841 Michigan Avenue, was developed between 1910 and 1924 with three storefronts, on previously vacant land. Two of the storefronts were demolished between 1924 and 1941, and the remaining storefront was demolished between 1941 and 1949. The property has been used as a parking lot or has consisted of vacant land since that time. The property was historically occupied by various storefronts and commercial businesses and has consisted of vacant land since at least the 1940s. No historical dry-cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

Review of historical sources indicates the south adjoining property, identified as 5845-5849 Michigan Avenue, was developed prior to 1884 with a portion of a building containing a blacksmith shop and shed. The building was demolished and the property consisted of vacant land until the construction of the current building between 1910 and 1924. The property has historically been occupied by a grocery store and various storefronts, commercial businesses and restaurants since at least 1926 and has been vacant since between 2013 and present. No historical dry-cleaning operations have been identified associated with this property through review of reasonable ascertainable information.

West Adjoining Properties

Review of historical sources indicates that the northwest adjoining properties have historically consisted of residential or vacant land.

Review of historical sources indicates that the west adjoining property, identified as 5840 Michigan Avenue, was developed between 1884 and 1897 with a storefront and outbuilding. The outbuilding was demolished and a garage constructed between 1910 and 1924, and the garage was demolished by 1941. Another garage was constructed in the 1950s which was demolished and replaced with a commercial building identified as a feed warehouse in 1961. The storefront and warehouse were demolished between 2002 and 2005 and the property has consisted of vacant land since that time. The property was historically occupied by a grocery store and various

storefronts, commercial businesses, and a lumber company since at least 1892 and has been vacant since between 2002 and 2005.

SECTION 6.0: SITE RECONNAISSANCE

Section 6.1: Methodology and Limiting Conditions

Reconnaissance Information	
PM Field Personnel:	Mr. David Balash and Ms. Zainab Fakh
Site Reconnaissance Date:	June 9, 2022
Escort:	None
Limitations:	None identified

Section 6.2: General Subject Property Setting

A general property description and improvements is provided in Sections 3.1 and 3.2.

The subject property parcels consist of vacant land with groomed grass and/or overgrown vegetation. Concrete paved sidewalks are located along North Campbell Road and Michigan Avenue. An alley is present north of the subject property. The subject property parcels are proposed to be redeveloped with a four-story mixed-used commercial and residential building and associated parking lot.

Section 6.3: Exterior Observations

The following table summarizes the exterior site observations. Affirmative responses are discussed in more detail following the table.

Category	Feature	Observed
Exterior Observations	Aboveground Storage Tanks (ASTs)	No
	Drums, Barrels and/or Containers > 5 gallons	No
	Stressed Vegetation	No
	Stained Soil or Pavement	No
	Monitoring Wells	No
	Soil Piles of Unknown Origin/Site Filling	No
	Exterior Dumpsters with Staining	No
	Leachate or Other Waste Seeps	No
	Trash, Debris, and/or Other Waste Materials	Yes
	Uncontrolled Dumping or Disposal Areas	No
	Surface Water Discoloration, Sheen or Free Product	No
	Strong, Pungent or Noxious Odors	No
	Storm water retention or detention ponds	No
	Pits, Ponds, Lagoons	No
	Pad or Pole Mounted Transformers and/or Capacitors	No
	Underground Storage Tanks	No
	Fuel Dispensers	No
Pipeline Markers	No	

Trash, Debris, and/or Other Waste Materials: PM observed trash and debris spread around the northern subject property parcels, consisting of building debris, tires, empty plastic containers, and other general refuse items. PM did not observe any stained soil or dumping of apparent hazardous materials associated with the trash and debris, therefore the trash and debris does not represent a REC.

Section 6.3.1: Underground Storage Tanks (USTs)

Review of reasonably ascertainable standard and other historical sources, and site observations, have not identified the current presence of USTs on the subject property. Specifically, no records of active USTs were identified though review of reasonably ascertainable records and PM did not observe any evidence of USTs (i.e., fill ports, vent pipes, etc.) during the site reconnaissance. Additionally, the current owner indicated he had no knowledge of current USTs associated with the subject property.

Review of Sanborn maps document that at least four gasoline USTs were associated with the former gasoline dispensing operations on the subject property. PM was unable to determine the size of the USTs, or dates of installation and removal. However, PM previously identified the potential for orphan USTs as a REC, which was properly assessed as part of previous site investigations and no longer represents a REC. Refer to Section 5.2.3 for a summary of the previous reports completed at the subject property.

Section 6.4: Interior Observations

Section 6.4.1: Description of Interior Operations

The subject property is currently vacant land with no current business operations.

SECTION 7.0: INTERVIEWS

The objective of completing interviews with knowledgeable site contacts is to obtain information about the uses and physical characteristics of the property.

In general, interviewees supported the information reviewed from other historical sources (i.e., aerial photos, city records, etc.).

Section 7.1: Interview with Owners, Occupants, or Others

Represents	Interviewed	Name and Title	Length of Time Associated with Subject Property	Comments
Current Property Owner and Key Site Manager	Yes	Mr. Daniel Loacano; current property owner (Southwest Housing Solutions Corporation)	Since 2014	PM interviewed Mr. Loacano as part of the 2021 Phase I ESA and he indicated there had been no changes at the subject property since the previous reports completed during purchase in 2013 and 2014.
Former Property Owner	No	Not applicable	Not applicable	Contact information for the former owner was not reasonably ascertainable or provided by the User
Current Occupant(s)	No	Not applicable	Not applicable	The subject property is vacant land; therefore, a "current occupant" was not available for interview
Former Occupant(s)	No	Not applicable	Not applicable	Contact information for the former occupants was not reasonably ascertainable or provided by the User
Other(s)	No	Not applicable	Not applicable	No other relevant interviews were conducted as part of this Phase I ESA.

Section 7.2: Interview with Local Government Officials

PM made a reasonable attempt to interview representatives of the City of Detroit municipal offices and the City of Detroit Health Department, Division of Environmental Health and Safety. However, responses were not received within the time constraints of this report.

Section 7.2.1: Local Fire Department

PM submitted a FOIA request to the City of Detroit FOIA Coordinator at the City of Detroit Law Department to review Fire Department records for the subject property. PM did not receive a response within the time constraints of this report. If PM does receive a response, and it changes the findings of the report, the client will be notified. However, PM reviewed Fire Department records during the 2013 Phase I ESA, which document various inspections and minor code violations for the subject property from the 1970s until the 2000s. No other relevant information was included within the records reviewed.

Section 7.2.2: Local Health Department

PM submitted a FOIA request to City of Detroit Health Department, Division of Environmental Health and Safety to review records for the subject property. PM did not receive a response within the time constraints of this report. If PM does receive a response, and it changes the findings of the report, the client will be notified. Based on information gathered as part of this Phase I ESA and PM's experience with files maintained by this office, it is unlikely that information provided will be relevant to this assessment. Therefore, PM has not identified this lack of response as a data failure that represents a significant data gap.

SECTION 8.0: EVALUATION AND REPORT PREPARATION

Section 8.1: Findings

The following known or suspect environmental conditions associated with the subject property have been identified. These conditions may include de minimis conditions, RECs, both on-site and off-site, as well as historical RECs, controlled RECs, non-ASTM findings such as Asbestos Containing Materials and/or wetland identification, and environmental non-compliance issues.

Section 8.1.1: De Minimis Condition

A de minimis condition, as defined in the ASTM Standard, is a condition that generally does not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not RECs or CRECs. No de minimis conditions were identified during this assessment.

Section 8.1.2: Historical Recognized Environmental Conditions (HRECs)

An HREC, as defined in the ASTM Standard, is a past release of hazardous substances or petroleum products that has occurred in connection with the subject property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the subject property to any required controls. PM has not identified any HRECs associated with the subject property.

Section 8.1.3: Recognized Environmental Conditions (RECs)

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the Vacant Land located at 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan, the subject property. Any exceptions to, or deletions from, this practice are described in Sections 2.4 and 2.5 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except the following:

- The subject property at 5800 Michigan Avenue was historically occupied by gasoline dispensing operations from between 1910 and 1921 until at least 1949 and vulcanizing operations from between 1910 and 1924 until between 1941 and 1949. Previous site assessment activities completed between 2011 and 2022 document soil contamination

has been identified on the subject property above the current Part 201 GCC. Additionally, soil concentrations of select VOCs were identified exceeding SSVIAC developed for the subject property. Based on these analytical results and completion of a BEA, the subject property at 5800 Michigan Avenue has been classified as a “facility,” as defined by Part 201 of P.A. 451 of the Michigan Natural Resources Environmental Protection Act (NREPA), as amended.

No adjoining and/or nearby RECs have been identified.

Section 8.1.4: Controlled Recognized Environmental Conditions (CRECs)

A CREC, as defined in the ASTM Standard, is a recognized environmental condition (REC) resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. PM has not identified any CRECs associated with the subject property.

Section 8.2: Opinion

PM has performed an Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E-1527-13, ASTM Practice E 2600-15 and MSHDA Environmental Review Guidelines for 2022 of the Vacant Land located at 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan. Any exceptions to or deletions from this practice are described in the Limitations section of this report.

This assessment has revealed no evidence of recognized environmental conditions connected with the property, with the exception of the REC(s) identified in Section 8.1.4.

Section 8.3: Additional Investigation

PM recommends completion of a BEA and Response Activity Plan (RAP) that will require approval by EGLE. Additional investigation may be needed to complete the RAP. PM could provide a cost estimate to complete this additional investigation at the request of the client.

Section 8.4: Significant Data Gaps

A data gap, as defined in the ASTM Standard, is a lack of or inability to obtain information required by the ASTM Standard despite good faith efforts by the environmental professional to gather such information. The environmental professional must then determine whether these gaps are significant. PM did not identify or encounter any instances of significant data gaps during the course of this ESA.

Section 8.5: Conclusions

PM has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of Proposed 5800 LDHA LP Apartments located at 5800 Michigan Avenue and 3951-3957 North Campbell Street, Detroit, Wayne County, Michigan, the subject property. Any exceptions to, or deletions from, this practice are described in Sections 2.4

and 2.5 of this report. This assessment has revealed no evidence of recognized environmental conditions connected with the property except as listed in Section 8.1.4 of this report.

Section 8.6: Additional Services

Additions to the ASTM Standard include a 100-year flood plain evaluation, an evaluation for the presence of potential wetlands, inspection for potential electromagnetic fields due to high tension power lines, an evaluation of the presence of high pressure gas mains in the vicinity of the subject property, an evaluation of communication towers and/or antenna currently located at or proposed at the subject property, and an evaluation of railroad/roadway/airport noise analysis, and a Tier I Vapor Encroachment Screen (VES) of the target property. Refer to Section 9.0 for a discussion of additional services.

Section 8.7: Deviations

Refer to Section 2.4 for additional discussion.

Section 8.8: References

The following published sources were utilized during completion of this Phase I ESA:

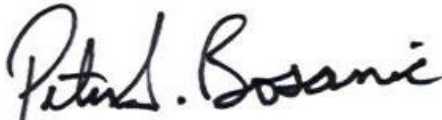
- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM, ASTM Designation E 1527-13, Published November 2013.
- Bresser's Cross-Index City Directories, Bresser's in Detroit, Michigan. City: Detroit. Years: 1946-2014.
- R.L. Polk's Directories, obtained from the State of Michigan Library in Lansing, Michigan. City: Detroit. Years: 1891-1941.
- Michigan Department of Environment, Great Lakes, and Energy (EGLE) "Your County's Radon Levels" map, referenced June 2022.
- Federal Emergency Management Agency (FEMA) floodplain map, dated February 2, 2012 (Map No. 26163C0280E).
- U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) Map, referenced June 2022.
- United States Geological Survey Division (U.S.G.S.) 7.5 Minute Topographic Map Detroit, Michigan Quadrangle, 1968 (photo-revised 1973 and 1980).
- *Custom Soil Resource Report for Wayne County, Michigan*, U.S. Department of Agriculture, survey area data: September 7, 2021.

In addition, PM reviewed the following previous site investigations, some of which are available from public sources:

Name of Report	Date of Report	Company that Prepared Report
Phase I ESA	11/10/2010	Advanced Environmental Management Group (AEMG)
Phase II ESA	1/7/2011	AKT Peerless (AKT)
Phase I ESA	11/22/2013	PM
Phase II ESA	3/31/2014	
Baseline Environmental Assessment (BEA)		
Phase I ESA	1/15/2021	
Phase II ESA	4/6/2022	

Section 8.9: Signature(s) of Environmental Professional(s)

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312 and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquires in conformance with the standards and practices set forth in 40 CFR Part 312.



Peter S. Bosanic, P.E., EP
 Principal

Section 8.10: Qualification(s) of Environmental Professional(s)

Refer to resumes included in Section 10.8 for descriptions of qualifications for the above Environmental Professional.

SECTION 9.0: NON-ASTM SCOPE SERVICES

Section 9.1: Friable and Non-friable Asbestos Containing Materials (ACMs)

Asbestos containing products are often referred to as “asbestos containing materials” (ACM) and can include but is not limited to floor tile, plaster, drywall, surfacing, pipe wrap, roofing materials, siding, and many other common building materials in any building regardless of construction date. ASTM Standard Designation E-1527-13 and NESHAP regulations define ACM as containing more than one percent asbestos, which is also considered regulated ACM. Friable ACM is ACM that can be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable refers to materials that contain asbestos bound by cement, plastic, adhesive, etc., (i.e., gaskets, floor coverings, roofing materials, etc.).

No buildings or other structures were present at the subject property during the site reconnaissance. Therefore, an evaluation for the existence of suspect asbestos containing materials was not performed.

Section 9.2: Lead-Based Paint (LBP)

No buildings or other structures were present at the subject property during the site reconnaissance. Therefore, evaluation of the potential for LBP was not performed.

Section 9.3: Radon Gas

No buildings or other structures were present at the subject property during the site reconnaissance, and a radon inspection was not required for the subject property, since it is not located within one of the 24 counties (Barry, Berrien, Branch, Calhoun, Cass, Clinton, Dickinson, Eaton, Hillsdale, Ionia, Iron, Jackson, Kalamazoo, Lapeer, Livingston, Lenawee, Monroe, Oakland, Otsego, Ottawa, Shiawassee, St. Joseph, Tuscola, and Washtenaw) designated by the EGLE as 25% or more homes tested equal to or above 4 picocuries/liter (pCi/L) of radon exposure. Therefore, no additional investigation is necessary.

Section 9.4: 100-Year Floodplain

According to a Federal Emergency Management Agency (FEMA) floodplain map, dated February 2, 2012 (Panel No. 26163C0280E), the subject property is not located within the 100-year flood zone. PM did not observe any sensitive ecological areas on the subject property, including potential wetlands, during the site reconnaissance. Furthermore, topographical features present in the subject property area are not representative of a flood plain. Documentation of the floodplain map is included in Section 10.7.

Section 9.5: Wetlands

Any construction activities proposed in a wetland (regulated or unregulated) or in a 100-year flood plain area or where site contamination cannot be effectively remediated or mitigated are strongly discouraged and may be prohibited from the use of federal funds. PM did not observe any wet areas potentially associated with wetlands on the subject property during the site reconnaissance. In addition, review of the National Wetlands Inventory (NWI) Maps from the U.S. Fish and Wildlife Service and the EGLE Wetlands Map Viewer, did not identify any wetlands on the subject property. Documentation of the NWI map is included in Section 10.7.

Section 9.6: Electromagnetic Fields, Communication Towers, and Antenna

PM did not observe any high-tension wires or substations in the vicinity of the subject property. Additionally, no cell phone towers, antennae, or arrays were observed on the subject building during the site reconnaissance. According to the Sponsor, no building-mounted cell phone antennae arrays are planned.

Section 9.7: High Pressure Buried Gas Lines

No high-pressure gas lines were identified within 1,000 feet of the subject property.

Section 9.8: Noise Analysis

MSHDA requires that a HUD Desktop Noise Assessment be completed for properties that are located within 1,000 feet of a major roadway, 3,000 feet of a railroad, or 15 miles of a military or

FAA-regulated airports. The subject property is located within the applicable distance of one busy roadway, one railroad, and four airports. PM conducted a Desktop Noise Assessment in general accordance with the HUD Noise Abatement and Control standards contained in 24 CFR 51B. The Desktop Noise Assessment is provided in Appendix 10.7. Two NALs (NAL #1 and #2) on the subject property were used for this analysis based on proximity to noise sources.

Using the HUD DNL calculator, the following is a summary of the findings of the Desktop Noise Assessment.

NAL #	Combined Source DNL (dB)	Category
1 (southeast corner of proposed building)	73	Normally Unacceptable
2 (northwest corner of proposed building)	67	Normally Unacceptable

All sites whose environmental or community noise exposure exceeds the day night average sound level (DNL) of 65 decibels (dB) are considered noise-impacted areas. For new construction that is proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required by HUD environmental criteria and standards contained in Subpart B (Noise Abatement and Control) of 24 CFR Part 51. The interior standard is 45 dB.

The "Normally Unacceptable" noise zone includes community noise levels from above 65 dB to 75 dB. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dB but does not exceed 70 dB, or a minimum of 10 dB of additional sound attenuation if the day-night average sound level is greater than 70 dB but does not exceed 75 dB (HUD generally gives a 1 dB variance up to 76 dB).

PM was provided a completed Sound Transmission Classification Assessment Tool (STraCAT) form provided by the project architect. Current noise DNLs were calculated as 74 dB (using the noise assessment completed in 2021, which was slightly higher due to inaccurate CAADT data). According to the STraCAT form, based on the proposed building materials, the average interior noise level for the proposed building was calculated to be below 45 dB with a combined attenuation of 34.83 dB. Based on this information, no additional investigation is warranted.

Additional HUD attenuation guidance is provided within the Desktop Noise Assessment report (Appendix 10.7).

Section 9.9: Assessment of Potential Vapor Encroachment Conditions (VECs)

PM completed a Tier I Vapor Encroachment Screen (VES) of the target property. The Tier I VES were conducted in general accordance with the guidelines established by the American Society for Testing and Materials (ASTM) in the *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions Designation E 2600-15* (ASTM Standard Practice E 2600-15).

The purpose of the VES was to determine if potential Vapor Encroachment Concerns (pVECs) or Vapor Encroachment Concerns (VECs) exist associated with the target property. ASTM's Standard Practice E 2600-15 defines the term VEC as the presence or likely presence of any

contaminant of concern (COC) in the indoor air environment of existing or planned structures on a property caused by the release of vapor from contaminated soil or groundwater either on the property or within close proximity to the property, at a concentration that presents or may present an unacceptable health risk to occupants. A VEC can be further defined as any COC within 100 feet for soil impacts or ground water impacts of an existing/planned structure or to the target property boundary if there are no planned structures.

The scope of this Tier I VES included a review of the geologic, hydrologic, hydrogeologic, topographic maps, aerial photography, city directories, Sanborn Fire Insurance Maps, a review of previous site investigations, regulatory databases and other pertinent data obtained during the preparation of the Phase I. No subsurface investigation of the property was undertaken as part of this Tier I VES.

Section 9.9.1: Additional Historical Record Sources

Screening tests: 1) search distance test to determine if there are any known or suspected contaminated properties in the area of concern (AOC); 2) a chemical of concern (COC) test to determine for those known or suspect contaminated properties within the AOC whether or not COC are likely to be present. The critical distance is defined as the lineal distance in any direction between the nearest edge of the contaminated plume and the nearest property boundary. For contaminated properties downgradient of the subject property, the AOC is reduced to the area within the critical distance.

- Critical distance = 30 feet for dissolved petroleum hydrocarbon COC
- Critical distance = 100 feet for COC and petroleum hydrocarbon/non-petroleum/chlorinated solvents COC

PM conducted additional historical record review beyond the scope of a Phase I ESA consisting of review of city directories, aerial photography, and the regulatory database to identify additional potentially contaminated sources of COCs within the ASTM E 2600-15 Approximate Minimum Search Distances (AMSDs). The primary area of concern included a radius of 1/3 mile (1,742 feet) and 1/10 mile (528 feet) for COCs using various factors (geology, hydrogeology, COCs, etc.). The additional historical review did not identify any further potential sources of COCs within ASTM E 2600-15 AMSDs, with the exception of:

Property Address	Distance and direction from Property	Suspect Historical Usage (dates of usage)	Historical Source	Represents VEC (yes or no with justification)
5828-5830 Michigan Avenue	Historical subject property address	Gasoline dispensing station (Between 1910-1921 and 1949)	City directories, municipal records, previous site investigations	Yes, based on soil concentrations of select VOCs exceeding SSVIAC developed for the subject property. Refer to Section 5.2.3 for additional information.

Property Address	Distance and direction from Property	Suspect Historical Usage (dates of usage)	Historical Source	Represents VEC (yes or no with justification)
5848-5864 Michigan Avenue	Approximately 50-90 feet west	Photo shop (5848-5850 Michigan Avenue; dry cleaners (5862-5864 Michigan Avenue)	City directories, municipal records, previous site investigations	No, based on the results of a previous site investigation completed for the west adjoining properties. Refer to Section 5.1.2 and Adobe Attachment Tab.

Additional properties were listed in the regulatory database, Sanborn maps, and/or city directory listings, however, based on the regional clay geology, lack of groundwater to act as a transport mechanism, and distance considerations, PM has not identified these properties as VECs.

Section 9.9.2: Conclusions/Opinion

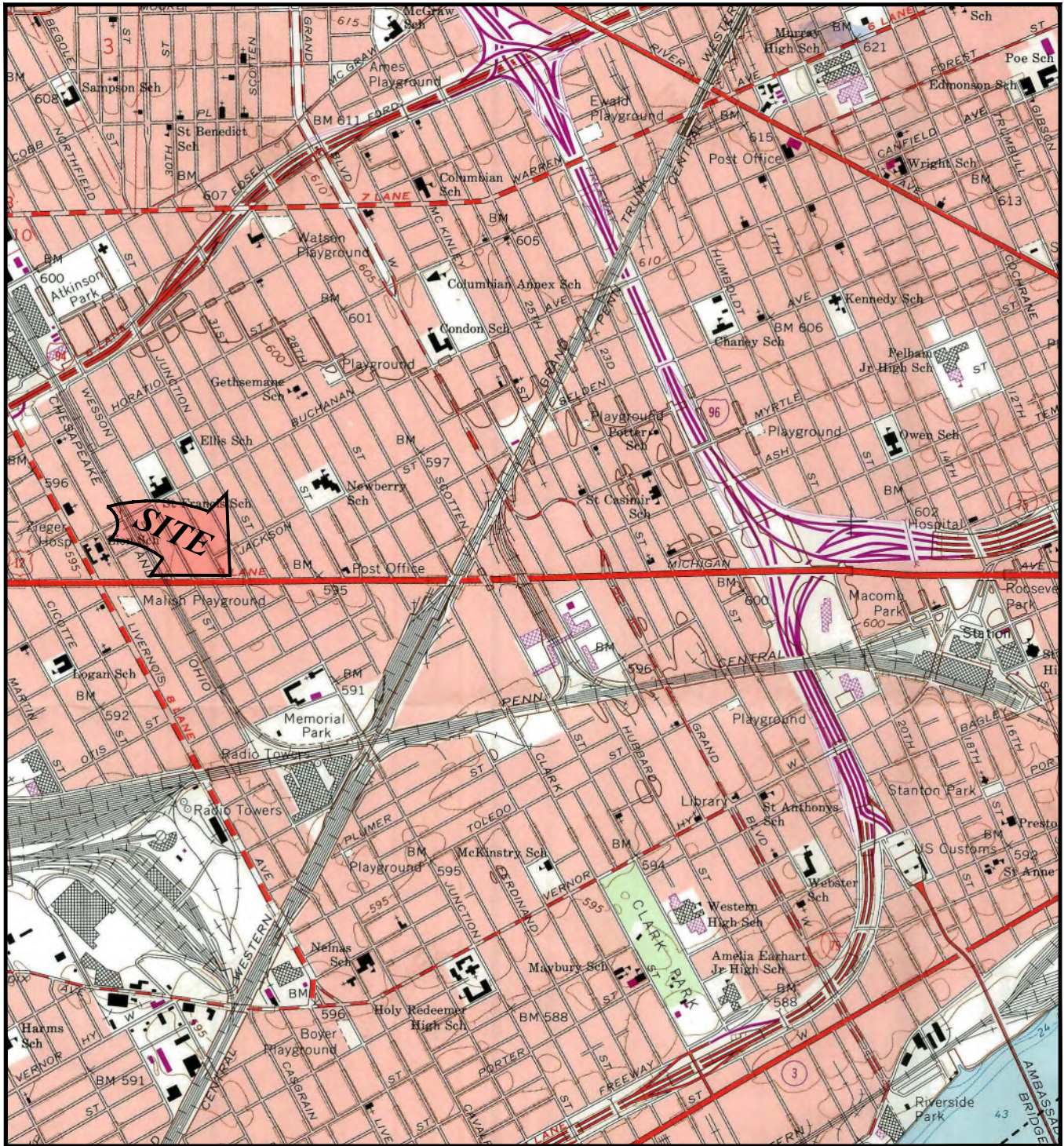
This Tier I VES did not reveal any VECs associated with the target property and/or nearby/adjoining properties; with the exception of those identified in Sections 8.1.3, 9.9.1, and Section 9.9.2 of this report.

The screening process concludes that a VEC cannot be ruled out.

Section 9.10 Onsite or Nearby Blast Hazard

MSHDA requires site that contain onsite or nearby above ground storage tanks (ASTs) be evaluated according to HUD's Guidebook on Acceptable Separation Distance (ASD). PM searched an acceptable distance from the subject property in which potential ASTs could be a hazard. PM did not identify any ASTs that would require the calculation of acceptable separation distances (ASD) for thermal radiation and/or blast overpressure.

Section 10.1: Property Vicinity Map



WAYNE COUNTY

FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SURVEY, 7.5 MINUTE SERIES
 DETROIT, MI QUADRANGLE, 1996.



PROJ: VACANT LAND
 5800 MICHIGAN AVENUE AND
 3951-3957 NORTH CAMPBELL STREET
 DETROIT, MI 48210

THIS IS NOT A LEGAL SURVEY

VERIFY SCALE
 0 2000'

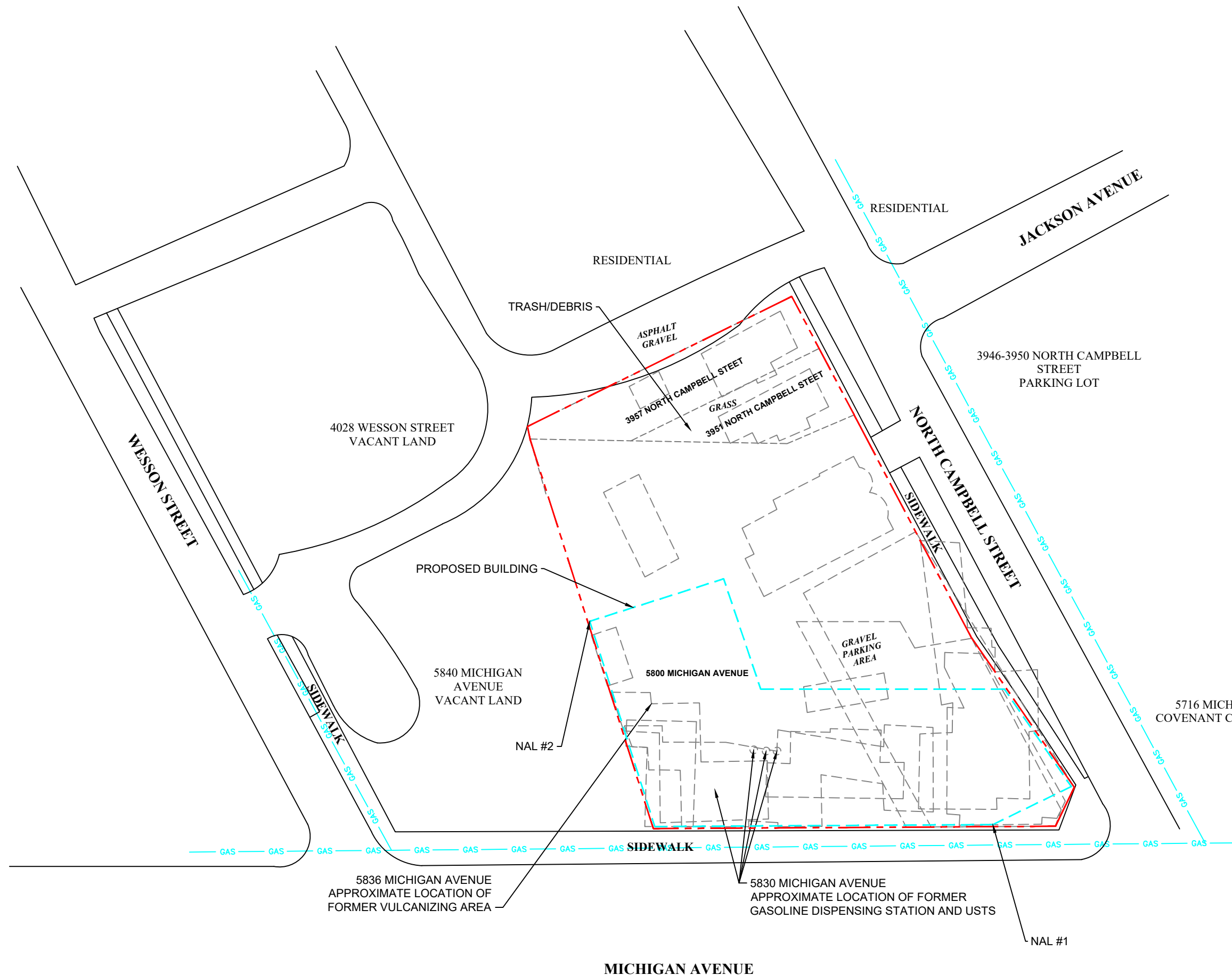
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DRN BY: MRM/CS DATE: 6/17/2022

CHKD BY: AP/DB SCALE: 1" = 2,000'

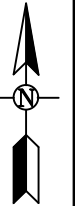
FILE NAME: 01-13496-0-001F01R00


Section 10.2: Development Site Plan



LEGEND:

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PARCEL / LOT BOUNDARIES
- GAS
- GAS
- PROPOSED SITE FEATURES





PM
ENVIRONMENTAL

**Environmental
& Engineering
Services**

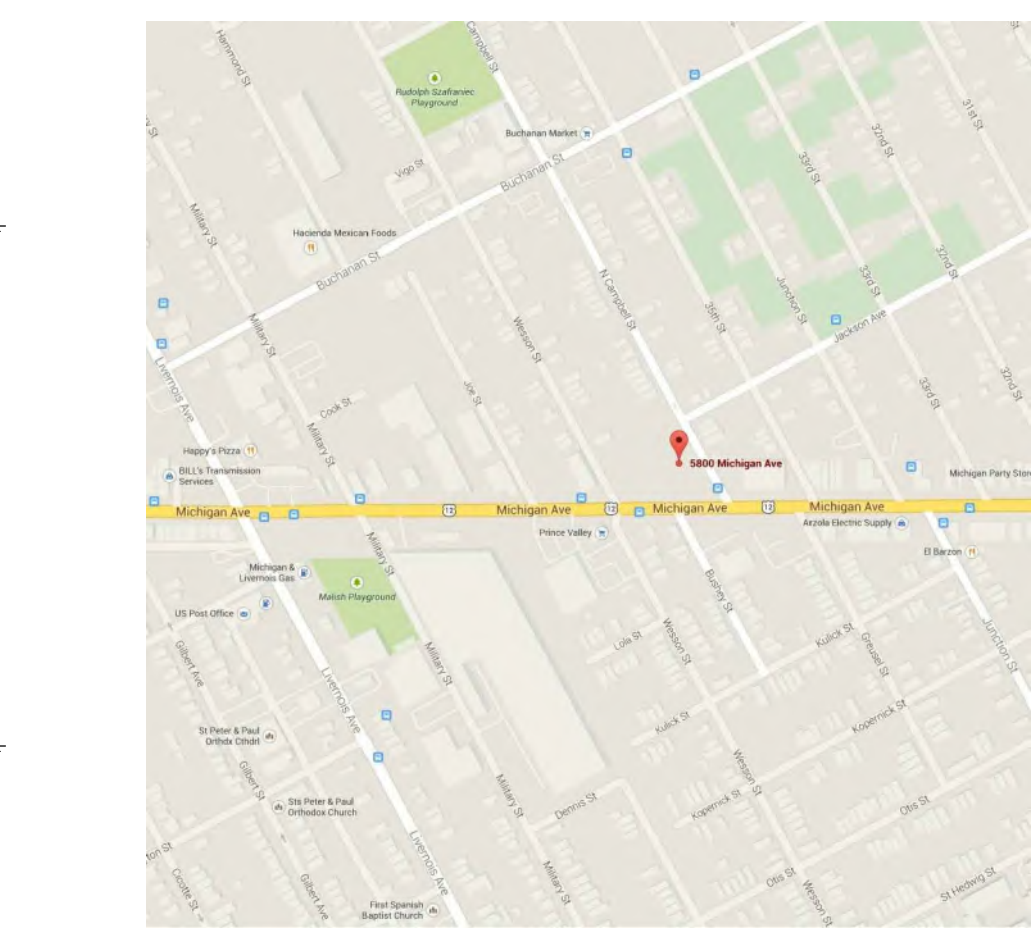
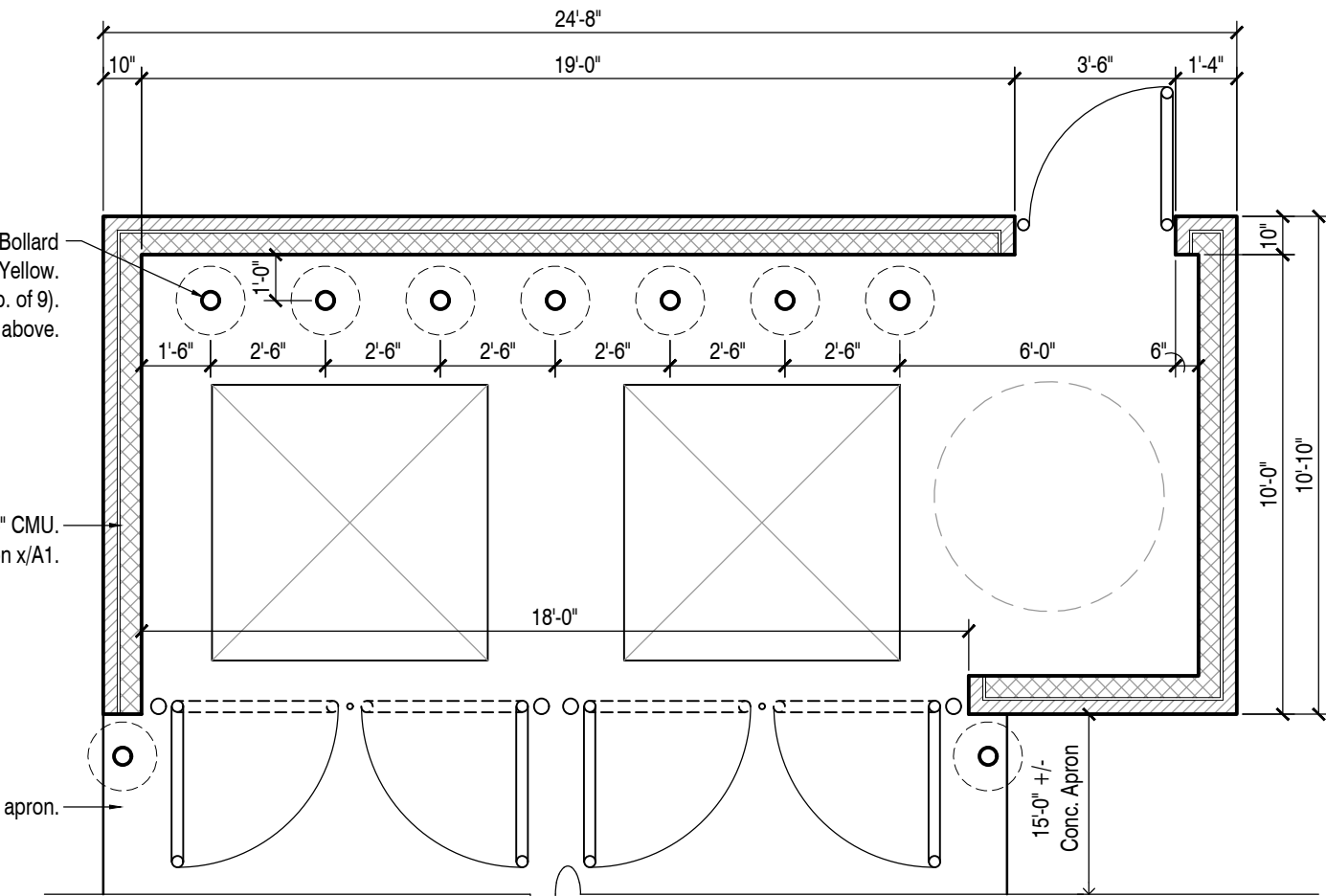
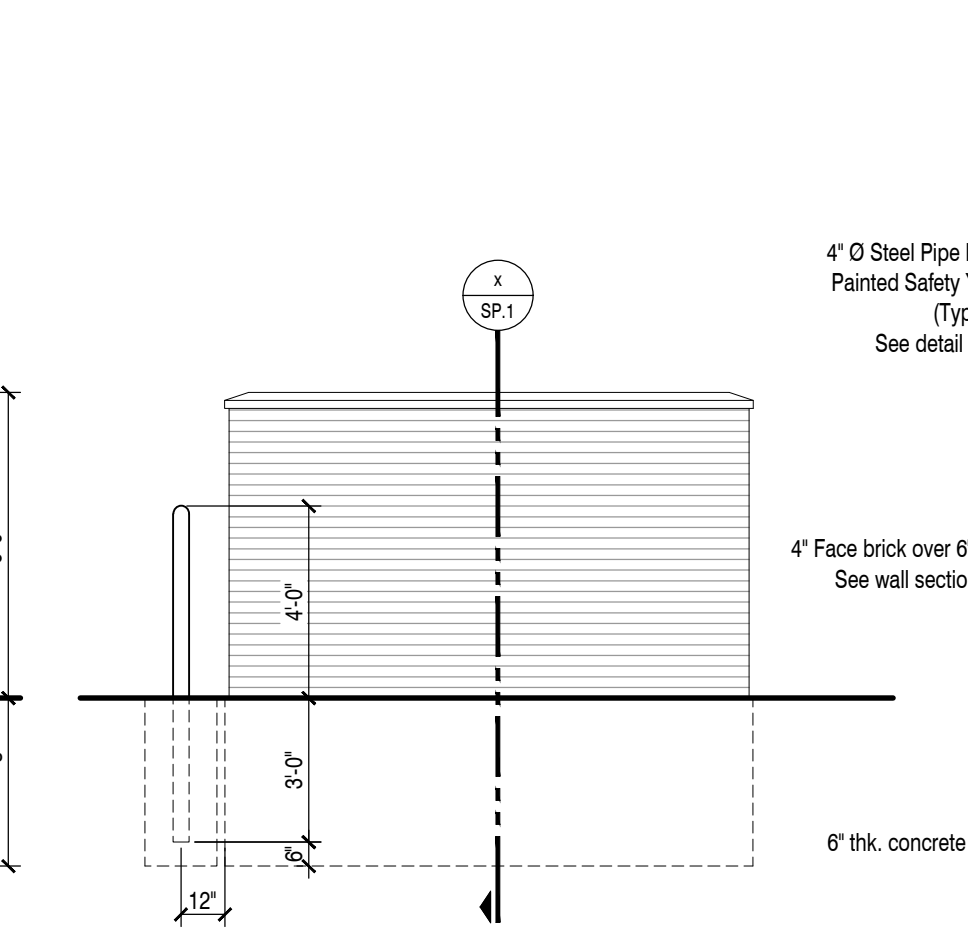
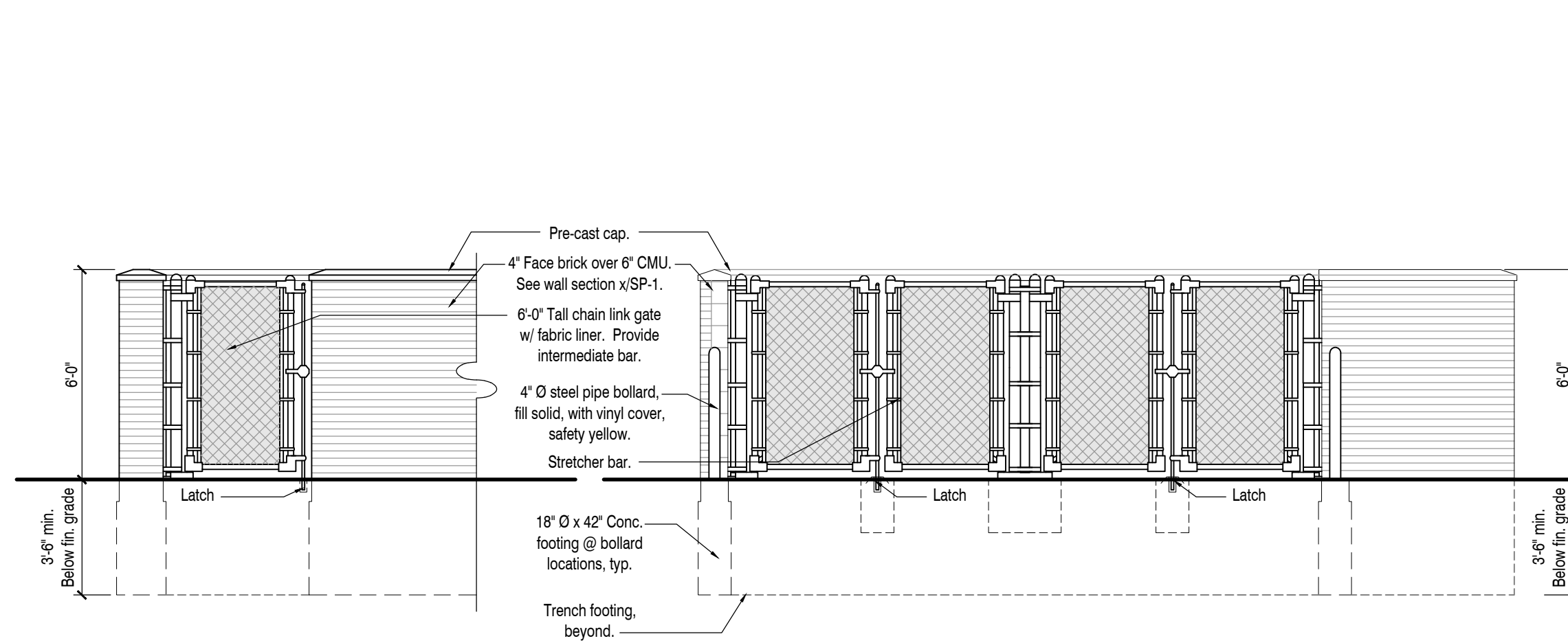
FIGURE 2
SITE PLAN

PROJ: VACANT LAND
5800 MICHIGAN AVENUE AND
3951-3957 NORTH CAMPBELL STREET
DETROIT, MI 48210

THIS IS NOT A LEGAL SURVEY	DRN BY: MM/CS/TS/MM/CS	DATE: 6/17/2022
VERIFY SCALE	CHKD BY: DB	SCALE: 1" = 50'
0 50'	FILE NAME: 01-13496-0-001F02R00	
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		

MICHIGAN AVENUE

5845-5849 MICHIGAN AVENUE VACANT COMMERCIAL BUILDING 5837-5841 MICHIGAN AVENUE VACANT LAND 5831-5833 MICHIGAN AVENUE VACANT COMMERCIAL BUILDING 5715 MICHIGAN AVENUE SOCIAL SERVICES ADMINISTRATION



7 Elevation at Dumpster Enclosure

SP-1 Scale: 1/4" = 1'-0"

DEVELOPMENT INFORMATION:
 Reference Ordinance: City of Detroit, Zoning Ordinance November 15, 2021
 Zoning District: B-4
 Proposed Use: R-2 Multi-Family (Apartments), B - Business (Office) [By right use]
 Construction Type: VA, Fully Sprinkled

Lot Areas:
 B-4 Parcels: 3 & 8. 42,344.83 s.f.

Total Lot Area: 0.97 acres

Allowable Building Ht. / Area per floor: 4 Stories / 36,000 s.f. per floor
 Proposed Building Ht. / Area per floor: 4 stories / 13,737 s.f. per floor

Total Building Area: 54,948 g.s.f.

Allowable/Proposed Building Height: 70'-0" / 48'-0" +/-

F.A.R.: 1.30

Business (Office) Parking Required: 1 per 400 square feet
 3,560 / 400 = 8.9 = 9 spaces

Residential Parking Required: 0.75 / unit = 30

Total Parking Required: 39 spaces
 Total Parking Provided: 48 spaces

12x35 Loading Zone required: 12x35 Loading Zone provided

Total Landscaping Required: 18 square feet per surface parking space
 18 s.f. x 51 sp = 918 s.f. landscaping req.

Total Landscaping Provided: 1,670 +/-, s.f. provided

6 Elevation at Dumpster Enclosure

SP-1 Scale: 1/4" = 1'-0"

Minimum Lot Dimensions (Area): 7,000 s.f. 42,344.83 s.f.
 Minimum Lot Dimensions (Width): 70 feet 201.26 feet
 Minimum Setback (front): no requirement 0 feet
 Minimum Setback (side): no requirement 0 feet
 Minimum Setback (rear): 30 feet 107'-9" +/-
 Maximum Height: 35'+40'=75 feet 48'-0" +/-

Sec. 50-13-63 B3 B4 District Height Limitations
 Where the zoning lot fronts on a street which is 80 feet or more in width and is designated by the Detroit Master Plan of Policies as a major or secondary thoroughfare, and where the outer most point of the proposed building on said zoning lot is 40 feet or more from the nearest point of the lot line of all R1, R2, and R3 Districts, the maximum height may be increased, as a matter of right, one foot for each one foot of street width greater than 80 feet, provided, that in no case shall the building exceed 80 feet in height.

5 Elevation at Dumpster Enclosure

SP-1 Scale: 1/4" = 1'-0"

4 Plan at Dumpster Enclosure

SP-1 Scale: 1/4" = 1'-0"

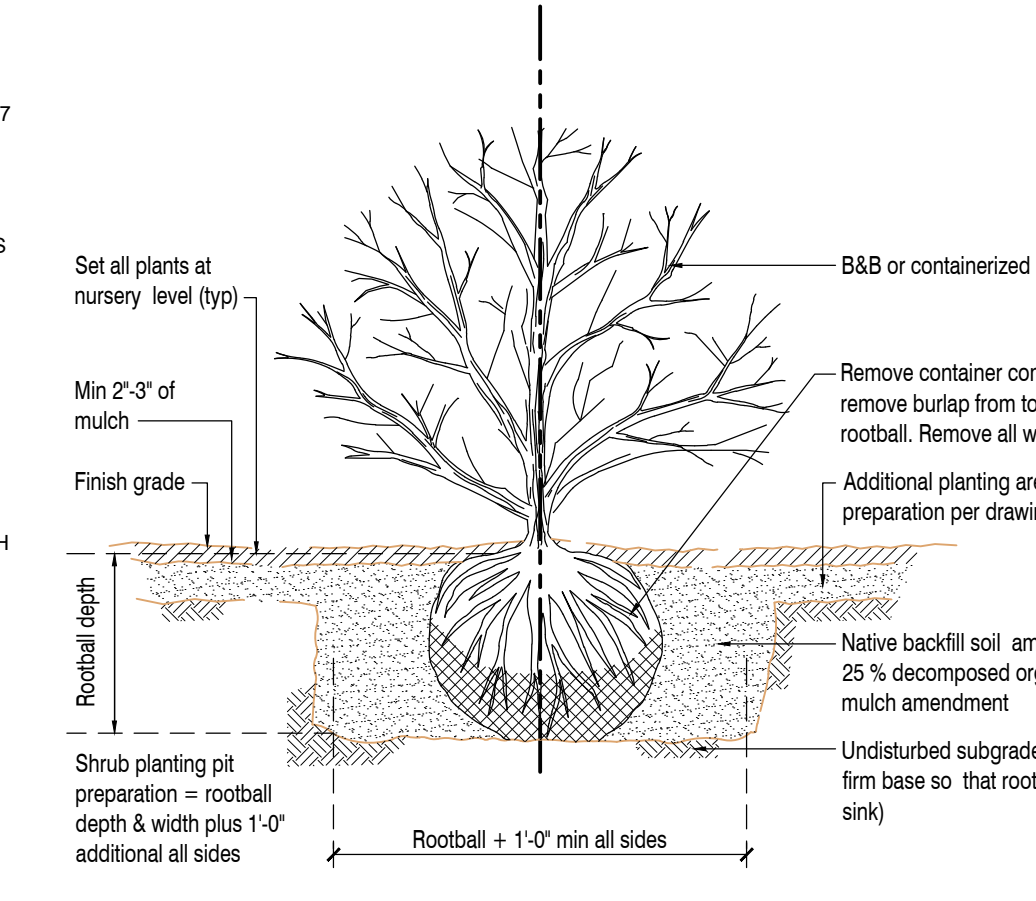
PROPERTY DESCRIPTION
 (FROM CAPITAL FUND TITLE SERVICES, LLC TITLE POLICY COMMITMENT NO. 700553, EFFECTIVE DATE SEPTEMBER 08, 2015)
 LAND IN THE CITY OF DETROIT, COUNTY OF WAYNE, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

PARCEL 3:
 PART OF LOT 6, PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS AND PART OF PRIVATE CLAIM 171, TOWN 2 SOUTH, RANGE 11 EAST, CITY OF DETROIT, WAYNE COUNTY, MICHIGAN, DESCRIBED AS: BEGINNING AT THE INTERSECTION OF THE WEST LINE OF CAMPBELL AVENUE WITH THE NORTH LINE OF MICHIGAN AVENUE; THENCE ALONG THE WEST LINE OF CAMPBELL AVENUE, NORTH 27 DEGREES 19 MINUTES WEST 235.45 FEET TO A POINT ON THE EASTERLY LINE OF LOT 6, PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM 171, CITY OF DETROIT, WAYNE COUNTY, MICHIGAN, AS RECORDED IN LIBER 12, PAGE 24 OF PLATS, WAYNE COUNTY RECORDS, SAID POINT BEING NORTH 27 DEGREES 19 MINUTES WEST 17.90 FEET FROM THE SOUTHEASTERLY CORNER OF LOT 6; THENCE SOUTH 67 DEGREES 33 MINUTES 53 SECONDS WEST 43.62 FEET TO A POINT ON THE SOUTHERLY LINE OF LOT 6, SAID POINT BEING NORTH 89 DEGREES 08 MINUTES 26 SECONDS WEST 49.30 FEET FROM THE SOUTHEAST CORNER OF SAID LOT 6; THENCE ALONG THE SOUTHERLY LINE OF LOT 6, NORTH 89 DEGREES 08 MINUTES 26 SECONDS WEST 122.92 FEET TO THE SOUTHWESTERLY CORNER OF LOT 6; THENCE SOUTH 19 DEGREES 36 MINUTES 14 SECONDS EAST 204.47 FEET TO A POINT ON THE NORTH LINE OF MICHIGAN AVENUE; THENCE ALONG THE NORTH LINE OF MICHIGAN AVENUE, SOUTH 89 DEGREES 30 MINUTES EAST 202.68 FEET TO THE POINT OF BEGINNING.

PARCEL 8:
 PART OF LOT 6, PLAT OF THE SUBDIVISION OF PART OF PRIVATE CLAIM NO. 171, ACCORDING TO THE RECORDED PLAT AS RECORDED IN LIBER 12 OF PLATS, PAGE 24, WAYNE COUNTY RECORDS, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT IN WEST LINE OF CAMPBELL AVENUE, DISTANT NORTH 27 DEGREES 19 MINUTES WEST 273.25 FEET ALONG SAID LINE FROM NORTH LINE OF MICHIGAN AVENUE; THENCE SOUTH 27 DEGREES 19 MINUTES EAST 37.8 FEET; THENCE SOUTH 67 DEGREES 33 MINUTES 53 SECONDS WEST 43.62 FEET; THENCE NORTH 89 DEGREES 08 MINUTES 26 SECONDS WEST 71.42 FEET; THENCE EASTERLY 106.00 FEET TO THE POINT OF BEGINNING. ALSO, THE NORTH 27 FEET OF LOT 6. ADDRESS: 3951 AND 3957 CAMPBELL

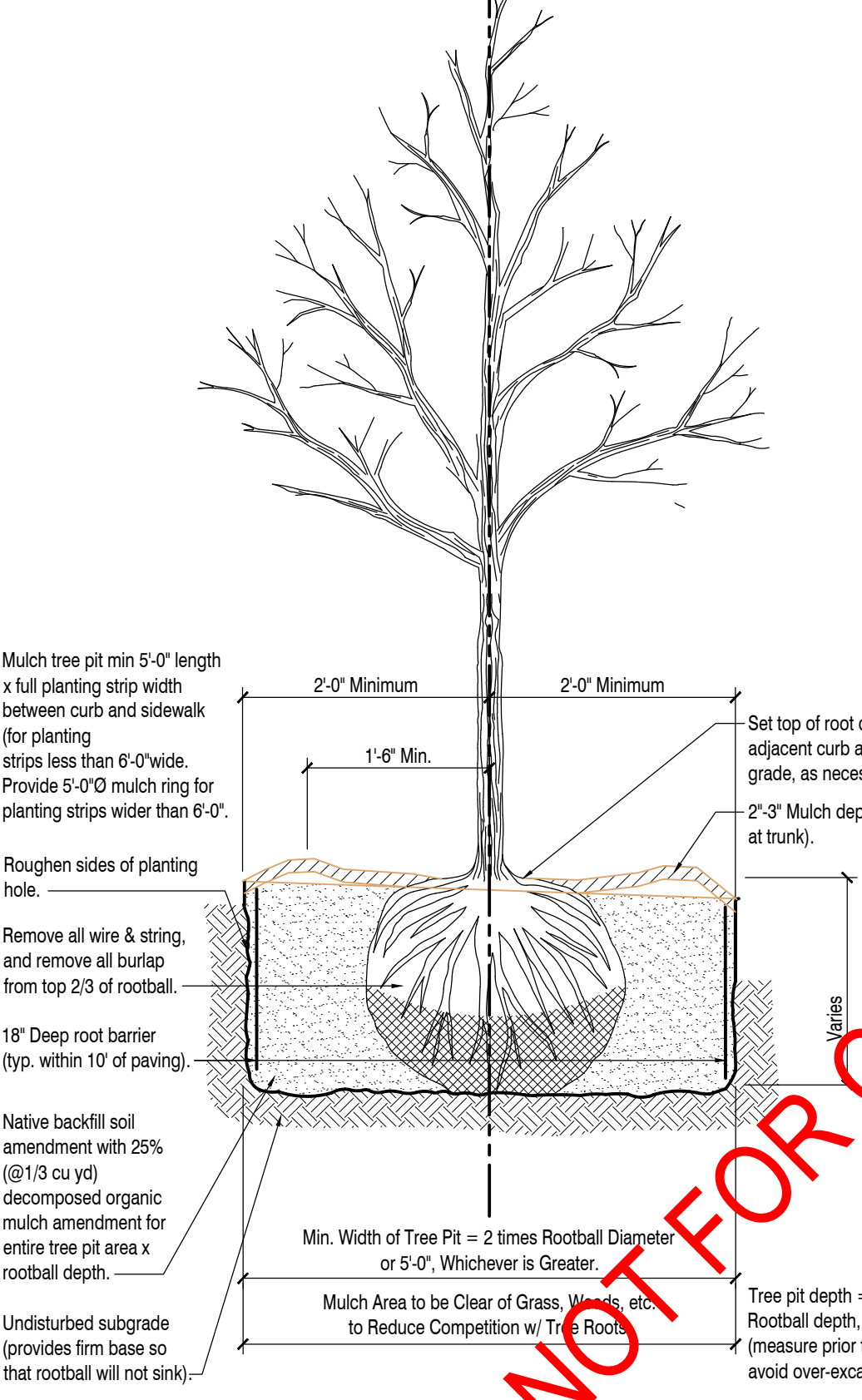
0 Location Map

SP-1 Scale: n.t.s.



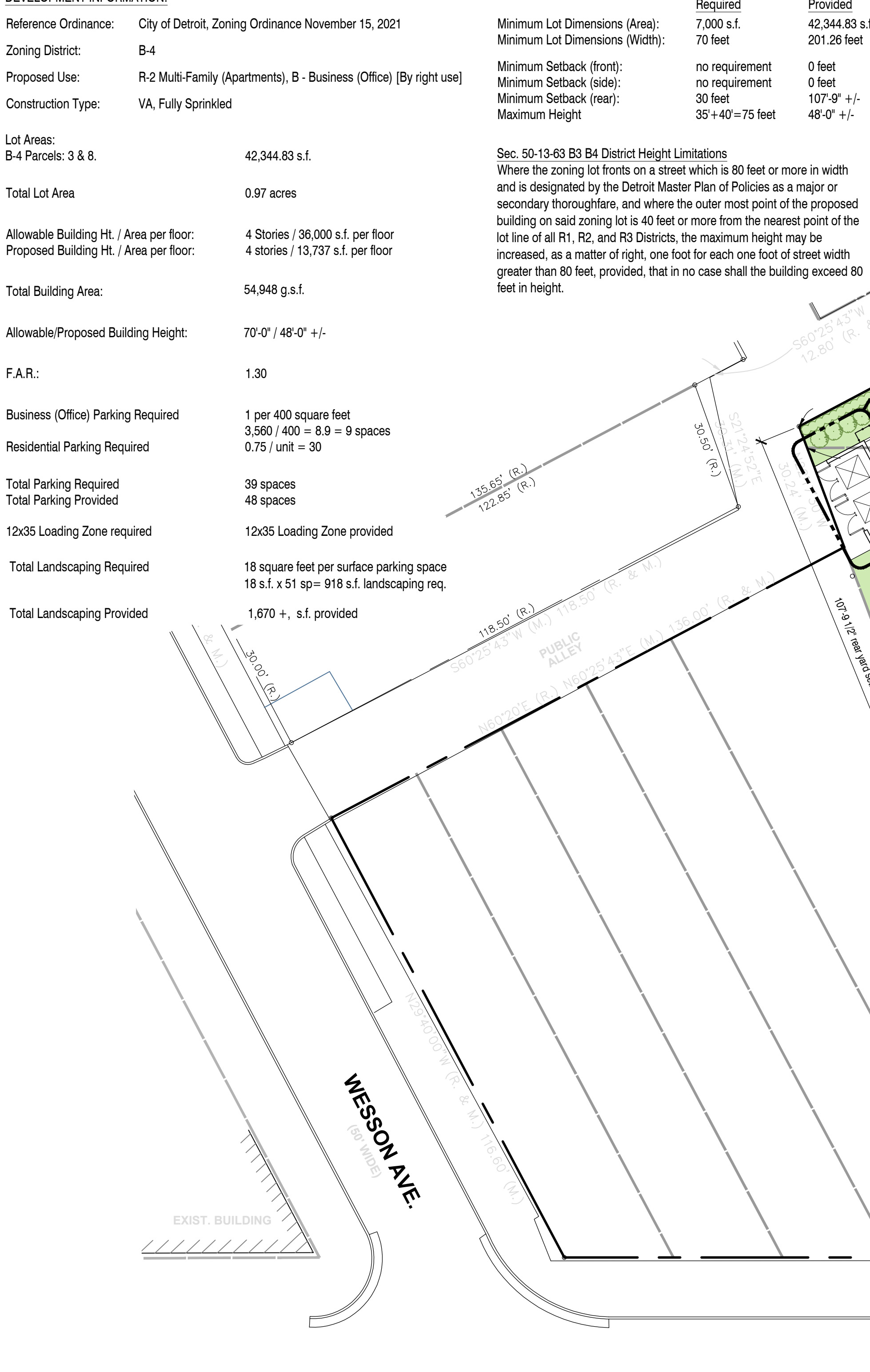
3 Perennial Planting Detail (Typical)

SP-1 Scale: NTS



2 Tree Planting Detail (Typ. of 7)

SP-1 Scale: NTS



1 Architectural Site Plan

SP-1 Scale: 1" = 20'-0"



1"=1'-0"	1/2"=1'-0"	1/8"=1'-0"
3"	3/8"=1'-0"	0"
1 1/2"=1'-0"	3/4"=1'-0"	1/4"=1'-0"

Issued For	Date
Preliminary	11.17.2021
Review	12.15.2021

**Architectural Site Plan
 Zoning Analysis
 Planting Details &
 Trash Enclosure Plans**

2021-250
 Project No. JM/S/GP
 Drawn By SGP
 Checked By SGP

Scale

SP-1
 Drawing No.

NOT FOR CONSTRUCTION

Section 10.3: Site Photographs

SITE PHOTOGRAPHS



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 1



Overview of the subject property

Photograph 2



Subject property, facing north



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 3



Subject property, facing east

Photograph 4



Subject property, facing south



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 5



Subject property, facing west

Photograph 6



Trash and debris in the northern portion



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 7



North adjoining residential property

Photograph 8



Northwest adjoining vacant land



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 9



Northeast adjoining residential property

Photograph 10



East adjoining properties;
3946-3950 North Campbell Street



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 11



East adjoining property;
5716 Michigan Avenue

Photograph 12



Southeast adjoining property;
5715 Michigan Avenue



Photographs From Site Reconnaissance
PM Project No. 01-13496-0-0001
Location: 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan

Photograph 13



South adjoining properties;
5831-5749 Michigan Avenue

Photograph 14



West adjoining property;
5840 Michigan Avenue

Section 10.4: Historical Research Documentation

AERIAL PHOTOGRAPHS

WAYNE

Subject Property



INQUIRY #: 3772998.5

YEAR: 1937

| = 500'



BOIT

IK



Subject Property

INQUIRY #: 3772998.5

YEAR: 1949

| = 500'



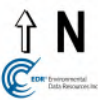


Subject Property

INQUIRY #: 3772998.5

YEAR: 1972

| = 600'



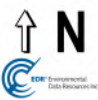


Subject Property

INQUIRY #: 3772998.5

YEAR: 1985

| = 500'





Subject Property

INQUIRY #: 3772998.5

YEAR: 1999

| = 500'



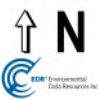


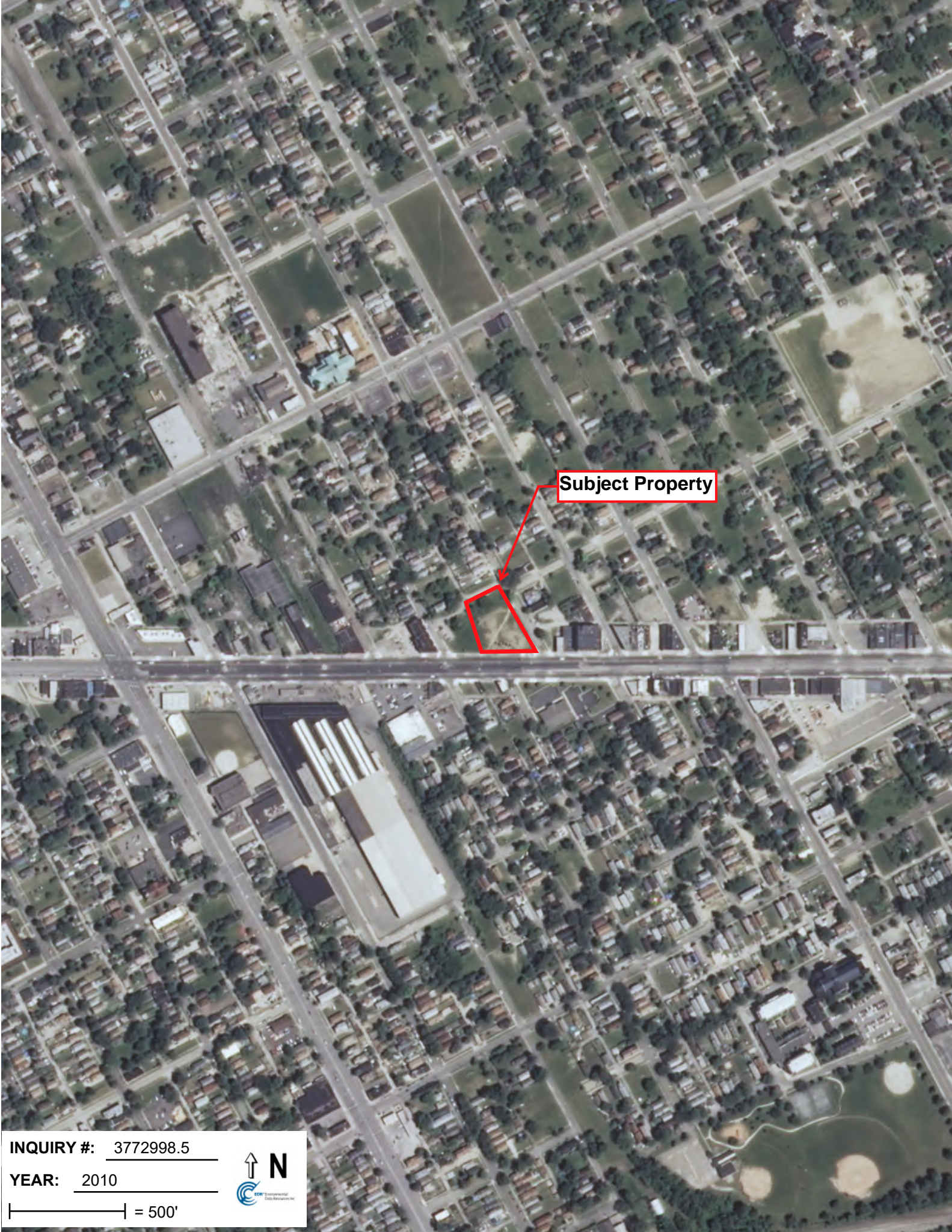
Subject Property

INQUIRY #: 3772998.5

YEAR: 2005

| = 500'





Subject Property

INQUIRY #: 3772998.5



YEAR: 2010

| = 500'





Subject Property

	Location: 5800 Michigan Avenue and 3951-3957 Campbell Street Detroit, Michigan	
	PM Project No. 01-12749-0-0001	
	Aerial Year: 2014	
	Source: USGS	



Subject Property



Location: 5800 Michigan Avenue and 3951-3957 North Campbell Street Detroit, Michigan

PM Project No. 01-13496-0-0001

Aerial Year: 2018

Source: USGS



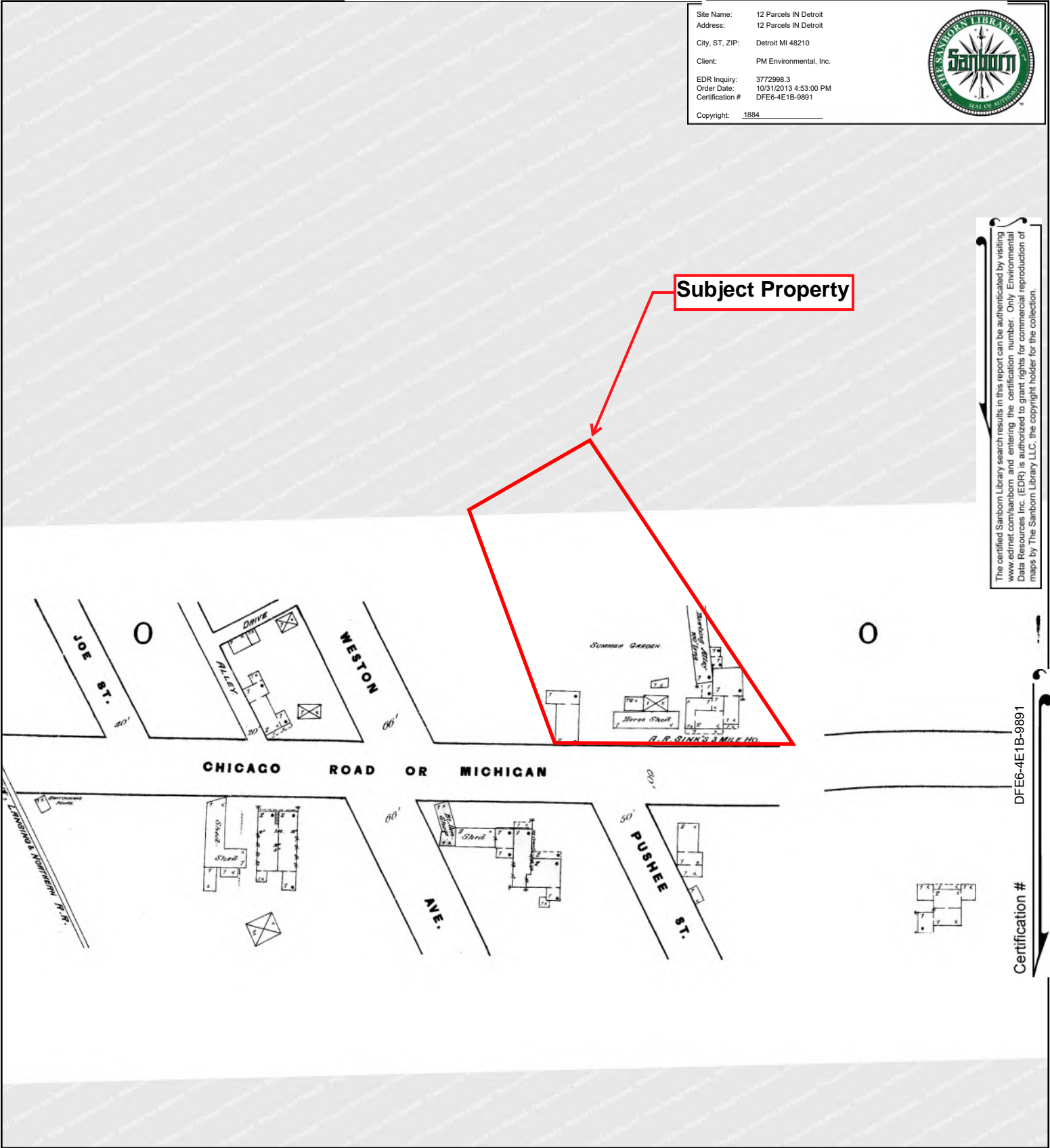
SANBORN FIRE INSURANCE MAPS

1884 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
 Address: 12 Parcels IN Detroit
 City, ST, ZIP: Detroit MI 48210
 Client: PM Environmental, Inc.
 EDR Inquiry: 3772998.3
 Order Date: 10/31/2013 4:53:00 PM
 Certification # DFE6-4E1B-9891
 Copyright: 1884

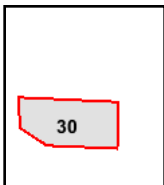
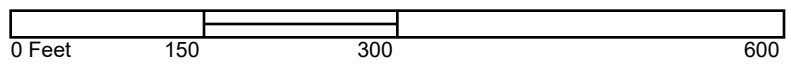


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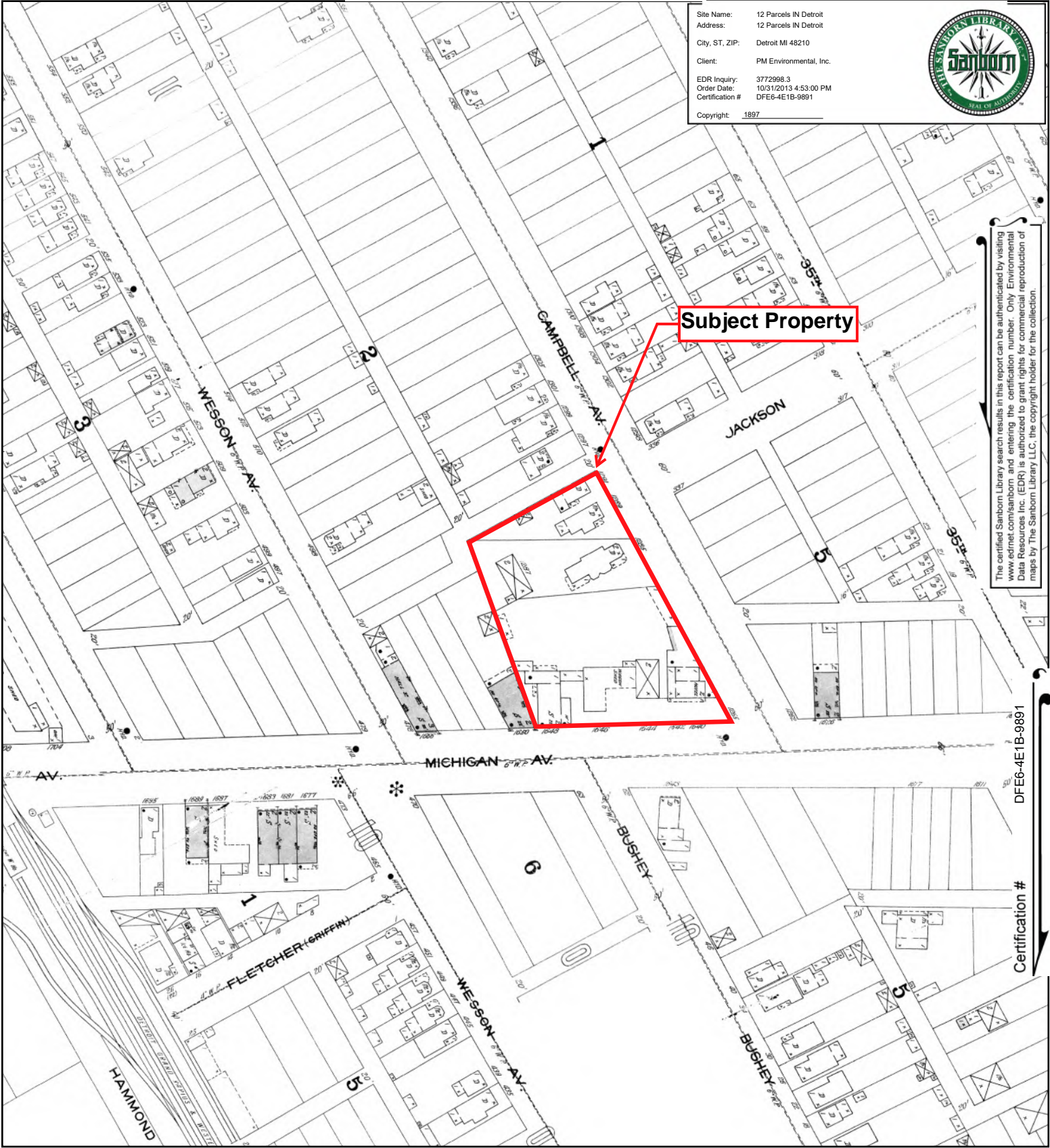


Volume 1, Sheet 30



1897 Certified Sanborn Map

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 EDR Inquiry: 3772998.3
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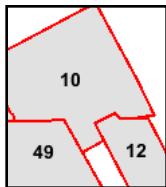
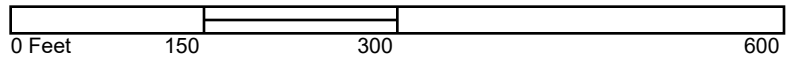


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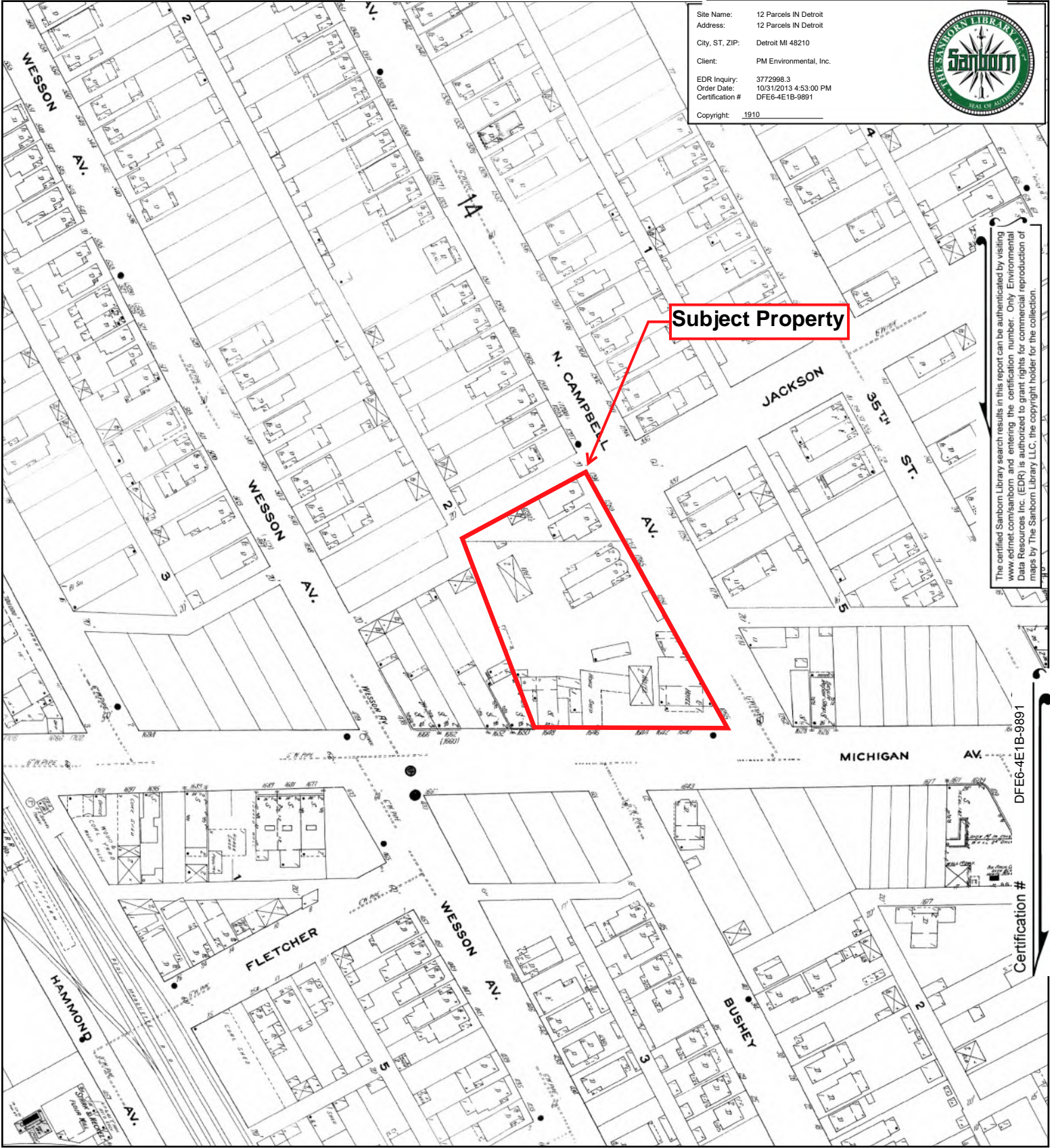


Volume 5, Sheet 10
 Volume 5, Sheet 12
 Volume 5, Sheet 49



1910 Certified Sanborn Map

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 Address: 12 Parcels IN Detroit
 City, ST, ZIP: Detroit MI 48210
 Client: PM Environmental, Inc.
 EDR Inquiry: 3772998.3
 Order Date: 10/31/2013 4:53:00 PM
 Certification # DFE6-4E1B-9891
 Copyright: 1910

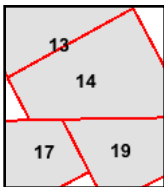
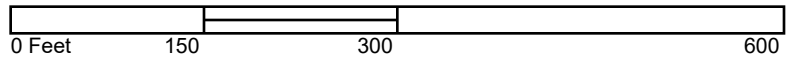


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DFE6-4E1B-9891

Certification #

This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.

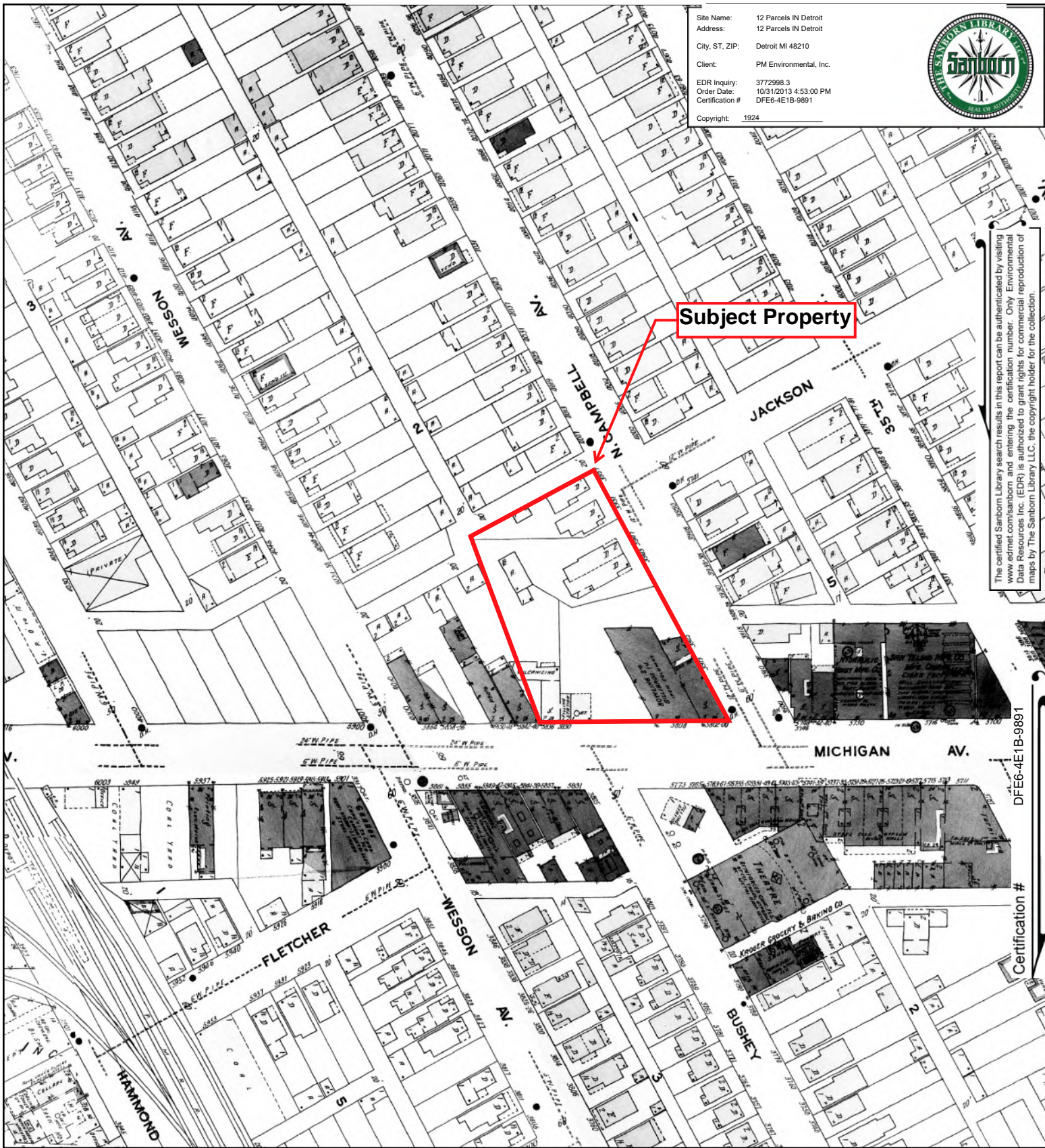


- Volume 5, Sheet 13
- Volume 5, Sheet 14
- Volume 5, Sheet 17
- Volume 5, Sheet 19



1924 Certified Sanborn Map

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 Address: 12 Parcels IN Detroit
 City, ST, ZIP: Detroit MI 48210
 Client: PM Environmental, Inc.
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 Order Date: 10/31/2013 4:53:00 PM
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 Copyright: 1924

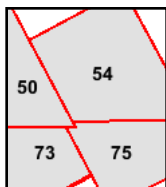
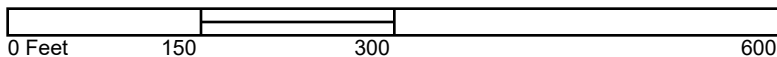


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DFE6-4E1B-9891

Certification #

This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.

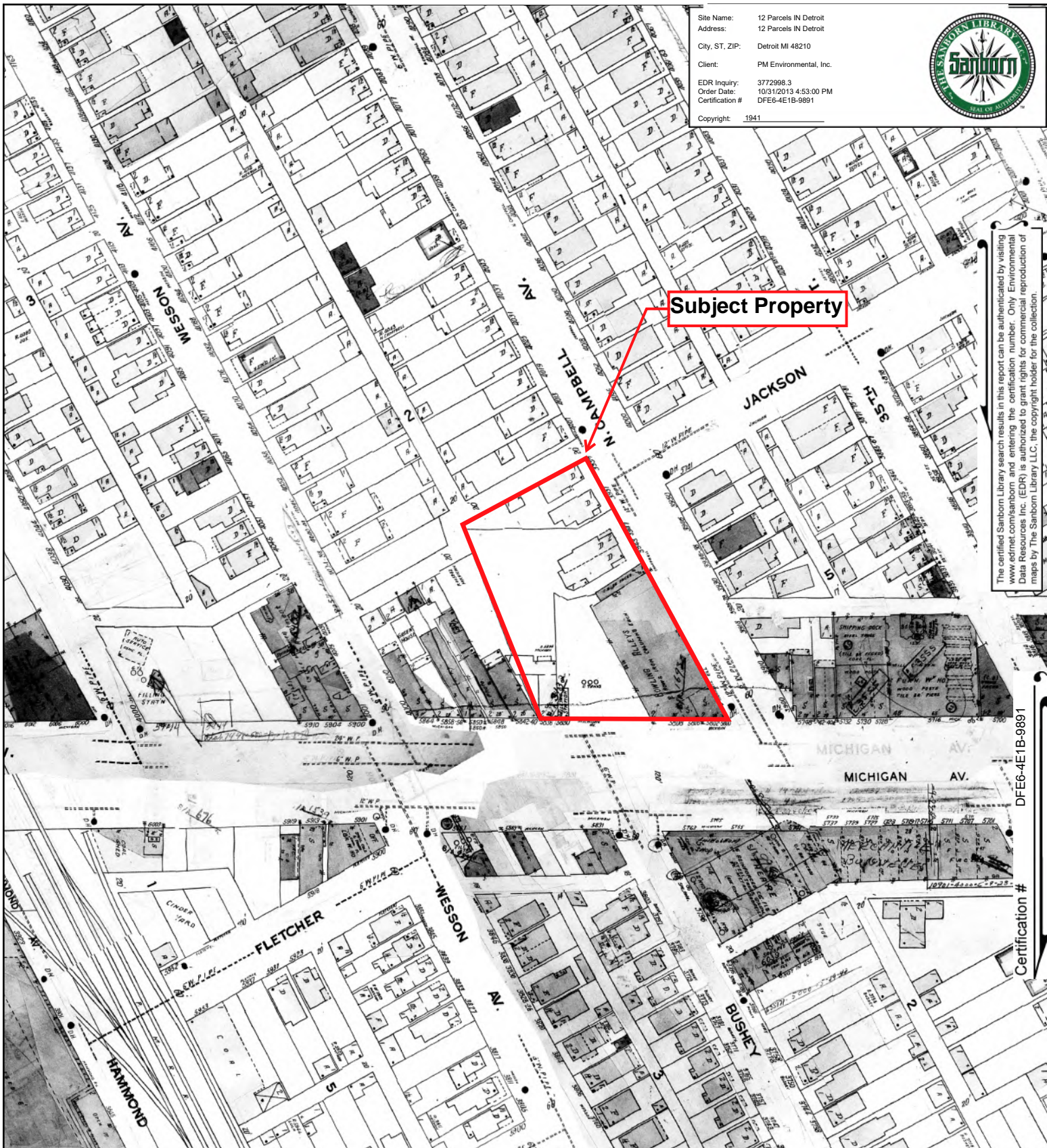


- Volume 12, Sheet 50
- Volume 12, Sheet 54
- Volume 12, Sheet 73
- Volume 12, Sheet 75
- Volume 12, Sheet 54



1941 Certified Sanborn Map

Site Name: 12 Parcels IN Detroit
 Address: 12 Parcels IN Detroit
 City, ST, ZIP: Detroit MI 48210
 Client: PM Environmental, Inc.
 EDR Inquiry: 3772998.3
 Order Date: 10/31/2013 4:53:00 PM
 Certification #: DFE6-4E1B-9891
 Copyright: 1941

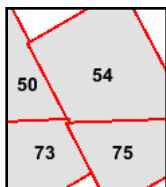
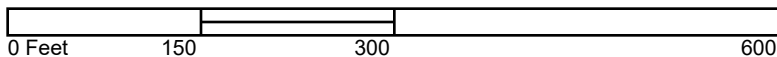


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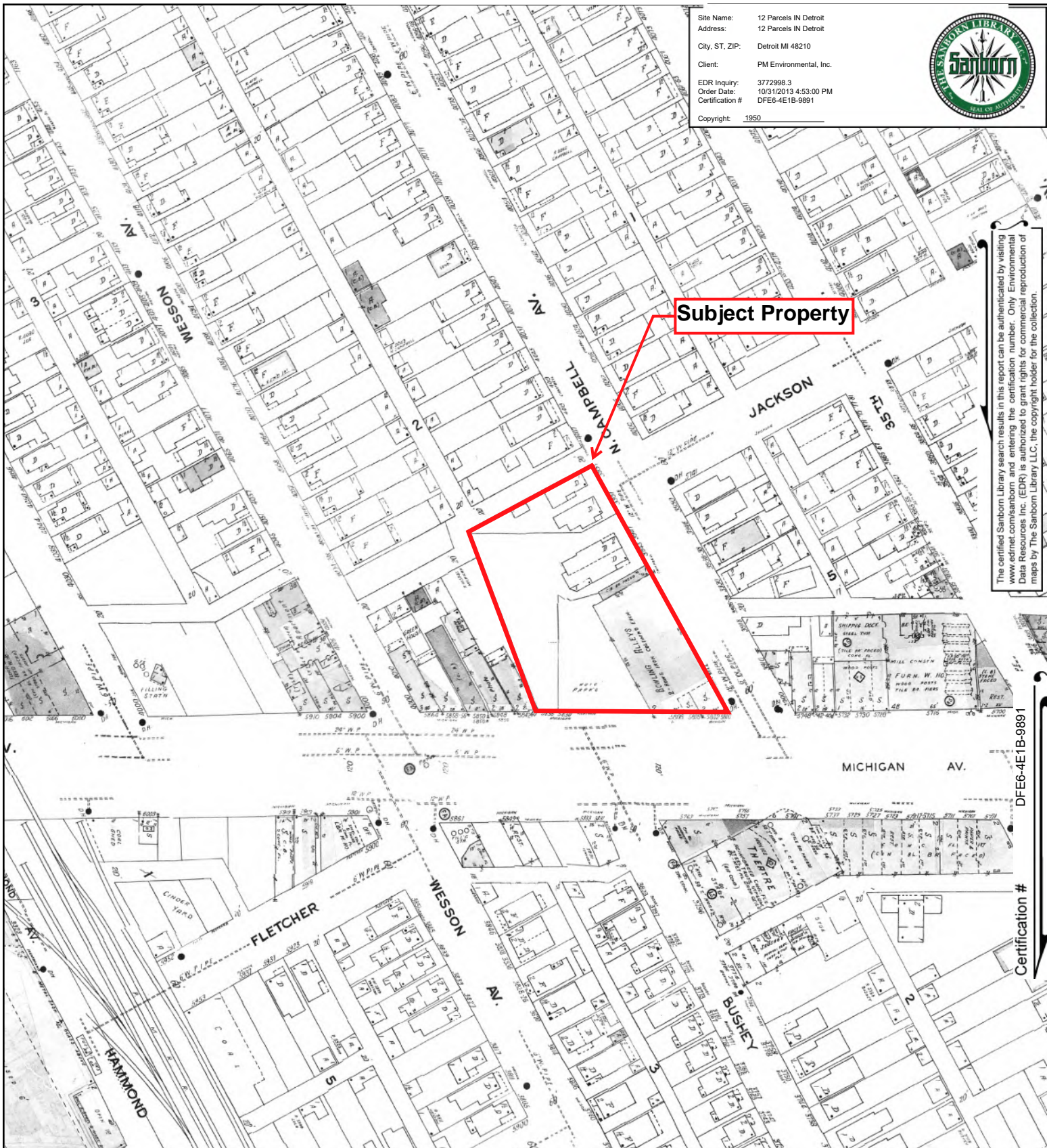


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1950 Certified Sanborn Map

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 Copyright: 1950

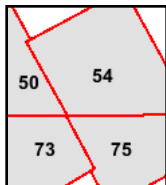
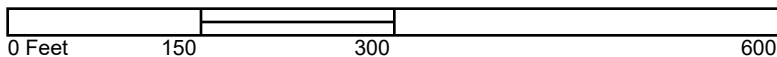


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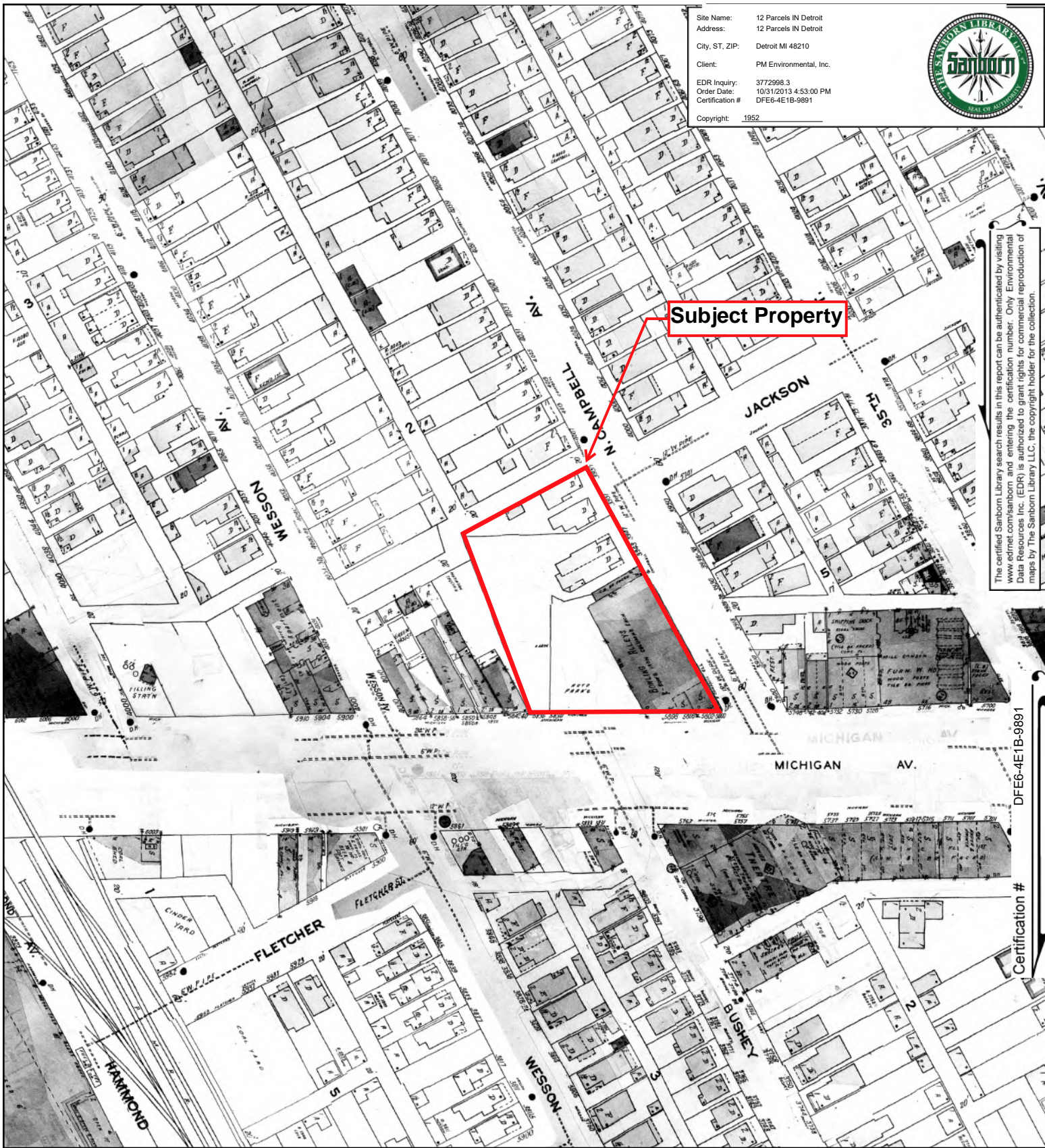


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1952 Certified Sanborn Map

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 Order Date: 10/31/2013 4:53:00 PM
 Certification #: DFE6-4E1B-9891
 Copyright: 1952

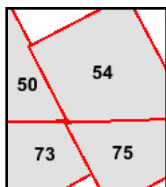
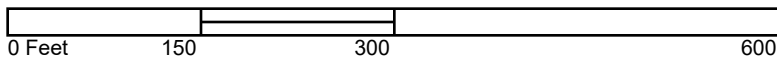


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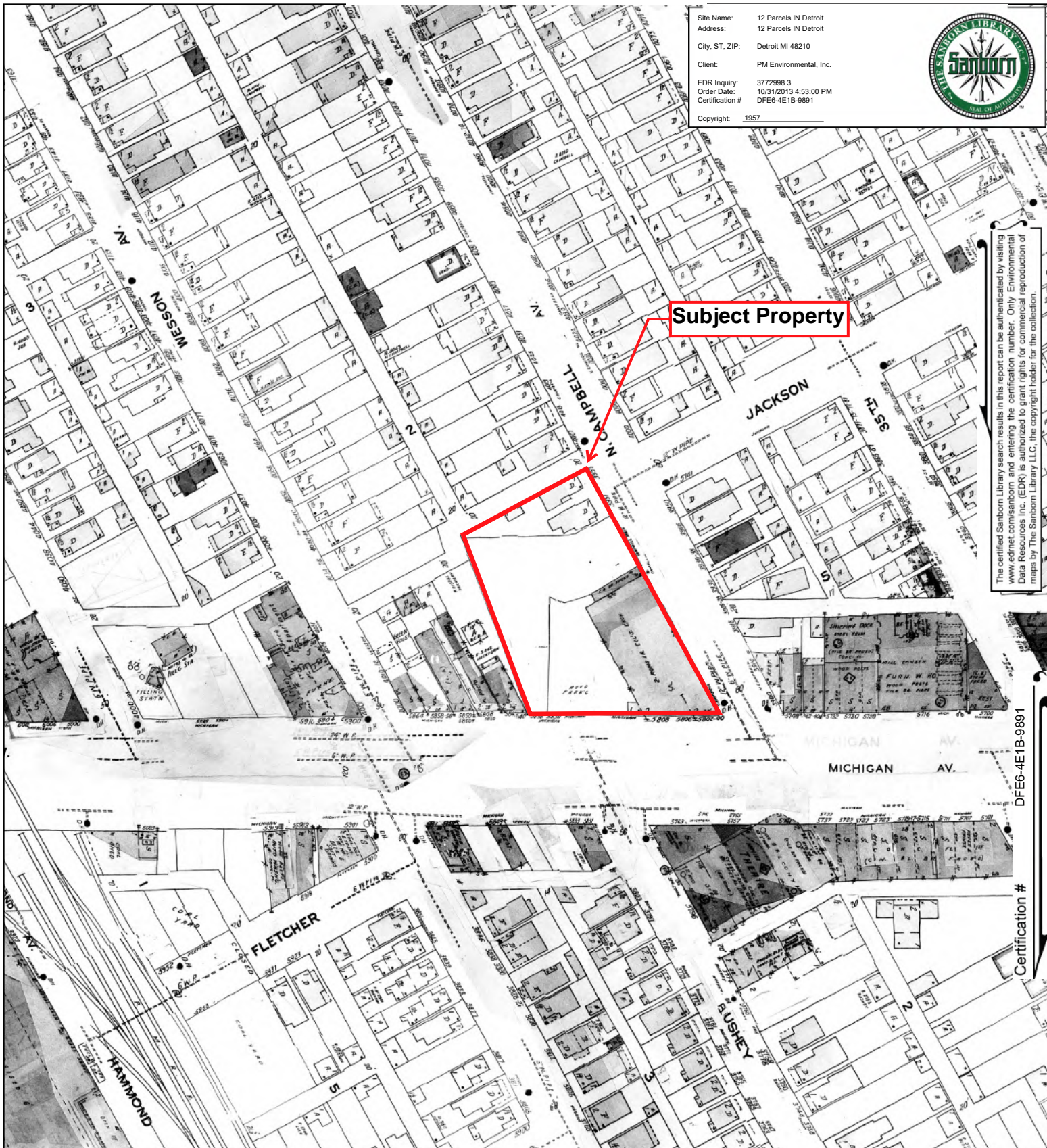


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1957 Certified Sanborn Map

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 Client: PM Environmental, Inc.
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 Copyright: 1957

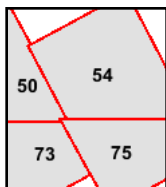
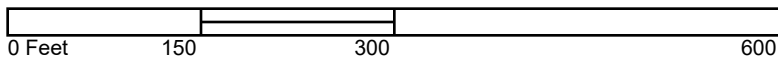


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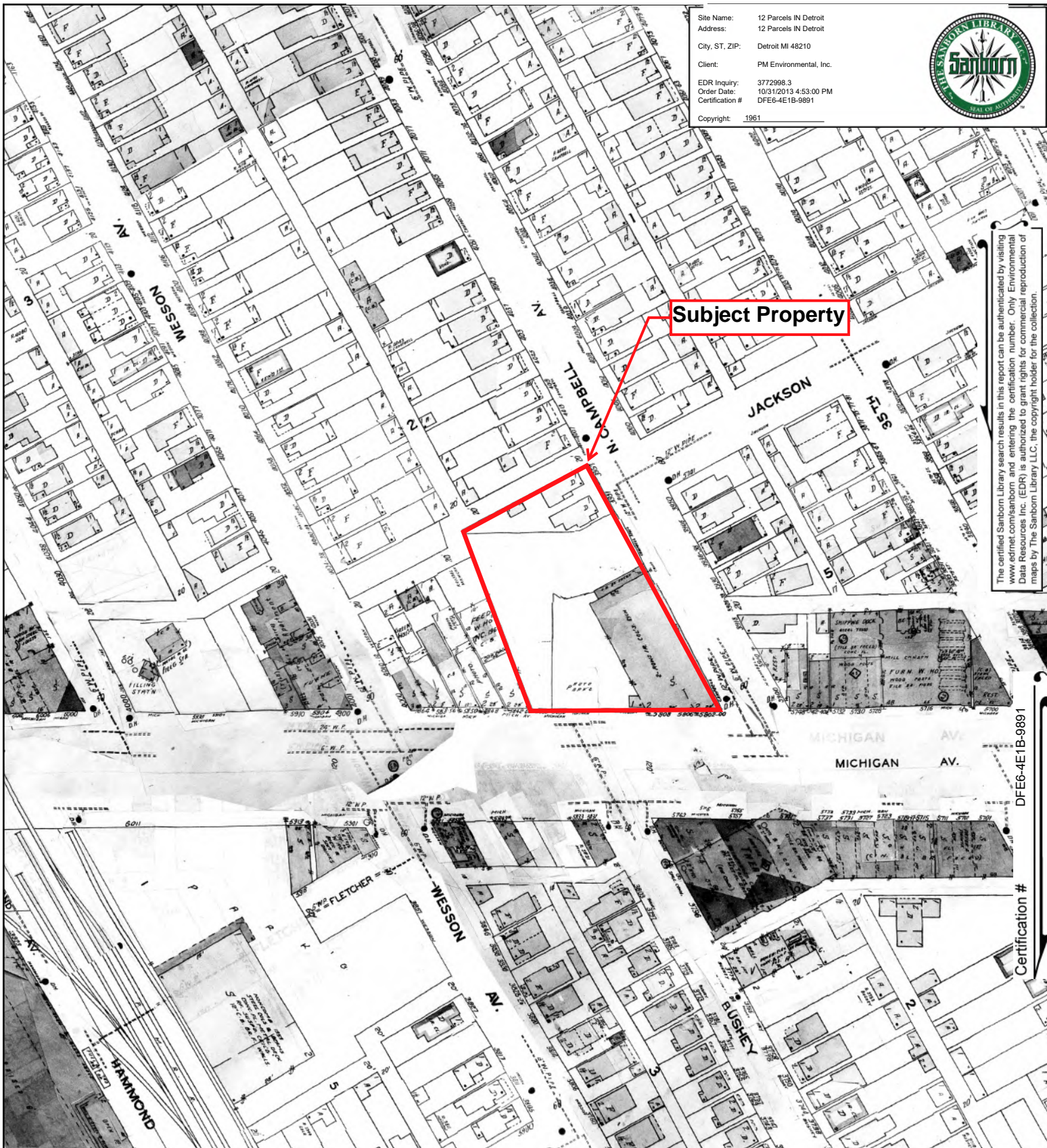


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1961 Certified Sanborn Map

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 Client: PM Environmental, Inc.
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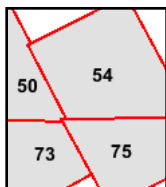
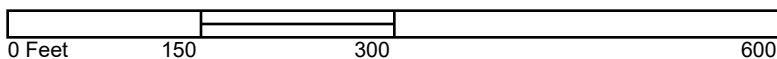


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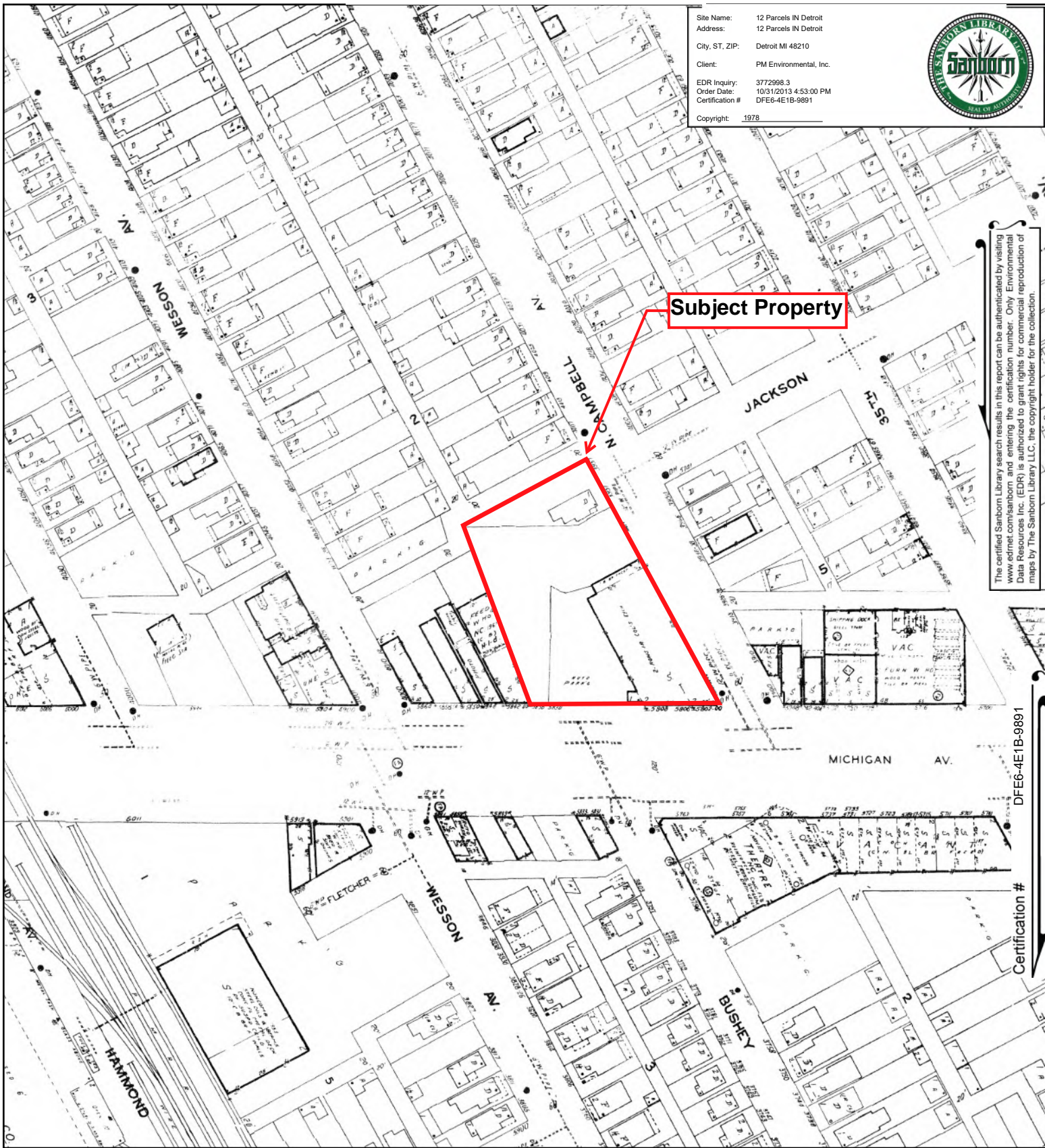


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1978 Certified Sanborn Map

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 Client: PM Environmental, Inc.
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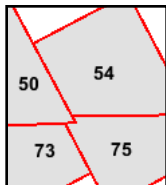
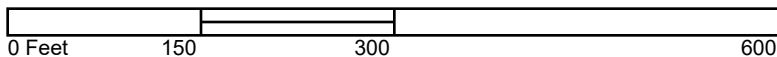


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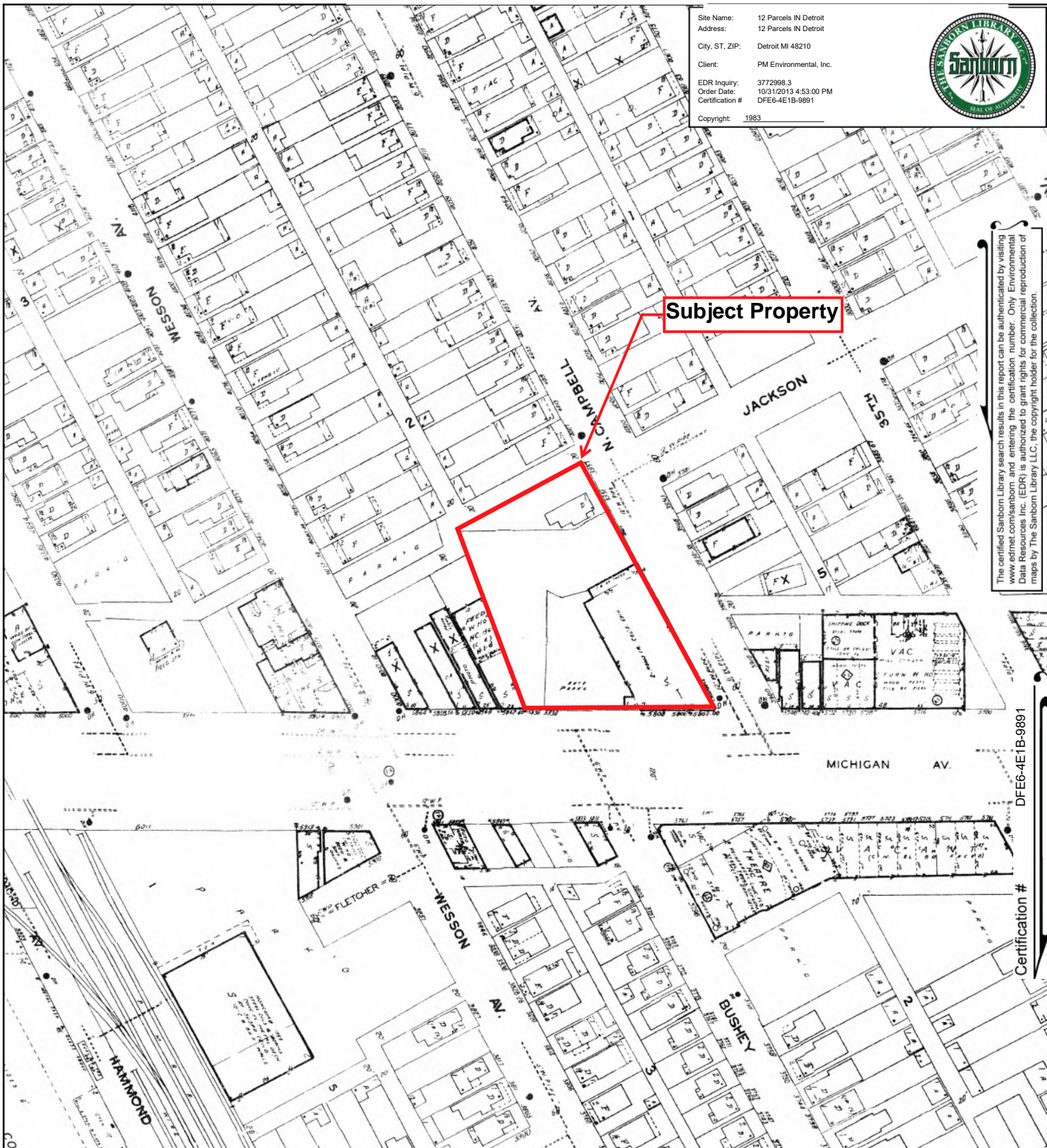


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1983 Certified Sanborn Map

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 Client: PM Environmental, Inc.
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 Order Date: 10/31/2013 4:53:00 PM
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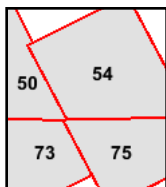
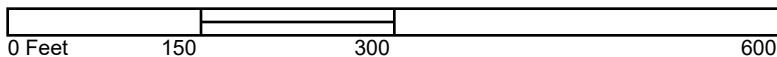


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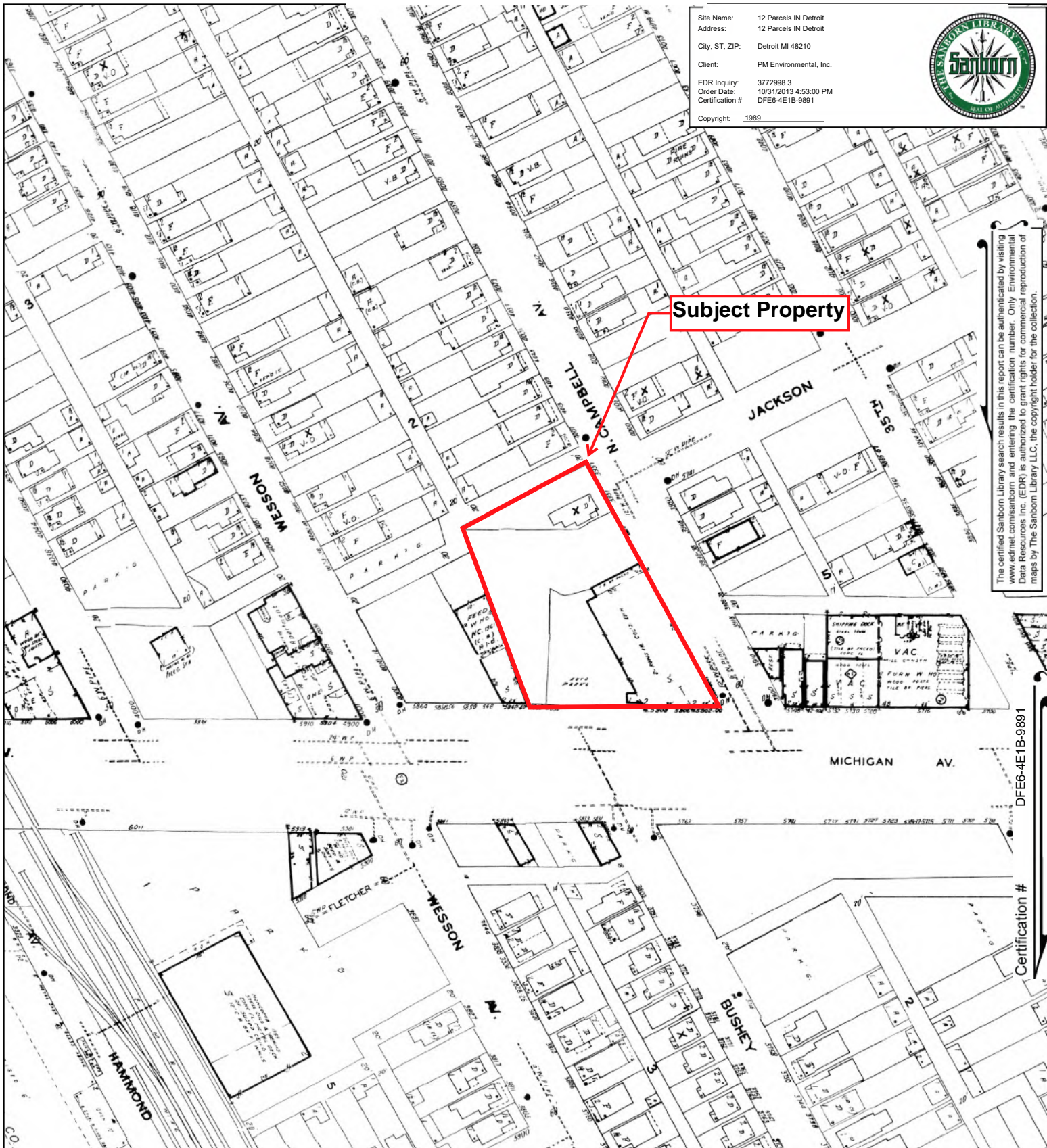


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1989 Certified Sanborn Map

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 Client: PM Environmental, Inc.
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 Copyright: 1989

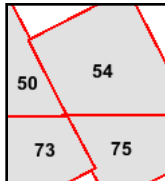
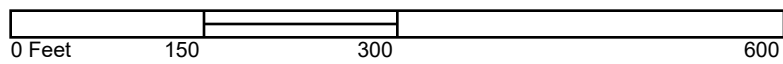


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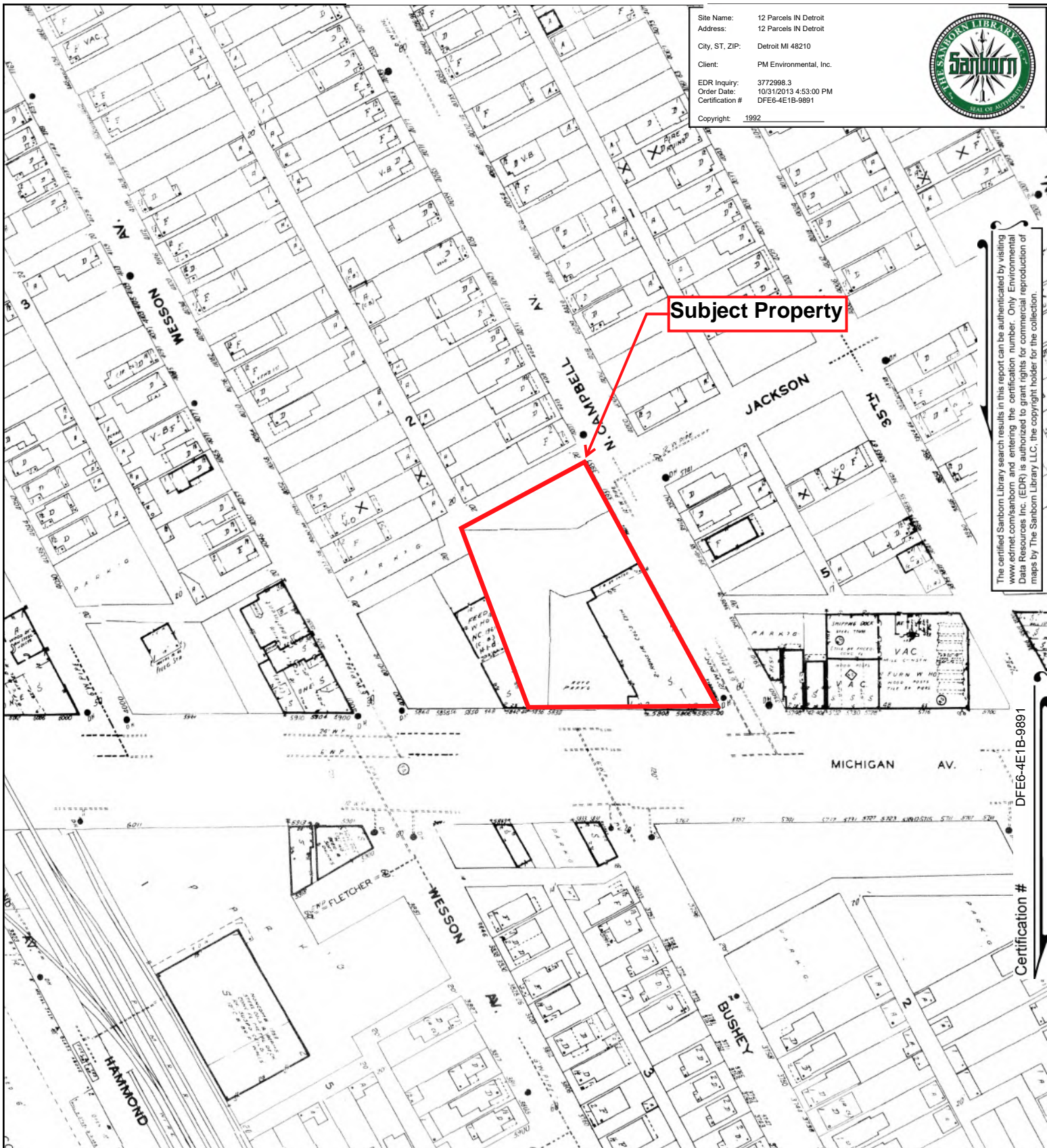


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1992 Certified Sanborn Map

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 City, ST, ZIP: Detroit MI 48210
 Client: PM Environmental, Inc.
 EDR Inquiry: 3772998.3
 Order Date: 10/31/2013 4:53:00 PM
 Certification #: DFE6-4E1B-9891
 Copyright: 1992

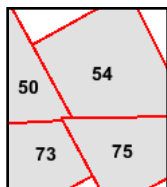
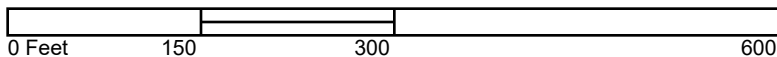


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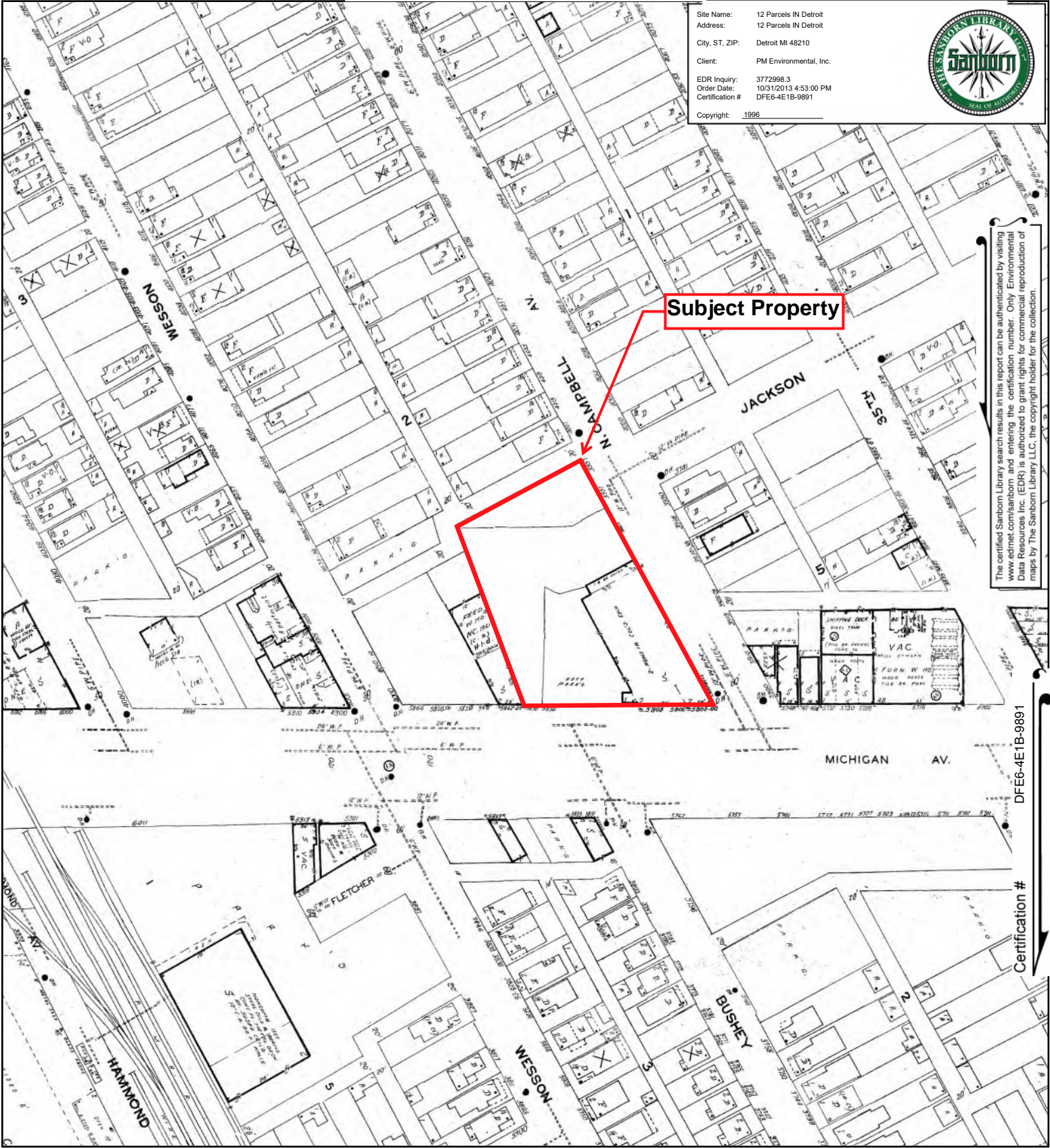


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1996 Certified Sanborn Map

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 Client: PM Environmental, Inc.
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 Order Date: 10/31/2013 4:53:00 PM
 Certification #: DFE6-4E1B-9891
 Copyright: 1996

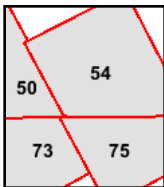
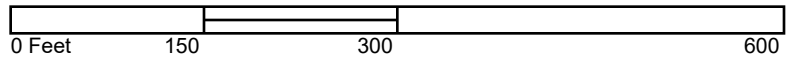


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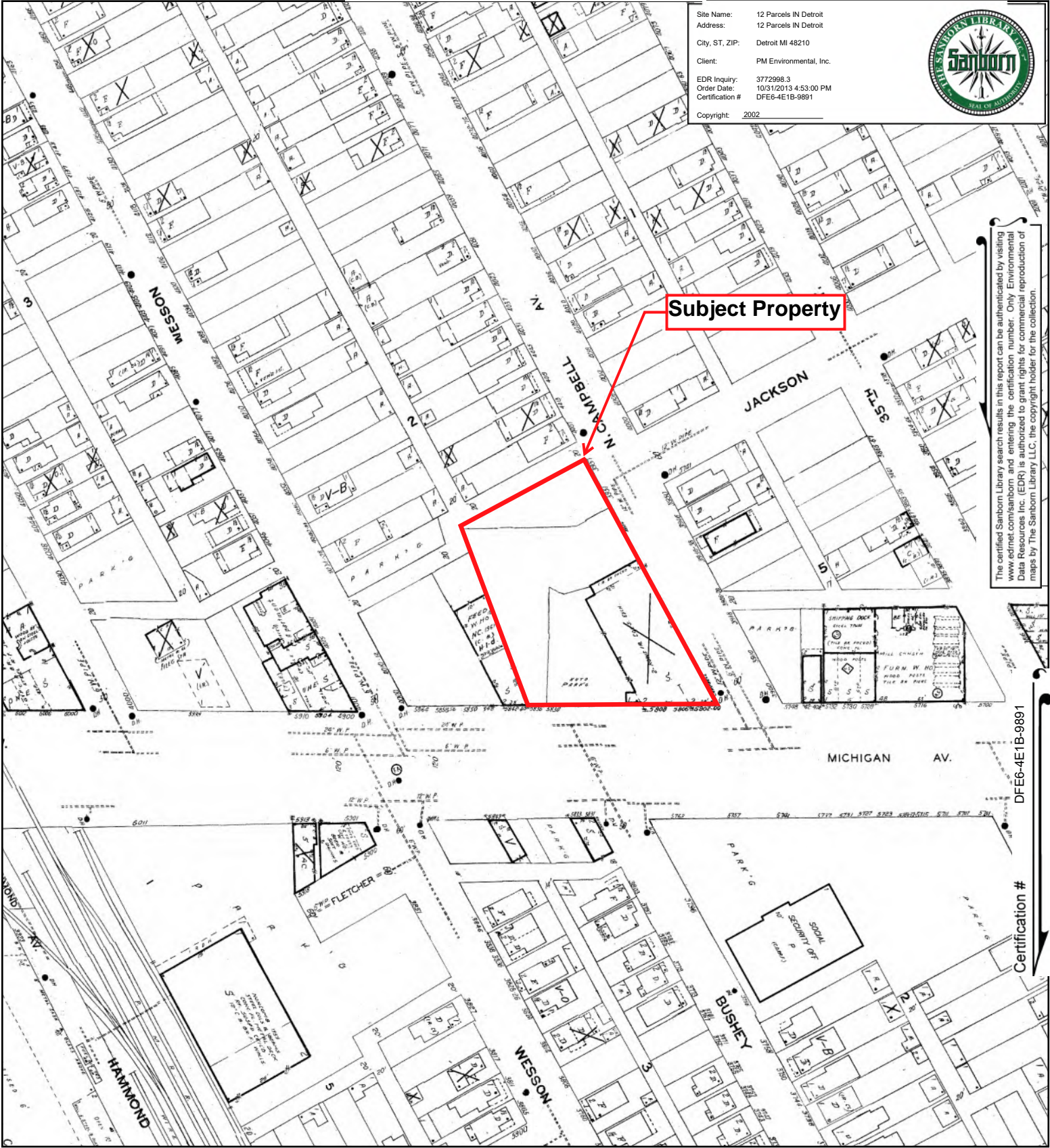


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2002 Certified Sanborn Map

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 Copyright: 2002

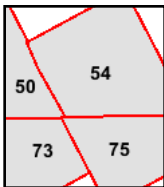
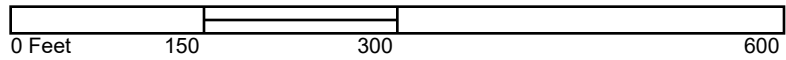


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SOIL SURVEY INFORMATION



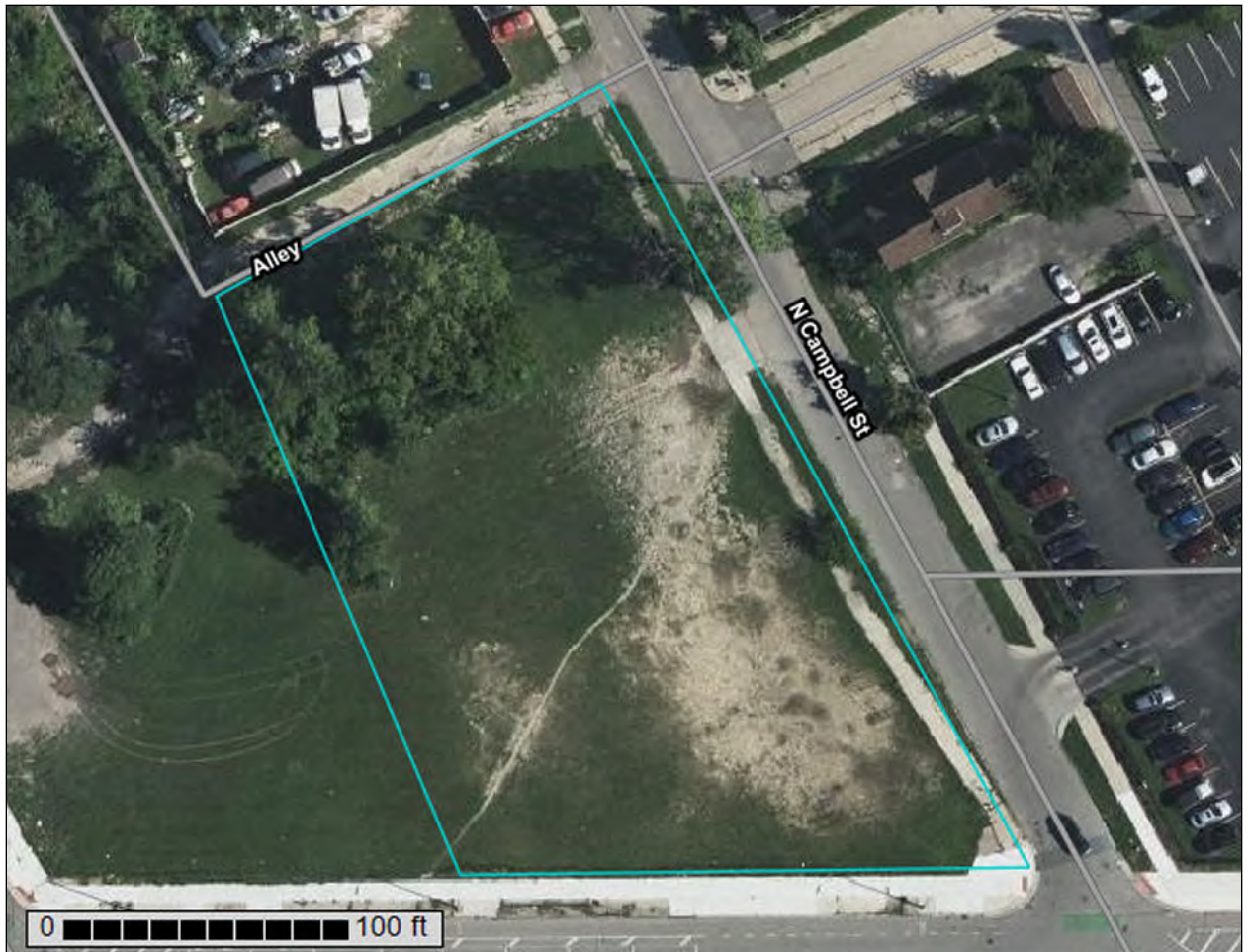
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Wayne County, Michigan**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

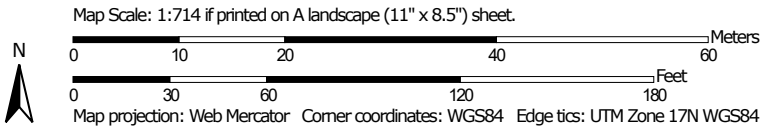
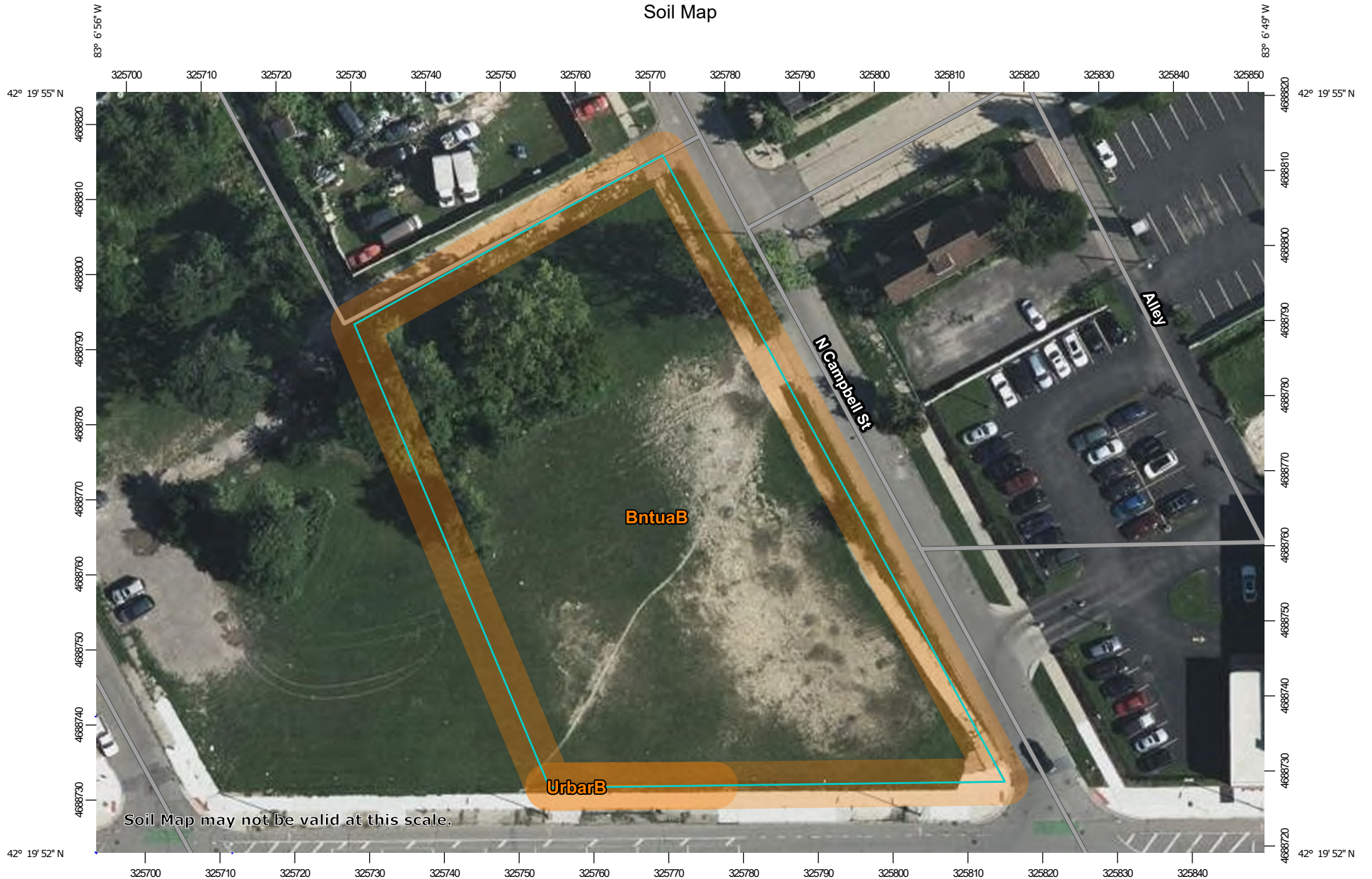
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map


The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

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

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

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

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

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

Soil Survey Area: Wayne County, Michigan
 Survey Area Data: Version 7, Sep 7, 2021

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

Date(s) aerial images were photographed: Aug 5, 2020—Aug 12, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BntuaB	Blount-Urban land complex, 0 to 4 percent slopes	1.0	99.9%
UrbarB	Urban land-Riverfront complex, dense substratum, 0 to 4 percent slopes	0.0	0.1%
Totals for Area of Interest		1.0	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Wayne County, Michigan

BntuaB—Blount-Urban land complex, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2tx75
Elevation: 580 to 650 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Blount, human transported surface, and similar soils: 55 percent
Urban land: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blount, Human Transported Surface

Setting

Landform: Wave-worked till plains
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Loamy human-transported material over clayey lodgment till

Typical profile

^Au - 0 to 9 inches: sandy loam
^Cu - 9 to 12 inches: loam
Bwb - 12 to 31 inches: clay
BCb - 31 to 37 inches: clay loam
Cd - 37 to 80 inches: clay

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: 19 to 49 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 2 to 31 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 28 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.1 to 1.5 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Urban Land

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: 0 inches to manufactured layer

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: No

Minor Components

Ziegenfuss, human transported surface

Percent of map unit: 7 percent

Landform: Wave-worked till plains

Microfeatures of landform position: Open depressions

Down-slope shape: Linear, concave

Across-slope shape: Convex, linear

Hydric soil rating: No

Midtown

Percent of map unit: 3 percent

Landform: Wave-worked till plains

Down-slope shape: Linear

Across-slope shape: Convex, linear

Hydric soil rating: No

UrbarB—Urban land-Riverfront complex, dense substratum, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2whsx

Elevation: 560 to 720 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 80 percent

Riverfront, dense substratum, and similar soils: 19 percent

Minor components: 1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: 0 inches to manufactured layer

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: D

Hydric soil rating: No

Description of Riverfront, Dense Substratum

Setting

Landform: Deltas, water-lain moraines, wave-worked till plains

Down-slope shape: Linear

Across-slope shape: Convex, linear

Parent material: Loamy human-transported material over clayey lodgment till

Typical profile

^Au - 0 to 6 inches: sandy loam

^Cu1 - 6 to 16 inches: very artificial sandy loam

^Cu2 - 16 to 46 inches: gravelly-artificial loam

^Cu3 - 46 to 68 inches: very artificial loam

2Cd - 68 to 80 inches: clay

Properties and qualities

Slope: 0 to 4 percent

Depth to restrictive feature: 56 to 78 inches to densic material

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 28 percent

Gypsum, maximum content: 1 percent

Maximum salinity: Nonsaline (0.1 to 1.5 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydrologic Soil Group: B

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Riverfront, dense substratum, steep

Percent of map unit: 1 percent

Landform: Deltas, water-lain moraines, wave-worked till plains

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected

Custom Soil Resource Report

initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (K_{sat}), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Custom Soil Resource Report

Soil Features—Wayne County, Michigan									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		<i>Low-RV-High</i>	<i>Range</i>		<i>Low-High</i>	<i>Low-High</i>			
		<i>In</i>	<i>In</i>		<i>In</i>	<i>In</i>			
BntuaB—Blount-Urban land complex, 0 to 4 percent slopes									
Blount, human transported surface	Densic material	19-37-49	31-61	Noncemented	0	0	Moderate	High	Low
Urban land	Manufactured layer	0	3-16	Very strongly cemented	—	—			
Ziegenfuss, human transported surface	Densic material	44-56-60	20-36	Noncemented	0	0	High	High	Low
Midtown	Densic material	38-55-79	1-42	Noncemented	0	0	Moderate	High	Low
UrbarB—Urban land-Riverfront complex, dense substratum, 0 to 4 percent slopes									
Urban land	Manufactured layer	0	3-16	Very strongly cemented	—	—			
Riverfront, dense substratum	Densic material	56-68-78	2-24	Noncemented	0	0	Moderate	Low	Low
Riverfront, dense substratum, steep	Densic material	56-68-78	2-24	Noncemented	0	0	Moderate	Low	Low

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- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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ASSESSING DEPARTMENT RECORDS

5800 MICHIGAN AVE 48210 (Property Address)

Parcel Number: 16001706-8



Item 1 of 2 [2 Images / 0 Sketches](#)

Property Owner: SOUTHWEST HOUSING SOLUTIONS CORP

Summary Information

> Assessed Value: \$38,300 | Taxable Value: \$38,300 > Property Tax information found

Owner and Taxpayer Information

Owner	SOUTHWEST HOUSING SOLUTIONS CORP 1920 25TH STREET DETROIT, MI 48216	Taxpayer	SEE OWNER INFORMATION
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General Information for Tax Year 2022

Property Class	202 COMMERCIAL-VACANT	Unit	01 CITY OF DETROIT
School District	DETROIT CITY SCHOOL DISTRICT	Assessed Value	\$38,300
WARD#	16	Taxable Value	\$38,300
HOPE#	5	State Equalized Value	\$38,300
PP CODE#	Not Available	Date of Last Name Change	07/21/2015
RELATED #	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
COUNCIL#	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information

Homestead Date No Data to Display

Principal Residence Exemption	June 1st	Final
2022	0.0000 %	-
2021	0.0000 %	0.0000 %

Land Information

Zoning Code	B4	Total Acres	0.832
Land Value	\$76,619	Land Improvements	\$0
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	Not Available	Mortgage Code	No Data to Display
Lot Dimensions/Comments	Not Available	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
Lot 1	203.00 ft	179.00 ft
Total Frontage: 203.00 ft		Average Depth: 179.00 ft

Legal Description

N MICHIGAN S 235.45 FT ON E LINE BG S 204.47 FT ON W LINE OF ALL THAT PT OF P C 171 & LOT 6 LYG N & ADJ MICHIGAN AVENUE AND ADJ LOT 5 SUB OF PT P C 171 L12 P24 PLATS, W C R 16/85 202.68 IRREG

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
03/17/2014	\$1.00	PTA	GAPPY, JOEY & HENNIFER	CARDIFF PROPERTIES, LLC	MULTI PARCEL SALE	

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
03/17/2014	\$1.00	PTA	CARDIFF PROPERTIES LLC	SOUTHWEST HOUSING SOLUTIONS CORP	MULTI PARCEL SALE	51644/468

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3951 CAMPBELL 48209 (Property Address)

Parcel Number: 16014695.



Item 1 of 2 [2 Images / 0 Sketches](#)

Property Owner: SOUTHWEST HOUSING SOLUTIONS CORP

Summary Information

> Assessed Value: \$100 | Taxable Value: \$100 > Property Tax information found

Owner and Taxpayer Information

Owner	SOUTHWEST HOUSING SOLUTIONS CORP 1920 25TH STREET STE. A DETROIT, MI 48216	Taxpayer	SEE OWNER INFORMATION
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General Information for Tax Year 2022

Property Class	402 RESIDENTIAL-VACANT	Unit	01 CITY OF DETROIT
School District	DETROIT CITY SCHOOL DISTRICT	Assessed Value	\$100
WARD#	16	Taxable Value	\$100
HOPE#	5	State Equalized Value	\$100
PP CODE#	Not Available	Date of Last Name Change	11/03/2016
RELATED #	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
COUNCIL#	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information

Homestead Date No Data to Display

Principal Residence Exemption	June 1st	Final
2022	0.0000 %	-
2021	0.0000 %	0.0000 %

Land Information

Zoning Code	B4	Total Acres	0.060
Land Value	\$220	Land Improvements	\$0
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	Not Available	Mortgage Code	No Data to Display
Lot Dimensions/Comments	Not Available	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
Lot 1	3.00 ft	869.00 ft
Total Frontage: 3.00 ft		Average Depth: 869.00 ft

Legal Description

W--N CAMPBELL ALL THAT PT OF 6 DESC AS FOLS BEG AT PTE IN W LINE OF CAMPBELL AVE DIST N 27D 19M W 273.25 FT ALG SD LINE FROM N LINE OF MICHIGAN AVE TH S 27D 19M E 37.8 FT TH S 67D 33M 53S W 43.62 FT TH N 89D 08M 26S W 71.42 FT TH ELY 106.00 FT TO PTE OF BEG SUB OF PT OF P C 171 L12 P24 PLATS, W C R 16/85 37.80 IRREG

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
08/03/2012	\$648.00	PTA	CITY OF DETROIT	SOUTHWEST HOUSING SOLUTIONS, CORP.	12-FROM LENDING INSTITUTION NOT EXPOSED	50094-350

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
02/17/2004	\$1,000.00	QC	CITY OF DETROIT-P&DD	CARDIFF PROPERTIES LLC	12-FROM LENDING INSTITUTION NOT EXPOSED	

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3957 CAMPBELL 48209 (Property Address)

Parcel Number: 16014694.



Item 1 of 2 [2 Images / 0 Sketches](#)

Property Owner: SOUTHWEST HOUSING SOLUTIONS CORP

Summary Information

> Assessed Value: \$200 | Taxable Value: \$109 > Property Tax information found

Owner and Taxpayer Information

Owner	SOUTHWEST HOUSING SOLUTIONS CORP 1920 25TH STREET, STE. A DETROIT, MI 48216	Taxpayer	SEE OWNER INFORMATION
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General Information for Tax Year 2022

Property Class	402 RESIDENTIAL-VACANT	Unit	01 CITY OF DETROIT
School District	DETROIT CITY SCHOOL DISTRICT	Assessed Value	\$200
WARD#	16	Taxable Value	\$109
HOPE#	5	State Equalized Value	\$200
PP CODE#	Not Available	Date of Last Name Change	11/03/2016
RELATED #	Not Available	Notes	Not Available
Historical District	Not Available	Census Block Group	Not Available
COUNCIL#	Not Available	Exemption	No Data to Display

Principal Residence Exemption Information

Homestead Date No Data to Display

Principal Residence Exemption	June 1st	Final
2022	0.0000 %	-
2021	0.0000 %	0.0000 %

Land Information

Zoning Code	B4	Total Acres	0.083
Land Value	\$375	Land Improvements	\$0
Renaissance Zone	No	Renaissance Zone Expiration Date	No Data to Display
ECF Neighborhood	Not Available	Mortgage Code	No Data to Display
Lot Dimensions/Comments	Not Available	Neighborhood Enterprise Zone	No

Lot(s)	Frontage	Depth
Lot 1	27.00 ft	134.00 ft
Total Frontage: 27.00 ft		Average Depth: 134.00 ft

Legal Description

W--N CAMPBELL N 27 FT 6 SUB OF PT OF P C 171 L12 P24 PLATS, W C R 16/85 27 IRREG

Sale History

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
08/03/2012	\$648.00	PTA	CITY OF DETROIT	SOUTHWEST HOUSING SOLUTIONS, CORP.	12-FROM LENDING INSTITUTION NOT EXPOSED	50094-350

Sale Date	Sale Price	Instrument	Grantor	Grantee	Terms of Sale	Liber/Page
02/17/2004	\$1,000.00	QC	CITY OF DETROIT-P&DD	CARDIFF PROPERTIES LLC	12-FROM LENDING INSTITUTION NOT EXPOSED	

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FIRE DEPARTMENT RECORDS



LAW DEPARTMENT

Coleman A. Young Municipal Center
2 Woodward Avenue, Suite 500
Detroit, Michigan 48226-3437

Phone 313•224•4550
Fax 313•224•5505
www.detroitmi.gov

June 13, 2022

David Balash, Staff Consultant
PM Environmental, Inc.
4080 West Eleven Mile Road
Berkley, MI 48072

**RE: Freedom of Information Act Request A22-20632, Dated June 10, 2022,
Concerning City of Detroit Records Pertaining to Fire Files for Michigan Ave. and N.
Campbell Addresses**

Dear Mr. Balash:

This letter serves as the City of Detroit's response to the above-referenced matter. Your request was received at the City of Detroit Law Department Freedom of Information Act Section via facsimile or email, on June 10, 2022. Because your request was received by electronic transmission, pursuant to Section 5(1) of the Michigan Freedom of Information Act (the "Act"), MCL 15.235(1); it is deemed to have been received at the Law Department on the next business day, June 13, 2022.

Pursuant to Section 5(2) of the Act, MCL 15.235(2), the City's response is due within five (5) business days. However, due to the nature and the scope of your request and the volume of the requests received by the City, we are extending the City's response deadline by ten (10) additional business days in accordance with Section 5(2)(d) of the Act, MCL 15.235(2)(d). Therefore, your request will be granted, denied, or granted in part and denied in part on or before July 5, 2022.

Please note, during the COVID-19 pandemic, many City employees have been required to be away from their job locations. While some employees are able to work remotely, others are not. As a result, many records required for an appropriate response cannot be obtained and/or processed during the crisis. While we are continuing to process requests for which we receive records, we anticipate that many of our responses will be delayed. To this end, City offices are in the process of re-opening. As City offices re-open, more records will be accessible and fewer responses will be delayed. We regret any inconvenience that this may cause.

If you did not provide an email address in your request, please forward it to me so we can provide you a response more readily than by regular mail or fax. Mail and fax are not preferred at this time since they both require in-office support. We thank you in advance for your understanding.

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Your request is being handled by **Marwa Elshazly**. If you have questions regarding your request, or if you did not provide an email address in your request, please forward it to **Marwa Elshazly** at **Marwa.Elshazly@detroitmi.gov** to provide you a response more readily than by regular mail or fax. Mail and fax are not preferred at this time since they both require in-office support. We thank you in advance for your understanding.

Very truly yours,



Jack P. Dietrich
Supervising Assistant Corporation Counsel
FOIA Section
City of Detroit Law Department
Phone Number: (313) 237-5030
dietjp@detroitmi.gov

JPD/atj

HEALTH DEPARTMENT RECORDS



LAW DEPARTMENT

Coleman A. Young Municipal Center
2 Woodward Avenue, Suite 500
Detroit, Michigan 48226-3437

Phone 313•224•4550
Fax 313•224•5505
www.detroitmi.gov

June 13, 2022

Emily Scheidegger, Staff Consultant
PM Environmental, Inc.
3340 Ranger Road
Lansing, MI 48906

**RE: Freedom of Information Act Request A22-20637, Dated June 10, 2022,
Concerning City of Detroit Records Pertaining to Health Dept. Files for Michigan Ave.
and N. Campbell Addresses**

Dear Ms. Scheidegger:

This letter serves as the City of Detroit's response to the above-referenced matter. Your request was received at the City of Detroit Law Department Freedom of Information Act Section via facsimile or email, on June 10, 2022. Because your request was received by electronic transmission, pursuant to Section 5(1) of the Michigan Freedom of Information Act (the "Act"), MCL 15.235(1); it is deemed to have been received at the Law Department on the next business day, June 13, 2022.

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Your request is being handled by **Marwa Elshazly**. If you have questions regarding your request, or if you did not provide an email address in your request, please forward it to **Marwa Elshazly** at **Marwa.Elshazly@detroitmi.gov** to provide you a response more readily than by regular mail or fax. Mail and fax are not preferred at this time since they both require in-office support. We thank you in advance for your understanding.

Very truly yours,



Jack P. Dietrich
Supervising Assistant Corporation Counsel
FOIA Section
City of Detroit Law Department
Phone Number: (313) 237-5030
dietjp@detroitmi.gov

JPD/atj

UTILITY INFORMATION

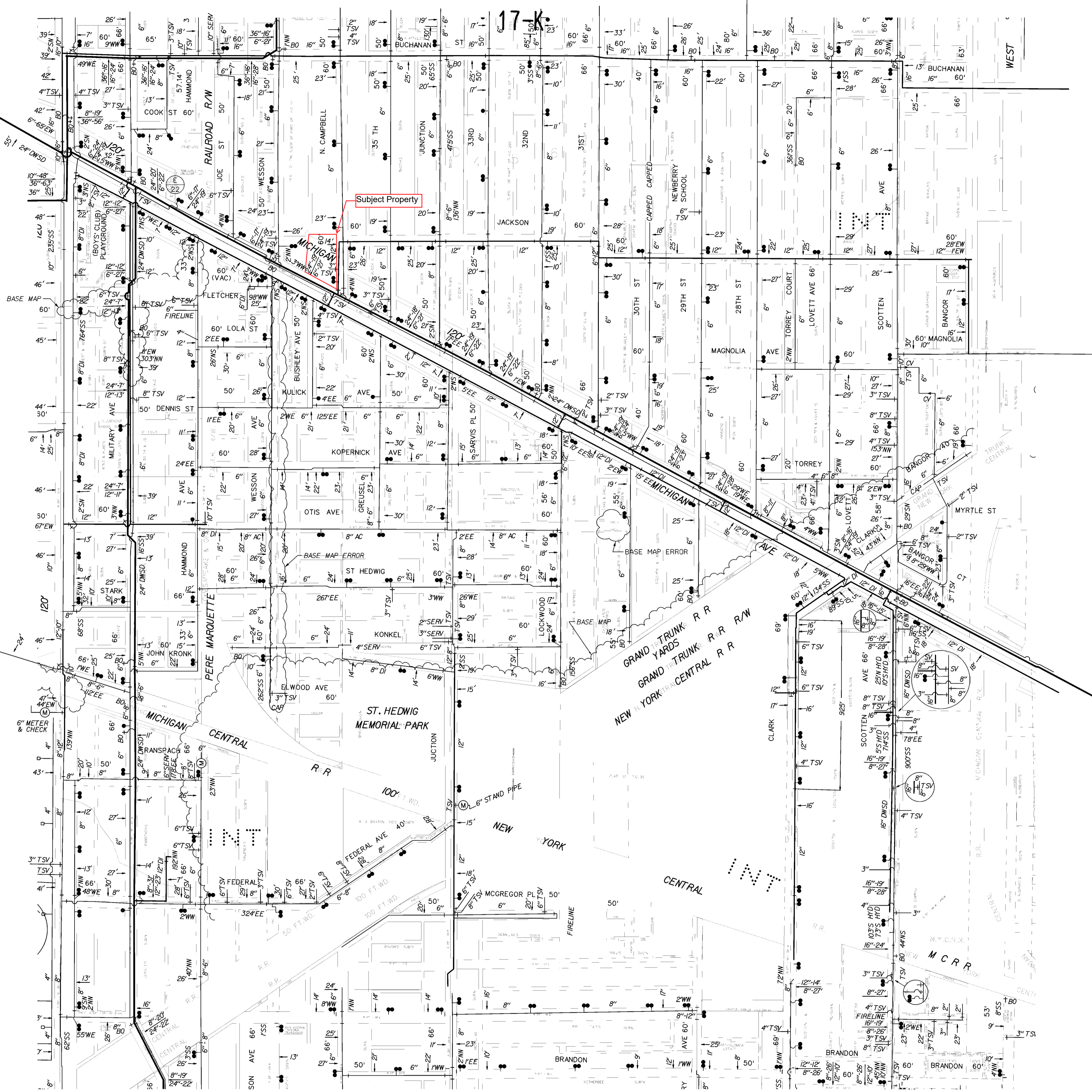
16-I

16-J

17-J

18-I

18-J



17-I



WATER MAP

SCALE: 1" = 300'

0 300 600

CITY OF DETROIT

DWSD SEC. MAP NUMBER: **17-J**

NOTES:

NAME	DATE
DIGITIZED BY: CEA, INC.	10-21-96
CHECKED BY: DWSD	10-21-96
LOG	
REVISED THRU:	
PRINT DATE:	12-7-98



STATE PLANE



S-13-D

S-13-F

S-12-B

SEWER MAP

CITY OF DETROIT

SCALE: 1" = 200'

DWSD SEC. MAP NUMBER: S-13-E

NOTES:

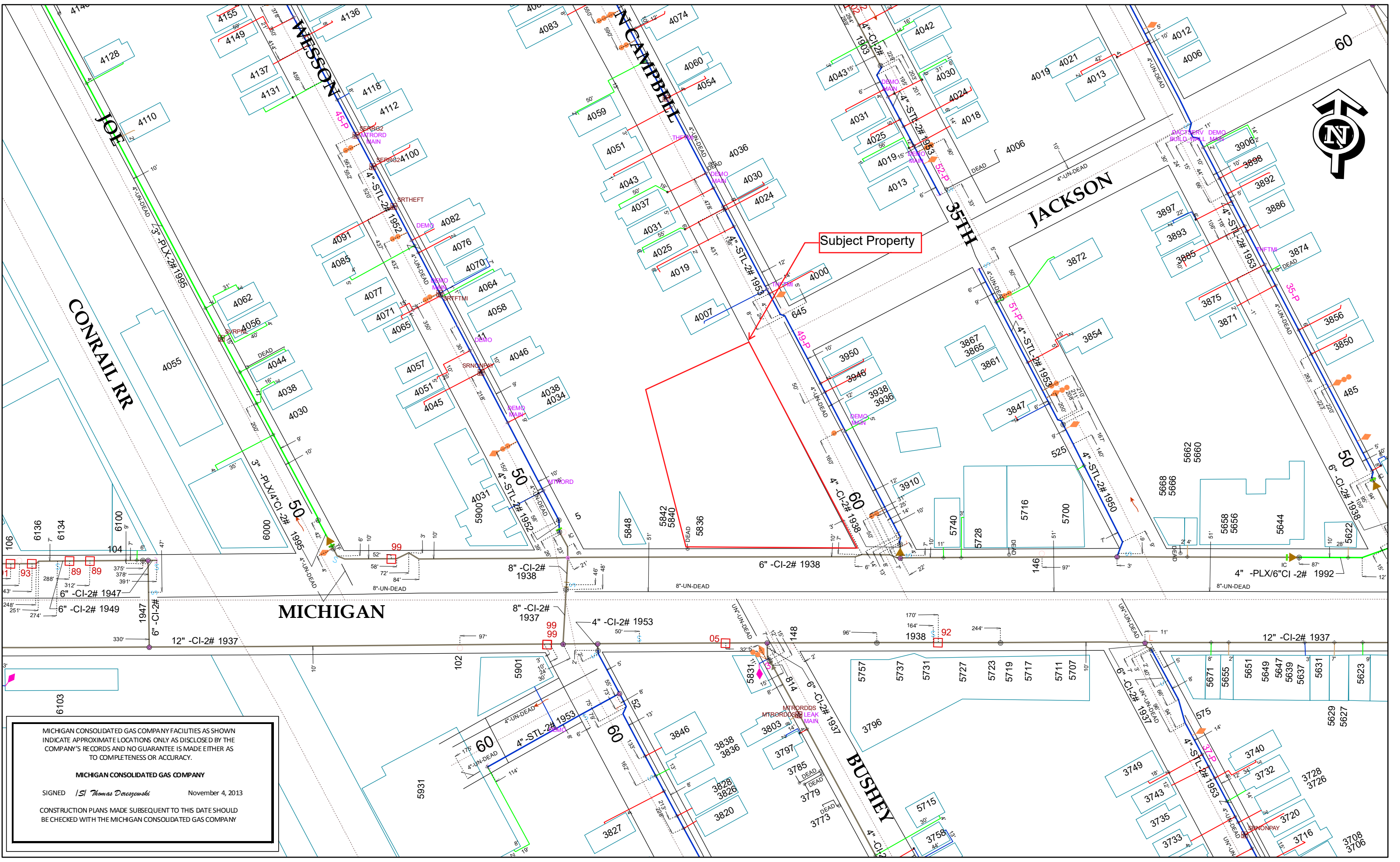
NAME	DATE
DIGITIZED BY: CEA, INC.	06-12-96
CHECKED BY: DWSD	06-12-96
LOG	
REVISED THRU:	12-31-03
PRINT DATE:	01-22-99



STATE PLANE



NATURAL GAS CONNECTION MAP



Subject Property

MICHIGAN CONSOLIDATED GAS COMPANY FACILITIES AS SHOWN INDICATE APPROXIMATE LOCATIONS ONLY AS DISCLOSED BY THE COMPANY'S RECORDS AND NO GUARANTEE IS MADE EITHER AS TO COMPLETENESS OR ACCURACY.

MICHIGAN CONSOLIDATED GAS COMPANY

SIGNED *ISI Thomas Denczewski* November 4, 2013

CONSTRUCTION PLANS MADE SUBSEQUENT TO THIS DATE SHOULD BE CHECKED WITH THE MICHIGAN CONSOLIDATED GAS COMPANY

PREVIOUS SITE INVESTIGATION

Previous Site
Investigations
are included
in Adobe Tab



Section 10.5: Regulatory Records Documentation

ENVIRONMENTAL DATABASE SEARCH

AT THE REQUEST OF EGLE, THIS ATTACHMENT HAS BEEN DELETED TO REDUCE
REPORT SIZE.

Section 10.6: Interview Documentation

USER QUESTIONNAIRE



SECTION VIII: 2020 - USER'S ENVIRONMENTAL QUESTIONNAIRE AND DISCLOSURE STATEMENT

The Authority requires the completion of its "User's Environmental Questionnaire and Disclosure Statement" to fulfill Section 6, User's Responsibilities of the ASTM Standard E 1527-13. The checklist is to be completed and signed by the sponsor (developer), and returned to the Environmental Professional conducting the Phase I. This questionnaire is to be reviewed by the Environmental Professional and incorporated into their Phase I report (the completed User's Questionnaire is to be included in Appendix 10.6 of the Phase I report). Failure to properly complete this process will result in delays.

In preparing this document, the "User" (Sponsor) must make a good faith effort to answer the questions in the checklist. The User or a preparer designated by the User presents that to the best of his/her knowledge, the above statements and facts are true and correct and that to the best of the preparer's knowledge, no material facts have been omitted or misstated. Time and care should be taken to check whatever records are in the User's possession. If any of the following questions are answered in the affirmative or if answers are unknown, are qualified, or cannot be obtained, the burden is on the Environmental Professional to determine whether further inquiry is appropriate. The User should document the reason for any affirmative answer to provide the Environmental Professional with all appropriate information. Moreover, the Environmental Professional must determine if further inquiry in any area where the property owner provides incomplete information is warranted, providing written explanation for their recommendation(s).

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Relief and Brownfield's Revitalization Act of 2001 (the "Brownfield's Amendments"), the User must provide the following information (if available) to the Environmental Professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

User's (Sponsor's) Name: Southwest Housing Solutions Corporation
User's (Sponsor's) Telephone No.: 313-841-3727
User's (Sponsor's) Fax No.: 313-841-3734
Subject Property: 5800 Michigan Avenue/3951, 3957-Campbell
Property Address: 1920 25th Street
City: Detroit State: MI Zip: 48210



1.0 Environmental Cleanup Liens:

Are you aware of any environmental cleanup liens against the property that are filed, recorded, or unrecorded under federal, tribal, state, or local law?

___ YES NO (If "YES," please describe)

2.0 Activity and Land Use Limitations:

Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed, recorded or unrecorded in a registry under federal, tribal, state or local law?

___ YES NO (If "YES," please describe)

3.0 Specialized Knowledge or Experience of the User:

As the user of this ESA do you have any knowledge or experience related to the property or nearby properties that could be material to any environmental conditions of this property?

___ YES NO (If "YES," please describe)

Are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

___ YES NO (If "YES," please describe)

4.0 Relationship of Purchase Price to Fair Market Value:

Does the purchase price being paid for this property reasonably reflect the fair market value of the property?

___ YES NO (If "YES," please describe)

If you conclude that there is a difference, have you considered whether the lower price is because contamination is known or believed to be present at the property?

___ YES NO (If "YES," please describe)



5.0 Commonly Known or Reasonably Ascertainable Information:

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

Do you know the past uses of the property? Please list:

Do you know the specific chemicals that are present or once were present at the property?

___ YES NO (If "YES," please describe)

Do you know of spills or other chemical releases that have taken place at the property?

___ YES NO (If "YES," please describe)

Do you know of any environmental cleanups that have taken place at the property?

___ YES NO (If "YES," please describe)

6.0 Presence or Likely Presence of Contamination:

As the user of this ESA and based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property?

___ YES NO (If "YES," please describe)

User's Signature: Daniel S. Lozano Date 12/8/2020

User's Printed Name: Daniel S. Lozano

**Section 10.7: Special Contractual Conditions between User and
Environmental Professional**

RADON



WASTE

Solid Waste
Hazardous Waste
Transporters
Radiological Protection
Michigan Indoor Radon Program
Low-Level Radioactive Waste
Radioactive Materials
Radiological Monitoring & Reporting
Radiological Emergency Preparedness
Waste Compliance & Enforcement

DEQ / WASTE / RADIOLOGICAL PROTECTION / MICHIGAN INDOOR RADON PROGRAM

Your County's Radon Levels

Contact: 800-723-6642 or radon@michigan.gov
 Agency: Environmental Quality

Some counties are known to have a higher likelihood of having homes with elevated radon. Check out the map below to see if homes in your county typically have elevated radon levels. Keep in mind that homes in counties with a lower likelihood of having high radon levels should still be tested.

While your neighbor's test results may give you an idea of the potential for a problem in your home, radon levels can vary significantly from lot to lot and home to home. Do not rely on your neighbor's test results to determine your risk. Test your own home and be certain! Find additional details on county radon levels on-line at http://mi-radon.info/MI_counties.html.



Click [here](#) to learn more about the radon survey, mapping radon levels in Michigan, and the indoor radon program.

FLOODPLAIN

National Flood Hazard Layer FIRMMette



83°7'10"W 42°20'6"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/30/2020 at 5:10 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

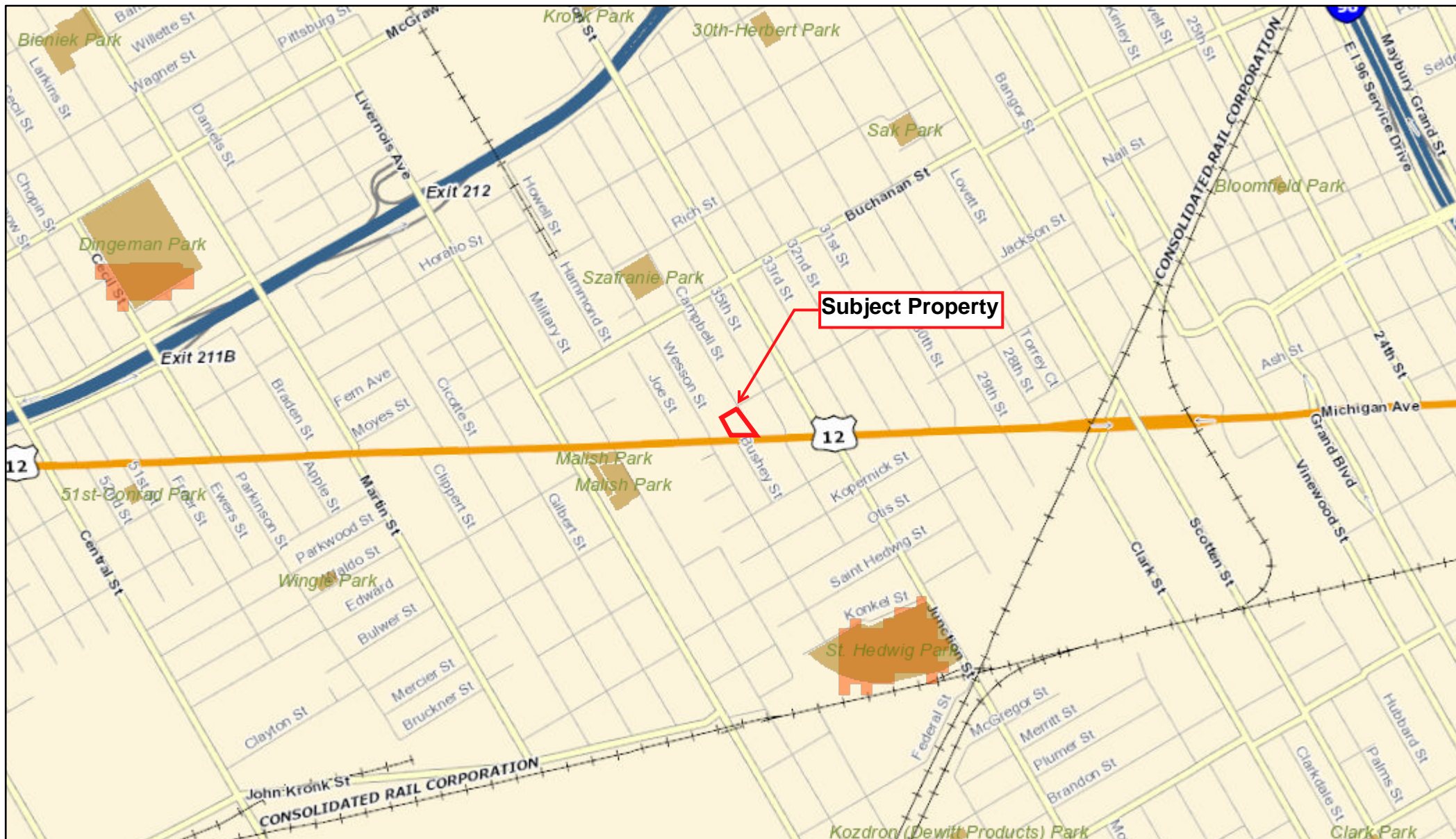
USGS The National Map: Orthoimagery. Data refreshed October, 2020.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

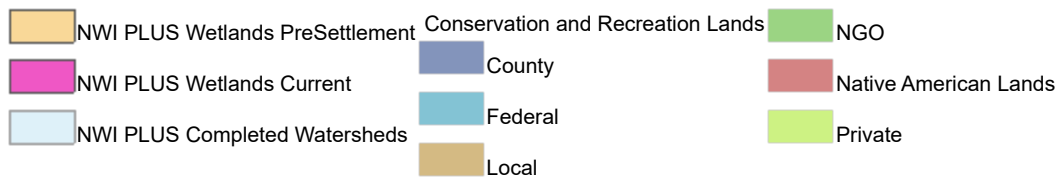
83°6'32"W 42°19'39"N

WETLANDS MAP

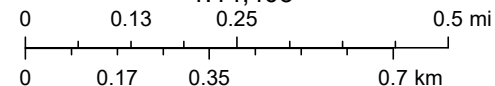
Wetlands Map Viewer



December 30, 2020



1:14,403

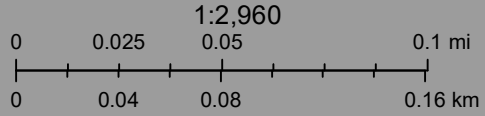


Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Disclaimer: This map is not intended to be used to determine the specific











Subject Property



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

December 30, 2020

Wetlands

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

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

NOISE ANALYSIS



Environmental & Engineering Services Nationwide



ENVIRONMENTAL SERVICES

BUILDING ARCHITECTURE,
ENGINEERING & SCIENCE

INDUSTRIAL HYGIENE SERVICES

BROWNFIELDS & ECONOMIC
INCENTIVES CONSULTING

DESKTOP NOISE ASSESSMENT

Vacant Land

5800 Michigan Avenue and 3951-3957 North Campbell Street
Detroit, Michigan

PM Project Number 01-13496-0-0002

EPA Grant No. BF-00E02726; Hazardous Grant

Prepared for:

Wayne County Brownfield Redevelopment Authority

500 Griswold Street, 28th Floor
Detroit, Michigan 48226

Prepared by:

PM Environmental

4080 West Eleven Mile Road
Berkley, Michigan 48072

Know Your Risk.
Take Control.
Work with the Experts.

www.pmenv.com



Corporate Headquarters
Lansing, Michigan
3340 Ranger Road, Lansing, MI 48906
f: 877.884.6775
t: 517.321.3331

Michigan Locations
Berkley Bay City
Grand Rapids Lansing
Oak Park

June 30, 2022

Ms. Annie Mendoza
Wayne County Brownfield Redevelopment Authority
500 Griswold Street, 28th Floor
Detroit, Michigan 48226

**Re: Desktop Noise Assessment of the Vacant Land
Located at 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan
PM Environmental, Inc. Project No. 01-13496-0-0002
EPA Grant No. BF-00E02726; Hazardous Grant**

Dear Ms. Mendoza:

PM Environmental, Inc. (PM) has completed the Desktop Noise Assessment of the above referenced property. This Desktop Noise Assessment was conducted in general accordance with the US Department of Housing and Urban Development (HUD) Noise Abatement and Control standards contained in 24 CFR 51B. This report was also prepared for MSHDA requirements.

The purpose of the Desktop Noise Assessment was to gather sufficient information to develop an independent professional opinion regarding possible noise concerns associated with the subject property through designated Noise Assessment Locations (NALs) on the subject property.

The Desktop Noise Assessment for the above referenced property represents the product of PM's professional expertise and judgment in the environmental consulting industry, and it is reasonable for **WAYNE COUNTY BROWNFIELD REDEVELOPMENT AUTHORITY, 5800 LDHA LP, SOUTHWEST HOUSING SOLUTIONS CORPORATION, AND THE MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY** to rely on PM's Desktop Noise Assessment report.

If you have any questions related to this report, please do not hesitate to contact our office at 800.313.2966.

Sincerely,
PM ENVIRONMENTAL, INC.

David Balash
Staff Consultant

Peter S. Bosanic, P.E., EP
Principal

TABLE OF CONTENTS

1.0 Introduction 1
2.0 Evaluation of Noise Sources 2
 2.1: Airports 2
 2.2: Major Roadways 2
 2.3: Railroads..... 2
3.0 Calculations 2
4.0 Conclusions 3
5.0 References..... 4

APPENDICES

- Appendix A: NAL Location Map
- Appendix B: Airport Noise Contour Map
- Appendix C: Noise Source Information
- Appendix D: Day-Night Level Electronic Assessments

1.0 INTRODUCTION

PM Environmental, Inc. (PM) was retained to conduct a Desktop Noise Assessment of the Vacant Land located at 5800 Michigan Avenue and 3951 and 3957 North Campbell Street, Detroit, Wayne County, Michigan (hereafter referred to as the “subject property”). This Desktop Noise Assessment was conducted in general accordance with the US Department of Housing and Urban Development (HUD) Noise Abatement and Control standards contained in 24 CFR 51B. This report was also prepared for MSHDA requirements.

THIS REPORT WAS PREPARED FOR THE EXCLUSIVE USE OF WAYNE COUNTY BROWNFIELD REDEVELOPMENT AUTHORITY, 5800 LDHA LP, SOUTHWEST HOUSING SOLUTIONS CORPORATION, AND THE MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY, EACH OF WHOM MAY RELY ON THE REPORT’S CONTENTS.

The proposed development/rehabilitation utilizes a state source of funding. This assessment was conducted to provide the noise level and associated noise category at each designated Noise Assessment Location (NAL) at the subject property. This assessment does not include an evaluation of noise attenuation but general guidance is provided at the end of this assessment.

MSHDA requires that a noise assessment be completed at properties that are located within 1,000 feet of a major roadway, 3,000 feet of a railroad, or 15 miles of a military or FAA-regulated airports.

The noise level calculated at a NAL is known as the day-night average sound level or DNL. A calculated DNL can fall within three categories:

1. Acceptable: DNL not exceeding 65 decibels (dB)
2. Normally Unacceptable: DNL above the 65 dB threshold but not exceeding 75 dB
3. Unacceptable: DNL above 75 dB

Two NALs (NAL #1 and NAL #2) on the subject property were used for this analysis based on proximity to noise sources. A map with the subject property boundaries, buildings, and NALs is included as Appendix A.

The following is a summary of the applicable noise sources identified at each NAL.

NAL #1

Noise Source with Applicable Distance	Name	Distance to NAL
Airports	Coleman A. Young Municipal Airport	7.0 miles
	Detroit Metropolitan Airport	13.2 miles
	Oakland Troy Airport	14.7 miles
	Windsor International Airport	8.26miles
Busy Road	Michigan Avenue (US-12)	60 feet
Railroad	Grand Trunk Western Railroad (GTW)	2,830 feet

NAL #2

Noise Source with Applicable Distance	Name	Distance to NAL
Airports	Coleman A. Young Municipal Airport	7.0 miles
	Detroit Metropolitan Airport	13.2 miles
	Oakland Troy Airport	14.7 miles
	Windsor International Airport	8.3 miles
Busy Road	Michigan Avenue (US-12)	150 feet
Railroad	Grand Trunk Western Railroad (GTW)	2,985 feet

The noise sources identified within the table are further discussed below.

2.0 EVALUATION OF NOISE SOURCES

2.1: Airports

Coleman A. Young Municipal Airport is located approximately 7.0 miles distant. Based on the Noise Contour Map for the airport (Appendix B), the site is not within a distance of concern.

Detroit Metropolitan Airport is located approximately 13.20 miles distant. Based on the Noise Contour Map for the airport (Appendix B), the airport is not within a distance of concern.

Oakland Troy Airport (Y47) is located approximately 14.70 miles distant. This airport is the county’s executive airport with business travelers and tourists using private, corporate, and charter aircraft. Based on the small size and lack of commercial jet traffic, this airport is opined to represent minimal noise impact to the subject property.

Windsor International Airport is located approximately 8.20 miles distant. Based on the Noise Contour Map for the airport (Appendix B), the site is not within a distance of concern.

2.2: Major Roadways

The major roadway near the site is:

- Michigan Avenue (US-12)

Michigan Avenue has two-lane east and westbound sections with a center turn lane. The speed limit is 35 miles per hour (mph) near the subject property. There are no stop signs or stop lights within 600 feet of the subject property. Traffic counts for Michigan Avenue were obtained through the Michigan Department of Transportation (MDOT) and projections were calculated through 2032. A growth rate of 1% per year compounded was judged appropriate as traffic levels are expected to remain relatively stable. Traffic projections are included Appendix C.

2.3: Railroads

One active railroad is located southeast of the subject property, which is owned and operated by Grand Trunk Western Railroad (GTW). Inventory information from U.S. Department of

Transportation (U.S. D.O.T.) indicates that typically there are eight train movements daily, all of which are during normal daytime hours. Inventory information is provided in Appendix C.

3.0 CALCULATIONS

Using the HUD DNL calculator, the combined noise level from Michigan Avenue, as predicted for operations in 2032, and the nearby railroad at NAL #1 is 73 dB. This result is Normally Unacceptable.

Using the HUD DNL calculator, the combined noise level from Michigan Avenue, as predicted for operations in 2032, and the nearby railroad at NAL #2 is 67 dB. This result is Normally Unacceptable.

Noise DNL calculator worksheets for each NAL are provided in Appendix D.

4.0 CONCLUSIONS

The following is a summary of the findings of this assessment.

NAL #	Combined Source DNL (dB)	Category
1 (southeast corner of proposed building)	73	Normally Unacceptable
2 (northwest corner of proposed building)	67	Normally Unacceptable

HUD ATTENUATION GUIDANCE

All sites whose environmental or community noise exposure exceeds the day night average sound level (DNL) of 65 decibels (dB) are considered noise-impacted areas. For new construction that is proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required by HUD environmental criteria and standards contained in Subpart B (Noise Abatement and Control) of 24 CFR Part 51. The interior standard is 45 dB.

The "Normally Unacceptable" noise zone includes community noise levels from above 65 dB to 75 dB. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dB but does not exceed 70 dB, or a minimum of 10 dB of additional sound attenuation if the day-night average sound level is greater than 70 dB but does not exceed 75 dB (HUD generally gives a 1 dB variance up to 76 dB).

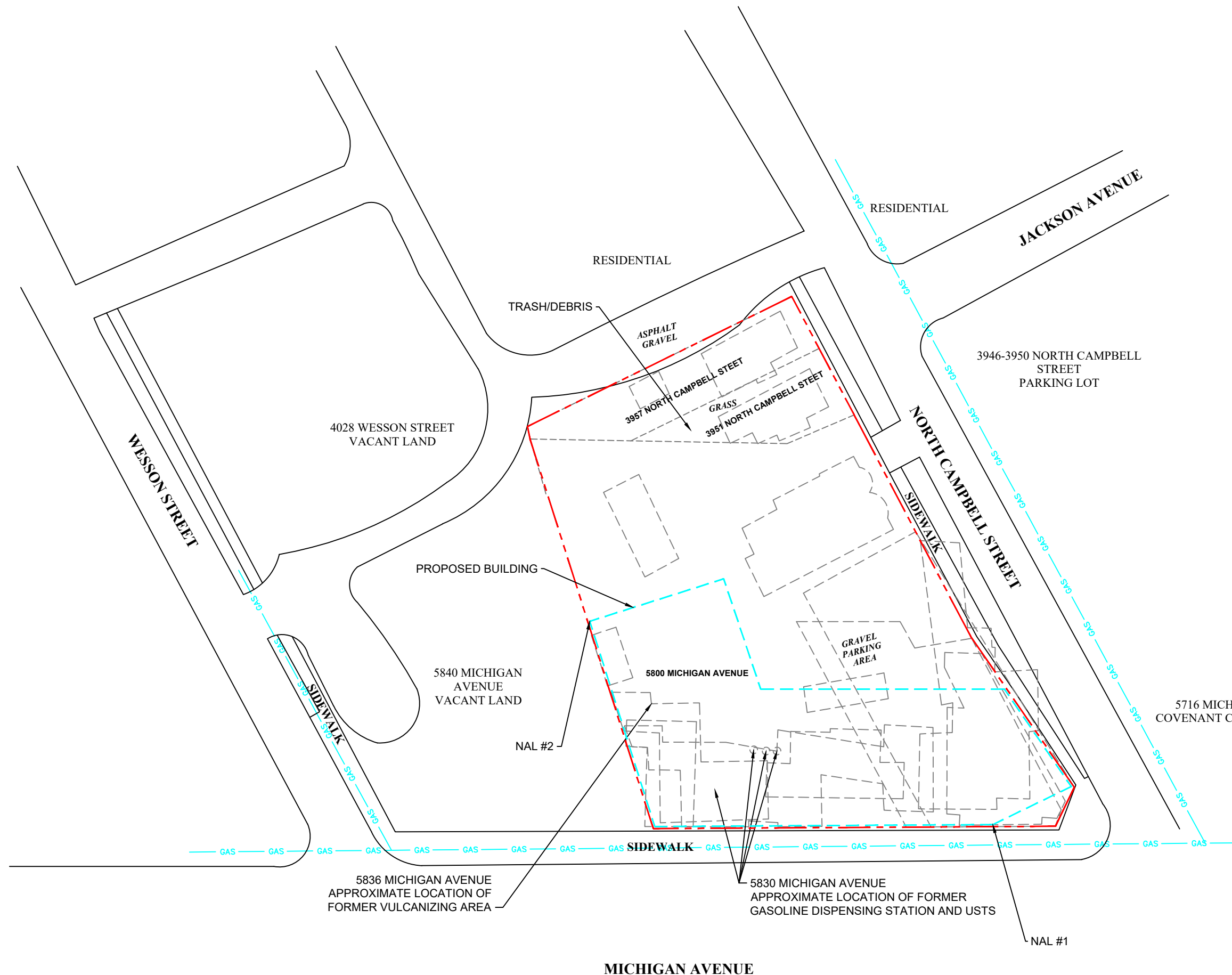
PM was provided a completed Sound Transmission Classification Assessment Tool (STraCAT) form provided by the project architect. Current noise DNLs were calculated as 74 dB (using the noise assessment completed in 2021, which was slightly higher due to inaccurate CAADT data). According to the STraCAT form, based on the proposed building materials, the average interior noise level for the proposed building was calculated to be below 45 dB with a combined attenuation of 34.83 dB. Based on this information, no additional investigation is warranted. Documentation is included in Appendix D.

5.0 REFERENCES

- 24 CFR Part 51 Subpart B
- The Noise Guidebook, U.S. Department of Housing and Urban Development,
- Michigan Department of Transportation (MDOT)
- <https://www.hudexchange.info/programs/environmental-review/dnl-calculator/>
- STraCAT, provided by Shelter Design Studio LLC

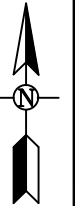
Appendix A






LEGEND:

- SUBJECT PROPERTY
- APPROXIMATE FORMER/HISTORICAL SITE FEATURES
- PARCEL / LOT BOUNDARIES
- GAS
- GAS
- PROPOSED SITE FEATURES





PM
ENVIRONMENTAL

**Environmental
& Engineering
Services**

FIGURE 2
SITE PLAN

PROJ: VACANT LAND
5800 MICHIGAN AVENUE AND
3951-3957 NORTH CAMPBELL STREET
DETROIT, MI 48210

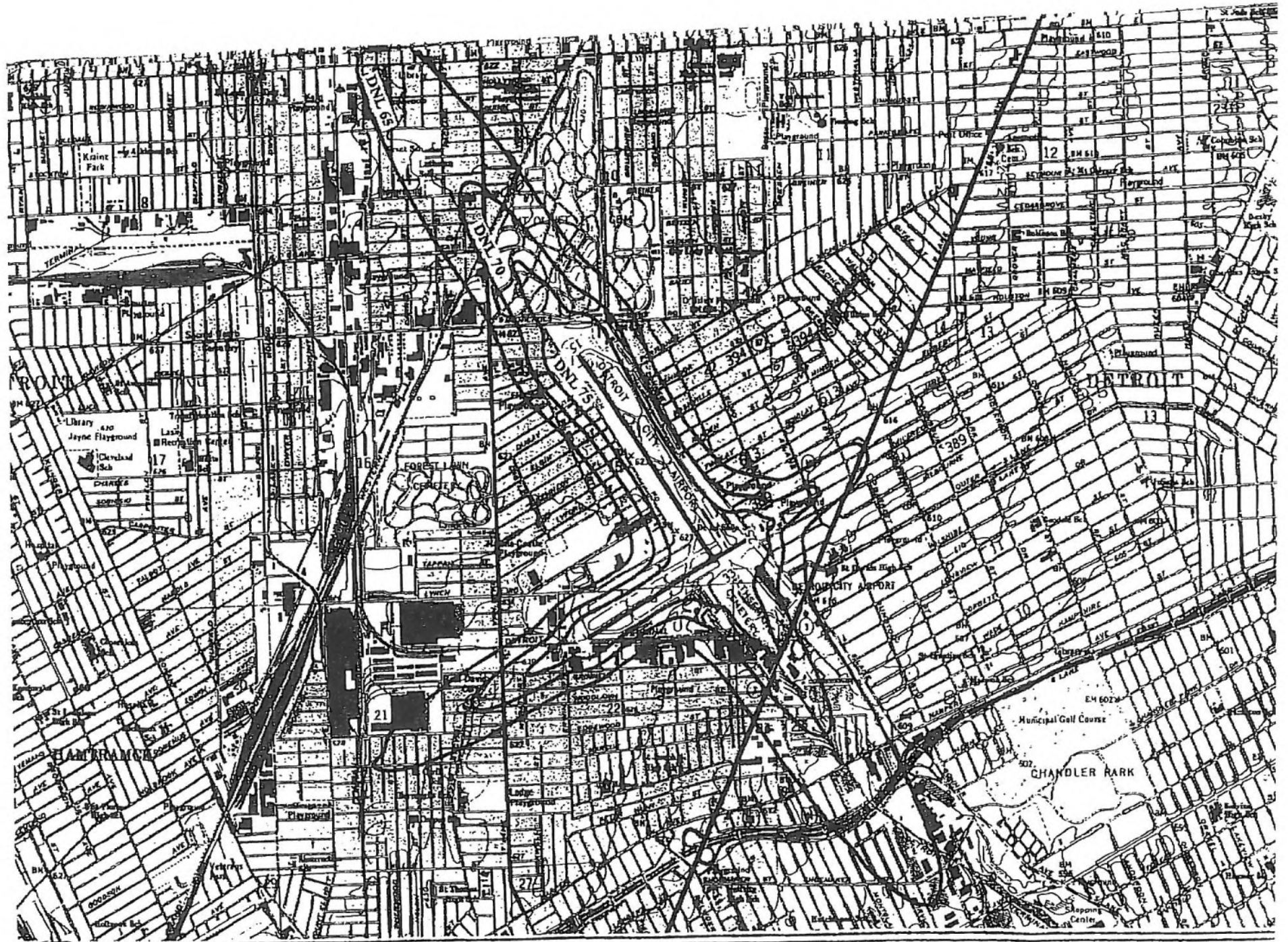
THIS IS NOT A LEGAL SURVEY	DRN BY: MM/CS/TS/MM/CS	DATE: 6/17/2022
VERIFY SCALE	CHKD BY: DB	SCALE: 1" = 50'
IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		FILE NAME: 01-13496-0-001F02R00

MICHIGAN AVENUE

5845-5849 MICHIGAN AVENUE
VACANT COMMERCIAL BUILDING
5837-5841 MICHIGAN AVENUE
VACANT LAND
5831-5833 MICHIGAN AVENUE
VACANT COMMERCIAL BUILDING
5715 MICHIGAN AVENUE
SOCIAL SERVICES
ADMINISTRATION

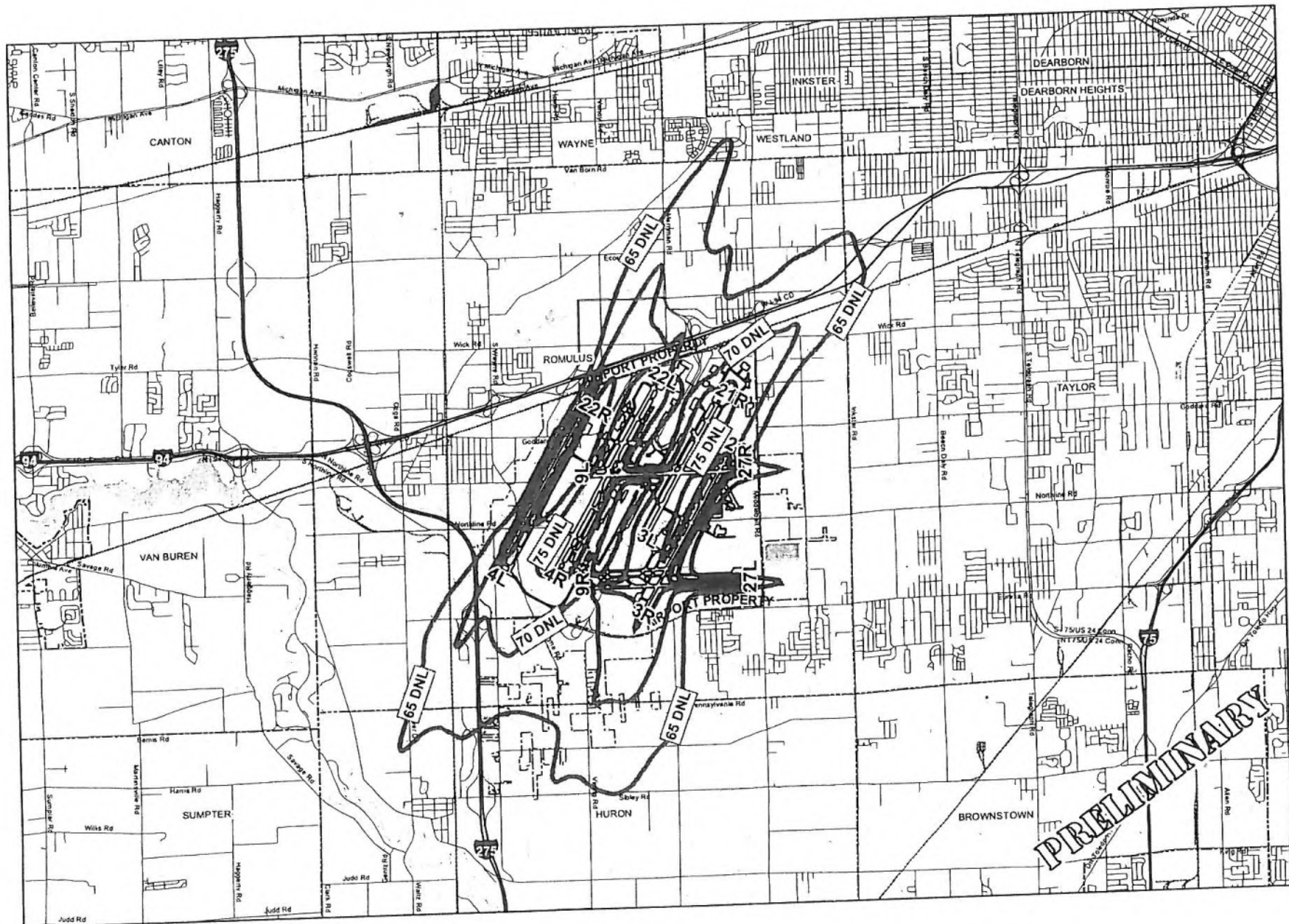
Appendix B





CITY OF DETROIT
 AIRPORT DEPARTMENT

1996 BAS
 NOISE EXPOSURE
 CONTOURS



Existing (2004) Noise Contour

Source: Michigan Department of Natural Resources, SEMCOG

DETROIT METROPOLITAN WAYNE COUNTY AIRPORT

AIRNAV.COM



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[iPhone App](#)
[My AirNav](#)

 1594 users online [LOGIN](#)

KVLL Oakland/Troy Airport

Troy, Michigan, USA



GOING TO TROY?


 Reserve a
Hotel Room

AVIS **Hertz**
[Reserve Online](#) [Reserve Online](#)

FAA INFORMATION EFFECTIVE 01 FEBRUARY 2018

[Loc](#) | [Ops](#) | [Rwys](#) | [IFR](#) | [FBO](#) | [Links](#)
[Com](#) | [Nav](#) | [Svcs](#) | [Stats](#) | [Notes](#)

Location

FAA Identifier: VLL

Lat/Long: 42-32-34.6000N / 083-10-40.4000W

42-32.576667N / 083-10.673333W

42.5429444 / -83.1778889

(estimated)

Elevation: 727.2 ft. / 221.7 m (surveyed)

Variation: 06W (1995)

From city: 2 miles E of TROY, MI

Time zone: UTC -5 (UTC -4 during Daylight Saving Time)

Zip code: 48084

Airport Operations

Airport use: Open to the public

Control tower: no

ARTCC: CLEVELAND CENTER

FSS: LANSING FLIGHT SERVICE STATION

NOTAMs facility: VLL (NOTAM-D service available)

Attendance: 0800-1800

Pattern altitude: 1727.2 ft. MSL

Wind indicator: lighted

Segmented circle: no

Lights: ACTVT MIRL RY 09/27 & PAPI RYS 09 & 27 - CTAF.

Beacon: white-green (lighted land airport)

Operates sunset to sunrise.

Landing fee: yes

Airport Communications

CTAF/UNICOM: 123.05

WX AWOS-3: 119.475 (248-288-4649)

DETROIT APPROACH: 126.85

DETROIT DEPARTURE: 126.85

WX ASOS at DET (11 nm SE): PHONE 313-371-9696

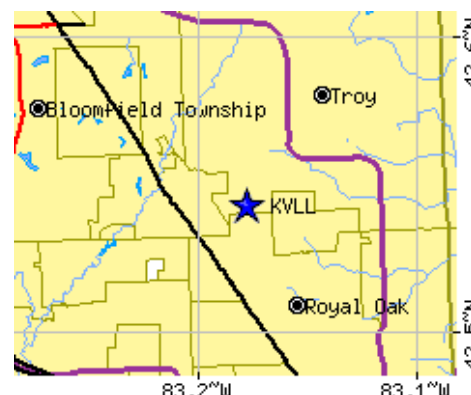
Sweepstakes

Each month, one winner will win a prize in the amount of the cost of all their rooms booked on AirNav, up to

\$5,000

from February 2018 to January 2019

Book. Stay. Win!


 Road maps at: [MapQuest](#) [Bing](#) [Google](#)

Aerial photo

WARNING: Photo may not be current or correct

WX ASOS at PTK (13 nm NW): 125.025 (248-886-8551)

Nearby radio navigation aids

VOR radial/distance	VOR name	Freq	Var
PSI r124/18.3	PONTIAC VORTAC	111.00	03W
SVM r069/20.1	SALEM VORTAC	114.30	03W
DXO r029/21.5	DETROIT VOR/DME	113.40	06W
YQG r325/23.4	WINDSOR VOR/DME	113.80	06W
CRL r026/32.2	CARLETON VOR/DME	115.70	03W
FNT r141/35.7	FLINT VORTAC	116.90	06W

NDB name	Hdg/Dist	Freq	Var	ID
MADDS	313/4.7	338	05W	DE - . . .
CARGL	324/14.9	230	05W	VQ . . . - - - . -
GROSSE ILE	005/26.5	419	07W	RYS . - . - - . - - . . .

Airport Services

- Fuel available: 100LL JET-A
- Parking: tiedowns
- Airframe service: NONE
- Powerplant service: NONE

Runway Information

Runway 9/27

Dimensions: 3549 x 60 ft. / 1082 x 18 m

Surface: asphalt, in fair condition

Runway edge lights: medium intensity

RUNWAY 9

RUNWAY 27

Latitude: 42-32.575973N

42-32.578848N

Longitude: 083-11.068925W

083-10.278788W

Elevation: 727.0 ft.

701.0 ft.

Gradient: 0.7% DOWN

0.7% UP

Traffic pattern: left

left

Runway heading: 096 magnetic, 090 true

276 magnetic, 270 true

Markings: nonprecision, in good condition

nonprecision, in good condition

Visual slope indicator: 2-light PAPI on right (3.75 degrees glide path)

2-light PAPI on left (3.75 degrees glide path)

Runway end identifier lights: no

no

Touchdown point: yes, no lights

yes, no lights

Obstructions: 19 ft. trees, 542 ft. from runway, 18:1 slope to clear

17 ft. bldg, lighted, 540 ft. from runway, 20:1 slope to clear

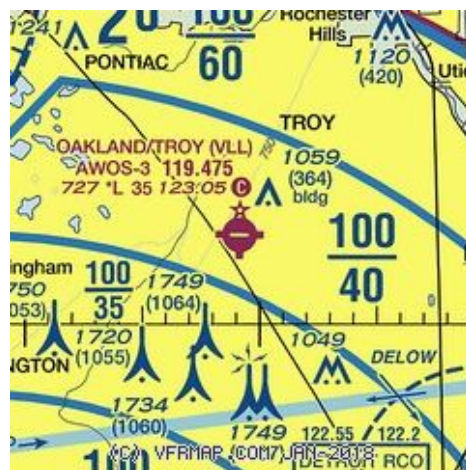
Airport Ownership and Management from official FAA records



Photo by Jeff Schuster
Photo taken 29-Jun-2014
looking west.

Do you have a better or more recent aerial photo of Oakland/Troy Airport that you would like to share? If so, please [send us your photo](#).

Sectional chart



Airport distance calculator

Flying to Oakland/Troy Airport? Find the distance to fly.

From to KVLL

Sunrise and sunset

	Times for 27-Feb-2018	
	Local (UTC-5)	Zulu (UTC)
Morning civil twilight	06:44	11:44
Sunrise	07:13	12:13
Sunset	18:18	23:18
Evening civil twilight	18:47	23:47

Current date and time

Zulu (UTC)	27-Feb-2018 21:13:29
Local (UTC-5)	27-Feb-2018 16:13:29

METAR

KVLL 272055Z AUTO 22013G19KT 10SM CLR 15/M02 A3013 RMK AO2 T01511018
[KDET](#) 272053Z 25016G21KT 10SM CLR 11nm SE 14/M01 A3012 RMK AO2 SLP201 T01441006 56031
[KPTK](#) 272053Z 20012G18KT 10SM 13nm NW FEW070 SCT250 14/M01 A3009

Ownership: Publicly-owned

Owner: OAKLAND COUNTY
6500 HIGHLAND ROAD
WATERFORD, MI 48327
Phone 248-666-3900
ARPT PHONE 248-288-6100

Manager: KARL W RANDALL
6500 HIGHLAND RD
WATERFORD, MI 48327
Phone 248-666-3900

RMK AO2 SLP192 T01441011
56029

[KMTC](#)
17nm E 272056Z 23015G22KT 10SM
FEW065 SCT230 15/M01 A3011
RMK SLP204 WND DATA ESTMD
ALSTG/SLP ESTMD 56027 \$

[CYQG](#)
19nm SE **272000Z** 21016G23KT 15SM
BKN260 13/02 A3014 RMK CI6
SLP213

[KDTW](#)
20nm S 272053Z 23020G27KT 10SM
BKN250 16/00 A3013 RMK AO2 PK
WND 22030/2036 SLP208
T01560000 56031

TAF

[KDET](#)
11nm SE 271720Z 2718/2818 22015G25KT
P6SM FEW250 FM272200 20011KT
P6SM SCT250 FM281300 19008KT
P6SM OVC050 FM281500 21008KT
4SM -RA BR BKN015 OVC025

[KPTK](#)
13nm NW 271720Z 2718/2818 22015G25KT
P6SM FEW250 FM272200 20011KT
P6SM SCT250 FM281300 19008KT
P6SM OVC050 FM281500 21008KT
4SM -RA BR BKN015 OVC025

[KMTC](#)
17nm E 271700Z 2717/2823 20009KT 9999
FEW200 QNH2989INS BECMG
2814/2815 20009KT 9999 BKN015
QNH2979INS BECMG 2820/2821
23006KT 9999 OVC008
QNH2979INS TX12/2719Z
TNM02/2809Z

[CYQG](#)
19nm SE 271738Z 2718/2818 20015KT
P6SM FEW250 FM272000
21015G25KT P6SM SCT070
FM280200 20012KT P6SM SKC
FM280800 20012KT P6SM BKN120
FM281200 21008G18KT P6SM
FEW020 SCT120 SCT200 FM281700
23011KT P6SM -SHRA BKN012
BKN130 BKN190 RMK NXT FCST BY
280000Z

[KDTW](#)
20nm S 271720Z 2718/2824 22015G25KT
P6SM FEW250 FM272200 20011KT
P6SM SCT250 FM281300 19008KT
P6SM OVC050 FM281500 21008KT
4SM -RA BR BKN015 OVC025

NOTAMs

[Click for the latest NOTAMs](#)
NOTAMs are issued by the DoD/FAA and will open in a separate window not controlled by AirNav.

Airport Operational Statistics

Aircraft based on the field: 103 Aircraft operations: avg 82/day *
Single engine airplanes: 92 50% transient general aviation
Multi engine airplanes: 5 50% local general aviation
Helicopters: 5 * for 12-month period ending 31 December 2014
Ultralights: 1

Additional Remarks

- DEER AND BIRDS ON & INVOF ARPT.
- RY 09 +3 FT BERM 316 FT FM THLD.
- NO TGL OR PRACTICE TFC PATTERNS.
- FOR CD CTC DETROIT APCH AT 800-499-8181.

Instrument Procedures

NOTE: All procedures below are presented as PDF files. If you need a reader for these files, you should [download](#) the free Adobe Reader.

NOT FOR NAVIGATION. Please procure official charts for flight.
FAA instrument procedures published for use between 1 February 2018 at 0901Z and 1 March 2018 at 0900Z.

STARs - Standard Terminal Arrivals

- CRUXX SIX [download](#) (248KB)
- LLEEO TWO [download](#) (321KB)
- SPRTN THREE [download](#) (158KB)
- SWWAN TWO [download](#) (149KB)

IAPs - Instrument Approach Procedures

- RNAV (GPS) RWY 09 [download](#) (164KB)
- NOTE: Special Take-Off Minimums/Departure Procedures apply [download](#) (125KB)

Other nearby airports with instrument procedures:

- [KDET](#) - Coleman A Young Municipal Airport (11 nm SE)
- [KPTK](#) - Oakland County International Airport (13 nm NW)
- [KMTC](#) - Selfridge Air National Guard Base (16 nm E)
- [1D2](#) - Canton-Plymouth-Mettetal Airport (17 nm SW)
- [57D](#) - Ray Community Airport (17 nm NE)
- [D98](#) - Romeo State Airport (18 nm NE)
- [Y47](#) - Oakland Southwest Airport (20 nm W)

FBO, Fuel Providers, and Aircraft Ground Support

Business Name	Contact	Services / Description	Fuel Prices	Comments
JDS Pump-N-Go	248-288-6100 [email]	Aviation fuel, Aircraft parking (ramp or tiedown), Hangar leasing / sales More info about JDS Pump-N-Go no information available	Avfuel 100LL Jet A SS \$5.06 \$4.35 Updated 27-Feb-2018	not yet rated write
24HRFUEL.com	248-655-1474	If you are affiliated with 24HRFUEL.com and would like to show here your services, contact info, web link, logo, and more, click here	100LL Jet A SS \$4.89 \$3.49 Updated 21-Feb-2018	not yet rated 2 read write
			SS= Self service	
			UPDATE PRICES	

Would you like to see your business listed on this page?

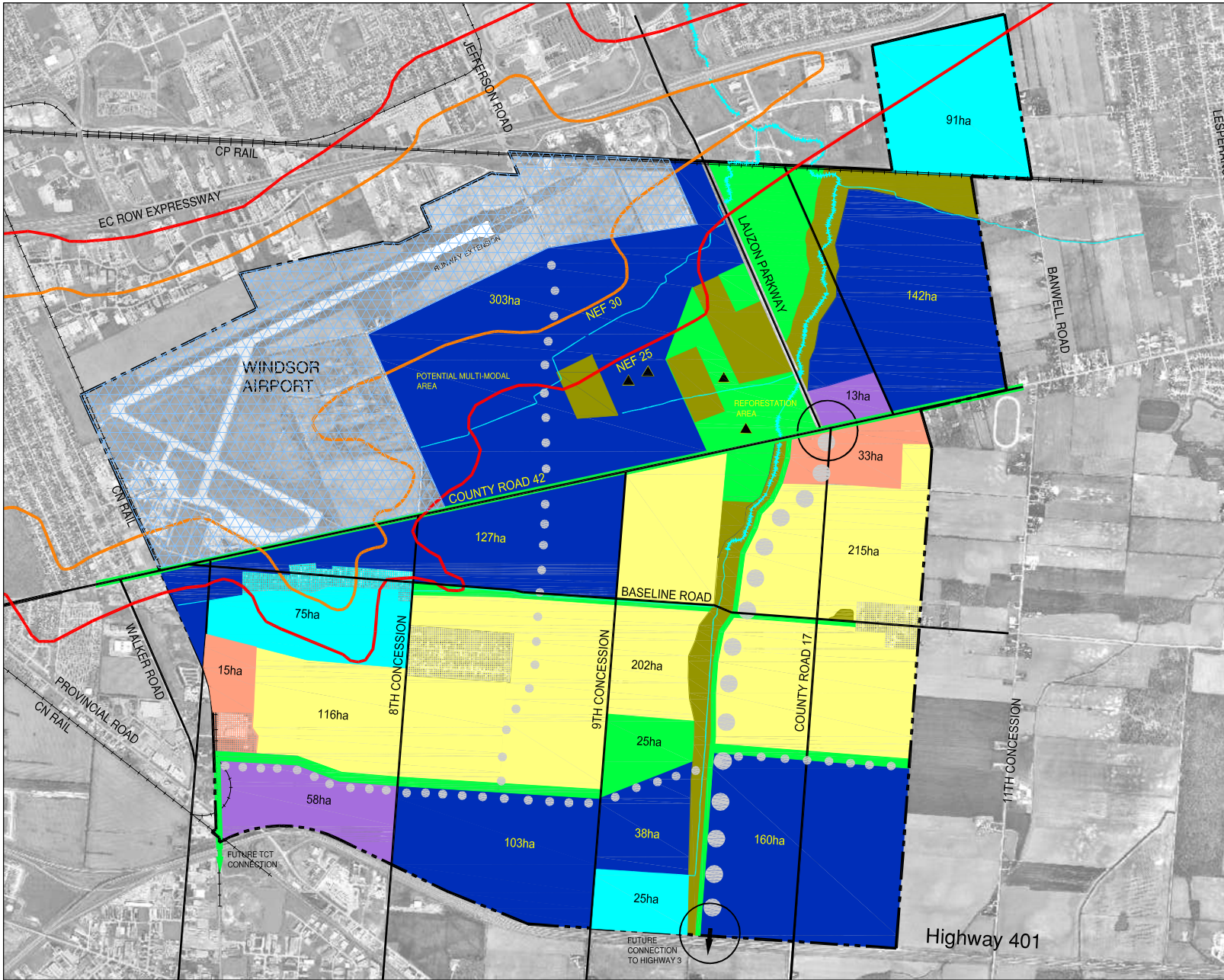
If your business provides an interesting product or service to pilots, flight crews, aircraft, or users of the Oakland/Troy Airport, you should consider listing it here. To start the listing process, click on the button below

[ADD YOUR BUSINESS OR SERVICE](#)

Other Pages about Oakland/Troy Airport

- [Page from the Michigan Airport Directory \(PDF\)](#)
- [Oakland/Troy Airport Website](#)

[UPDATE, REMOVE OR ADD A LINK](#)



LEGEND:

- Residential
- Commercial
- Mixed Use
- Industrial
- Business Park
- Natural Heritage/EPA
- Open Space
- Airport Lands
- Future Roads (potential location*)
- Potential Interchange
- Natural Corridor Linkage Opportunities

* Final location to be determined through the Class EA process.

LAND USE:

Residential	550ha
Mixed Use	50ha
Commercial	70ha
Business Park	190ha
Industrial	875ha
Airport	420ha

Stantec Consulting Limited

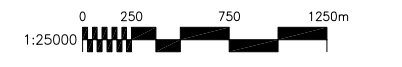
N6A 5J7
 Tel. (519)645-2007
 Fax. (519)645-6575
 www.stantec.com

CITY OF WINDSOR

WINDSOR ANNEXED AREA MASTER PLAN STUDY

CONCEPT 1

September 2006 614-01073CP1.dwg



Appendix C



Auto and Heavy Truck 10-year ADT Projections

Michigan Avenue

	Cars	% Change	Trucks	% Change
2018	19245	N/A	558	N/A
2019	19149	0	1416	61
	Avg % change:	0	Avg % change:	61
	Avg % change (Last 5-yr Trend):	0	Avg % change (Last 5-yr Trend):	61
	% Change/Year Assumption	1	%/Year Change Assumption	1

2032 Projections

	Cars	Trucks
2018	19245	558
2019	19149	1416
2020	19340	1430
2021	19534	1444
2022	19729	1459
2023	19927	1473
2024	20126	1488
2025	20327	1503
2026	20530	1518
2027	20736	1533
2028	20943	1549
2029	21152	1564
2030	21364	1580
2031	21578	1596
2032	21793	1612

Predicted 2032 Auto AADT	Predicted 2032 Truck AADT
21793	1612

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 09 / 04 / 2020	B. Reporting Agency <input checked="" type="checkbox"/> Railroad <input type="checkbox"/> Transit <input type="checkbox"/> State <input type="checkbox"/> Other	C. Reason for Update (Select only one) <input checked="" type="checkbox"/> Change in Data <input type="checkbox"/> New Crossing <input type="checkbox"/> Closed <input type="checkbox"/> Re-Open <input type="checkbox"/> Date Change Only <input type="checkbox"/> Change in Primary Operating RR <input type="checkbox"/> No Train Traffic <input type="checkbox"/> Quiet Zone Update <input type="checkbox"/> Admin. Correction	D. DOT Crossing Inventory Number 283997V
---	--	---	--

Part I: Location and Classification Information

1. Primary Operating Railroad GRAND TRUNK WESTERN RAILROAD INC. [GTW]		2. State MICHIGAN		3. County WAYNE	
4. City / Municipality <input checked="" type="checkbox"/> In <input type="checkbox"/> Near DETROIT		5. Street/Road Name & Block Number JUNCTION AVE (Street/Road Name) * (Block Number)		6. Highway Type & No. CITY	
7. Do Other Railroads Operate a Separate Track at Crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Specify RR ATK		
9. Railroad Division or Region <input type="checkbox"/> None MICHIGAN		10. Railroad Subdivision or District <input type="checkbox"/> None SHORE LINE		11. Branch or Line Name <input type="checkbox"/> None MAIN	
12. RR Milepost 0050.190 (prefix) (nnnn.nnn) (suffix)		13. Line Segment * SC00538812		14. Nearest RR Timetable Station * DETROIT	
15. Parent RR (if applicable) <input type="checkbox"/> N/A CN		16. Crossing Owner (if applicable) <input type="checkbox"/> N/A GTW		17. Crossing Type <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	
18. Crossing Purpose <input checked="" type="checkbox"/> Highway <input type="checkbox"/> Pathway, Ped. <input type="checkbox"/> Station, Ped.		19. Crossing Position <input type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input checked="" type="checkbox"/> RR Over		20. Public Access (if Private Crossing) <input type="checkbox"/> Yes <input type="checkbox"/> No	
21. Type of Train <input checked="" type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Commuter <input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Tourist/Other		22. Average Passenger Train Count Per Day <input type="checkbox"/> Less Than One Per Day <input checked="" type="checkbox"/> Number Per Day 8		23. Type of Land Use <input type="checkbox"/> Open Space <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Recreational <input type="checkbox"/> RR Yard	
24. Is there an Adjacent Crossing with a Separate Number? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) <input checked="" type="checkbox"/> No <input type="checkbox"/> 24 Hr <input type="checkbox"/> Partial <input type="checkbox"/> Chicago Excused Date Established		
26. HSR Corridor ID <input checked="" type="checkbox"/> N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.325528		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -83.107370	
29. Lat/Long Source <input checked="" type="checkbox"/> Actual <input type="checkbox"/> Estimated		30.A. Railroad Use *		31.A. State Use *	
30.B. Railroad Use *		31.B. State Use *		30.C. Railroad Use *	
30.D. Railroad Use *		31.C. State Use *		30.D. Railroad Use *	
32.A. Narrative (Railroad Use) *		32.B. Narrative (State Use) *		33. Emergency Notification Telephone No. (posted) 800-465-9239	
34. Railroad Contact (Telephone No.) 888-888-5909		35. State Contact (Telephone No.) 517-335-2592			

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 8	1.B. Total Night Thru Trains (6 PM to 6 AM) 0	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day <input type="checkbox"/> How many trains per week? _____
2. Year of Train Count Data (YYYY) 2015		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 40 3.B. Typical Speed Range Over Crossing (mph) From 1 to 40		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) <input type="checkbox"/> Constant Warning Time <input type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other <input checked="" type="checkbox"/> None				
6. Is Track Signaled? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		7.A. Event Recorder <input type="checkbox"/> Yes <input type="checkbox"/> No		7.B. Remote Health Monitoring <input type="checkbox"/> Yes <input type="checkbox"/> No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 09/04/2020		PAGE 2		D. Crossing Inventory Number (7 char.) 283997V		
Part III: Highway or Pathway Traffic Control Device Information						
1. Are there Signs or Signals? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		2. Types of Passive Traffic Control Devices associated with the Crossing				
2.A. Crossbuck Assemblies (count) 0		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) <input checked="" type="checkbox"/> None <input type="checkbox"/> W10-1 0 <input type="checkbox"/> W10-3 0 <input type="checkbox"/> W10-11 0 <input type="checkbox"/> W10-2 0 <input type="checkbox"/> W10-4 0 <input type="checkbox"/> W10-12 0		
2.E. Low Ground Clearance Sign (W10-5) <input type="checkbox"/> Yes (count 0) <input type="checkbox"/> No		2.F. Pavement Markings <input type="checkbox"/> Stop Lines <input type="checkbox"/> Dynamic Envelope <input type="checkbox"/> RR Xing Symbols <input type="checkbox"/> None		2.G. Channelization Devices/Medians <input type="checkbox"/> All Approaches <input type="checkbox"/> Median <input type="checkbox"/> One Approach <input type="checkbox"/> None	2.H. EXEMPT Sign (R15-3) <input type="checkbox"/> Yes <input type="checkbox"/> No	2.I. ENS Sign (I-13) Displayed <input type="checkbox"/> Yes <input type="checkbox"/> No
2.J. Other MUTCD Signs Specify Type _____ Count 0 Specify Type _____ Count 0 Specify Type _____ Count 0		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2.K. Private Crossing Signs (if private) <input type="checkbox"/> Yes <input type="checkbox"/> No	2.L. LED Enhanced Signs (List types)		
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)						
3.A. Gate Arms (count) Roadway 0 Pedestrian 0	3.B. Gate Configuration <input type="checkbox"/> 2 Quad <input type="checkbox"/> Full (Barrier) Resistance <input type="checkbox"/> 3 Quad <input type="checkbox"/> Median Gates <input type="checkbox"/> 4 Quad	3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 0 <input type="checkbox"/> Incandescent Not Over Traffic Lane 0 <input type="checkbox"/> LED		3.D. Mast Mounted Flashing Lights (count of masts) 0 <input type="checkbox"/> Incandescent <input type="checkbox"/> LED <input type="checkbox"/> Back Lights Included <input type="checkbox"/> Side Lights Included	3.E. Total Count of Flashing Light Pairs 0	
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) _____/_____/_____ <input type="checkbox"/> Not Required		3.G. Wayside Horn <input type="checkbox"/> Yes Installed on (MM/YYYY) ____/____/_____ <input type="checkbox"/> No		3.H. Highway Traffic Signals Controlling Crossing <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.I. Bells (count) 0	
3.J. Non-Train Active Warning <input type="checkbox"/> Flagging/Flagman <input type="checkbox"/> Manually Operated Signals <input type="checkbox"/> Watchman <input type="checkbox"/> Floodlighting <input type="checkbox"/> None				3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____		
4.A. Does nearby Hwy Intersection have Traffic Signals? <input type="checkbox"/> Yes <input type="checkbox"/> No	4.B. Hwy Traffic Signal Interconnection <input type="checkbox"/> Not Interconnected <input type="checkbox"/> For Traffic Signals <input type="checkbox"/> For Warning Signs	4.C. Hwy Traffic Signal Preemption <input type="checkbox"/> Simultaneous <input type="checkbox"/> Advance	5. Highway Traffic Pre-Signals <input type="checkbox"/> Yes <input type="checkbox"/> No Storage Distance * 0 Stop Line Distance * 0	6. Highway Monitoring Devices (Check all that apply) <input type="checkbox"/> Yes - Photo/Video Recording <input type="checkbox"/> Yes - Vehicle Presence Detection <input type="checkbox"/> None		
Part IV: Physical Characteristics						
1. Traffic Lanes Crossing Railroad Number of Lanes 0		<input type="checkbox"/> One-way Traffic <input type="checkbox"/> Two-way Traffic <input type="checkbox"/> Divided Traffic	2. Is Roadway/Pathway Paved? <input type="checkbox"/> Yes <input type="checkbox"/> No	3. Does Track Run Down a Street? <input type="checkbox"/> Yes <input type="checkbox"/> No	4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/_____ <input type="checkbox"/> 1 Timber <input type="checkbox"/> 2 Asphalt <input type="checkbox"/> 3 Asphalt and Timber <input type="checkbox"/> 4 Concrete <input type="checkbox"/> 5 Concrete and Rubber <input type="checkbox"/> 6 Rubber <input type="checkbox"/> 7 Metal <input type="checkbox"/> 8 Unconsolidated <input type="checkbox"/> 9 Composite <input type="checkbox"/> 10 Other (specify) _____						
6. Intersecting Roadway within 500 feet? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Approximate Distance (feet) _____			7. Smallest Crossing Angle <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input type="checkbox"/> 60° - 90°		8. Is Commercial Power Available? * <input type="checkbox"/> Yes <input type="checkbox"/> No	
Part V: Public Highway Information						
1. Highway System <input type="checkbox"/> (01) Interstate Highway System <input type="checkbox"/> (02) Other Nat Hwy System (NHS) <input type="checkbox"/> (03) Federal AID, Not NHS <input type="checkbox"/> (08) Non-Federal Aid		2. Functional Classification of Road at Crossing <input type="checkbox"/> (0) Rural <input type="checkbox"/> (1) Urban <input type="checkbox"/> (1) Interstate <input type="checkbox"/> (5) Major Collector <input type="checkbox"/> (2) Other Freeways and Expressways <input type="checkbox"/> (3) Other Principal Arterial <input type="checkbox"/> (6) Minor Collector <input type="checkbox"/> (4) Minor Arterial <input type="checkbox"/> (7) Local		3. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input type="checkbox"/> No	4. Highway Speed Limit 0 MPH <input type="checkbox"/> Posted <input type="checkbox"/> Statutory	
5. Linear Referencing System (LRS Route ID) *						
6. LRS Milepost *						
7. Annual Average Daily Traffic (AADT) Year 1970 AADT 1		8. Estimated Percent Trucks 0 %	9. Regularly Used by School Buses? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Average Number per Day 0		10. Emergency Services Route <input type="checkbox"/> Yes <input type="checkbox"/> No	
Submission Information - This information is used for administrative purposes and is not available on the public website.						
Submitted by _____ Organization _____ Phone _____ Date _____						
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.						

Appendix D



Home (/) > Programs (/programs/) > Environmental Review (/programs/environmental-review/) > DNL Calculator

DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the [Day/Night Noise Level Calculator Electronic Assessment Tool Overview \(/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/\)](/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/).

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID	5800 Michigan Avenue
Record Date	06/22/2022
User's Name	NAL #1

Road # 1 Name:	Michigan Avenue (US-12)
-----------------------	--------------------------------

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	<input type="text" value="60"/>	<input type="text" value="60"/>	<input type="text" value="60"/>
Distance to Stop Sign	<input type="text"/>	<input type="text"/>	<input type="text"/>
Average Speed	<input type="text" value="35"/>	<input type="text" value="35"/>	<input type="text" value="35"/>
Average Daily Trips (ADT)	<input type="text" value="21793"/>	<input type="text" value="806"/>	<input type="text" value="806"/>
Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text" value="15"/>
Road Gradient (%)	<input type="text"/>	<input type="text"/>	<input type="text" value="2"/>
Vehicle DNL	<input type="text" value="66"/>	<input type="text" value="62"/>	<input type="text" value="72"/>
<input type="button" value="Calculate Road #1 DNL"/>	<input type="text" value="73"/>	<input type="button" value="Reset"/>	

Railroad #1 Track Identifier:

Grand Trunk Western Railroad (GTW)

Rail # 1

Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance	<input type="text"/>	<input type="text" value="2830"/>
Average Train Speed	<input type="text"/>	<input type="text" value="40"/>
Engines per Train	<input type="text"/>	<input type="text" value="2"/>
Railway cars per Train	<input type="text"/>	<input type="text" value="50"/>
Average Train Operations (ATO)	<input type="text"/>	<input type="text" value="8"/>
Night Fraction of ATO	<input type="text"/>	<input type="text" value="0"/>
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>

Train DNL	<input type="text" value="0"/>	<input type="text" value="46"/>
Calculate Rail #1 DNL	<input type="text" value="46"/>	<input type="button" value="Reset"/>
<input type="button" value="Add Road Source"/>	<input type="button" value="Add Rail Source"/>	
Airport Noise Level	<input type="text"/>	
Loud Impulse Sounds?	<input type="radio"/> Yes <input type="radio"/> No	
Combined DNL for all Road and Rail sources	<input type="text" value="73"/>	
Combined DNL including Airport	<input type="text" value="N/A"/>	
Site DNL with Loud Impulse Sound	<input type="text"/>	
<input type="button" value="Calculate"/>	<input type="button" value="Reset"/>	

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative:** Cancel the project at this location

- **Other Reasonable Alternatives:** Choose an alternate site
- **Mitigation**
 - Contact your Field or Regional Environmental Officer (</programs/environmental-review/hud-environmental-staff-contacts/>)
 - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
 - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
 - Incorporate natural or man-made barriers. See *The Noise Guidebook* (</resource/313/hud-noise-guidebook/>)
 - Construct noise barrier. See the **Barrier Performance Module** (</programs/environmental-review/bpm-calculator/>)

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (</resource/3822/day-night-noise-level-assessment-tool-user-guide/>)

Day/Night Noise Level Assessment Tool Flowcharts (</resource/3823/day-night-noise-level-assessment-tool-flowcharts/>)

[Home \(/\)](#) > [Programs \(/programs/\)](#) > [Environmental Review \(/programs/environmental-review/\)](#) > DNL Calculator

DNL Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the [Day/Night Noise Level Calculator Electronic Assessment Tool Overview \(/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/\)](#).

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

DNL Calculator

Site ID	5800 Michigan Avenue
Record Date	06/22/2022
User's Name	NAL #2
Road # 1 Name:	Michigan Avenue (US-12)

Road #1

Vehicle Type	Cars <input checked="" type="checkbox"/>	Medium Trucks <input checked="" type="checkbox"/>	Heavy Trucks <input checked="" type="checkbox"/>
Effective Distance	<input type="text" value="150"/>	<input type="text" value="150"/>	<input type="text" value="150"/>
Distance to Stop Sign	<input type="text"/>	<input type="text"/>	<input type="text"/>
Average Speed	<input type="text" value="35"/>	<input type="text" value="35"/>	<input type="text" value="35"/>
Average Daily Trips (ADT)	<input type="text" value="21793"/>	<input type="text" value="806"/>	<input type="text" value="806"/>
Night Fraction of ADT	<input type="text" value="15"/>	<input type="text" value="15"/>	<input type="text" value="15"/>
Road Gradient (%)	<input type="text"/>	<input type="text"/>	<input type="text" value="2"/>
Vehicle DNL	<input type="text" value="60"/>	<input type="text" value="56"/>	<input type="text" value="66"/>
Calculate Road #1 DNL	<input type="text" value="67"/>	<input type="text" value="Reset"/>	

Railroad #1 Track Identifier:

Grand Trunk Western Railroad (GTW)

Rail # 1

Train Type	Electric <input type="checkbox"/>	Diesel <input checked="" type="checkbox"/>
Effective Distance	<input type="text"/>	<input type="text" value="2985"/>
Average Train Speed	<input type="text"/>	<input type="text" value="40"/>
Engines per Train	<input type="text"/>	<input type="text" value="2"/>
Railway cars per Train	<input type="text"/>	<input type="text" value="50"/>
Average Train Operations (ATO)	<input type="text"/>	<input type="text" value="8"/>
Night Fraction of ATO	<input type="text"/>	<input type="text" value="0"/>
Railway whistles or horns?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>
Bolted Tracks?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>	Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/>

Train DNL	<input type="text" value="0"/>	<input type="text" value="46"/>
<input type="button" value="Calculate Rail #1 DNL"/>	<input type="text" value="46"/>	<input type="button" value="Reset"/>
<input type="button" value="Add Road Source"/>	<input type="button" value="Add Rail Source"/>	
Airport Noise Level	<input type="text"/>	
Loud Impulse Sounds?	<input type="radio"/> Yes <input type="radio"/> No	
Combined DNL for all Road and Rail sources	<input type="text" value="67"/>	
Combined DNL including Airport	<input type="text" value="N/A"/>	
Site DNL with Loud Impulse Sound	<input type="text"/>	
<input type="button" value="Calculate"/>	<input type="button" value="Reset"/>	

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative:** Cancel the project at this location

- **Other Reasonable Alternatives:** Choose an alternate site
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 - Contact your Field or Regional Environmental Officer (</programs/environmental-review/hud-environmental-staff-contacts/>)
 - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
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 - Construct noise barrier. See the **Barrier Performance Module** (</programs/environmental-review/bpm-calculator/>)

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (</resource/3822/day-night-noise-level-assessment-tool-user-guide/>)

Day/Night Noise Level Assessment Tool Flowcharts (</resource/3823/day-night-noise-level-assessment-tool-flowcharts/>)

Sound Transmission Classification Assessment Tool (STraCAT)

Overview

The Sound Transmission Classification Assessment Tool (STraCAT) is an electronic version of Figures 17 and 19 in The HUD Noise Guidebook. The purpose of this tool is to document sound attenuation performance of wall systems. Based on wall, window, and door Sound Transmission Classification (STC) values, the STraCAT generates a composite STC value for the wall assembly as a whole. Users can enter the calculated noise level related to a specific Noise Assessment Location in front of a building façade and STraCAT will generate a target required attenuation value for the wall assembly in STC. Based on wall materials, the tool will state whether the composite wall assembly STC meets the required attenuation value.

How to Use This Tool

Location, Noise Level and Wall Configuration to Be Analyzed

STraCAT is designed to calculate the attenuation provided by the wall assembly for one wall of one unit. If unit exterior square footage and window/door configuration is identical around the structure, a single STraCAT may be sufficient. If units vary, at least one STraCAT should be completed for each different exterior unit wall configuration to document that all will achieve the required attenuation. Additionally, if attenuation is not based on a single worst-case NAL, but there are multiple NALs which require different levels of attenuation around the structure, a STraCAT should be completed for each differing exterior wall configuration associated with each NAL.

Exterior wall configurations associated with an NAL include those with parallel (facing) or near-parallel exposure as well as those with perpendicular exposure. When a façade has parallel or perpendicular exposure to two or more NALs, you should base the required attenuation on the NAL with the highest calculated noise level. For corner units where the unit interior receives exterior noise through two facades, the STraCAT calculation should incorporate the area of wall, window and door materials pertaining to the corner unit's total exterior wall area (i.e., from both walls).

Information to Be Entered

Users first enter basic project information and the NAL noise level that will be used as the basis for required attenuation. This noise level must be entered in whole numbers. STraCAT users then enter information on wall, window and door component type and area. Again, as noted above, the wall, window and door entries are based on one unit, and one wall (except for corner units as discussed above). The tool sums total wall square footage based on the combined area of walls, doors and windows for the façade being evaluated.

Users may input STC values for materials in one of two ways. The tool includes a dropdown menu of common construction materials with STC values prefilled. If selected construction materials are not included in this dropdown menu, the user may also enter the STC for a given component manually. Verification of the component STC must be included in the ERR. Documentation includes the architect or construction manager's project plans showing wall material specifications. For new construction or for components that will be newly installed in an existing wall, documentation also includes the manufacturer's product specification sheet (cut sheet) documenting the STC rating of selected doors and windows.

Required STC Rating and Determination of Compliance

Finally, based on project information entered the tool will indicate the required STC rating for the wall assembly being evaluated and whether or not the materials specified will produce a combined rating that meets this requirement. Note that for noise levels above 75 dB DNL, either HUD (for 24 CFR Part 50 reviews) or the Responsible Entity (for 24 CFR Part 58 reviews) must approve the level and type of attenuation, among other processing requirements. Required attenuation values generated by STraCAT for NALs above 75 dB DNL should therefore be considered tentative pending approval by HUD or the RE.

Part I - Description

Project

5800 LDHA LP

Sponsor/Developer

5800 LDHA LP

Location

5800 Michigan Avenue, Detroit, MI 48210

Prepared by

Shelter Design Studio LLC

Noise Level

074

Date

6/27/2022



Primary Source(s)

Major Roads

Part II - Wall Components

Part II - Wall Components

Wall Construction Detail

Area

STC

W1, Burnished Block, Air Space, vapor barrier, 1/2 " rigid insulation, 1/2" o.s.b., insulated 2x6 wall, 1/2" resilient channel, 5/8" gyp. bd.

9723

42

W2, Insulated metal panel, vapor barrier, 1/2 " rigid insulation, 1/2" o.s.b., insulated 2x6 wall, 1/2" resilient channel, 5/8" gyp. bd.

14991

34

W3, Corrugated metal panel, vapor barrier, 1/2 " rigid insulation, 1/2" o.s.b., insulated 2x6 wall, 1/2" resilient channel, 5/8" gyp. bd.

3398

34

Add new wall

**28,112 Sq.
Feet**

35.49

Window Construction Detail

Quantity

**Sq
Ft/Unit**

STC

3'x5' wood-framed double hung window each sash has one 7/16" glass panel

32

15

26

Add new window

Door Construction Detail

Quantity

Sq Ft/Unit

STC

3'x7' steel-faced rigid polyurethane core door 1 3/4" thick

5

21

26

Add new door

Wall Statistics

Stat	Value
Area:	28112 ft ²
Wall STC:	35.49

Aperture Statistics

Aperture	Count	Area	% of wall
Windows:	32	480 ft ²	1.71%
Doors:	5	105 ft ²	0.37%

Evaluation Criteria

Criteria	Value
Noise source sound level (dB):	074
Combined STC for wall assembly:	34.83
Required STC rating:	32
Does wall assembly meet requirements?	Yes

[Print](#)

What do you do if the preferred wall design is not sufficient to achieve the required attenuation? Another wall design with more substantial materials will work, but may not be the most cost-effective solution. Try adding some other elements for just a little more attenuation.

For example:

- Staggering the studs in a wall offers approximately 4dB of additional protection.
- Increasing the stud spacing from 16" on center to 24" can increase the STC from 2-5dB.
- Adding a 2" air space can provide 3dB more attenuation.
- Increasing a wall's air space from 3" to 6" can reduce noise levels by an additional 5dB.
- Adding a layer of ½" gypsum board on "Z" furring channels adds 2dB of attenuation.
- Using resilient channels and clips between wall panels and studs can improve the STC from 2-5dB.
- Adding a layer of ½" gypsum board on resilient channels adds 5dB of attenuation.
- Adding acoustical or isolation blankets to a wall's airspace can add 4-10dB of attenuation.
- A 1" rockwool acoustical blanket adds 3dB to the wall's STC.
- Filling the cells of lightweight concrete masonry units with expanded mineral loose-fill insulation adds 2dB to the STC.

Section 10.8: Qualifications of the Environmental Professionals

PM PROFESSIONAL RESUMES

DAVID BALASH

STAFF CONSULTANT

1.800.313.2966 www.pmenv.com balash@pmenv.com

David Balash is a Staff Consultant at PM Environmental, Inc. He specializes in Environmental Due Diligence by managing Phase I Environmental Site Assessments throughout the Midwest.

AREAS OF EXPERTISE

- Staff consultant for Phase I Environmental Site Assessments (ESAs)
- Assists with data collection and evaluation for Transaction Screen Assessments, Phase I ESAs and other due diligence reports
- Experience with various types of industrial operations, automotive dealerships and automotive service operations, gasoline stations, office buildings, strip malls, multi-family residential apartments, and low-income housing projects
- Experience in implementation and completion of various site assessment standards and professional protocol and commercial lending requirements (ASTM E-1527)
- Experience with low-income housing projects including Housing and Urban Development (HUD) and Michigan State Housing Development Authority (MSHDA) Environmental Reviews and Desktop Noise Assessments



EDUCATION

- University of Michigan—Ann Arbor
B.S. Environmental Science, specialization in Restoration Ecology

CERTIFICATIONS

- OSHA 29 CFR 1910.120 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training

PROFESSIONAL ASSOCIATIONS

- Member of Golden Key International Honor Society
- Trained volunteer leader with Huron River Watershed Council

PETER S. BOSANIC, P.E., EP, Q.C.

FOUNDER

1.800.313.2966 www.pmenv.com bosanic@pmenv.com

Peter Bosanic is the Co-founder of PM Environmental, Inc. He has over 30 years of relevant experience in environmental risk management, environmental & engineering due diligence, M&A, Brownfield redevelopment and economic development incentives, leaking UST management, remediation, environmental compliance, industrial hygiene projects and government contracts. PM regularly works with financial institutions, investors, developers, retail petroleum clients, municipalities, industries, business and government agencies and regulators.

AREAS OF EXPERTISE

- Environmental Due Diligence for financial institutions, investors, developers and government agencies including:
 - Phase I & II Environmental Site Assessments (ESAs)
 - Vapor intrusion investigations
 - Baseline Environmental Assessments (BEAs)
 - Due Care Plans and Continuing Obligations Evaluations
 - Property Condition Assessments (PCAs)
- Leaking UST and industrial site investigations, feasibility studies and corrective action plans and remediation
- Environmental compliance audits
- Brownfield redevelopment economic development consulting including grants and other incentives
- Industrial hygiene services experience including asbestos, lead based paint and other hazardous materials
- Government environmental contract project management on projects for state owned or funded projects
- Multifamily (privately owned and public housing agencies) environmental and engineering services including Phase I and II ESAs, NEPA Investigations, HUD environmental assessments and Capital Needs Assessments (CNAs)



EDUCATION

- Michigan State University B.S. Civil and Environmental Engineering
- Michigan State University Graduate Studies Environmental Engineering
- Various Continuing Education and Professional Development Classes
- ASTM Risk Based Corrective Action Training
- Zweig White Principals Academy

CERTIFICATIONS

- OSHA 40 Hours Hazwoper and 8-hour Supervisor Training
- Environmental Professional (EP) as defined in § 312.10 of 40 CFR 312
- ASTM PCA Training
- HUD MAP CNA Training
- Qualified UST Consultant (QC) in Michigan

PROFESSIONAL ACTIVITIES

- National Brownfield Association
- Mortgage Bankers Association
- Environmental Bankers Association
- Michigan Association of Environmental Professional
- Michigan Petroleum Association
- Chi Epsilon Civil Engineering Honor Society
- Michigan Housing Council

REGISTRATION

- Professional Engineer in the following States: Alabama, Kentucky, Michigan, Mississippi, Ohio, Illinois, Indiana and Tennessee

Section 10.9: MSHDA Phase I Letter of Reliance



Corporate Headquarters
Lansing, Michigan
3340 Ranger Road, Lansing, MI 48906
f: 877.884.6775
t: 517.321.3331

Michigan Locations
Berkley Bay City
Grand Rapids Lansing
Oak Park

2022 MSHDA PHASE I LETTER OF RELIANCE

PRIVILEGED AND CONFIDENTIAL

Mr. Dan Lince
Environmental Manager
Rental Development Division
Michigan State Housing Development Authority
735 East Michigan Avenue
Lansing, Michigan 48912

**Re: Phase I Environmental Site Assessment of the Vacant Land
Located at 5800 Michigan Avenue and
3951-3957 North Campbell Street, Detroit, Michigan
PM Environmental, Inc. Project No. 01-13496-0-0001
EPA Grant No. BF-00E02726; Hazardous Grant
Dated: June 30, 2022**

Dear Mr. Lince:

Please find enclosed the Phase I Environmental Site Assessment for the subject property dated June 30, 2022 to the Michigan State Housing Development Authority.

It is my understanding that the information contained in the Phase I Environmental Site Assessment will be used by the Authority in considering proposed financing of residential development of the property and, furthermore, that the Authority may rely upon the Phase I Environmental Site Assessment as if it were issued to the Authority.

I **represent** that the attached is a true, correct, and complete copy of the Phase I Environmental Site Assessment for the above captioned property and that the report represents my professional opinion of the site as of this date and that I meet the definition of an Environmental Professional as defined in Section 312.10 of 40 CFR 312. I also **represent** that the Phase I Environmental Site Assessment including the evaluation, recommendations, and conclusions as of this date has been performed in conformance with the scope and limitations of the ASTM Practice E1527-13, ASTM Practice E 2600-15, and MSHDA's Environmental Review Requirements for 2022.

Sincerely,
PM ENVIRONMENTAL, INC.

Peter S. Bosanic, P.E., EP
Principal

**Section 10.10: Copy of Environmental Professional Insurance
Certificates**



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/2/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher Risk Management Services, Inc. 4000 Midlantic Drive Suite 200 Mount Laurel NJ 08054 License#: BR-724491 PMENVIR-01	CONTACT NAME: Tim Fyock PHONE (A/C No. Ext): 888-273-8155 E-MAIL ADDRESS: Tim_Fyock@ajg.com	FAX (A/C, No): 856-273-3663													
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : Nautilus Insurance Company</td> <td>17370</td> </tr> <tr> <td>INSURER B : Great Northern Insurance Company</td> <td>20303</td> </tr> <tr> <td>INSURER C : Bankers Standard Insurance Company</td> <td>18279</td> </tr> <tr> <td>INSURER D :</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Nautilus Insurance Company	17370	INSURER B : Great Northern Insurance Company	20303	INSURER C : Bankers Standard Insurance Company	18279	INSURER D :		INSURER E :		INSURER F :
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INSURER D :															
INSURER E :															
INSURER F :															
INSURED P.M. Environmental, Inc. 3340 Ranger Road Lansing, MI 48906															

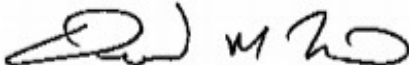
COVERAGES **CERTIFICATE NUMBER:** 1430273800 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Prof. Liability <input checked="" type="checkbox"/> Contractors Poll GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:			ECP2034012-11	2/1/2022	2/1/2023	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Contract Pollution \$ 2,000,000
B	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			73583024	2/1/2022	2/1/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Comp/Coll Deductible \$ \$2,000
A	<input type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$			FFX2034013-11	2/1/2022	2/1/2023	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	71745612	2/1/2022	2/1/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Errors & Omissions Claims Made			ECP2034012-11	2/1/2022	2/1/2023	Aggregate Limit \$2,000,000 SIR \$25,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 MSHDA is included as Additional Insured in accordance with the policy provisions of the General Liability policy. General Liability policy evidenced herein is Primary and Non-Contributory to other insurance available to an Additional Insured, but only in accordance with the policy's provisions.

CERTIFICATE HOLDER**CANCELLATION**

MSHDA Attn: Daniel Lince 735 East Michigan Avenue Lansing MI 48909-7544	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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Attachment VII

Subsurface Investigation (8/6/2022 by McDowell, excerpts only)



McDOWELL & ASSOCIATES
 Geotechnical, Environmental, & Hydrogeologic Services
 21355 Hatcher Avenue • Ferndale, MI 48220
 Phone: (248) 399-2066 • Fax: (248) 399-2157

LOG OF
 TEST PIT NO. TP-2

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7-14-2022

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID	
2a	1	[Hatched Legend]	Moist dark brown silty CLAY with brick, clay tile, glass and concrete, fill	ND	
	2			1'9"	ND
2b	3			Moist brown silty CLAY, fill	ND
	4	[Hatched Legend]	Moist variegated silty CLAY	ND	
	5			4'3"	ND
	6			5'6"	ND
	7				
	8				
	9				
	10				
	11				
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	23				
	24				
	25				

NOTES:
 PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).
 ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL BORING NO. 101

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID	
a	1		Moist dark brown sandy CLAY with occasional concrete, glass and topsoil, fill	ND	
b	2				
c	3			3'0"	ND
d	4				
e	5			5'0"	ND
	6				
	7				ND
	8			8'0"	
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

- TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 102

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1		0'6" Moist dark brown sandy TOPSOIL, fill	ND
a	2		Moist brown silty fine SAND, fill	
b			2'0" Moist black coarse SAND, fill	
	3		2'6"	ND
c	4		Moist brown to dark brown silty CLAY with topsoil streaks, fill	
	5		4'6"	ND
d	6		Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER	HRS.	FT.
G.W. VOLUMES		INS.

None



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LOG OF SOIL BORING NO. 103

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
a	1			ND
			Moist brown silty fine SAND, fill	
b	2			
			2'0" Moist black clayey SAND, fill	
	3			ND
c	4			
			Moist dark brown sandy CLAY with trace of concrete, fill	
	5			ND
d	6			3.0
	7			
	8			1.5
	9		Moist variegated silty CLAY	ND
	10			
	11			ND
e	12			
			12'0"	
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL
 BORING NO. 104

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
a	1			ND
	2		Moist brown silty fine SAND, fill	
b	3		2'0"	ND
	4		Moist black sandy CLAY with glass, asphalt and concrete, fill	
c	5		4'6"	ND
	6			
	7		Moist variegated silty CLAY	ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 105

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue
 Detroit, Michigan

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1			ND
	2		Moist brown silty fine SAND, fill	
	3			ND
	4		3'0" Moist dark brown sandy clayey TOPSOIL, fill	
	5		3'6"	
	6			ND
	7		Moist variegated silty CLAY	
	8			ND
	9		8'0"	
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL BORING NO. 106

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a	2		Moist brown silty fine SAND, fill	
			2'0"	
b	3			ND
	4			
	5		Moist black SAND with brick, concrete and glass, fill	
				ND
c	6			
	7			ND
			7'0" Moist variegated silty CLAY, fill	
d	8		7'6" Moist black clayey SAND with brick and glass, fill	
			8'0"	
e	9		Moist variegated silty CLAY	ND
	10			
			10'0"	
	11		Moist blue silty CLAY	ND
	12			
			12'0"	
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 107

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
a	1		Moist brown silty fine SAND, fill	ND
b	2		2'0" Moist brown clayey SAND, fill	
			2'6" Moist brown clayey SAND, fill	
c	3		2'8" Moist black sandy CLAY with possible glass, fill	ND
d	4		Moist variegated silty CLAY	
	5		4'0"	
	6			
	7			
	8			
	9			
	10			
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	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL BORING NO. 108

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1			ND
a	2		Moist brown silty fine SAND, fill	
	3			ND
b			3'0" Moist black clayey SAND & GRAVEL, fill	
c	4		3'6" Moist variegated silty CLAY	
	4'0"			
	5			
	6			
	7			
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NOTES:
 PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).
 ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL BORING NO. 109

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	ND
	1			
a	2		Moist brown silty fine SAND, fill	
	3		2'6" Moist black sandy CLAY with brick and topsoil streaks, fill	ND
b	4		3'6" Moist black sandy CLAY with brick and topsoil streaks, fill	
	5			ND
c	6		Moist variegated silty CLAY	
	7			ND
	8		8'0"	
	9			
	10			
	11			
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	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
--	--	---



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LOG OF SOIL BORING NO. 110

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
a	1	[Dotted Pattern]		ND
	2	[Dotted Pattern]	Moist brown silty fine SAND, fill	
b	3	[Diagonal Lines]	2'6" Moist black sandy CLAY with glass, fill	ND
		[Diagonal Lines]	3'0" Moist variegated silty CLAY	
c	4	[Diagonal Lines]	4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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	14			
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	20			
	21			
	22			
	23			
	24			
	25			

NOTES:
 PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).
 ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
--	---	---



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LOG OF SOIL BORING NO. 111

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1		1'0" Moist brown sandy CLAY, fill	ND
b	2		2'0" Moist brown silty fine SAND, fill	
c	3		Moist brown clayey SAND with concrete, brick and glass, fill	ND
d	4		3'9" Moist dark brown silty CLAY	
e	5		4'0" Moist variegated silty CLAY	ND
	6			
	7			ND
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

- TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 112

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
	1		Moist brown silty fine SAND, fill	ND
a	2		2'0" Moist black clayey SAND with gravel, fill	
b				
	3		3'0" Moist dark brown silty CLAY, fill	ND
c			3'6" Moist variegated silty CLAY	
d	4		4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
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	23			
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	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 113

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'3" Moist dark brown sandy TOPSOIL, fill	
a	1			ND
	2		Moist brown silty fine SAND, fill	
b	3		2'6" Moist black clayey SAND with brick and concrete, fill	
c	3		3'0" Moist dark brown silty clayey TOPSOIL	ND
d	4		3'6" Moist variegated silty CLAY	
	4		4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Faling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES		

None



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LOG OF SOIL
 BORING NO. 114

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'1" Moist dark brown sandy TOPSOIL, fill	
a	1		0'6" Moist brown silty fine SAND, fill	ND
			1'0" Moist brown to dark brown sandy CLAY, fill	
b	2		2'0" Moist brown silty fine SAND, fill	
c	3		3'0" Moist black clayey SAND with glass, fill	ND
d	4		3'6" Moist dark brown silty CLAY, fill	
e	4		4'0" Moist variegated silty CLAY	
	5			
	6			
	7			
	8			
	9			
	10			
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	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER	HRS.	FT.
G.W. VOLUMES		INS.

None



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LOG OF SOIL
 BORING NO. 115

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1			
			Moist brown silty fine SAND, fill	ND
a	2			
b	3		2'6" Moist black sandy CLAY with brick, fill	
c			3'0" Moist dark brown silty CLAY, fill	ND
d	4		3'6" Moist variegated silty CLAY	
			4'0"	
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
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	16			
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	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

- TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER	HRS.	FT.
G.W. VOLUMES		INS.

None



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LOG OF SOIL
 BORING NO. 116

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist brown clayey SAND, fill	
a	1		Moist brown silty fine SAND, fill	ND
	2		2'0"	
b	3		Moist black clayey SAND with glass, fill	ND
c	4		3'6" Moist variegated silty CLAY	
	4'0"			
	5			
	6			
	7			
	8			
	9			
	10			
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	20			
	21			
	22			
	23			
	24			
	25			

NOTES:
 PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).
 ND = None Detected

TYPE OF SAMPLE D. - DISTURBED UL. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30". Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL BORING NO. 117

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1	[Dotted Pattern]	1'0" Moist brown clayey SAND with concrete, fill	ND
b	2	[Dotted Pattern]	Moist brown silty fine SAND	
	3	[Dotted Pattern]	3'0"	ND
c	4	[Dotted Pattern]	Moist black clayey SAND with brick and glass, fill	
	5	[Diagonal Lines]	4'6"	ND
d	6	[Diagonal Lines]	Moist variegated silty CLAY	
	7	[Diagonal Lines]		ND
	8	[Diagonal Lines]	8'0"	
	9			
	10			
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	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER	HRS.	FT.
G.W. VOLUMES		INS.

None



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LOG OF SOIL
 BORING NO. 118

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
			0'6" Moist brown to dark brown sandy CLAY, fill	PID
	1			ND
a	2		Moist brown silty fine SAND, fill	
	3		3'0"	ND
b	4		Moist black sandy CLAY with brick, fill	
	5			ND
c	6		6'0"	
d	7		Moist variegated silty CLAY with trace of brick, fill	ND
e	8		7'6"	
			8'0"	
	9			
	10			
	11			
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	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

- TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 119

PROJECT Subsurface Investigation

LOCATION 5800 Michigan Avenue

Detroit, Michigan

JOB NO. 22-16296

SURFACE ELEV. _____ DATE 7/21/22

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
	1			
a			1'6" Moist brown to dark brown clayey SAND with trace of concrete, fill	ND
	2			
b			2'6" Moist brown silty fine SAND, fill	
	3			ND
	4			
c			6'6" Moist black sandy CLAY with brick and glass, fill	ND
	5			
	6			
	7		8'0" Moist variegated silty CLAY	ND
d				
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

- TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER	HRS.	FT.
G.W. VOLUMES		INS.

None



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LOG OF SOIL
 BORING NO. 120

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1	[Dotted Pattern]	Moist dark brown clayey SAND with topsoil and brick, fill	ND
	2	[Dotted Pattern]	2'0"	
b	3	[Dotted Pattern]	Moist brown silty fine SAND, fill	ND
	4	[Diagonal Lines]	3'0"	
c	5	[Diagonal Lines]	Moist variegated silty CLAY with topsoil and brick, fill	ND
	6	[Dotted Pattern]	5'6"	
d	7	[Diagonal Lines]	Moist brown coarse SAND with gravel, fill	ND
	8	[Diagonal Lines]	6'6"	
e	9	[Diagonal Lines]	Moist variegated silty CLAY	ND
	10		8'0"	
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 D. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER	HRS.	FT.
G.W. VOLUMES		INS.

None



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LOG OF SOIL BORING NO. 121

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1	[Diagonal Hatching]	Moist brown to dark brown sandy CLAY with concrete, metal and roots, fill	ND
	2			
b	3	[Diagonal Hatching]	3'9" CONCRETE	ND
	4			
	5	[Dotted Pattern]	4'0" Moist brown clayey SAND, possible fill	ND
	6	[Diagonal Hatching]	6'0" Moist variegated silty CLAY	ND
c	7			
	8		8'0"	
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:
 PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).
 ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30"; Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL
 BORING NO. 122

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1	[Dotted Pattern]	Moist brown SAND with pebbles, concrete and brick, fill	ND
	2	[Dotted Pattern]	1'6"	
b	3	[Dotted Pattern]	Moist brown silty fine SAND, fill	ND
	4	[Dotted Pattern]	3'6"	
c	5	[Dotted Pattern]	Moist black coarse SAND with metal	ND
	6	[Diagonal Lines]	5'0"	
	7	[Diagonal Lines]		ND
d	8	[Diagonal Lines]	Moist variegated silty CLAY with coarse sand seams, fill	
	9	[Diagonal Lines]		ND
e	10	[Diagonal Lines]		
	11	[Diagonal Lines]	11'0"	ND
f	12	[Diagonal Lines]	Moist brown silty CLAY	
	13		12'0"	
	14			
	15			
	16			
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE
 O. - DISTURBED
 U.L. - UNDIST. LINER
 S.T. - SHELBY TUBE
 S.S. - SPLIT SPOON
 R.C. - ROCK CORE
 () - PENETROMETER

REMARKS:

Standard Penetration Test - Driving 2" OD Sampler 1' With
 140# Hammer Falling 30": Count Made at 6" Intervals

GROUND WATER OBSERVATIONS

G.W. ENCOUNTERED AT	FT.	INS.
G.W. ENCOUNTERED AT	FT.	INS.
G.W. AFTER COMPLETION	FT.	INS.
G.W. AFTER _____ HRS.	FT.	INS.
G.W. VOLUMES	None	



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LOG OF SOIL
 BORING NO. 123

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID	
a	1	[Dotted Pattern]	Moist brown clayey SAND with traces of brick and concrete, fill	ND	
b	2	[Dotted Pattern]	1'6"		
	3	[Dotted Pattern]		Moist brown silty fine SAND, fill	ND
c	4	[Dotted Pattern]	3'6"		
	5	[Dotted Pattern]		Moist black clayey SAND with metal and glass, fill	ND
d	6	[Diagonal Lines]	5'0"		
	7	[Diagonal Lines]		Moist variegated silty CLAY	ND
	8	[Diagonal Lines]	8'0"		
	9				
	10				
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	23				
	24				
	25				

NOTES:

PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).

ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
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LOG OF SOIL
 BORING NO. 124

PROJECT Subsurface Investigation

JOB NO. 22-16296

LOCATION 5800 Michigan Avenue

SURFACE ELEV. _____ DATE 7/21/22

Detroit, Michigan

Sample & Type	Depth	Legend	SOIL DESCRIPTION	PID
a	1	[Dotted Pattern]	Moist brown clayey SAND with brick and concrete, fill	ND
	2	[Dotted Pattern]	1'6"	
b	3	[Dotted Pattern]	Moist brown silty fine SAND, fill	ND
	4	[Diagonal Lines]	3'6"	
c	5	[Diagonal Lines]	Moist black sandy CLAY with metal, fill	ND
	6	[Diagonal Lines]	4'6"	
d	7	[Diagonal Lines]	Moist variegated silty CLAY	ND
	8	[Diagonal Lines]	8'0"	
	9			
	10			
	11			
	12			
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	22			
	23			
	24			
	25			

NOTES:
 PID readings from MiniRAE 3000 photoionization detector as parts per million (ppm, calibrated to isobutylene).
 ND = None Detected

TYPE OF SAMPLE D. - DISTURBED U.L. - UNDIST. LINER S.T. - SHELBY TUBE S.S. - SPLIT SPOON R.C. - ROCK CORE () - PENETROMETER	REMARKS: Standard Penetration Test - Driving 2" OD Sampler 1' With 140# Hammer Falling 30": Count Made at 6" Intervals	GROUND WATER OBSERVATIONS G.W. ENCOUNTERED AT FT. INS. G.W. ENCOUNTERED AT FT. INS. G.W. AFTER COMPLETION FT. INS. G.W. AFTER HRS. FT. INS. G.W. VOLUMES None
--	---	--



Analytical Laboratory Report

Lab Sample ID: S38211.02

Sample Tag: 2a

Collected Date/Time: 07/15/2022 11:00

Matrix: Soil

COC Reference: 147807

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.3	IR
1	40ml Glass	MeOH	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/19/22 13:30	CCM	
PNA Extraction*	Completed	SW3546	07/18/22 16:00	JWR	
Mercury Digestion	Completed	SW7471B	07/20/22 13:00	JRH	

Inorganics

Method: SM2540B, Run Date: 07/18/22 15:35, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	86	1		%	1		

Metals

Method: SW6020A, Run Date: 07/19/22 14:52, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	589	3.0		mg/kg	2430	7439-92-1	

Method: SW7471B, Run Date: 07/20/22 15:37, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	0.219	0.050		mg/kg	65	7439-97-6	

Organics - Semi-Volatiles

Polynuclear Aromatics, Method: SW8270D, Run Date: 07/20/22 03:49, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	300		ug/kg	10	83-32-9	
Acenaphthylene	Not detected	300		ug/kg	10	208-96-8	
Anthracene	Not detected	300		ug/kg	10	120-12-7	
Benzo(a)anthracene	800	300		ug/kg	10	56-55-3	
Benzo(a)pyrene	800	300		ug/kg	10	50-32-8	
Benzo(b)fluoranthene	1,300	300		ug/kg	10	205-99-2	p
Benzo(k)fluoranthene	1,500	300		ug/kg	10	207-08-9	p
Benzo(ghi)perylene	400	300		ug/kg	10	191-24-2	
Chrysene	800	300		ug/kg	10	218-01-9	
Dibenzo(ah)anthracene	Not detected	300		ug/kg	10	53-70-3	
Fluoranthene	1,800	300		ug/kg	10	206-44-0	
Fluorene	Not detected	300		ug/kg	10	86-73-7	
Indeno(1,2,3-cd)pyrene	300	300		ug/kg	10	193-39-5	
Naphthalene	Not detected	300		ug/kg	10	91-20-3	
Phenanthrene	1,000	300		ug/kg	10	85-01-8	
Pyrene	1,600	300		ug/kg	10	129-00-0	
2-Methylnaphthalene	Not detected	300		ug/kg	10	91-57-6	

p-Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.



Analytical Laboratory Report

Lab Sample ID: S38211.03

Sample Tag: 2b

Collected Date/Time: 07/15/2022 11:00

Matrix: Soil

COC Reference: 147807

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.3	IR
1	40ml Glass	MeOH	Yes	3.3	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/19/22 13:30	CCM	
PNA Extraction*	Completed	SW3546	07/18/22 16:00	JWR	
Sample wt. (g) / Methanol (ml)*	11.200/11	SW5035A	07/18/22 14:03	JKJ	
Mercury Digestion	Completed	SW7471B	07/20/22 13:00	JRH	

Inorganics

Method: SM2540B, Run Date: 07/18/22 15:35, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	88	1		%	1		

Metals

Method: SW6020A, Run Date: 07/19/22 14:54, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	14.3	0.30		mg/kg	268	7439-92-1	

Method: SW7471B, Run Date: 07/20/22 15:40, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.050		mg/kg	64	7439-97-6	

Organics - Semi-Volatiles

Polynuclear Aromatics, Method: SW8270D, Run Date: 07/20/22 04:06, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	300		ug/kg	10	83-32-9	
Acenaphthylene	Not detected	300		ug/kg	10	208-96-8	
Anthracene	Not detected	300		ug/kg	10	120-12-7	
Benzo(a)anthracene	Not detected	300		ug/kg	10	56-55-3	
Benzo(a)pyrene	Not detected	300		ug/kg	10	50-32-8	
Benzo(b)fluoranthene	Not detected	300		ug/kg	10	205-99-2	
Benzo(k)fluoranthene	Not detected	300		ug/kg	10	207-08-9	
Benzo(ghi)perylene	Not detected	300		ug/kg	10	191-24-2	
Chrysene	Not detected	300		ug/kg	10	218-01-9	
Dibenzo(ah)anthracene	Not detected	300		ug/kg	10	53-70-3	
Fluoranthene	Not detected	300		ug/kg	10	206-44-0	
Fluorene	Not detected	300		ug/kg	10	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	300		ug/kg	10	193-39-5	
Naphthalene	Not detected	300		ug/kg	10	91-20-3	
Phenanthrene	Not detected	300		ug/kg	10	85-01-8	
Pyrene	Not detected	300		ug/kg	10	129-00-0	
2-Methylnaphthalene	Not detected	300		ug/kg	10	91-57-6	



Analytical Laboratory Report

Lab Sample ID: S38211.03 (continued)

Sample Tag: 2b

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 07/22/22 20:03, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	300		ug/kg	62.6	60-29-7	
Acetone	Not detected	1,000		ug/kg	62.6	67-64-1	
Methyl iodide	Not detected	100		ug/kg	62.6	74-88-4	
Carbon disulfide	Not detected	300		ug/kg	62.6	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	300		ug/kg	62.6	1634-04-4	
Acrylonitrile	Not detected	100		ug/kg	62.6	107-13-1	
2-Butanone (MEK)	Not detected	940		ug/kg	62.6	78-93-3	
Dichlorodifluoromethane	Not detected	300		ug/kg	62.6	75-71-8	
Chloromethane	Not detected	300		ug/kg	62.6	74-87-3	
Vinyl chloride	Not detected	60		ug/kg	62.6	75-01-4	
Bromomethane	Not detected	300		ug/kg	62.6	74-83-9	
Chloroethane	Not detected	300		ug/kg	62.6	75-00-3	
Trichlorofluoromethane	Not detected	100		ug/kg	62.6	75-69-4	
1,1-Dichloroethene	Not detected	60		ug/kg	62.6	75-35-4	
Methylene chloride	Not detected	100		ug/kg	62.6	75-09-2	
trans-1,2-Dichloroethene	Not detected	60		ug/kg	62.6	156-60-5	
1,1-Dichloroethane	Not detected	60		ug/kg	62.6	75-34-3	
cis-1,2-Dichloroethene	Not detected	60		ug/kg	62.6	156-59-2	
Tetrahydrofuran*	Not detected	1,000		ug/kg	62.6	109-99-9	
Chloroform	Not detected	60		ug/kg	62.6	67-66-3	
Bromochloromethane	Not detected	100		ug/kg	62.6	74-97-5	
1,1,1-Trichloroethane	Not detected	60		ug/kg	62.6	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	3,000		ug/kg	62.6	108-10-1	
2-Hexanone	Not detected	3,000		ug/kg	62.6	591-78-6	
Carbon tetrachloride	Not detected	60		ug/kg	62.6	56-23-5	
Benzene	Not detected	60		ug/kg	62.6	71-43-2	
1,2-Dichloroethane	Not detected	60		ug/kg	62.6	107-06-2	
Trichloroethene	Not detected	60		ug/kg	62.6	79-01-6	
1,2-Dichloropropane	Not detected	60		ug/kg	62.6	78-87-5	
Bromodichloromethane	Not detected	100		ug/kg	62.6	75-27-4	
Dibromomethane	Not detected	300		ug/kg	62.6	74-95-3	
cis-1,3-Dichloropropene	Not detected	60		ug/kg	62.6	10061-01-5	
Toluene	Not detected	60		ug/kg	62.6	108-88-3	
trans-1,3-Dichloropropene	Not detected	60		ug/kg	62.6	10061-02-6	
1,1,2-Trichloroethane	Not detected	60		ug/kg	62.6	79-00-5	
Tetrachloroethene	Not detected	60		ug/kg	62.6	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	60		ug/kg	62.6	110-57-6	
Dibromochloromethane	Not detected	100		ug/kg	62.6	124-48-1	
1,2-Dibromoethane	Not detected	30		ug/kg	62.6	106-93-4	M
Chlorobenzene	Not detected	60		ug/kg	62.6	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	100		ug/kg	62.6	630-20-6	
Ethylbenzene	Not detected	60		ug/kg	62.6	100-41-4	
p,m-Xylene	Not detected	100		ug/kg	62.6		
o-Xylene	Not detected	60		ug/kg	62.6	95-47-6	
Styrene	Not detected	60		ug/kg	62.6	100-42-5	
Isopropylbenzene	Not detected	300		ug/kg	62.6	98-82-8	
Bromoform	Not detected	100		ug/kg	62.6	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	60		ug/kg	62.6	79-34-5	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S38211.03 (continued)

Sample Tag: 2b

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 07/22/22 20:03, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2,3-Trichloropropane	Not detected	100		ug/kg	62.6	96-18-4	
n-Propylbenzene	Not detected	60		ug/kg	62.6	103-65-1	
Bromobenzene	Not detected	100		ug/kg	62.6	108-86-1	
1,3,5-Trimethylbenzene	Not detected	60		ug/kg	62.6	108-67-8	
tert-Butylbenzene	Not detected	60		ug/kg	62.6	98-06-6	
1,2,4-Trimethylbenzene	Not detected	60		ug/kg	62.6	95-63-6	
sec-Butylbenzene	Not detected	60		ug/kg	62.6	135-98-8	
p-Isopropyltoluene	Not detected	100		ug/kg	62.6	99-87-6	
1,3-Dichlorobenzene	Not detected	100		ug/kg	62.6	541-73-1	
1,4-Dichlorobenzene	Not detected	100		ug/kg	62.6	106-46-7	
1,2-Dichlorobenzene	Not detected	100		ug/kg	62.6	95-50-1	
1,2,3-Trimethylbenzene	Not detected	60		ug/kg	62.6	526-73-8	
n-Butylbenzene	Not detected	60		ug/kg	62.6	104-51-8	
Hexachloroethane	Not detected	400		ug/kg	62.6	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	300		ug/kg	62.6	96-12-8	
1,2,4-Trichlorobenzene	Not detected	410		ug/kg	62.6	120-82-1	
1,2,3-Trichlorobenzene	Not detected	410		ug/kg	62.6	87-61-6	
Naphthalene	Not detected	300		ug/kg	62.6	91-20-3	
2-Methylnaphthalene	Not detected	100		ug/kg	62.6	91-57-6	



Report ID: S38421.01(03)
Generated on 08/03/2022
Replaces report S38421.01(02) generated on 07/27/2022

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Report Summary

Lab Sample ID(s): S38421.01-S38421.20
Project: 22-16296
Collected Date(s): 07/21/2022
Submitted Date/Time: 07/22/2022 14:20
Sampled by: Jen L
P.O. #:

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Maya Murshak
Technical Director



General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Method Summary

Method	Version
SM2540B	Standard Method 2540 B 2015
SW1311	SW 846 Method 1311 Revision 0 July 1992
SW3015A	SW 846 Method 3015A Revision 1 February 2007
SW3050B	SW 846 Method 3050B Revision 2 December 1996
SW6020A	SW 846 Method 6020A Revision 1 February 2007



Sample Summary (20 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S38421.01	102a	Soil	07/21/22 09:30
S38421.02	102b	Soil	07/21/22 09:30
S38421.03	104a	Soil	07/21/22 09:30
S38421.04	104b	Soil	07/21/22 09:30
S38421.05	107a	Soil	07/21/22 09:30
S38421.06	107b	Soil	07/21/22 09:30
S38421.07	107c	Soil	07/21/22 09:30
S38421.08	108a	Soil	07/21/22 09:30
S38421.09	108b	Soil	07/21/22 09:30
S38421.10	111c	Soil	07/21/22 09:30
S38421.11	112a	Soil	07/21/22 09:30
S38421.12	113a	Soil	07/21/22 11:30
S38421.13	114c	Soil	07/21/22 11:30
S38421.14	117b	Soil	07/21/22 11:30
S38421.15	117c	Soil	07/21/22 11:30
S38421.16	118d	Soil	07/21/22 11:30
S38421.17	119c	Soil	07/21/22 11:30
S38421.18	123c	Soil	07/21/22 11:30
S38421.19	124c	Soil	07/21/22 13:30
S38421.20	107b, 108b, 117c, 118d, 119c, and 123c Composite	Soil	07/21/22 00:01



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.01

Sample Tag: 102a

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	98	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 13:50, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	2.20	0.30		mg/kg	238	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.02

Sample Tag: 102b

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	89	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 13:53, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	355	0.30		mg/kg	270	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.03

Sample Tag: 104a

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	98	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 13:55, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	2.88	0.30		mg/kg	242	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.04

Sample Tag: 104b

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	83	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 13:56, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	233	0.30		mg/kg	275	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.05

Sample Tag: 107a

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	96	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 13:58, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	2.83	0.30		mg/kg	250	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.06

Sample Tag: 107b

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	90	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 13:59, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	485	0.30		mg/kg	260	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.07

Sample Tag: 107c

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	85	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:01, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	263	0.30		mg/kg	267	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.08

Sample Tag: 108a

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	95	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:02, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	3.03	0.30		mg/kg	254	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.09

Sample Tag: 108b

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	88	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:04, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	369	0.30		mg/kg	268	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.10

Sample Tag: 111c

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	93	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:05, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	145	0.30		mg/kg	257	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.11

Sample Tag: 112a

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	98	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:14, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	4.12	0.30		mg/kg	240	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.12

Sample Tag: 113a

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	96	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:15, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	2.81	0.30		mg/kg	247	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.13

Sample Tag: 114c

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	86	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:17, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	151	0.30		mg/kg	280	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.14

Sample Tag: 117b

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	96	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:18, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	2.78	0.30		mg/kg	243	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.15

Sample Tag: 117c

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	87	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:24, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	1,130	3.5		mg/kg	6675	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.16

Sample Tag: 118d

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	81	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:25, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	138	0.30		mg/kg	277	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.17

Sample Tag: 119c

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	87	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:27, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	279	0.30		mg/kg	275	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.18

Sample Tag: 123c

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	87	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:28, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	164	0.30		mg/kg	276	7439-92-1		



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S38421.19

Sample Tag: 124c

Collected Date/Time: 07/21/2022 13:30

Matrix: Soil

COC Reference: 147812

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	Plastic Bag	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	07/26/22 13:00	CCM	

Inorganics

Method: SM2540B, Run Date: 07/22/22 18:05, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Total Solids*	89	1		%	1			

Metals

Method: SW6020A, Run Date: 07/26/22 14:30, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead	194	0.30		mg/kg	275	7439-92-1		



Lab Sample ID: S38421.20

Sample Tag: 107b, 108b, 117c, 118d, 119c, and 123c Composite

Collected Date/Time: 07/21/2022 00:01

Matrix: Soil

COC Reference: 147810

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	8oz Glass	None	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion*	Completed	SW3015A	08/03/22 10:50	CCM	

TCLP Extraction

Parameter	Result	Method	Run Date	Analyst	Flags
Initial Sample pH	8.44	SW1311	08/01/22 15:30 - 08/02/22	DMP	
pH after 3.5 ml HCl	1.98	SW1311	08/01/22 15:30 - 08/02/22	DMP	
% Solids	100	SW1311	08/01/22 15:30 - 08/02/22	DMP	
Sample Used g	40	SW1311	08/01/22 15:30 - 08/02/22	DMP	
Final Volume mL	800	SW1311	08/01/22 15:30 - 08/02/22	DMP	
TCLP Extraction Fluid	1	SW1311	08/01/22 15:30 - 08/02/22	DMP	
Final Extract pH	6.31	SW1311	08/01/22 15:30 - 08/02/22	DMP	

Metals

Method: SW6020A, Run Date: 08/03/22 13:46, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags	Limits
Lead, TCLP	0.11	0.03		mg/L	25	7439-92-1		5.0

Merit Laboratories Login Checklist

Lab Set ID:S38421

Client: MCDOWELL (McDowell & Associates)

Project: 22-16296

Submitted: 07/22/2022 14:20 Login User: MMC

Attention: Jennifer Lagerbohm

Address: McDowell & Associates

21355 Hatcher Avenue

Ferndale, MI 48220

Phone: O:248-399-2066

FAX:

Email: jennifer.lagerbohm@mcdowasc.com

Selection	Description	Note
Sample Receiving		
01.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # IR 3.4
02.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



Analytical Laboratory Report

Report ID: S38420.01(01)
Generated on 07/28/2022

Report to
Attention: Jennifer Lagerbohm
McDowell & Associates
21355 Hatcher Avenue
Ferndale, MI 48220

Phone: O:248-399-2066 C:248-514-6950 FAX:
Email: jennifer.lagerbohm@mcdowasc.com

Additional Contacts: John Kemp, Melanie Mcdowell

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Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S38420.01
Project: 22-16296
Collected Date(s): 07/21/2022
Submitted Date/Time: 07/22/2022 14:20
Sampled by: Jen L
P.O. #:

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
SM2540B	Standard Method 2540 B 2015
SW3546	SW 846 Method 3546 Revision 0 February 2007
SW5035A	SW 846 Method 5035A Revision 1 July 2002
SW5035A/8260C	SW 846 Method 8260C Revision 3 August 2006 / 5035A Revision 1 July 2002
SW8270D	SW 846 Method 8270D Revision 4 February 2007



Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S38420.01	103d	Soil	07/21/22 09:30



Analytical Laboratory Report

Lab Sample ID: S38420.01

Sample Tag: 103d

Collected Date/Time: 07/21/2022 09:30

Matrix: Soil

COC Reference: 147811

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	3.4	IR
1	40ml Glass	MeOH	Yes	3.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
PNA Extraction*	Completed	SW3546	07/26/22 13:00	TAW	
Sample wt. (g) / Methanol (ml)*	10.990/10	SW5035A	07/25/22 10:26	JKJ	

Inorganics

Method: SM2540B, Run Date: 07/22/22 15:55, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	77	1		%	1		

Organics - Semi-Volatiles

Polynuclear Aromatics, Method: SW8270D, Run Date: 07/27/22 00:14, Analyst: PL

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Acenaphthene	Not detected	300		ug/kg	10	83-32-9	
Acenaphthylene	Not detected	300		ug/kg	10	208-96-8	
Anthracene	Not detected	300		ug/kg	10	120-12-7	
Benzo(a)anthracene	Not detected	300		ug/kg	10	56-55-3	
Benzo(a)pyrene	Not detected	300		ug/kg	10	50-32-8	
Benzo(b)fluoranthene	Not detected	300		ug/kg	10	205-99-2	
Benzo(k)fluoranthene	Not detected	300		ug/kg	10	207-08-9	
Benzo(ghi)perylene	Not detected	300		ug/kg	10	191-24-2	
Chrysene	Not detected	300		ug/kg	10	218-01-9	
Dibenzo(ah)anthracene	Not detected	300		ug/kg	10	53-70-3	
Fluoranthene	Not detected	300		ug/kg	10	206-44-0	
Fluorene	Not detected	300		ug/kg	10	86-73-7	
Indeno(1,2,3-cd)pyrene	Not detected	300		ug/kg	10	193-39-5	
Naphthalene	Not detected	300		ug/kg	10	91-20-3	
Phenanthrene	Not detected	300		ug/kg	10	85-01-8	
Pyrene	Not detected	300		ug/kg	10	129-00-0	
2-Methylnaphthalene	Not detected	300		ug/kg	10	91-57-6	

Organics - Volatiles

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 07/26/22 17:11, Analyst: KAG

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Diethyl ether	Not detected	300		ug/kg	74	60-29-7	
Acetone	Not detected	1,000		ug/kg	74	67-64-1	
Methyl iodide	Not detected	100		ug/kg	74	74-88-4	
Carbon disulfide	Not detected	400		ug/kg	74	75-15-0	
tert-Methyl butyl ether (MTBE)	Not detected	300		ug/kg	74	1634-04-4	
Acrylonitrile	Not detected	100		ug/kg	74	107-13-1	
2-Butanone (MEK)	Not detected	1,100		ug/kg	74	78-93-3	
Dichlorodifluoromethane	Not detected	400		ug/kg	74	75-71-8	
Chloromethane	Not detected	400		ug/kg	74	74-87-3	



Analytical Laboratory Report

Lab Sample ID: S38420.01 (continued)

Sample Tag: 103d

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 07/26/22 17:11, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Vinyl chloride	Not detected	70		ug/kg	74	75-01-4	
Bromomethane	Not detected	300		ug/kg	74	74-83-9	
Chloroethane	Not detected	400		ug/kg	74	75-00-3	
Trichlorofluoromethane	Not detected	100		ug/kg	74	75-69-4	
1,1-Dichloroethene	Not detected	70		ug/kg	74	75-35-4	
Methylene chloride	Not detected	100		ug/kg	74	75-09-2	
trans-1,2-Dichloroethene	Not detected	70		ug/kg	74	156-60-5	
1,1-Dichloroethane	Not detected	70		ug/kg	74	75-34-3	
cis-1,2-Dichloroethene	Not detected	70		ug/kg	74	156-59-2	
Tetrahydrofuran*	Not detected	1,000		ug/kg	74	109-99-9	
Chloroform	Not detected	70		ug/kg	74	67-66-3	
Bromochloromethane	Not detected	100		ug/kg	74	74-97-5	
1,1,1-Trichloroethane	Not detected	70		ug/kg	74	71-55-6	
4-Methyl-2-pentanone (MIBK)	Not detected	4,000		ug/kg	74	108-10-1	
2-Hexanone	Not detected	4,000		ug/kg	74	591-78-6	
Carbon tetrachloride	Not detected	70		ug/kg	74	56-23-5	
Benzene	Not detected	70		ug/kg	74	71-43-2	
1,2-Dichloroethane	Not detected	70		ug/kg	74	107-06-2	
Trichloroethene	Not detected	70		ug/kg	74	79-01-6	
1,2-Dichloropropane	Not detected	70		ug/kg	74	78-87-5	
Bromodichloromethane	Not detected	100		ug/kg	74	75-27-4	
Dibromomethane	Not detected	400		ug/kg	74	74-95-3	
cis-1,3-Dichloropropene	Not detected	70		ug/kg	74	10061-01-5	
Toluene	Not detected	70		ug/kg	74	108-88-3	
trans-1,3-Dichloropropene	Not detected	70		ug/kg	74	10061-02-6	
1,1,2-Trichloroethane	Not detected	70		ug/kg	74	79-00-5	
Tetrachloroethene	Not detected	70		ug/kg	74	127-18-4	
trans-1,4-Dichloro-2-butene	Not detected	70		ug/kg	74	110-57-6	
Dibromochloromethane	Not detected	100		ug/kg	74	124-48-1	
1,2-Dibromoethane	Not detected	30		ug/kg	74	106-93-4	M
Chlorobenzene	Not detected	70		ug/kg	74	108-90-7	
1,1,1,2-Tetrachloroethane	Not detected	100		ug/kg	74	630-20-6	
Ethylbenzene	Not detected	70		ug/kg	74	100-41-4	
p,m-Xylene	Not detected	100		ug/kg	74		
o-Xylene	Not detected	70		ug/kg	74	95-47-6	
Styrene	Not detected	70		ug/kg	74	100-42-5	
Isopropylbenzene	Not detected	400		ug/kg	74	98-82-8	
Bromoform	Not detected	100		ug/kg	74	75-25-2	
1,1,2,2-Tetrachloroethane	Not detected	70		ug/kg	74	79-34-5	
1,2,3-Trichloropropane	Not detected	100		ug/kg	74	96-18-4	
n-Propylbenzene	Not detected	70		ug/kg	74	103-65-1	
Bromobenzene	Not detected	100		ug/kg	74	108-86-1	
1,3,5-Trimethylbenzene	Not detected	70		ug/kg	74	108-67-8	
tert-Butylbenzene	Not detected	70		ug/kg	74	98-06-6	
1,2,4-Trimethylbenzene	Not detected	70		ug/kg	74	95-63-6	
sec-Butylbenzene	Not detected	70		ug/kg	74	135-98-8	
p-Isopropyltoluene	Not detected	100		ug/kg	74	99-87-6	
1,3-Dichlorobenzene	Not detected	100		ug/kg	74	541-73-1	
1,4-Dichlorobenzene	Not detected	100		ug/kg	74	106-46-7	

M-Result reported to MDL not RDL



Analytical Laboratory Report

Lab Sample ID: S38420.01 (continued)

Sample Tag: 103d

Volatile Organics 5035, Method: SW5035A/8260C, Run Date: 07/26/22 17:11, Analyst: KAG (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
1,2-Dichlorobenzene	Not detected	100		ug/kg	74	95-50-1	
1,2,3-Trimethylbenzene	Not detected	70		ug/kg	74	526-73-8	
n-Butylbenzene	Not detected	70		ug/kg	74	104-51-8	
Hexachloroethane	Not detected	400		ug/kg	74	67-72-1	
1,2-Dibromo-3-chloropropane	Not detected	400		ug/kg	74	96-12-8	
1,2,4-Trichlorobenzene	Not detected	490		ug/kg	74	120-82-1	
1,2,3-Trichlorobenzene	Not detected	490		ug/kg	74	87-61-6	
Naphthalene	Not detected	400		ug/kg	74	91-20-3	
2-Methylnaphthalene	Not detected	100		ug/kg	74	91-57-6	

Merit Laboratories Login Checklist

Lab Set ID:S38420

Client: MCDOWELL (McDowell & Associates)

Project: 22-16296

Submitted: 07/22/2022 14:20 Login User: MMC

Attention: Jennifer Lagerbohm

Address: McDowell & Associates

21355 Hatcher Avenue

Ferndale, MI 48220

Phone: O:248-399-2066

FAX:

Email: jennifer.lagerbohm@mcdowasc.com

Selection	Description	Note
Sample Receiving		
01.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # IR 3.4
02.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



Analytical Laboratory Report

Report ID: S38569.01(01)
Generated on 08/02/2022

Report to
Attention: Jennifer Lagerbohm
McDowell & Associates
21355 Hatcher Avenue
Ferndale, MI 48220

Phone: O:248-399-2066 C:248-514-6950 FAX:
Email: jennifer.lagerbohm@mcdowasc.com

Additional Contacts: John Kemp, Melanie Mcdowell

Report produced by
Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Lavery (johnlavery@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary
Lab Sample ID(s): S38569.01-S38569.04
Project: 22-16296
Collected Date(s): 07/21/2022
Submitted Date/Time: 07/27/2022 15:25
Sampled by: Jen L
P.O. #:

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

When MDL results are provided, then 'Not detected' indicates that parameter was not found at a level equal to or greater than the MDL.

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile, and 2-chloroethylvinyl ether need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the

FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."

Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001
Pennsylvania DEP	#68-05884
Wisconsin DNR	FID# 399147320

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



Analytical Laboratory Report

Method Summary

Method	Version
SM2540B	Standard Method 2540 B 2015
SW3050B	SW 846 Method 3050B Revision 2 December 1996
SW6020A	SW 846 Method 6020A Revision 1 February 2007



Analytical Laboratory Report

Sample Summary (4 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S38569.01	116b	Soil	07/21/22 11:30
S38569.02	116c	Soil	07/21/22 11:30
S38569.03	117d	Soil	07/21/22 11:30
S38569.04	122c	Soil	07/21/22 13:30



Analytical Laboratory Report

Lab Sample ID: S38569.01

Sample Tag: 116b

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	08/02/22 09:30	JRH	

Inorganics

Method: SM2540B, Run Date: 07/27/22 17:48, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	85	1		%	1		

Metals

Method: SW6020A, Run Date: 08/02/22 13:47, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	517	0.30		mg/kg	286	7439-92-1	



Analytical Laboratory Report

Lab Sample ID: S38569.02

Sample Tag: 116c

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	08/02/22 09:30	JRH	

Inorganics

Method: SM2540B, Run Date: 07/27/22 17:48, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	81	1		%	1		

Metals

Method: SW6020A, Run Date: 08/02/22 13:48, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	12.3	0.30		mg/kg	287	7439-92-1	



Analytical Laboratory Report

Lab Sample ID: S38569.03

Sample Tag: 117d

Collected Date/Time: 07/21/2022 11:30

Matrix: Soil

COC Reference: 147818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	08/02/22 09:30	JRH	

Inorganics

Method: SM2540B, Run Date: 07/27/22 17:48, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	82	1		%	1		

Metals

Method: SW6020A, Run Date: 08/02/22 13:49, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	12.4	0.30		mg/kg	284	7439-92-1	



Analytical Laboratory Report

Lab Sample ID: S38569.04

Sample Tag: 122c

Collected Date/Time: 07/21/2022 13:30

Matrix: Soil

COC Reference: 147818

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	4oz Glass	None	Yes	2.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Metal Digestion	Completed	SW3050B	08/02/22 09:30	JRH	

Inorganics

Method: SM2540B, Run Date: 07/27/22 17:48, Analyst: MAM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Solids*	84	1		%	1		

Metals

Method: SW6020A, Run Date: 08/02/22 13:51, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Lead	5,270	0.30		mg/kg	274	7439-92-1	

Merit Laboratories Login Checklist

Lab Set ID:S38569

Client: MCDOWELL (McDowell & Associates)

Project: 22-16296

Submitted: 07/27/2022 15:25 Login User: PFD

Attention: Jennifer Lagerbohm

Address: McDowell & Associates

21355 Hatcher Avenue

Ferndale, MI 48220

Phone: O:248-399-2066

FAX:

Email: jennifer.lagerbohm@mcdowasc.com

Selection	Description	Note
-----------	-------------	------

Sample Receiving

- | | | |
|-----|--|--|
| 01. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples are received at 4C +/- 2C Thermometer # IR 2.8 |
| 02. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Received on ice/ cooling process begun |
| 03. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples shipped |
| 04. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples left in 24 hr. drop box |
| 05. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Are there custody seals/tape or is the drop box locked |

Chain of Custody

- | | | |
|-----|--|--|
| 06. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC adequately filled out |
| 07. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | COC signed and relinquished to the lab |
| 08. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sample tag on bottles match COC |
| 09. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Subcontracting needed? Subcontracted to: |

Preservation

- | | | |
|-----|--|---|
| 10. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Do sample have correct chemical preservation |
| 11. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Completed pH checks on preserved samples? (no VOAs) |
| 12. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Did any samples need to be preserved in the lab? |

Bottle Conditions

- | | | |
|-----|--|---|
| 13. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | All bottles intact |
| 14. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Appropriate analytical bottles are used |
| 15. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Merit bottles used |
| 16. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Sufficient sample volume received |
| 17. | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A | Samples require laboratory filtration |
| 18. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | Samples submitted within holding time |
| 19. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A | Do water VOC or TOX bottles contain headspace |

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____

Attachment VIII

Résumés

Jennifer Lagerbohm, M.S., CHMM
Senior Industrial Hygienist

**PROFESSIONAL
EXPERIENCE**

2001-October 2012; May 2013- Present
McDOWELL & ASSOCIATES, INC.
Senior Industrial Hygienist/Environmental Professional

Current responsibilities include subsurface investigation work plans, sampling soil vapor, soil, and groundwater, interpretation of data, recommendations, and written reports. Also completes Asbestos Surveys, Operations & Maintenance Plans, Lead-Based Paint Investigations, Phase I and Phase II Environmental Site Assessments, Baseline Environmental Assessments, Due Care Plans, remedial and underground storage tank consulting. Responsibilities include overall program management of projects including cost estimates, schedule, reporting, and performance tracking. Responsibilities include soil, soil vapor, sediment, air, and groundwater sampling, interpreting analytical results, compiling data, statistical evaluation of data, and completion of reports.

October 2012 - May 2013
CARDNO ATC
Project Manager/ Environmental Professional

Responsibilities included review and preparation of Phase I Environmental Site Assessments, scope of work development for Phase II Environmental Site Assessments, and due diligence consulting.

EDUCATION

B.S., Environmental Health
Oakland University, College of Arts & Sciences
Rochester Hills, Michigan

M.S., Industrial Hygiene
Wayne State University, Department of Fundamental Sciences
Detroit, Michigan

CERTIFICATIONS

Certified Hazardous Materials Manager (CHMM)- Institute for Hazardous Materials Management
OSHA 29 CFR 1910.120 – Forty-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER)
Certified Lead Inspector/Risk Assessor, Michigan Department of Community Health
Certified Asbestos Building Inspector, Michigan Department of Labor and Economic Growth
Certified Radon Measurement Specialist- National Radon Proficiency Program

Jennifer Lagerbohm, M.S., CHMM
Senior Industrial Hygienist

TRAINING	<p>MAEP & MDEQ Vapor Intrusion Presentation (March 2017) MDEQ Petroleum Vapor Intrusion Workshop (2013) PSMJ Project Manager Bootcamp- 2-Day Classroom Training (2012) Zweig-White Leadership 2011- 1 Day Classroom Training (2011) ITRC Vapor Intrusion Pathway 2-Day Classroom Training (2011) ITRC Non-Aqueous Phase Liquid (NAPL) 2-Day Training (2012) ASTM Vapor Encroachment Screening (E2600-10) Evaluation of Indoor Inhalation Pathway- Risk Assessment and Management Group, Inc. Integrated Site Remediation & Vapor Intrusion- Regenesis MDEQ RRD Cleanup Criteria Training (2007) Niton X-Ray Fluorescence (XRF) Operations & Radiation Safety ASTM Risk-Based Corrective Action at Petroleum Sites Nielsen Environmental Field School- Environmental Sampling NGWA- Groundwater Flow, Transport, and Remediation US Department of Transportation Pipeline Emergency Response Troxler Nuclear Gauge Operations & Radiation Safety Excavation Competent Person</p>
PROFESSIONAL AFFILIATIONS	<p>Board of Directors (2014- present)- Michigan Association of Environmental Professionals American Industrial Hygiene Association American Institute of Professional Geologists</p>
SAMPLE PROJECTS	<p>Existing Drycleaners, Shelby Township, Michigan- Performed coring and hand auger borings for soil sampling. Installed vapor pins to collect soil gas samples for testing to investigate vapor intrusion. Following review of analytical testing, an active soil vapor venting system was designed and installed to facilitate financing for the property owner.</p> <p>Residential Redevelopment, Novi, Michigan- Performed field screening during soil excavation activities at a former petroleum release. Installed sub-slab vapor pins in nearby buildings to address vapor intrusion. Quarterly sampling of soil gas was conducted and No Further Action (NFA) Reports were submitted to MDEQ for approval of unrestricted residential use.</p> <p>City of Southfield NSP Program- Asbestos, Lead, Mold, and Radon-assessments for single-family homes throughout the City.</p> <p>Brush Park, Detroit, Michigan- Completion of multiple Phase I ESAs, Phase II ESAs, remedial consulting, underground storage tank (UST) consulting, asbestos and lead surveys for historic structures.</p> <p>Apartment Buildings, Southeast Michigan- completion of Phase I ESAs, asbestos surveys, asbestos abatement plans, and operations and maintenance plans for eleven apartment complexes across southeast Michigan.</p>

DOUGLAS M. McDOWELL, M.S., P.E.

DM 2-1-2022

VICE PRESIDENT:

McDowell & Associates, Ferndale, MI
1993 to Present

EDUCATION:

M.S. - Environmental Engineering -
Wayne State University, 1996

United States Military Academy
B.S. General Engineering
West Point, New York, 1986

CERTIFICATIONS and AWARDS:

Licensed Professional Engineer, State of Michigan

OSHA 29 CFR 1910.120 - Forty hour Hazardous Site
Worker Protection and Supervisor

Certified Asbestos Building Inspector, State of Michigan

Certified Storm Water Operator (Industrial),
State of Michigan

Recognized by Dow Chemical Company for Outstanding Contribution to the Contractor
Owner Safety Team

Recognized by the West Point Society of Michigan as its Distinguished Graduate in 2016
for contributions to West Point Outreach Efforts through development and
implementation of the Urban Leadership Initiative

EXPERIENCE:

1993 to Present McDowell & Associates, Ferndale, Michigan
Vice President. Direct responsibility for environmental department that completes over
200 Phase I's, 100 Phase II's and 12 BEA's per year. Has completed or supervised
completion of over 4000 Phase I's, 1,000 Phase II's, 200 BEA's, and 350 NFAs,
Cleanups, Closures, and/or Documentation of Due Care. Oversight of Midland Office.

- 1992 to International Tire Recyclers, Inc., Crosswell, MI
1993 Evaluated Pyrolysis and potential for development of tire storage and recycling facility.
- 1990 to Proctor & Gamble, Green Bay, WI
1992 Customer Services
Direct Supervisor of 44 technicians at two plant sites. Responsible for Total Quality Management and development, hazardous chemical management, cost, shipped timeliness, inventory accuracy, productivity, and training. Also responsible for maintenance of a fleet of over 200 vehicles, fuel storage, and site interaction with key customers.
- 1986 to U.S. ARMY - West Germany
1990 Executive Officer, Platoon Leader

PROFESSIONAL MEMBERSHIPS:

ASTM
Michigan Association of Environmental Professionals
Engineering Society of Detroit
American Chemical Society

COMMUNITY SERVICE:

Waza Track Club founder and Director of Coaching – 2006 – present – Nationally competitive AAU and USATF Track Club based in Novi, MI. Multiple national champions.

West Point Society of Michigan - Outreach – 2010 – present – Develop strategy and implement efforts to assist West Point with its Outreach efforts in Detroit and other urban and underprivileged areas in the State of Michigan. Coordinate local West Point Science, Technology, Engineering and Math (STEM) programs, and Leadership and Ethics conferences for Detroit and other Michigan youth. Recognized as the top West Point Outreach programs in the nation. Program has inspired Detroit students to apply for and attend West Point. Leadership Ethics alumni include one Schwarzman Scholar and one Rhodes Scholar each from the City of Detroit.

West Point Field Force – Former Senator Levin and Senator Stabenaw Academy Nomination Review Boards – SE Michigan Congressional Districts - 2010 – 2014. Interview military academy candidates and provide recommendations for nominations to Michigan Senators. Assist West Point Candidates with the academy application process.

West Point Society of Michigan Board Member – Outreach - 2013 – 2015

St. John Lutheran Church – Building Committee, Resource Group Leader – 2003 – 2006

MILITARY SCHOOLING:

- 1990 Armor Officer Advanced Course
Fort Knox, KY
Sponsor for Kuwaiti Officer under co-op program between U.S. and Kuwait.
- 1986 Chemical Officer's Course
Fort McClellan, AL
Focused on the hazards associated with radioactive materials and multiple chemical and biological agents, transport mechanisms, characteristics, modelling, and appropriate Personal Protective Equipment.
- 1986 Airborne School
Fort Benning, GA
- 1984 Northern Warfare Training Center
Fort Greely, AK
Arctic terrain analysis and navigation

Douglas M. McDowell - Sample Projects

Cul-Mac Industries – Wayne, MI. Operating chemical manufacturing plant with former industrial uses dating to the 1940's. Phase I, Phase II, Limited Asbestos Survey, BEA, Interim Due Care Compliance report, TSCA PCB Remedial Investigation and Cleanup Plan. Work underway to document soil remediation.

Pullman Parc Residential Development – Detroit, MI. Former Pullman Rail Car factory site and former Friend's School site. Phase I's, Phase II's, Asbestos Survey, Geotechnical Investigations, Brownfield Work Plan for State of Michigan Grant Application, witness and document soil remediation, Construction Testing Services, No Further Action Reports. Site awarded \$1 Million Grant to conduct remedial activities. No Further Action letter received from EGLE for portion of property. No Further Action letter under review for remainder of property.

Metro International Trade Services / RB Properties – Multiple historic industrial locations, SE Michigan. Phase Is, Phase IIs, BEAs, Documentation of Due Care Reports, Asbestos Surveys, Geotechnical Investigations, Industrial Storm Water consulting, Response Activity Documentation and related reports for multiple remedial projects, Brownfield Plan, Sub-Slab Depressurization System Design, oversee install, verification monitoring.

Golling Dealership Purchases – Multiple locations, SE Michigan. Phase Is, Phase IIs, BEAs, Documentation of Due Care Reports, Sub-Slab Depressurization System Design, oversee install, verification monitoring,

St. Clair River Coastal Wetland Project, Port Huron, MI – St. Clair County Parks and Recreation Commission, Smith Group JJR – Site with industrial history. McDowell & Associates provided environmental consulting to St. Clair County representatives undergoing the acquisition of the property and redevelopment into an interpretive wetlands with nature trails and scenic overlooks.

McDowell responsible to project team to provide environmental consulting including evaluation of existing contaminants and likely impact to future construction plans and future users. Work included Documentation of Due Care Compliance submitted to Michigan Department of Environmental Quality for review.

Wayne County Child Development Center Redevelopment, Northville Township, MI – Toll Brothers, Biltmore Properties, Robertson Brothers - Commercial, Single Family and Multifamily Residential, and Arnold Palmer designed Golf Course. Supervised demolition and clean-up work completed by Wayne County prior to purchase by several developers. Phase I and II Environmental Assessments and Closure Reports. Firm provided Geotechnical Engineering as well as Construction Testing and Quality Control during construction.

Presbyterian Village - Brush Park Redevelopment, Detroit, MI – Presbyterian Villages of Michigan – Phase I, II, and Baseline Environmental Assessments. Firm provided Geotechnical Engineering as well as Construction Testing and Quality Control during construction.

Gem Theatre Relocation and Redevelopment, Detroit, MI – Forbes Management - Phase I, II, and Baseline Environmental Assessments. Firm provided Geotechnical Engineering for evaluation of new foundation and for parking structure as well as Construction Testing and Quality Control during move and construction.

Former Packard and Ford Test Track - Proposed Residential Redevelopment, Shelby Township, MI – Pulte Homes, The Lombardo Companies – Phase I and II Environmental Site Assessments. Firm provided Geotechnical and Hydrogeological Engineering.

International Gospel Center Redevelopment, Ecorse, MI – International Gospel Center – Phase I and II Environmental Assessments, Baseline Environmental Assessments, and Closure Reports. Firm provided Geotechnical Engineering as well as Construction Testing and Quality Control during construction.