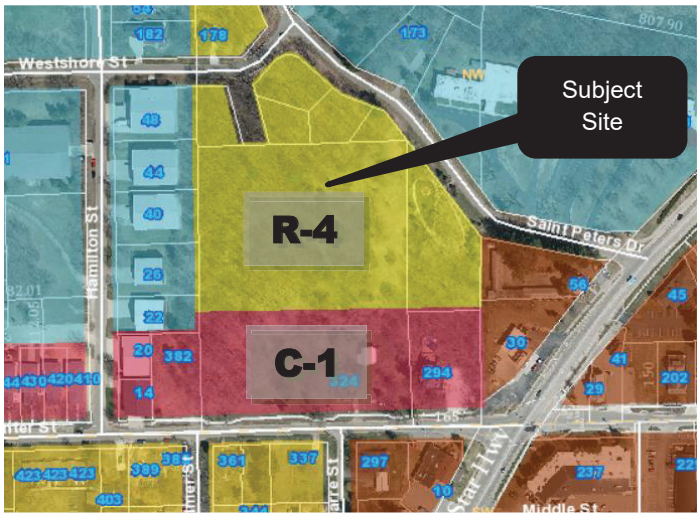
williams&works
engineers | surveyors | planners

**MEMORANDUM**

| | |
|---|---|
| **To:** | City of The Village of Douglas Planning Commission |
| **Date:** | December 1, 2022 |
| **From:** | Tricia Anderson<br>Andy Moore, AICP |
| **RE:** | **Centre Collective Preliminary Site Condominium Review** |

Mr. Jeff Kerr of Kerr Real Estate has submitted an application for review of the preliminary plan for a 20-unit single-family residential site condominium development on the northern 6.9 acres of 324 West Center Street. The site is generally located on the north side of West Center Street, between the intersections of North Ferry Street/West Center Street, and North Blue Star Highway/West Center Street. The current zoning of the subject site is R-4, Harbor Residential, which allows single-family homes by right.

**BACKGROUND.** This site was previously zoned R-2 and received rezoning approval for R-4 in May of 2021. At one time, the subject site was planned for a PUD that would include residential on the northern 2/3 of the site and commercial on southern 1/3 of the subject site that has frontage on West Center Street. The developer has since decided to forego the mixed-use concept, and pursue separate permitted land uses in the R-4 and C-1 zoning districts. The map to the right does not reflect the recently-approved parcel combination of the smaller north/east parcels to the larger R-4 zoned project area.




The proposed site condominium development includes the following improvements:

- 20 single-family units ranging from 7,920 square to 10,081 square feet in area
- Public streets connecting to West Shore Court and St. Peters Drive
- Sidewalks along all public street frontages, on both sides of internal streets and connection to future commercial development to the south
- Street trees
- Stormwater management facilities and infrastructure
- Decorative fencing surrounding detention basins
- Retaining wall along the south property line

- Public water and sanitary sewer
- Open space within a common element

**Procedures.** The Planning Commission is tasked with making a recommendation to the City Council on the preliminary site condo development plan. If a favorable recommendation is made, the City Council will review the *final site condominium plan* against the standards contained within Section 16.24(7), Standards of Approval.

**Review.** The applicant previously was placed on the September 21, 2022, Planning Commission agenda, however, the item was requested to be removed from that agenda a few days before the meeting. Since then, the applicant has met with the Site Plan Review Committee and has had an opportunity to make revisions to the plan in response to the items identified in our original review memorandum. The revised plans dated 11/11/22 have been reviewed pursuant to the following articles of the City of the Village of Douglas Zoning Ordinance:

- Article 7, Harbor Residential District, Section 7.02.C. Site and Building Placement Standards
- Article 24, Site Plan Review, Section 24.02, Data Required
- Article 16, General Provisions, Section 16.24, Condominiums

The following remarks concerning deficiencies with the required content and minimum requirements are provided below:

- **Article 24, Site Plan Review.** Section 24.02 of the Zoning Ordinance outlines the information required for site plan review. While we determined that the application was sufficiently complete to warrant Planning Commission review and comment, there are a few items that still need to be addressed:

  - *24.02(3) Written statement regarding the proposed project's impact on existing infrastructure (including traffic capacity of streets, schools, and existing utilities) and on the natural environment of the site and adjoining lands. If deemed necessary by the Zoning Administrator or Planning Commission, a phase 1 environmental review may be requested. As appropriate, the Zoning Administrator or Planning Commission may also request a phase 2 environmental review. Also see Section 24(2)21 of this Section.*

    **Remarks:** While some of this information was provided with the previous application from earlier this year, a complete written statement or narrative addressing the above aspects of the project was not provided.

    The applicant has provided a Phase 1 Environmental Assessment and wetland delineation which would speak to the impact on the natural environment. The EA revealed no recognizable environmental conditions and the wetland delineation revealed two small pockets of wetlands, however, they are not regulated due to their small size.

The applicant has also obtained an updated traffic impact study, which takes into account the entire parent parcel and proposed trip generations for both the commercial mixed use to the south and the residential. The recommendations are shown below. The applicant will need to coordinate any modifications to the signal and to the Center Street right of way with the City's DPW.

**10 RECOMMENDATIONS**

*The recommendations of this TIS are as follows:*

- Update the existing signal timing at Blue Star Hwy, & W. Center St. to reflect current clearance intervals and optimize the signal timing with the addition of the proposed development traffic.
- Provide a right-turn taper on Center Street at the proposed SE. Site Drive.

▷ *24.02(8) Proposed streets, driveways, parking spaces and sidewalks, with indication of direction of travel, the inside radii of all curves including driveway curb returns, the width of streets, driveways and sidewalks, the total number of parking spaces, and dimensions of a typical individual parking space and associated aisles. This will also include a free and open general public pedestrian access in a form approved by the City Attorney to adjacent property or development unless waived by the Planning Commission as being unpractical or unreasonable due to topographical, natural barrier or similar type of reason.*

**Remarks:** Individual driveway locations that serve the single-family lots are subject to change as the project comes to fruition and building permits are issued. The applicant is planning to provide sidewalks along all public streets, including the frontage on St. Peters Drive. A connection is proposed to the proposed mixed-use development to the south.

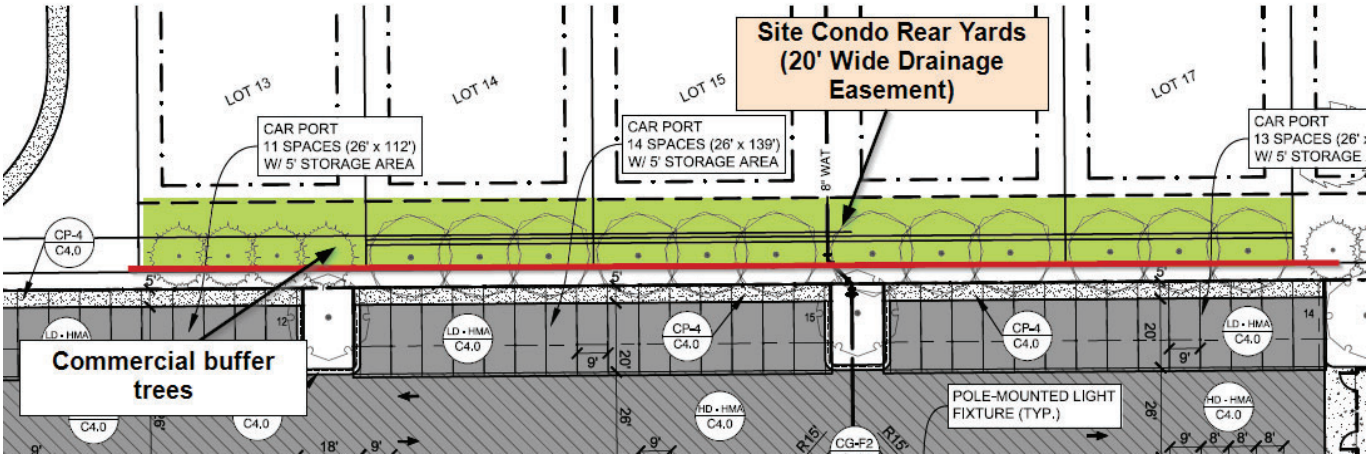
▷ *24.02(12) A landscaping plan indicating the locations of planting and screening, fencing, and lighting in compliance with the requirements of Article 21. Also, proposed locations of common open spaces, if applicable.*

**Remarks:** The preliminary plan provides street tree plantings within the right of way within the development, however, trees are not proposed along St. Peters Drive. The landscape plan should be updated to include these trees, in accordance with Article 21.01(5)(c):

> *Landscaping along public rights of way shall include a minimum of one (1) tree at least fifteen feet in height or a minimum caliper of three (3) inches (whichever is greater at the time of planting) for each thirty (30) lineal feet, or major portion thereof, of frontage abutting said right of way. Tree species shall be selected from the City of Douglas recommended species list. The remainder of the landscaping within the right of way shall comply with the recommendation of the Blue Star Corridor plan or other streetscape plans on file at the time of application and may include grass, ground cover, shrubs, and/or other natural, living, landscape material.*

▷ *24.02(13) Location of exterior drains, dry wells, catch basins, retention and/or detention areas, sumps and other facilities designed to collect, store or transport storm water or wastewater. The point of discharge for all drains and pipes shall also be specified on the site plan.*

**Remarks:** The proposed development provides drainage easements in the rear yards of the site condominium lots where an 18" storm main is planned to be buried. Along the rear yards of lots 13-17, a retaining wall is proposed within the easement, and just south of that, the required trees are proposed to serve as a buffer between the commercial and residential. The trees are not shown on the residential plan. They would likely pose a conflict if there is nothing in place to prevent a site condo owner from cutting or modifying the trees. A solution to this issue must be explored by the applicant.




☐ **Article 16, General Provisions, Condominium Review.** Section 16.24(4)(a) and (b) outlines the additional information that must be submitted for review as it pertains specifically to condominium developments:

▷ *16.24(4)(b)(iv) The use and occupancy restrictions and maintenance provisions for all general and limited common elements that will be included in the master deed including a copy of the draft master deed and by-laws.*

**Remarks:** The applicant provided a draft master deed with the original submittal. It is unclear if it has been updated. Regardless, the City Attorney must review the latest draft before a recommendation is made.

▷ *16.24(4)(b)(v) A storm drainage and a stormwater management plan, including all lines, swales, drains, basins, and other facilities and easements granted to the appropriate municipality for installation, repair, and maintenance of all drainage facilities.*

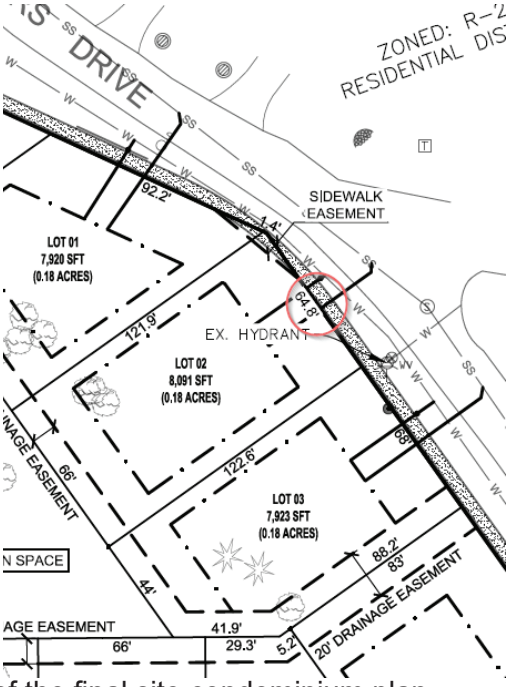
**Remarks:** This information has been provided and has been reviewed by the City's Engineer, who has provided a detailed memorandum with his findings.

▷ *16.24(4)(b)(vi) A utility plan showing all water and sewer lines and easements to be granted to the appropriate municipality or public utility for installation, repair and maintenance of all utilities.*

**Remarks:** The preliminary layout of public utilities and storm infrastructure, as well as any proposed easements, has been provided. The appropriate agencies will review this information in detail during the Final Site Condominium stage of review by the City Council.

- **Article 7, R-4 Uses and Dimensional Minimums.** The proposed site condominium development must meet the minimum dimensional standards and permitted uses contained within Article 7, R-4, Harbor Residential.

  **Remarks:** The preliminary site condominium plan appears to comply with the permitted uses, minimum standards for lot area, frontage, and building envelopes outlined in this section, with the exception of lot 2, which is shown at 64.8' in width, where a minimum of 66' is required. This must be addressed in the final site condominium plan.




**Recommendation.** At the December 8th meeting, the Planning Commission should listen carefully to comments from the applicant and the public. At this time, it is our recommendation that the Planning Commission forward a favorable recommendation to the City Council for the review of the final site condominium plan, subject to the following conditions:

1. The applicant shall provide a narrative describing the overall objectives of the proposed site condominium project.
2. The applicant shall adjust the width of lot 2 to meet the 66' minimum lot frontage in the R-4, Harbor Residential district.
3. The applicant shall update the landscaping plan to provide street trees along Ferry Street, in accordance with Section 21.01(5)(c).
4. The applicant shall address all conditions required by the City Engineer in the memorandum dated 11/28/22.

5. The applicant shall request that the City's Fire Marshal update his July 8th, 2022 report to reflect comments on the plan set last revision dated 11/11/2022 and shall comply with the requirements of the City's Fire Marshal.
6. The applicant shall explore a solution to the proposed trees for the commercial mixed use development in the drainage easement in the rear yards of lots 13-17. (may need stronger language here… they could say "oh well we explored it and decided to do nothing"

Please feel free to reach out with any questions or comments.

Prein&Newhof
Engineers ▪ Surveyors ▪ Environmental ▪ Laboratory

November 28, 2022
2200274

Ms. Traci Anderson
Williams&Works
549 Ottawa Ave., NW Ste. 310
Grand Rapids, MI 49503

RE: Centre Collective
Preliminary Site Condominium Plan Review

Dear Traci:

On behalf of the City of Douglas, our office has reviewed the ***revised*** preliminary site condominium plan dated November 11, 2022 and received November 28, 2022 for the above referenced project involving the proposed construction of 20 site condominium units. Our ***updated/additional*** comments regarding the project are as follows: (A previous draft letter dated September 13, 2022 and November 3, 2022 was submitted to the developer.)

I. GENERAL

1. We are good with the revised intersection layout; however, a detail of dimensions showing the offsets and distances need to be provided for the final drawing. ***No additional information was provided; engineer noted this will be provided in final drawings.***
2. Regarding the sidewalk, a connector at the east side of the unnamed street at Westshore should be provided and a ramp on the west side of the unnamed street should be added. Call outs and details on the ramp shall include the detectable warning strips. Because driveways are not shown, how will it be verified that 6" is installed through the driveways? Please also note the sidewalk ramp detail indicates 4" thick and it needs to be 6" thick. ***The City will need to decide what they would like to do based on the engineer's response. We recommend the connections be provided as we noted in our November 3, 2022 letter. Addition information will be provided in the final drawings; it should also be noted that the ramp thickness was not revised as shown still 4 inches on C4.0 in the ramp detail.***
3. It was indicated that a geotechnical report was provided, but we did not see the report with the newest submittal. ***A copy of the report was submitted. See our notes under the Drainage & Grading section of this letter.***
4. An updated traffic impact study needs to be provided. ***The submittal indicates this was submitted, but we did not find a copy in the submittal; therefore, it was not reviewed.***
5. KLSWA and STFD reviews should be provided. ***Information only.***
6. Street signage and lighting details should be provided, so the City knows what they are getting. ***Engineer noted this will be in the final drawings.***

7. The developer will be responsible for connection fees as well as review, administrative, and inspection fees for the project. ***Information only.***
8. Sanitary sewer record drawings indicate that the St. Peter's Church was once hooked up to a drain field on the south side of St. Peter's Drive. The developer may encounter remnants of this drain field while grading the site. ***The developer acknowledges this.***
9. The developer is responsible to obtain all necessary permits and approvals, including ACDC, EGLE, soil erosion, etc. for the project. ***The developer acknowledges this.***

II. SANITARY SEWER

1. The final submittal should have the pipe material labeled. Final construction drawings will need to be submitted with the construction permit applications for review and approval. The City will submit final drawings to EGLE via MiWaters when complete. ***The developer acknowledges this.***

III. WATER MAIN

1. The final submittal should have the pipe material labeled. ***The developer acknowledges this.***
2. High points need to be directed to the hydrants. Please include a graded water main design with grades and slopes. ***Please note that this will still have to be adjusted at station 3+60+/-. This can be included in the final drawings.***
3. Please make sure a valve is labeled at the live tap. ***Valves still need to be labeled, and all other fittings labeled at the fitting. This can be included in the final drawings.***
4. The water main going to the commercial portion of the project needs to be included in profile view. Also an easement needs to be shown around this water main. ***This was included in this drawing. More information is needed as to how the wall will be constructed over the watermain; this may not be allowed depending on the design.***
5. Final construction drawings will need to be submitted with the construction permit applications for review and approval. The City will submit final drawings to EGLE via email or hard copy as desired by EGLE. ***Information only.***
6. The water main will need to have the loop completed to Center Street as part of this phase. The City plans to abandon the 4 inch line along the east portion of the site from St Peters Drive to Center Street in the future. ***The developer acknowledges this.***

IV. DRAINAGE & GRADING

1. The City of Douglas uses the Allegan County Drain Commission for new development review & construction. An approval from ACDC should be obtained. (We did not review the calculations as this would be reviewed as part of ACDC's review.) ***Please note that no easements were shown for drainage systems and we have concerns that subsurface systems will be approved for the type of soils and groundwater elevations in the area. We note this because this could affect building envelopes upon final design. Please note that site condominiums have preliminary approval process with ACDC's office as well.***

2. This site is not within an ACDC drainage district. Surface water onsite generally flows north and crosses Westshore Street in a culvert. ***Information only.***
3. A property owners association should be set up and be responsible for the maintenance and liability of the ponds, swales, and gardens. ***Information only.***
4. It should be noted that proposed easements may not meet ACDC's standards. For example, the easement along the south line of the development shall be a minimum of 30 feet wide per ACDC's standards. ***See note 1 above.***

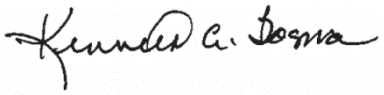
***Additional Comments:***

1. ***Per the Aamazon Natural Resources Consulting report dated June 2021 there are "no regulated wetlands."***
2. ***Per the Sierra Environmental Consultants, LLC March 1, 2022 there are "no revealed evidence of recognized environmental conditions."***
3. ***The City should consider if they wish to keep the landscaping along St. Peters Drive. We have the following comments: 1) will the landscaping impact the sidewalk over time?, 2) landscaping will be over a water main that if needed to be repaired could be an issue, and 3) will there be site vision issues at the entrance to St Peters Drive?***

If you have any questions or comments regarding the above, please feel free to call me.

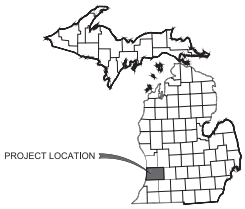
Sincerely,

**Prein&Newhof**



Kenneth A. Bosma, P.E.
KAB/kab

cc: Ms. Jenny Pearson, City of Douglas
Mr. Daryl VanDyk, KLSWA
Mr. Bruce Callen – Callen Engineering
Mr. Jeff Kerr, Developer




VICINITY MAP

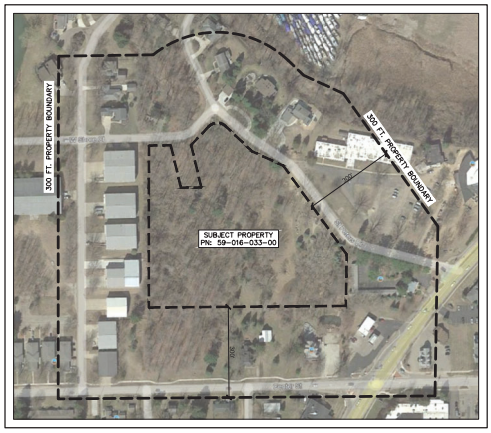
# CENTRE COLLECTIVE

## SITE CONDOMINIUM

## 324 WEST CENTER STREET

## THE CITY OF THE VILLAGE OF DOUGLAS

## ALLEGAN COUNTY, MICHIGAN




VICINITY MAP

NORTH

0 150 300

SCALE IN FEET

**INDEX OF SHEETS**



| CONSTRUCTION SEQUENCE / PHASES OF EARTHWORK | Operation, Time Schedule | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOBILIZATION | X | | | | | | | | | | | | | | |
| CLEAR BRUSH, STRIP TOPSOIL, AND BEGIN GRADING | X | X | | | | | | | | | | | | | |
| CONSTRUCT UNDERGROUND UTILITIES | | X | X | X | | | | | | | | | | | |
| CONSTRUCT RESIDENTIAL HOMES | | | X | X | X | X | X | X | X | X | X | X | X | X | X |
| CONSTRUCT STREETS, PLATWORK (PER LOTS) | | | | X | X | X | X | | | | | | | | |
| FINE GRADE LAWN AREAS, LANDSCAPE, MULCH | | | | | | | | X | X | | | | | | |
| STABILIZATION (TOPSOIL, SEED AND MULCH) | | | | | | | | | X | | | | | | X |
| REMOVE TEMP SESC CONTROLS | | | | | | | | | | | | | | | X |

PRELIMINARY - NOT FOR CONSTRUCTION

811 Know what's **Call** before you dig. **below.**

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.

**PROJECT LOCATION**

**SECTION 16, T3N, R16W,**
**CITY OF DOUGLAS,**
**ALLEGAN COUNTY, MICHIGAN**

**OWNER**

KRE WEST CENTRE LLC
PO BOX 574
DOUGLAS, MICHIGAN 49406
PHONE: 269-420-5156


Plan Prepared By:
Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456
Tel: 616-414-5260
email: bcallen@callenengineering.com


DATE OF PLAN: 11-11-22

**ISSUANCES**

| | |
|---|---|
| PRELIMINARY SITE CONDOMINIUM PLANS | 07-27-22 |
| PRELIMINARY SITE CONDOMINIUM PLANS RESPONSE | 10-21-22 |
| PRELIMINARY SITE CONDOMINIUM PLAN RESPONSE | 11-11-22 |

**REVISIONS**

DESIGNED BY:


callen civil engineers
Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com


Drawn by J.W.C.
Engineer B.A.C. Check B.A.C.

Callen Engineering Project No. 021 CENTRE COLLECTIVE

Sheet No. CS

Experience . . . the Difference


LOCATION MAP
NOT TO SCALE

## LEGEND

| | | | |
|---|---|---|---|
| Benchmark | Misc Dig Flag - Gas | Water Valve | |
| Catch Basin - Round | Misc Dig Flag - Water | Overhead Utility | |
| Catch Basin - Square | Manhole | Storm | |
| Culvert | Post | Guard Rail | |
| Deciduous Tree | Phone Riser | Tree | |
| Evergreen Tree | Stop Box | Asphalt | |
| Gas Meter | Sign | Concrete | |
| Guy Anchor | Stop Sign | Existing Building | |
| Hydrant | Sanitary Sewer Manhole | Described | |
| Iron - Set | Utility Pole | Platted | |
| Iron - Found | Underground Gas Marker | | |

## SURVEYOR'S NOTES

1) ALTA TABLE "A" ITEM NO. 4 - **Gross Land Area: 450952 Square Feet / 10.34 Acres**
2) ALTA TABLE "A" ITEM NO. 16 - Evidence of recent earth moving work, building construction or building additions observed in the process of conducting the fieldwork. **None observed at time of survey.**
3) Basis of Bearing: N89°32'47"E along the East-West 1/4 line of Section 16, T3N, R16W
4) Note to the client, insurer, and lender - With regard to Table A, item 11, source information from plans and markings will be combined with observed evidence of utilities pursuant to Section 5.E.iv. to develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response. Where additional or more detailed information is required, the client is advised that excavation and/or a private utility locate request may be necessary.
5) NOTE TO CONTRACTORS: 3 (THREE) WORKING DAYS BEFORE YOU DIG, CALL MISS DIG AT TOLL FREE 1-800-482-7171 FOR UTILITY LOCATIONS ON THE GROUND.

## TITLE INFORMATION

The Title Description and Schedule B items hereon are from Lighthouse Title Commitment No. CCU21-0328449R, dated March 18, 2021.

## TITLE DESCRIPTION

PARCEL A: Part of the Northwest 1/4 of Section 16, Town 3 North, Range 16 West, Saugatuck Township, Allegan County, Michigan, described as: Commencing at the West 1/4 corner of said Section; thence North 89 degrees 32 minutes 47 seconds East 662.20 feet along the East-West 1/4 line of said Section to the Point of Beginning; thence North 00 degrees 00 minutes 00 seconds East 33.26 feet; thence South 89 degrees 32 minutes 47 seconds West 103.94 feet; thence North 00 degrees 19 minutes 50 seconds East 200.11 feet; thence North 89 degrees 24 minutes 59 seconds East 102.79 feet; thence North 00 degrees 00 minutes 00 seconds East 426.01 feet along the East line of Terrace Parks Heights; thence North 00 degrees 11 minutes 41 seconds East 140.20 feet along the West line of St. Peter's Subdivision; thence North 89 degrees 11 minutes 47 seconds East 72.01 feet along the North line of Lot 10, St. Peter's Subdivision; thence South 13 degrees 25 minutes 13 seconds East 144.30 feet along the East line of said Lot 10; thence North 89 degrees 32 minutes 47 seconds East 67.62 feet along the South line of St. Peter's Subdivision; thence North 13 degrees 25 minutes 13 seconds West 144.65 feet along the West line of Lots 11 and 12 of St. Peter's Subdivision; thence North 43 degrees 39 minutes 47 seconds East 83.94 feet along the North line of Lot 12, St. Peter's Subdivision; thence Easterly 62.80 feet along a 40.00-foot radius curve to the right, said curve having a central angle of 89 degrees 57 minutes 16 seconds, and a chord bearing North 88 degrees 41 minutes 09 seconds East 56.55 feet along said North line; thence South 46 degrees 20 minutes 15 seconds East 119.91 feet along the North line of Lots 12 and 13 of St. Peter's Subdivision; thence South 65 degrees 14 minutes 13 seconds East 114.54 feet along the North line of Lots 13 and 14 of St. Peter's Subdivision; thence South 35 degrees 26 minutes 58 seconds East 360.78 feet along the Westerly right-of-way line of St. Peter's Drive; thence South 00 degrees 59 minutes 18 seconds West 169.89 feet along the East line of the Southeast 1/4 of the Northwest 1/4 of said Section; thence South 89 degrees 32 minutes 47 seconds West 165.05 feet along the North line of the South 264 feet of the Southeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of said Section; thence South 00 degrees 59 minutes 18 seconds West 264.08 feet along the West line of the East 10 rods of the Southwest 1/4 of the Northwest 1/4 of said Section; thence South 89 degrees 32 minutes 47 seconds West 481.98 feet along the East-West 1/4 line of said Section to the Point of Beginning. Subject to easements, restrictions and rights-of-way of record. Subject to highway right of-way for Center Street over the most Southerly 33.00 feet thereof.

## SCHEDULE B - SECTION II NOTES

The provided title commitment does not contain any easements to depict on this survey.

## SURVEYOR'S CERTIFICATION

To Jeff Kerr, St. Peter's Church, Chicago Title Insurance Company, and WFG National 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 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 4, 11, and 16 of Table A thereof. The fieldwork was completed on 2/8/21.

Scott A. Hendges
Professional Surveyor No. 4001047093
Nederveld, Inc.
shendges@nederveld.com

0' 250' 500' 1000'
SCALE: 1" = 500'

Know what's below. CALL before you dig.

EXACT LOCATIONS AND SERVICES FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

NOTE:
UNKNOWN UTILITIES AND SERVICE LINES IDENTIFIED AS "PLUGS" WERE OBTAINED FROM AVAILABLE CITY (PUBLIC) RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH AND STATUS OF ALL UTILITIES AND SERVICE LINES PRIOR TO NEW CONNECTIONS.


NEDERVELD
www.nederveld.com
800.222.1868
HOLLAND
347 Hoover Blvd
Holland, MI 49423
Phone: 616.393.0449
ANN ARBOR
CHICAGO
COLUMBUS
GRAND RAPIDS
INDIANAPOLIS
ST. LOUIS


**PREPARED FOR:**
Kerr Real Estate LLC
Jeffery Kerr

PO Box 574
Douglas, MI 49406

**CREATED:**
Drawn: WBB Date: 2/8/21

**REVISIONS:**
Rev. Drawn Date

# Centre Collective

## ALTA/NSPS Land Title Survey

PART OF THE NORTHWEST 1/4 OF SECTION 16, T3N, R16W, CITY OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN

**STAMP:**

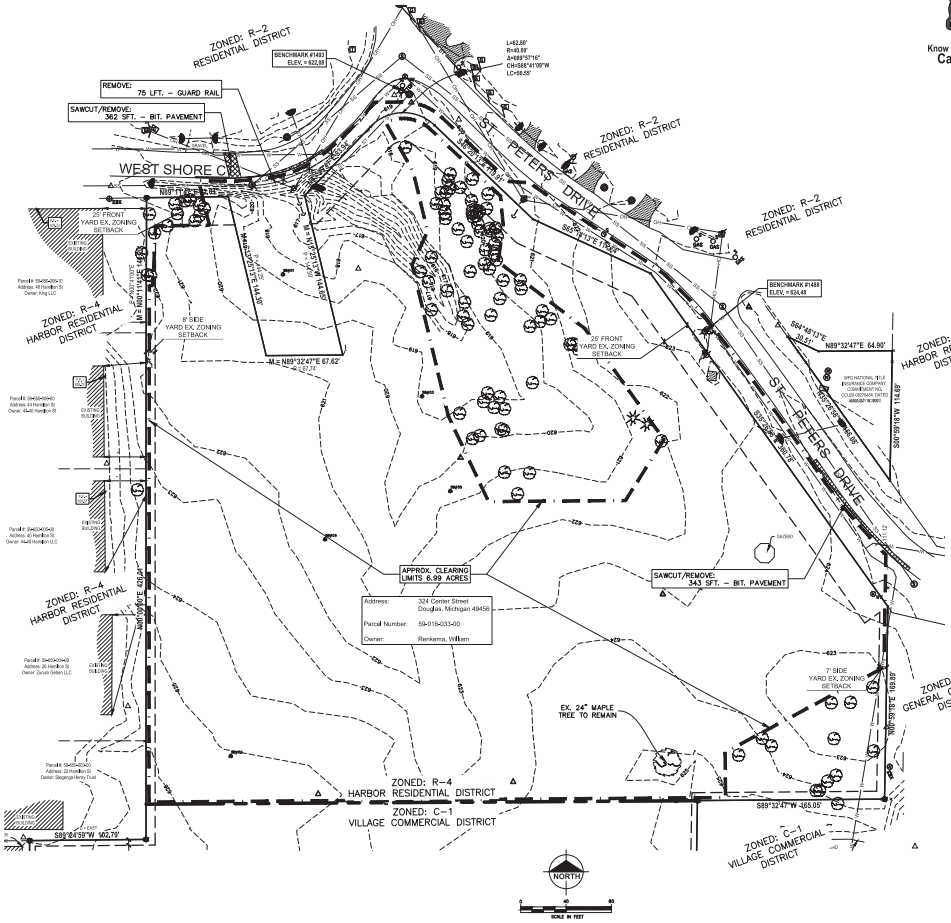
**PROJECT NO:** 19201508

**SHEET NO:** AL

**SHEET:** 1 OF 1



Land Planning ▬ Landscape Architecture ▬ Civil Engineering ▬ Land Surveying ▬ High Definition Scanning ▬ Forensic Engineering ▬ Fire Investigation




811
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**Plan Prepared By:**

**Bruce A. Callen, PE**
**Callen Engineering, Inc.**
**108 E. Savidge St.**
**Spring Lake, Michigan 49456**

**Tel: 616--414--5260**
**email: bcallen@callenengineering.com**


Property Address:
324 Center Street,
Douglas, Michigan 49456

Parcel Number:
59-016-033-00

Property Description:

PARCEL A: Part of the Northwest 1/4 of Section 16, Town 3 North, Range 16 West, Saugatuck Township, Allegan County, Michigan, described as: Commencing at the West 1/4 corner of said Section; thence North 89 degrees 32 minutes 47 seconds East 662.20 feet along the East-West 1/4 line of said Section to the Point of Beginning; thence North 00 degrees 00 minutes 00 seconds East 33.26 feet; thence South 89 degrees 32 minutes 47 seconds West 103.94 feet; thence North 00 degrees 19 minutes 50 seconds East 200.11 feet; thence North 89 degrees 24 minutes 59 seconds East 102.79 feet; thence North 00 degrees 00 minutes 00 seconds East 426.01 feet along the East line of Terrace Parks Heights; thence North 00 degrees 11 minutes 41 seconds East 140.20 feet along the West line of St. Peter's Subdivision; thence North 89 degrees 11 minutes 47 seconds East 72.01 feet along the North line of Lot 10, St. Peter's Subdivision; thence South 13 degrees 25 minutes 13 seconds East 144.20 feet along the East line of said Lot 10; thence North 89 degrees 32 minutes 47 seconds East 67.62 feet along the South line of St. Peter's Subdivision; thence North 13 degrees 25 minutes 13 seconds West 144.65 feet along the West line of Lots 11 and 12 of St. Peter's Subdivision; thence North 43 degrees 39 minutes 47 seconds East 83.94 feet along the North line of Lot 12, St. Peter's Subdivision; thence Easterly 62.80 feet along a 40.00-foot radius curve to the right, said curve having a central angle of 89 degrees 57 minutes 16 seconds, and a chord bearing North 88 degrees 41 minutes 09 seconds East 56.55 feet along said North line; thence South 46 degrees 20 minutes 13 seconds East 119.91 feet along the North line of Lots 12 and 13 of St. Peter's Subdivision; thence South 65 degrees 14 minutes 13 seconds East 114.54 feet along the North line of Lots 13 and 14 of St. Peter's Subdivision; thence South 35 degrees 26 minutes 58 seconds East 360.78 feet along the Westerly right-of-way line of St. Peter's Drive; thence South 00 degrees 59 minutes 18 seconds West 169.89 feet along the East line of the Southeast 1/4 of the Southwest 1/4 of the Northeast 1/4 of said Section; thence South 89 degrees 32 minutes 47 seconds West 165.05 feet along the North line of the South 264 feet of the Southeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of said Section; thence South 00 degrees 59 minutes 18 seconds West 264.08 feet along the West line of the East 10 rods of the Southwest 1/4 of the Northwest 1/4 of said Section; thence South 89 degrees 32 minutes 47 seconds West 481.86 feet along the East-West 1/4 line of said Section to the Point of Beginning. Subject to easements, restrictions and rights-of-way of record. Subject to highway right of-way for Center Street over the most Southerly 33.00 feet thereof.

Total Acreage:
7.17 Acres (312,325 sft.)

**REGULATED WETLANDS AND THREATENED AND ENDANGERED SPECIES**

NO REGULATED WETLANDS, THREATENED OR ENDANGERED SPECIES WERE IDENTIFIED ON THE SITE PER THE JUNE 2021 "WETLAND AND THREATENED AND ENDANGERED SPECIES REVIEW AND SITE ASSESSMENT, CENTRE COLLECTIVE VILLAGE OF DOUGLAS, ALLEGAN COUNTY, MICHIGAN PREPARED BY AAMAZON CONSULTING, LLC.

**TREE REMOVALS**

TREE REMOVALS WITHIN THE RIGHT-OF-WAY ARE INCLUDED ON THE LANDSCAPE PLAN. TREE REMOVALS WITHIN THE PROPERTY HAVE NOT BEEN DETERMINED. TREES WILL BE RETAINED TO THE GREATEST EXTENT POSSIBLE.

WETLAND AND THREATENED SPECIES REVIEW AND SITE ASSESSMENT PERFORMED BY AAMAZON NATURAL RESOURCES CONSULTING, DATED JUNE 2021.

REMOVALS LEGEND

PAVEMENT REMOVAL AREA

X REMOVAL ITEM

DATE OF PLAN: 11-11-22

**Prepared for:**
**KRE West Centre LLC**
PO BOX 574
Douglas, MI 49406
t.269.420.5156

CENTRE
COLLECTIVE
324 West Center Street
Douglas, Michigan


**Callen Engineering, Inc.**
108 East Savidge Street
Spring Lake, MI 49456
t.616.414.5260
www.callenengineering.com


EXISTING CONDITIONS AND REMOVALS PLAN

| | |
|---|---|
| Job No: | 821 KERR - CENTRE COLLECTIVE |
| Issue: | PRELIMINARY SITE CONDO REVIEWS |
| Issue Date: | NOVEMBER 11, 2022 |

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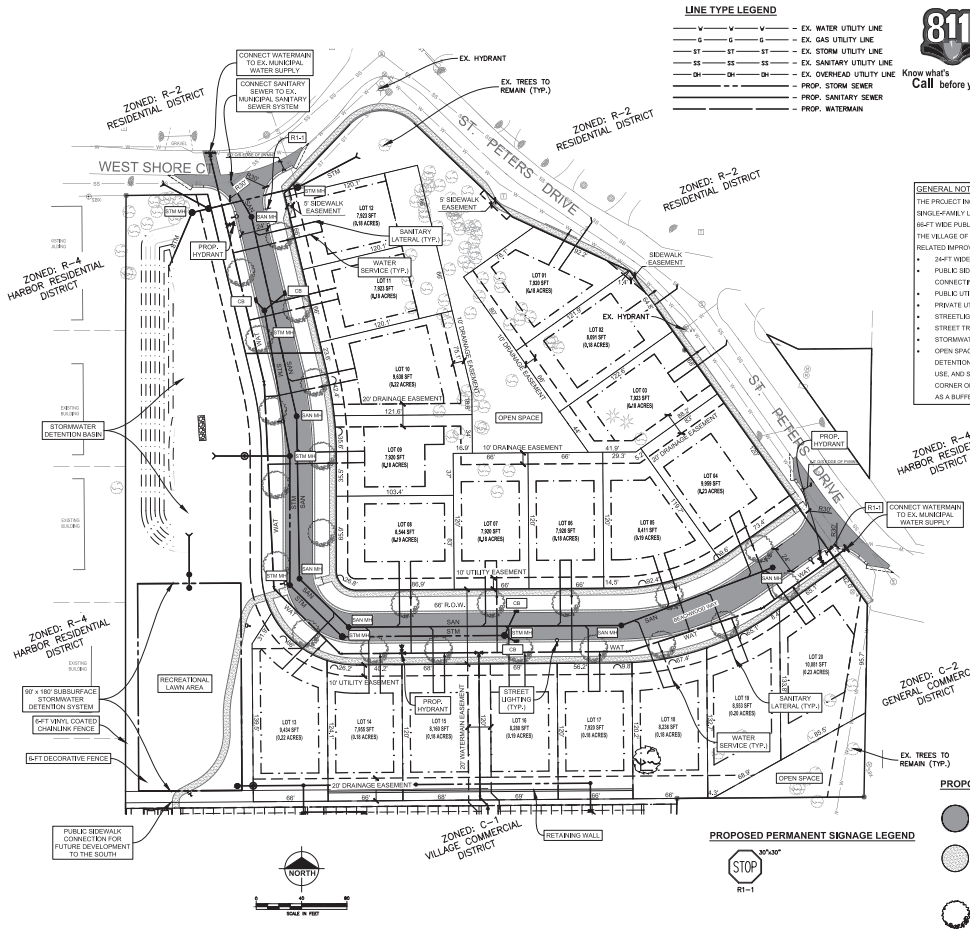
DATE OF PLAN: 11-11-22




## LINE TYPE LEGEND

- EX. WATER UTILITY LINE
- EX. GAS UTILITY LINE
- EX. STORM UTILITY LINE
- EX. SANITARY UTILITY LINE
- EX. OVERHEAD UTILITY LINE
- PROP. STORM SEWER
- PROP. SANITARY SEWER
- PROP. WATERMAIN

811 Know what's **Call** before you dig. **below.**

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.


Plan Prepared By:
Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
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Tel: 616-414-5260
email: bcallen@callenengineering.com


PRELIMINARY - NOT FOR CONSTRUCTION

## GENERAL NOTES

THE PROJECT INCLUDES CONSTRUCTION OF A NEW RESIDENTIAL NEIGHBORHOOD COMPRISED OF TWENTY (20) SINGLE-FAMILY LOTS RANGING BETWEEN 0.18 AND 0.23 ACRES. SEVENTEEN (17) OF THE NEW LOTS WILL FRONT A NEW 66-FT WIDE PUBLIC STREET RIGHT-OF-WAY MEETING THE REQUIREMENTS OF THE RELEVANT SECTIONS OF THE CITY OF THE VILLAGE OF DOUGLAS (CITY) ZONING ORDINANCE. THE REMAINING LOTS SHALL FRONT ST. PETERS DRIVE.

RELATED IMPROVEMENTS INCLUDE:

- 24-FT WIDE PUBLIC STREET W/ CURB AND GUTTER
- PUBLIC SIDEWALK FRONTING ALL RESIDENTIAL LOTS, AND EXTENDING ALONG ST. PETERS DRIVE, AND CONNECTING TO FUTURE COMMERCIAL DEVELOPMENT TO THE SOUTH
- PUBLIC UTILITIES (SANITARY SEWER, WATERMAIN, STORM SEWER)
- PRIVATE UTILITIES (GAS, ELECTRIC, COMMUNICATIONS)
- STREETLIGHTS
- STREET TREES
- STORMWATER DETENTION, MEETING ACOC REQUIREMENTS
- OPEN SPACE, INCLUDING A 90'X180' GENERALLY FLAT LAWN AREA (OVER PROPOSED SUBSURFACE STORMWATER DETENTION SYSTEM) WHICH CAN BE USED AS A PARK, ATHLETIC FIELD, DOG WALK, OR OTHER RECREATIONAL USE, AND SELECT NATURAL AREAS, LOCATED AT THE NORTH INTERIOR OF THE PROPERTY AND THE SOUTHEAST CORNER OF THE SITE, WHICH ARE INTENDED TO REMAIN OPEN SPACE TO PRESERVE EXISTING TREES AND SERVE AS A BUFFER FOR THE DEVELOPMENT

## LAND USE TABLE

| | |
|---|---|
| RESIDENTIAL LAND | 3.83 ACRES |
| STM WATER DETENTION | 0.79 ACRES |
| OPEN SPACE | 1.09 ACRES |
| PUBLIC R.O.W. | 1.28 ACRES |
| BUILDABLE AREA | 6.99 ACRES |
| UNIT DENSITY | 2.86 UNITS / ACRE |

## PROPOSED PERMANENT SIGNAGE LEGEND

30"x30" STOP R1-1

## PROPOSED FEATURES LEGEND

NEW HMA PAVEMENT AREA (23,972 SFT)

NEW LIGHT DUTY CONCRETE SIDEWALK AREA (11,724 SFT)

**STREET TREES**

SPECIES PER CITY OF DOUGLAS APPROVED TREE LIST

## PRELIMINARY ESTIMATED CONSTRUCTION QUANTITIES THIS SHEET

| PAY ITEM DESCRIPTION | UNIT | ESTIMATED QUANTITY |
|---|---|---|
| Machine Grading | Sta | 9 |
| Subbase, CL II CIP | Cyd | 870 |
| Aggregate Base, 6 Inch | Syd | 2,663 |
| HMA Pavement | Syd | 2,663 |
| Curb and Gutter, Conc, Det F4 | Ft | 1,864 |
| Detectable Warning Surface | Ft | 24 |
| Sidewalk, Conc, 4 Inch | Sft | 10,226 |
| Sidewalk, Conc, 6 Inch | Sft | 1,600 |
| D.I.W.M., 6 Inch | Ft | 18 |
| D.I.W.M., 8 Inch | Ft | 1,075 |
| Hydrant Assembly, 5 Inch | Ea | 3 |
| Water Service | Ea | 20 |
| Sanitary Manhole, 4 Foot Dia | Ea | 6 |
| Sanitary Sewer, 8 Inch | Ft | 803 |
| Sanitary Lateral, 6 Inch | Ft | 1,106 |
| Storm Manhole, 4 Foot Dia | Ea | 5 |
| Storm Catch Basin, 2 Foot Dia | Ea | 4 |
| Storm Sewer, 12 Inch | Ft | 533 |
| Storm Sewer, 15 Inch | Ft | 130 |
| Storm Sewer, 18 Inch | Ft | 65 |
| Detention Basin Grading | Laum | 1 |
| Street Tree | Ea | 23 |
| Street Light | Ea | 4 |
| Slope Restoration | Syd | 1,000 |

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PRELIMINARY SITE CONDOMINIUM PLAN

Job No: 821 KERE - CENTRE COLLECTIVE
Issue: PRELIMINARY SITE CONDO REVIEW
Issue Date: NOVEMBER 11, 2022

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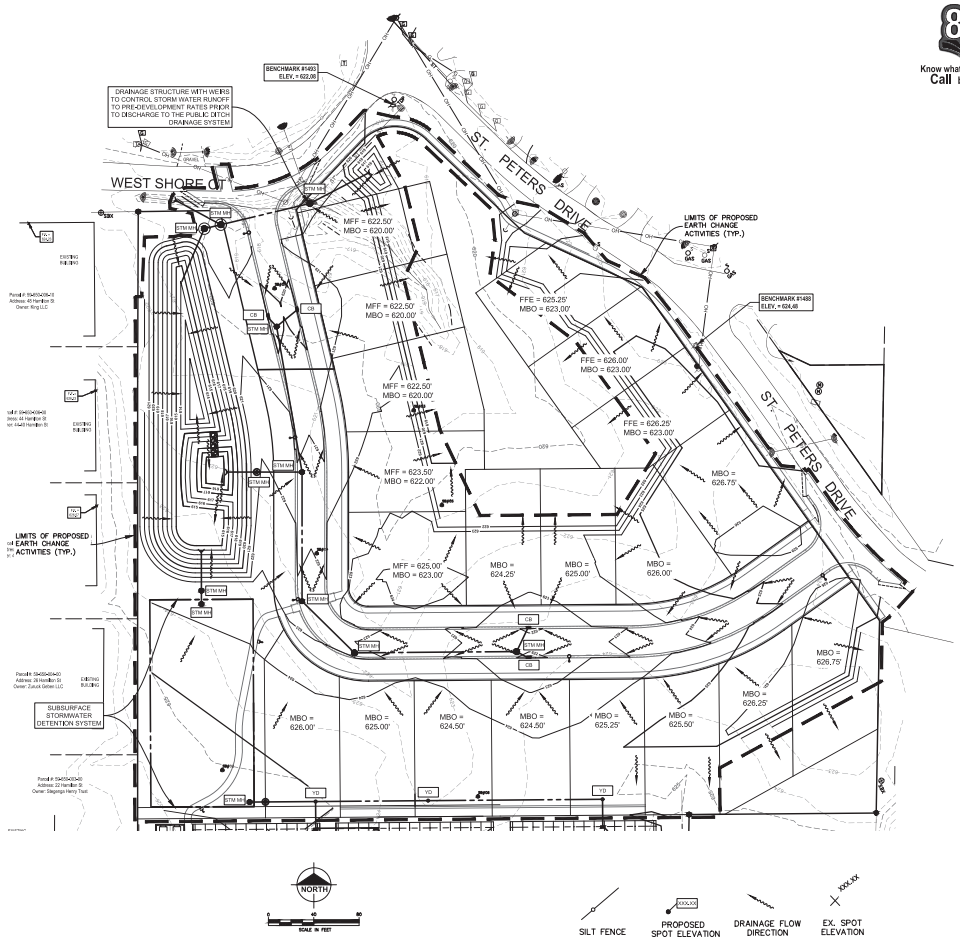


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**Plan Prepared By:**
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PRELIMINARY - NOT FOR CONSTRUCTION

EROSION CONTROL MEASURES

| KEY | SESC MEASURE | SYMBOL | WHERE USED |
|---|---|---|---|
| 1 | Seeding | | When bare soil is exposed, temporarily or permanently, to erosive forces from wind and or water on flat areas, side slopes, grassed waterways and spillways, diversion ditches and dikes, berms and stockpile areas, and soil piles. |
| 2 | Mulch | | On flat areas, slopes, grassed waterways and spillways, diversion ditches and dikes, berms and stockpile areas, and soil piles when areas are subject to raindrop impact, and erosive forces from wind or water. |
| 4 | Trees, Shrubs, Vines and Ground Cover | | When bare soil or recently vegetated slopes are exposed to erosive forces from wind and/or water. |
| 5 | Perimeter Sediment Control Measures (Silt Fence, Straw Wattles, etc.) | | As a temporary measure used to capture sediment from sheet flow. May also divert small volumes of sheet flow to protected outlets. |
| 7 | Storm Drain Inlet Protection | | Around the entrance to a catch basin or an inlet that will capture runoff from an earth change activity. |
| 2B | Stone Construction Access | | At locations where construction equipment will enter and exit the drain easement and tracking of soil is anticipated. |

*SESC MEASURES SHALL COMPLY WITH MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SESC MANUEL SPECIFICATIONS

**SESC NOTES**

TOTAL DISTURBED AREA: 274,740 SFT (6.31 ACRES)

ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THE SITE PLAN MAY BE NECESSARY AS SITE WORK PROGRESSES. PERMITTEE IS RESPONSIBLE FOR ALL MEASURES NECESSARY TO PREVENT OFFSITE SEDIMENTATION.

GEOTEXTILE SILT FENCE AND ALL CATCH BASIN PROTECTION MEASURES SHALL BE PROPERLY PLACED AS SHOWN ON PLANS AND AS NEEDED TO RETAIN SOILS ONSITE. PERIODIC MAINTENANCE AND INSPECTION OF SESC MEASURES IS REQUIRED FOR PROPER EFFECTIVENESS.

STABILIZE SITE AS SOON AS POSSIBLE.

CONSTRUCTION IS ANTICIPATED TO BEGIN 2023 WITH SUBSTANTIAL SITEWORK COMPLETION NO LATER THAN 2024.

DATE OF PLAN: 11-11-22

**Prepared for:**
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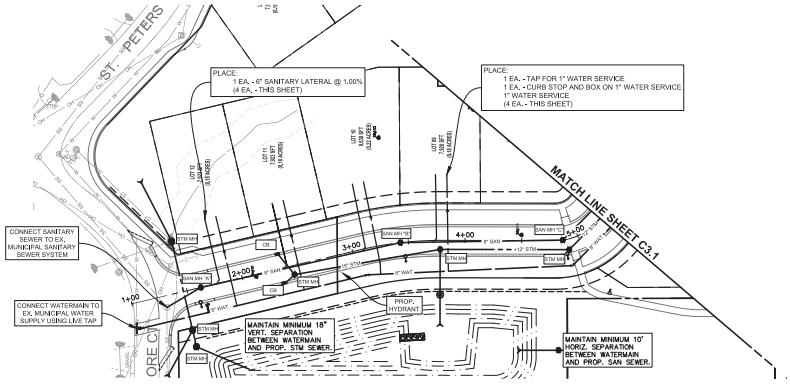
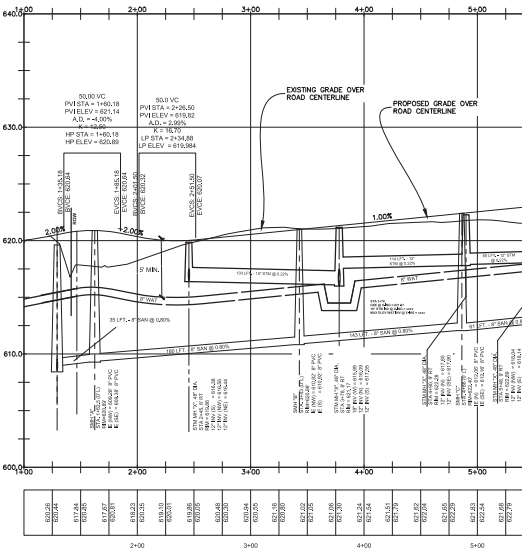
PRELIMINARY GRADING PLAN

| | |
|---|---|
| Job No: | 821 KERW - CENTRE COLLECTIVE |
| Issue: | PRELIMINARY SITE/CONDO REVIEWS |
| Issue Date: | NOVEMBER 11, 2022 |

C2.0





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PRELIMINARY - NOT FOR CONSTRUCTION

**SANITARY SEWER NOTES**

1. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. MAINTAIN MINIMUM 18 INCHES OF VERTICAL SEPARATION AND 10' HORIZONTAL SEPARATION BETWEEN ALL WATERMAIN AND SEWER.
3. ALL INSTALLATION OF AND MATERIALS FOR SANITARY SEWER, LATERALS,AND CONNECTION THE EXISTING SANITARY SEWER SHALL BE IN ACCORDANCE WITH THE CITY OF THE VILLAGE OF DOUGLAS SPECIFICATIONS.
4. A PRE-CONSTRUCTION MEETING WITH THE CITY OF THE VILLAGE OF DOUGLAS IS REQUIRED BEFORE SANITARY SEWER CONSTRUCTION ACTIVITIES BEGIN.

**WATERMAIN NOTES**

1. TOP OF PIPE SHALL BE A MINIMUM OF 5'-0" BELOW THE FINISH GROUND SURFACE.
2. ALL PIPE TO HAVE NECESSARY JOINT RESTRAINTS PER PROJECT SPECIFICATIONS.
3. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING WATERMAIN PRIOR TO CONSTRUCTION.
4. MAINTAIN 18 INCHES OF VERTICAL CLEARANCE AND 10 FEET OF HORIZONTAL CLEARANCE BETWEEN WATERMAIN AND SEWERS.
5. HYDRANT TYPE SHALL BE CITY OF VILLAGE OF DOUGLAS STANDARD. HYDRANT SHALL HAVE 6'-0" BURY.
6. ALL INSTALLATION OF AND MATERIALS FOR WATERMAIN, WATER SERVICES, CONNECTION TO THE EXISTING WATERMAIN, AND WORK WITHIN CITY OF THE VILLAGE OF DOUGLAS RIGHT-OF-WAY, OR WITHIN DEDICATED EASEMENT SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
7. A PRE-CONSTRUCTION MEETING WITH THE CITY OF THE VILLAGE OF DOULAS IS REQUIRED BEFORE WATERMAIN CONSTRUCTION ACTIVITIES MAY BEGIN.
8. ALL WATER MAINS AND THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND AWWA STANDARD C600.
9. WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE WITH AWWA STANDARD C651.

**PRIVATE UTILITY NOTE:**

PRIVATE UTILITIES LOCATIONS WILL BE BASED UPON LOCATIONS REQUESTED BY UTILITY COMPANIES (GAS, ELECTRIC, AND COMMUNICATIONS) WITH CONSIDERATION OF PUBLIC UTILITY LOCATIONS AND EASEMENTS.

NOTE:

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**LINE TYPE LEGEND**

- W — W — W — EX. WATER UTILITY LINE
- G — G — G — EX. GAS UTILITY LINE
- ST — ST — ST — EX. STORM UTILITY LINE
- SS — SS — SS — EX. SANITARY UTILITY LINE
- OH — OH — OH — EX. OVERHEAD UTILITY LINE
- PROP. STORM SEWER
- PROP. SANITARY SEWER
- PROP. WATERMAIN

DATE OF PLAN: 11-11-22

**Prepared for:**
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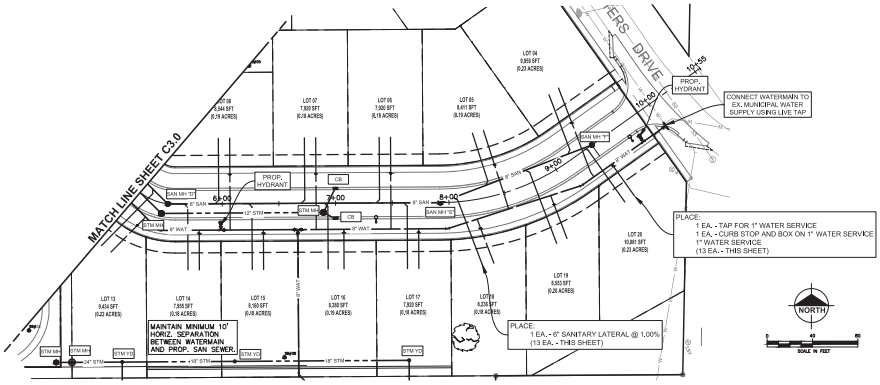
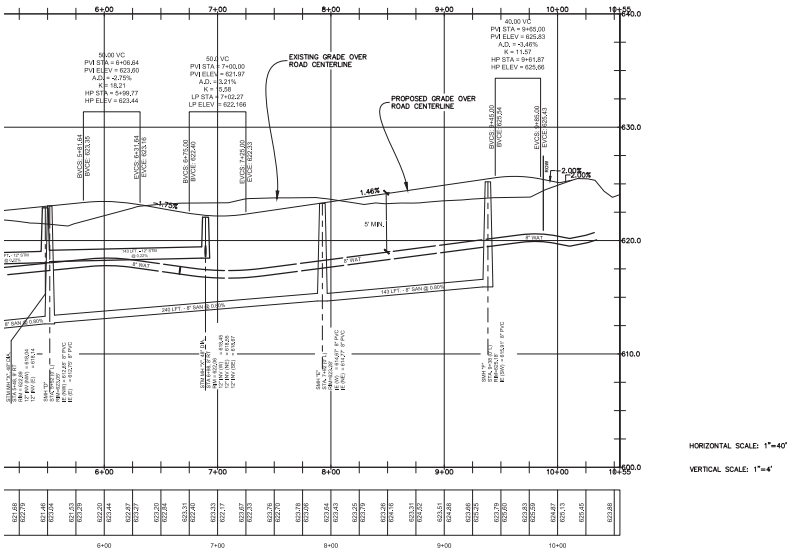
BEACHWOOD WAY
PLAN AND PROFILE

| | |
|---|---|
| Job No: | 821 KERE - CENTRE COLLECTIVE |
| Issue: | PRELIMINARY SITE CONDO RESUBMIT |
| Issue Date: | NOVEMBER 11, 2022 |

C3.0




Know what's **Call** before you dig. **811**

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PRELIMINARY - NOT FOR CONSTRUCTION

**SANITARY SEWER NOTES**

1. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
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**WATERMAIN NOTES**

1. TOP OF PIPE SHALL BE A MINIMUM OF 5'-0" BELOW THE FINISH GROUND SURFACE.
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8. ALL WATER MAINS AND THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND AWWA STANDARD C600.
9. WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE WITH AWWA STANDARD C651.

**PRIVATE UTILITY NOTE:**

PRIVATE UTILITIES LOCATIONS WILL BE BASED UPON LOCATIONS REQUESTED BY UTILITY COMPANIES (GAS, ELECTRIC, AND COMMUNICATIONS) WITH CONSIDERATION OF PUBLIC UTILITY LOCATIONS AND EASEMENTS.

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BEACHWOOD WAY
PLAN AND PROFILE

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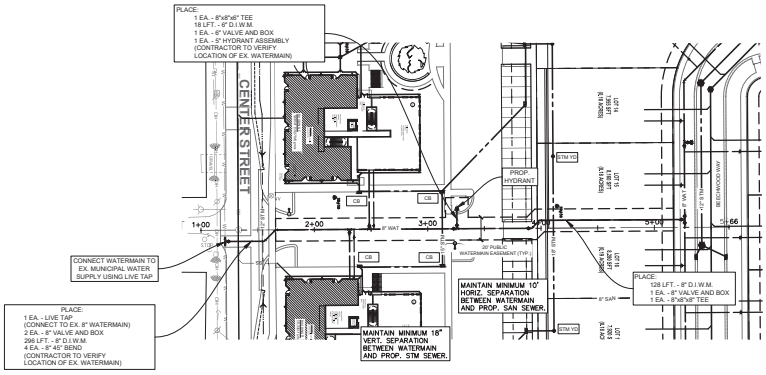
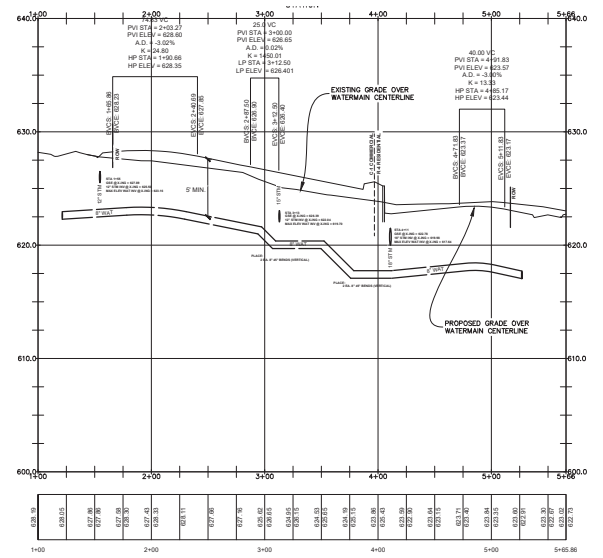
C3.1




HORIZONTAL SCALE: 1"=40'

VERTICAL SCALE: 1"=4'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PRELIMINARY - NOT FOR CONSTRUCTION

**WATERMAIN NOTES**

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3. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING WATERMAIN PRIOR TO CONSTRUCTION.
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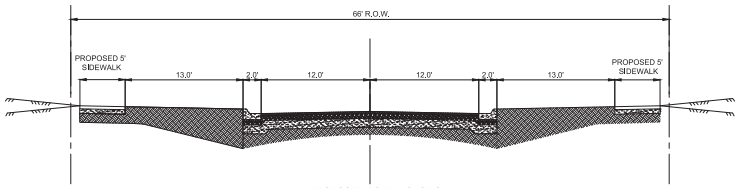
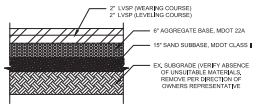
WATERMAIN CONNECTION PLAN AND PROFILE

| | |
|---|---|
| Job No: | 021 KERR - CENTRE COLLECTIVE |
| Issue: | PRELIMINARY SITE CONDO RESPONSE |
| Issue Date: | NOVEMBER 11, 2022 |

C3.2

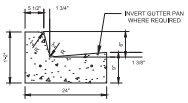



PROPOSED ROAD X-SECTION

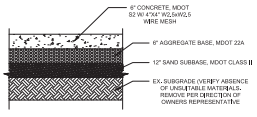



NOTE: CONTRACTOR(S) SHALL FAMILIARIZE THEMSELVES WITH THE INFORMATION AND FINDINGS PRESENTED IN THE GEOTECHNICAL EVALUATION REPORT PREPARED BY SOILS & STRUCTURES DATED FEB. 02, 2020, SOILS & STRUCTURES PROJECT NO. 2020J125.

HMA PAVEMENT SECTION HMA
NO SCALE

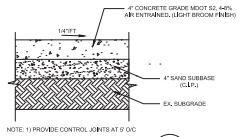



CONCRETE CURB & GUTTER CG-F4
DETAIL F4, MODIFIED
NO SCALE



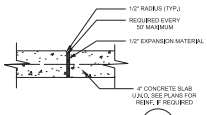

NOTE: CONTRACTOR(S) SHALL FAMILIARIZE THEMSELVES WITH THE INFORMATION AND FINDINGS PRESENTED IN THE GEOTECHNICAL EVALUATION REPORT PREPARED BY SOILS & STRUCTURES DATED FEB. 02, 2020, SOILS & STRUCTURES PROJECT NO. 2020J125.

6" CONCRETE PAVEMENT SECTION CP-6
NO SCALE

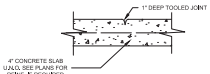



NOTE: 1) PROVIDE CONTROL JOINTS AT 5' O/C

CONCRETE SIDEWALK SECTION CP-4
NO SCALE




WALK EXPANSION JOINT SW-EJ
NO SCALE



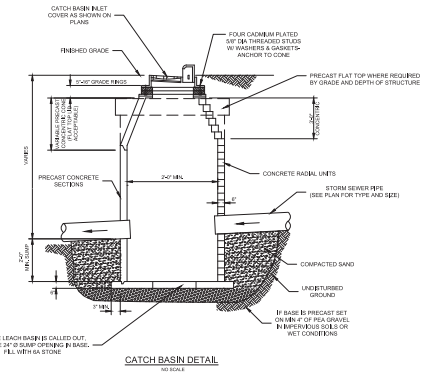

WALK CONTROL JOINT SW-CJ
NO SCALE

811
Know what's **Call** before you dig.

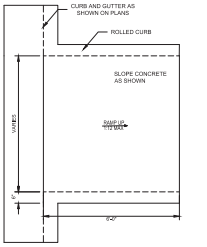
For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.


**Plan Prepared By:**
Bruce A. Callen, P.E.
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com


CATCH BASIN DETAIL
NO SCALE




B.F. RAMP DETAIL HC-R2
TYPE R
NO SCALE

DATE OF PLAN: 11-11-22


**Prepared for:**
**KRE West Centre LLC**
PO BOX 574
douglas, mi 49406
t.269.420.5156


CENTRE COLLECTIVE
324 West Center Street
Douglas, Michigan


**Callen Engineering, Inc.**
108 east savidge street
spring lake, mi 49456
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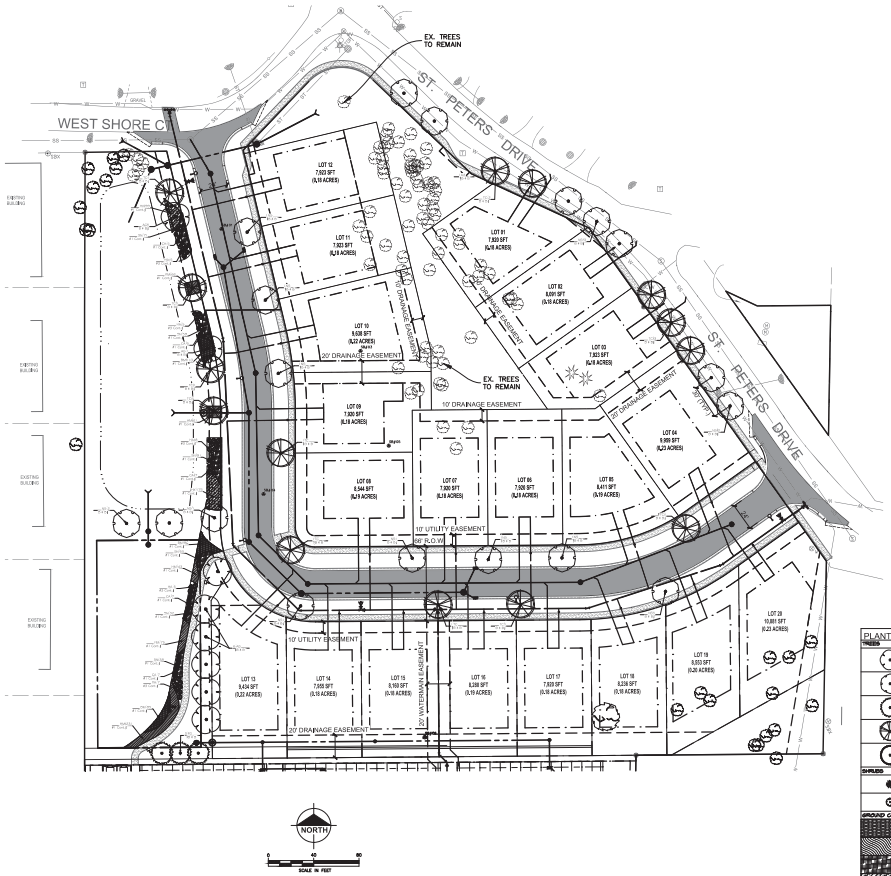
X-SECTIONS, NOTES, AND DETAILS

| | |
|---|---|
| Job No: | 821 KERW - CENTRE COLLECTIVE |
| Issue: | PRELIMINARY SITE CONDO RESUBMIT |
| Issue Date: | NOVEMBER 11, 2022 |

C4.0






Plan Prepared By:
Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456
Tel: 616-414-5260
email: bcallen@callenengineering.com

PRELIMINARY - NOT FOR CONSTRUCTION

**PROPOSED FEATURES LEGEND**

- NEW HMA PAVEMENT AREA
- NEW PERVIOUS CONCRETE AREA
- NEW LIGHT DUTY CONCRETE SIDEWALK AREA
- NEW HEAVY DUTY CONCRETE SIDEWALK AREA

**STREET TREES**

SPECIES PER CITY OF DOUGLAS APPROVED TREE LIST

**LINE TYPE LEGEND**

- W W W — EX. WATER UTILITY LINE
- G G G — EX. GAS UTILITY LINE
- ST ST ST — EX. STORM UTILITY LINE
- SS SS SS — EX. SANITARY UTILITY LINE
- OH OH OH — EX. OVERHEAD UTILITY LINE
- — PROP. STORM SEWER
- — PROP. SANITARY SEWER
- — PROP. WATERMAIN

PLANT SCHEDULE

| TREES | CODE | BOTANICAL / COMMON NAME | CONT | CAL | SIZE | | QTY |
|---|---|---|---|---|---|---|---|
| | Ag | Amelanchier x grandiflora 'Autumn Brilliance' / 'Autumn Brilliance' Serviceberry | B & B | 3"Cal | | | 18 |
| | Nb | Nyssa sylvatica 'NSMH' TM / Green Gable Tupelo | B & B | 3"Cal | | | 18 |
| | Pg | Picea glauca 'Densata' / Black Hills White Spruce | B & B | | Min 6' Ht. | | 19 |
| | TC | Tilia cordata / Littleleaf Linden | B & B | 3"Cal | | | 14 |
| | UA | Ulmus x 'Accolade' / Accolade Elm | B & B | 3"Cal | | | 4 |
| SHRUBS | CODE | BOTANICAL / COMMON NAME | CONT | SPACING | | | |
| | CA | Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass | #1 Cont. | | | | 31 |
| | HA | Hydrangea arborescens 'NCHA8' / Invincibelle Mini White Hydrangea | #3 Cont. | | | | 30 |
| GROUND COVERS | CODE | BOTANICAL / COMMON NAME | CONT | SPACING | | SPACING | |
| | BH | Brunnera macrophylla 'Jack Frost' TM / Jack Frost Siberian Bugloss | #1 Cont. | | | 18" o.c. | 241 |
| | HM | Helenostylis macra / Japanese Forest Grass | #1 Cont. | | | 18" o.c. | 475 |
| | SN | Salvia nemorosa 'Mey Night' / May Night Sage | #1 Cont. | | | 18" o.c. | 848 |
| | HK | x Heucherella x 'Stoplight' / Stoplight Foamy Bells | #1 Cont. | | | 18" o.c. | 214 |

DATE OF PLAN: 11-11-22

324 WEST CENTER STREET
CENTRE COLLECTIVE
DOUGLAS, MICHIGAN

**Kerr Real Estate Development**
PO BOX 574
douglas, mi 49406
t.269.420.5156

**r2 design group, pllc**
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grand rapids, mi 49503
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LANDSCAPE PLAN

Job No: 821 KERR - CENTRE COLLECTIVE
Issue: PRELIMINARY SITE CONDO RESUBMIT
Issue Date: NOVEMBER 11, 2022

L1.0

callen

**MEMORANDUM**

**DATE:** **NOVEMBER 11, 2022**

**TO:** **KERR REAL ESTATE**
**ATTN: MR. JEFFREY A KERR**
**P.O. BOX 574**
**DOUGLAS, MI 49406**
jeff@kerr-realestate.com

**FROM:** **BRUCE A. CALLEN, PE**

**SUBJECT:** **CENTRE COLLECTIVE - COMMERCIAL**
**RESPONSE TO CIVIL ENGINEERING REVIEW**

---

In response to the Kenneth A. Bosma, P.E. Prein & Newhof letter, dated November 3,2022, addressed to Ms. Traci Anderson, Williams & Works, regarding Centre Collective – Preliminary Site Condominium Review Comments, I offer the following responses:

*I. GENERAL*

1. *We are good with the revised intersection layout; however, a detail of dimensions showing the offsets and distances need to be provided for the final drawing.*
    - Final site condominium drawings will clearly illustrate dimensions as requested.
2. *Regarding the sidewalk, a connector at the east side of the unnamed street at Westshore should be provided and a ramp on the west side of the unnamed street should be added. Call outs and details on the ramp shall include the detectable warning strips. Because driveways are not shown, how will it be verified that 6" is installed through the driveways? Please also note the sidewalk ramp detail indicates 4" thick and it needs to be 6" thick.*
    - Given there are no public sidewalks in West Shore Court, nor on any public street within 800 feet of the new intersection, and, while doing so will impact no less than 6 to 10 mature canopy trees, we propose to not extend sidewalk across the intersection of West Shore Court and Beachwood Way.

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- A note/detail will be provided in the final site condominium drawings indicating detectable warning devices at the public street crossing at the St. Peters intersection.
- A note will be added to the final drawings stating that sidewalk through driveway crossings will be 6-inch thickness.
- The ramp detail has been revised to reflect 6-inch thickness.

3. *It was indicated that a geotechnical report was provided, but we did not see the report with the newest submittal.*
   - An electronic version of the geotechnical evaluation is included in this submittal.
4. *An updated traffic impact study needs to be provided.*
   - A current traffic impact study is included in the packet. The proposed intersection configurations reflect the recommendations of the study.
5. *KLSWA and STFD reviews should be provided.*
   - KLSWA review and approval will be sought upon local approval of the plan conditioned upon other jurisdictional approvals, namely KLSWA, EGLE, ACDC, etc. The street width exceeds the previously approved STFD requirements. STFD reviews have been accounted for in our design.
6. *Street signage and lighting details should be provided, so the City knows what they are getting.*
   - Street signage and lighting details will reflect current City details and standards, and be included in the final site condominium drawings
7. *The developer will be responsible for connection fees as well as review, administrative, and inspection fees for the project.*
   - The developer recognizes they are responsible for fees as stated.
8. *Sanitary sewer record drawings indicate that the St. Peter's Church was once hooked up to a drain field on the south side of St. Peter's Drive. The developer may encounter remnants of this drain field while grading the site.*
   - Understood
9. *The* developer is responsible to obtain all necessary permits and approvals, including ACDC, EGLE, soil erosion, etc. for the project.
   - Understood

*II. SANITARY SEWER*

1. *The final submittal should have the pipe material labeled. Final construction drawings will need to be submitted with the construction permit applications for review and approval. The City will submit final drawings to EGLE via MiWaters when complete.*
   - Understood

*III. WATER MAIN*

1. *The final submittal should have the pipe material labeled.*
   - Understood

2. *High points need to be directed to the hydrants. Please include a graded water main design with grades and slopes.*
   - The two southerly hydrants are currently located at local high points. The northerly hydrant has been relocated nearer to the intersection of West Short Court to coincide with a proposed centerline crest.
3. *Please make sure a valve is labeled at the live tap.*
   - Valves are indicated at both live taps. Detailed watermain plan and profile drawings, as required for EGLE permitting, will be included in the final site condominium drawing set.
4. *The water main going to the commercial portion of the project needs to be included in profile view. Also an easement needs to be shown around this water main.*
   - The plan set has been revised to provide a plan and profile of the watermain connection to the commercial development. A 20-ft wide easement is illustrated on the plan views.
5. *Final construction drawings will need to be submitted with the construction permit applications for review and approval. The City will submit final drawings to EGLE via email or hard copy as desired by EGLE.*
   - Understood
6. *The water main will need to have the loop completed to Center Street as part of this phase. The City plans to abandon the 4 inch line along the east portion of the site from St Peters Drive to Center Street in the future.*
   - Dependent upon the construction schedules of the two projects, the watermain extension through the commercial development will be constructed during the first constructed phase.

*IV. DRAINAGE & GRADING*

1. *The City of Douglas uses the Allegan County Drain Commission for new development review & construction. An approval from ACDC should be obtained. (We did not review the calculations as this would be reviewed as part of ACDC's review.)*
   - Site storm water facilities were based upon ACDC rules for development. Drainage calculations were provided. We acknowledge that ACDC permitting will follow site plan approval.
2. *This site is not within an ACDC drainage district. Surface water onsite generally flows north and crosses Westshore Street in a culvert.*
   - Understood
3. *A property owners association should be set up and be responsible for the maintenance and liability of the ponds, swales, and gardens.*
   - Understood. The condominium documents will reflect this requirement.
4. *It should be noted that proposed easements may not meet ACDC's standards. For example, the easement along the south line of the development shall be a minimum of 30 feet wide per ACDC's standards.*

- Understood. We intend to have ACDC dictate that requirement in their review following preliminary site condominium approval, which will then be reflected in the final site condominium drawings.

In response to the Tricia Anderson/Andy Moore, AICP, Williams & Works letter, dated November 3,2022, addressed to City of the Village of Douglas Planning Commission, regarding Centre Collective Preliminary Site Condominium Review Comments on 10/21/22 Plan, I offer the following responses to those comments that required clarification or further information:

***Completeness of Submittal***

- *Written statement regarding the proposed project's impact on existing infrastructure (including traffic capacity of streets, schools, and existing utilities) and on the natural environment of the site and adjoining lands. If deemed necessary by the Zoning Administrator or Planning Commission, a phase 1 environmental review may be requested. As appropriate, the Zoning Administrator or Planning Commission may also request a phase 2 environmental review. Also, see Section 24(2)21 of this Section.*

  ***Remarks:*** *While some of this information was provided with the previous application from earlier this year, a complete written statement addressing the above aspects of the project was not provided.* ***Not provided***

  - We recognize the reviewer's recent introduction to the project and offer the following information.

    With regard to the impact on the community:

    The proposed residential development is consistent with both the requirements of the current zoning and, when combined with the adjacent commercial use, meets the intent of the future land use plan. By itself, the 20-unit, single-family residential development provides less impact than the future land use plan allows.

    We anticipate there will be a nominal increase in emergency calls for service as is consistent with any residential development.

    We do not anticipate negative effects on the natural environment. A current Wetland and Threatened Species Review and Site Assessment, prepared by Aamazon Natural Resources Consulting indicates no impact to regulated wetlands or any protected plant or animal species are anticipated for the project. A digital copy of the assessment is provided. Special consideration to retain existing trees was provided in the site layout and design.

    An existing Phase 1 Environmental Site Assessment, performed by Sierra Environmental Consultants, LLC, did not reveal evidence of recognized environmental conditions associated with the property. A digital copy of the ESA is resubmitted for the reviewer's benefit.

    The storm water system was designed per county standards and runoff will be released pre-treated and metered to mitigate quality and quantity concerns. The

site shall be graded and designed, and stormwater detained onsite, consistent with ACDC standards, to deter adverse impacts on adjacent and downstream properties.

City staff and its consultants, and other relevant agencies, have assured us that the site is readily served by existing infrastructure (streets, utilities, schools, emergency response, etc.) and are suitable in capacity to accommodate the relatively low-density provided in a 20-lot residential development. Proposed watermain improvements will improve water quality and add improved redundancy to the city's water system.

We do not anticipate negative effects on automobile and truck circulation patterns. The proposed streets and intersections are sized to accommodate the intended vehicle uses, including first responders, and related turning movements.

We do not anticipate negative effects on the local traffic volume. This is a low density residential development that is being served adequately by the existing public street network. A copy of the updated traffic impact study is included in the packet.

We believe all elements of the site plan are harmonious and efficiently organized in relation to zoning, topography, the size and type of the lot, the character of adjoining properties and the type and size of buildings. All site amenities meet the required setbacks and are illustrated on the plan drawings. Upon completion of construction activities, all surfaces shall be promptly and properly restored.

- Project description, including the total number of structures, units, bedrooms, offices, square feet, total and usable floor area, carports or garages, employees by shift, amount of recreational and open space, type of recreation facilities to be provided, and pertinent information or information otherwise required by this Ordinance.

  ***Remarks:*** *Several of these items have been provided, but it is suggested that the applicant add a general notes section to Sheet C3.3 that contains the following:* ***Please include this information in a stand-alone document as a narrative.***

  - *A project description*
  - *Breakdown of total acreage within the project area into area dedicated to open space, unbuildable areas, storm detention basins, rights of way and remainder of area dedicated to the single-family lots.*
  - *A density calculation should be provided based on units per buildable area.* ***Buildable area (definition below) does not include right of way or any other unbuildable areas. Pease provide an updated density calculation.***

BUILDABLE AREA. That area of the site exclusive of right-of-way, wetlands, floodplain, steep slopes (over 20%), or other areas of the site rendered un-buildable due to environmental conditions.

- *Any passive or active recreation facilities to be provided within the development.* ***Any?***

  - Per the request of the reviewer, we offer the following:

    The project consists of a residential site condominium neighborhood development with twenty (20) single-family residential lots located on 7.17 acres at the southwest corner of West Shore Court and St. Peters Drive. Related improvements include:

    - 24-FT WIDE PUBLIC STREET W/ CURB AND GUTTER
    - PUBLIC SIDEWALK FRONTING ALL RESIDENTIAL LOTS, AND EXTENDING ALONG ST. PETERS DRIVE, AND CONNECTING TO FUTURE COMMERCIAL DEVELOPMENT TO THE SOUTH
    - PUBLIC UTILITIES (SANITARY SEWER, WATERMAIN, STORM SEWER)
    - PRIVATE UTILITIES (GAS, ELECTRIC, COMMUNICATIONS)
    - STREETLIGHTS
    - STREET TREES
    - STORMWATER DETENTION, MEETING ACDC REQUIREMENTS
    - OPEN SPACE, INCLUDING A 90'X180' GENERALLY FLAT LAWN AREA (OVER PROPOSED SUBSURFACE STORMWATER DETENTION SYSTEM) WHICH CAN BE USED AS A PARK, ATHLETIC FIELD, DOG WALK, OR OTHER RECREATIONAL USE, AND SELECT NATURAL AREAS, LOCATED AT THE NORTH INTERIOR OF THE PROPERTY AND THE SOUTHEAST CORNER OF THE SITE, WHICH ARE INTENDED TO REMAIN OPEN SPACE TO PRESERVE EXISTING TREES AND SERVE AS A BUFFER FOR THE DEVELOPMENT

  There are no active recreation facilities proposed. Passive recreational facilities include the community lawn area at the southwest corner of the site intended as a park, dog walk, or other recreational use. Ample open space surrounding the detention basin and purposefully preserved natural areas serve to provide passive recreation activities throughout the property.

  The requirement for calculating density is based on existing conditions, not post-design conditions. Currently, the entire property is "buildable" as it is not encumbered by sensitive land types, surface waters, or rights-of-way, therefore the stated calculations are correct and appropriate.

- *A landscaping plan indicating the locations of planting and screening, fencing, and lighting in compliance with the requirements of Article 21. Also, proposed locations of common open spaces, if applicable.*

  ***However*, street trees must be provided along St. Peter's Drive, per Section 21.01.5**

  Street trees are provided for residential lots fronting St. Peter's Drive. We do propose installing street trees along St. Peters Drive north of the residential lots due to available right-of-way encumbered by existing watermain and other underground utilities, proposed sidewalk, and the presence of established canopy trees that are being preserved in that area.

- *The preliminary site condominium plan appears to comply with the permitted uses, minimum standards for lot area, frontage, and building envelopes outlined in this section.*

  ***Some lots do not meet the minimum frontage for R-4 (lots 2 and 20). A table should be provided that shows each lot and its associated area and frontage.***

  Lots 2 and 20 meet the current frontage requirements.

  Lot 2 frontage includes 64.8 feet of frontage measured from the northeast corner of Lot 3 northerly to the point where the right-of-way bends to the northwest, then 1.4 feet along that frontage to the north property line of Lot 2, providing 66.2 feet of frontage. Minimum required lot width is 66 feet. The plan has been revised to make the measurements more clear.

  Lot 20 provides 65.1 feet of frontage on Beachwood Way and 42.0 feet of frontage along St. Peters Drive, for a total frontage of 107.1 feet. Minimum required lot width is 66 feet. A review of the property lines and rights-of-way in this vicinity will reveal that St. Peters Drive curves to the east at this location, such that the frontage along St. Peter's Drive serves essentially as a side lot line, when added to the proposed easterly side lot line totals 137.7 feet. The lot geometry is such that the property width exceeds the typical lot width by about 9 feet, and provides the greatest acreage lot in the development.

  **The applicant shall provide a proposed construction schedule on the cover sheet of the *plan* set.**

  The cover sheet has been updated with an estimated construction schedule.

OPINION CONCERNING REVIEW OF DRAFT MASTER DEED AND BYLAWS
PROPOSED CENTRE COLLECTIVE CONDOMINIUM (RESIDENTIAL ONLY)

TO: RICH LABOMBARD, CITY MANAGER, CITY OF THE VILLAGE OF DOUGLAS

FROM: DAVID S. KEAST, OF COUNSEL PLUNKETT COONEY

DATE: AUGUST 17, 2022

---

Rich, Nick Wikar had requested that I perform a legal review of the "pro forma" draft Master Deed and Bylaws submitted to the City by the Applicant for the proposed Centre Collective Condominium, to be developed within a R-4 Harbor Residential zoning district as a site residential condominium in accordance with the requirements of Act 59 of the Public Acts of 1978, as amended (the "Condominium Act"), and the City's Zoning Ordinance, including, without limitation, Articles 3, 7, 16 and 24. Upon request, Nick also provided preliminary site plan drawings submitted by the Applicant.

This reviewer recommends and requests that, when prepared, the final complete Master Deed of Centre Collective Condominium, including the Condominium Subdivision Plan thereof (at this stage, presumably not yet prepared and, in any event, not yet furnished for review), be required to be submitted to the writer for additional review and approval as a condition of City Council approval, assuming that subsequently is granted.

The "pro forma" Master Deed and Bylaws substantially comply with the Condominium Act, although, in the opinion of this reviewer, the Applicant's reservation of a broad discretion in the development of this Condominium raises a concern that the City and future end purchasers may wish to exercise caution when relying upon what is presently presented. It is impossible for this reviewer to say that those "pro forma" documents evidence compliance with the City Zoning Ordinance since Centre Collective Condominium is a site condominium that does not address the number of Condominium Units, the preliminary site plan drawings reviewed show only building envelopes and:

1. Section 7 of the Master Deed reserves to the Developer broad rights of subdivision, consolidation and modification of the building site Condominium Units. Subject to compliance with R-4 District size and setback limitations of the City Zoning Ordinance, the Applicant will have at any time prior to their sale to an end purchaser the right to increase, or decrease to no fewer than 2, the number of Condominium Units.

2. Section 8 of the Master Deed declares that the entire Condominium Project – Condominium Units, General Common Elements and Limited Common Elements – may be altered within 6 years pursuant to a reserved Developer right of conversion. As noted below, any exercise of this conversion right may include the

creation of additional Limited Common Elements of any type (presently unspecified) which may be said to be supportive of the Condominium Unit(s) to which they are assigned. In theory, any such change may require City approval as a "major change".

THE FOREGOING RESERVED RIGHTS APPEAR TO BE AUTHORIZED BY THE CONDOMINIUM ACT AND, ALTHOUGH ARGUABLY INCONSISTENT WITH THE PURPOSE OF CITY ZONING ORDINANCE SITE PLAN REVIEW, ARE NOT EXPRESSLY PROHIBITED BY THE CITY'S ZONING ORDINANCE.

3. Other than deep subsurface ground below the surface of the building envelopes, the Master Deed does not describe the portions of the Project that are, or will be, assigned as "Limited Common Elements", but instead declares that the term will include any improvement, facility or service" which is either (a) "necessary to the existence, upkeep, appearance, utility or safety" of fewer than all Condominium Units or (b) designated by the Developer on the Condominium Subdivision Plan or any future amendment to the Plan. The "pro forma" documents provide no further guidance as to what may be contemplated.

4. The Applicant has reserved to the Developer in Section 6.2 of the Bylaws the exclusive right to appoint and remove members of the Architectural Review Committee during the Development and Sales Period, but a transfer of this power to the Condominium Association is described as discretionary. In order that important Condominium Association rights are not inadvertently lost, the Bylaws should provide for the automatic transfer of this right (and any similar unassigned rights) at that time.

Thank you for the opportunity to address this matter.

David S Keast
Of Counsel
Plunkett Cooney
(586) 212-5443

Open.20448.43876.29412342-1

MASTER DEED
OF
CENTRE COLLECTIVE CONDOMINIUM

(Act 59, Public Acts of 1978, as amended)

Allegan County Subdivision Plan No. _____

(1) Master Deed establishing the Centre Collective Condominium, a residential site condominium project.

(2) Exhibit A to Master Deed: Condominium Bylaws

(3) Exhibit B to Master Deed: Condominium Subdivision Plan

This document is exempt from real estate transfer tax under MCL 207.505(a) and 207.526(a).

This document prepared by:

# MASTER DEED

# CENTRE COLLECTIVE CONDOMINIUM

This Master Deed is made and executed on this _____ day of _____, 2021, by KRE WEST CENTRE, LLC, a Michigan limited liability company (hereinafter referred to as "Developer"), whose registered address is P.O. Box 574, Douglas, Michigan 49406, in pursuance of the provisions of the Michigan Condominium Act (being Act 59 of the Public Acts of 1978, as amended), hereinafter referred to as the "Act".

## BACKGROUND

A. Developer is the owner in fee simple of the lands located in the City of the Village of Douglas, Allegan County, Michigan, more particularly described on the attached Exhibit "A", which are intended to be developed in accordance with the Condominium Subdivision Plan attached hereto as Exhibit "B".

B. The Condominium is known as Centre Collective Condominium and consists of _____ _____ site condominium units. The Units are shown on the Condominium Subdivision Plan attached hereto as Exhibit "B".

NOW, THEREFORE, the Developer does, upon the recording hereof, establish CENTRE COLLECTIVE CONDOMINIUM as a Condominium Project under the Act and does declare that CENTRE COLLECTIVE CONDOMINIUM shall, after such establishment, be held, conveyed, hypothecated, encumbered, leased, rented, occupied, improved, or in any other manner utilized, subject to the provisions of the Act, and to the easements, covenants, conditions, restrictions, uses, limitations and affirmative obligations set forth in this Master Deed and Exhibits "A" and "B" hereto, all of which shall be deemed to run with the land and shall be a burden and a benefit to the Developer, its successors and assigns, and any persons acquiring or owning an interest in the Condominium Premises (defined below), and their successors and assigns. In furtherance of the establishment of the Condominium Project, it is provided as follows:

## ARTICLE 1

## TITLE AND NATURE OF PROJECT

1.1 The Condominium shall be known as CENTRE COLLECTIVE, Allegan County Condominium Subdivision Plan No. _____. The Condominium Project is a _____ Unit site condominium and is established in accordance with the Act. The engineering and architectural plans and specifications for the Project will be filed with the appropriate governmental agencies. The Units contained in the Condominium, including the number, boundaries, dimensions, and area of each, are set forth completely in the Condominium Subdivision Plan attached as Exhibit "B" hereto. As described in Article 9, each Co-owner of a Unit shall be a member of the Association and each Co-owner of a Unit will be subject to both the terms and provisions of this Master Deed.

## ARTICLE 2

## LEGAL DESCRIPTION

2.1 The land which is submitted to the Condominium Project established by this Master Deed is located in the City of the Village of Douglas, Allegan County, State of Michigan and is described as follows:

**[INSERT LEGAL DESCRIPTION]**

2.2. The Condominium, and the Units contained therein are subject to and may benefit from the following restrictions, limitations, encumbrances, easements and the easements set forth in Article 6 hereof:

(a) Local zoning, building, and use ordinances and restrictions.

(b) Easements, restrictions, and agreements of record.

(c) Rights or claims of parties in possession not shown by the public records.

(d) Any encroachment, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete survey of the Condominium Premises.

(e) Easements or claims of easements not shown by the public records and existing water, mineral, oil and exploration rights.

(f) Any lien, or right to a lien, for services, labor, or material heretofore or hereafter furnished, imposed by law and not shown by the public records.

(g) Any and all oil, gas, mineral, mining rights and/or reservations thereof.

(h) Taxes or special assessments which are not shown as existing liens by the public records.

(i) Taxes and/or assessments which become a lien or become due and payable subsequent to the date hereof.

(j) Rights of the public, and of any governmental unit, in any part of the Condominium Premises taken, used, or deeded for street or highway uses.

(k) Such other easements, restrictions, encumbrances and/or encroachments disclosed by the Condominium Subdivision Plan.

## ARTICLE 3

## DEFINITIONS

3.1 When used in any of the Condominium Documents (defined below), or in any contract, deed, mortgage, lien, easement or other instrument affecting the Condominium Project or the establishment or transfer of any interest in it, the following terms shall carry the definitions that follow them unless the context clearly indicates to the contrary:

(a) "Act" means the Michigan Condominium Act, being Act 59 of the Public Acts of 1978, as amended.

(b) "Association" means the nonprofit corporation known as Centre Collective Condominium Association which is organized under the laws of the State of Michigan, of which all Co-owners shall be members and which shall administer, operate, manage and

maintain the Condominium Project. Any action required of or permitted to the Association shall be exercisable by its Board of Directors unless expressly reserved to the members by the Condominium Documents or the laws of the State of Michigan, and any reference to the Association shall, where appropriate, also constitute a reference to its Board of Directors.

(c) "Board of Directors" or "Board" means the board of directors of the Association.

(d) "Bylaws" means Exhibit "A" to this Master Deed, which shall constitute (*i*) the Bylaws for the Condominium Project setting forth the substantive rights and obligations of the Co-owners and required by Section 3(8) of the Act to be recorded as part of the Master Deed; and (*ii*) the corporate bylaws of the Master Association as provided for under the Michigan Nonprofit Corporation Act.

(e) "City" means the City of the Village of Douglas, which is located in Allegan County, Michigan.

(f) "Common Elements" means those portions of the Condominium Project other than the Units, including the General and Limited Common Elements as described in Article 4 below and shown on the Condominium Subdivision Plan.

(g) "Condominium Documents" means and includes this Master Deed, including Exhibits "A" and "B", and any other instrument referred to in this Master Deed that affects the rights and obligations of a Co-owner in the Condominium Project, including the Articles of Incorporation and the rules and regulations of the Association.

(h) "Condominium Premises" means the land described in Article 2 below, and all easements, rights and appurtenances belonging to the Condominium Project.

(i) "Condominium Project" or "Condominium" means Centre Collective, which is a site condominium project established under the Act.

(j) "Condominium Subdivision Plan" means Exhibit "B" to this Master Deed, being the site, survey and other drawings depicting the real property and improvements that form a part of this Master Deed.

(k) "Co-owner" or "Owner" means any person, firm, corporation, partnership, limited liability company, trust or other legal entity, or any combination of them, that owns title to a Unit. As described in Article 9, the Developer shall be the initial Co-owner of the Units in the Condominium. At the time a Unit is conveyed, the transferee shall have the rights and obligations of a Co-owner in the Condominium subject to the limitations set forth herein.

(l) "Developer" means KRE WEST CENTRE, LLC, a Michigan limited liability company, which has made and executed this Master Deed, and its successors and assigns. Successors and assigns shall always be deemed to be included whenever, however and wherever the term "Developer" is used in the Condominium Documents. All Condominium rights reserved to the Developer in this Master Deed are assignable in writing; provided, however, that conveyances of Units by the Developer shall not operate to assign the Developer's Condominium rights unless the deed or other instrument of conveyance expressly provides.

(m) "Development and Sales Period," for the purposes of the Condominium Documents and the rights reserved to Developer thereunder, means the period commencing with

the recording of the Master Deed and continuing as long as the Developer owns any Unit in the Condominium which it offers for sale, and for so long as the Developer continues or proposes to construct or is entitled to construct land improvements to develop additional Units, or and for so long as the Developer continues to own land within the Condominium, whichever is longer.

(n) "Limited Common Element" means any improvement, facility or service identified as a Limited Common Element in Article 4 below or on the Condominium Subdivision Plan or in any future amendment to this Master Deed. Limited Common Elements include such other elements of the Condominium Project which are not designated as a Limited Common Element, are not enclosed within the boundaries of a Unit, but are either necessary for the existence, upkeep, appearance, utility or safety of a Unit, or are intended for common use of a limited number of the Units.

(o) "Master Deed" means this Master Deed, including Exhibits "A" and "B" each of which are incorporated by reference and made a part of this Master Deed.

(p) "Open Space Areas" means the Open Space Areas identified on attached Exhibit "B". The Open Space Areas may include paths, trails, parks, water features and/or open space areas within the Condominium. Developer shall have the right, in its sole discretion, to add additional Open Space Areas anywhere within the Condominium (excluding those portions of the Condominium that have been previously conveyed to third parties), and/or to expand, contract, remove, eliminate, convert, change or modify previously designated Open Space Areas throughout the Condominium. Developer may designate or create new Open Space Areas within portions of the Condominium that are added to the Condominium as provided herein.

(q) "Units" means the Units within the Condominium established by this Master Deed.

3.2 Terms not defined in this Master Deed but defined in the Act, shall carry the meanings given them in the Act unless the context clearly indicates to the contrary. Whenever any reference is made to one gender, the same shall include a reference to any and all genders where such a reference would be appropriate. Similarly, whenever a reference is made to the singular, a reference shall also be included to the plural where such a reference would be appropriate, and vice versa.

## ARTICLE 4
## COMMON ELEMENTS

4.1 The General Common Elements of the Condominium are for the use and enjoyment of all of the Unit of the Condominium. The General Common Elements are as follows:

(a) The land described in Article 2 above, except those portions of such land within the boundaries of any Unit and any portions designated on Exhibit "B" as a Limited Common Element, and the land identified as a General Common Element on Exhibit "B".

(b) The Open Space Areas

(c) The private roads, drives, parking areas and community entry areas shown on attached Exhibit "B".

(d) The electrical transmission system located throughout the Condominium Project, up to the point of connection to a Unit.

(e) The telephone transmission system located throughout the Condominium Project, up to the point of connection to a Unit.

(f) The gas distribution system throughout the Condominium Project, up to the point of connection to a Unit.

(g) The water distribution system and waste disposal network throughout the Condominium Project, up to the point of connection to a Unit.

(h) The sanitary sewer system throughout the Condominium Project, up to the point where sewer is stubbed for connection with a Unit.

(i) The telecommunications system throughout the Condominium Project, up to the point of connection to a Unit.

(j) The storm water drainage system, including retention areas, collection points and connections, as shown on attached Exhibit "B" (except to the extent all or portions of such systems are dedicated to the public or a governmental authority).

(k) The Condominium access and entry areas, including all signs and other improvements that may be located therein, as shown on Exhibit "B".

(l) Any beneficial easements granted to and serving any part of the Condominium unless otherwise set forth in such easements or elsewhere in this Master Deed.

(m) All facilities, elements and other matters identified as General Common Elements in the Condominium Subdivision Plan.

(n) All other elements of the Project not herein designated as General or Limited Common Elements which are not enclosed within the boundaries of a Unit, and which are intended for common use or are necessary to the existence, upkeep, appearance, utility or safety of the Project.

Notwithstanding the foregoing, some or all of the utility lines, systems (including mains and service leads), storm water drainage system and equipment and the telecommunications system described above may be owned by the local public authority or by the company that is providing the pertinent service. Accordingly, such utility lines, systems and equipment shall be General Common Elements only to the extent of the Co-owners' interest therein, if any, and Developer makes no warranty whatever with respect to the nature or extent of such interest, if any.

4.2 The Limited Common Elements shall be subject to the exclusive use and enjoyment of a a particular Unit, or Units, to which the Limited Common Elements are appurtenant. The Limited Common Elements are as follows:

(a) Convertible Area. The Developer has reserved the right in Article 8 of this Master Deed to designate Limited Common Elements within the Convertible Area which may, at the Developer's discretion, be assigned as appurtenant to an individual Unit.

(b) Subsurface. The area more than twenty feet below the surface of the land of a Unit is a Limited Common Element appurtenant to such Unit.

(c) Other. Any other improvement, facility or service identified as a Limited

Common Element on the Condominium Subdivision Plan or in any future amendment to the Master Deed as a Limited Common Element and such other elements of the Project which are not designated as a Limited Common Element, are not enclosed within the boundaries of a Unit, but are either necessary for the existence, upkeep, appearance, utility or safety of a Unit (or Units), or are intended for common use of a limited number of Units, are a Limited Common Element appurtenant to such Unit(s).

In the event that no specific assignment of one or more of the Limited Common Elements described in this Section has been made in the Condominium Subdivision Plan, the Developer (during the Development and Sales Period) and the Association (after the Development and Sales Period has expired) reserve the right to designate each such space or improvement as a Limited Common Element appurtenant to a particular Unit by subsequent amendment or amendments to this Master Deed.

4.3 The respective responsibilities for the maintenance, decoration, repair and replacement of the Common Elements and Units are as follows:

(a) The Association shall be responsible for the cost of maintenance, repair, replacement and insurance of all General Common Elements, except to the extent of any repair or replacement necessitated by the act or neglect of a Co-owner or their agent, employee, contractor, invitee, family member or pet, which shall be the responsibility of, and paid by, the Co-owner on demand.

(b) The owner of a Unit shall be responsible for the maintenance, repair and replacement of the Unit.

4.4 By acceptance of a deed, mortgage, land contract or other instrument of conveyance to a Unit, all Co-owners, mortgagees and other interested parties are deemed to have appointed the Association as their agent and attorney to act in connection with all matters concerning the Common Elements and their respective interests in the Common Elements. Without limiting the generality of this appointment, the Association will have full power and authority to grant easements over, to sever or lease mineral interests and/or to convey title to the land or improvements constituting the General Common Elements or any part of them, to amend the Condominium Documents for the purpose of assigning or reassigning the Limited Common Elements and in general to execute all documents and to do all things necessary or convenient to the exercise of such powers.

## ARTICLE 5
## DESCRIPTION AND PERCENTAGE OF VALUE

5.1 A complete description of each Unit in the Condominium Project, with elevations therein referenced to an official benchmark of the United States Geological Survey, is set forth in the Condominium Subdivision Plan, as surveyed by _____. Each Unit shall include the space located within Unit boundaries from a depth of twenty (20) feet below grade and upward fifty (50) feet above grade as delineated with heavy outlines on the Condominium Subdivision Plan. The development plan has been filed with the City.

5.2 The percentage of value assigned to each Unit is determinative of each Unit's respective share of the proceeds and expenses of administration and the value of such Unit's vote at meetings of the Association when a vote is based on percentage of value rather than number. After review of the comparative characteristics of the Units, it was determined that the percentage of value assigned to the each Unit shall be as follows:

| Unit | Percentage of Value |
|---|---|
| | |
| | |
| | |

5.3 The percentages of value were computed based on the relative size of the respective Units and the relative impact the respective Units are anticipated to have on the Common Elements.

5.4 If the Condominium Subdivision Plan is amended, and the revisions would alter the percentage of value per Unit when applied to the criteria used to derive the percentage of value, then the percentage of value shall be altered to reflect the revisions.

## ARTICLE 6

## EASEMENTS

6.1 If any portion of a Unit or Common Element encroaches on another Unit or Common Element due to the shifting, settling or moving of a building, or due to survey errors or construction deviations, reciprocal easements shall exist for the maintenance of such encroachment for so long as such encroachment exists, and for the maintenance thereof after rebuilding in the event of destruction. This shall not be construed to allow or permit any encroachment on, or an easement for an encroachment on a Unit without the consent of the Co-owner of the Unit to be burdened by the encroachment or easement. There shall also be permanent easements in favor of the Association, and the Developer during the Development and Sales Period, to, through and over those portions of the Condominium Premises (including the Units) as may be reasonable for (*a*) the maintenance and repair of Common Elements for which the Association (or Developer) may from time to time be responsible or that the Association (or Developer) may elect to assume; (*b*) the installation, maintenance and repair of all utility services furnished to the Condominium Project; and (*c*) access to Units for purposes of decoration, maintenance, repair or replacement. Public utilities shall have access to the Common Elements and to the Units at such times as may be reasonable for the installation, repair or maintenance of such services, and any costs to install, repair or maintain such services shall be an expense of administration assessed against all Co-owners in accordance with the Bylaws.

6.2 The easements shown on the Condominium Subdivision Plan are hereby established for the benefit of the Co-owners, subject to the purposes shown on the Condominium Subdivision Plan and to the terms and conditions of any recorded instrument documenting such easements. In addition, no improvements shall be made to any such easement without the written approval of the Developer during the Development and Sales Period, or the Association thereafter.

6.3 The Association, both before and after the transitional control date, shall be empowered and obligated to grant easements under and across the Condominium Premises for utilities, access and such other lawful purposes that it determines to be reasonable and necessary, subject to the written approval of the Developer during the Development and Sales Period.

6.4 Developer reserves for itself and its agents, employees, representatives, guests, invitees, independent contractors, successors and assigns, the right, at any time prior to the expiration of the Development and Sales Period to reserve, dedicate and/or grant public or private easements over, under and across the Condominium for the construction, installation, repair, maintenance and replacement of rights-of-way, walkways, pedestrian crossings and bicycle paths, nature trails, water mains, sanitary sewers, storm drains, retention basins, water wells, electric lines, telephone lines, gas mains, cable television and other telecommunication lines and other public and private utilities, including all equipment, facilities and appurtenances relating thereto as identified in the approved final Condominium Subdivision Plan, and all plans and specifications approved by the City, as well as any amendments thereto. Developer reserves the right to assign any such easements to governmental units or public utilities, and to enter into maintenance agreements with respect thereto and to assign obligations thereunder to the Association. Any of the foregoing easements or transfers of title may be conveyed by Developer without the consent of the Association, any Co-owner, mortgagee or other person who now or hereafter shall have any interest in the Condominium. All of the Co-owners and mortgagees of Units and other persons now or hereafter interested in the Condominium Project from time to time shall be deemed to have unanimously consented to such grants of easements or dedications and any amendments of this Master Deed to reflect the foregoing easements or transfers of title. All such interested persons irrevocably appoint Developer as agent and attorney to execute such amendments to the Master Deed and all other documents necessary to effectuate the foregoing.

6.5 The Association shall assume and perform all of Developer's obligations under any easement pertaining to the Condominium Project or General Common Elements.

6.6 Developer reserves, declares and establishes an easement on, over and across the Condominium for the following purposes:

(a) To use the Common Elements for sales purposes;

(b) To use any of the unsold Units for leasing and/or sales (including model units and sales offices), administrative or management purposes;

(c) To place signs on the Common Elements and unsold Units for sales and promotional purposes; and

(d) To park, locate or establish construction trailers, vehicles, equipment, structures, improvements, materials or facilities within Units or on the Common Elements.

6.7 The Condominium is subject to various recorded easements, agreements and restrictions. These recorded documents both benefit and burden the Condominium. Each Co-owner should fully review the recorded documents to fully understand the rights and obligations of the Condominium and the Co-owners. The following is a summary of several of the more pertinent recorded documents:

**[DESCRIBE EASEMENTS]**

## ARTICLE 7
## SUBDIVISION, CONSOLIDATION AND OTHER MODIFICATIONS OF UNITS

7.1 Notwithstanding any other provision of this Master Deed or the Bylaws to the contrary, Units in the Condominium may be subdivided, consolidated and modified, and the boundaries relocated, in accordance with Sections 48 and 49 of the Act and this Article 7, and subject to any and all

ordinances and approval rights of the City. Any such changes in an affected Unit shall be reflected in a duly recorded amendment to this Master Deed.

7.2 During the Development and Sales Period, Developer reserves the sole right, without the consent of any other Co-owner or mortgagee of any Unit, to undertake any of the following:

(a) To subdivide any Unit.

(b) To consolidate under single ownership two (2) or more adjoining Units separated only by Unit boundaries.

(c) To relocate any boundaries between two (2) or more adjoining Units, separated only by Unit boundaries.

Any exercise of the rights reserved to the Developer above shall be effected by an amendment to this Master Deed, prepared by and at the sole discretion of the Developer, and recorded in the manner provided by law. In any such amendment, each portion of the Units resulting from any subdivision, consolidation or relocation of boundaries shall be separately identified by the number and percentages of value for such Units. Any such amendment shall also contain such further definitions of Common Elements as may be necessary to adequately describe the buildings and Units in the Condominium Project as so modified. All of the Co-owners and mortgagees of Units, and any other persons interested or to become interested in the Condominium Project from time to time, shall be deemed to irrevocably and unanimously consent to any such amendment and to any adjustment of percentages of value of Units that the Developer determines necessary in conjunction with such amendment. All such interested persons irrevocably appoint Developer as agent and attorney for the purpose of execution of such amendment and all other documents necessary to effectuate the foregoing. Such amendments may be effected without re-recording this Master Deed or any Exhibit to this Master Deed.

## ARTICLE 8
## CONVERTIBLE AREAS

8.1 The General Common Elements, Limited Common Elements and the Units have been designated as Convertible Areas within which the Units and Common Elements may be modified as provided herein.

8.2 The Developer reserves the right, in its sole discretion and subject to prior approval of the appropriate governmental agencies, during a period ending no later than six (6) years from the date of recording this Master Deed, to enlarge, modify, merge or extend Units and/or General or Limited Common Elements and to create Limited Common Elements appurtenant or geographically proximate to such Units within the Convertible Areas above designated. Such amendment may be effected without the necessity of recording an entire Master Deed or the Exhibits hereto and may incorporate by reference all or any pertinent portions of this Master Deed and the Exhibits hereto.

8.3 All of the Co-owners and mortgagees of the Units and other persons interested in the Project from time to time shall be deemed to have irrevocably and unanimously consented to such amendments to this Master Deed as may be made pursuant to this Article 8. All such interested persons irrevocably appoint Developer as agent and attorney for the purpose of execution of such amendment to the Master Deed and all other documents necessary to effectuate the foregoing. Such amendment may be effected without the necessity of recording an entire Master Deed or the Exhibits hereto and may incorporate by reference all or any pertinent portions of this Master Deed and the Exhibits hereto.

8.4 All improvements constructed within the Convertible Areas described above shall be reasonably compatible with other improvements made by the Developer in the Condominium Project, as determined by Developer in its discretion.

## ARTICLE 9
## RESERVED

## ARTICLE 10
## AMENDMENT AND TERMINATION

10.1 The Master Deed, Bylaws, Condominium Subdivision Plan and any other document referred to in the Master Deed or Bylaws which affects the rights and obligations of a Co-owner in the Project may be amended without the consent of Co-owners or mortgagees, if the amendment does not materially alter or change the rights of a Co-owner or mortgagee. An amendment that does not materially change the rights of a Co-owner or mortgagee includes, but is not limited to, a modification of the types and sizes of unsold Units and their appurtenant limited common elements.

10.2 Except as provided in this Article 10, the Master Deed, Bylaws and Condominium Subdivision Plan may be amended, even if the amendment will materially alter or change the rights of the Co-owners or mortgagees, with the consent of not less than 2/3 of the votes of the Units and mortgagees of Units. Notwithstanding the foregoing, unless otherwise provided in the Act, no such amendment which materially alters, restricts, limits or changes the rights of a Unit shall be approved and take effect unless the affected Co-owner of the Unit votes in favor of the amendment.

10.3 In addition to the rights of amendment provided to Developer in the various Articles of this Master Deed, Developer may, prior to the expiration of the Development and Sales Period, and without the consent of any Co-owner, mortgagee or any other person, amend this Master Deed and the Condominium Subdivision plan attached as Exhibit B in order to correct survey or other errors made in such documents and to make such other amendments to such instruments and to the Bylaws attached hereto as Exhibit A that do not materially affect the rights of any Co-owners or mortgagees in the Project, including, but not limited to, amendments required by governmental authorities, or for the purpose of facilitating conventional mortgage loan financing for existing or prospective Co-owners and to enable the purchase or insurance of such mortgage loans by the Federal Home Loan Mortgage Corporation, the Federal National Mortgage Association, the Government National Mortgage Association, the Veterans Administration or the Department of Housing and Urban Veterans Administration or the Department of Housing and Urban Development, or by any other public or private mortgage insurer or any institutional participant in the secondary mortgage market.

10.4 The value of the vote of any Unit and the corresponding proportion of common expenses assessed against such Unit shall not be modified without the written consent of the Co-owner of such Unit, nor shall the percentage of value assigned to any Unit be modified without such consent, except for a modification made in connection with the consolidation or modification of Units as provided in this Master Deed.

10.5 A person causing or requesting an amendment to the Master Deed, Bylaws, Condominium Subdivision Plan and any other document referred to in the Master Deed or Bylaws shall be responsible for costs and expenses of the amendment.

10.6 Pursuant to Section 90(2) of the Act, Developer hereby reserves the right, on behalf of itself and on behalf of the Association of Co-Owners, to amend this Master Deed and the Condominium Documents without the approval of any mortgagee of a Unit, unless the amendment would materially alter or change the rights of a mortgagee of a Unit, in which event the approval of two-thirds

(2/3) of the votes of mortgagees of Units shall be required for such amendment. Each mortgagee shall have one (1) vote for each Unit subject to a mortgage. Notwithstanding any provision of this Master Deed or the Bylaws to the contrary, mortgagees are entitled to vote on amendments to the condominium documents only under the following circumstances:

(a) The termination of the Condominium Project.

(b) A change in the method of formula used to determine the percentage of value assigned to a Unit subject to the mortgagee's mortgage.

(c) A reallocation of responsibility for maintenance, repair, replacement, or decoration for a Unit, its appurtenant Limited Common Elements, or the General Common Elements from the Association to the Unit subject to the mortgagee's mortgage.

(d) The elimination of a requirement for the Association to maintain insurance on the Project as a whole or a Unit subject to the mortgagee's mortgage or reallocation of responsibility for obtaining or maintaining, or both, insurance from the Association to the Unit subject to the mortgagee's mortgage.

(e) The modification or elimination of an easement benefiting the Unit subject to the mortgagee's mortgage.

(f) The partial or complete modification, imposition, or removal of leasing restrictions for Units in the condominium project.

10.7 During the Development and Sales Period, this Master Deed and Exhibits "A" and "B" hereto shall not be amended nor shall the provisions thereof be modified in any way without the written consent of the Developer.

## ARTICLE 12
## ASSIGNMENT

Any or all of the rights and powers granted or reserved to the Developer in the Condominium Documents or by law, including the power to approve or disapprove any act, use or proposed action or any other matter or thing, may be assigned by it to any other person or entity or to the Association. Any such assignment or transfer shall be made by appropriate instrument in writing duly recorded in the office of the Allegan County Register of Deeds.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, this Master Deed is made and executed on the date set forth above.

KRE WEST CENTRE, LLC,
a Michigan limited liability company

By: _____
Jeffrey A. Kerr
Its: Manager

STATE OF MICHIGAN )
)
ALLEGAN COUNTY )

The foregoing instrument was acknowledged before me in Allegan County, Michigan, on _____, 2022, by Jeffrey A. Kerr, as Manager of KRE WEST CENTRE, LLC, a Michigan limited liability company, on behalf of the company.

_____

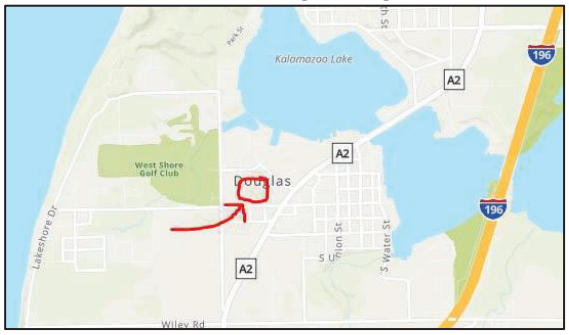
State of Michigan
County of _____
My Commission Expires _____

Master Deed drafted by and
when recorded return to:

# WETLAND AND THREATENED SPECIES REVIEW AND SITE ASSESSMENT
# Centre Collective, Village of Douglas, Allegan County, Michigan

## BACKGROUND

Plans are underway for the development of a new residential community in the Village of Douglas, on the western edge of Allegan County, in southwest Michigan. Client requested that Aamazon Natural Resources Consulting, LLC (ANRC) conduct a review regarding the potential for the occurrence of wetlands on the proposed tower site property, and the potential for occurrences of State-protected or federally protected plant or animal species on or near the project area.




The site is located on the north side of Center Street, just west of Highway A2, in the Village of Douglas, Saugatuck Township (Section 16, T3N, R16W). See location map, right.

## SUMMARY OF FINDINGS

**Wetlands:** This site has a small area of wetland but it doesn't meet the criteria to be regulated. No Michigan Department of Environment, Great Lakes, and Energy (EGLE – formerly Dept. of Environmental Quality) wetland or stream permit should be required for the project as proposed.

**Protected species**: No impacts to any protected plant or animal species are anticipated for the project as proposed. No effects are anticipated for any federally listed species.

This regulatory opinion is subject to review and concurrence by EGLE, the Michigan Dept. of Natural Resources, and the U.S. Fish & Wildlife Service, who are the regulatory authorities in such matters.

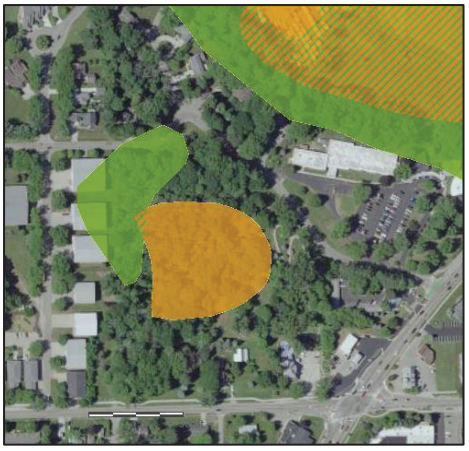

*Right: Aerial view of project area and approximate project limits*

## WETLANDS

### Existing Wetland Maps


The National Wetlands Inventory (NWI) map for this area (right), from the U.S. Fish & Wildlife website, shows an area of forested wetland (PFO1C) mapped within the proposed project area.

The Wetlands Map for this area (below right) from the MDEGLE website shows an area of wetland and an area of potentially hydric soil mapped within the proposed project area. Shaded areas indicate potential for hydric soils (yellow) and wetland (green).



MDEGLE offers this disclaimer: "This map is not intended to be used to determine the specific locations and jurisdictional boundaries of wetland areas subject to regulation under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended."

Note: NWI and Wetland Inventory maps are not definitive, are generally inaccurate at a site-specific scale, are not field-verified, and are intended only as a general indicator of the possible presence of wetland and/or hydric soils.

| Map Unit Symbol | Map Unit Name |
|---|---|
| 27B | Metea loamy fine sand, 1 to 6 percent slopes |
| 28A | Rimer loamy sand, 0 to 4 percent slopes |
| 31B | Tekenink loamy fine sand, 2 to 6 percent slopes |
| 33A | Kibbie fine sandy loam, 0 to 3 percent slopes |
| 45 | Pewamo silt loam |
| 72B | Urban land-Oakville complex, 0 to 6 percent slopes |


### Soils

There is an indication of hydric soils in the project area (code 45, Pewamo silt loam). However, most soils within the proposed project area on this site are mapped by the USDA Soil Survey (left) as primarily sand, loamy sand, and sandy loam, all non-hydric. See soils descriptions following.

**27B**, Metea loamy fine sand, 1 to 6 percent slopes: is classified as well drained, has a water table estimated at greater than 80 inches, and typically has no flooding or ponding. Hydrologic group is B, and this soil type is <u>not</u> rated as hydric.

**28A**, Rimer loamy sand, 0 to 4 percent slopes: classified as somewhat poorly drained, has a water table estimated at about 12 to 30 inches, and typically has no flooding or ponding. Hydrologic group is C/D, and this soil type is <u>not</u> rated as hydric.

**33A**, Kibbie fine sandy loam, 0 to 3 percent slopes: classified as somewhat poorly drained, has a water table estimated at about 12 to 24 inches, and typically has no flooding or ponding. Hydrologic group is B/D, and this soil type is not rated as hydric.

**45**, Pewamo silt loam: classified as poorly drained, has a water table estimated at or near the surface, typically has no flooding, but may pond frequently. Hydrologic group is C/D, and this soil type is rated as hydric.

**72B**, Urban land – Oakville complex, 0 to 6 percent slopes: classified as well drained, has a water table estimated at more than 80 inches, and typically has no flooding or ponding. Hydrologic group is A, and this soil type is not rated as hydric.

**Hydrologic Soil Groups**
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas, and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes. In Group D, soils have a very slow infiltration rate (high runoff potential) when thoroughly wet. These include: clays with a high shrink-swell potential, soils with a high water table, soils with a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Please note: USDA soil data is generated primarily by remote interpretation, and the information in soils survey data is not confirmed by field-truthing. It is generally inaccurate at a site-specific scale.


## Floodplain

The site is not in a FEMA-designated floodplain. See FEMA map panel excerpt, right.



## Site Description

This property is a mostly level wooded site, with a mature forest in the center and mowed lawn areas along Center Street. Soils are primarily sandy loam or loamy sand. In some parts of the site, the sandy loam sits over a thin clay lens at a depth of about 18 to 22 inches.

A USGS historic aerial photo from 1997 (left) shows much of the site cleared, with a patch of woods in the northwest part.

An aerial photo from early spring 2011 (left) shows a slightly darker patch of soils in the west center of the site. There is a shallow topographic depression in this area, and it is likely that there was annual ponding in that location.

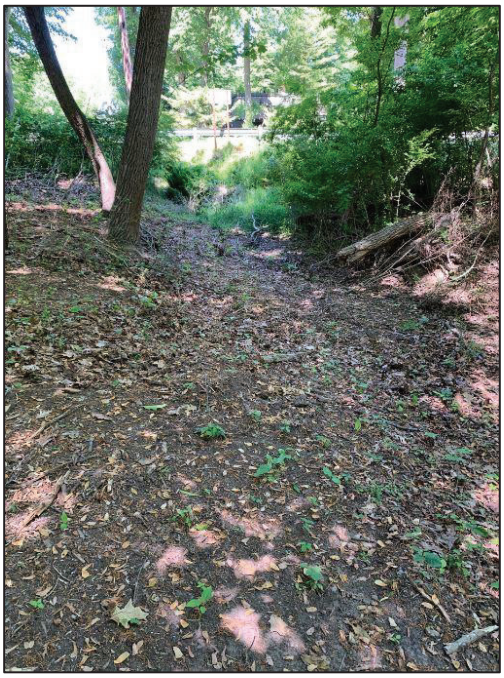
A large percentage of the remaining vegetation on the site consists of non-native species, though there are also many mature and robust oak, maples, and pines.

There is a man-made dry swale in the north end

that conveys surface runoff to the northwest into a culvert going under West Shore Street. This swale does not meet the statutory definition of a stream. To be a stream it requires a) definite banks, b) a bed, and c) visible evidence of continued flow. This has gently sloped banks, but not naturally occurring banks. The lower part of the swale is not scoured and shows no apparent channel, and no evidence of continuing or intermittent flow. (See photo, right.) Vegetation in the swale is very sparse due to it being heavily shaded and full of leaves, and it does not contain wetland species, with the exception of a few feet in a depression at the very west end around the culvert under West Shore Street.

At the time of the second site visit, much of the understory on the site had been cleared, and the ground layer was very heavily disturbed. (See photo below.)

Dry swale east end (above), west end (below)



## On-site Survey Summary

We visited the site on May 20 and June 14, 2021. Temperatures were typical for those dates, and no recent extraordinary rain events had occurred. On-site investigation included a survey of dominant plant species in order to characterize habitat types and to document a dominance of upland or wetland indicator plant species, to identify areas meeting the criteria for the State of Michigan definition of wetlands. This survey is not to be construed as a complete inventory of all species which may be present throughout the growing season, but is intended to present representative dominant species for purposes of generally documenting and assessing habitat type. Please see Appendix 2 for a complete plant list.

| Area | Predominant Vegetation | Soils | Hydrology |
|---|---|---|---|
| Mowed upland | Canada bluegrass, Kentucky bluegrass, common dandelion, plantain spp. | Disturbed and amended with variable depth topsoil over loamy sand, 10YR 4/3 to 4/4 | No hydrologic indicators |
| Unmowed upland meadow and scrub | Autumn olive, hybrid honeysuckle, Japanese honeysuckle, multiflora rose, alternate-leaved dogwood, privet spp., Japanese barberry, Asian yew, red-cedar, sassafras, oak spp. seedlings, common mullein, Orchard grass, sweet vernal grass, Hungarian brome grass, miscanthus grass, timothy grass, Canada bluegrass, Kentucky bluegrass, white clover, hairy vetch, European ivy, white-top aster, ox-eye daisy, common dandelion, ground ivy, self-heal, motherwort, graceful sedge, stellate sedge, Swan's sedge, common milkweed, periwinkle, garlic mustard, hoary alyssum, dame's rocket, path rush, common chickweed, field garlic, plantain spp., cleavers | Disturbed – may have been farmed at one time<br><br>Generally:<br>Loamy sand, 10YR 3/2 to 5/4<br><br>No saturation or groundwater encountered to a depth of at least 22" | No hydrologic indicators |
| Upland woods and scrub | White pine, black cherry, red-cedar, Scots pine, white ash, catalpa, white mulberry, sugar maple, red maple, red oak, white oak, black oak, basswood, Asian yew, sassafras, honeysuckle spp., alternate-leaf dogwood, poison ivy, Oriental bittersweet, barberry, autumn olive, Jack-in-the-pulpit, lady fern, sand sedge, garlic mustard, dame's rocket, self-heal, ground ivy | 0-13" loamy sand, 10YR 4/3-4/4<br>13-16" clay, 10YR 6/2<br>w/~10% mottles 7.5YR 5/6<br>16-20" sand, 10YR 6/2<br>20-26" sand, 10YR 5/3<br>26"+ sand, 10YR 4/4<br><br>Sand at about 24" damp but not saturated | No hydrologic indicators |
| Wet woods | Silver maple, red maple, box-elder, sour-gum, aspen, cottonwood, spicebush, stinging nettle, poison ivy, Virginia creeper, spinulose woodfern, ostrich fern, sensitive fern, yellow-fruited sedge, deer-tongue grass, fowl manna grass, reed canary grass, common reed, jewelweed, white avens | 0-15" clay loam, 10YR 3/2<br>15-18" loamy clay, 10YR 4/3<br>18-23" clay, 10YR 5/4<br>w/~10% mottles 7.5YR 4/4<br>23-27" sandy clay, 10YR 5/3<br>w/~20% mottles 7.5 YR 4/3<br>27"+ clayey sand, 10YR 5/4<br>w/no saturation or groundwater to at least 30" | Topographic depression, buttressed tree roots, stained leaves |

In Michigan, a wetland is defined as a community that supports a predominance of plants that are found 50% or more of the time in wetland habitats (each plant species is assigned an indicator status that gives a probability of its occurrence in wetland). Plants with an indicator status of UPL are upland plants. Plants with an indicator status of FAC to FACW to OBL are indicators of wetland conditions.

In making this delineation, we used techniques outlined in the U.S. Army Corps of Engineers Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). Methodology included investigation and analysis of vegetation, soils, and hydrology, to the extent possible, given the highly disturbed nature of the site.


*Above: Approximate extent of site wetlands (less than an acre)*

**State Regulation**

The wetland on this site is less than five acres, is not contiguous to a water body, has no surface flow connection to a water body, and contains no plant or animal species of concern. It would not be regulated under Michigan law.

Michigan is one of two states that have assumed Section 404 (Clean Water Act) administration from the federal government. Michigan wetlands are regulated under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended. In Michigan, a wetland is defined as a community that supports a predominance of plants that are found 50% or more of the time in wetland habitats (each plant species is assigned an indicator status that gives a probability of its occurrence in wetland).

*Looking north toward Center St. - Trees marked to save*

Not all wetlands are regulated. In accordance with Part 303, wetlands are regulated if they are any of the following:

- Connected to one of the Great Lakes or Lake St. Clair.
- Located within 1,000 feet of one of the Great Lakes or Lake St. Clair.
- Connected to an inland lake, river, or stream.
- Located within 500 feet of an inland lake, pond, river or stream.
- Not connected to one of the Great Lakes or Lake St. Clair, or an inland lake, pond, stream, or river, but are more than 5 acres in size.
- Not connected to one of the Great Lakes or Lake St. Clair, or an inland lake, pond, stream, or river, and less than 5 acres in size, but the DEQ has determined that these wetlands are essential to the preservation of the state's natural resources and has notified the property owner.

Under Part 303, a person may not do any of the following to a regulated wetland without a permit:
- Deposit or permit the placing of fill material.
- Dredge, remove, or permit the removal of soil or minerals.
- Construct, operate, or maintain any use or development.
- Drain surface water.

To obtain a permit to impact regulated wetlands, the applicant must demonstrate that there are no feasible or prudent alternatives to accomplish the basic project purpose, and that the impacts have been minimized to the greatest extent practicable.

*Looking toward northeast part of property*

**Federal Regulation - Waters of the United States (WOTUS)**

In December 2018, the Michigan Legislature amended numerous sections of Public Act 451 of 1994 (Natural Resources and Environmental Protection) including sections pertinent to wetland and water resources protection.

The State definition of “inland lake or stream” was previously as follows:
*A natural or artificial lake, pond, or impoundment; a river, stream, or creek which may or may not be serving as a drain as defined by the drain code of 1956, 1956 PA 40, MCL 280.1 to 280.630; or any other body of water that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water, including the St. Marys, St. Clair, and Detroit Rivers. Inland lake or stream does not include the Great Lakes, Lake St. Clair, or a lake or pond that has a surface area of less than 5 acres.*

The definition was expanded to include any “water of the United States” as defined by The Federal Water Pollution Control Act (commonly known as the “Clean Water Act”). The existing regulatory definition of “waters of the United States” is:
*1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
*2. All interstate waters including interstate wetlands;*
*3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:*
*a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
*b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or*
*c. Which are used or could be used for industrial purposes by industries in interstate commerce;*
*4. All impoundments of waters otherwise defined as waters of the United States under this definition;*
*5. Tributaries of waters identified in paragraphs (1) through (4) of this section;*
*6. The territorial sea;*
*7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.*

*Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.*

So technically, they could arbitrarily regulate any waters of any size under 3(a), use "*by interstate or foreign travelers for recreational or other purposes."*

The State definition of "wetland" was also significantly amended:

*A land or water feature, commonly referred to as a bog, swamp, or marsh, inundated or saturated by water at a frequency and duration sufficient to support, and that under normal circumstances does support, hydric soils and a predominance of wetland vegetation or aquatic life. A land or water feature is not a wetland unless it meets any of the following:*

*- Is a water of the United States as that term is used in Section 502(7) of the Clean Water Act;*

*- Is contiguous to the Great Lakes, Lake St. Clair, an inland lake or pond, or a stream. "Pond" does not include a farm or stock pond constructed consistent with the exemption under Sec. 30305(2)(G).*

*- Is more than 5 acres in size.*

*- Has the documented presence of an Endangered or Threatened species.*

*- Is a rare and imperiled [type of] wetland. Starting in 2019, the DNR may recommend changes to this list every five years.*

*Soil pit – looking toward east side of property*

## Conclusions

Based on the site visits, and a review of known data, including NWI maps, aerial photos, soils data, and FEMA maps, there are no indications that the site contains regulated wetland. There is a small non-contiguous area of wetland in the center of the property, containing wetland vegetation, wetland soils, and wetland hydrology.

The project as proposed should not require any EGLE permit for wetlands or streams under Part 301 (Inland Lakes & Streams) or Part 303 (Wetland Protection) of PA 451 of 1994, the Natural Resources and Environmental Protection Act.

*This report summarizes findings in a format intended to provide easily understood information. We can provide a more detailed technical basis for our conclusions if needed. Soils and water table information in this report relate to State and federal wetland determination methodology. Due to the dynamic nature of wetlands, this wetland review is valid for three years. In the event that conditions on this site or adjacent sites should change, the site should be reviewed again prior to construction. This regulatory opinion is subject to review and concurrence by the Mich. Dept. of Environment, Great Lakes, and Energy, who is the regulatory authority in such matters.*

## THREATENED AND ENDANGERED SPECIES

A review of Michigan Natural Features Inventory (MNFI) records for State-listed and federally listed species of concern within Allegan County identified historic occurrence records for 157 protected species and species of concern. See complete listing in Appendix 1.

Habitat for each identified protected species was reviewed. The species on this list are not likely to occur within the proposed project area due to the absence of appropriate habitat.

There are MNFI occurrence records for several federally listed species for Allegan County:

- Rusty-patched bumble bee (LE): Three records for this county, most recent 1964. Foraging habitat includes dunes, marshes, forests, farmland, and urban areas. A habitat generalist, it is unlikely to be impacted by this project.
- Pitcher's thistle (LT): Three records for this county, most recent 2013. Found in near-shore open sand dunes with sparse vegetation. Habitat not present here.
- Karner blue butterfly (LE): 27 records for this county, most recent 2017. Uses open sandy areas with lupine, not present on this site.
- Northern long-eared bat (LT): One record for this county from 2000. Lives in deciduous or mixed hardwood-coniferous forests with loose-barked trees, tree hollows, or caves and crevices. There are no known hibernacula or roost trees in Allegan County. USFWS has declined to define Critical Habitat for this species, and states: "*Northern long-eared bats use a wide variety of forested areas in summer to find food and raise their young and are highly flexible in how they meet these needs. As such, there are no specific physical habitat features essential to its conservation. In addition, the bat's summer habitat is not limited or in short supply, habitat loss is not a predominant threat, and there are no areas that meet the definition of critical habitat."*
- Eastern massasauga rattlesnake (LT): 20 records for this county, most recent 2020. This species was upgraded to Threatened status as of Oct. 31, 2016 for its federal listing status and will be upgraded for State-Threatened next time the State list is updated. Impacts to this species can be avoided or minimized by conducting activities during the snakes' inactive season (November through early March). However, habitat for that species is not present within the project area. From the MNFI website:

*"Eastern Massasaugas have been found in a variety of wetland habitats. Populations in southern Michigan are typically associated with open wetlands, particularly prairie fens, while those in northern Michigan are known from open wetlands and lowland coniferous forests, such as cedar swamps... Massasauga habitats generally appear to be characterized by the following: (1) open, sunny areas intermixed with shaded areas, presumably for thermoregulation; (2) presence of the water table near the surface for hibernation; and (3) variable elevations between adjoining lowland and upland habitats."*

The site assessment is not to be construed as a complete inventory of all species which may be present throughout the growing season, but is intended to present representative dominant species for purposes of generally documenting and assessing habitat type.

*Right: northwest edge of property*

**S7 Consultation:**
**"No Effect" Determination**

From the site visits, and a review of known site data, historic species records, habitat requirements for identified species, and aerial photos, there is no indication that the potential exists for any of the identified species of concern to occur within the project area.

Based on these factors, we recommend a "No Effect" determination because the project will not remove suitable habitat for any listed species, and/or no habitat disturbance is anticipated. No listed species or designated critical habitat is anticipated to be directly or indirectly affected by this proposed project.

Bobbi Jones Sabine

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# APPENDIX 1 – MNFI HISTORIC OCCURRENCE RECORDS FOR THREATENED AND ENDANGERED SPECIES IN ALLEGAN COUNTY

Species identified as "E" and "T" (Endangered and Threatened) are protected under State law. Species identified as "SC" are classified as "Special Concern," which indicates that there is concern for the species, but does not afford legal protection (except Special Concern reptiles and amphibians, which are protected under a separate DNR Director's Order, No. FO-224.13). Species identified as "X" (Extirpated) are believed to no longer occur in this state.

| Scientific Name | Common Name | Federal Status | State Status | Global Rank | State Rank | Occurrences in County | Last Observed in County |
|---|---|---|---|---|---|---|---|
| *Acipenser fulvescens* | Lake sturgeon | | T | G3G4 | S2 | 2 | 2016 |
| *Acris blanchardi* | Blanchard's cricket frog | | T | G5 | S2S3 | 4 | 2002 |
| *Adlumia fungosa* | Climbing fumitory | | SC | G4 | S3 | 1 | 1889 |
| *Alasmidonta marginata* | Elktoe | | SC | G4 | S3? | 4 | 2016 |
| *Alasmidonta viridis* | Slippershell | | T | G4G5 | S2S3 | 2 | 2013 |
| *Ambystoma opacum* | Marbled salamander | | E | G5 | S1 | 2 | 1989 |
| *Ammodramus henslowii* | Henslow's sparrow | | E | G4 | S3 | 1 | 1994 |
| *Ammodramus savannarum* | Grasshopper sparrow | | SC | G5 | S4 | 2 | 2007 |
| *Aristida longespica* | Three-awned grass | | T | G5 | S2 | 1 | 2010 |
| *Asclepias purpurascens* | Purple milkweed | | T | G5? | S2 | 1 | 2018 |
| *Baptisia lactea* | White or prairie false indigo | | SC | G4Q | S3 | 1 | 1981 |
| *Bartonia paniculata* | Panicled screwstem | | T | G5 | S2 | 3 | 1999 |
| *Berula erecta* | Cut-leaved water parsnip | | T | G4G5 | S2 | 6 | 2020 |
| *Boechera missouriensis* | Missouri rock-cress | | SC | G5 | S2 | 4 | 2018 |
| *Bombus affinis* | Rusty-patched bumble bee | LE | SC | G2 | SH | 3 | 1964 |
| *Bombus auricomus* | Black and gold bumble bee | | SC | G5 | S2 | 1 | 1964 |
| *Bombus borealis* | Northern amber bumble bee | | SC | G4G5 | S3 | 1 | 1936 |
| *Bombus pensylvanicus* | American bumble bee | | SC | G3G4 | S1 | 3 | 1963 |
| *Brickellia eupatorioides* | False boneset | | SC | G5 | S2 | 1 | 2009 |
| *Buteo lineatus* | Red-shouldered hawk | | T | G5 | S4 | 9 | 2013 |
| *Callophrys irus* | Frosted elfin | | T | G2G3 | S2S3 | 15 | 2020 |
| *Carex albolutescens* | Sedge | | T | G5 | S2 | 1 | 1989 |
| *Carex festucacea* | Fescue sedge | | SC | G5 | S1 | 1 | 1989 |
| *Carex seorsa* | Sedge | | T | G5 | S2 | 3 | 2020 |
| *Chlidonias niger* | Black tern | | SC | G4G5 | S2 | 1 | 1997 |
| *Cincinnatia cincinnatiensis* | Campeloma spire snail | | SC | G5 | S3 | 1 | |
| *Cirsium pitcheri* | Pitcher's thistle | LT | T | G3 | S3 | 3 | 2013 |
| *Cistothorus palustris* | Marsh wren | | SC | G5 | S3 | 1 | 2005 |
| *Clemmys guttata* | Spotted turtle | | T | G5 | S2 | 12 | 2020 |
| *Clonophis kirtlandii* | Kirtland's snake | | E | G2 | S1 | 1 | 1985 |
| *Collinsia verna* | Blue-eyed Mary | | SC | G5 | SNR | 1 | 1940 |
| *Conioselinum chinense* | Hemlock-parsley | | SC | G5 | SNR | 2 | 2020 |
| *Coregonus artedi* | Lake herring or Cisco | | T | GNR | S3 | 4 | 2017 |
| *Coregonus kiyi* | Kiyi | | SC | G3G4 | S2S3 | 1 | 1983 |
| *Coregonus zenithicus* | Shortjaw cisco | | T | G3 | S2 | 2 | 2001 |
| *Cottus ricei* | Spoonhead sculpin | | SC | G5 | S1S2 | 1 | 1990 |
| *Cryptotis parva* | Least shrew | | T | G5 | S1S2 | 1 | 1938 |
| *Cyclonaias tuberculata* | Purple wartyback | | T | G5 | S2 | 3 | 2000 |
| *Cypripedium candidum* | White lady slipper | | T | G4 | S2 | 1 | 2005 |
| *Diarrhena obovata* | Beak grass | | T | G4G5 | S2 | 1 | 2018 |
| *Dryobius sexnotatus* | Six-banded longhorn beetle | | T | GNR | S1 | 1 | 2011 |
| *Echinodorus tenellus* | Dwarf burhead | | E | G5? | S1 | 2 | 2013 |
| *Eleocharis atropurpurea* | Purple spike rush | | E | G4G5 | S1 | 1 | 2010 |
| *Eleocharis engelmannii* | Engelmann's spike rush | | SC | G4G5 | S2S3 | 1 | 1989 |
| *Eleocharis melanocarpa* | Black-fruited spike-rush | | SC | G4 | S3 | 5 | 2016 |
| *Eleocharis microcarpa* | Small-fruited spike-rush | | E | G5 | S1 | 1 | 1988 |
| *Eleocharis tricostata* | Three-ribbed spike rush | | T | G4 | S2 | 4 | 2016 |
| *Emydoidea blandingii* | Blanding's turtle | | SC | G4 | S2S3 | 7 | 2020 |
| *Erimyzon claviformis* | Creek chubsucker | | E | G5 | S1 | 1 | 1982 |
| *Erynnis persius persius* | Persius dusky wing | | T | G5T1T3 | S3 | 3 | 1980 |
| *Euonymus atropurpureus* | Wahoo | | SC | G5 | S3 | 1 | 2007 |

| Scientific Name | Common Name | Federal Status | State Status | Global Rank | State Rank | Occurrences in County | Last Observed in County |
|---|---|---|---|---|---|---|---|
| *Euphorbia commutata* | Tinted spurge | | T | G5 | S1 | 1 | 1931 |
| *Eutrochium fistulosum* | Hollow-stemmed Joe-pye weed | | T | G5? | S1 | 2 | 2009 |
| *Fontigens nickliniana* | Watercress snail | | SC | G5 | S2S3 | 1 | 1990 |
| *Fraxinus profunda* | Pumpkin ash | | T | G4 | S2 | 1 | 2014 |
| *Fuirena pumila* | Umbrella-grass | | T | G4 | S2 | 1 | 1975 |
| *Galearis spectabilis* | Showy orchis | | T | G5 | S2 | 2 | 2014 |
| *Gallinula galeata* | Common gallinule | | T | G5 | S3 | 2 | 2019 |
| *Gavia immer* | Common loon | | T | G5 | S3 | 1 | 1988 |
| *Gentiana puberulenta* | Downy gentian | | E | G4G5 | S1 | 1 | 1990 |
| *Geum triflorum* | Prairie smoke | | T | G5 | S2S3 | 1 | 1932 |
| *Glyptemys insculpta* | Wood turtle | | SC | G3 | S2 | 1 | 1975 |
| *Haliaeetus leucocephalus* | Bald eagle | | SC | G5 | S4 | 7 | 2017 |
| *Helianthus hirsutus* | Whiskered sunflower | | SC | G5 | S3 | 2 | 2014 |
| *Hesperia metea* | Cobweb skipper | | SC | G4 | S4 | 1 | 2002 |
| *Hesperia ottoe* | Ottoe skipper | | T | G3 | S1 | 8 | 2011 |
| *Hieracium paniculatum* | Panicled hawkweed | | T | G5 | S2 | 2 | 2015 |
| *Hiodon tergisus* | Mooneye | | T | G5 | S1 | 1 | 1941 |
| *Hydrastis canadensis* | Goldenseal | | T | G3G4 | S2 | 1 | 1976 |
| *Hypericum gentianoides* | Gentian-leaved St. John's-wort | | SC | G5 | S3 | 1 | 2018 |
| *Isoetes engelmannii* | Engelmann's quilwort | | E | G4 | S1 | 1 | 1989 |
| *Juncus anthelatus* | Large path rush | | SC | GNR | SNR | 2 | 2020 |
| *Juncus brachycarpus* | Short-fruited rush | | T | G4G5 | S1S2 | 1 | 1989 |
| *Juncus dichotomus* | Forked rush | | SC | G5 | SNR | 1 | 2017 |
| *Juncus scirpoides* | Scirpus-like rush | | T | G5 | S2 | 3 | 2014 |
| *Juncus vaseyi* | Vasey's rush | | T | G5 | S1S2 | 1 | 1989 |
| *Lanius ludovicianus migrans* | Migrant loggerhead shrike | | E | G4T3Q | S1 | 2 | 1991 |
| *Lasmigona compressa* | Creek heelsplitter | | SC | G5 | S3 | 5 | 2018 |
| *Lasmigona costata* | Flutedshell | | SC | G5 | SNR | 5 | 2018 |
| *Lechea minor* | Least pinweed | | X | G5 | S1 | 1 | 2000 |
| *Lechea pulchella* | Leggett's pinweed | | T | G5 | S1S2 | 2 | 2018 |
| *Lepisosteus oculatus* | Spotted gar | | SC | G5 | S2S3 | 10 | 2015 |
| *Ligumia recta* | Black sandshell | | E | G4G5 | S1? | 1 | |
| *Linum sulcatum* | Furrowed flax | | SC | G5 | S2S3 | 2 | 2005 |
| *Linum virginianum* | Virginia flax | | T | G4G5 | S2 | 2 | 2015 |
| *Lipocarpha micrantha* | Dwarf-bulrush | | SC | G5 | S3 | 2 | 2016 |
| *Lithobates palustris* | Pickerel frog | | SC | G5 | S3S4 | 4 | 2003 |
| *Ludwigia sphaerocarpa* | Globe-fruited seedbox | | T | G5 | S1 | 2 | 2018 |
| *Lycaeides melissa samuelis* | Karner blue | LE | T | G1G2 | S2 | 27 | 2017 |
| *Lycopodiella subappressa* | Northern appressed clubmoss | | SC | G2 | S2 | 2 | 1970 |
| *Melanerpes erythrocephalus* | Red-headed woodpecker | | SC | G5 | S3 | 1 | |
| *Mesomphix cupreus* | Copper button | | SC | G5 | S1 | 2 | |
| *Microtus pinetorum* | Woodland vole | | SC | G5 | S3S4 | 2 | 1939 |
| *Myotis septentrionalis* | Northern long-eared bat | LT | SC | G1G2 | S1 | 1 | 2000 |
| *Necturus maculosus* | Mudpuppy | | SC | G5 | S3S4 | 1 | 1958 |
| *Notropis dorsalis* | Bigmouth shiner | | SC | G5 | S2 | 14 | 1960 |
| *Notropis texanus* | Weed shiner | | X | G5 | S1 | 4 | 1947 |
| *Nycticorax nycticorax* | Black-crowned night-heron | | SC | G5 | S3 | 2 | 1997 |
| *Obliquaria reflexa* | Threehorn wartyback | | E | G5 | S1 | 1 | 1936 |
| *Oecanthus laricis* | Tamarack tree cricket | | SC | G3? | S3 | 1 | 2000 |
| *Panax quinquefolius* | Ginseng | | T | G3G4 | S2S3 | 10 | 2017 |
| *Pandion haliaetus* | Osprey | | SC | G5 | S4 | 1 | 2017 |
| *Panicum longifolium* | Panic grass | | T | G4 | S2 | 4 | 2015 |
| *Panicum verrucosum* | Warty panic grass | | T | G4 | S1 | 1 | 1999 |
| *Pantherophis spiloides* | Gray ratsnake | | SC | G4G5 | S2S3 | 4 | 2017 |
| *Papaipema beeriana* | Blazing star borer | | SC | G2G3 | S2 | 1 | 1997 |
| *Papaipema maritima* | Maritime sunflower borer | | SC | G3 | S2 | 1 | 1997 |
| *Papaipema sciata* | Culvers root borer | | SC | G3 | S3 | 2 | 1996 |
| *Papaipema speciosissima* | Regal fern borer | | SC | G4 | S2S3 | 1 | 1995 |
| *Parkesia motacilla* | Louisiana waterthrush | | T | G5 | S2 | 2 | 1999 |
| *Persicaria careyi* | Carey's smartweed | | T | G4 | S1S2 | 1 | 1999 |
| *Platanthera ciliaris* | Orange- or yellow-fringed orchid | | E | G5 | S1S2 | 2 | 2015 |

| Scientific Name | Common Name | Federal Status | State Status | Global Rank | State Rank | Occurrences in County | Last Observed in County |
|---|---|---|---|---|---|---|---|
| *Pleurobema sintoxia* | Round pigtoe | | SC | G4G5 | S3 | 1 | 2000 |
| *Poa paludigena* | Bog bluegrass | | T | G3G4 | S2 | 1 | 2016 |
| *Polygala cruciata* | Cross-leaved milkwort | | SC | G5 | S3 | 3 | 2013 |
| *Potamilus alatus* | Pink heelsplitter | | SC | G5 | SNR | 1 | |
| *Potamogeton bicupulatus* | Waterthread pondweed | | T | G4 | S2 | 4 | 2017 |
| *Protonotaria citrea* | Prothonotary warbler | | SC | G5 | S3 | 3 | 2006 |
| *Pycnanthemum verticillatum* | Whorled mountain mint | | SC | G5 | S2 | 4 | 2014 |
| *Pygarctia spraguei* | Sprague's pygarctia | | SC | G5 | S2S3 | 2 | 1993 |
| *Rallus elegans* | King rail | | E | G4 | S2 | 2 | 1949 |
| *Rhexia mariana* | Maryland meadow beauty | | T | G5T5 | S1S2 | 2 | 2015 |
| *Rhexia virginica* | Meadow beauty | | SC | G5 | S3 | 6 | 2016 |
| *Rhynchospora macrostachya* | Tall beakrush | | SC | G4 | S3S4 | 7 | 2016 |
| *Rhynchospora nitens* | Short-beak beak-rush | | E | G4? | S1 | 1 | 2016 |
| *Rhynchospora recognita* | Globe beak-rush | | E | G5? | S1 | 1 | 1995 |
| *Rhynchospora scirpoides* | Bald-rush | | T | G4 | S2 | 4 | 2016 |
| *Schoenoplectiella hallii* | Hall's bulrush | | T | G3 | S2 | 2 | 2011 |
| *Schoenoplectus torreyi* | Torrey's bulrush | | SC | G5? | S2S3 | 1 | 1983 |
| *Scleria pauciflora* | Few-flowered nut rush | | E | G5 | S1 | 1 | 1995 |
| *Scleria reticularis* | Netted nut rush | | T | G4 | S2 | 3 | 2016 |
| *Scleria triglomerata* | Tall nut rush | | SC | G5 | S3 | 2 | 2015 |
| *Setophaga cerulea* | Cerulean warbler | | T | G4 | S3 | 3 | 2015 |
| *Setophaga citrina* | Hooded warbler | | SC | G5 | S3 | 4 | 2010 |
| *Setophaga discolor* | Prairie warbler | | E | G5 | S3 | 5 | 2003 |
| *Setophaga dominica* | Yellow-throated warbler | | T | G5 | S3 | 1 | 1999 |
| *Sistrurus catenatus* | Eastern massasauga | LT | SC | G3 | S3 | 20 | 2020 |
| *Sisyrinchium atlanticum* | Atlantic blue-eyed-grass | | T | G5 | S2 | 3 | 2017 |
| *Spiranthes ovalis* | Lesser ladies'-tresses | | T | G5? | S1 | 1 | 2009 |
| *Spiza americana* | Dickcissel | | SC | G5 | S3 | 2 | 2007 |
| *Sporobolus clandestinus* | Dropseed | | E | G5 | S1 | 2 | 2017 |
| *Sporobolus heterolepis* | Prairie dropseed | | SC | G5 | S3 | 2 | 2013 |
| *Strophostyles helvula* | Trailing wild bean | | SC | G5 | S3 | 1 | 2002 |
| *Symphyotrichum sericeum* | Western silvery aster | | T | G5 | S2 | 1 | 2014 |
| *Terrapene carolina carolina* | Eastern box turtle | | SC | G5T5 | S2S3 | 27 | 2020 |
| *Tradescantia bracteata* | Long-bracted spiderwort | | X | G5 | SX | 1 | 1938 |
| *Trichostema dichotomum* | Bastard pennyroyal | | T | G5 | S2 | 1 | 1986 |
| *Triphora trianthophora* | Nodding pogonia or three birds orchid | | T | G4? | S1 | 1 | 1880 |
| *Truncilla donaciformis* | Fawnsfoot | | T | G5 | S1 | 2 | 2000 |
| *Truncilla truncata* | Deertoe | | SC | G5 | S2S3 | 2 | 2000 |
| *Utricularia subulata* | Bladderwort | | T | G5 | S1 | 1 | 2010 |
| *Utterbackia imbecillis* | Paper pondshell | | SC | G5 | S2S3 | 2 | 2018 |
| *Valerianella chenopodiifolia* | Goosefoot corn salad | | T | G4 | S1 | 2 | 2020 |
| *Venustaconcha ellipsiformis* | Ellipse | | SC | G4 | S3 | 1 | 2016 |
| *Villosa iris* | Rainbow | | SC | G5 | S3 | 1 | |
| *Wolffia brasiliensis* | Watermeal | | T | G5 | S1 | 4 | 2018 |
| *Zizania aquatica* | Wild rice | | T | G5 | S2S3 | 1 | 1910 |

# APPENDIX 2 – PLANT INVENTORY

**Centre Collective, Douglas, MI** Compiler: William Martinus Site Visit: 6/14/21

**Notes**
Nomenclature follows Voss & Reznicek, *Field Manual of Michigan Flora*, *2012* & *Michigan Flora Online*
* Asterisk indicates non-native species
Coefficient of Conservatism number (0 – 10, 10 being most highly specialized habitat)
Wetland Indicator Status (UPL, FACU, FAC, FACW, OBL)

**Vascular Plants**

**Pteridophytes**
**Lycophytes**
**Ferns**
**Athyriaceae, Lady Fern Family**
*Athyrium filix-femina*, Lady Fern 4; FAC
**Dryopteridaceae, Wood Fern Family**
*Dryopteris carthusiana*, Spinulose Woodfern 5; FACW
**Onocleaceae, Sensitive Fern Family**
*Matteuccia struthiopteris*, Ostrich Fern 3; FAC
*Onoclea sensibilis*, Sensitive Fern 2; FACW

**Gymnosperms**
**Cupressaceae, Cypress Family**
*Juniperus virginiana*, Red-cedar 3; FACU
**Pinaceae, Pine Family**
*Pinus strobus*, White Pine 3; FACU
*Pinus sylvestris*, Scots Pine* 0; UPL
**Taxaceae, Yew Family**
*Taxus cuspidata*, Asian Yew* 0; UPL

**Angiosperms**
**Monocots**
**Alliaceae, Onion Family**
*Allium vineale*, Field Garlic* 0; FACU
**Araceae, Arum Family**
*Arisaema triphyllum*, Jack-in-the-pulpit 5; FAC
**Cyperaceae, Sedge Family**
*Carex annectens* var. *xanthocarpa*, Yellow-fruited Sedge 1; FACW
*Carex gracillima*, Graceful Sedge 4; FACU
*Carex leptonervia*, Two-edged Sedge 3; FAC
*Carex muehlenbergii*, Sand Sedge 7; UPL
*Carex rosea*, Stellate Sedge 2; UPL
*Carex swanii*, Swan's Sedge 4; FACU
**Juncaceae, Rush Family**
*Juncus tenuis*, Path Rush 1; FAC
**Poaceae, Grass Family**
*Anthoxanthum odoratum*, Sweet Vernal Grass* 0; FACU
*Bromus inermis*, Hungarian Brome* 0; UPL
*Dactylis glomerata*, Orchard Grass* 0; FACU
*Dichanthelium clandestinum*, Deer-tongue Grass 3; FACW
*Glyceria striata*, Fowl Manna Grass 4; OBL
*Holcus lanatus*, Velvet Grass* 0; FACU

*Miscanthus sinensis*, Eulalia* 0; UPL
*Phalaris arundinacea*, Reed Canary Grass* 0; FACW+
*Phleum pratense*, Timothy* 0; FACU
*Phragmites australis* spp. *australis*, Common Reed* 0; FACW+
*Poa compressa*, Canada Bluegrass* 0; FACU
*Poa nemoralis*, Wood Bluegrass* 0; FACU
*Poa pratensis*, Kentucky Bluegrass* 0; FAC-

**Dicots**
**Anacardiaceae, Cashew Family**
*Toxicodendron radicans,* Poison Ivy 2; FAC+
**Apocynaceae, Dogbane Family**
*Asclepias syriaca*, Common Milkweed 1; UPL
*Vinca minor*, Periwinkle* 0; UPL
**Araliaceae, Ginseng Family**
*Hedera helix*, European Ivy* 0; FACU
**Asteraceae, Aster Family**
*Erigeron annuus*, White-top 0; FACU
*Eurybia macrophylla*, Large-leaved Aster 4; UPL
*Hypochoeris radicata*, Cat's-ear* 0; UPL
*Leucanthemum vulgare*, Ox-eye Daisy* 0; UPL
*Taraxacum officinale*, Common Dandelion* 0; FACU
**Balsaminaceae, Touch-me-not Family**
*Impatiens capensis*, Spotted Touch-me-not 2; FACW
**Berberidaceae, Barberry Family**
*Berberis thunbergii*, Japanese Barberry* 0; FACU-
**Bignoniaceae, Trumpet Creeper Family**
*Catalpa speciosa*, Northern Catalpa* 0; FACU
**Brassicaceae, Mustard Family**
*Alliaria petiolata*, Garlic Mustard* 0; FAC
*Berteroa incana*, Hoary Alyssum* 0; UPL
*Hesperis matronalis*, Dame's Rocket* 0; FACU
**Caprifoliaceae, Honeysuckle Family**
*Lonicera ×bella*, Hybrid Honeysuckle* 0; FACU
*Lonicera japonica*, Japanese Honeysuckle* 0; FACU
**Caryophyllaceae, Pink Family**
*Stellaria media*, Common Chickweed* 0; FACU
**Celastraceae, Bittersweet Family**
*Celastrus orbiculatus*, Oriental Bittersweet* 0; UPL
**Cornaceae, Dogwood Family**
*Cornus alternifolia*, Alternate-leaved Dogwood 5; FACU
**Elaeagnaceae, Oleaster Family**
*Elaeagnus umbellata*, Autumn Olive* 0; FACU
**Fabaceae, Pea Family**
*Medicago lupulina*, Black Medick* 0; FAC-
*Trifolium repens*, White Clover* 0; FACU+
*Vicia villosa*, Hairy Vetch* 0; UPL
**Fagaceae, Beech Family**
*Quercus alba*, White Oak 5; FACU
*Quercus rubra*, Red Oak 5; FACU
*Quercus velutina*, Black Oak 6; UPL
**Lamiaceae, Mint Family**
*Glechoma hederacea*, Ground Ivy* 0; FACU
*Leonurus cardiaca*, Motherwort* 0; UPL

*Prunella vulgaris*, Self-heal 0; FAC
**Lauraceae, Laurel Family**
*Lindera benzoin*, Spicebush 7; FACW-
*Sassafras albidum*, Sassafras 5; FACU
**Magnoliaeae, Magnolia Family**
*Liriodendron tulipifera*, Tulip Tree 9; FACU
**Malvaceae, Mallow Family**
*Tilia americana*, Basswood 5; FACU
**Moraceae, Mulberry Family**
*Morus alba*, White Mulberry* 0; FAC
**Nyssaceae, Tupelo Family**
*Nyssa sylvatica*, Sour-gum 9; FACW+
**Oleaceae, Olive Family**
*Fraxinus americana*, White Ash 5; FACU
*Ligustrum obtusifolium*, Border Privet* 0; FACU
*Ligustrum vulgare*, Common Privet* 0; FACU
**Onagraceae, Evening-primrose Family**
*Circaea canadensis* subsp. *canadensis*, Enchanter's-nightshade 2; FACU
**Oxalidaceae, Wood-sorrel Family**
*Oxalis dillenii*, Common Yellow Wood-sorrel 0; FACU
**Phytolaccaceae, Pokeweed Family**
*Phytolacca americana*, Pokeweed 2; FAC-
**Plantaginaceae, Plantain Family**
*Plantago major*, Common Plantain* 0; FAC+
*Plantago rugelii*, Red-stalked Plantain 0; FAC
**Polygonaceae, Smartweed Family**
*Persicaria virginiana*, Jumpseed 4; FAC
*Rumex obtusifolius*, Bitter Dock* 0; FACW
**Rosaceae, Rose Family**
*Geum canadense*, White Avens 1; FAC
*Prunus serotina*, Wild Black Cherry 2; FACU
*Rosa multiflora*, Multiflora Rose* 0; FACU
*Rubus flagellaris*, Northern Dewberry 1; FACU
**Rubiaceae, Madder Family**
*Galium aparine*, Cleavers 0; FACU
**Salicaceae, Willow Family**
*Populus deltoides*, Eastern Cottonwood 1; FAC+
*Populus tremuloides*, Quaking Aspen 1; FAC
**Sapindaceae, Soapberry Family**
*Acer negundo*, Box-elder 0; FACW-
*Acer rubrum*, Red Maple 1; FAC
*Acer saccharinum*, Silver Maple 2; FACW
*Acer saccharum*, Sugar Maple 5; FACU
**Scrophulariaceae, Figwort Family**
*Verbascum thapsus*, Common Mullein* 0; UPL
**Urticaceae, Nettle Family**
*Urtica dioica*, Stinging Nettle 1; FAC+
**Vitaceae, Grape Family**
*Parthenocissus quinquefolia*, Virginia Creeper 5; FAC-
*Vitis riparia*, River-bank Grape 3; FACW-

## REFERENCES/RESOURCES

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U.S. Dept. of Agriculture – Natural Resources Conservation District. Web Soil Survey

U.S. Fish and Wildlife Service - National Wetlands Inventory

U.S. Geological Survey – Historic aerial photos

SOILS & STRUCTURES

# REPORT OF GEOTECHNICAL INVESTIGATION FOR 324 WEST CENTER

DOUGLAS
ALLEGAN COUNTY
MICHIGAN

MARCH 27, 2020


David W. Hohmeyer, P.E.
Michigan No. 32629
March 27, 2020

*Kerr Real Estate*
*PO Box 574*
*Douglas, Michigan 49406*

*Project No. 2020.0129*

SOILS & STRUCTURES

March 27, 2020

Kerr Real Estate
PO Box 574
Douglas, Michigan 49406

Attention: Mr. Jeff Kerr

Regarding: 324 West Center
Douglas, Allegan County, Michigan
Project No. 2020.0129

Dear Mr. Kerr:

Soils & Structures is pleased to present this geotechnical investigation report for the 324 West Center project in Douglas, Allegan County, Michigan.

The investigation included ten (10) test borings to depths of 20.0 feet. The test borings were conducted in accordance with ASTM D 1586 procedures.

The report, test boring location plan, and test boring logs are enclosed. The report provides recommendations for site preparation, foundations, fill, floors and pavement.

We appreciate the opportunity to provide you engineering services. If you have any questions regarding this report, please contact our office.

Sincerely,
Soils & Structures, Inc.

Malcolm P. Thompson, E.I.T.
MPT/mt

Reviewed by:

David W. Hohmeyer, P.E.

SOILS & STRUCTURES

# Table of Contents

SOILS & STRUCTURES

Location of Soil Investigation

The soil investigation was located at 324 West Center Street in Douglas, Allegan County, Michigan. The parcel number is 59-016-033-00.

Purpose of Investigation

The purpose of this investigation is to provide geotechnical engineering recommendations for the proposed residential and commercial buildings.

Design Information

The proposed development includes single family residences, townhomes and mixed use buildings. The project includes pavement.

The single family residences and townhomes will be one to two story wood framed structures with slab on grade floors. The floor elevation of the single family residences and townhomes will vary across the site depending on the existing grade and underlying soil conditions. The design load on foundations is anticipated to be approximately 2500 pounds per linear foot. Column loads are anticipated to be 10,000 pounds or less. The design live load for the floor is anticipated to be 40 pounds per square foot.

The mixed use buildings will be two to three story wood or steel framed structures with slab on grade floors. The floor elevation of the mixed use buildings will be approximately 625.0 feet. The design load on foundations is anticipated to be approximately 4000 pounds per linear foot. Column loads are anticipated to be 200,000 pounds or less.

Allowable post construction settlements of 0.6 inches for total settlement and 0.4 inches for differential settlement are assumed. If the actual loads are significantly greater than the anticipated loads listed in this report, then Soils & Structures should be contacted so that the recommendations included in this report may be reviewed and revised if necessary.

The maximum thickness of fill will be approximately 7.0 feet. Fill will be required to reach grade and to replace soft soil below foundations, floors and pavement. Fill for this project will also include backfill over foundations and utilities. Most of the soil required for fill is expected to be obtained offsite.

The maximum excavation depth will be approximately 7.0 feet. Over excavation will be required to remove soft or loose soils below foundations, floors and pavement. Excavations will also be required for the construction of foundations and utilities.



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Pavement is assumed to be subjected to both automobile and truck traffic. A service life of twenty years was assumed for the pavement subgrade recommendations. The subgrade is assumed to be prepared as recommended in this report.

Tests Performed

The investigation included ten test borings drilled to depths of 20.0 feet. The test borings are designated as Test Boring One through Test Boring Ten. The test borings were conducted in accordance with ASTM D 1586 procedures. The locations were determined by Nederveld, Inc. The locations were adjusted for accessibility by Soils and Structures, Inc. An automatic hammer was used to obtain the soil samples. The ASTM D 1586 standard describes the procedure for sampling and testing soil using the Standard Penetration Test.

The surface elevations at the test boring locations and additional points of reference were obtained with a Global Navigation Satellite System (GNSS) Receiver. The receiver was connected to the local MDOT CORS base station. Through this system, vertical measurements are obtained and referenced to the North American Vertical Datum (NAVD88). Horizontal measurements are also obtained at the test boring locations which are referenced to the Michigan State Plane Coordinate System. Both the vertical and horizontal measurements typically have an accuracy of approximately 0.5 inches. The measured test boring locations and surface elevations are represented in Table 1.

**Table 1:** Measured Test Boring and Points of Reference Locations and Surface Elevations

| Test Boring / Location | Elevation (feet) | Northing (feet) | Easting (feet) | Surface Cover |
|---|---|---|---|---|
| Test Boring One* | 624.1 | 422897.0 | 12627697.8 | Topsoil |
| Test Boring Two* | 626.7 | 422465.8 | 12627611.1 | Topsoil |
| Test Boring Three* | 608.1 | 422729.1 | 12627812.3 | Topsoil |
| Test Boring Four* | 628.1 | 422560.2 | 12627694.9 | Topsoil |
| Test Boring Five* | 635.7 | 422615.3 | 12627817.5 | Topsoil |
| Test Boring Six | 623.2 | 422431.9 | 12627847.5 | Topsoil |

*Potential Error: Signal interference due to tree cover



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**Table 1 Continued:** Measured Test Boring and Points of Reference Locations and Surface Elevations

| Test Boring / Location | Elevation (feet) | Northing (feet) | Easting (feet) | Surface Cover |
|---|---|---|---|---|
| Test Boring Seven* | 634.7 | 422257.7 | 12627597.6 | Topsoil |
| Test Boring Eight* | 631.8 | 422258.2 | 12627681.3 | Topsoil |
| Test Boring Nine | 624.8 | 422250.2 | 12627789.1 | Topsoil |
| Test Boring Ten | 625.4 | 422257.0 | 12627972.6 | Topsoil |
| Base Setup VRS1 | 617.3 | 422230.7 | 12627654.2 | - |

*Potential Error: Signal interference due to tree cover

Soil samples were classified according to the Unified Soil Classification System. This method is a standardized system for classifying soil according to its engineering properties. Please refer to the appendix of this report for the Unified Classification System Chart. The classification is shown in the "Material Description" column of the test boring logs.

The soil strength and the allowable soil bearing value were evaluated using the "N" value. The "N" value is the number of blows required to drive a soil sampler one foot with a standard 140 pound drop hammer. The sampler is driven a distance of 18.0 inches. The number of blows for each 6.0 inch increment is recorded. The sum of the second and third intervals is the "N" value. The number of blows for each 6.0 inch interval is shown on the test boring logs under the column labeled "Penetration." The "N" value for each sample is shown in the adjacent column.

Laboratory testing consisted of natural moisture content, particle size analysis, Atterberg limits and unconfined compressive strength testing. The tests were performed on representative soil samples. The tests were performed in accordance with applicable ASTM standards. The water content documents the presence of groundwater in the soil. The sieve test determines the particle distribution which is used to classify the soil and estimate its properties. The Atterberg limit tests aid in determining the properties of cohesive soils. Unconfined compression testing determines the strength properties of cohesive soil.

The U.S. Geological Survey Topographic map and the Quaternary Geology map of Southern Michigan were reviewed. These maps provide general geological information about the region.



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Description of Soil

The soil profile consists of clay with frequent pockets of sand and silt. Topsoil is present at the surface.

The clay layer is part of a glacial moraine that is present in Saugatuck Township. Less prominent features of glacial moraines include sand and gravel outwash that are typically present as pockets and veins within the clay and small alluvial fans at the surface which have low volumes of sand.

The topsoil consists of a dark brown clayey sand. The thickness ranges from 3.0 to 6.0 inches.

The natural clay layer consists of brown and gray low plasticity clay with various amounts of sand and silt. The sand and silt particles are present dispersed throughout the clay, and also appear concentrated in horizontal lenses. The clay layer is more prominent in the upper 20.0 feet of the soil profile on the south portion of the site. In the area of Test Boring Two and Test Borings Four through Ten the clay layer is present at depths between 0.25 and 7.0 feet. In the area of Test Boring One and Test Boring Three, the north portion of the site, the clay layer is present at depths of 7.0 and 19.0 feet.

The "N" values of the clay layer range from 4 to 17, indicating the clay is soft to stiff. The majority of the clay layer is stiff. The stiff clay is indicated by "N" values greater than 7. The shear strength of the stiff clay is in the range of 1800 to 3500 pounds per square foot which also indicates the clay is stiff.

The upper 8.0 feet of the clay layer in the area of Test Borings Five, Six and Ten consists of gray silty low plasticity clay. The "N" values of the clay range from 4 to 7, indicating the clay is soft to firm. The shear strength of the clay is in the range of 800 to 1800 pounds per square foot which also indicates the clay is soft to firm. The clay layer will support foundations, floors and pavement following the removal of any soft clay.

Pockets of sand are present in the upper 7.0 feet of the clay layer in the area of Test Borings Two, Three, Five, Seven, Eight and Nine. The pockets consist of brown fine silty and clayey sand. The "N" values of the pockets range from 3 to 15, indicating the sand is in a loose to compact state. The loose sand is indicated by "N" values equal to or less than 7. The pockets of sand will support foundations, floors and pavement following the compaction or removal of any loose sand.



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Pockets of silt are present in the upper 9.5 feet of the clay layer in the area of Test Borings One, Two, Four, Eight and Nine. The thickness of the silt pockets range from 1.5 to 7.5 feet. The "N" values of the silt range from 6 to 13, indicating the silt is firm to stiff. The silt pockets will support foundations, floors and pavement following site preparations.

Pockets of sand and silt are present in the lower portion of the clay layer throughout the site. The pockets of silt are stiff and the pockets of sand are in a compact state. The pockets of sand and silt in the lower portion of the clay layer should not adversely effect foundations, floors or pavement under the anticipated loading conditions.

Description of Groundwater Conditions

Perched groundwater is present at depths ranging from 2.0 to 8.0 feet. The elevation of Kalamazoo Lake is 581.0 feet. Kalamazoo Lake is near the north portion of the site. Ditches, sumps and pumps are anticipated to be sufficient to control perched water and precipitation during construction.

Description of Site

The site is located at 324 West Center Street in Douglas, Allegan County, Michigan. The site is a wooded lot. A private residence is present on the southeast portion of the site. The north side of the site is bordered by West Shore Court and St. Peters Drive. The east and west sides of the site are bordered by commercial buildings. The south side of the site is bordered by West Center Street. Photographs #1 and #2 show the site at the time of the investigation.

Photograph #1: View of the south portion of the site. The view is to the northwest. (Project No. 2020.0129, 324 West Center, Douglas, Allegan County, Michigan, February, 2020)



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Photograph #2: View of the center of the site. (Project No. 2020.0129, 324 West Center, Douglas, Allegan County, Michigan, February, 2020)

Settlement

The maximum settlement of the building is anticipated to be less than 0.5 inches provided the recommendations in this report are observed including subgrade preparation. Differential settlement will be approximately one half to three quarters of the maximum value. These levels of settlement are within the recommended acceptable limits of 0.6 inches of total settlement and 0.4 inches of differential settlement.



Recommendations

Construction Considerations

Construction considerations will include the use of the on-site soil for fill, temporary roads for construction traffic and temporary storage areas. Other potential considerations include the control of groundwater and surface water.

The soil available on site may be used for fill in areas where drainage is not a consideration. Most of the soil will be clay with a water content of 19.2 to 26.9 percent. The optimum water content is 13.0 to 18.0 percent so most of the soil used for fill will need to be dried. The most effective equipment for compaction will be sheepsfoot rollers and fully loaded scrapers.

The future roads will be used initially as construction roads. Due to the possibility of the road spanning across both sand and clay soils, the recommended option for maintaining the integrity of the road subgrade is an aggregate drive.

The recommended cross section for an aggregate access road is a 10.0 to 12.0 inch thick aggregate layer over a geogrid reinforcing. The recommended aggregate is crushed material with a nominal diameter of 1.0 inches or greater. The aggregate may be comprised of natural aggregate, concrete, asphalt or slag. The recommended geogrid is TerraGrid SX3030. The aggregate and geogrid may be incorporated into the final pavement.

During construction elevating the road surface a minimum of 6.0 inches above the surrounding area is recommended.

Control of surface water will be necessary due to the duration of construction and impermeable soil. Temporary ditches are recommended to remove surface water from the construction area. Lime treatment is recommended in areas where surface water softens the clay to re-establish a useable surface. Cement stabilization is recommended in areas where clay is not the primary soil.

Site & Subgrade Preparation

Existing foundations, trees and vegetation in the area of the buildings and pavement should be cleared and removed as part of subgrade preparation. The topsoil should be removed to the extent that all soil with an organic content of 3.0 percent or greater is removed. Soil containing roots should be removed to the extent that the root content by volume is 5.0 percent or less. All roots over 0.5 inches in diameter should be removed. The anticipated thickness of topsoil to be removed is 1.0 feet or less.



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Proof compaction of the site is not recommended. Excessive loading of the clay with heavy construction equipment will soften the clay resulting in unnecessary removal and replacement of the existing soil.

The area of the townhomes and single family residences should be excavated initially to the subgrade level. The subgrade should be inspected and tested to determine if soft soil is present below foundations and floors. Any soft soil should be removed. The over excavation should extend a minimum of 3.0 feet beyond the sides of the foundation. If foundations are to be constructed on a pocket of sand, the sand should be compacted to 95.0 percent of the sand's maximum density to a depth of 3.0 feet below the foundations. The fill used to replace the soft clay or loose sand should be sand meeting MDOT Class II specifications. The sand should be compacted to 95.0 percent of the sand's maximum density.

The area of the mixed use buildings should be excavated initially to the required grade. The subgrade should be inspected and tested to determine if soft soil is present below foundations or floors. Any soft soil should be removed. Based on Test Borings Eight and Ten, soft soil is expected below the floor and foundation elevation. The depth of soft soil is anticipated to be less than 7.0 feet. The over excavation should extend a minimum of 3.0 feet beyond the sides of the foundation. The fill used to replace the soft soil should be sand meeting MDOT Class II specifications. The sand should be compacted to 95.0 percent of the sand's maximum density.

When the site is graded, the existing clay may be used for fill. The water content of most of the clay will be 5.0 percent or higher than the clay's optimum water content. The optimum method of placement will be to maintain lifts of 6.0 inches or less in thickness and compact each lift with three to five passes with a sheepsfoot roller and loader. Drying the clay will be necessary to achieve compaction.

Soil that is brought to the site for fill should be clean sand meeting MDOT Class II specifications or an approved alternative. The soil should be compacted to 95.0 percent of its maximum density, as determined by the modified proctor method per the ASTM D 1557 standard. Compaction tests are recommended to verify the compaction of the fill. Full time testing is recommended while the earthwork phase of the project because of the significant thickness of the fill.



Fill should be placed in accordance with the "Fill" section of this report. The fill should be compacted to 95.0 percent of its maximum density. If the total height of fill will be greater than 4.0 feet, the lower 4.0 feet should be compacted to 97.0 percent of its maximum density. The soil which will be used for fill should be kept free of topsoil and other organic materials. Compaction tests are recommended to check the compaction of the new fill.

Foundations

Spread foundations are recommended to support the proposed buildings provided the subgrade is prepared as discussed in this section as well as the "Site & Subgrade Preparation" and "Fill" sections of this report. The foundations are anticipated to be supported on fill or the in-situ soil following site preparation.

Fill below foundations should be compacted to a density of 95.0 percent of the soil's maximum density to its full depth. In-situ sand below foundations should be compacted to a density of 95.0 percent of the sand's maximum density to a minimum depth of 3.0 feet. Compaction tests should be performed in the foundation subgrade to verify these levels of compaction. Soils not meeting or exceeding the minimum density should be recompacted.

If foundations are constructed on clay, the clay should be dry and level to ensure proper contact between the subgrade and concrete. Prior to pouring the foundations, the clay should be tested with a pocket penetrometer or torvane to ensure adequate strength to support the foundations. If the clay exhibits unconfined compressive strength of less than 1,500 pounds per square foot, it should be excavated and replaced with MDOT Class II fill.

Silt below foundations should not be compacted due to liquefaction. The silt should be dry and level to ensure proper contact between the subgrade and concrete. If the silt is not dry, the silt should be over excavated 8.0 to 12.0 inches below the foundation level and replaced with MDOT Class II fill or pea stone to establish a usable surface.

The recommended minimum cover over exterior foundations is 42 inches for protection against frost heave.

Foundations should not be constructed on frozen soil. During cold weather construction, the foundation subgrade and foundations should be protected from freezing with insulated blankets until backfill is placed over both sides of the foundation. Foundations that are damaged by frost heave should be replaced.



The site classification for seismic design is "D" based on the Michigan Building Code provided the recommendations in this report are observed. The site has a peak ground acceleration of 0.096g with a 2.0 percent probability of exceedance in 50 years. The mapped spectral accelerations are 0.091 for the short-term response ($S_s$) and 0.050 for the one second response ($S_1$). The corresponding numeric seismic design values for the spectral response acceleration parameters above are 0.097g ($S_{DS}$) and 0.081g ($S_{D1}$) respectively.

Foundations may be designed using an allowable soil bearing value of 3000 pounds per square foot for isolated column foundations and 2500 pounds per square foot for wall foundations provided the recommendations in this report are observed. A minimum width of 16.0 inches is recommended for new foundations. The allowable bearing values may be increased 25.0 percent when considering transient loads such as earthquakes and wind.

Floors

A slab on grade is recommended for the floors.

A base of 8.0 inches of clean sand is recommended under the floors. The sand should meet MDOT Class II specifications. Fill under floors should be compacted as specified in the "Fill" section of this report. The in-situ soil does not meet these specifications.

A vapor barrier is recommended at the bottom of the concrete slab.

A modulus of subgrade reaction of 100 pounds per cubic inch is recommended for the design of slabs on grade.

Lateral Earth Pressure

Foundation walls with different soil levels on either side should be designed as retaining walls. Sand should be used as backfill behind retaining and foundation walls. The sand should meet MDOT Class II specifications. The cantilevered walls should be designed using a soil density of 120 pounds per cubic foot and a coefficient of active earth pressure of 0.30 for level sand backfill. Braced excavations and foundation walls that will be braced against lateral movement at the top of the wall should be designed using a soil density of 120 pounds per cubic foot and a coefficient of at rest earth pressure of 0.45 for level sand backfill. The effects of any surcharge or sloping backfill should also be included in the design. The passive resistance of the existing sand should be calculated using an earth pressure coefficient of 4.0.



Excavations

The existing clay is OSHA type "B" soils. Excavations should be based on OSHA requirements for a type "B" soil. Based on OSHA requirements a maximum allowable side slope of 45 degrees (1H:1V) is recommended for excavations 4.0 to 20.0 feet deep. For excavations adjacent to property lines, structures such as buildings and roads or excavations over 20.0 feet deep retaining systems are recommended. Excavations less than 4.0 feet deep may have vertical side slopes.

The in situ sand and fill are an OSHA type "C" soil. Excavations that will be entered by personnel should be based on OSHA requirements for a type "C" soil. Based on OSHA requirements, a maximum allowable side slope of 34 degrees (1.5H:1V) is recommended for excavations 4.0 to 20.0 feet deep. Excavations less than 4.0 feet deep may have vertical side slopes.

Fill

The subgrade should be prepared as discussed in this section as well as the "Site & Subgrade Preparation" section of this report. Topsoil should be removed. The subgrade should be inspected and tested for loose and soft soil before the placement of fill. Any soft soil should be removed. Any loose or slightly compact sand should be compacted or removed. Due to the high amounts of fill expected for this project, large settlements will occur if fill is placed on compressible soil.

Fill, including the aggregate layers under pavement, should be compacted to a density of 95.0 percent of its maximum density. The maximum density should be determined in accordance with the ASTM D 1557 standard. A maximum thickness per layer of 6.0 inches is recommended. The lift thickness may be increased to 12.0 inches if a vibratory roller or loader is used for compaction.

If fill will be placed to a depth greater than 4.0 feet, the lower 4.0 feet should be compacted to 97.0 percent of its maximum density. This should reduce the total settlement of overlying structures.

Compaction tests are recommended to confirm that the fill is compacted to the required density and may be used as fill.



Soil brought to the site for structural fill should be sand meeting MDOT Class II requirements or ASTM requirements for a SP or SW which are the designations for clean sand. The in-situ soil does not meet these requirements.

Fill should not be placed over frozen ground, snow or ice. Soil which contains frozen material should not be used as fill. During winter construction, removal of frozen ground may be necessary prior to placing fill.

Groundwater Management

Groundwater is present in isolated pockets at depths of 2.0 to 8.0 feet. The quantity of groundwater flowing into excavations from the pockets is anticipated to be moderate. If excavations encounter groundwater, the excavation bottom may be stabilized by placing a 6.0 to 8.0 inch layer of porous stone over the bottom of the excavation. The stone will stabilize the bottom of the excavation.

A vapor barrier is recommended under the floor in areas that will be enclosed and heated. The vapor barrier should consist of a 10 mil polyethylene sheet and should be located immediately below the floor slab. The vapor barrier may be omitted in portions of the building that will not be heated.

Infiltration rates for the in-situ soils will be low and unsuitable for internal drainage of the site. MDOT Class II sand is recommended in any areas where drainage is required.

Drains around the foundations and under the pavement are recommended. The drains should consist of a 4.0 inch diameter slotted plastic pipe wrapped in filter fabric. Pea gravel should be used for backfill within a 6.0 inch circumference of the drain. Under pavement, the recommended spacing is 50.0 feet. The drain invert should be at a minimum depth of 30.0 inches below the pavement surface. The drains should be connected to a storm sewer or have an outlet a minimum of 3.0 feet below the lowest floor.

SOILS & STRUCTURES

Hot Mix Asphalt (HMA) Pavement

The recommended preliminary HMA pavement sections listed in Table 2 were developed based on the discussions and assumptions included in this report and the design procedures outlined in the "AASHTO Guide for Design of Pavement Structures." The subgrade should be prepared as described in the "Site & Subgrade Preparation" and "Fill" sections of this report. The final pavement section should be designed based on actual traffic volumes and the owner specific performance requirements. The recommended pavement section materials listed in Table 2 refer to and should comply with the standard material designations included in applicable MDOT specifications and guidelines including the 2012 MDOT "Standard Specifications for Construction."'

**Table 2:** Recommended Pavement Section

| Pavement Cross Section Materials | Standard Duty | | Heavy Duty | |
|---|---|---|---|---|
| | Material | Thickness (in) | Material | Thickness (in) |
| HMA Wearing Coarse | 36A, 5E1 | 1.5 | 36A, 5E1 | 2.0 |
| HMA Base Coarse | 13A, 4E1 | 2.0 | 13A, 4E1 | 2.0 |
| Aggregate Base | 22A, 21AA | 8.0 | 22A, 21AA | 10.0 |
| Sand Subbase | Class II | 12.0 | Class II | 12.0 |

The recommended asphaltic binder is PG 58-28. The paving contractor should submit the proposed mix design to the owner for review and approval prior to placement. The HMA pavement should be placed in at least two lifts. The pavement section should be constructed in accordance with MDOT guidelines and specifications as well as applicable state and local requirements.

The subgrade, sand subbase and aggregate base should be constructed and prepared in accordance with the "Site & Subgrade Preparation" and "Fill" sections of this report and applicable MDOT guidelines and specifications.



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Driveways

The subgrade should be prepared in accordance with the "Site Preparation" and "Fill" sections of this report.

A base of 12.0 inches of clean sand is recommended under the driveway. The sand should meet MDOT Class II specifications.

A minimum slab thickness 5.5 inches is recommended. Fibermesh is recommended for the reinforcing.

In the areas of loading docks, dumpster pads and truck parking the minimum thickness should be increased to 12.0 inches and the pavement should be reinforced. The reinforcing should be designed by a structural engineer. The paving contractor should submit the proposed mix design to the owner for review and approval prior to concrete placement.

Quality Control Testing

Compaction tests (ASTM D 6938) are recommended to confirm that fill in the building area is compacted to the specified density. While fill is being placed, compaction tests should be performed at the rate of one test per 400 cubic yards of fill and throughout the depth of the fill with a minimum of five tests at each 1.0 foot elevation interval. Compaction tests should be performed under foundations at the rate of one test per 50 linear feet for wall foundations and one test per column foundation. The recommended testing frequency in the floor and pavement subgrade is one test per 5000 square feet. Tests should also be performed in the backfill over foundations and utilities. The maximum density should be determined in accordance with ASTM D 1557 or ASTM D 4253 procedures.

The shear strength of clay should be checked with a hand penetrometer or torvane. The tests should be performed at the same frequency as compaction tests.

A smooth 0.5 to 0.75 inch diameter rod should be used in conjunction with compaction tests to probe for loose areas under foundations, in fill and under floors.

A dynamic cone should not be substituted for compaction tests for evaluating fill.

Testing should be performed by technicians supervised by a registered geotechnical engineer.

SOILS & STRUCTURES

General Conditions & Reliance

The report was prepared in accordance with generally accepted practices of the geotechnical engineering profession. The scope of work consisted of performing ten test borings and providing soil related recommendations for the design and construction of the proposed building and pavement. The scope of work did not include an environmental study or wetland determination.

The report and the associated test borings were prepared specifically for the previously described project and site. Soils & Structures should be consulted if a significant change in the scope of the project is made.

The test borings represent point information and may not have encountered all of the soil types and materials present on this site. This report does not constitute a guarantee of the soil or groundwater conditions or that the test boring is an exact representation of the soil or groundwater conditions at all points on this site.

The descriptions and recommendations contained in this report are based on an interpretation of the test borings and laboratory tests. The test borings should not be used independently of the report. If soil conditions are encountered which are significantly different from the test borings, Soils & Structures should be consulted for additional recommendations.

The report and test borings may be relied upon by Kerr Real Estate for the design, construction, permitting and financing associated with the construction of the 324 West Center project in Douglas, Allegan County, Michigan. The use of the report and test borings by third parties not associated with this project or for other sites has not been agreed upon by Soils & Structures. Soils & Structures does not recommend or consent to third party use or reliance of the report or test borings unless allowed to review the proposed use of these materials. Unless obtained in writing, consent to third party use should not be assumed. Third parties using the report or test boring logs do so at their own risk and are offered no guarantee or promise of indemnity.



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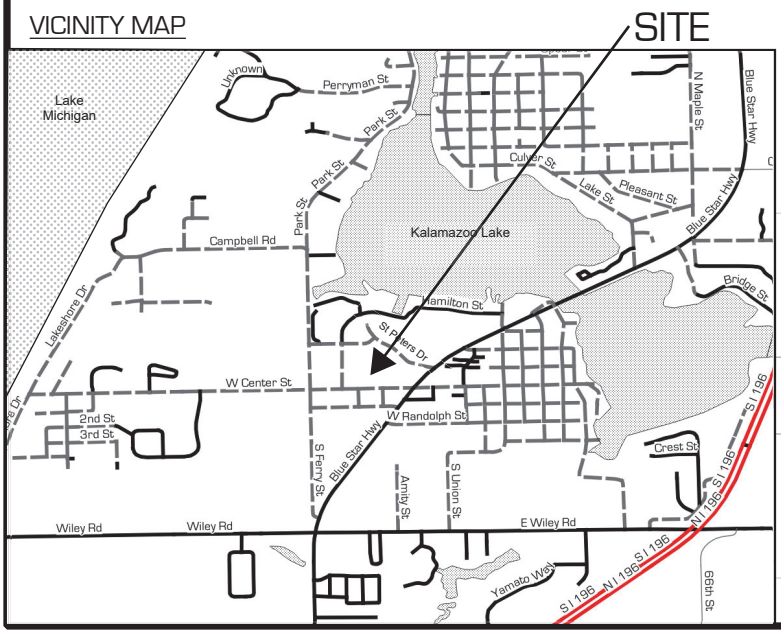
Appendix

Test Boring Location Plan
General Soil Profile
Test Boring Logs
Laboratory Tests
General Soil Information


VICINITY MAP




TEST BORING LOCATION PLAN
NTS

Note: The background of the test boring plan is a portion of a site plan from Nederveld over a portion of an aerial photograph from Google Earth dated 9/22/2018

# 324 West Center

Douglas, Allegan County, Michigan

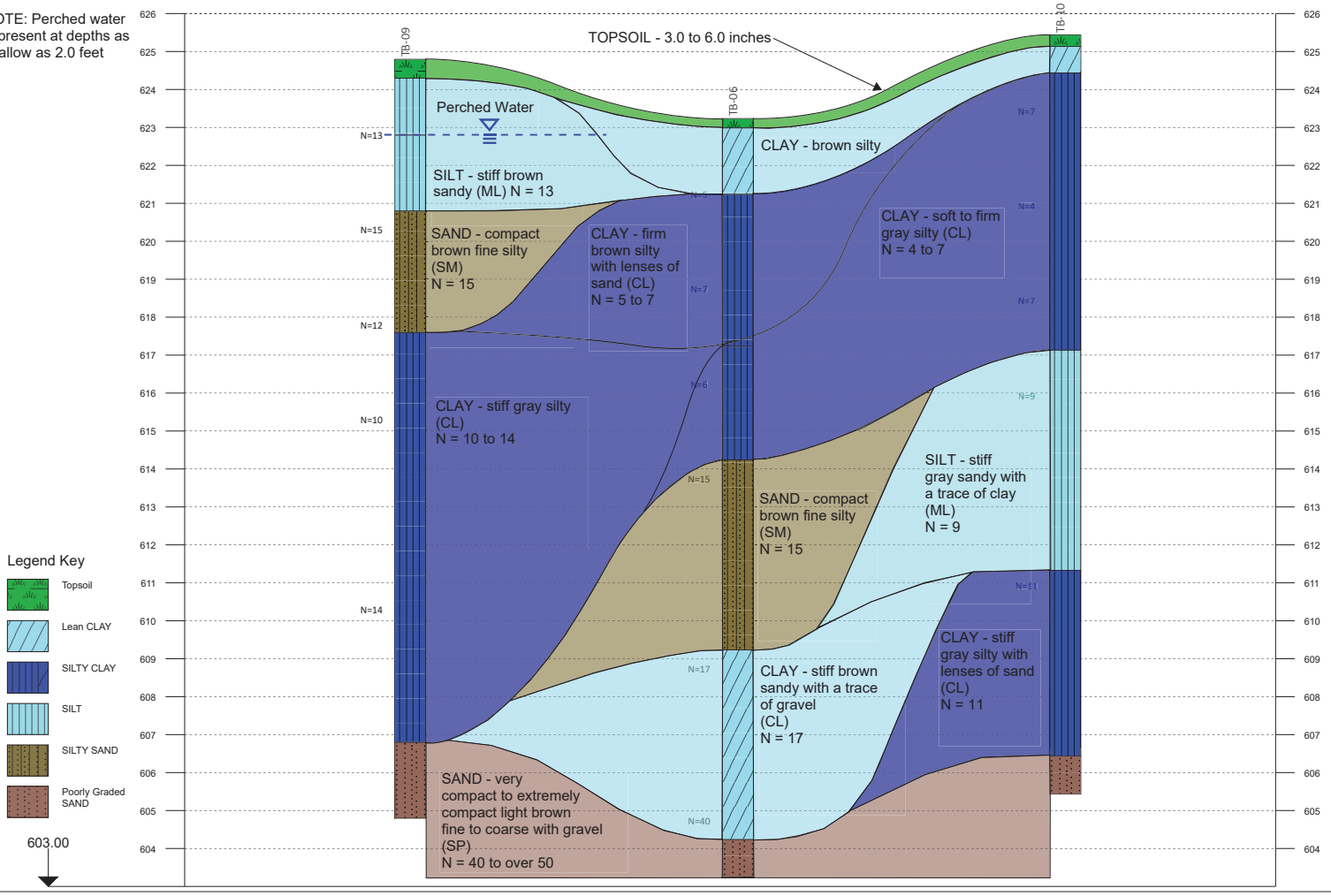
Soils & Structures, Inc.
6480 Grand Haven Road
Muskegon, Michigan 49441

JOB NO.: 2020.0129 DATE: 2-02-2020

# GENERAL SOIL PROFILE

| | | | |
|---|---|---|---|
| Project Id: | 2020.0129 | Title: | Section line 1 |
| Project Title: | 324 West Center | Vertical Scale: | 1:136 |
| Location: | Douglas, Michigan | Horizontal Scale: | Not to scale |
| Client: | Kerr Real Estate | Engineer: | Malcolm Thompson |

NOTE: Perched water is present at depths as shallow as 2.0 feet



SOILS & STRUCTURES

**Borehole ID: TB-01**

Sheet 1 of 1

| | | | |
|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | J Poel |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 19 2020 | **Completed:** | Feb 19 2020 |
| **Northing:** | 422897.0 | **Easting:** | 12627697.8 |
| **Elevation:** | 624.14 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | Feb 19 2020 - Water Not Encountered |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Graphic | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | TOPSOIL - dark brown fine (6.0") | | | | | | | | | | | | |
| 1 | | SILT - brown clayey with a trace of sand | | | | | | | | | | | | |
| 2 | | SILT - stiff brown clayey and sandy | | | | | | | | | | | | |
| 3 | | | | | SPT-A | 20 | 3-4-4 | 8 | | 22.9 | | | | ML |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | SPT-B | 33 | 2-4-4 | 8 | | 22.1 | | | | ML |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | SPT-C | 80 | 2-3-3 | 6 | | | | | | SP |
| 8 | | SAND - slightly compact light brown fine to medium with a trace of silt | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | SPT-D | 80 | 3-2-3 | 5 | | 8.2 | | | | SP |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | SAND - very compact light brown fine to medium | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | | | | SPT-E | 67 | 5-10-14 | 24 | | 5.3 | | | | SP |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | CLAY - stiff brown sandy with silt and a trace of gravel | | | SPT-F | 80 | 2-6-7 | 13 | | | | | | CL |
| 20 | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |

SOILS & STRUCTURES

**Borehole ID: TB-02**

Sheet 1 of 1

| | | | |
|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | C Bowditch |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 18 2020 | **Completed:** | Feb 18 2020 |
| **Northing:** | 422465.8 | **Easting:** | 12627611.1 |
| **Elevation:** | 626.73 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 8.00 on Feb 18 2020 - Perched Water Encountered |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | TOPSOIL - dark brown fine (5.0") | | | | | | | | | | | | |
| 1 | SAND - brown fine | | | | | | | | | | | | |
| 2 | SAND - loose brown fine to medium clayey and silty | | | | | | | | | | | | |
| 3 | | | | SPT-A | 53 | 2-2-2 | 4 | | 23.8 | | | | SC |
| 4 | | | | | | | | | | | | | |
| 5 | SILT - stiff brown with sand | | | SPT-B | 80 | 4-5-8 | 13 | | | | | | ML |
| 6 | CLAY - stiff brown silty with sand | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | SPT-C | 80 | 3-5-11 | 16 | | 21.9 | | | | CL |
| 9 | | | | | | | | | | | | | |
| 10 | | | | SPT-D | 80 | 6-6-7 | 13 | | 20.2 | | | | CL |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | SAND - compact light brown fine to medium with a trace of gravel | | | | | | | | | | | | |
| 15 | | | | SPT-E | 80 | 6-8-10 | 18 | | | | | | SP |
| 16 | SAND - very compact brown fine to coarse with gravel and lenses of clay | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | SPT-F | 80 | 8-18-32 | 50 | | 8.2 | | | | SC |
| 20 | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |

SOILS & STRUCTURES

**Borehole ID: TB-03**

Sheet 1 of 1

| | | | |
|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | C Bowditch |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 19 2020 | **Completed:** | Feb 19 2020 |
| **Northing:** | 422729.1 | **Easting:** | 12627812.3 |
| **Elevation:** | 608.12 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 5.00 on Feb 19 2020 - Perched Water Encountered |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Graphic | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | TOPSOIL - dark brown fine (5.0") | | | | | | | | | | | | |
| 1 | | SAND - compact brown fine | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | SPT-A | 80 | 2-6-6 | 12 | | 18.9 | | | | SP |
| 4 | | | | | | | | | | | | | | |
| 5 | | SAND - loose brown fine silty with a trace of clay | | | SPT-B | 40 | 2-1-2 | 3 | | | | | | SM |
| 6 | | | | | | | | | | | | | | |
| 7 | | CLAY - stiff gray silty with a trace of sand | | | SPT-C | 100 | 2-4-7 | 11 | | 20.8 | | | | CL |
| 8 | | | | | | | | | | | | | | |
| 9 | | SILT - stiff gray clayey with lenses of sand | | | | | | | | | | | | |
| 10 | | | | | SPT-D | | 2-3-5 | 8 | | | | | | ML |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | SAND - compact brown fine to medium with frequent lenses of clay | | | SPT-E | 53 | 2-4-12 | 16 | | | | | | SC |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | SAND - very compact brown fine with frequent lenses of silt | | | | | | | | | | | | |
| 19 | | | | | SPT-F | 100 | 14-24-25 | 49 | | | | | | SM |
| 20 | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-04**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | J Poel |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 19 2020 | **Completed:** | Feb 19 2020 |
| **Northing:** | 422560.2 | **Easting:** | 12627694.9 |
| **Elevation:** | 628.15 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 5.50 on Feb 19 2020 - Perched Water Encountered |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Graphic | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | TOPSOIL - dark brown fine (3.0") | | | | | | | | | | | | |
| 1 | | CLAY - brown silty with a trace of sand | | | | | | | | | | | | |
| 2 | | CLAY - stiff brown silty | | | | | | | | | | | | |
| 3 | | | | | SPT-A | 80 | 2-4-5 | 9 | | | | | | CL |
| 4 | | | | | | | | | | | | | | |
| 5 | | SAND - compact brown fine to medium silty | | | SPT-B | 80 | 3-6-7 | 13 | | 21.7 | | | | SM |
| 6 | | SILT - stiff gray with lenses of clay | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | SPT-C | 100 | 2-3-7 | 10 | 0.35 | 21.0 | | | | ML |
| 9 | | | | | | | | | | | | | | |
| 10 | | CLAY - firm gray silty | | | SPT-D | 80 | 3-2-3 | 5 | | | | | | CL |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | SAND - compact light brown fine to medium | | | | | | | | | | | | |
| 15 | | | | | SPT-E | 100 | 3-5-8 | 13 | | | | | | SP |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | |
| 19 | | SAND - very compact brown fine to coarse with gravel | | | SPT-F | 100 | 14-20-26 | 46 | | | | | | SP |
| 20 | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-05**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | J Poel |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 19 2020 | **Completed:** | Feb 19 2020 |
| **Northing:** | 422615.3 | **Easting:** | 12627817.5 |
| **Elevation:** | 635.69 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 8.00 on Feb 19 2020 - Perched Water Encountered |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | TOPSOIL - dark brown fine (6.0") | | | | | | | | | | | | |
| 1 | SAND - brown fine clayey | | | | | | | | | | | | |
| 2 | CLAY - soft brown silty with lenses of sand | | | | | | | | | | | | |
| 3 | | | | SPT-A | 100 | 2-2-2 | 4 | | 24.5 | | | | CL |
| 4 | | | | | | | | | | | | | |
| 5 | | | | SPT-B | 53 | 2-1-3 | 4 | | | | | | CL |
| 6 | CLAY - firm gray silty with a trace of sand and lenses of silt | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | SPT-C | 100 | 2-3-3 | 6 | 0.93 | 19.2 | | | | CL |
| 9 | | | | | | | | | | | | | |
| 10 | | | | SPT-D | 100 | 2-3-3 | 6 | | | | | | CL |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | SILT - stiff gray sandy with lenses of clay | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | SPT-E | 100 | 2-6-7 | 13 | | 19.3 | | | | ML |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | SAND - extremely compact brown fine to medium silty with gravel slight cementation | | | SPT-F | 13 | 27-50/0.25' | 100 | | | | | | SM |
| 20 | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-06**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | J Poel |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 19 2020 | **Completed:** | Feb 19 2020 |
| **Northing:** | 422431.9 | **Easting:** | 12627847.5 |
| **Elevation:** | 623.24 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 5.00 on Feb 19 2020 - Perched Water Encountered |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | TOPSOIL - dark brown fine (3.0") | | | | | | | | | | | | |
| 1 | CLAY - brown silty with a trace of sand | | | | | | | | | | | | |
| 2 | CLAY - firm brown silty with lenses of sand | | | | | | | | | | | | |
| 3 | | | | SPT-A | 80 | 2-2-3 | 5 | 0.46 | 26.9 | | | | CL |
| 4 | | | | | | | | | | | | | |
| 5 | | | | SPT-B | 80 | 2-3-4 | 7 | | 22.3 | | | | CL |
| 6 | CLAY - firm gray silty | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | SPT-C | 100 | 2-2-4 | 6 | | 26.0 | | | | CL |
| 9 | SAND - compact brown fine silty | | | | | | | | | | | | |
| 10 | | | | SPT-D | 67 | 3-6-9 | 15 | | | | | | SM |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | CLAY - stiff brown sandy with a trace of gravel | | | | | | | | | | | | |
| 15 | | | | SPT-E | 100 | 8-6-11 | 17 | | | | | | CL |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | SAND - very compact light brown fine to coarse with gravel and a trace of silt | | | SPT-F | 80 | 8-16-24 | 40 | | | | | | SP |
| 20 | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-07**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | J Poel |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 18 2020 | **Completed:** | Feb 18 2020 |
| **Northing:** | 422257.7 | **Easting:** | 12627597.6 |
| **Elevation:** | 634.73 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 8.00 on Feb 18 2020 |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | TOPSOIL - dark brown fine sandy (5.0") | | | | | | | | | | | | |
| 1 | SAND - brown fine | | | | | | | | | | | | |
| 2 | SAND - slightly compact brown fine to medium clayey | | | | | | | | | | | | |
| 3 | | | | SPT-A | 80 | 4-3-3 | 6 | | | | | | SC |
| 4 | CLAY - firm brown silty with lenses of silt | | | | | | | | | | | | |
| 5 | | | | SPT-B | 80 | 1-2-5 | 7 | 1.79 | 20.8 | | | | CL |
| 6 | CLAY - stiff dark gray silty | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | |
| 8 | | | | SPT-C | 80 | 4-4-7 | 11 | | | | | | CL |
| 9 | SAND - gray fine silty | | | | | | | | | | | | |
| 10 | SILT - stiff gray with a trace of sand and lenses of clay | | | SPT-D | 100 | 1-5-7 | 12 | | | | | | ML |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | SPT-E | 100 | 3-4-6 | 10 | | | | | | ML |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | SAND - very compact brown fine to coarse gravelly | | | SPT-F | 93 | 12-13-14 | 27 | | | | | | SP |
| 20 | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-08**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | J Poel |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 18 2020 | **Completed:** | Feb 18 2020 |
| **Northing:** | 422258.2 | **Easting:** | 12627681.3 |
| **Elevation:** | 631.77 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 7.00 on Feb 18 2020 |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | TOPSOIL - dark brown fine sandy (4.0") | | | | | | | | | | | | |
| 1 | SAND - brown fine silty with a trace of clay | | | | | | | | | | | | |
| 2 | SILT - firm gray sandy with lenses of sand | | | | | | | | | | | | |
| 3 | | | | SPT-A | 100 | 2-2-4 | 6 | | 31.9 | | | | ML |
| 4 | CLAY - stiff brown silty | | | | | | | | | | | | |
| 5 | | | | SPT-B | 0 | 3-4-6 | 10 | | | | | | CL |
| 6 | SILT - stiff gray sandy | | | | | | | | | | | | |
| 7 | | | | SPT-C | 100 | 1-4-5 | 9 | | 23.3 | | | | ML |
| 8 | CLAY - stiff gray silty with lenses of silt | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | SPT-D | 100 | 3-4-7 | 11 | | | | | | CL |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | SAND - compact light brown fine to medium | | | SPT-E | 80 | 2-6-9 | 15 | | | | | | SP |
| 16 | | | | | | | | | | | | | |
| 17 | CLAY - stiff gray silty | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | SPT-F | 100 | 8-12-26 | 38 | | | | | | CL |
| 20 | SAND - very compact brown fine to medium with gravel and a trace of silt | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-09**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | C Bowditch |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 18 2020 | **Completed:** | Feb 18 2020 |
| **Northing:** | 422250.2 | **Easting:** | 12627789.1 |
| **Elevation:** | 624.80 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 2.00 on Feb 18 2020 - Perched Water Encountered. |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Graphic | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | TOPSOIL - dark brown fine (6.0") | | | | | | | | | | | | |
| 1 | | SILT - brown clayey with a trace of sand | | | | | | | | | | | | |
| 2 | | SILT - stiff brown sandy | | | | | | | | | | | | |
| 3 | | | | | SPT-A | 100 | 5-7-6 | 13 | | 23.7 | | | | ML |
| 4 | | SAND - compact brown fine silty | | | | | | | | | | | | |
| 5 | | | | | SPT-B | 87 | 4-8-7 | 15 | | 23.1 | | | | SM |
| 6 | | | | | | | | | | | | | | |
| 7 | | CLAY - stiff gray silty | | | SPT-C | 100 | 3-4-8 | 12 | | | | | | CL |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | SPT-D | 100 | 4-4-6 | 10 | | 25.7 | 42 | 20 | 22 | CL |
| 11 | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | |
| 15 | | | | | SPT-E | 100 | 8-6-8 | 14 | | | | | | CL |
| 16 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | |
| 18 | | SAND - extremely compact light brown fine to medium with gravel | | | | | | | | | | | | |
| 19 | | | | | SPT-F | 116 | 10-37-50/0.29' | 87 | | | | | | SP |
| 20 | | | | | | | | | | | | | | |
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SOILS & STRUCTURES

**Borehole ID: TB-10**

Sheet 1 of 1

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|---|---|---|---|
| **Project Name:** | 324 West Center | **Project Number:** | 2020.0129 |
| **Project Location:** | Douglas, Michigan | **Logged By:** | C Bowditch |
| **Reviewed By:** | W. Stambaugh | | |
| **Client:** | Kerr Real Estate | **Survey Datum:** | NAD 1983 StatePlane Michigan South |
| **Hole Depth:** | 20.00 | | |
| **Date Started:** | Feb 18 2020 | **Completed:** | Feb 18 2020 |
| **Northing:** | 422257.0 | **Easting:** | 12627972.6 |
| **Elevation:** | 625.43 | | |
| **Drilling Method:** | 3-1/4" Hollow Stem Auger | **Ground Water Levels** | |
| **Equipment:** | Diedrich D-25 | At Time of Drilling | 8.00 on Feb 18 2020 |
| **Hammer Type:** | Automatic Hammer | | |
| **Notes:** | | | |

| Depth | Material Description | Cautionary Condition | Sample Type | Number | Recovery % RQD | Blow Counts | N-Value | Shear Strength (tsf) | Moisture Content (%) | Atterberg Limits: Liquid Limit | Atterberg Limits: Plastic Limit | Atterberg Limits: Plasticity Index | USCS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | TOPSOIL - dark brown sandy (4.0") | | | | | | | | | | | | |
| 1 | CLAY - brown silty | | | | | | | | | | | | |
| 2 | CLAY - soft to firm gray silty | | | | | | | | | | | | |
| 3 | | | | SPT-A | 80 | 2-3-4 | 7 | | | | | | CL |
| 4 | | | | | | | | | | | | | |
| 5 | | | | SPT-B | 67 | 2-2-2 | 4 | 0.42 | 22.5 | | | | CL |
| 6 | | | | | | | | | | | | | |
| 7 | | | | SPT-C | 80 | 2-3-4 | 7 | 0.45 | 27.9 | | | | CL |
| 8 | | | | | | | | | | | | | |
| 9 | SILT - stiff gray sandy with a trace of clay | | | | | | | | | | | | |
| 10 | | | | SPT-D | 100 | 3-4-5 | 9 | | | | | | ML |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | CLAY - stiff gray silty with lenses of sand | | | | | | | | | | | | |
| 15 | | | | SPT-E | 100 | 3-6-5 | 11 | | | | | | CL |
| 16 | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | SAND - extremely compact light brown fine to | | | SPT-F | 106 | 16-32-50/0.42' | 82 | | | | | | SP |
| 20 | medium with silt and a trace of gravel | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | |
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| 23 | | | | | | | | | | | | | |
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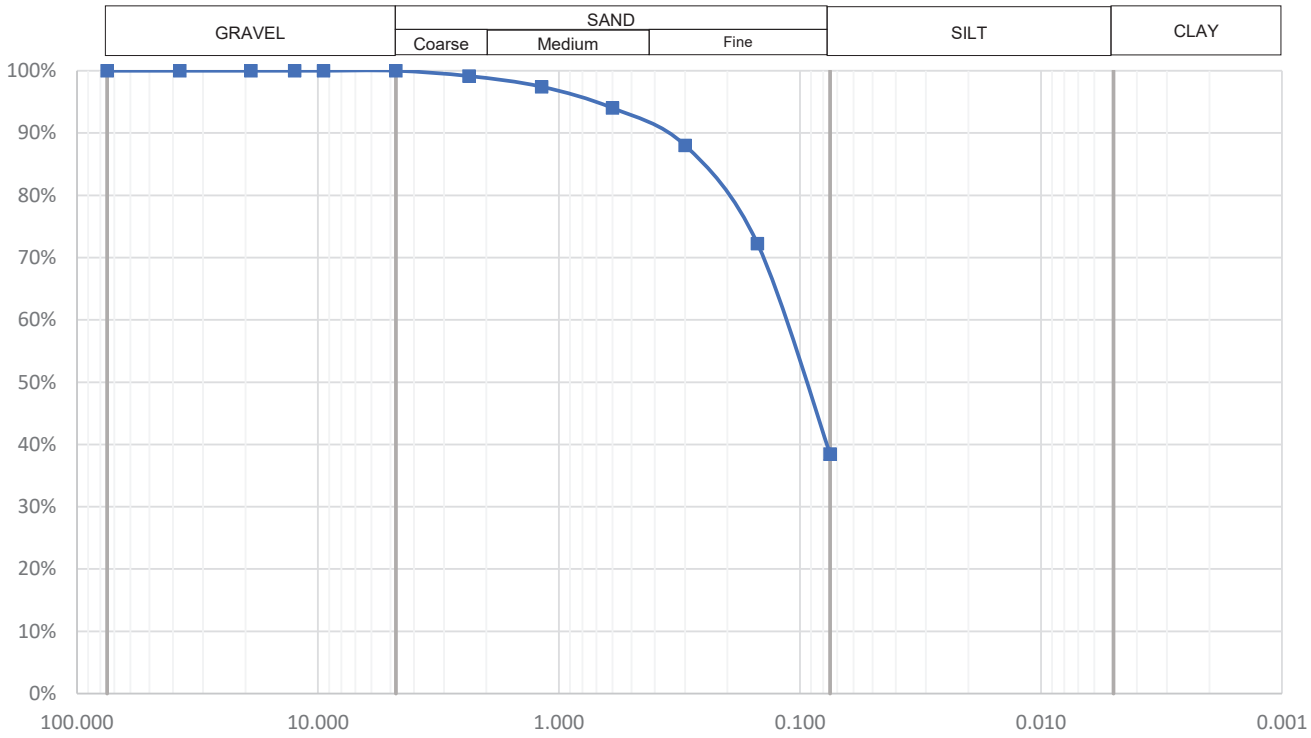
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |

SOILS & STRUCTURES

# Particle Size Distribution Report

| | | | |
|---|---|---|---|
| Sample Location | TB-02 | Project Name | 324 West Center |
| Sample Depth (ft) | 2 | Project Number | 2020.0129 |
| Sample ID | MSK_2020030354 | Client | Kerr Real Estate |
| | | Date | 3/6/2020 |




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0% | 0.0% | 0.0% | 1.4% | 8.1% | 52.1% | 0.0% | 0.0% |
| **D85** | **D60** | **D50** | **D30** | **D15** | **D10** | **Loss By Wash** | |
| 0.2712 | 0.1228 | 0.1006 | 0.0585 | 0.0293 | 0.0195 | 38.5% | |

| Sieve | |
|---|---|
| Particle Size (mm) | % Passing |
| 75.000 | 100.0% |
| 37.500 | 100.0% |
| 19.000 | 100.0% |
| 12.500 | 100.0% |
| 9.500 | 100.0% |
| 4.750 | 100.0% |
| 2.360 | 99.1% |
| 1.180 | 97.4% |
| 0.600 | 94.0% |
| 0.300 | 88.0% |
| 0.150 | 72.2% |
| 0.075 | 38.5% |

| Hydrometer | |
|---|---|
| Particle Size (mm) | % Passing |
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| Material Description |
|---|
| Fine Clayey SAND (SC) |

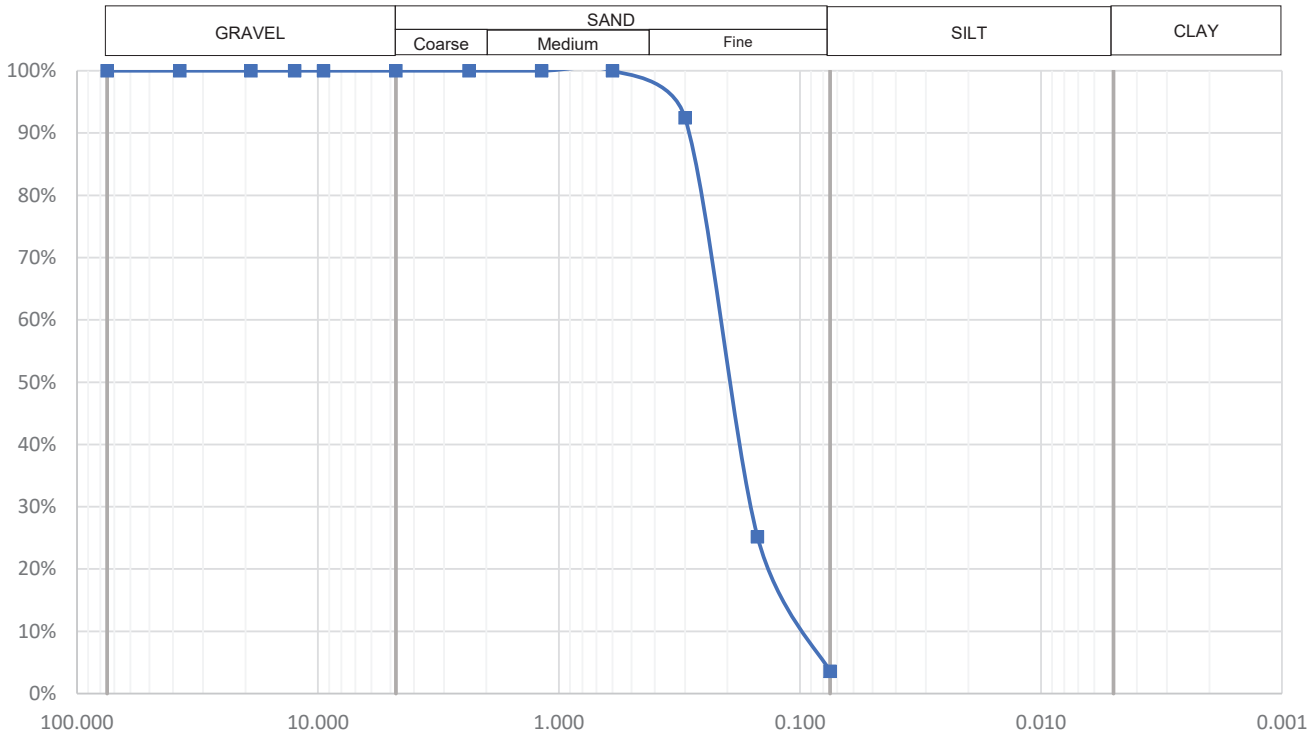
| Remarks |
|---|
| |

| | |
|---|---|
| **Technician** | MDaigneault |
| **Checked** | wstambaugh |
| **Approved** | wstambaugh |

SOILS & STRUCTURES

# Particle Size Distribution Report

| | | | |
|---|---|---|---|
| Sample Location | TB-03 | Project Name | 324 West Center |
| Sample Depth (ft) | 2 | Project Number | 2020.0129 |
| Sample ID | MSK_2020030358 | Client | Kerr Real Estate |
| | | Date | 3/6/2020 |




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0% | 0.0% | 0.0% | 0.0% | 4.4% | 92.0% | 0.0% | 0.0% |
| **D85** | **D60** | **D50** | **D30** | **D15** | **D10** | **Loss By Wash** | |
| 0.2834 | 0.2276 | 0.2053 | 0.1607 | 0.1146 | 0.0973 | 3.6% | |

| Sieve | |
|---|---|
| Particle Size (mm) | % Passing |
| 75.000 | 100.0% |
| 37.500 | 100.0% |
| 19.000 | 100.0% |
| 12.500 | 100.0% |
| 9.500 | 100.0% |
| 4.750 | 100.0% |
| 2.360 | 100.0% |
| 1.180 | 100.0% |
| 0.600 | 100.0% |
| 0.300 | 92.4% |
| 0.150 | 25.2% |
| 0.075 | 3.6% |

| Hydrometer | |
|---|---|
| Particle Size (mm) | % Passing |
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| Material Description |
|---|
| Fine SAND (SP) |

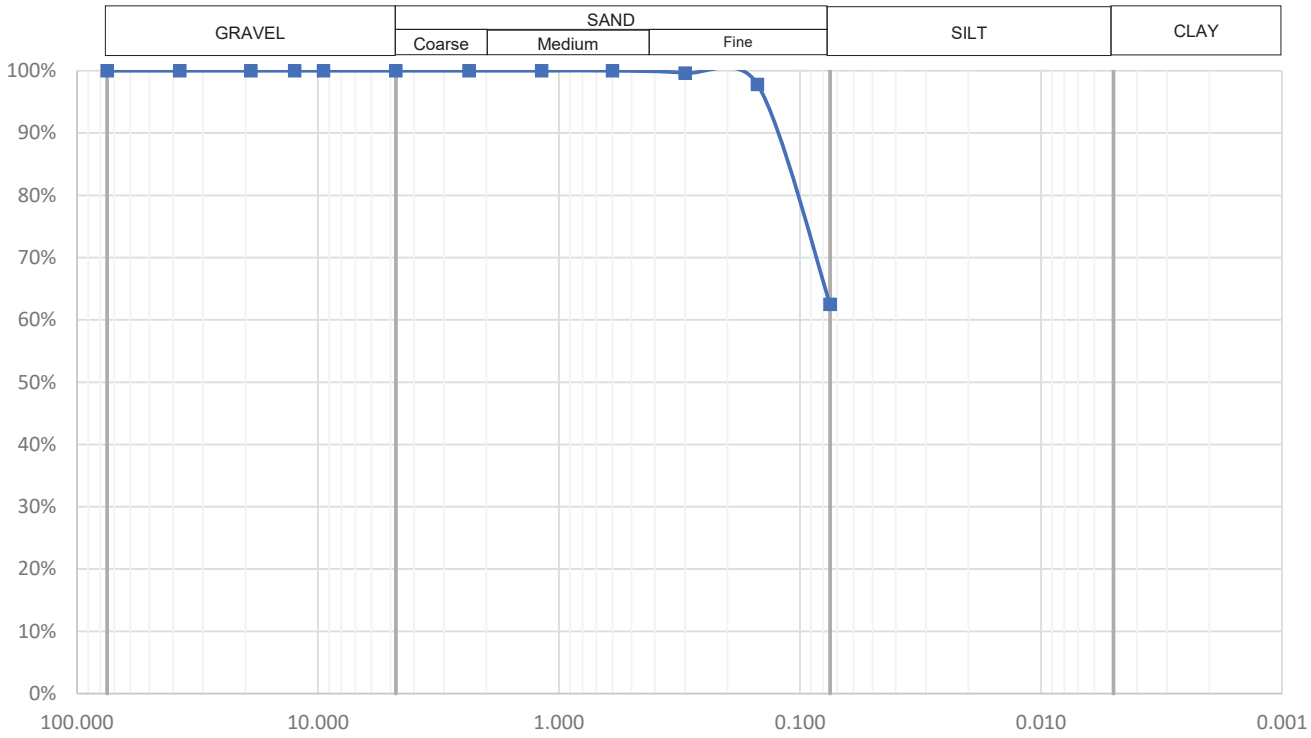
| Remarks |
|---|
| |

| | |
|---|---|
| **Technician** | MDaigneault |
| **Checked** | wstambaugh |
| **Approved** | wstambaugh |

SOILS & STRUCTURES

# Particle Size Distribution Report

| | | | |
|---|---|---|---|
| Sample Location | TB-09 | Project Name | 324 West Center |
| Sample Depth (ft) | 2 | Project Number | 2020.0129 |
| Sample ID | MSK_2020030371 | Client | Kerr Real Estate |
| | | Date | 3/6/2020 |




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0% | 0.0% | 0.0% | 0.0% | 0.2% | 37.3% | 0.0% | 0.0% |
| **D85** | **D60** | **D50** | **D30** | **D15** | **D10** | **Loss By Wash** | |
| 0.1228 | 0.0720 | 0.0600 | 0.0360 | 0.0180 | 0.0120 | 62.5% | |

| Sieve | |
|---|---|
| Particle Size (mm) | % Passing |
| 75.000 | 100.0% |
| 37.500 | 100.0% |
| 19.000 | 100.0% |
| 12.500 | 100.0% |
| 9.500 | 100.0% |
| 4.750 | 100.0% |
| 2.360 | 100.0% |
| 1.180 | 100.0% |
| 0.600 | 100.0% |
| 0.300 | 99.6% |
| 0.150 | 97.8% |
| 0.075 | 62.5% |

| Hydrometer | |
|---|---|
| Particle Size (mm) | % Passing |
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| Material Description |
|---|
| Sandy SILT (ML) |

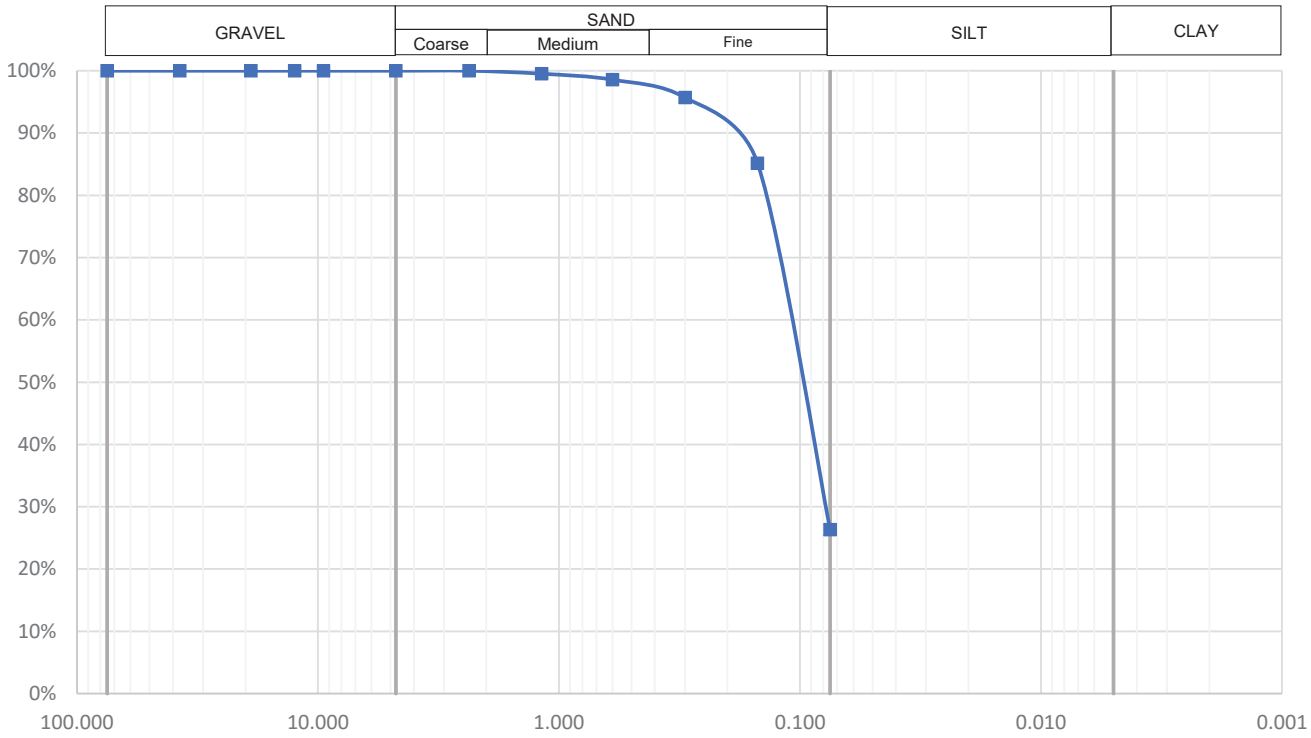
| Remarks |
|---|
| |

| | |
|---|---|
| **Technician** | MDaigneault |
| **Checked** | wstambaugh |
| **Approved** | wstambaugh |

SOILS & STRUCTURES

# Particle Size Distribution Report

| | | | |
|---|---|---|---|
| Sample Location | TB-09 | Project Name | 324 West Center |
| Sample Depth (ft) | 4.5 | Project Number | 2020.0129 |
| Sample ID | MSK_2020030372 | Client | Kerr Real Estate |
| | | Date | 3/6/2020 |




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0% | 0.0% | 0.0% | 0.1% | 3.0% | 70.6% | 0.0% | 0.0% |
| **D85** | **D60** | **D50** | **D30** | **D15** | **D10** | **Loss By Wash** | |
| 0.1498 | 0.1179 | 0.1052 | 0.0797 | 0.0428 | 0.0285 | 26.3% | |

| Sieve | |
|---|---|
| Particle Size (mm) | % Passing |
| 75.000 | 100.0% |
| 37.500 | 100.0% |
| 19.000 | 100.0% |
| 12.500 | 100.0% |
| 9.500 | 100.0% |
| 4.750 | 100.0% |
| 2.360 | 100.0% |
| 1.180 | 99.5% |
| 0.600 | 98.6% |
| 0.300 | 95.7% |
| 0.150 | 85.2% |
| 0.075 | 26.3% |

| Hydrometer | |
|---|---|
| Particle Size (mm) | % Passing |
| | |
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| Material Description |
|---|
| Fine Silty SAND (SM) |

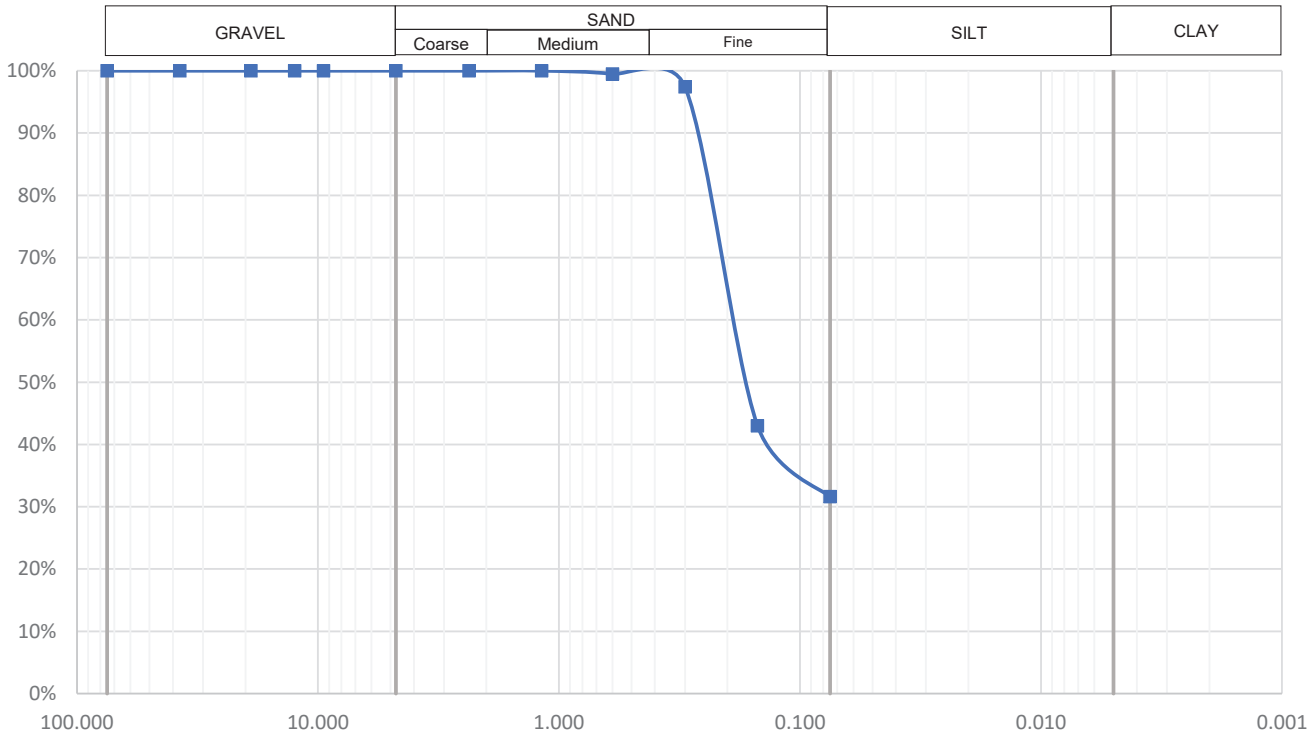
| Remarks |
|---|
| |

| | |
|---|---|
| **Technician** | MDaigneault |
| **Checked** | wstambaugh |
| **Approved** | wstambaugh |

SOILS & STRUCTURES

# Particle Size Distribution Report

| | | | |
|---|---|---|---|
| Sample Location | TB-04 | Project Name | 324 West Center |
| Sample Depth (ft) | 4.5 | Project Number | 2020.0129 |
| Sample ID | MSK_2020030360 | Client | Kerr Real Estate |
| | | Date | 3/6/2020 |




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0% | 0.0% | 0.0% | 0.0% | 1.7% | 66.7% | 0.0% | 0.0% |
| **D85** | **D60** | **D50** | **D30** | **D15** | **D10** | **Loss By Wash** | |
| 0.2658 | 0.1969 | 0.1693 | 0.0712 | 0.0356 | 0.0237 | 31.6% | |

| Sieve | |
|---|---|
| Particle Size (mm) | % Passing |
| 75.000 | 100.0% |
| 37.500 | 100.0% |
| 19.000 | 100.0% |
| 12.500 | 100.0% |
| 9.500 | 100.0% |
| 4.750 | 100.0% |
| 2.360 | 100.0% |
| 1.180 | 100.0% |
| 0.600 | 99.5% |
| 0.300 | 97.4% |
| 0.150 | 43.0% |
| 0.075 | 31.6% |

| Hydrometer | |
|---|---|
| Particle Size (mm) | % Passing |
| | |
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| Material Description |
|---|
| Fine Silty SAND (SM) |

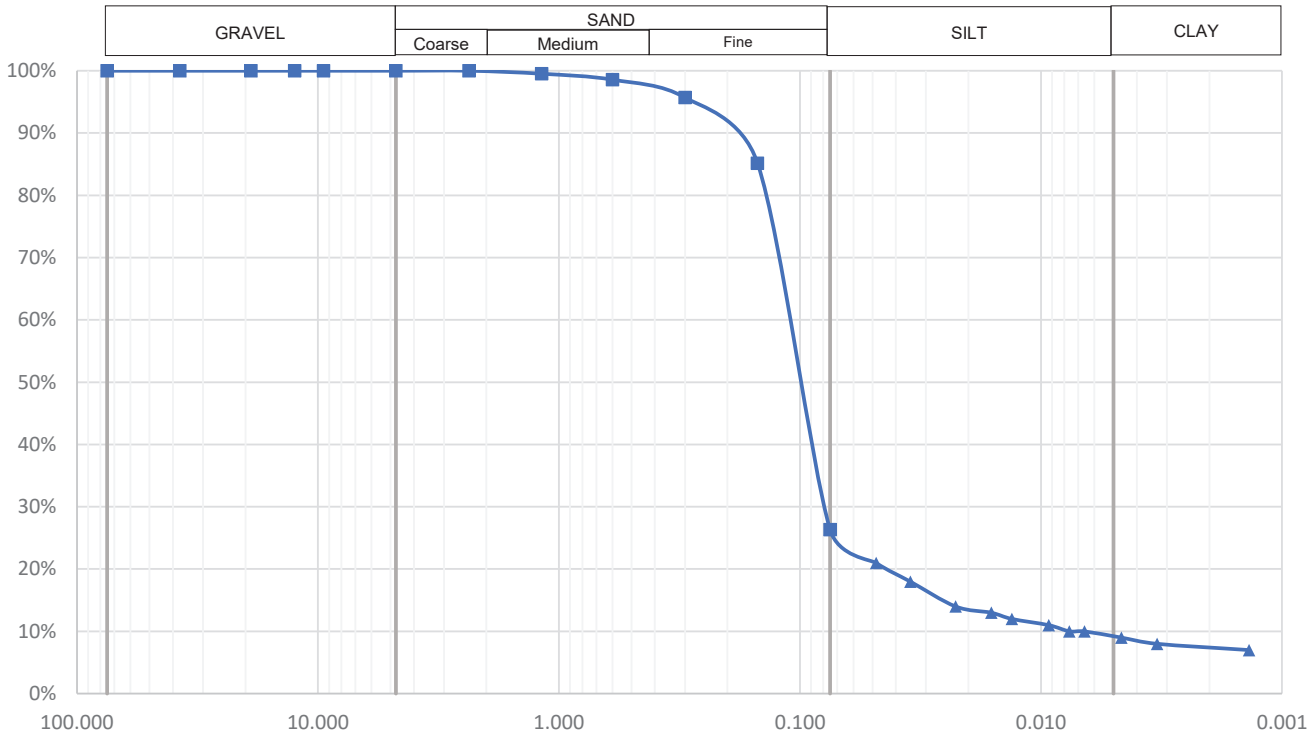
| Remarks |
|---|
| |

| | |
|---|---|
| **Technician** | MDaigneault |
| **Checked** | wstambaugh |
| **Approved** | wstambaugh |

SOILS & STRUCTURES

# Particle Size Distribution Report

| | | | |
|---|---|---|---|
| Sample Location | TB-09 | Project Name | 324 West Center |
| Sample Depth (ft) | 4.5 | Project Number | 2020.0129 |
| Sample ID | MSK_2020030372 | Client | Kerr Real Estate |
| | | Date | 3/6/2020 |




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0% | 0.0% | 0.0% | 0.1% | 3.0% | 70.6% | 18.3% | 8.0% |
| **D85** | **D60** | **D50** | **D30** | **D15** | **D10** | **Loss By Wash** | |
| 0.1498 | 0.1179 | 0.1052 | 0.0797 | 0.0257 | 0.0076 | 26.3% | |

| Sieve | |
|---|---|
| Particle Size (mm) | % Passing |
| 75.000 | 100.0% |
| 37.500 | 100.0% |
| 19.000 | 100.0% |
| 12.500 | 100.0% |
| 9.500 | 100.0% |
| 4.750 | 100.0% |
| 2.360 | 100.0% |
| 1.180 | 99.5% |
| 0.600 | 98.6% |
| 0.300 | 95.7% |
| 0.150 | 85.2% |
| 0.075 | 26.3% |

| Hydrometer | |
|---|---|
| Particle Size (mm) | % Passing |
| 0.0483 | 21.0% |
| 0.0348 | 18.0% |
| 0.0226 | 14.0% |
| 0.0161 | 13.0% |
| 0.0132 | 12.0% |
| 0.0093 | 11.0% |
| 0.0076 | 10.0% |
| 0.0066 | 10.0% |
| 0.0046 | 9.0% |
| 0.0033 | 8.0% |
| 0.0014 | 7.0% |

| Material Description |
|---|
| Fine Silty SAND with Clay (SM) |

| Remarks |
|---|
| |

| | |
|---|---|
| **Technician** | MDaigneault |
| **Checked** | wstambaugh |
| **Approved** | wstambaugh |

| SOILS & STRUCTURES | LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX ( ASTM D4318-10, Multipoint test ) | | | Job Ref | 2020.0129 |
|---|---|---|---|---|---|
| | | | | Borehole/Pit No. | TB-09 |
| Site Name | 324 West Center | | | Sample No. | D |
| Soil Description | | | | Depth ft | 9.5 |
| Specimen Reference | 5 | Specimen Depth | ft | Sample Type | SPT |
| Specimen Description | | | | KeyLAB ID | MSK_2020030373 |
| Test Method | ASTM D4318-10, Multipoint test | | | Date started | |

**Sample preparation:**

Tested ..... ◯ in natural condition ◯ after >425um removed by hand ◯ after washing to remove >425um

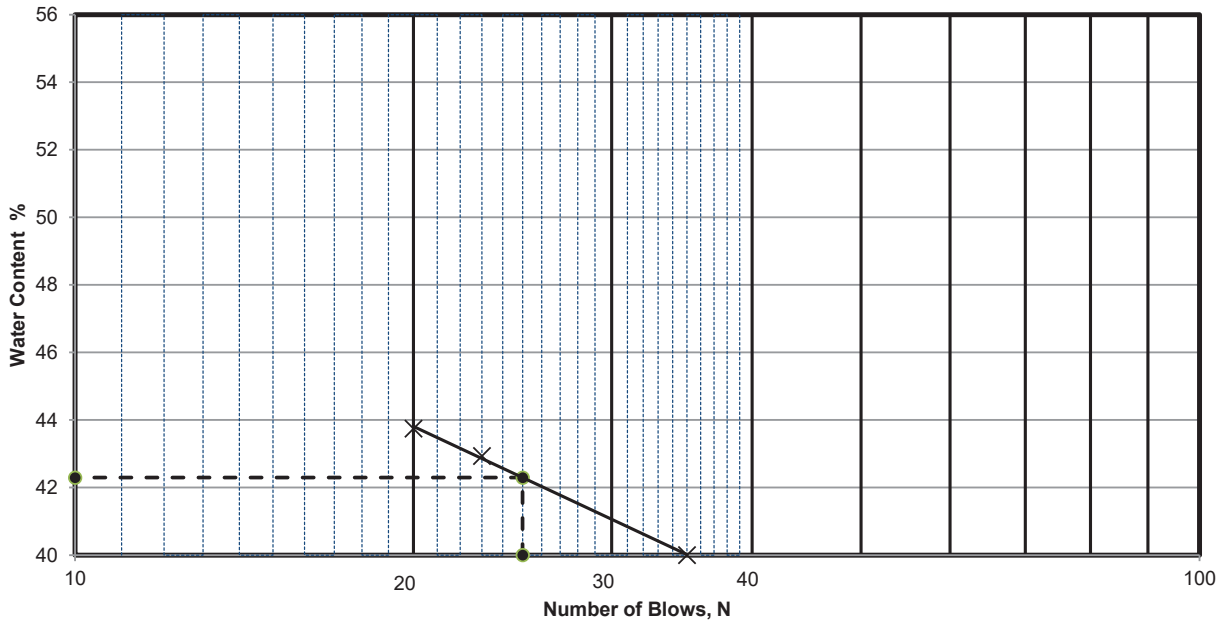
| | | | | |
|---|---|---|---|---|
| Total mass of sample | | lb | Percentage retained 425µm | % |
| Mass, greater than 425µm sieve, removed | | lb | Percentage passing 425µm | % |

**Liquid Limit**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 25 - 35 | 25 - 30 | 15 - 25 | | |
| No. of blows, N | | 35 | 23 | 20 | | |
| Container No | | | | | LL Device No. | |
| Mass of container | g | 11.70 | 11.70 | 11.70 | Mechanical or manual | |
| Mass of wet soil and container | g | 33.40 | 36.00 | 27.80 | Grooving tool No. | |
| Mass of dry soil and container (1) | g | 27.20 | 28.70 | 22.90 | Plastic or Metal | |
| Mass of dry soil and container (2) | g | | | | Oven No. | |
| Water Content | % | 40.0 | 42.9 | 43.8 | Oven temperature | oC |

**Plastic Limit**

| | | | | | | |
|---|---|---|---|---|---|---|
| Container No | | | | | Performed by hand | |
| Mass of container | g | 11.20 | 11.20 | | Rolling device No. | |
| Mass of wet soil and container | g | 16.60 | 16.70 | | Oven No. | |
| Mass of dry soil and container (1) | g | 15.70 | 15.80 | | Oven temperature | oC |
| Mass of dry soil and container (2) | g | | | Average PL | | |
| Water Content | % | 20.0 | 19.6 | 20 | | |




Remarks ( added to preparation for report/ags data )

| | |
|---|---|
| Tested | MDaigneault |
| Checked | wstambaugh |
| Approved | wstambaugh |

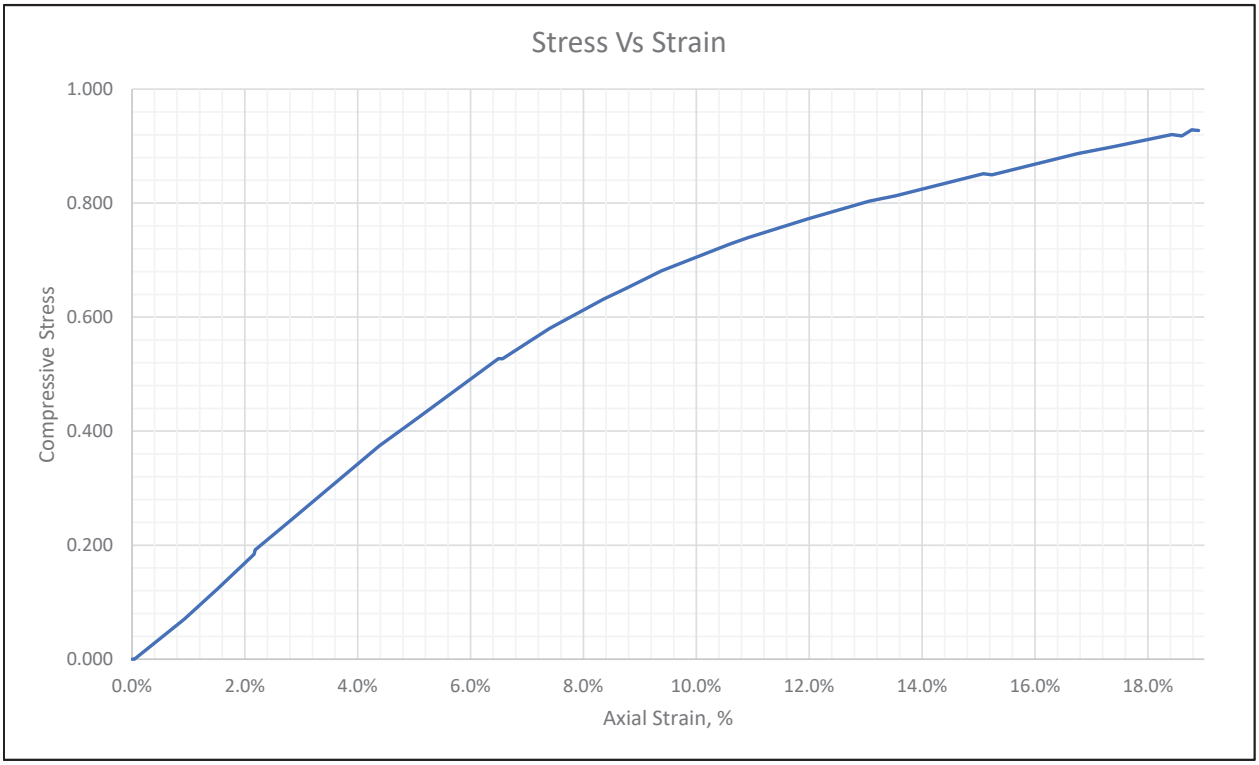
| | |
|---|---|
| **LIQUID LIMIT** | **42** |
| **PLASTIC LIMIT** | **20** |
| **PLASTICITY INDEX** | **22** |

Lab Sheet Reference :

SOILS & STRUCTURES

# Unconfined Compressive Strength Report

| | |
|---|---|
| **Project Name** | 324 West Center |
| **Project No.** | 2020.0129 |
| **Date:** | 3/6/2020 |
| **Client** | 324 West Center |
| **Boring Location** | TB-06 |
| **Depth** | 2 |




| | |
|---|---|
| **Sample ID** | MSK_2020030365 |
| **Unconfined Strength (tsf)** | 0.929 |
| **Undrained Shear Strength (tsf)** | 0.464 |
| **Failure Strain (%)** | 18.8% |
| **Strain Rate, (in/min)** | 0.000 |
| **Moisture Content** | 26.9% |
| **Wet Density (pcf)** | 128.2 |
| **Dry Density (pcf)** | 101.0 |
| **Void Ratio** | 0.6681 |
| **Saturation (%)** | 108.9% |
| **Specimen Diameter (in)** | 1.38 |
| **Specimen Height (in)** | 2.33 |
| **Height/Diameter Ratio** | 1.69 |

| **Liquid Limit** |
|---|
| |

| **Plastic Limit** |
|---|
| |

| **Plasticity Index** |
|---|
| |

| **Assumed GS** |
|---|
| 2.7 |

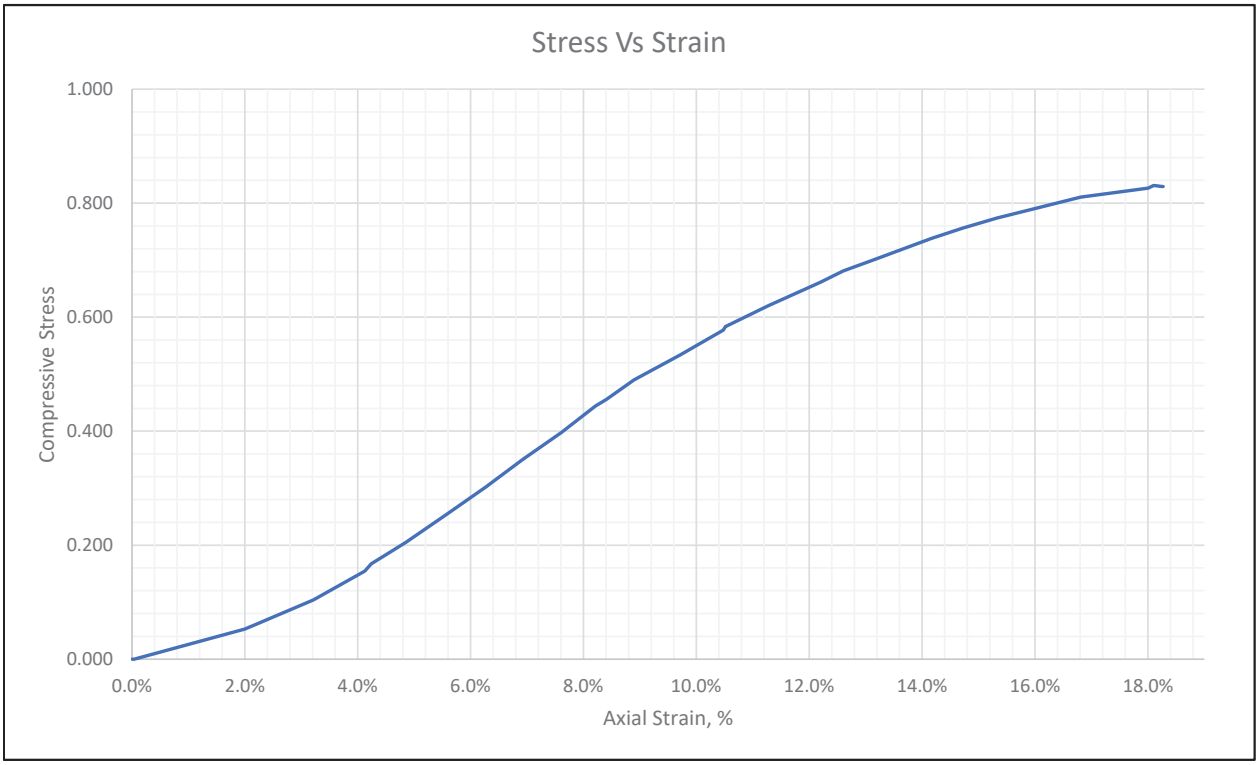
**Comments:**

| **Tested** |
|---|
| wstambaugh |
| **Checked** |
| wstambaugh |
| **Approved** |
| wstambaugh |

SOILS & STRUCTURES

# Unconfined Compressive Strength Report

| | |
|---|---|
| **Project Name** | 324 West Center |
| **Project No.** | 2020.0129 |
| **Date:** | 3/6/2020 |
| **Client** | 324 West Center |
| **Boring Location** | TB-10 |
| **Depth** | 4.5 |




| | |
|---|---|
| **Sample ID** | MSK_2020030374 |
| **Unconfined Strength (tsf)** | 0.831 |
| **Undrained Shear Strength (tsf)** | 0.415 |
| **Failure Strain (%)** | 18.1% |
| **Strain Rate, (in/min)** | 0.000 |
| **Moisture Content** | 22.5% |
| **Wet Density (pcf)** | 135.3 |
| **Dry Density (pcf)** | 110.5 |
| **Void Ratio** | 0.5246 |
| **Saturation (%)** | 115.7% |
| **Specimen Diameter (in)** | 1.49 |
| **Specimen Height (in)** | 2.41 |
| **Height/Diameter Ratio** | 1.62 |

| **Liquid Limit** |
|---|
| |

| **Plastic Limit** |
|---|
| |

| **Plasticity Index** |
|---|
| |

| **Assumed GS** |
|---|
| 2.7 |

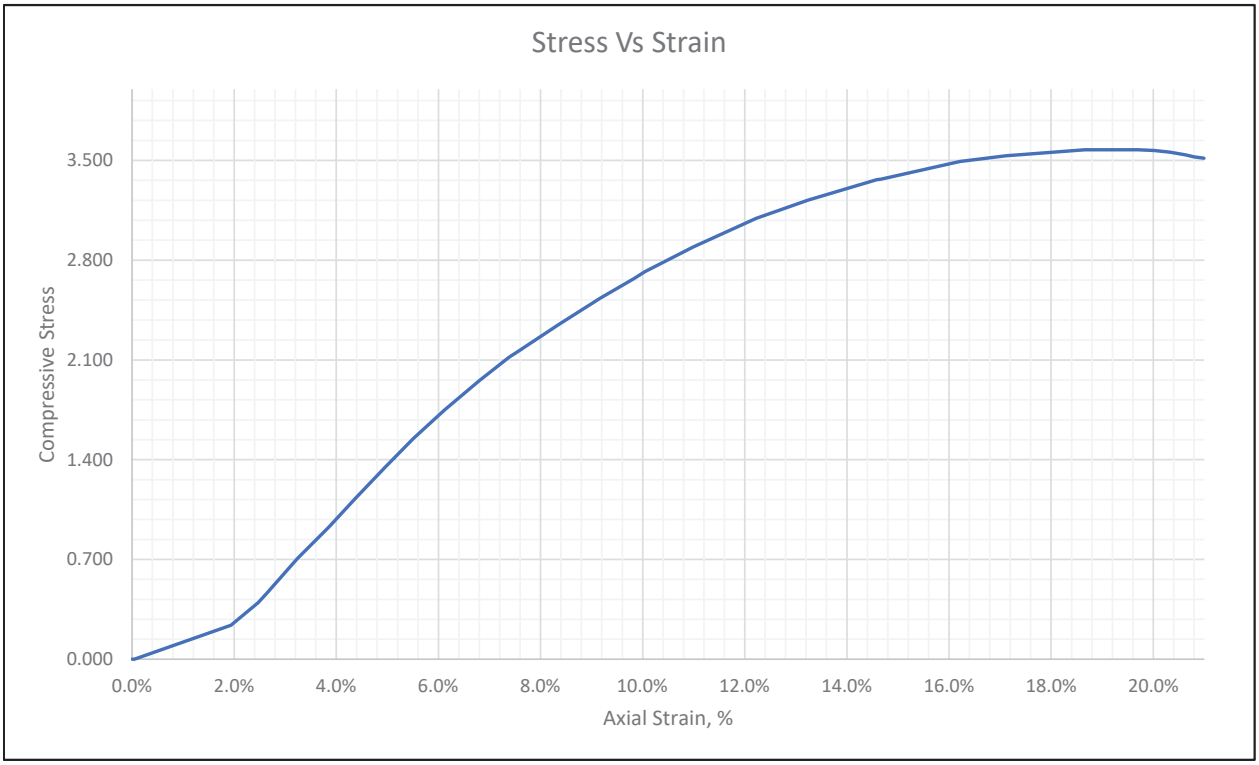
**Comments:**

| **Tested** |
|---|
| wstambaugh |
| **Checked** |
| wstambaugh |
| **Approved** |
| wstambaugh |

SOILS & STRUCTURES

# Unconfined Compressive Strength Report

| | |
|---|---|
| **Project Name** | 324 West Center |
| **Project No.** | 2020.0129 |
| **Date:** | 3/6/2020 |
| **Client** | 324 West Center |
| **Boring Location** | TB-07 |
| **Depth** | 4.5 |




| | |
|---|---|
| **Sample ID** | MSK_2020030368 |
| **Unconfined Strength (tsf)** | 3.574 |
| **Undrained Shear Strength (tsf)** | 1.787 |
| **Failure Strain (%)** | 18.7% |
| **Strain Rate, (in/min)** | 0.000 |
| **Moisture Content** | 19.7% |
| **Wet Density (pcf)** | 129.6 |
| **Dry Density (pcf)** | 108.2 |
| **Void Ratio** | 0.5565 |
| **Saturation (%)** | 95.5% |
| **Specimen Diameter (in)** | 1.38 |
| **Specimen Height (in)** | 2.08 |
| **Height/Diameter Ratio** | 1.51 |

| **Liquid Limit** |
|---|
| |

| **Plastic Limit** |
|---|
| |

| **Plasticity Index** |
|---|
| |

| **Assumed GS** |
|---|
| 2.7 |

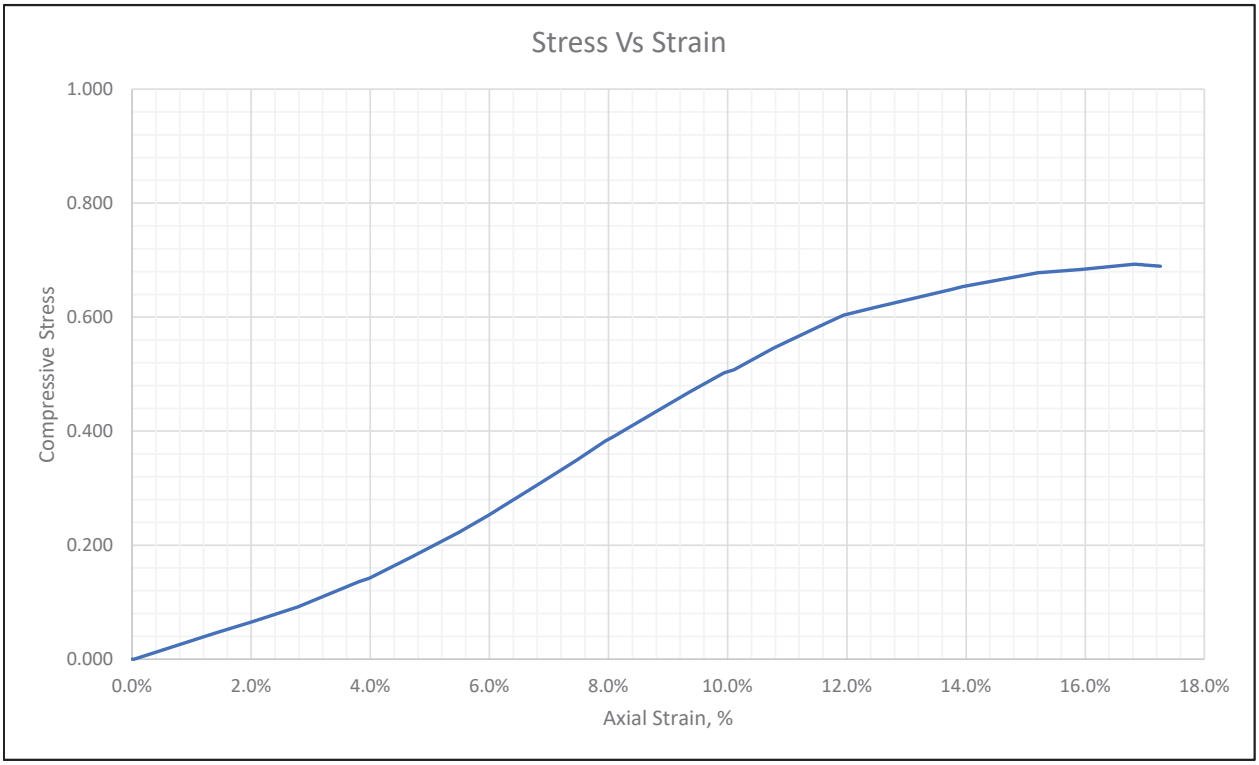
**Comments:**

| **Tested** |
|---|
| wstambaugh |
| **Checked** |
| wstambaugh |
| **Approved** |
| wstambaugh |

SOILS & STRUCTURES

# Unconfined Compressive Strength Report

| | |
|---|---|
| **Project Name** | 324 West Center |
| **Project No.** | 2020.0129 |
| **Date:** | 3/6/2020 |
| **Client** | 324 West Center |
| **Boring Location** | TB-04 |
| **Depth** | 7 |




| | |
|---|---|
| **Sample ID** | MSK_2020030361 |
| **Unconfined Strength (tsf)** | 0.693 |
| **Undrained Shear Strength (tsf)** | 0.346 |
| **Failure Strain (%)** | 16.8% |
| **Strain Rate, (in/min)** | 0.000 |
| **Moisture Content** | 21.0% |
| **Wet Density (pcf)** | 139.6 |
| **Dry Density (pcf)** | 115.3 |
| **Void Ratio** | 0.4606 |
| **Saturation (%)** | 123.3% |
| **Specimen Diameter (in)** | 1.49 |
| **Specimen Height (in)** | 2.54 |
| **Height/Diameter Ratio** | 1.70 |

| **Liquid Limit** |
|---|
| |

| **Plastic Limit** |
|---|
| |

| **Plasticity Index** |
|---|
| |

| **Assumed GS** |
|---|
| 2.7 |

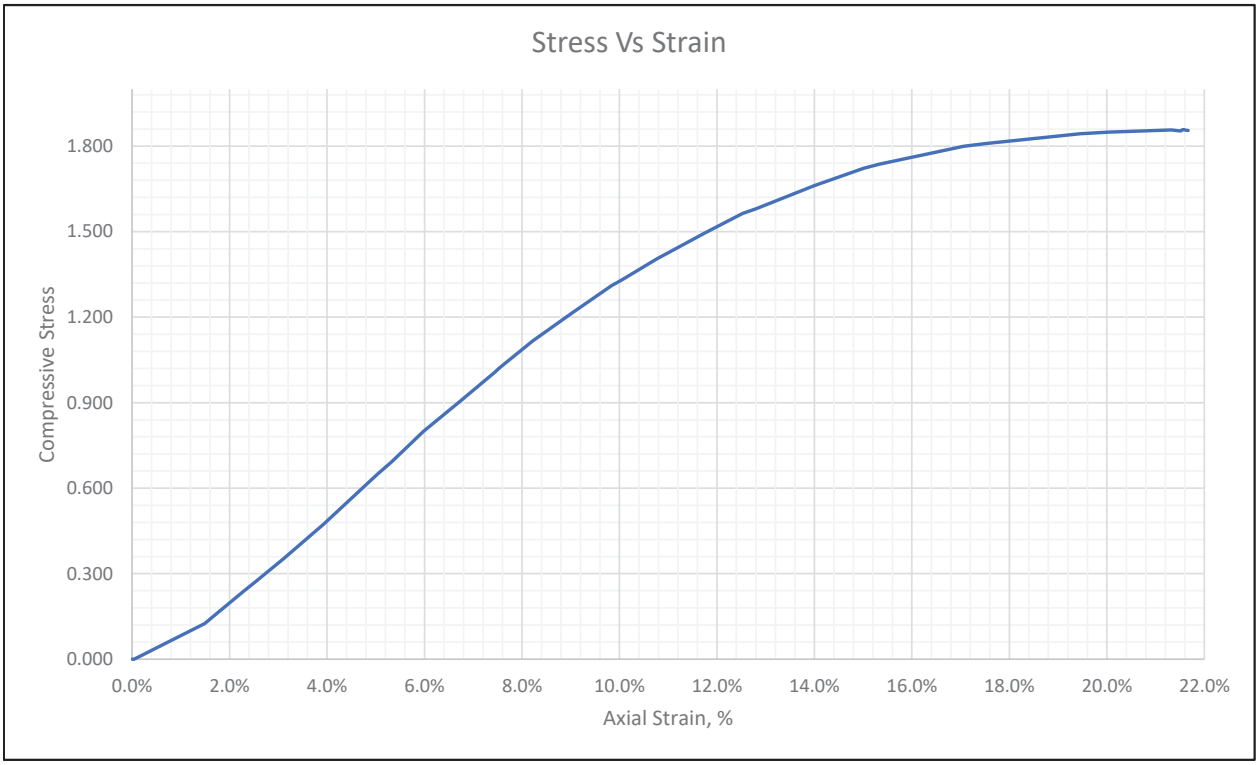
**Comments:**

| **Tested** |
|---|
| wstambaugh |
| **Checked** |
| wstambaugh |
| **Approved** |
| wstambaugh |

SOILS & STRUCTURES

# Unconfined Compressive Strength Report

| | |
|---|---|
| **Project Name** | 324 West Center |
| **Project No.** | 2020.0129 |
| **Date:** | 3/6/2020 |
| **Client** | 324 West Center |
| **Boring Location** | TB-05 |
| **Depth** | 7 |




| | |
|---|---|
| **Sample ID** | MSK_2020030363 |
| **Unconfined Strength (tsf)** | 1.858 |
| **Undrained Shear Strength (tsf)** | 0.929 |
| **Failure Strain (%)** | 21.6% |
| **Strain Rate, (in/min)** | 0.000 |
| **Moisture Content** | 19.2% |
| **Wet Density (pcf)** | 135.8 |
| **Dry Density (pcf)** | 113.9 |
| **Void Ratio** | 0.4787 |
| **Saturation (%)** | 108.4% |
| **Specimen Diameter (in)** | 1.37 |
| **Specimen Height (in)** | 2.03 |
| **Height/Diameter Ratio** | 1.48 |

| **Liquid Limit** |
|---|
| |

| **Plastic Limit** |
|---|
| |

| **Plasticity Index** |
|---|
| |

| **Assumed GS** |
|---|
| 2.7 |

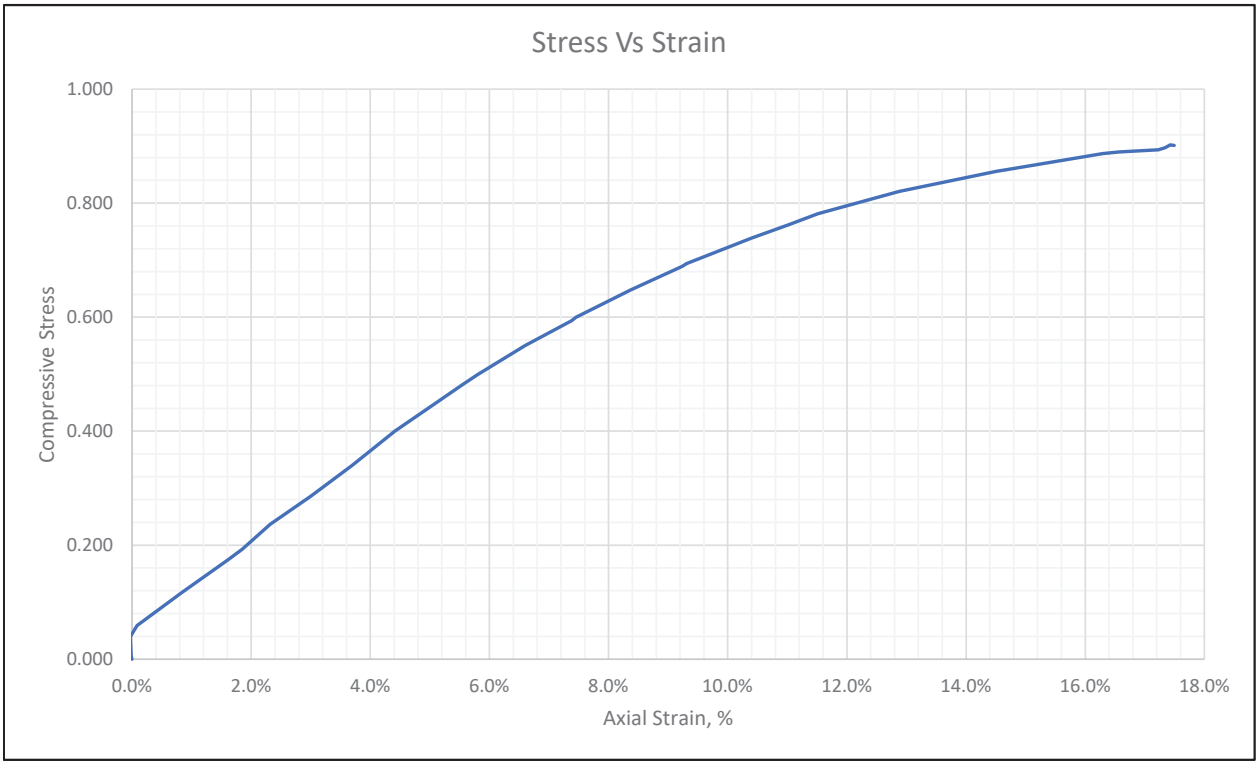
**Comments:**

| **Tested** |
|---|
| wstambaugh |
| **Checked** |
| wstambaugh |
| **Approved** |
| wstambaugh |

SOILS & STRUCTURES

# Unconfined Compressive Strength Report

| | |
|---|---|
| **Project Name** | 324 West Center |
| **Project No.** | 2020.0129 |
| **Date:** | 3/6/2020 |
| **Client** | 324 West Center |
| **Boring Location** | TB-10 |
| **Depth** | 7 |




| | |
|---|---|
| **Sample ID** | MSK_2020030375 |
| **Unconfined Strength (tsf)** | 0.902 |
| **Undrained Shear Strength (tsf)** | 0.451 |
| **Failure Strain (%)** | 17.4% |
| **Strain Rate, (in/min)** | 0.000 |
| **Moisture Content** | 27.9% |
| **Wet Density (pcf)** | 123.5 |
| **Dry Density (pcf)** | 96.6 |
| **Void Ratio** | 0.7438 |
| **Saturation (%)** | 101.1% |
| **Specimen Diameter (in)** | 1.51 |
| **Specimen Height (in)** | 2.75 |
| **Height/Diameter Ratio** | 1.82 |

| **Liquid Limit** |
|---|
| |

| **Plastic Limit** |
|---|
| |

| **Plasticity Index** |
|---|
| |

| **Assumed GS** |
|---|
| 2.7 |

**Comments:**

| **Tested** |
|---|
| wstambaugh |
| **Checked** |
| wstambaugh |
| **Approved** |
| wstambaugh |

SOILS & STRUCTURES

## General Information for Method of Field Investigation

The soil investigation was performed in accordance with the American Society of Testing and Materials method ASTM D 1586, which is the "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils". Samples of compressible clays or organic soils are obtained in accordance with ASTM D 1587, which is the "Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes." Rock may be cored in conjunction with the above methods as specified in ASTM D 2113 which is the "Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigation."

### Field Testing

Standard Penetration Tests (SPT) in accordance with ASTM D 1586 were generally performed at depths of 2.0', 4.5', 7.0', 9.5' and 5.0' intervals thereafter.

### Laboratory Testing

Samples obtained from the Standard Penetration Test, ASTM D 1586 or thin walled tube method, ASTM D 1587, were tested in the laboratory for the moisture content and density and/or particle size, where applicable. When soils sampled possessed sufficient cohesive properties, it was tested for its compressive strength in the unconfined state.

Natural Percent Moisture content (N.P.M.) of the soil is the percentage by weight of water contained in the soil sample compared to the dry weight of the solids of which the soil is composed. The NPM of select samples is determined in accordance with ASTM D 2216.

Natural Density (N.D.) of soil as reported on the appended boring logs is the natural wet density of the soils expressed in pounds per cubic foot.

The unconfined compressive strength of cohesive soils is determined in the laboratory on "undisturbed" select samples in accordance with ASTM D 2166. This test determines the maximum load required at a specified rate to deform the cohesive soil specimen length twenty (20%) percent. The primary purpose of the unconfined compression test is to obtain approximate quantitative values of the compressive strength of soils possessing sufficient coherence to permit testing in the unconfined state. The shear strength of the cohesive soil can be calculated from the results of the unconfined compressive strength test.

### Color

When the color of the soils is uniform throughout, the color recorded will be such as brown, gray, and black and may be modified by adjectives such as light and dark. If the soils predominant color is shaded by secondary color, the secondary color precedes the primary color, such as gray-brown, or yellow-brown. If two major and distinct colors are swirled throughout the soil, the colors will be modified by the term mottled; such as mottled brown and gray.

### Water Observations

Depth of water recorded in the test boring is measured from the ground surface to the water surface. Initial depth indicates water level during boring, completing depth indicates water level immediately after boring, and depth after "X" number of hours indicates water level after allowing the groundwater rise or fall over a period of time. Water observations in pervious soils are considered reliable groundwater levels for accurate groundwater measurements at the time the test borings were performed unless records are made over several days' time. Factors such as weather, soils porosity, etc., will cause the groundwater level to fluctuate for both pervious and impervious soils.

SOILS & STRUCTURES

**Sample Type**

If not otherwise indicated, the sample is a split-barrel liner sample ASTM D 1586.

| |
|---|
| "S.T.' – Shelby tube sample, ASTM D 1587 |
| "A" – disturbed augered sample |
| "C" – rock core sampled ASTM D 2113 |
| N.P.M. – Natural Percent Moisture of in-situ soils sample |
| N.D. – Natural Density of in-situ soils sample in pcf. |
| S.S. – Shear Strength of cohesive soils samples as determined by the Unconfined Compression tests in ksf. |

Classification Data – Laboratory data to assist in classification of soils and classification of soils characteristics; i.e., plastic limit or liquid limit

Test Boring Logs

| **Particle Size** | **Visual** |
|---|---|
| Boulders | Larger than 12" (300 mm) |
| Cobbles | 12" to 3" (300 to 75 mm) |
| Gravel - Coarse | 3" to ¾ " (75 to 19 mm) |
| Gravel – Fine | 19.0 to 4.75 mm |
| Sand- Coarse | 4.75 to 2.0 mm |
| Sand - Medium | 2.0 to 0.425 mm |
| Sand - Fine | 0.425 to 0.075 mm |
| Silt | 0.075 to 0.002 mm |
| Clay | 0.002 mm and smaller |

Soils Components

| **Major Component** | **Minor Component** |
|---|---|
| Gravel | Trace (1 - 10%) |
| Sand | Some (11 - 35%) |
| Silt/Clay | And (36 - 50%) |

Condition of Soil Relative to Compactness

| **Granular Material** | **"N" Value** |
|---|---|
| Loose | 0 - 4 |
| Slightly Compact | 5 - 7 |
| Compact | 8 - 20 |
| Very Compact | 21 - 50 |
| Extremely Compact | 51 and above |

| **Cohesive Material** | **"N" Value** |
|---|---|
| Soft | 0 - 4 |
| Firm | 5 - 7 |
| Stiff | 8 - 20 |
| Very Stiff | 21 - 50 |
| Extremely Stiff | 51 and above |

"N" values in clay soils are not to be used as a measure of shear strength. However, they may be used as a general indication of strength.

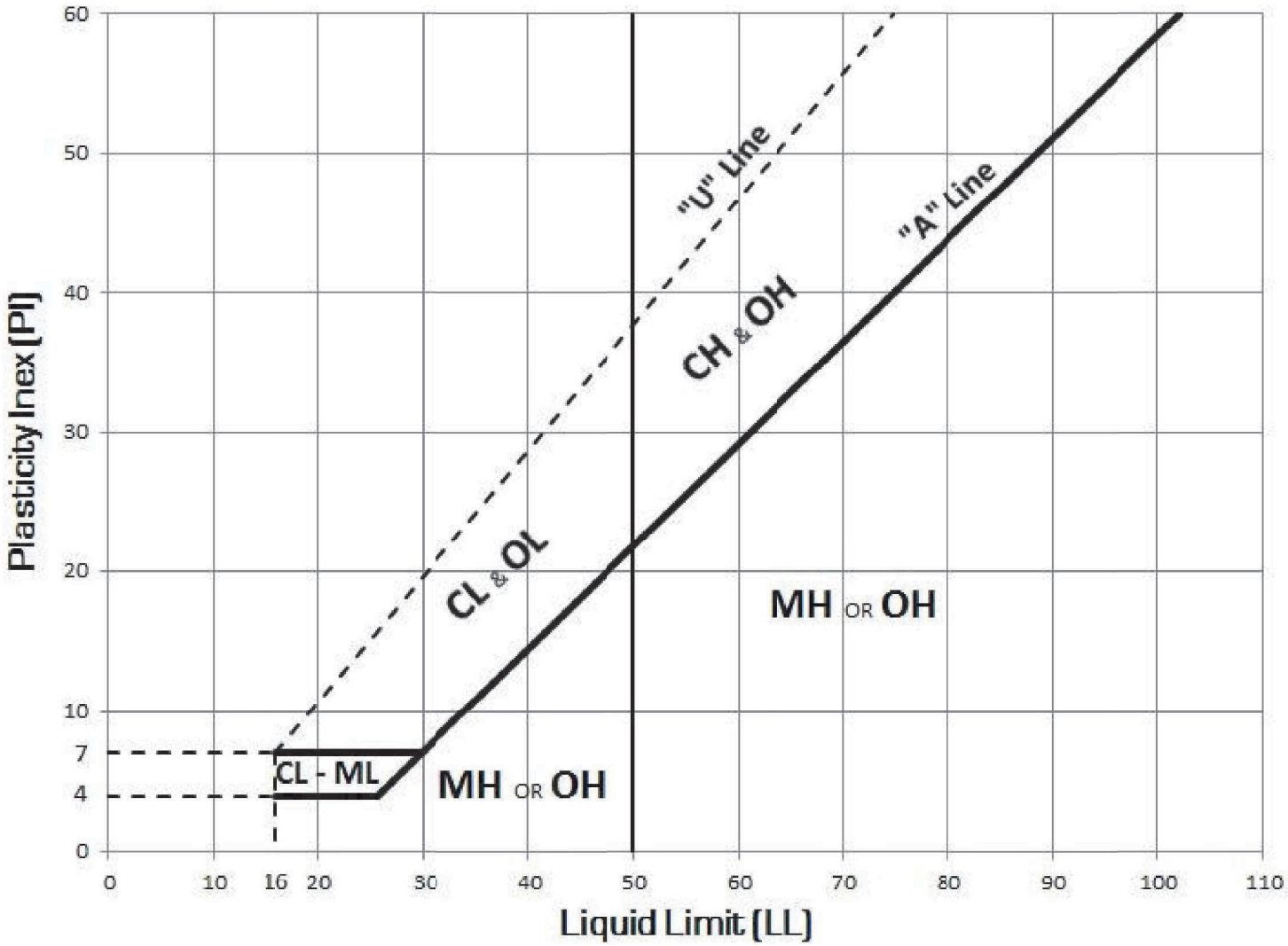
SOILS & STRUCTURES

Unified Soil Classification System Chart

| Major Divisions | | | Letter Symbol | Typical Descriptions |
|---|---|---|---|---|
| Coarse Grained Soils<br><br>More than 50% of material is larger than No. 200 sieve size | Gravel – Gravelly Soils<br><br>more than 50% of coarse fraction retained on No. 4 sieve | Clean gravels<br><br>(little or no fines) | GW | Well-Graded gravels, gravel-sand mixtures, little or no fines |
| | | | GP | Poorly-Graded gravels, gravel-sand mixtures, little or no fines |
| | | Gravel with Fines<br><br>(appreciable amount of fines) | GM | Silty gravels, gravel-sand-silt mixtures |
| | | | GC | Clayey gravels, gravel-sand-clay mixtures |
| | Sand and Sandy Soils<br><br>More than 50% of coarse fraction passing No. 4 sieve | Clean Sand<br><br>(little or no fines) | SW | Well-Graded sands, gravelly sands, little or no fines |
| | | | SP | Poorly-Graded sands, gravelly sands, little or no fines |
| | | Sand with Fines<br><br>(appreciable amount of fines) | SM | Silty sands, sand-silt mixtures |
| | | | SC | Clayey sands, sand-clay mixtures |
| Fine Grained Soils<br><br>More than 50% of material is smaller than No. 200 sieve size | Silts and Clays<br><br>Liquid limit less than 50 | | ML | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity |
| | | | CL | Inorganic clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays |
| | | | OL | Organic silts and organic silty clays or low plasticity |
| | Silts and Clays<br><br>Liquid limit greater than 50 | | MH | Inorganic silts, micaceous or diatomaceous fine sand or silty soils |
| | | | CH | Inorganic clays of high plasticity, fat clays |
| | | | OH | Organic clays or medium to high plasticity, organic silts |
| | Highly organic soils | | PT | Peat, humus, swamp soils with high organic contents |

For Laboratory Classification of Fine Grained Soil

Plasticity Chart



**SIERRA ENVIRONMENTAL CONSULTANTS, LLC**

**PO #136, KENT CITY, MICHIGAN 49330**

# PHASE I ENVIRONMENTAL SITE ASSESSMENT:

**324 Center Street parcels per furnished description**

**Douglas, Michigan**


**PREPARED FOR:**

**Kerr Real Estate LLC**

**Managing Member for Kerr-West Centre LLC**

**March 1, 2021**

**EXECUTIVE SUMMARY**

*Sierra Environmental Consultants, LLC* has completed this *Phase I Environmental Site Assessment* (*ESA*) for 324 Center Street parcels per furnished description, Douglas, Allegan County, Michigan (the *property*). This *ESA* has been completed in conformance with the scope and limitations of ASTM International E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (the *standard practice*). Any exceptions to or deletions from the *standard practice* are described in Section 1.4 of this report.

This ESA has not revealed evidence of recognized environmental conditions (RECs) associated with the property.

## 1.0 INTRODUCTION

*Sierra Environmental Consultants, LLC* has completed this *Phase I Environmental Site Assessment* (*ESA*) for a parcel of *commercial real estate* known as 324 Center Street parcels per furnished description, Douglas, Allegan County, Michigan (the *property*). This *ESA* has been completed in conformance with the scope and limitations of ASTM International E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (the *standard practice*). Any exceptions to or deletions from the *standard practice* are described in Section 1.4 of this report. All italicized items refer to definitions set forth in the *standard practice*.

### 1.1 Recognized Environmental Conditions

The term *recognized environmental condition*" (REC) means the presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of future release to the environment." The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. Any identified REC's are indicated in Section 8.0 - "Findings and Opinions".

### 1.2 Historical Recognized Environmental Conditions

The term “Historical Recognized Environmental Condition” (HREC) applies to the Property for contamination that has been verified to be remediated to an unrestricted cleanup standard. Any identified HREC's are indicated in Section 8.0 - "Findings and Opinions".

### 1.3 Controlled Recognized Environmental Conditions

The term “Controlled Recognized Environmental Condition” (CREC) applies to the Property if a cleanup utilized engineering or institutional controls such as deed use restrictions or prohibiting use of groundwater. Any identified CREC's are indicated in Section 8.0 - "Findings and Opinions".

### 1.4 “De Minimis” Conditions

The term *de minimis conditions* applies to minor or insignificant releases that generally do not present a threat to human health or the environment and that 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 *recognized environmental conditions,* and may or may not be considered significant enough to specify, based solely upon the discretion of the environmental professional.

1.6 Scope of Services

This *ESA* has been performed in accordance with good commercial and customary practice in the fields of environmental engineering and science. *Sierra Environmental Consultants, LLC*' scope of services and report format are intended to meet and exceed the requirements of the *standard practice*. The specific scope of services is as follows:

1. *Standard environmental record sources* were utilized to identify listings of known or suspected environmental conditions indicative of releases or threatened releases of hazardous substances in the vicinity of the *property*. *Sierra Environmental Consultants, LLC* contracts with a third party to search the various agency listings for different approximate minimum search distances from the *property*, based upon the relative potential threat represented by each listing as established in the *standard practice*. The following databases (and their respective search distances) were searched for this ESA, and each one meets or exceeds it's respective ASTM minimum search distance (Shown in miles)

- Federal NPL site list - 1.0 mile radius
- Federal CERCLIS list - 0.5 mile radius
- Federal CERCLIS NFRAP site list - property and adjoining properties -
- Federal RCRA CORRACTS facilities list - 1.0 mile radius
- Federal RCRA non-CORRACTS TSD facilities list - 0.5 mile radius
- Federal RCRA generators list - property and adjoining properties
- Federal ERNS list - property only
- State-equivalent NPL list - 1.0 mile radius
- State-equivalent CERCLIS list - 0.5 mile radius
- State landfill and/or solid waste disposal site lists - 0.5 mile radius
- State leaking UST list - 0.5 mile radius
- State registered UST list - property and adjoining properties

2. The following *additional environmental record sources* may have been reviewed, at the discretion of the environmental professional, to enhance and supplement the *standard environmental record sources*:

    - Michigan Department of Environmental Quality;
    - County Health Department;
    - Local Fire Department; and
    - Local Building Department.

Written information requests may have been made instead of oral interviews with local governmental officials. These agencies typically require a written request prior to processing requests for information.

3. A USGS 7.5 Minute Topographic Map was used to identify the physical setting of the *property* and immediate surrounding areas.
4. A USGS soils map and database was used to asses soils and aquifer vulnerability. Other information sources may also be utilized to determine the soil and/or groundwater conditions in the vicinity of the *property.* at the discretion of the environmental professional.
5. Readily available geotechnical reports, environmental reports, or other relevant documents pertaining to environmental conditions at the *property* and adjoining properties may also have been viewed at the discretion of the environmental professional.

6. Reasonably available and practically reviewable standard historical sources are utilized to determine the historical use of the *property*. This task requires reviewing only as many of the standard historical sources as are necessary and both reasonably ascertainable and likely to be useful, at the discretion of the environmental professional. The *standard practice* includes, but is not limited to the following sources as standard historical sources:

    - Aerial photographs;
    - Fire insurance maps;
    - Property tax files;
    - Recorded land title documents;
    - USGS topographic maps;
    - Local street directories;
    - Building department records;
    - Zoning/land use records; and
    - Other historical sources.

7. A *site reconnaissance* of the *property* and *adjoining properties* (as feasible) was conducted. The *site reconnaissance* consisted of:

    - The periphery of the *property* was observed;
    - The periphery of any structures on the *property* was observed;

- The *property* was observed from all adjacent public thoroughfares;
- Any roads or paths with no apparent outlet were observed;
- Accessible common areas, maintenance and repair areas, and a representative sample of occupant spaces of any structures at the *property* were observed; and
- *Adjoining properties* were observed as feasible.

8. One or more, as appropriate, of the following individuals was interviewed with regard to past and present uses of the *property* and its vicinity:
   - The current owner;
   - The key site manager of the *property*;
   - Past owners of the site as feasible;
   - Current and past occupants as feasible; and
   - Others with knowledge of the *property*, such as public agencies, nearby property occupants as appropriate (i.e. for abandoned properties) and feasible, local publications or "commonly known" sources as readily available.

9. A limited screening for suspected asbestos-containing materials (SACM) was conducted using visual observations of readily assessable areas of the *property*. No sampling was performed.

10. The results of the foregoing are described in Section 8.0 of this report entitled "Findings and Opinions", including:
    - Any known or suspected *recognized environmental conditions*, *historical environmental conditions*, *controlled recognized environmental conditions*, and *de minimis conditions*.
    - Opinions on the impact of these conditions and recommendations regarding additional appropriate investigation are provided. The significance of any identified *data gaps* is provided.

Section 4.5.2 of the *standard practice* states that *all appropriate inquiry* does not mean an exhaustive assessment of a clean *property*. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an environmental site assessment and the reduction of uncertainty about unknown conditions resulting from additional information.

Section 4.5.3 of the *standard practice* states that not every *property* will warrant the same level of assessment. Consistent with good commercial or customary practice, the appropriate level of environmental site assessment will be guided by the type of *property* subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry.

1.7 Significant Assumptions

*Sierra Environmental Consultants, LLC* assumes that the information provided by the user, regulatory databases, regulatory agencies, and interviews is accurate and that no pertinent information was withheld.

A generalized estimation of groundwater flow direction has been determined based on topography in the vicinity of the *property*, i.e. the assumption that shallow groundwater flow will follow topography, or on other available resources. No site-specific field measurements of groundwater flow direction, e.g. installation of groundwater monitoring wells, have been performed for this *ESA*. The interpretation of groundwater flow direction as well as proximity and other contaminant fate and transport characteristics are the basis for determining the potential risk for known contamination to impact the *property*. Since all of these factors cannot be definitively known within the scope of work defined by the Standard Practice, professional judgment is intrinsic to the process. Additionally, *Sierra Environmental Consultants, LLC* may also rely upon certain verbal information, representations and upon provided documents, both public and private in nature.

We may not attempt to independently verify the accuracy of this information, unless we detect any inconsistency or omission of a nature that might call into question the validity of any of this information. To the extent that the conclusions in the report are based in whole or in part on such information, they are contingent on its validity.

1.8 Limitations and Exceptions

Environmental site assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and evaluation. During the course of a site evaluation, information prepared by others is often necessary. *Sierra Environmental Consultants, LLC* is not responsible for the accuracy of such information.

*Sierra Environmental Consultants, LLC* cannot warrant the accuracy, completeness, currency, merchantability, or fitness of any information related to records review provided in this *ESA*. Such information is not the product of an independent review conducted by *Sierra Environmental Consultants,*

*LLC*, but is only publicly available information maintained by government agencies, and aggregated by an independent third party supplier. Neither can *Sierra Environmental Consultants, LLC* warrant against the consequences of any *data gap* resulting from a lack of, or an inability to obtain, information required by current standards and practices, despite good faith efforts by the environmental professional or the prospective landowner or grant recipient to gather such information.

The environmental characteristics of the *property* and surrounding properties might change over time. This report does not warrant against future operations or conditions, nor does it warrant operations or conditions present of a type or at a location not investigated, or from information that may have changed but was not updated or was misrepresented in the obtained files.

*Sierra Environmental Consultants, LLC* will analyze the information obtained in this limited investigation in keeping with existing standards and practices. Other than indicated, this scope of work is not intended to address compliance with any federal, state or local statutes, regulations ordinances or codes.

This report is not legal advice and should not be construed or relied upon by anyone as such. *Sierra Environmental Consultants, LLC* recommends that you consult with an attorney specializing in environmental or real estate issues for guidance on all legalities related to the project and interpretation of environmental law.

In addition to the foregoing, the following limitations and exceptions to the *standard practice* apply to this report:

- The tribal reservation search only identifies Indian-administered lands that are equal to or greater than 640 acres.

- *Data gaps* identified during this *ESA* are discussed in the appropriate section of this report for the type of *data gap* identified. For instance, a *data gap* in the historical use of the *property* would be discussed in Section 5.1 (Summary of Historical Use of the Property) of this report while a *data gap* related to access the structures at the *property* would be discussed in Section 6.0 (Site Reconnaissance) of this report. Significant data gaps are summarized in Section 8.0 (Findings and Opinions) of this report.

Deviations and additions to the *standard practice* are discussed in Section 10.0 (Deviations) of this report.

1.9 Special Terms and Conditions

There were no special terms or conditions for this report.

1.91 User Reliance

Sierra Environmental Consultants, LLC conducted this ESA for the use of Kerr Real Estate LLC, Managing Member for Kerr-West Centre LLC (the user). This report is the property of Sierra Environmental Consultants, LLC. It is intended for the sole use of the user, and may not be used or relied upon by any third party without the written consent of Sierra Environmental Consultants, LLC. Any re-use of, or reliance on this report, in full or in part, is strictly prohibited unless authorized by the express written permission of Sierra Environmental Consultants, LLC or it's assignees.

## 2.0 SITE DESCRIPTION

The location and legal description of the *property*, general characteristics of the site and vicinity, the current use of the *property*, a description of structures, roads, and other improvements on the *property*, and the current uses of the adjoining properties are presented below.

### 2.1 Location and Legal Description

| | |
|---|---|
| Address | 324 Center Street parcels per furnished description, Douglas, MI |
| County | Allegan |
| General Description | Residential |
| Legal Description | Appendicized |
| Vicinity Map | Appendicized |

### 2.2 Site and Vicinity General Characteristics

| | |
|---|---|
| Area | About 7.5 acres m/l |
| Surface Cover | Residential structures and mixed vegetation |
| Land Use in Vicinity | mixed |
| Site plan | Appendicized |

### 2.3 Current Use of the Property

| | |
|---|---|
| Current Use | Residential |
| Current Owner | William Underdown, William Renkema |

**2.4 Description of Structures, Roads, Other Improvements on Site**

| | |
|---|---|
| Structures | Residential home and outbuilding |
| Access | Access is provided via Center Street |
| Parking | Parking is available |
| Water Supply | Municipal |
| Sewage Disposal | Municipal |
| Utilities | Natural gas, electricity, and telephone available |

**2.5 Current Uses of the Adjoining Properties**

| | |
|---|---|
| North | Residential |
| South | Residential |
| East | Residential |
| West | Residential |

## 3.0 USER PROVIDED INFORMATION

This section describes information provided by the user to help identify possible *recognized environmental conditions* in connection with the *property*.

3.1 Title Records

A title commitment was provided by the user (appendicized) which did not indicate increased environmental risk to the property.

3.2 Environmental Liens, Activity Use Limitations (AUL), Institutional Controls

The Standard Practice does not require that the Environmental Professional perform searches for Environmental Liens, Activity Use Limitations (AUL), or Institutional Controls, since the user(s) are responsible for providing this information to the environmental consultant. The Standard Practice requires that these searches must be performed not only in land title records but also in judicial records for those jurisdictions where that information is maintained. It is the user' responsibility to ensure that judicial records are searched in those jurisdictions when ordering title searches.

- A title commitment was provided by the user (appendicized) which did not indicate Environmental Liens, Activity Use Limitations (AUL), or Institutional Controls at the property.

3.3 Specialized Knowledge

No specialized knowledge was reported.

3.4 Commonly Known or Reasonably Ascertainable Information

No commonly known or reasonably ascertainable information was reported.

3.5 Valuation Reduction for Environmental Issues

No value reductions were reported.

3.6 Owner, Property Manager, and Occupant Information

William Underdown & William Renkema were identified as the owners of the *property*.

3.7 Reason for Performing Phase I

The purpose for performing this *ESA* is for due diligence purposes in anticipation of a commercial real estate transaction.

3.8 Other

NA

**4.0 RECORDS REVIEW**

As required by the *standard practice*, sites with known releases of hazardous substances, physical settings, and historical information sources are analyzed. In accordance with Section 3.2.65 and 3.2.73 of the *standard practice*, *Sierra Environmental Consultants, LLC* only reviewed records that were both reasonably ascertainable and practically reviewable.

4.1 Standard Environmental Record Sources

A search of state environmental agency and federal listings was performed (the database search report is included in Appendix V). The purpose of this search is to identify potential, suspected, or known sources of contamination on, or in the area of, the *property*. The database searched the various agency listings for different approximate minimum search distances from the *property*, based upon the relative potential threat represented by each listing as established in the *standard practice*.

*Sierra Environmental Consultants, LLC* evaluated sites identified within the search radii to determine if they are likely to have adversely affected the *property*. The criteria used to evaluate the potential for adverse effect include:

- Proximity to the *property*;
- Expected depth and direction of ground water and surface water flow;
- Hydrogeologic characteristic of the soil in the vicinity of the *property*;

- Expected storm water flow direction; and
- The presence/absence of documented contaminant releases at nearby sites and at the Subject Property.

**4.11 State and Federal Record Searches**

The following databases (and their respective search distances) were searched for this ESA, and each one meets or exceeds it's respective ASTM minimum search distance (Shown in miles)

- Federal NPL site list - 1.0 mile radius
- Federal CERCLIS list - 0.5 - mile radius
- Federal CERCLIS NFRAP site list - property and adjoining properties -
- Federal RCRA CORRACTS facilities list - 1.0 mile radius
- Federal RCRA non-CORRACTS TSD facilities list - 0.5 mile radius
- Federal RCRA generators list - property and adjoining properties
- Federal ERNS list - property only
- State-equivalent NPL list - 1.0 mile radius
- State-equivalent CERCLIS list - 0.5 mile radius
- State landfill and/or solid waste disposal site lists - 0.5 mile radius
- State leaking UST list - 0.5 mile radius
- State registered UST list - property and adjoining properties

**4.12 Tribal Record Sources**

Based on the site reconnaissance and records review, no Indian Reservations were identified within the vicinity of the *property*.

**4.13 Discussion of Records Review**

The E1527-13 Standard Practice requires review of agency files when the property or adjacent properties are identified on one of the standard databases that are required to be searched to determine if a REC, CREC, HREC or de minimis condition exists at the property. A file review is not required if supported by a sound rationale as to why the review is unnecessary. Alternatively, the consultant can rely on records provided from other sources (e.g., user-provided records or interviews with regulatory officials) to determine if there is sufficient information for identifying RECs.

- The Subject Property is not a listed site of known or suspected contamination.
- The remaining listed sites exhibit a low potential for material threat the Subject Property for one or more of the following reasons:

- Contaminant transport characteristics for contaminants known to exist at nearby listed sites exhibit a low potential for material threat to the Subject Property when considered along with the combination of:
  - inferred groundwater migration direction
  - topography
  - relative proximity to the Subject Property
- Any nearby registered UST sites, RCRA Generator sites (CESQG, SQG, LQG), and TSD Facilities may or may not be confirmed "release" locations and thus may exhibit a low potential for material threat to the Subject Property unless they are also on one of the other lists.
- Brownfields (ACRES sites) can include presence or potential presence of a hazardous substance, pollutant, or contaminant, or they may simply be "blighted", a term which is not reliant on any of those conditions. By evaluating the readily ascertainable and practically reviewable information about these, a determination can be made as to the potential for material threat to the Subject Property.
- The regulatory status of a particular listed site on any list (e.g. closed) indicate a low potential for material threat to the Subject Property.
- By evaluating the readily ascertainable and practically reviewable information about notes, maps, or other information which may be online or otherwise obtained, a determination can be made as to the potential for material threat to the Subject Property.
- *Sierra Environmental Consultants, LLC* may have file information on hand from other projects from which a determination can be made as to the potential for material threat to the Subject Property.
- *Sierra Environmental Consultants, LLC* may have interviewed state, federal, or local regulatory personnel who may have knowledge from which a determination can be made as to the potential for material threat to the Subject Property.
- A site on any list may be in error, based on other information known about that site.

- Any off-site source which impacts the Subject Property, is subject to Michigan's Part 201 of PA 451, Part 20126 (4)(c), which states: "*The owner or operator of property onto which contamination has migrated unless that person is responsible for an activity causing the release that is the source of the contamination.* "

**4.2 Soil Gas/Vapor Migration Pathway**

The E1527-13 Standard Practice only requires an opinion on a soil gas/vapor risk if there is a soil gas condition that qualifies as REC and it has been determined that the pathway poses an actual risk to human

health. In many cases, the mere presence of contaminated vapors in soil gas may simply be a de minimis condition. Sub-slab or indoor air sampling to confirm if the vapor pathway is completed (exposures are occurring) or to determine the indoor air contaminant concentrations is outside the scope of E1527-13.

If the source of the contaminated vapors is an on-site source, that condition will be flagged as a REC. Thus, from a practical standpoint, identifying the vapor pathway as a REC will only be an issue when contaminated vapors are migrating onto the property from an off-site source. The factors used in evaluating this potential are outlined in Section 4.13.

- This assessment did not identify any likely nearby off-site sources with a strong potential to create a soil gas/vapor pathway migrating to the Property.
- Based on the foregoing, the potential for vapor intrusion risk is minimal.

**4.3 Additional Environmental Record Sources**

Additional environmental record sources are sometimes reviewed to supplement the standard environmental record sources. Only reasonably ascertainable and sufficiently useful, accurate, and complete records are used when and as necessary. Standard historical sources reviewed as part of a prior environmental site assessment do not need to be searched or reviewed again except to identify uses of the *property* since the prior environmental site assessment.

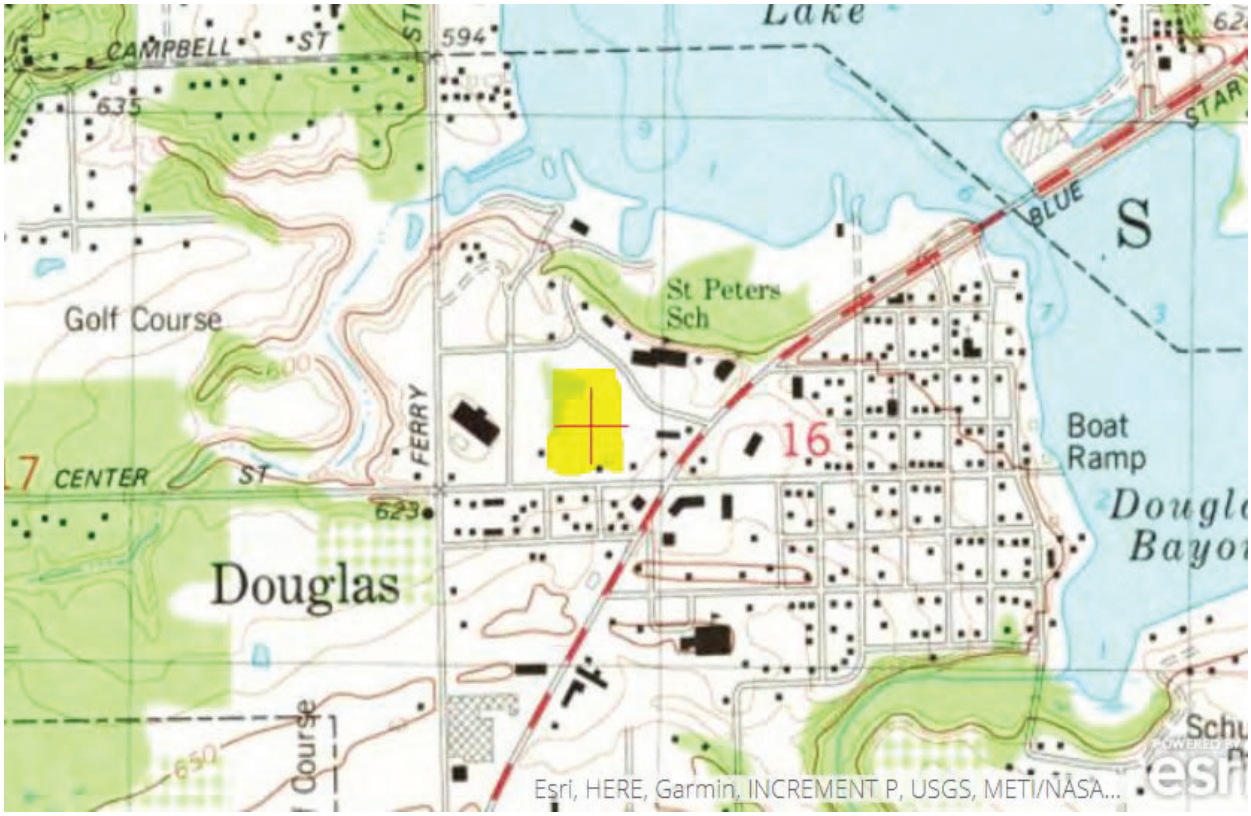
- NA

**4.4 Physical Settings Sources**

The objectives of reviewing physical setting sources are to locate the *property* relative to known sites of environmental contamination, to infer groundwater depth and migration direction, and to help identify potential contaminant migratory pathways. Monitor wells were not installed on-site as part of this *ESA*; therefore, the depth to and direction of groundwater at the *property* is uncertain. Frequently, near-surface unconfined groundwater gradients mimic topographic gradients. Many factors can affect the groundwater flow direction and velocity; including, but not limited to: spatial variations in the geologic materials present in the subsurface; man-made influences and structures; subsurface man-made conduits relative to the utilities servicing the area; and regional groundwater flow gradient may be altered proximal to the intermittent creeks and the groundwater flow direction may change seasonally in these areas.

4.41 USGS 7.5 topographical quadrangle

The objectives of reviewing this map are to locate the Subject Property relative to known sites of environmental contamination, to infer groundwater depth and migration direction, and to help identify potential contaminant migratory pathways. *Sierra Environmental Consultants, LLC* viewed a USGS 7.5 topographical quadrangle covering the *property*.




| | |
|---|---|
| Elevation | Approximately 625 - 640 feet above sea level |
| Topographic Gradient (*property*) | Northeast |
| Topographic Gradient (vicinity) | Northeast |
| Nearest Surface Water | Kalamazoo Lake is located less than 1 mile northeast of the *property*. |
| Groundwater Flow Direction | Based on the topography of the vicinity of the *property* and the nearby surface water, groundwater flow at the Property is likely to primarily move north-northeast towards Kalamazoo Lake. |
| Depth to Groundwater | The depth to groundwater at the *property* is likely less than 20 feet. |

Note: Monitor wells were not installed on-site as part of this Phase I EA; therefore, the depth to and direction of groundwater at the Subject Property is uncertain. It is important to note that many factors exist which can affect the groundwater flow direction and velocity, and which can only be determined with certainty by performance of a site-specific hydrogeological evaluation.

4.42 USDA Soils Map

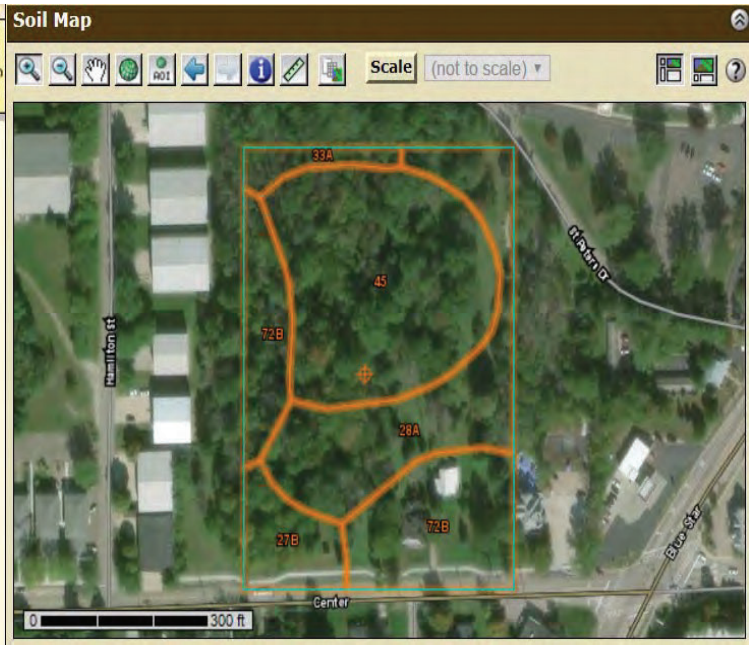
Search

Map Unit Legend

Allegan County, Michigan (MI005)

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 27B | Metea loamy fine sand, 1 to 6 percent slopes | 0.6 | 7.8% |
| 28A | Rimer loamy sand, 0 to 4 percent slopes | 1.9 | 25.6% |
| 33A | Kibbie fine sandy loam, 0 to 3 percent slopes | 0.3 | 3.4% |
| 45 | Pewamo silt loam | 2.8 | 37.5% |
| 72B | Urban land-Oakville complex, 0 to 6 percent slopes | 1.9 | 25.7% |
| Totals for Area of Interest | | 7.5 | 100.0% |

Legend




The objectives of reviewing the soil and geology in the vicinity of the *property* are to utilize known soil characteristics to infer soil contaminant adsorption potential and potential contaminant mobility. If a release of a regulated contaminant were to occur at the *property* ground surface or subsurface, the potential for near-surface groundwater impact would be moderate. No such release at the property was identified.

## 5.0 HISTORICAL USE INFORMATION

According to the *standard practice*, all obvious uses of the *property* shall be identified from the present, back to the *property*'s first developed use (including agricultural uses and placement of fill dirt), or back to 1940, whichever is earlier.

### 5.1 Historical Use Summary of the Property

A summary of the historical usage of the *property* based on the information collected from the sources outlined above is presented below. Data gaps of more than 5 years are identified and *Sierra Environmental Consultants, LLC* opinion on the significance of the data gap is provided.

- The Property was first developed in the about 1901 as a residential parcel. A barn was added later. The house and barn remain presently. Aside from the footprint of the house and barn, it appears that most of the property is wooded and undeveloped, and has been so for many years.

**5.2 Historical Use Information Sources**

This task requires reviewing only as many of the standard historical sources (list in Section 1.2 as are necessary and both reasonably ascertainable and likely to be useful. Review of standard historical sources at less than five-year intervals is not required by the *standard practice*.

Standard historical sources reviewed as part of a prior environmental site assessment do not need to be searched or reviewed again except to identify uses of the *property* since the prior environmental site assessment.

Aerial Photographs

Historical aerial photography is often useful in identifying past usages of a *property* or surrounding area, building locations, and discernible notable features, which may indicate potential environmental concerns with regard to the *property* and/or surrounding area. The quality and scale of the aerial photographs often limit *Sierra Environmental Consultants, LLC* ability to make detailed observations and conclusions regarding the historical uses of the p*roperty* and adjoining properties.

- *Sierra Environmental Consultants, LLC* previously reviewed 1969, 1976, 1981, 1987, and 1992 aerial photos available at the Allegan County Equalization Office. The photographs do not provide additional information regarding the site history relative to that obtained through other sources.

Fire Insurance Maps

Sanborn Fire Insurance Maps are historical map records of fire prevention hazards for specific urban areas. These maps often provide data that sometimes can be used to determine the presence of underground and aboveground storage tanks (USTs/ASTs), type of building materials, location of flammable material storage, and types of businesses that occupied a particular site. Sanborn Fire Insurance Maps typically are dated from the late 1800's to the 1950's, and include updates for selected areas as recently as 1990.

- Sanborn Map Coverage not available for this area.

Property Tax Files

Property tax files are maintained for *property* tax purposes by the local jurisdiction and may include records of past ownership, appraisals, maps, sketches, photographs, or other information pertaining to a *property*.

Online property tax records were reviewed from Allegan County's website (appendicized). No recent splits were registered, and no delinquent taxes were shown.

Recorded Land Title Records

Land title records include records of fee ownership, leases, land contracts, easements, liens, and other encumbrances on or of the site, recorded in the place where land title records are, by law or custom, and recorded for the local jurisdiction in which a *property* is located. Typically, the municipal or county recorder or clerk maintains these records.

- A title commitment was provided by the user (appendicized) which did not indicate increased environmental risk to the property.

USGS Topographic Maps

Historical topographic maps may indicate the presence of structures, roads, standing water, orchards, and other significant features. Elevation data is also presence, which may be used with more current data to determine if filling, or cutting of soil has occurred at the *property*. Sierra Environmental Consultants, LLC performed a review of readily available of historical topographic maps for the *property*.

| Year | Summary |
|---|---|
| 1918, 1951, 1969, 1973, 1985,1989 | No environmental issues identified |

Local Street Directories

Local street directories are published by public and private sources and show occupancy and/or use of properties by reference to street address.

- NA

Building Department Records

The local government maintains Building Department records. These records indicate permission of the local government to construct, alter, or demolish improvements on a specified *property*. Frequently, information regarding the dates of installation and/or removal of USTs, municipal sewer, and water connections, and natural gas or electrical service installation is contained in these records.

- The property is connected to municipal water and sewer per code since 1977.

Zoning/Land Use Records

Zoning ordinances, enacted by the local government, indicate the uses permitted by the local government in particular zones within the limits of its jurisdiction. Various local government offices such as the Planning Department or Commission maintain zoning/land use records.

- NA

Other Historical Sources: Previous Environmental Evaluations

The term "other historical sources" refers to any source or sources other than standard historical sources that are credible to a reasonable person, and that identify past uses of the *property*. This category includes miscellaneous maps, newspaper archives, and records or personal knowledge of the *property* owner or occupants. Historical use information from the *property* owner(s) and/or occupants is presented in Section 7.0 (Interviews) of this report. Standard historical sources reviewed as part of a prior environmental site assessment do not need to be searched or reviewed again except to identify uses of the *property* since the prior environmental site assessment.

- NA

**5.3 Historical Use Information on the Adjoining Properties**

The historical sources used in Section 5.2 to determine the historical use of the *property* were also used to determine the general historical use of the adjoining properties.

| | |
|---|---|
| North adjoining | Residential/wooded |
| South adjoining | Residential/wooded |
| East adjoining | Residential/wooded |
| West adjoining | Residential/wooded |

No *recognized environmental conditions* were identified at the *property* as a result of historical uses of the adjoining properties.

**6.0 SITE RECONNAISSANCE**

The purpose of the *property* reconnaissance is to obtain visual information to help identify potential *recognized environmental conditions* in connection with the *property*.

**6.1 Methodology and Limiting Conditions**

The *standard practice* requires that the periphery of the *property* shall be visually and/or physically observed as well as the periphery of all structures on the *property*, and the *property* shall be viewed from all adjacent public thoroughfares. On the interior of structures on the *property*, accessible common areas

expected to be used by occupants or the public (such as lobbies, hallways, utility rooms, recreation areas, etc.) maintenance and repair areas, including boiler rooms, and a representative sample of occupant spaces, should be visually and/or physically observed. Looking under floors, above ceilings, or behind walls is not necessary. Also in accordance with the *standard practice*, *Sierra Environmental Consultants, LLC* did not attempt to gain access into exterior areas not readily accessible to an occupant or visitor to the *property* such as beneath ground cover or water filled areas.

| | |
|---|---|
| Date of Site Reconnaissance | 02/24/21 |
| Site Reconnaissance Conducted By | David G. VerSluis, REPA |
| Methodology | See the Section 1.2 of this report. |
| Limiting Conditions | None |
| Photographs | Appendicized |

**6.2 General Site Settings**

The general site settings of the *property* are discussed below. Identified conditions may be discussed following the table.

| | |
|---|---|
| Current Uses of the *property* | Residential/wooded |
| Past Uses of the *property* | Residential/wooded |
| Current Uses of the Adjoining Properties | See Section 2.5 of this report. |
| Past Uses of the Adjoining Properties | See Section 5.3 of this report. |
| Current or Past Uses in the Surrounding Area | See Section 2.5 and Section 5.3 of this report |
| Geologic, Hydrogeologic, Hydrologic, and Topographic | See Section 4.3 of this report. |
| General Description of Structures | See Section 2.4 of this report. |
| Roads | See Section 2.4 of this report. |
| Potable Water Supply | municipal |
| Sewage Disposal System | municipal |

**6.3 Exterior Observations**

Exterior observations of the *property* are discussed below. Identified conditions may be discussed following the table.

| | |
|---|---|
| Current Use(s) of the *property* | Residential/wooded |
| Past Use(s) of the *property* | Residential/wooded |
| Hazardous Substance Use (Identified *property* uses) | None observed |
| Evidence of Storage Tanks | None observed. |
| Strong, pungent, or noxious odors | None observed |
| Pools of Liquids | None observed |
| Drums | None observed |
| Hazardous Substance Containers (non-identified *property* uses) | None observed |
| Unidentified Substance Containers | None observed |
| Equipment likely to contain PCBs | None observed |
| Pits, Ponds, or Lagoons | None observed |
| Stained Soil or Pavement | None observed. |
| Stressed Vegetation | None observed |
| Solid Waste Disposal | None observed. |
| Waste Water Discharges | None observed |
| Wells (monitor, water, dry, etc.) | None observed |
| Septic System or Cesspools | None observed |
| Wetlands | None observed |

**6.4 Interior Observations**

Interior observations of the *property* are discussed below. Identified conditions may be discussed following the table.

| | |
|---|---|
| Current Use(s) of the *property* | Residential |
| Past Use(s) of the *property* | Residential |
| Hazardous Substance Use (Identified *property* uses) | None observed |
| Evidence of Storage Tanks | None observed |
| Strong, pungent, or noxious odors | None observed |
| Pools of Liquids | None observed |
| Drums | None observed |
| Hazardous Substance Containers Non-identified *property* uses | None observed |

| | |
|---|---|
| Unidentified Substance Containers | None observed |
| Equipment likely to contain PCBs | None observed. |
| Heating and Cooling Sources | None observed. |
| Stains or Corrosion | None observed |
| Drains and Sumps | None observed. |

**7.0 INTERVIEWS**

These sections detail *Sierra Environmental Consultants, LLC* attempts to interview relevant personal related to the *property*.

**7.1 Interview with Owners Representative**

Owner William Underdown contracted the property in 2017 from William Renkema with a Phase I ESA at that time. Neither Mr. Underdown nor Mr Renkema disclosed any RECs, and they did not indicate that any RECs have transpired at the Subject Property since that time.

**7.2 Interview with Site Manager**

Residential tenant not home at time of site visit.

This represents a data gap that would not rise to the level of significance necessary to affect the outcome of the report, given the weight of the other evidence evaluated.

**7.3 Interview with Occupants**

See 7.1 above

**7.4 Interview with Local Government Officials**

NA

**7.5 Interview with Others**

NA

**8.0 FINDINGS AND OPINIONS**

As required by the *standard practice*, this section identifies known or suspect *recognized environmental conditions*, *historical recognized environmental conditions*, and *de minimis conditions* in connection to the *property*. Significant *data gaps* are also discussed in this section.

1. Significant data gaps

    - No significant gaps identified.
2. Property listed as a site of known or suspected contamination.
    - None identified
3. Underground storage tanks on site
    - None identified
4. Environmental Questionnaire response from User
    - No issues identified
5. *Recognized Environmental Conditions* at the Property
    - None identified
6. *Historical Environmental Conditions* at the Property:
    - None identified
7. *Controlled Recognized Environmental Conditions* at the Property:
    - None identified
8. *De minimis Conditions* at the Property:
    - None identified
9. Other issues identified at the Property:
    - None identified

## 9.0 CONCLUSIONS

The *standard practice* requires that all *recognized environmental conditions* in connection with the *property* be summarized in the conclusion section of the report.

*Sierra Environmental Consultants, LLC* has completed this *Phase I Environmental Site Assessment* (*ESA*) for 324 Center Street parcels per furnished description, Douglas, Allegan County, Michigan (the *property*). This *ESA* has been completed in conformance with the scope and limitations of ASTM International E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (the *standard practice*). Any exceptions to or deletions from the *standard practice* are described in Section 1.4 of this report.

This ESA has not revealed evidence of recognized environmental conditions (RECs) associated with the property.

## 10.0 DEVIATIONS

Refer to Section 1.4 (Limitations and Exceptions) of this report for any limitations and exceptions to the *standard practice*. Deletions, deviations, and additions to the *standard practice* are described below.

Deletions
No deletions to the *standard practice* were made for this ESA.

Deviations
This *ESA* included the following deviations to the *standard practice*:

1. This report generally follows the recommended report format in the *standard practice*. Additional subsections have been added throughout the report to assist with the readability of the report. Specific changes include:

    - A new section (Historical Use Information) was created to include the Historical Use Information on the Property and Historical Use Information on the Adjoining Properties subsections. These subsections were removed from the Records Review section of this report.

    - Subsections 5. (Summary of the Historical Use of the Property), 5. (Historical Use Information Sources), and Historical Use Information on the Adjoining Properties were added to the Historical Use Information section of this report. Subsection 6.3 (Interior and Exterior Observations) was added to the Site Reconnaissance section of this report.

    - The Findings section and Opinions section were combined to form the Findings and Opinions section of this report.

2. Written information requests may have been made instead of oral interviews with local governmental officials. Local agencies typically require a written request prior to processing requests for information. Responses from these agencies may not be received within the time allotted for this *ESA*.

Additions

This *ESA* included the following additions to the *standard practice*:

1. Significant *data gaps* that may affect the conclusions of this report are discussed in the Findings and Opinions section of this report.

2. The Remediation and Redevelopment Division of the MDEQ maintains two lists of leaking underground storage tank (LUST) sites. The "closed" list contains sites that have been remediated to the satisfaction of the MDEQ. These sites are not likely to present a material threat to human health or the environment. Therefore, "closed" LUST sites are only discussed if they are located on or adjoining the *property*.

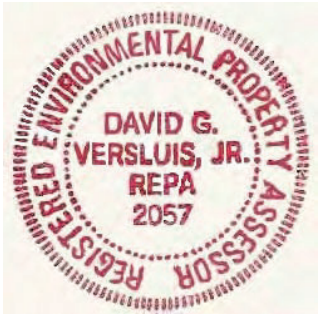
**11.0 ADDITIONAL SERVICES**

*Sierra Environmental Consultants, LLC* did not perform any services outside the *standard practice* for this *ESA*.

**12.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS**

As required by 40 CFR 312.21(d) and the *standard practice*:

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. 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 inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.




David G. VerSluis, REPA
Managing Member

## 13.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

*Sierra Environmental Consultants, LLC*' Mission Statement, as an organization of environmental professionals, is to provide knowledgeable decisions relating to the planning and management of environmental activities in which industry, government, and the general public may place their complete confidence. This includes responding to changing legislation and client needs with practical, innovative, and cost-effective environmental solutions. In addition, *Sierra Environmental Consultants, LLC* adheres to the Code of Professional Practice prepared by the National Registry of Environmental Professionals (NREP). *Sierra Environmental Consultants, LLC* personnel directly involved in the technical performance of this Phase I *ESA* included:

**David G. VerSluis, Jr., R.E.P.A.,** holds a B.S. in Industrial and Environmental Health Management from Ferris State University in Big Rapids, Michigan. After graduation, Mr. VerSluis gained experience with a series of environmental engineering and consulting firms, and he developed expertise in the assessment, investigation, and remediation of contaminated soil and groundwater from a multitude of sources. In 1993, Mr. VerSluis founded *Sierra Environmental Consultants, LLC*, and the company has become a recognized leader in the field of environmental consulting. As a result of Mr. VerSluis' consulting experience, the company has diversified to included other services and products dedicated to pollution prevention.

Mr. VerSluis has served as a member of the Michigan Economic Developers Association (MEDA), the SBA's Economic Development Foundation, Certified (EDFC), the Michigan Rural Water Association (MWRA), the Michigan Water Environment Association (MWEA), past member of the "Ethics and Standards" committee of the Michigan Environmental Consultants and Contractors Association (MECCA), and has been a Selected, Honored member of the National Directory of "Who's Who" for Executive Professionals since 1995. Mr. VerSluis has taught the environmental seminar for the Small Business Administration's annual "Lender's Conference" in Lansing, Michigan since it's inception in 2001.

Mr. VerSluis has been a Registered Environmental Property Assessor (REPA) certified by the National Registry of Environmental Professionals (NREPA) since 1992, and is the Managing Member of *Sierra Environmental Consultants, LLC*. Mr. VerSluis has provided environmental expertise to several thousand successful Real Estate Transactions.

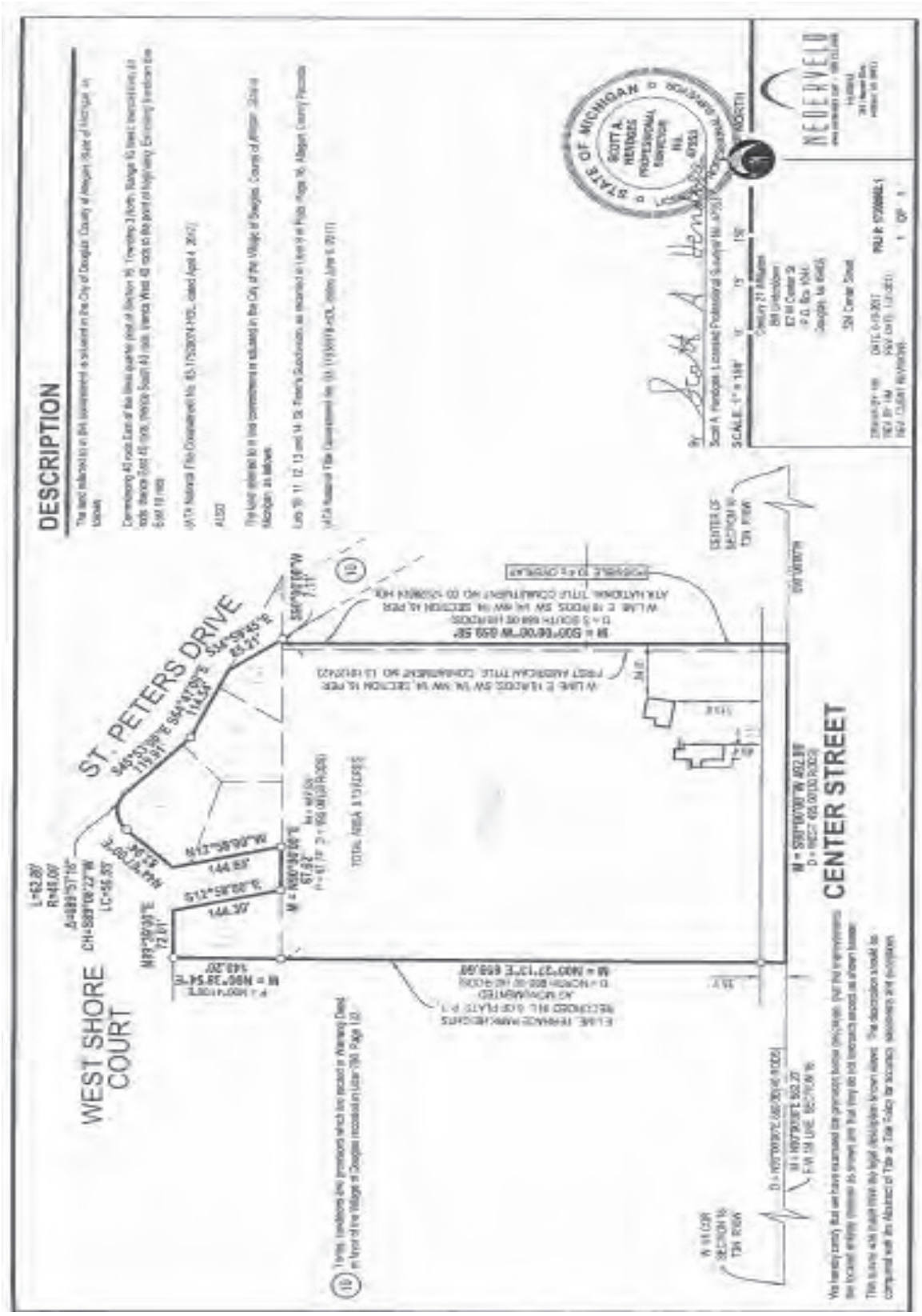
## 14.0 REFERENCES

The *standard practice* requires that supporting documentation shall be included in the report or adequately referenced to facilitate reconstruction of the *ESA* by an environmental professional other than the environmental professional who conducted it. The following sources are commonly used by *Sierra Environmental Consultants, LLC* during a Phase I *ESA*:

| Information | Source |
|---|---|
| Standard practice | ASTM International. 2005. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E 1527-05. West Conshohocken, PA. |
| Prior Assessments | See page 19 of this report. |
| User Provided Information | |
| Title Records | *User* provided title records. |
| User | The *user* is identified in Section 1.6 (User Reliance) of this report. |
| Records Review | |
| Federal, State, and Tribal | Environmental Discovery Inc. *RadiusSearch Report*®. Batavia, IL, or Nationwide Environmental Title Research, LLC |
| Regulatory Agency | Local district office of the Michigan Department of Environmental Quality |
| Health Department | Local Health Department |
| Fie Department | Local Fire Department |
| Building Department | Local Building Department |
| Physical Settings Sources | |
| Topographic Map | U.S. Department of Interior, Geological Survey. Reston, VA. |
| Historical Sources | |
| Aerial Photographs (one or more) | County Equalization, Geographic Information Systems (GIS), or Property Description and Mapping departments, msrmaps, Google Earth, USDA, USGS, Terrafly, Landvoyage, Nationwide Environmental Title Research, LLC |
| Soils maps | USDA Natural Resources Conservation Service (NRCS) |
| Fire Insurance Map, Atlases (one or more) | Public Library, Library of Congress, ProQuest |
| Property Tax Files | Local Assessor and/or County Equalization Department, County GIS system, or user |
| Recorded Land Title Records | Title records if provided by the *user* |
| Topo Maps (one or more) | Public Library, topoquest.com, Topozone, digital-**topo-maps**.com, trails.com |
| City Directories | Public Library |
| Building Department | Local Building Department |
| Zoning/Land Use | County or local zoning Dept |
| Interviews | Interviews |
| Owner | |
| Key Site Manager | See page 24 of this report. |
| Occupants | See page 24 of this report. |
| Local Government Officials | See page 16 of this report. |
| Others | See page 24 of this report. |

**Appendix I – Site Plan (furnished)**

**Appendix II – Survey/Legal Description (furnished)**

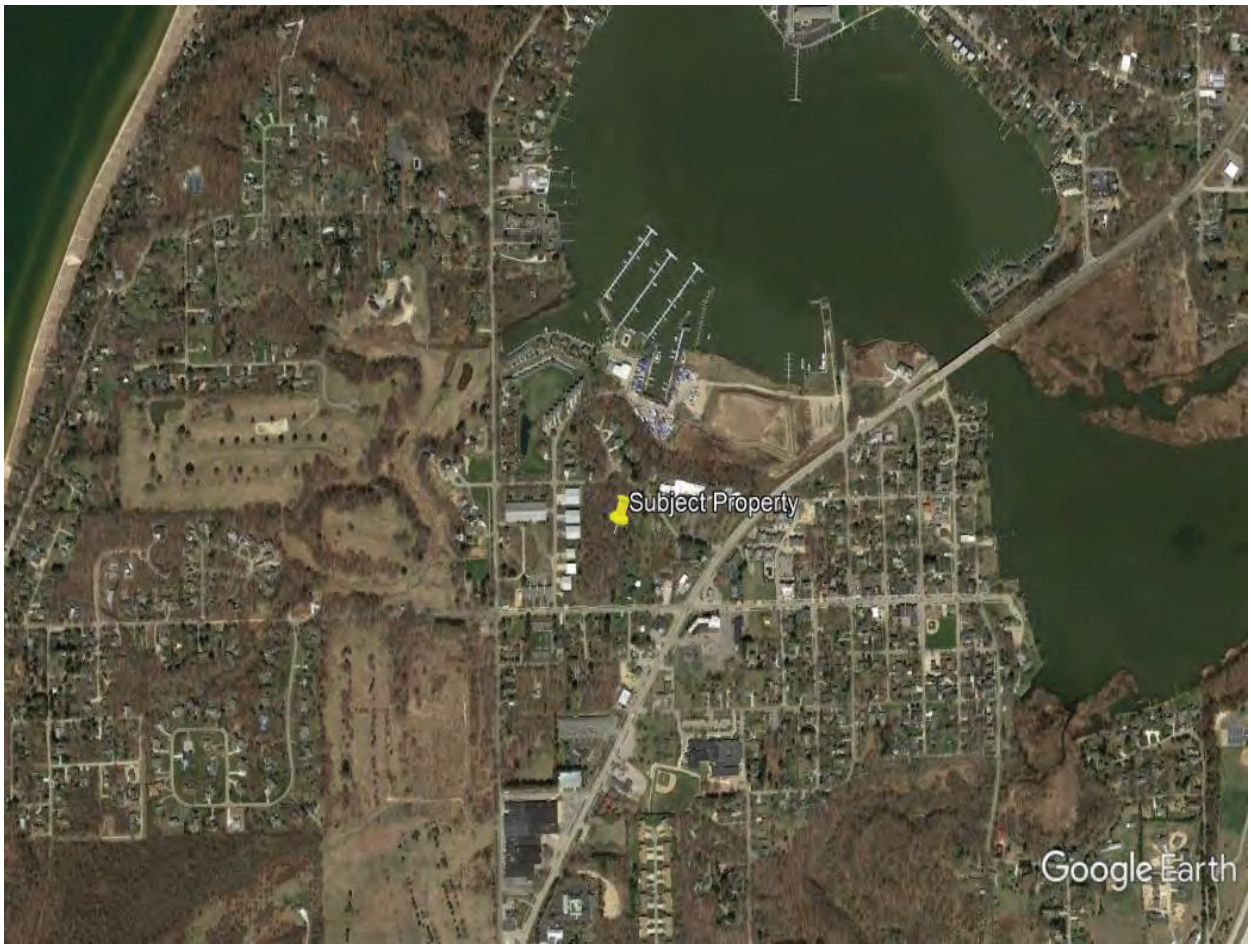



*From 2017 Phase I*


Dave,
Additional parcels
① 382 W. Center
② Church Parcels

*Furnished 2-2021*

## Appendix III - Vicinity Map



**Appendix IV – Questionnaire**

(scroll down)

# User Questionnaire

**The user (the person or a representative of the company intending to purchase, occupy, or foreclose on the property) must complete this questionnaire and return it to Sierra Consultants.**

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

no

2. Are you aware of any AULs (Activity Use Limitations), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

no

3. As the user of the ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, 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?

no

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

yes

5. 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,

a. What are the past uses of the property?

Floral/Garden

b. What specific chemicals are present or once were present at the property?

N/A

c. What spills or other chemical releases have taken place at the property?

N/A

d. What environmental cleanups have taken place at the property?

N/A

6. As the user of the ESA, 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?

No

INITIAL HERE PLEASE:

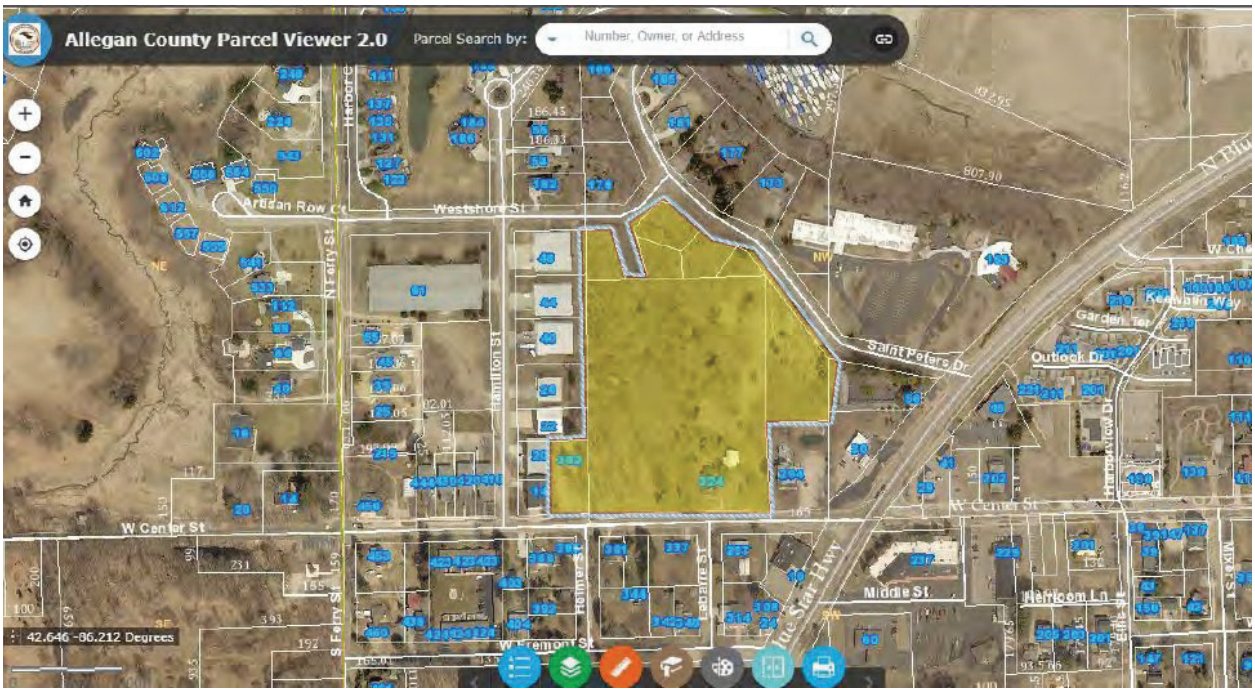
GK
02/16/21
3:25 PM EST
dotloop verified

## Appendix V – Title Work

(N/A, not provided by user)

## Appendix VI – Assessor Information

(scroll down)



**324 CENTER ST** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-016-033-00

**Property Owner:** RENKEMA WILLIAM

***Summary Information***

> Residential Building Summary
- Year Built: 1950
- Bedrooms: 1
- Full Baths: 1
- Half Baths: 0
- Sq. Feet: 1,320
- Acres: 7.500

> Assessed Value: $198,300 | Taxable Value: $91,673

> Property Tax information found

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | RENKEMA WILLIAM<br>2313 59TH ST<br>FENNVILLE, MI 49408 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | RESIDENTIAL – IMPROVED | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $198,300 |
| **MAP #** | 29 3H | **Taxable Value** | $91,673 |
| **ACTION** | 0 | **State Equalized Value** | $198,300 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

***Principal Residence Exemption Information***

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

***Previous Year Information***

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $195,500 | $195,500 | $89,964 |
| 2018 | $190,000 | $190,000 | $87,856 |
| 2017 | $190,200 | $190,200 | $86,049 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | C-1 VILL COMM | **Total Acres** | 7.500 |
| **Land Value** | $321,417 | **Land Improvements** | $1,080 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | RESIDENTAL DEVELOPABLE | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| Lot 1 | 495.00 ft | 660.00 ft |
| | **Total Frontage: 495.00 ft** | **Average Depth: 660.00 ft** |

## Legal Description

COM 660 FT E OF W 1/4 POST SEC 16 TH N 660 FT TH E 660 FT TH S 660 FT TH W 660 FT TO POB EX E 165 FT THEREOF SEC 16 T3N R16W. (71).

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

## Building Information - 1320 sq ft RANCH (Residential)

### General

| | | | |
|---|---|---|---|
| **Floor Area** | 1,320 sq ft | **Estimated TCV** | $74,078 |
| **Garage Area** | 0 sq ft | **Basement Area** | 0 sq ft |
| **Foundation Size** | 1,320 sq ft | | |
| **Year Built** | 1950 | **Year Remodeled** | *No Data to Display* |
| **Occupancy** | Single Family | **Class** | D +10 |
| **Effective Age** | 41 yrs | **Tri-Level** | No |
| **Percent Complete** | 100% | **Heat** | Forced Air w/ Ducts |
| **AC w/Separate Ducts** | No | **Wood Stove Add-on** | No |
| **Basement Rooms** | 0 | **Water** | Public Water |
| **1st Floor Rooms** | 0 | **Sewer** | Public Sewer |
| **2nd Floor Rooms** | 0 | **Style** | RANCH |
| **Bedrooms** | 1 | | |

### Area Detail - Basic Building Areas

| Height | Foundation | Exterior | Area | Heated |
|---|---|---|---|---|
| 1 Story | Slab | Siding | 1,320 sq ft | 1 Story |

### Exterior Information

| | | | |
|---|---|---|---|
| **Brick Veneer** | 0 sq ft | **Stone Veneer** | 0 sq ft |

### Basement Finish

| | | | |
|---|---|---|---|
| **Recreation** | 0 sq ft | **Recreation % Good** | 0% |
| **Living Area** | 0 sq ft | **Living Area % Good** | 0% |
| **Walk Out Doors** | 0 | **No Concrete Floor Area** | 0 sq ft |

### Plumbing Information

| | |
|---|---|
| **3 Fixture Bath** | 1 |

### Built-In Information

| | |
|---|---|
| **Appliance Allow.** | 1 |

### Deck Information

| | |
|---|---|
| **Treated Wood** | 20 sq ft |

**382 CENTER ST** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-650-001-00

**Property Owner:** KERR-REAL ESTATE LLC

***Summary Information***

> Residential Building Summary
- Year Built: N/A
- Bedrooms: 0
- Full Baths: 1
- Half Baths: 0
- Sq. Feet: 1,066
- Acres: 0.473

> Assessed Value: $55,600 | Taxable Value: $52,628
> Property Tax information found

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | KERR-REAL ESTATE LLC<br>PO BOX 574<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | COMMERCIAL – VACANT | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $55,600 |
| **MAP #** | 27-1 | **Taxable Value** | $52,628 |
| **ACTION** | 0 | **State Equalized Value** | $55,600 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 11/09/2020 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

***Principal Residence Exemption Information***

**Homestead Date** 07/12/2002

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

***Previous Year Information***

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $55,600 | $55,600 | $51,647 |
| 2018 | $55,600 | $55,600 | $50,437 |
| 2017 | $49,400 | $49,400 | $49,400 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | C-1 VILL COMM | **Total Acres** | 0.473 |
| **Land Value** | $111,261 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | COMMERCIAL | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| Lot 1 | 103.00 ft | 200.00 ft |
| | **Total Frontage: 103.00 ft** | **Average Depth: 200.00 ft** |

## Legal Description

PART OF LOTS 1 & 2 TERRACE PARK HEIGHTS COMM AT W 1/4 PST SEC 16 TH E 474.08' TH N 33.26' TH E 84' TO POB TH N 200.11' TH E 102.79' TH S 200.33' TH W 103.94' TO POB SEC 16 T3N R16W (98)

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| 09/30/2020 | $0.00 | WD | EAGLE STORAGE SERVICES LLC | KERR REAL ESTATE LLC | TO BE DETERMINED | 4518/905 |
| 10/09/2014 | $120,000.00 | WD | WISEACRE LLC | EAGLE STORAGE SERVICES LLC | FAMILY SALE | 3878/776 |
| 12/15/2005 | $0.00 | WD | ANDERSON RICHARD W & CAROLE J | WISEACRE LLC | ARMS LENGTH | 2931/585 |
| 10/01/2005 | $0.00 | QC | OOMS KRISTINE | ANDERSON RICHARD W & CAROLE J | NOT USED | 2915/936 |
| 07/12/2002 | $80,000.00 | LC | ANDERSON RICHARD W & CAROLE J | OOMS KRISTINE | OUTLIER | 2272/260 |
| 09/19/1997 | $40,000.00 | WD | BARKER BROKERAGE | MOORE MARION | ARMS LENGTH | |

## Building Information - 1066 sq ft RANCH (Residential)

### *General*

| | | | |
|---|---|---|---|
| **Floor Area** | 1,066 sq ft | **Estimated TCV** | *No Data to Display* |
| **Garage Area** | 0 sq ft | **Basement Area** | 0 sq ft |
| **Foundation Size** | 1,066 sq ft | | |
| **Year Built** | *No Data to Display* | **Year Remodeled** | *No Data to Display* |
| **Occupancy** | Single Family | **Class** | C |
| **Effective Age** | 46 yrs | **Tri-Level** | No |
| **Percent Complete** | 0% | **Heat** | Forced Air w/ Ducts |
| **AC w/Separate Ducts** | No | **Wood Stove Add-on** | No |
| **Basement Rooms** | 0 | **Water** | Public Water |
| **1st Floor Rooms** | 0 | **Sewer** | Public Sewer |
| **2nd Floor Rooms** | 0 | **Style** | RANCH |
| **Bedrooms** | 0 | | |

### *Area Detail - Basic Building Areas*

| Height | Foundation | Exterior | Area | Heated |
|---|---|---|---|---|
| 1 Story | Crawl Space | Siding | 1,066 sq ft | 1 Story |

### *Exterior Information*

| | | | |
|---|---|---|---|
| **Brick Veneer** | 0 sq ft | **Stone Veneer** | 0 sq ft |

### *Basement Finish*

| | | | |
|---|---|---|---|
| **Recreation** | 0 sq ft | **Recreation % Good** | 0% |
| **Living Area** | 0 sq ft | **Living Area % Good** | 0% |
| **Walk Out Doors** | 0 | **No Concrete Floor Area** | 0 sq ft |

### *Plumbing Information*

| | | | |
|---|---|---|---|
| **Average Fixture(s)** | 1 | **3 Fixture Bath** | 1 |

**80 WEST SHORE CT** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-750-010-00

**Property Owner:** ST PETERS CHURCH

***Summary Information***

> Assessed Value: $0 | Taxable Value: $0

> Property Tax information found

**Parcel is Vacant**

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | ST PETERS CHURCH<br>PO BOX 248<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | EXEMPT FEDERAL PROPERTY | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $0 |
| **MAP #** | 31/10 | **Taxable Value** | $0 |
| **ACTION** | 0 | **State Equalized Value** | $0 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

### *Principal Residence Exemption Information*

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

### *Previous Year Information*

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $0 | $0 | $0 |
| 2018 | $0 | $0 | $0 |
| 2017 | $0 | $0 | $0 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | R-2 RESIDENTIAL | **Total Acres** | 0.000 |
| **Land Value** | $0 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | EXEMPT | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| No lots found. | | |
| | **Total Frontage: 0.00 ft** | **Average Depth: 0.00 ft** |

## Legal Description

LOT 10 SEC 16 T3N R16W ST PETER'S SUBDIV.

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

**100 WEST SHORE CT** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-750-011-00

**Property Owner:** ST PETERS CHURCH

***Summary Information***

> Assessed Value: $0 | Taxable Value: $0

> Property Tax information found

**Parcel is Vacant**

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | ST PETERS CHURCH<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | EXEMPT FEDERAL PROPERTY | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $0 |
| **MAP #** | 31/11 | **Taxable Value** | $0 |
| **ACTION** | 0 | **State Equalized Value** | $0 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

### *Principal Residence Exemption Information*

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

### *Previous Year Information*

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $0 | $0 | $0 |
| 2018 | $0 | $0 | $0 |
| 2017 | $0 | $0 | $0 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | R-2 RESIDENTIAL | **Total Acres** | 0.000 |
| **Land Value** | $0 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | EXEMPT | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| No lots found. | | |
| | **Total Frontage: 0.00 ft** | **Average Depth: 0.00 ft** |

## Legal Description

LOT 11 SEC 16 T3N R16W ST PETER'S SUBDIV.

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

**424 ST PETERS DR** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-750-012-00

**Property Owner:** ST PETERS CHURCH

***Summary Information***

> Assessed Value: $0 | Taxable Value: $0

> Property Tax information found

**Parcel is Vacant**

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | ST PETERS CHURCH<br>PO BOX 248<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | EXEMPT FEDERAL PROPERTY | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $0 |
| **MAP #** | 31/12 | **Taxable Value** | $0 |
| **ACTION** | 0 | **State Equalized Value** | $0 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

### *Principal Residence Exemption Information*

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

### *Previous Year Information*

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $0 | $0 | $0 |
| 2018 | $0 | $0 | $0 |
| 2017 | $0 | $0 | $0 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | R-2 RESIDENTIAL | **Total Acres** | 0.000 |
| **Land Value** | $0 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | EXEMPT | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| No lots found. | | |
| | **Total Frontage: 0.00 ft** | **Average Depth: 0.00 ft** |

## Legal Description

LOT 12 SEC 16 T3N R16W ST PETER'S SUBDIV.

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

**420 ST PETERS DR** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-750-013-00

**Property Owner:** ST PETERS CHURCH

***Summary Information***

> Assessed Value: $0 | Taxable Value: $0

> Property Tax information found

**Parcel is Vacant**

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | ST PETERS CHURCH<br>PO BOX 248<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | EXEMPT FEDERAL PROPERTY | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $0 |
| **MAP #** | 31/13 | **Taxable Value** | $0 |
| **ACTION** | 0 | **State Equalized Value** | $0 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

### *Principal Residence Exemption Information*

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

### *Previous Year Information*

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $0 | $0 | $0 |
| 2018 | $0 | $0 | $0 |
| 2017 | $0 | $0 | $0 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | R-2 RESIDENTIAL | **Total Acres** | 0.000 |
| **Land Value** | $0 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | EXEMPT | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| No lots found. | | |
| | **Total Frontage: 0.00 ft** | **Average Depth: 0.00 ft** |

## Legal Description

LOT 13 SEC 16 T3N R16W ST PETER'S SUBDIV.

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

**400 ST PETERS DR** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-750-014-00

**Property Owner:** ST PETERS CHURCH

***Summary Information***

> Assessed Value: $0 | Taxable Value: $0

> Property Tax information found

**Parcel is Vacant**

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | ST PETERS CHURCH<br>PO BOX 248<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | EXEMPT FEDERAL PROPERTY | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $0 |
| **MAP #** | 31/14 | **Taxable Value** | $0 |
| **ACTION** | 0 | **State Equalized Value** | $0 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

### *Principal Residence Exemption Information*

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

### *Previous Year Information*

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $0 | $0 | $0 |
| 2018 | $0 | $0 | $0 |
| 2017 | $0 | $0 | $0 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | R-2 RESIDENTIAL | **Total Acres** | 0.000 |
| **Land Value** | $0 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | EXEMPT | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| No lots found. | | |
| | **Total Frontage: 0.00 ft** | **Average Depth: 0.00 ft** |

## Legal Description

LOT 14 SEC 16 T3N R16W ST PETER'S SUBDIV.

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

**300 ST PETERS DR** DOUGLAS, MI 49406 (Property Address)

Parcel Number: 59-016-034-00

**Property Owner:** TRUSTEE FOR ST PETER'S CHUR

***Summary Information***

> Assessed Value: $0 | Taxable Value: $0

> Property Tax information found

**Parcel is Vacant**

## Owner and Taxpayer Information

| | | | |
|---|---|---|---|
| **Owner** | TRUSTEE FOR ST PETER'S CHUR<br>PO BOX 248<br>DOUGLAS, MI 49406 | **Taxpayer** | SEE OWNER INFORMATION |

## General Information for Tax Year 2020

| | | | |
|---|---|---|---|
| **Property Class** | EXEMPT FEDERAL PROPERTY | **Unit** | 59 DOUGLAS CITY |
| **School District** | SAUGATUCK | **Assessed Value** | $0 |
| **MAP #** | 29-A | **Taxable Value** | $0 |
| **ACTION** | 0 | **State Equalized Value** | $0 |
| **USER ALPHA 1** | *Not Available* | **Date of Last Name Change** | 02/13/2019 |
| **USER ALPHA 3** | *Not Available* | **Notes** | *Not Available* |
| **Historical District** | No | **Census Block Group** | *No Data to Display* |
| **ADDESS CHANGE** | *Not Available* | **Exemption** | *No Data to Display* |

### *Principal Residence Exemption Information*

**Homestead Date** *No Data to Display*

| Principal Residence Exemption | June 1st | Final |
|---|---|---|
| 2020 | 0.0000 % | - |
| 2019 | 0.0000 % | 0.0000 % |

### *Previous Year Information*

| Year | MBOR Assessed | Final SEV | Final Taxable |
|---|---|---|---|
| 2019 | $0 | $0 | $0 |
| 2018 | $0 | $0 | $0 |
| 2017 | $0 | $0 | $0 |

## Land Information

| | | | |
|---|---|---|---|
| **Zoning Code** | R-2 RESIDENTIAL | **Total Acres** | 0.000 |
| **Land Value** | $0 | **Land Improvements** | $0 |
| **Renaissance Zone** | No | **Renaissance Zone Expiration Date** | *No Data to Display* |
| **ECF Neighborhood** | EXEMPT | **Mortgage Code** | *No Data to Display* |
| **Lot Dimensions/Comments** | *No Data to Display* | **Neighborhood Enterprise Zone** | No |

| Lot(s) | Frontage | Depth |
|---|---|---|
| No lots found. | | |
| | **Total Frontage: 0.00 ft** | **Average Depth: 0.00 ft** |

## Legal Description

E 165 FT SE 1/4 SW 1/4 NW 1/4 EX S 264 FT THEREOF EX ST. PETERS DR. SEC 16 T3N R16W.

## Sale History

| Sale Date | Sale Price | Instrument | Grantor | Grantee | Terms of Sale | Liber/Page |
|---|---|---|---|---|---|---|
| No sales history found. | | | | | | |

**Appendix VII – Photographs**

(scroll down)

| | |
|---|---|
| Photo #1 |  |
| Description: | House |
| Date: | 2/24/21 |

| | |
|---|---|
| Photo #2 |  |
| Description: | Barn/outbuilding |
| Date: | 2/24/21 |

| | |
|---|---|
| Photo #3 |  |
| Description: | S side of house |
| Date: | @2015 Courtesy Zillow |

| | |
|---|---|
| Photo #4 |  |
| Description: | House Interior - typical |
| Date: | @2015 Courtesy Zillow |

| | |
|---|---|
| Photo #5 |  |
| Description: | Property Exterior – typical. Note Turkeys |
| Date: | 2/24/21 |

| | |
|---|---|
| Photo #6 |  |
| Description: | Property Exterior – typical. Note Deer |
| Date: | 2/24/21 |

| | |
|---|---|
| Photo #7 |  |
| Description: | Grounds- typical |
| Date: | 02/24/21 |

| | |
|---|---|
| Photo #8 |  |
| Description: | Property Frontage along Center Street looking east. |
| Date: | 02/24/21 |

| | |
|---|---|
| Photo #9 |  |
| Description: | Adjacent NE along St. Peter Drive. Note deer. |
| Date: | 02/24/21 |

| | |
|---|---|
| Photo #10 |  |
| Description: | Former residential converted to offices, adjacent E. |
| Date: | 02/24/21 |

| | |
|---|---|
| Photo #11 |  |
| Description: | Commercial warehouse-type businesses adjacent to the west along Hamilton, looking South. |
| Date: | 02/24/21 |

| | |
|---|---|
| Photo #12 |  |
| Description: | Residential adjoining on N side, on Peters. |
| Date: | 09/19/17 |

**Appendix VII - Government Listed Sites - Database Report**

(Scroll down)

42.644738, -86.209064
prepared for:
Ref:

February 17, 2021

# *Environmental Radius Report*

# Summary

| | < 1/4 | 1/4 - 1/2 | 1/2 - 1 |
|---|---|---|---|
| National Priorities List (NPL) | | | |
| CERCLIS List | | | |
| CERCLIS NFRAP | | | |
| RCRA CORRACTS Facilities | | | |
| RCRA non-CORRACTS TSD Facilities | | | |
| Federal Institutional Control / Engineering Control Registry | | | |
| Emergency Response Notification System (ERNS) | | | 3 |
| US Toxic Release Inventory | | | 1 |
| US RCRA Generators (CESQG, SQG, LQG) | 2 | 4 | 9 |
| US ACRES (Brownfields) | 2 | 1 | 2 |
| US NPDES | 1 | | 2 |
| US Air Facility System (AIRS / AFS) | | | 1 |
| MI Baseline Environmental Assessment (BEA) | 6 | 2 | 9 |
| MI Underground Storage Tanks | 8 | | 3 |
| MI Leaking Underground Storage Tanks | 2 | | 2 |
| MI Contaminated Sites - Part 201 List | | 1 | |
| MI Active Solid Waste Landfills | | | |
| MI Closed Solid Waste Landfills | | | |

# National Priorities List (NPL)

This database includes Proposed Sites, Final Sites and Deleted NPL Sites. The Superfund Program, administered under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is an EPA Program to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. The NPL (National Priorities List) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.

The boundaries of an NPL site are not tied to the boundaries of the property on which a facility is located. The release may be contained with a single property's boundaries or may extend across property boundaries onto other properties. The boundaries can, and often do change as further information on the extent and degree of contamination is obtained.

**This database returned no results for your area**

# CERCLIS List

The United States Environmental Protection Agency (EPA) investigates known or suspected uncontrolled or abandoned hazardous substance facilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA maintains a comprehensive list of these facilities in a database known as the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS). These sites have either been investigated or are currently under investigation by the EPA for release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and ultimately placed on the National Priority List (NPL).

CERCLIS sites designated as "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an intitial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.

**This database returned no results for your area**

# CERCLIS NFRAP

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" NFRAP have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the site being placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed these NFRAP sites from CERCLIS to lift unintended barriers to the redevelopment of these properties. This policy change is part of EPA"s Brownfields Redevelopment Program to help cities, states, private investors and affected citizens promote economic redevelopment of unproductive urban sites.

**This database returned no results for your area**

# RCRA CORRACTS Facilities

The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA maintains the Corrective Action Report (CORRACTS) database of Resource Conservation and Recovery Act (RCRA) facilities that are undergoing "corrective action." A "corrective action order" is issued pursuant to RCRA Section 3008(h) when there has been a release of hazardous waste or constituents into the environment from a RCRA facility. Corrective actions may be required beyond the facility"s boundary and can be required regardless of when the release occurred, even if it predated RCRA.

**This database returned no results for your area**

# RCRA non-CORRACTS TSD Facilities

The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). The EPA"s RCRA Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Facilites database is a compilation by the EPA of facilities that report generation, storage, transportation, treatment, or disposal of hazardous waste. RCRA Permitted Treatment, Storage, Disposal Facilities (RCRA-TSD) are facilities which treat, store and/or dispose of hazardous waste.

**This database returned no results for your area**

# Federal Institutional Control / Engineering Control Registry

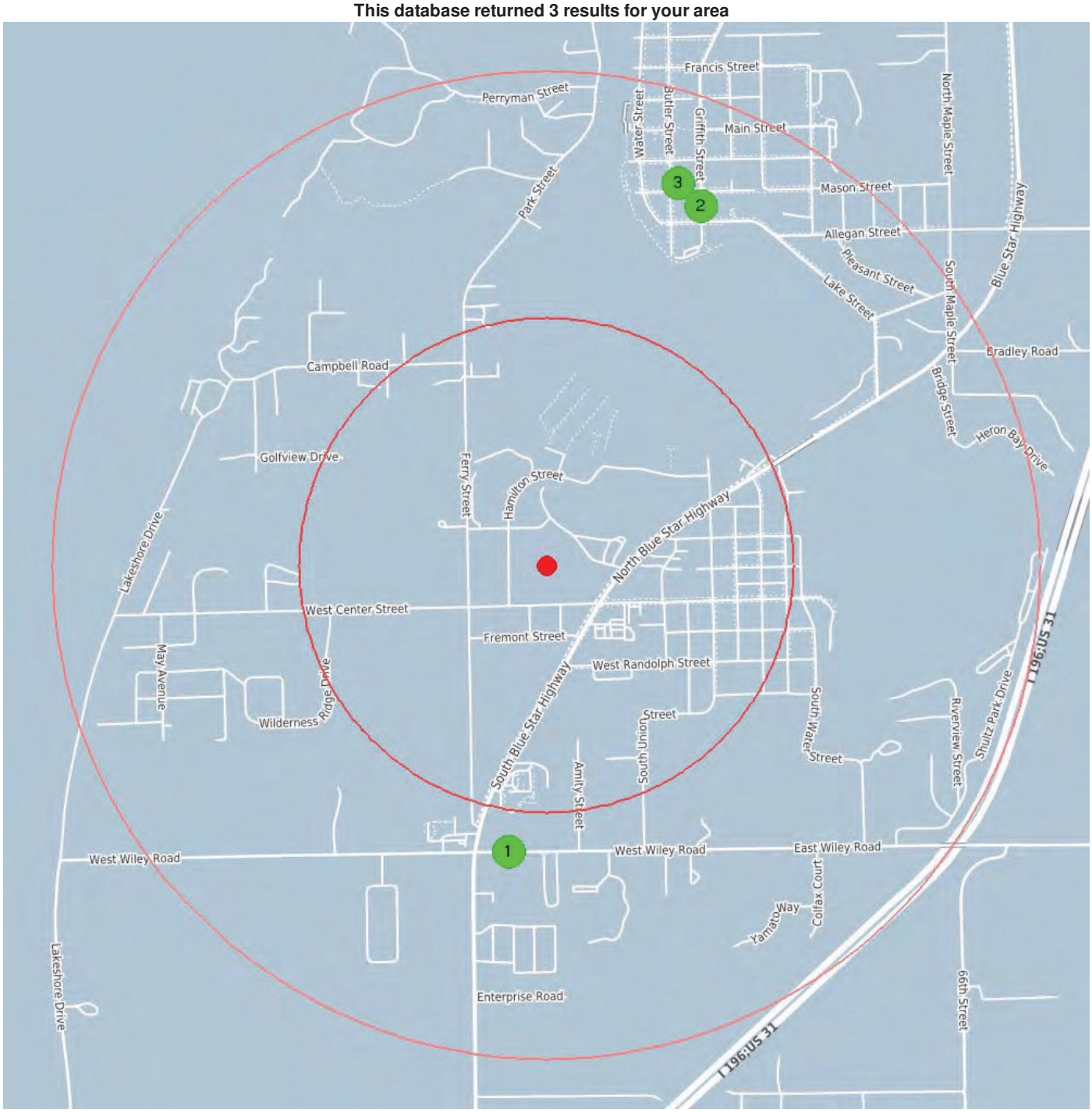
Federal Institutional Control / Engineering Control Registry

**This database returned no results for your area**

# Emergency Response Notification System (ERNS)

The Emergency Response Notification System (ERNS) is a national computer database used to store information on unauthorized releases of oil and hazardous substances. The program is a cooperative effort of the Environmental Protection Agency, the Department of Transportation Research and Special Program Administration"s John Volpe National Transportation System Center and the National Response Center. There are primarily five Federal statutes that require release reporting: the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 103; the Superfund Amendments and Reauthorization Act(SARA) Title III Section 304; the Clean Water Act of 1972(CWA) section 311(b)(3); and the Hazardous Material Transportation Act of 1974(HMTA section 1808(b).

**This database returned 3 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

# Emergency Response Notification System (ERNS)

1

| | |
|---|---|
| **Coordinates** | 42.636341094971, -86.210548400879 |
| **Distance to site** | 3088 ft / 0.585 mi S |
| **Incident** | CALLER IS REPORTING A GASOLINE TANK THAT WASHED UP ON SHORELINE DO TO UNKNOWN CAUSES. THE GASOLINE TANK IS STILL SLIGHTLY UNDERWATER. CALLER STATED THERE IS A POTENTIAL FOR A FUEL SPILL. |
| **Incident Date** | 7/14/2009 19:30 |
| **Incident location** | KALAMAZOO RIVER |
| **Year Reported** | 2009 |
| **City** | DOUGLAS |
| **State** | MI |
| **County** | ALLEGAN |

2

| | |
|---|---|
| **Coordinates** | 42.655250549316, -86.20288848877 |
| **Distance to site** | 4177 ft / 0.791 mi NE |
| **Incident** | CALLER IS REPORTING AN UNKNOWN SHEEN SIGHTING. EXACT SOURCE OF THE SHEEN IS UNKNOWN AT THIS TIME. |
| **Incident Date** | 6/19/2013 20:54 |
| **Incident location** | KALAMACO RIVER, ON THE SOUTHERN AREA OF THE RIVER, BY SAUGATUCK |
| **Year Reported** | 2013 |
| **City** | SAUGATUCK |
| **State** | MI |
| **County** | OTTAWA |

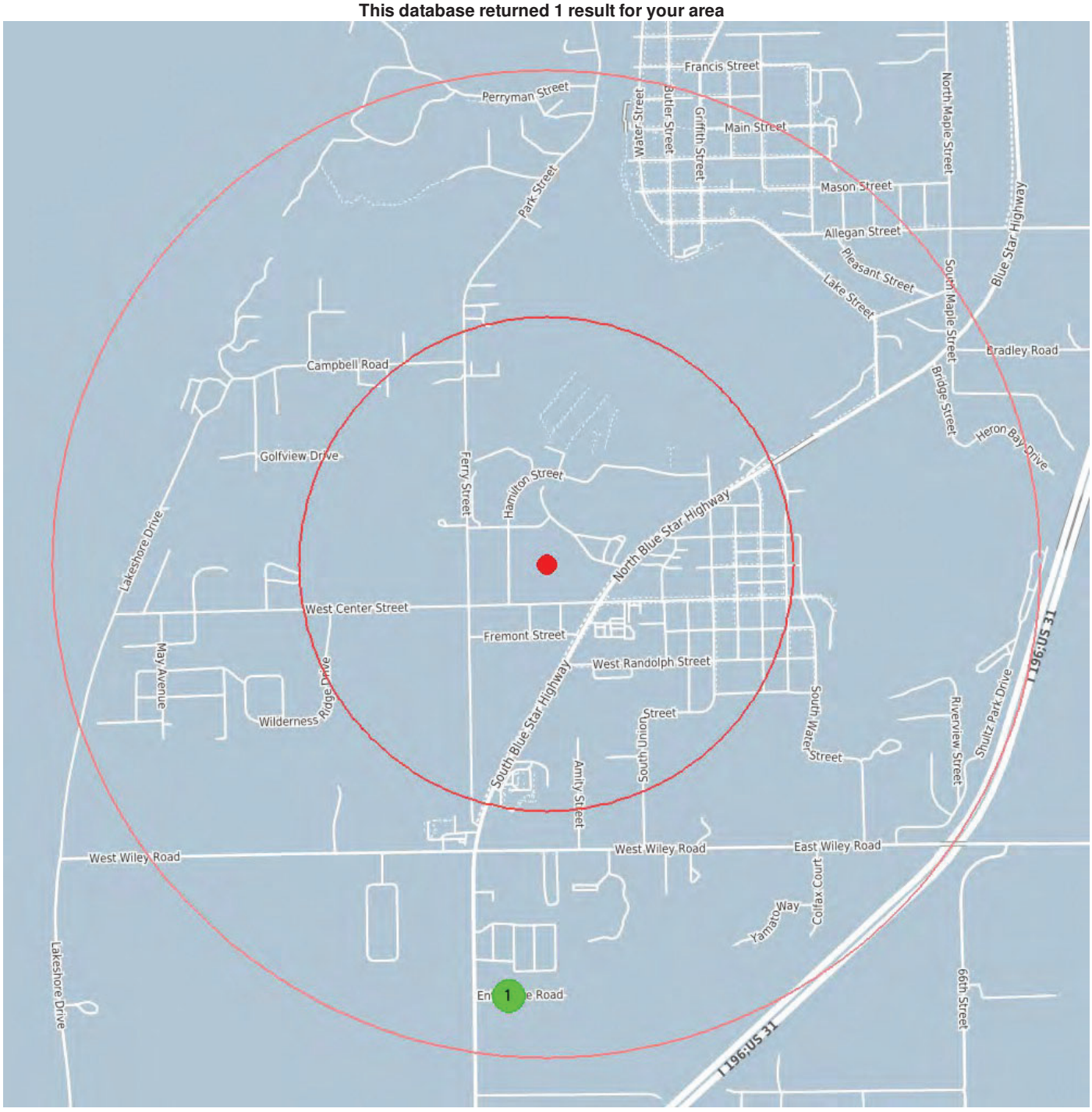
3

| | |
|---|---|
| **Coordinates** | 42.655250549316, -86.20288848877 |
| **Distance to site** | 4177 ft / 0.791 mi NE |
| **Incident** | CALLER IS REPORTING AN UNKNOWN SHEEN IN THE WATER. |
| **Incident Date** | 10/2/2013 19:09 |
| **Incident location** | UNKNOWN SHEEN INCIDENT |
| **Year Reported** | 2013 |
| **Address** | BETWEEN PIER HEADS |
| **City** | SAUGATUCK |
| **State** | MI |
| **County** | ALLEGAN |

# US Toxic Release Inventory

The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. TRI reporters for all reporting years are provided in the file.

**This database returned 1 result for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

## US Toxic Release Inventory

1

| | |
|---|---|
| **Coordinates** | 42.63208, -86.21057 |
| **Distance to site** | 4635 ft / 0.878 mi S |

| | |
|---|---|
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002118903 |
| **EPA Identifier** | 110002118903 |
| **Primary Name** | DOUGLAS MARINE CORP |
| **Address** | 6780 ENTERPRISE DR. |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **NAICS Codes** | 336611, 336612 |
| **SIC Codes** | 3732 |
| **SIC Descriptions** | BOAT BUILDING AND REPAIRING |
| **Programs** | BR:MID982633117, RCRAINFO:MID982633117, TRIS:49406DGLSM6780E |
| **Program Interests** | HAZARDOUS WASTE BIENNIAL REPORTER, SQG, TRI REPORTER |
| **Updated On** | 31-DEC-2015 10:57:59 |
| **Recorded On** | 01-MAR-2000 00:00:00 |
| **NAICS Descriptions** | BOAT BUILDING., SHIP BUILDING AND REPAIRING. |

# US RCRA Generators (CESQG, SQG, LQG)

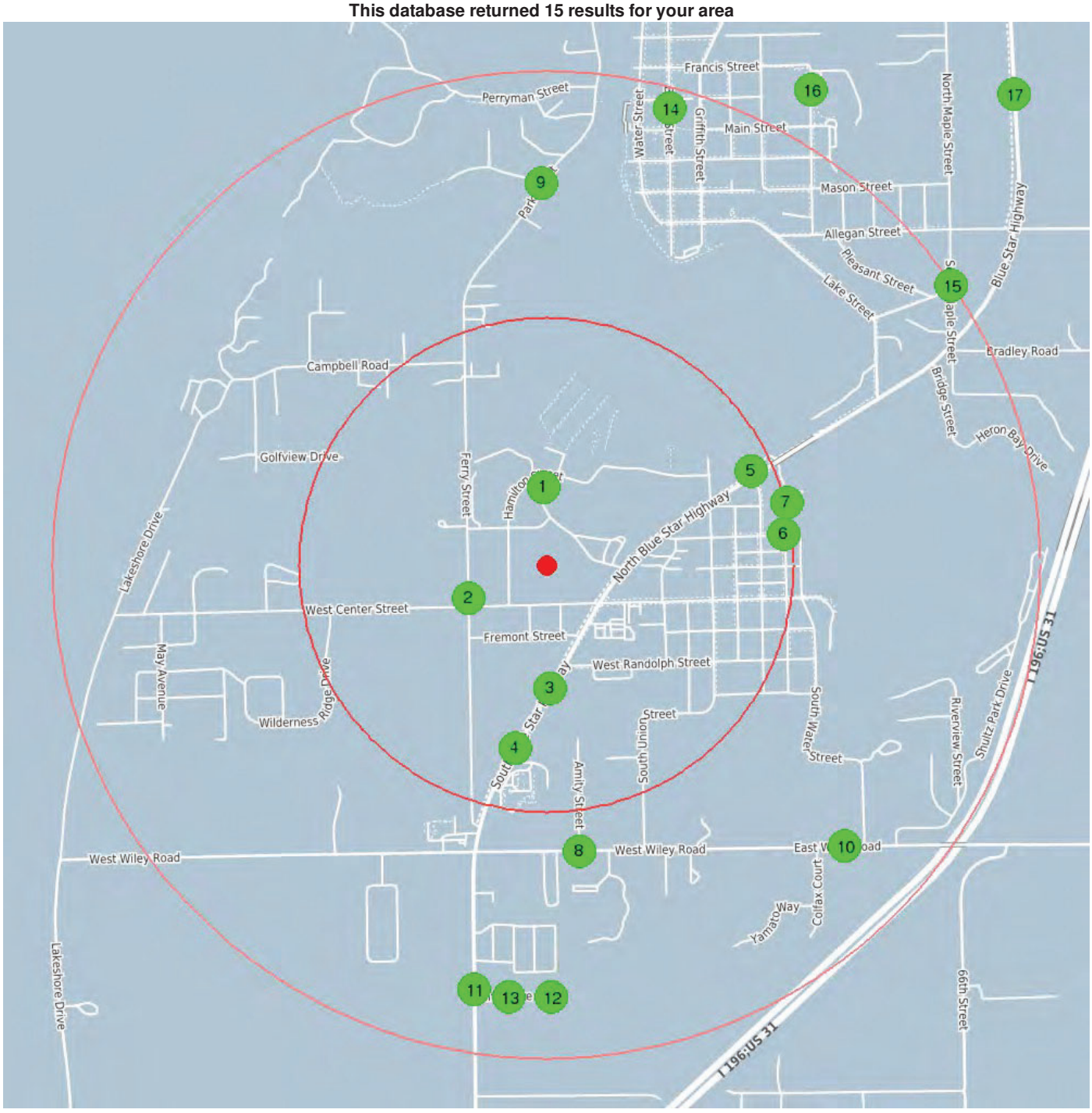
The United States Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA). EPA maintains a database of facilities, which generate hazardous waste or treat, store, and/or dispose of hazardous wastes.

Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste.

Small Quantity Generators (SQG) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Large Quantity Generators (LQG) generate 1,000 kilograms per month or more of hazardous waste, or more than 1 kilogram per month of acutely hazardous waste.

**This database returned 15 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

1

| | |
|---|---|
| **Coordinates** | 42.64701, -86.20918 |
| **Distance to site** | 829 ft / 0.157 mi N |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110003596092 |
| **EPA Identifier** | 110003596092 |
| **Primary Name** | TOWER MARINE |
| **Address** | 216 SAINT PETERS DR |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **NAICS Codes** | 713930 |
| **Programs** | RCRAINFO:MID050951474 |
| **Program Interests** | SQG |
| **Updated On** | 29-DEC-2014 10:08:16 |
| **Recorded On** | 01-MAR-2000 00:00:00 |
| **NAICS Descriptions** | MARINAS. |

2

| | |
|---|---|
| **Coordinates** | 42.64377, -86.21216 |
| **Distance to site** | 903 ft / 0.171 mi W |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110043185095 |
| **EPA Identifier** | 110043185095 |
| **Primary Name** | MACATAWA BANK |
| **Address** | 14 FERRY ST |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MIK612445361 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 28-MAR-2014 23:45:26 |
| **Recorded On** | 05-JAN-2011 14:56:52 |

3

| | |
|---|---|
| **Coordinates** | 42.64112, -86.20893 |
| **Distance to site** | 1320 ft / 0.250 mi S |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110055060204 |
| **EPA Identifier** | 110055060204 |
| **Primary Name** | WEATHERVANE PARTNERS LLC |
| **Address** | 102 BLUE STAR HWY |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MIK146550217 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 28-MAR-2014 23:38:15 |
| **Recorded On** | 19-FEB-2013 13:04:59 |

4

| | |
|---|---|
| **Coordinates** | 42.63938, -86.21029 |
| **Distance to site** | 1981 ft / 0.375 mi S |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110046088167 |
| **EPA Identifier** | 110046088167 |
| **Primary Name** | HAWORTH INC |
| **Address** | 200 BLUE STAR HWY |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **NAICS Codes** | 337214 |
| **Programs** | RCRAINFO:MIT270011521 |
| **Program Interests** | CESQG |
| **Updated On** | 28-MAR-2014 23:49:12 |
| **Recorded On** | 24-JUN-2012 11:48:42 |
| **NAICS Descriptions** | OFFICE FURNITURE (EXCEPT WOOD) MANUFACTURING. |

5

| | |
|---|---|
| **Coordinates** | 42.647489, -86.200903 |
| **Distance to site** | 2408 ft / 0.456 mi E |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110003591970 |
| **EPA Identifier** | 110003591970 |
| **Primary Name** | METALLURGICAL HIGH VACUUM CORP |
| **Address** | 471 WASHINGTON ST |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MID027114123 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 27-SEP-2010 18:19:14 |
| **Recorded On** | 01-MAR-2000 00:00:00 |

6

| | |
|---|---|
| **Coordinates** | 42.645642, -86.199586 |
| **Distance to site** | 2563 ft / 0.486 mi E |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110003629119 |
| **EPA Identifier** | 110003629119 |
| **Primary Name** | WEATHER VAN CLEANERS |
| **Address** | 102 WASHINGTON ST |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MID982424491 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 27-SEP-2010 18:32:53 |
| **Recorded On** | 01-MAR-2000 00:00:00 |

7

| | |
|---|---|
| **Coordinates** | 42.646556, -86.199482 |
| **Distance to site** | 2654 ft / 0.503 mi E |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110003607534 |
| **EPA Identifier** | 110003607534 |
| **Primary Name** | DOUGLAS MARINE CORP |
| **Address** | 160 WASHINGTON ST |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MID089964613 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 27-SEP-2010 18:36:16 |
| **Recorded On** | 01-MAR-2000 00:00:00 |

8

| | |
|---|---|
| **Coordinates** | 42.63636, -86.20773 |
| **Distance to site** | 3076 ft / 0.583 mi S |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110008452539 |
| **EPA Identifier** | 110008452539 |
| **Primary Name** | DOUGLAS SITE |
| **Address** | AMITY LANE |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MID982073595 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 26-JAN-2012 18:03:03 |
| **Recorded On** | 01-MAR-2000 00:00:00 |

9

| | |
|---|---|
| **Coordinates** | 42.655917, -86.209239 |
| **Distance to site** | 4078 ft / 0.772 mi N |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110031356547 |
| **EPA Identifier** | 110031356547 |
| **Primary Name** | KLSWA LIFT STATION 6 |
| **Address** | 178 PARK ST |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **Programs** | RCRAINFO:MIK811411669 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 26-JAN-2012 18:35:34 |
| **Recorded On** | 22-OCT-2007 16:07:08 |

10

| | |
|---|---|
| **Coordinates** | 42.636504, -86.197163 |
| **Distance to site** | 4383 ft / 0.830 mi SE |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015840697 |
| **EPA Identifier** | 110015840697 |
| **Primary Name** | INTERURBAN TRANSIT AUTHORITY |
| **Address** | 100 WILEY ST |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **NAICS Codes** | 485113 |
| **Programs** | RCRAINFO:MIK366242642 |
| **Program Interests** | CESQG |
| **Updated On** | 27-SEP-2010 18:40:41 |
| **Recorded On** | 04-DEC-2003 09:39:05 |
| **NAICS Descriptions** | BUS AND OTHER MOTOR VEHICLE TRANSIT SYSTEMS. |

11

| | |
|---|---|
| **Coordinates** | 42.63229, -86.21194 |
| **Distance to site** | 4605 ft / 0.872 mi S |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110003610272 |
| **EPA Identifier** | 110003610272 |
| **Primary Name** | HANSEN MANUFACTURING |
| **Address** | 2948 BLUE STAR HWY |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **NAICS Codes** | 333513 |
| **Programs** | RCRAINFO:MID103472577 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 26-JAN-2012 18:07:31 |
| **Recorded On** | 01-MAR-2000 00:00:00 |
| **NAICS Descriptions** | MACHINE TOOL (METAL FORMING TYPES) MANUFACTURING. |

12

| | |
|---|---|
| **Coordinates** | 42.63208, -86.20886 |
| **Distance to site** | 4617 ft / 0.875 mi S |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110016734060 |
| **EPA Identifier** | 110016734060 |
| **Primary Name** | RANDY'S WEST SHORE BOAT REPAIR INC |
| **Address** | 6765 ENTERPRISE DR |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | RCRAINFO:MIK369822291 |
| **Program Interests** | CESQG |
| **Updated On** | 29-JUN-2009 11:32:58 |
| **Recorded On** | 13-FEB-2004 18:06:51 |

13

| | |
|---|---|
| **Coordinates** | 42.63208, -86.21057 |
| **Distance to site** | 4635 ft / 0.878 mi S |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002118903 |
| **EPA Identifier** | 110002118903 |
| **Primary Name** | DOUGLAS MARINE CORP |
| **Address** | 6780 ENTERPRISE DR. |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **NAICS Codes** | 336611, 336612 |
| **SIC Codes** | 3732 |
| **SIC Descriptions** | BOAT BUILDING AND REPAIRING |
| **Programs** | BR:MID982633117, RCRAINFO:MID982633117, TRIS:49406DGLSM6780E |
| **Program Interests** | HAZARDOUS WASTE BIENNIAL REPORTER, SQG, TRI REPORTER |
| **Updated On** | 31-DEC-2015 10:57:59 |
| **Recorded On** | 01-MAR-2000 00:00:00 |
| **NAICS Descriptions** | BOAT BUILDING., SHIP BUILDING AND REPAIRING. |

14

| | |
|---|---|
| **Coordinates** | 42.65814, -86.204141 |
| **Distance to site** | 5064 ft / 0.959 mi N |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015911682 |
| **EPA Identifier** | 110015911682 |
| **Primary Name** | MARINA MAN |
| **Address** | 471 BUTLER ST |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **Programs** | RCRAINFO:MIK132871120 |
| **Program Interests** | CESQG |
| **Updated On** | 26-JAN-2012 18:23:13 |
| **Recorded On** | 04-DEC-2003 15:50:54 |

15

| | |
|---|---|
| **Coordinates** | 42.65293, -86.19293 |
| **Distance to site** | 5259 ft / 0.996 mi NE |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015831634 |
| **EPA Identifier** | 110015831634 |
| **Primary Name** | MACATAWA BAY BOAT WORKS LLC |
| **Address** | 297 S MAPLE ST |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **NAICS Codes** | 441222 |
| **Programs** | RCRAINFO:MIK455433581 |
| **Program Interests** | CESQG |
| **Updated On** | 26-JAN-2012 18:27:02 |
| **Recorded On** | 04-DEC-2003 09:01:37 |
| **NAICS Descriptions** | BOAT DEALERS. |

16

| | |
|---|---|
| **Coordinates** | 42.65868, -86.19852 |
| **Distance to site** | 5819 ft / 1.102 mi NE |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015911842 |
| **EPA Identifier** | 110015911842 |
| **Primary Name** | SAUGATUCK PUBLIC SCHOOLS |
| **Address** | 401 ELIZABETH ST |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **Programs** | RCRAINFO:MIK136322948 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 26-JAN-2012 18:24:10 |
| **Recorded On** | 04-DEC-2003 15:52:42 |

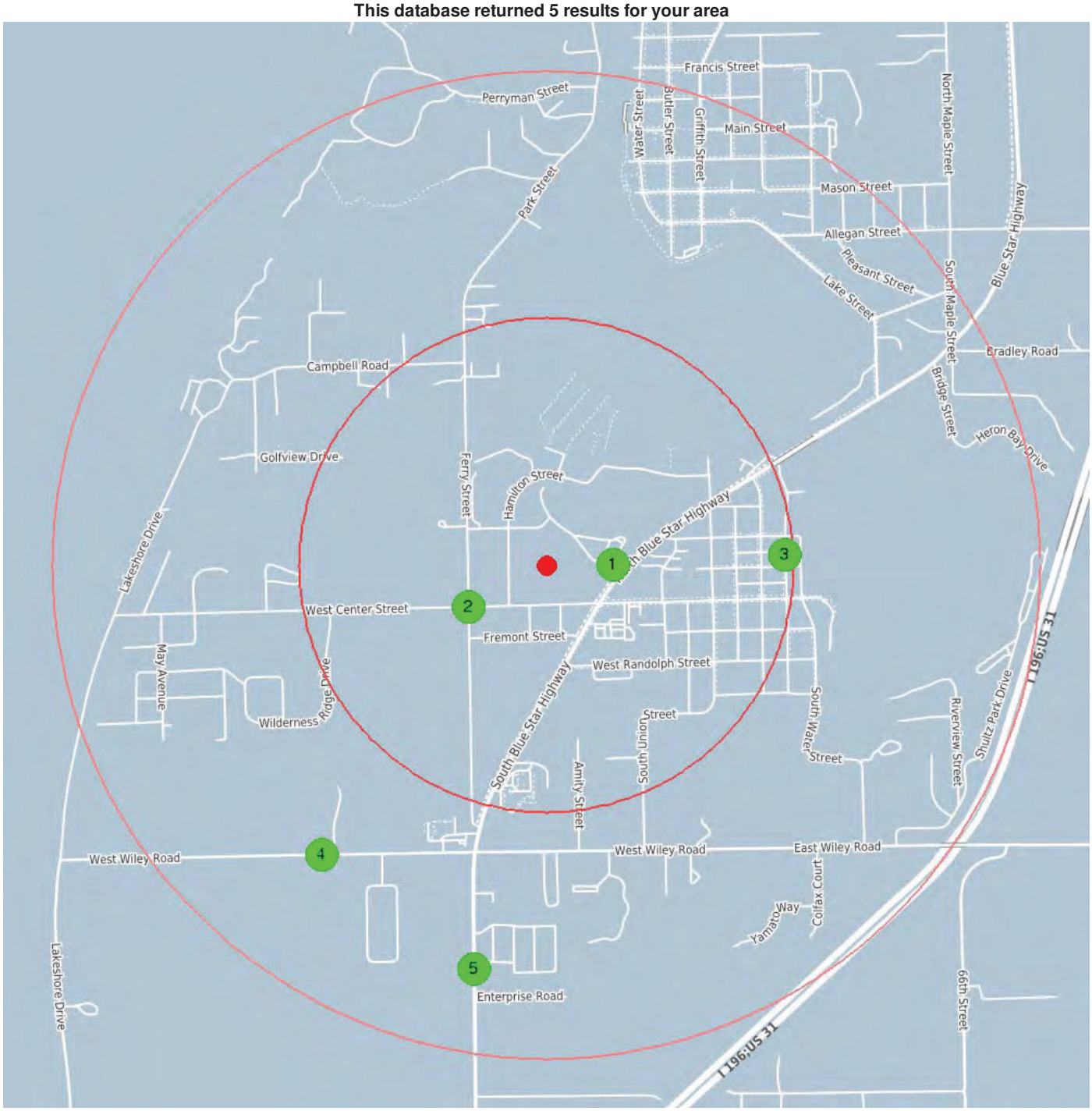
17

| | |
|---|---|
| **Coordinates** | 42.65854, -86.19044 |
| **Distance to site** | 7093 ft / 1.343 mi NE |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110044972946 |
| **EPA Identifier** | 110044972946 |
| **Primary Name** | COASTAL REAL ESTATE HOLDINGS 1 LLC |
| **Address** | 3295 BLUE STAR HWY |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **Programs** | RCRAINFO:MI0000118646 |
| **Program Interests** | UNSPECIFIED UNIVERSE |
| **Updated On** | 28-MAR-2014 23:31:57 |
| **Recorded On** | 20-MAR-2012 16:45:30 |

# US ACRES (Brownfields)

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. The Assessment, Cleanup and Redevelopment Exchange System (ACRES) is an online database for Brownfields Grantees to electronically submit data directly to The United States Environmental Protection Agency (EPA)

**This database returned 5 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

## US ACRES (Brownfields)

1

| | |
|---|---|
| **Coordinates** | 42.644742, -86.206385 |
| **Distance to site** | 717 ft / 0.136 mi E |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110046369443 |
| **EPA Identifier** | 110046369443 |
| **Primary Name** | TOWER MARINE |
| **Address** | 216 PETER'S DRIVE |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | ACRES:125683, ACRES:142101 |
| **Program Interests** | BROWNFIELDS PROPERTY |
| **Updated On** | 30-DEC-2014 19:05:08 |
| **Recorded On** | 17-AUG-2012 11:55:04 |

2

| | |
|---|---|
| **Coordinates** | 42.64352, -86.212156 |
| **Distance to site** | 941 ft / 0.178 mi W |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070384490 |
| **EPA Identifier** | 110070384490 |
| **Primary Name** | MIRO PROPERTY |
| **Address** | WEST OF CHASE AND SOUTH OF CENTER STREET |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | ACRES:169446 |
| **Program Interests** | BROWNFIELDS PROPERTY |
| **Recorded On** | 13-NOV-2018 11:03:09 |

3

| | |
|---|---|
| **Coordinates** | 42.645041, -86.199546 |
| **Distance to site** | 2555 ft / 0.484 mi E |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070384492 |
| **EPA Identifier** | 110070384492 |
| **Primary Name** | SAUGATUCK PUBLIC SCHOOLS BUS GARAGE |
| **Address** | 68 WASHINGTON STREET |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **Programs** | ACRES:169541 |
| **Program Interests** | BROWNFIELDS PROPERTY |
| **Recorded On** | 13-NOV-2018 11:03:10 |

4

| | |
|---|---|
| **Coordinates** | 42.636258, -86.217981 |
| **Distance to site** | 3911 ft / 0.741 mi SW |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070384489 |
| **EPA Identifier** | 110070384489 |
| **Primary Name** | PROPOSED DOUGLAS DPW SITE |
| **Address** | 6825 WILEY ROAD (130TH STREET) |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **Programs** | ACRES:169445 |
| **Program Interests** | BROWNFIELDS PROPERTY |
| **Recorded On** | 13-NOV-2018 11:02:54 |

## US ACRES (Brownfields)

5

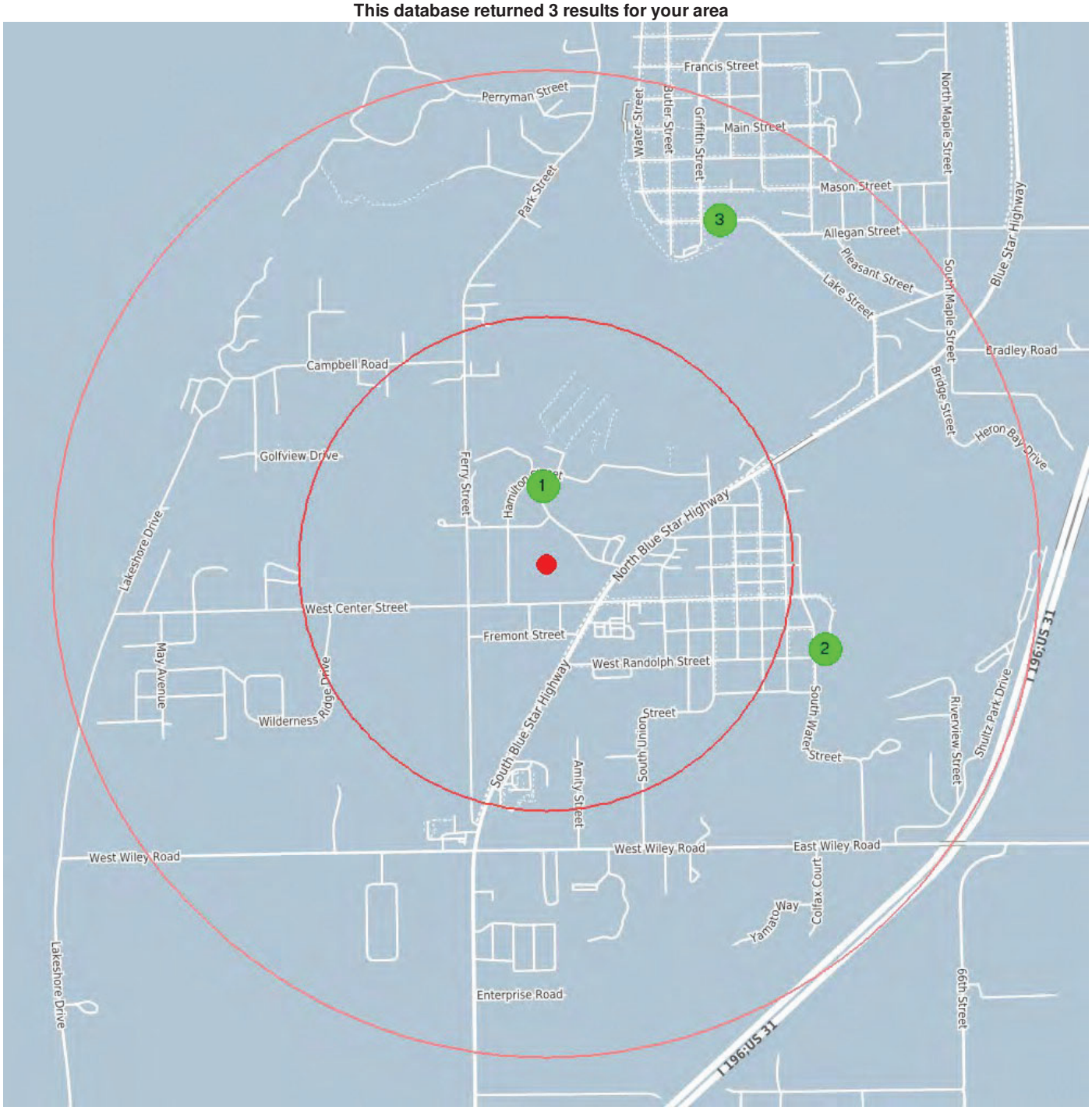
| | |
|---|---|
| **Coordinates** | 42.632919, -86.211948 |
| **Distance to site** | 4380 ft / 0.830 mi S |

| | |
|---|---|
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110045012393 |
| **EPA Identifier** | 110045012393 |
| **Primary Name** | 2987 BLUE STAR HIGHWAY |
| **Address** | 2987 BLUE STAR HIGHWAY |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49408 |
| **Programs** | ACRES:135794 |
| **Program Interests** | BROWNFIELDS PROPERTY |
| **Updated On** | 23-SEP-2014 04:19:31 |
| **Recorded On** | 23-MAR-2012 09:57:42 |

# US NPDES

The NPDES module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

**This database returned 3 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

## US NPDES

1

| | |
|---|---|
| **Coordinates** | 42.64701, -86.20918 |
| **Distance to site** | 829 ft / 0.157 mi N |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110063867070 |
| **EPA Identifier** | 110063867070 |
| **Primary Name** | TOWER MARINE-DOUGLAS |
| **Address** | 216 ST. PETERS DRIVE |
| **City** | DOUGLAS |
| **State** | MI |
| **Zipcode** | 49406 |
| **SIC Codes** | 3732 |
| **SIC Descriptions** | BOAT BUILDING AND REPAIRING |
| **Programs** | NPDES:MIG690005 |
| **Program Interests** | ICIS-NPDES NON-MAJOR |
| **Updated On** | 03-SEP-2016 09:15:15 |
| **Recorded On** | 10-APR-2015 15:07:38 |

2

| | |
|---|---|
| **Coordinates** | 42.642224, -86.197895 |
| **Distance to site** | 3133 ft / 0.593 mi E |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006742007 |
| **EPA Identifier** | 110006742007 |
| **Primary Name** | KALAMAZOO LAKE WTP |
| **Address** | 22 BAYOU STREET |
| **City** | DOUGLAS |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49406 |
| **SIC Codes** | 4941 |
| **SIC Descriptions** | WATER SUPPLY |
| **Programs** | NPDES:MIG640101 |
| **Program Interests** | ICIS-NPDES NON-MAJOR |
| **Updated On** | 09-MAY-2016 08:07:42 |
| **Recorded On** | 01-MAR-2000 00:00:00 |

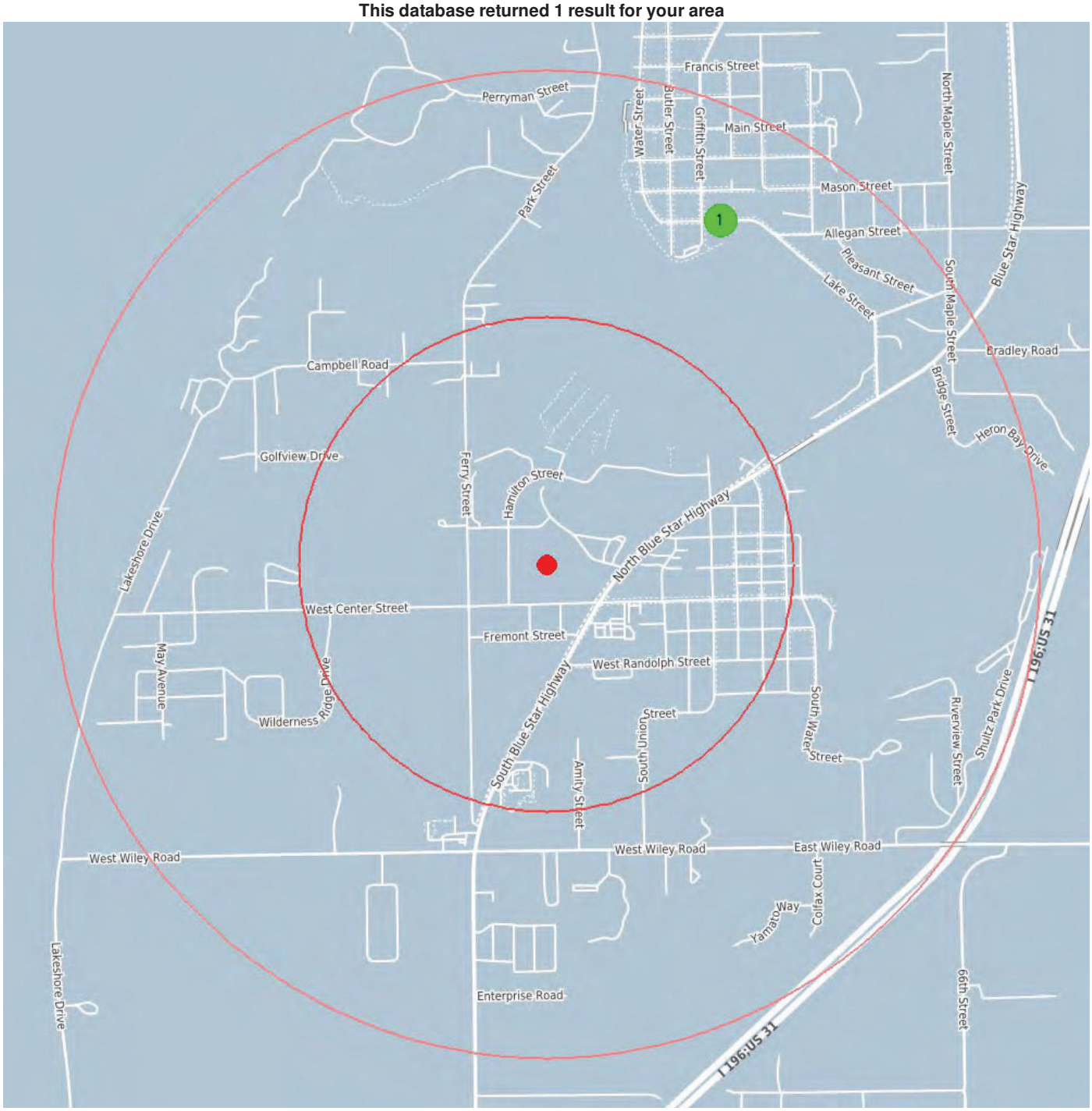
3

| | |
|---|---|
| **Coordinates** | 42.65483, -86.20212 |
| **Distance to site** | 4125 ft / 0.781 mi NE |
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110001300146 |
| **EPA Identifier** | 110001300146 |
| **Primary Name** | RICH PRODUCTS CORP |
| **Address** | 350 CULVER |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **NAICS Codes** | 311411 |
| **SIC Codes** | 2037, 2053 |
| **SIC Descriptions** | FROZEN BAKERY PRODUCTS, EXCEPT BREAD, FROZEN FRUITS, FRUIT JUICES, AND VEGETABLES |
| **Programs** | AIR:MI000000000000A0017, AIRS/AFS:2600500002, NPDES:MIG250144 |
| **Program Interests** | AIR SYNTHETIC MINOR, ICIS-NPDES NON-MAJOR |
| **Updated On** | 11-JAN-2016 07:45:00 |
| **Recorded On** | 01-MAR-2000 00:00:00 |
| **NAICS Descriptions** | FROZEN FRUIT, JUICE, AND VEGETABLE MANUFACTURING. |

# US Air Facility System (AIRS / AFS)

The Air Facility System (AIRS / AFS) contains compliance and permit data for stationary sources of air pollution (such as electric power plants, steel mills, factories, and universities) regulated by EPA, state and local air pollution agencies. The information in AFS is used by the states to prepare State Implementation Plans (SIPs) and to track the compliance status of point sources with various regulatory programs under Clean Air Act.

**This database returned 1 result for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

## US Air Facility System (AIRS / AFS)

1

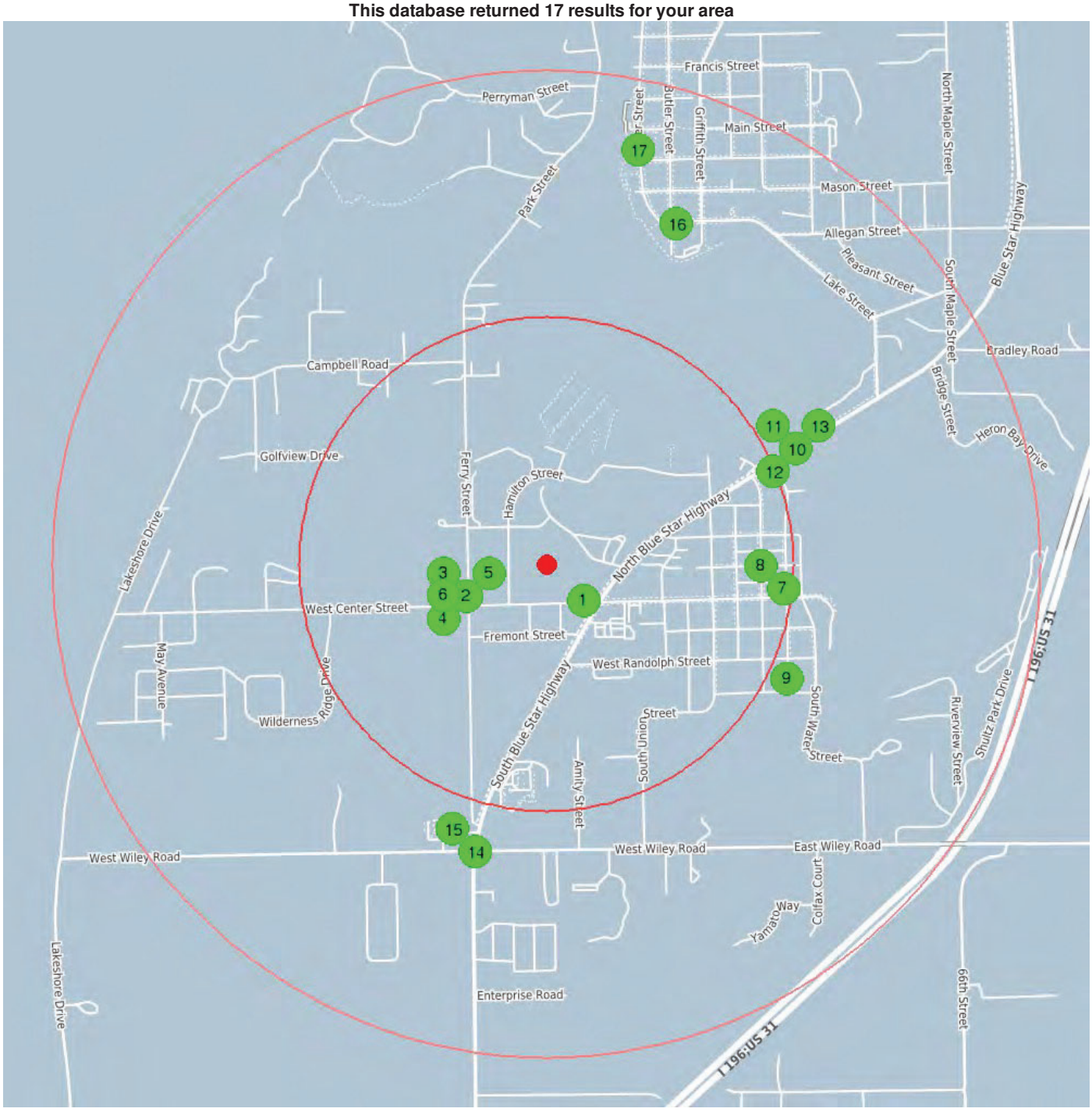
| | |
|---|---|
| **Coordinates** | 42.65483, -86.20212 |
| **Distance to site** | 4125 ft / 0.781 mi NE |

| | |
|---|---|
| **Info URL** | http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110001300146 |
| **EPA Identifier** | 110001300146 |
| **Primary Name** | RICH PRODUCTS CORP |
| **Address** | 350 CULVER |
| **City** | SAUGATUCK |
| **County** | ALLEGAN |
| **State** | MI |
| **Zipcode** | 49453 |
| **NAICS Codes** | 311411 |
| **SIC Codes** | 2037, 2053 |
| **SIC Descriptions** | FROZEN BAKERY PRODUCTS, EXCEPT BREAD, FROZEN FRUITS, FRUIT JUICES, AND VEGETABLES |
| **Programs** | AIR:MI00000000000A0017, AIRS/AFS:2600500002, NPDES:MIG250144 |
| **Program Interests** | AIR SYNTHETIC MINOR, ICIS-NPDES NON-MAJOR |
| **Updated On** | 11-JAN-2016 07:45:00 |
| **Recorded On** | 01-MAR-2000 00:00:00 |
| **NAICS Descriptions** | FROZEN FRUIT, JUICE, AND VEGETABLE MANUFACTURING. |

# MI Baseline Environmental Assessment (BEA)

A Michigan Baseline Environmental Assessment (BEA) allows people to purchase or begin operating at a facility without being held liable for existing contamination. BEAs are used to gather enough information about the property being transferred so that existing contamination can be distinguished from any new releases that might occur after the new owner or operator takes over the property.

**This database returned 17 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

1

| | |
|---|---|
| **Coordinates** | 42.643672674894, -86.207548901439 |
| **Distance to site** | 561 ft / 0.106 mi SE |
| **Property Name** | Center (294) Street, West |
| **Address** | 294 W. Center Street |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 1870 |
| **Date Received** | 5/29/2013 |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | spauldie |

2

| | |
|---|---|
| **Coordinates** | 42.643808797002, -86.212221309543 |
| **Distance to site** | 913 ft / 0.173 mi W |
| **Property Name** | Ferry (14) Street |
| **Address** | 14 Ferry Street |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 1629 |
| **Date Received** | 7/18/2011 |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

3

| | |
|---|---|
| **Coordinates** | 42.643808797002, -86.212221309543 |
| **Distance to site** | 913 ft / 0.173 mi W |
| **Property Name** | Ferry (14) Street |
| **Address** | 14 Ferry Street |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 1544 |
| **Date Received** | 12/3/2010 |
| **Category** | N |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

4

| | |
|---|---|
| **Coordinates** | 42.643808797002, -86.212221309543 |
| **Distance to site** | 913 ft / 0.173 mi W |
| **Property Name** | Ferry (14) Street |
| **Address** | 14 Ferry Street |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 1543 |
| **Date Received** | 12/3/2010 |
| **Category** | N |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

5

| | |
|---|---|
| **Coordinates** | 42.643808797002, -86.212221309543 |
| **Distance to site** | 913 ft / 0.173 mi W |
| **Property Name** | Ferry (14) Street |
| **Address** | 14 Ferry Street |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 1630 |
| **Date Received** | 7/18/2011 |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

6

| | |
|---|---|
| **Coordinates** | 42.643808797002, -86.212221309543 |
| **Distance to site** | 913 ft / 0.173 mi W |
| **Property Name** | Ferry (14) Street |
| **Address** | 14 Ferry Street |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 1628 |
| **Date Received** | 7/18/2011 |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

7

| | |
|---|---|
| **Coordinates** | 42.644021362066, -86.19958743453 |
| **Distance to site** | 2555 ft / 0.484 mi E |
| **Property Name** | Douglas Amoco |
| **Address** | 10-1/2 Washington |
| **City** | Douglas |
| **BEA Number** | 149 |
| **Date Received** | 4/2/1998 |
| **Category** | N |
| **Division Assigned** | STD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | kieslinb |

8

| | |
|---|---|
| **Coordinates** | 42.644021362066, -86.19958743453 |
| **Distance to site** | 2555 ft / 0.484 mi E |
| **Property Name** | Douglas Amoco |
| **Address** | 10-1/2 Washington |
| **City** | Douglas |
| **BEA Number** | 150 |
| **Date Received** | 4/1/1998 |
| **Category** | N |
| **Division Assigned** | STD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | kieslinb |

9

| | |
|---|---|
| **Coordinates** | 42.641376033425, -86.199469417334 |
| **Distance to site** | 2850 ft / 0.540 mi E |
| **Address** | 160 South Washington Road |
| **City** | Douglas |
| **BEA Number** | 108 |
| **Date Received** | 11/12/1997 |
| **Category** | N |
| **Reviewer** | unas_pl |

10

| | |
|---|---|
| **Coordinates** | 42.648128509521, -86.199111938477 |
| **Distance to site** | 2942 ft / 0.557 mi E |
| **Property Name** | Metropolitan Title Company |
| **Address** | 25-29 Blue Star Highway |
| **City** | Douglas |
| **BEA Number** | 301 |
| **Date Received** | 9/14/1999 |
| **Category** | N |
| **Division Assigned** | STD |
| **Petition Determination** | Affirmed |
| **Determination 20107a** | No Request |
| **Reviewer** | kieslinb |

11

| | |
|---|---|
| **Coordinates** | 42.648128509521, -86.199111938477 |
| **Distance to site** | 2942 ft / 0.557 mi E |
| **Property Name** | Metropolitan Title Company |
| **Address** | 25-29 Blue Star Hwy |
| **City** | Douglas |
| **BEA Number** | 300 |
| **Date Received** | 9/14/1999 |
| **Category** | N |
| **Division Assigned** | STD |
| **Petition Determination** | Affirmed |
| **Determination 20107a** | No Request |
| **Reviewer** | kieslinb |

12

| | |
|---|---|
| **Coordinates** | 42.648128509521, -86.199111938477 |
| **Distance to site** | 2942 ft / 0.557 mi E |
| **Property Name** | Blue Star (2948) Highway |
| **Address** | 2948 Blue Star Highway |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 547 |
| **Date Received** | 7/2/2002 |
| **Category** | N |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | ducharmm |

13

| | |
|---|---|
| **Coordinates** | 42.648128509521, -86.199111938477 |
| **Distance to site** | 2942 ft / 0.557 mi E |
| **Property Name** | Blue Star (2948) Highway |
| **Address** | 2948 Blue Star Highway |
| **City** | Douglas |
| **Zip Code** | 49406 |
| **BEA Number** | 750 |
| **Date Received** | 5/26/2004 |
| **Category** | N |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | ducharmm |

14

| | |
|---|---|
| **Coordinates** | 42.63633, -86.2119 |
| **Distance to site** | 3160 ft / 0.599 mi S |
| **Property Name** | Wiley Road (Vacant Land (V/L)) |
| **Address** | Wiley Road (Vacant Land (V/L)) |
| **City** | Douglas |
| **Zip Code** | 49408 |
| **BEA Number** | 1334 |
| **Date Received** | 1/5/2009 |
| **Category** | N |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

15

| | |
|---|---|
| **Coordinates** | 42.63633, -86.2119 |
| **Distance to site** | 3160 ft / 0.599 mi S |
| **Property Name** | Wiley Road (Vacant Land (V/L)) |
| **Address** | Wiley Road (Vacant Land (V/L)) |
| **City** | Douglas |
| **Zip Code** | 49408 |
| **BEA Number** | 1333 |
| **Date Received** | 1/5/2009 |
| **Category** | N |
| **Division Assigned** | RRD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | zimontb |

16

| | |
|---|---|
| **Coordinates** | 42.654731422663, -86.203880980611 |
| **Distance to site** | 3901 ft / 0.739 mi NE |
| **Property Name** | Kiama Properties |
| **Address** | 201 Culver Street |
| **City** | Saugatuck |
| **BEA Number** | 354 |
| **Date Received** | 3/22/2000 |
| **Category** | N |
| **Division Assigned** | STD |
| **Petition Determination** | Affirmed |
| **Determination 20107a** | No Request |
| **Reviewer** | kieslinb |

17

| | |
|---|---|
| **Coordinates** | 42.656872496009, -86.205411180854 |
| **Distance to site** | 4533 ft / 0.859 mi N |
| **Property Name** | Water (326 Street |
| **Address** | 326 Water Street |
| **City** | Saugatuck |
| **BEA Number** | 1032 |
| **Date Received** | 11/20/2006 |
| **Category** | N |
| **Division Assigned** | ERD |
| **Petition Determination** | No Request |
| **Determination 20107a** | No Request |
| **Reviewer** | weaverc1 |

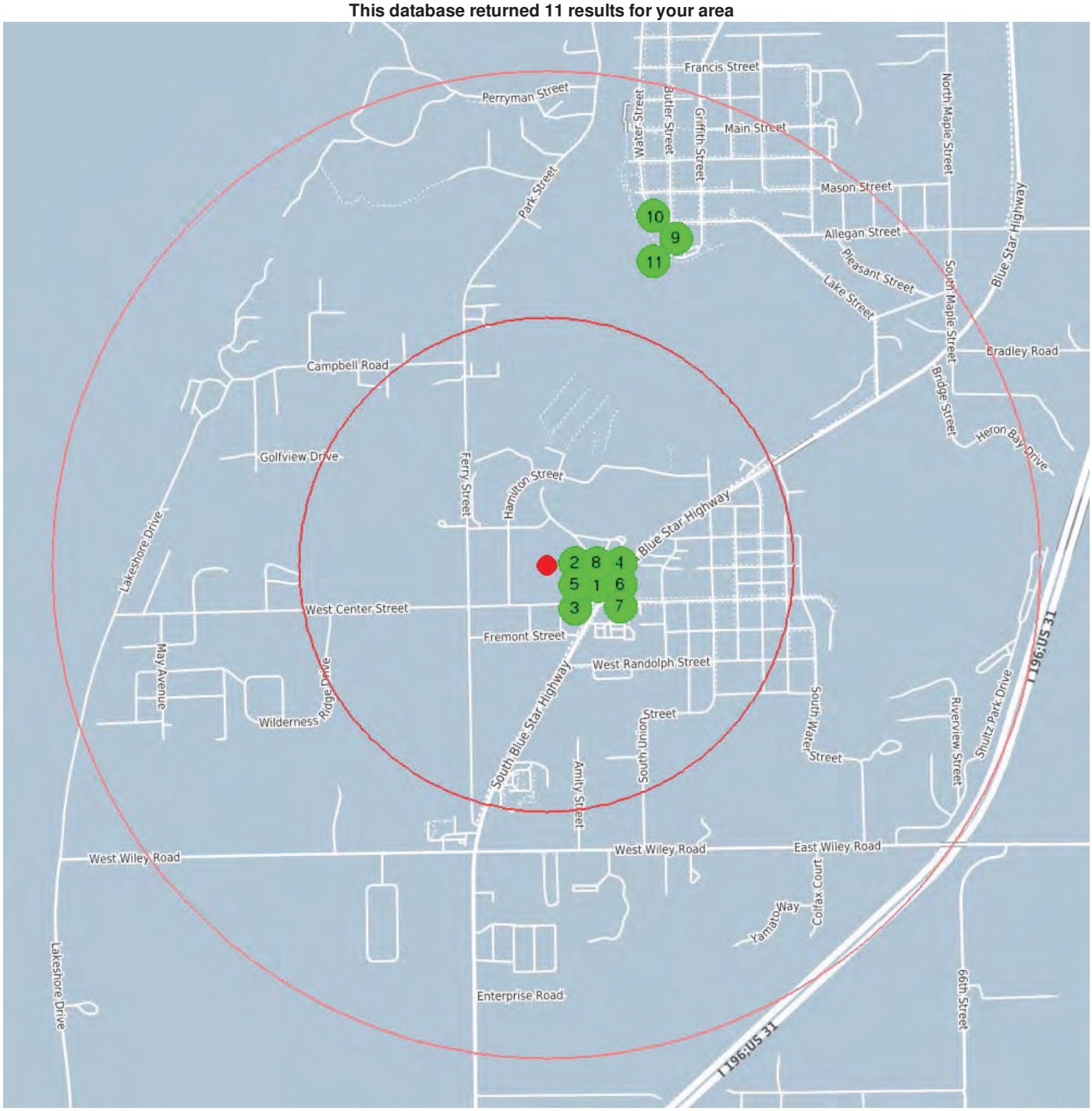
# MI Underground Storage Tanks

Underground Storage Tanks (UST) containing hazardous or petroleum substances are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The Michigan Department of Environmental Quality (MDEQ) maintains a list of registered USTs.

ACTIVE UST FACILITIES are those where there is at least one tank at the facility that is not closed in place or removed and is regulated under Part 211, Underground Storage Tank Regulations, of the Natural Resources and Environment Protection Act, 1994 PA 451, as amended (Act 451). There may be closed tanks and/or active non-regulated tanks (such as heating oil tanks) at the facility.

CLOSED UST FACILITIES are those where all tanks at the facility that are regulated under Part 211 of Act 451 are closed. There may be non-regulated active tanks at the facility, such as heating oil tanks or tanks that are smaller than the regulatory cutoff.

**This database returned 11 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

1

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 1 |
| **Tank Status** | Currently In Use |
| **Capacity** | 6000 |
| **Install Date** | Apr 19 1974 |
| **Substance** | Gasoline |
| **Tank Release** | Automatic Tank Gauging,Inventory Control |
| **Piping Release** | Automatic Line Leak Detectors |
| **Pipe Material** | ENVIRO-FLEX TOTAL CO,Secondary Containment |
| **Pipe Type** | Pressure |
| **Tank Material** | Asphalt Coated or Bare Steel,Lined Interier |
| **Impressed Cathodic Protection** | No |

2

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 2 |
| **Tank Status** | Currently In Use |
| **Capacity** | 6000 |
| **Install Date** | Apr 19 1974 |
| **Substance** | Gasoline |
| **Tank Release** | Automatic Tank Gauging,Inventory Control |
| **Piping Release** | Automatic Line Leak Detectors |
| **Pipe Material** | ENVIRO FLEX,Secondary Containment |
| **Pipe Type** | Pressure |
| **Tank Material** | Asphalt Coated or Bare Steel,Lined Interier |
| **Impressed Cathodic Protection** | No |

3

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 3 |
| **Tank Status** | Currently In Use |
| **Capacity** | 6000 |
| **Install Date** | Apr 19 1974 |
| **Substance** | Gasoline |
| **Tank Release** | Automatic Tank Gauging,Inventory Control |
| **Piping Release** | Automatic Line Leak Detectors |
| **Pipe Material** | ENVIRO FLEX,Secondary Containment |
| **Pipe Type** | Pressure |
| **Tank Material** | Asphalt Coated or Bare Steel,Lined Interier |
| **Impressed Cathodic Protection** | No |

4

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |

| | |
|---|---|
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 4 |
| **Tank Status** | Currently In Use |
| **Capacity** | 4000 |
| **Install Date** | Apr 19 1974 |
| **Substance** | Gasoline |
| **Tank Release** | Automatic Tank Gauging,Inventory Control |
| **Piping Release** | Automatic Line Leak Detectors |
| **Pipe Material** | ENVIRO FLEX,Secondary Containment |
| **Pipe Type** | Pressure |
| **Tank Material** | Asphalt Coated or Bare Steel,Lined Interier |
| **Impressed Cathodic Protection** | No |

5

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |

| | |
|---|---|
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 5 |
| **Tank Status** | Removed from Ground |
| **Capacity** | 270 |
| **Install Date** | Apr 19 1974 |
| **Substance** | Used Oil |
| **Closed Date** | Sep 1 1991 |
| **Pipe Material** | Galvanized Steel |
| **Tank Material** | Cathodically Protected Steel,Lined Interier,Polyethylene Tank Jacket |
| **Impressed Cathodic Protection** | No |

6

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |

| | |
|---|---|
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 6 |
| **Tank Status** | Removed from Ground |
| **Capacity** | 270 |
| **Install Date** | Apr 19 1974 |
| **Substance** | Used Oil |
| **Closed Date** | Sep 1 1991 |
| **Pipe Material** | Galvanized Steel |
| **Tank Material** | Asphalt Coated or Bare Steel |
| **Impressed Cathodic Protection** | No |

7

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 7 |
| **Tank Status** | Currently In Use |
| **Capacity** | 20 |
| **Install Date** | Apr 20 1971 |
| **Substance** | HOIST TANK |
| **Pipe Material** | Unknown |
| **Tank Material** | Asphalt Coated or Bare Steel |
| **Impressed Cathodic Protection** | No |

8

| | |
|---|---|
| **Coordinates** | 42.6441104866, -86.2069921001 |
| **Distance to site** | 600 ft / 0.114 mi E |
| **Facility ID** | 4516 |
| **Facility Name** | Douglas Shell |
| **Address** | 30 N WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 49090 |
| **County** | Allegan |
| **Tank ID** | 8 |
| **Tank Status** | Currently In Use |
| **Capacity** | 20 |
| **Install Date** | Apr 20 1971 |
| **Substance** | HOIST TANK |
| **Pipe Material** | Unknown |
| **Tank Material** | Asphalt Coated or Bare Steel |
| **Impressed Cathodic Protection** | No |

9

| | |
|---|---|
| **Coordinates** | 42.654306, -86.203887 |
| **Distance to site** | 3756 ft / 0.711 mi NE |
| **Facility ID** | 5096 |
| **Facility Name** | Sergeant Marina Condo Assoc |
| **Address** | 39 Butler St |
| **City** | Saugatuck |
| **Zip Code** | 49453 |
| **County** | Allegan |
| **Tank ID** | 3 |
| **Tank Status** | Currently In Use |
| **Capacity** | 6000 |
| **Install Date** | Apr 10 1972 |
| **Substance** | Gasoline |
| **Tank Release** | Automatic Tank Gauging |
| **Piping Release** | Interstitial Monitoring Double Walled Piping, Interstitial Monitoring/Second Containment |
| **Pipe Material** | Galvanized Steel |
| **Pipe Type** | Gravity Fed?, Suction: Valve at Tank |
| **Tank Material** | Asphalt Coated or Bare Steel, Lined Interior |
| **Impressed Cathodic Protection** | No |

## MI Underground Storage Tanks

10

| | |
|---|---|
| **Coordinates** | 42.654306, -86.203887 |
| **Distance to site** | 3756 ft / 0.711 mi NE |

| | |
|---|---|
| **Facility ID** | 5096 |
| **Facility Name** | Sergeant Marina Condo Assoc |
| **Address** | 39 Butler St |
| **City** | Saugatuck |
| **Zip Code** | 49453 |
| **County** | Allegan |
| **Tank ID** | 1 |
| **Tank Status** | Currently In Use |
| **Capacity** | 2000 |
| **Install Date** | Apr 10 1972 |
| **Substance** | Diesel |
| **Tank Release** | Automatic Tank Gauging |
| **Piping Release** | Interstitial Monitoring Double Walled Piping, Interstitial Monitoring/Second Containment |
| **Pipe Material** | Galvanized Steel, APT |
| **Pipe Type** | Gravity Fed?, Suction: Valve at Tank |
| **Tank Material** | Asphalt Coated or Bare Steel, Lined Interior |
| **Impressed Cathodic Protection** | No |

11

| | |
|---|---|
| **Coordinates** | 42.654306, -86.203887 |
| **Distance to site** | 3756 ft / 0.711 mi NE |

| | |
|---|---|
| **Facility ID** | 5096 |
| **Facility Name** | Sergeant Marina Condo Assoc |
| **Address** | 39 Butler St |
| **City** | Saugatuck |
| **Zip Code** | 49453 |
| **County** | Allegan |
| **Tank ID** | 2 |
| **Tank Status** | Currently In Use |
| **Capacity** | 6000 |
| **Install Date** | Apr 10 1972 |
| **Substance** | Gasoline |
| **Tank Release** | Automatic Tank Gauging |
| **Piping Release** | Interstitial Monitoring Double Walled Piping, Interstitial Monitoring/Second Containment |
| **Pipe Material** | Double Walled, Galvanized Steel |
| **Pipe Type** | Gravity Fed?, Suction: Valve at Tank |
| **Tank Material** | Asphalt Coated or Bare Steel, Lined Interior |
| **Impressed Cathodic Protection** | No |

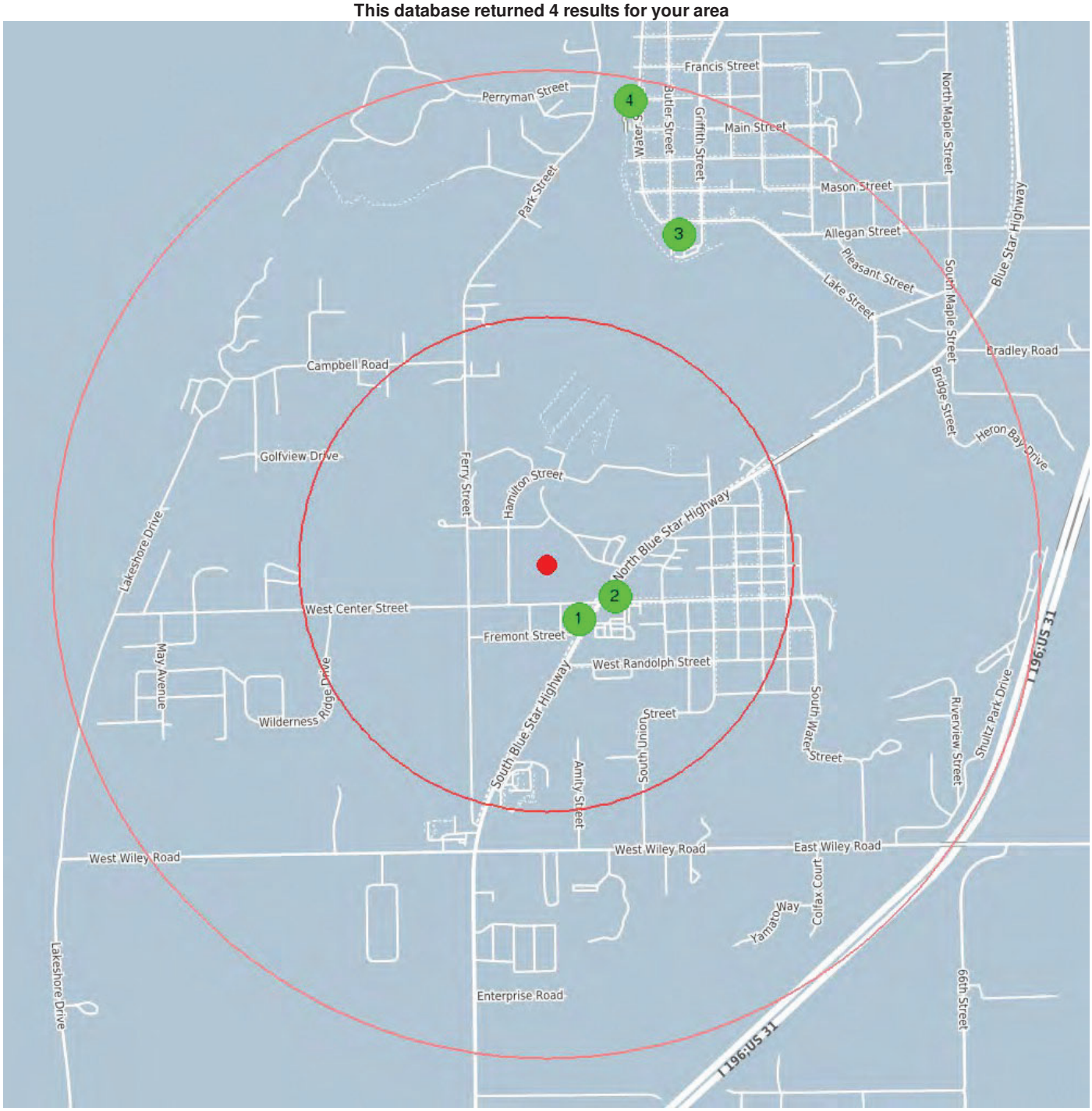
# MI Leaking Underground Storage Tanks

The Michigan Department of Environmental Quality (MDEQ) maintains a list of leaking underground storage tanks (LUST).

An OPEN LUST site means a location where a release has occurred from an underground storage tank system, and where corrective actions have not been completed to meet the appropriate land use criteria. An OPEN LUST site may have more than one confirmed release.

A CLOSED LUST site means a location where a release has occurred from an underground storage tank system, and where corrective actions have been completed to meet the appropriate land use criteria. In accordance with Section 21315(1) of Part 213, Leaking Underground Storage Tank, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), the MDEQ may audit a closure report, wherein the results of corrective actions are documented, up to 6 months after receipt of the closure report. This audit window may result in a confirmed release(s) being reopened during the 6 month time frame following receipt of a closure report if deficiencies are noted.

**This database returned 4 results for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

## MI Leaking Underground Storage Tanks

1

| | |
|---|---|
| **Coordinates** | 42.643119, -86.207729 |
| **Distance to site** | 690 ft / 0.131 mi SE |
| **Site Name** | Amoco #28876 (Douglas) |
| **Leak Number** | C-1267-85 |
| **Status** | Open |
| **Facility ID** | 50001810 |
| **Facility Name** | Douglas Amoco 28876 |
| **Address** | 10 1/2 S WASHINGTON |
| **City** | DOUGLAS |
| **Zip Code** | 48152 |
| **County** | Allegan |

2

| | |
|---|---|
| **Coordinates** | 42.643808, -86.206332 |
| **Distance to site** | 806 ft / 0.153 mi E |
| **Site Name** | Texaco Gas Station |
| **Leak Number** | C-0022-99 |
| **Substance** | Unknown |
| **Status** | Open |
| **Facility ID** | 50002327 |
| **Facility Name** | Metropolitan Title Office |
| **Address** | 25-27 BLUE STAR |
| **City** | SAUGATUCK |
| **Zip Code** | 99999 |
| **County** | Allegan |

3

| | |
|---|---|
| **Coordinates** | 42.654392, -86.203773 |
| **Distance to site** | 3797 ft / 0.719 mi NE |
| **Site Name** | Culver Street |
| **Leak Number** | C-0335-00 |
| **Release Date** | 2000-03-15 |
| **Substance** | Unknown |
| **Status** | Open |
| **Facility ID** | 50002605 |
| **Facility Name** | Culver St Site |
| **Address** | 201 CULVER ST |
| **City** | SAUGATUCK |
| **Zip Code** | 99999 |
| **County** | Allegan |

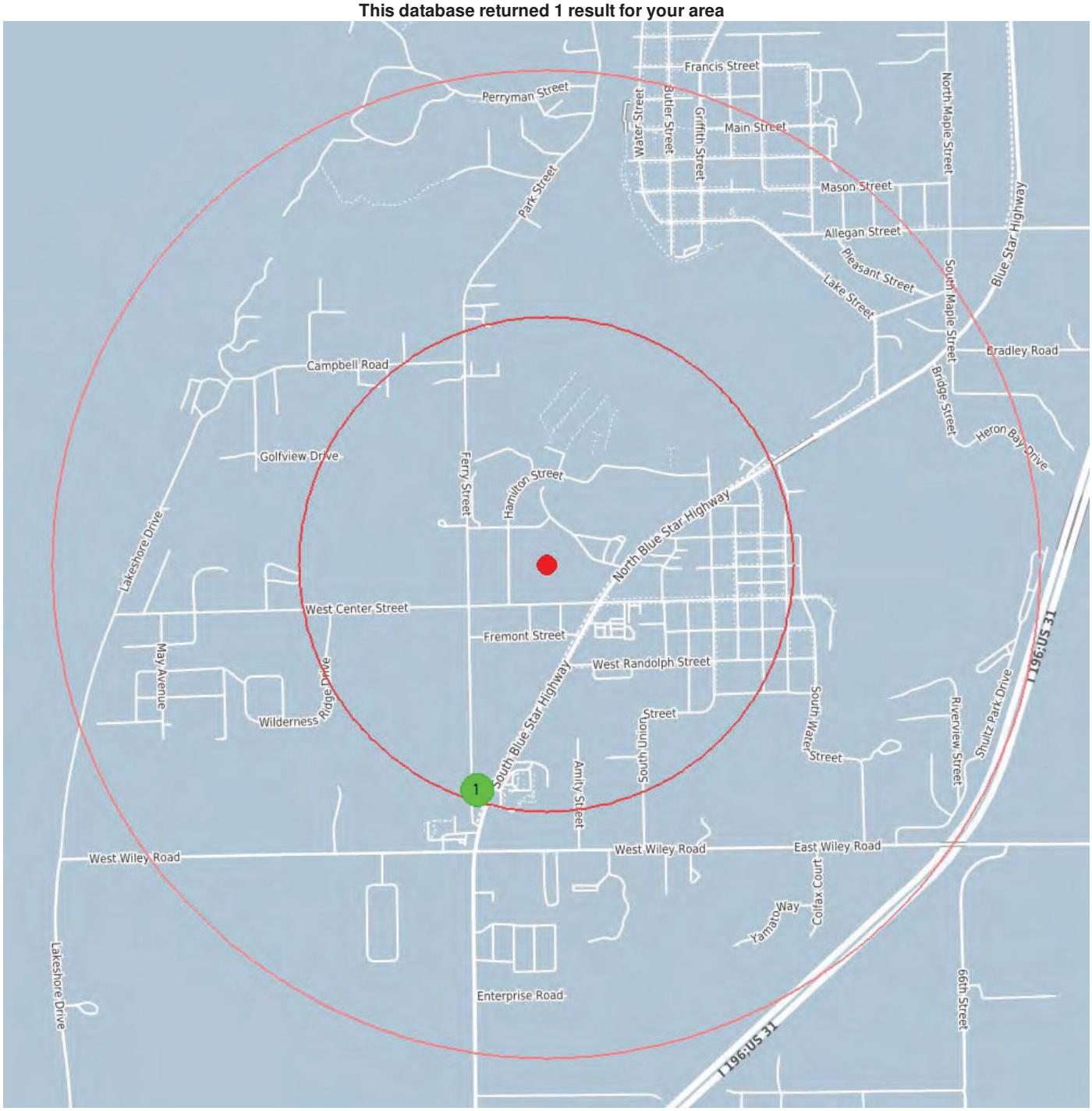
4

| | |
|---|---|
| **Coordinates** | 42.658315, -86.205707 |
| **Distance to site** | 5034 ft / 0.953 mi N |
| **Site Name** | Allegan Co. Rd. Comm. (Douglas) |
| **Leak Number** | C-1215-85 |
| **Release Date** | 1989-04-17 |
| **Status** | Open |
| **Facility ID** | 6446 |
| **Facility Name** | Branch Maintenance Garage |
| **Address** | 486 WATER ST |
| **City** | DOUGLAS |
| **Zip Code** | 49010 |
| **County** | Allegan |

# MI Contaminated Sites - Part 201 List

The Michigan Department of Environmental Quality (MDEQ) maintains a database of contaminated sites in their "Part 201 Site List". A Part 201 Listed site is a location that has been evaluated and scored by the MDEQ using the Part 201 scoring model. The location is or includes a "facility" as defined by Part 201, where there has been a release of a hazardous substance(s) in excess of the Part 201 residential criteria, and/or where corrective actions have not been completed under Part 201 to meet the applicable cleanup criteria for unrestricted residential use. The Part 201 List does not include all of the sites of contamination that are subject to regulation under Part 201 because owners are not required to inform the MDEQ about the sites and can pursue cleanup independently. Sites of environmental contamination that are not known to MDEQ are not on the list, nor are sites with releases that resulted in low environmental impact. A deleted site has been removed from the Part 201 List because information known to the MDEQ at the time of the evaluation does not support inclusion on the Part 201 List. This designation is often applied to sites where changes in cleanup criteria resulted in a determination that the site no longer exceeds any applicable cleanup criterion. A delisted site has been removed from the Part 201 List because response actions have reduced the levels of contaminants to concentrations which meet or are below the criteria for unrestricted residential use. The list DOES NOT include the sites of contamination regulated under Part 213, Leaking Underground Storage Tanks, of Act 451.

**This database returned 1 result for your area**




center 42.644737243652 -86.209060668945 0.5 mile 1.0 mile

# MI Contaminated Sites - Part 201 List

1

| | |
|---|---|
| **Coordinates** | 42.638139, -86.21179 |
| **Distance to site** | 2515 ft / 0.477 mi S |

| | |
|---|---|
| **Source** | Furniture & Fixtures |
| **Site ID** | '03000032' |
| **Pollutant** | Ni; TCE |
| **Status** | Remedial Action in Progress (may incl. use restrictions O&M and/or monitoring) |
| **Name** | Village of Douglas Contamination |
| **Township** | 03N |
| **Address** | 281 Chase Rd |
| **Range** | 16W |
| **City** | Douglas |
| **Section** | 16 |
| **Zip Code** | 49406 |
| **County** | Allegan |
| **Quarter Section** | NE |

# MI Active Solid Waste Landfills

The Solid Waste Landfill List (SWLF) database is provided by the Michigan Department of Environmental Quality (MDEQ) and consists of open solid waste disposal facilities and transfer stations.

**This database returned no results for your area**

# MI Closed Solid Waste Landfills

The Solid Waste Closed Landfill List (SWLF) database is provided by the Michigan Department of Environmental Quality (MDEQ) and consists of closed inactive solid waste disposal facilities.

**This database returned no results for your area**