



**AGENDA**  
CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION – REGULAR MEETING  
March 16, 2020 7PM

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1. CALL MEETING TO ORDER
2. PUBLIC REMARKS
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES
  - A. February 24, 2020 Regular Meeting
5. COMMUNICATIONS - None
6. PUBLIC HEARINGS
  - A. Special Use Permit #20011 (Andev Group, LLC), establish an approximately 268,263 square foot senior living community comprised of 230 units on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.
  - B. Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.
  - C. Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).
  - D. Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).
7. UNFINISHED BUSINESS - None
8. OTHER BUSINESS
  - A. Form based code
9. REPORTS AND ANNOUNCEMENTS
  - A. Township Board update.
10. PROJECT UPDATES
  - A. New Applications - None
  - B. Site Plans Received - None
  - C. Site Plans Approved - None
11. PUBLIC REMARKS
12. ADJOURNMENT

**AGENDA page 2**  
CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION MEETING  
March 16, 2020 7PM

**TENTATIVE PLANNING COMMISSION AGENDA**  
**March 30, 2020**

1. PUBLIC HEARINGS
  - A. Special Use Permit #20031 (McCreary's Healthy Homes), establish auto detailing service at 1477 Haslett Road.
  
2. UNFINISHED BUSINESS
  - A. Special Use Permit #20011 (Andev Group, LLC), establish an approximately 268,263 square foot senior living community comprised of 230 units on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.
  - B. Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.
  - C. Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).
  - D. Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).
  
3. OTHER BUSINESS - None

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Individuals with disabilities requiring auxiliary aids or services should contact: Principal Planner Peter Menser, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4576 - Ten Day Notice is Required.  
Meeting Location: 5151 Marsh Road, Okemos, MI 48864 Township Hall

Providing a safe and welcoming, sustainable, prime community.



**CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION  
REGULAR MEETING MINUTES**

**February 24, 2020  
5151 Marsh Road, Okemos, MI 48864-1198  
517-853-4560, Town Hall Room, 7:00 P.M.**

**PRESENT: Commissioners Premoe, Trezise, Hendrickson, Lane, Shrewsbury, Clark, and  
McConnell  
ABSENT: Commissioners Cordill and Richards  
STAFF: Director of Community Planning & Development Mark Kieselbach and  
Principal Planner Peter Menser**

**1. Call meeting to order**

Chair Lane called the regular meeting to order at 7:00 P.M.

**2. Public Remarks - None**

**3. Approval of Agenda**

Commissioner Trezise moved to approve the amended agenda.  
Seconded by Commissioner McConnell.  
VOICE VOTE: Motion approved unanimously.

**4. Approval of Minutes**

**A. February 10, 2020 Regular Meeting**

Commissioner Hendrickson requested amendments in the minutes to include the following items:

- Item 8B, 2020 Goals- Amend to read: Review the Sign Ordinance by the end of September, and propose new changes by the end of the year.
- In the discussion of the Big Goals- Add: Creation of TIFs for both the Grand River Corridor and the Haslett PICA areas
- Add: Amend the Planning Commission/Township Board review process so that a proposal being presented to the Board for the first time does not undergo changes after the Planning Commission has voted on it and/or allow for an expedited process if a matter gets referred back to the Planning Commission so that it only takes one meeting for the Planning Commission to review and approve/deny the amended proposals.
- Add: Improve the information flow among the various boards and commissions and the Planning Commission, specifically on projects of great interest.

Commissioner Hendrickson moved to approve the amended minutes.  
Seconded by Commissioner Trezise.  
VOICE VOTE: Motion approved unanimously.

**5. Communications - None**

**6. Public Hearings - None**

**7. Unfinished Business**

- A. Special Use Permit #19141 (The Cured Leaf TC, Inc.), establish commercial medical marihuana provisioning center at 3520 Okemos Road.

Principal Planner Menser noted the applicant has submitted responses to the special use permit criteria and they are available in the meeting packet for review.

Motion by Commissioner Premoe to recommend approval of Special Use Permit #19141.

Supported by Commissioner Hendrickson.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, Hendrickson, McConnell, Clark, Shrewsbury, Trezise, and Chair Lane.

NAYS: None

MOTION CARRIED: 7-0

- B. Special Use Permit #19131 (The W. Investment Holdings), establish commercial medical marihuana provisioning center at 1614 Grand River Avenue.

Principal Planner Menser commented there would be different conditions for this request compared to the previous special use permit discussed because new construction is proposed.

Motion by Commissioner Trezise to recommend approval with the 17 conditions stated in the resolution for Special Use Permit #1131.

Supported by Commissioner Premoe.

ROLL CALL VOTE:

YEAS: Commissioner Trezise, Premoe, Hendrickson, Shrewsbury, Clark, McConnell, and Chair Lane.

NAYS: None

MOTION CARRIED: 7-0

- C. Zoning Amendment #20020 (Township Board), amend Section 86-376 of the Code of Ordinances to allow a mix of single family and multiple family dwelling units in the RD, RC, and RCC (Multiple Family) zoning districts.

Principal Planner Menser noted a map showing the location of multiple family zoning districts (noted in red) in the Township was included in the meeting packet per the request of the Planning Commission at the February 10, 2020 meeting. He also noted that changes to the text of the draft ordinance included swapping out the term "living unit" for "dwelling unit" where applicable.

Motion by Commissioner McConnell to adopt the resolution recommending approval of Zoning Amendment #20020 in accordance with the revised draft ordinance language dated February 11, 2020.

Supported by Commissioner Trezise.

Commissioner Hendrickson stated he would be voting in opposition to the proposed zoning change because of the concerns he expressed at the February 10, 2020 public hearing.

ROLL CALL VOTE:

YEAS: Commissioner McConnell, Trezise, Premoe, Shrewsbury, Clark, and Chair Lane.

NAYS: Commissioner Hendrickson

MOTION CARRIED: 6-1

**8. Other Business**

A. 2020 Planning Commission goals

Principal Planner Menser summarized the four goals discussed by the Planning Commission at the February 10, 2020 regular meeting and noted they were listed in the meeting packet.

Commissioner Hendrickson asked to amend the language of the fourth goal to reflect the date change from June 30<sup>th</sup> to September 30<sup>th</sup> as previously discussed for the amended minutes.

Motion by Commissioner Hendrickson to adopt the amended 2020 Planning Commission goals. Supported by Commissioner Trezise.

ROLL CALL VOTE:

YEAS: Commissioner Hendrickson, Trezise, Premoe, McConnell, Clark, Shrewsbury, and Chair Lane.

NAYS: None

MOTION CARRIED: 7-0

B. Form Based Code meeting

Principal Planner Menser thanked Chair Lane, Vice Chair Hendrickson, and Commissioner McConnell for attending the Township Board Meeting on February 18, 2020. Chair Lane and Vice Chair Hendrickson presented an overview to the Board of what the Planning Commission has been working on relating to the Form Based Code initiative. A link to the video of the presentation was included in the meeting packet as well as a copy of the memo from Principal Planner Menser to the Township Board.

Planning Commission Discussion:

- The Board may be more supportive of the Form Based Code after having time to review the ordinance draft details.
- Follow up with another presentation to the Board after submitting the written draft to discuss questions they may have.
- The Board expressed interest in prescribing the uses and having final approval of projects.
- The purpose of the ordinance change could help streamline the process for applicants and create a unique look and feel of the area.
- Suggestion to hold a work session before the next Planning Commission meeting to continue working on the ordinance.

Chair Lane asked Principal Planner Menser to schedule a work session before the next Planning Commission meeting on March 16, 2020 starting at 6:00 p.m.

## **9. Reports and Announcements**

### A. Township Board updates.

Principal Planner Menser provided a summary of the February 18, 2020 Township Board meeting and provided a preview of what is on the agenda for the March 3, 2020 Township Board meeting.

Commissioner Premoe provided an update from attending the Brownfield Redevelopment Authority meeting on February 20, 2020.

## **10. Project Updates**

### A. New Applications

1. Special Use Permit #20031 (McCreary's Healthy Homes), establish auto detailing service at 1477 Haslett Road.

### B. Site Plans Received - None

#### C. Site Plans Approved

1. Site Plan Review #20-16-05 (GBC Design, Inc.), revisions to existing drive-through lane for Chick-fil-A restaurant at 2075 Grand River Avenue.

## **11. Public Remarks - None**

## **12. Adjournment**

Commissioner Premoe moved to adjourn the meeting.

Supported by Commissioner Shrewsbury.

VOICE VOTE: Motion carried unanimously.

Chair Lane adjourned the regular meeting at 7:47 p.m.

Respectfully Submitted,

Debbie Budzynski, Recording Secretary



**To: Planning Commission**

**From: Peter Menser, Principal Planner**

**Date: March 12, 2020**

**Re: Special Use Permit #20011 (Andev Group, LLC), establish an approximately 267,543 square foot senior living community comprised of 230 units on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard.**

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Andev Group, LLC has requested a special use permit to construct a 230 unit senior living community at the east end of Hannah Boulevard. The project site is 10.73 acres of a larger 58 acre unaddressed parcel identified by Parcel I.D. #20-401-005. The applicant is proposing to extend Hannah Boulevard further east and construct a cul-de-sac to serve the development. The property is zoned RAA (Single Family, Low Density), which allows senior living communities by special use permit. In addition to the special use permit for the senior living development, a special use permit is required to construct a group of buildings greater than 25,000 square feet in gross floor area (SUP #20021). The special use permits are being processed concurrently.

A total of 230 units are proposed in the 267,543 square foot building, which is comprised of a mix of assisted living, memory care, and independent living units, each located in a separate wing. A 720 square foot garage building is also proposed on the property. The applicant is proposing to construct the development in two phases, with the first phase consisting of the assisted living and memory care units and the second consisting of the independent living units. The following table provides information on the number each unit type in the building.

|         | <b>Building Size</b> | <b>Memory Care</b> | <b>Assisted Living</b> | <b>Independent Living</b> | <b>Total # of Units</b> |
|---------|----------------------|--------------------|------------------------|---------------------------|-------------------------|
| Phase 1 | 111,105 sq. ft.      | 42 units           | 67 units               | 0 units                   | 109                     |
| Phase 2 | 156,438 sq. ft.      | 0 units            | 0 units                | 121 units                 | 121                     |

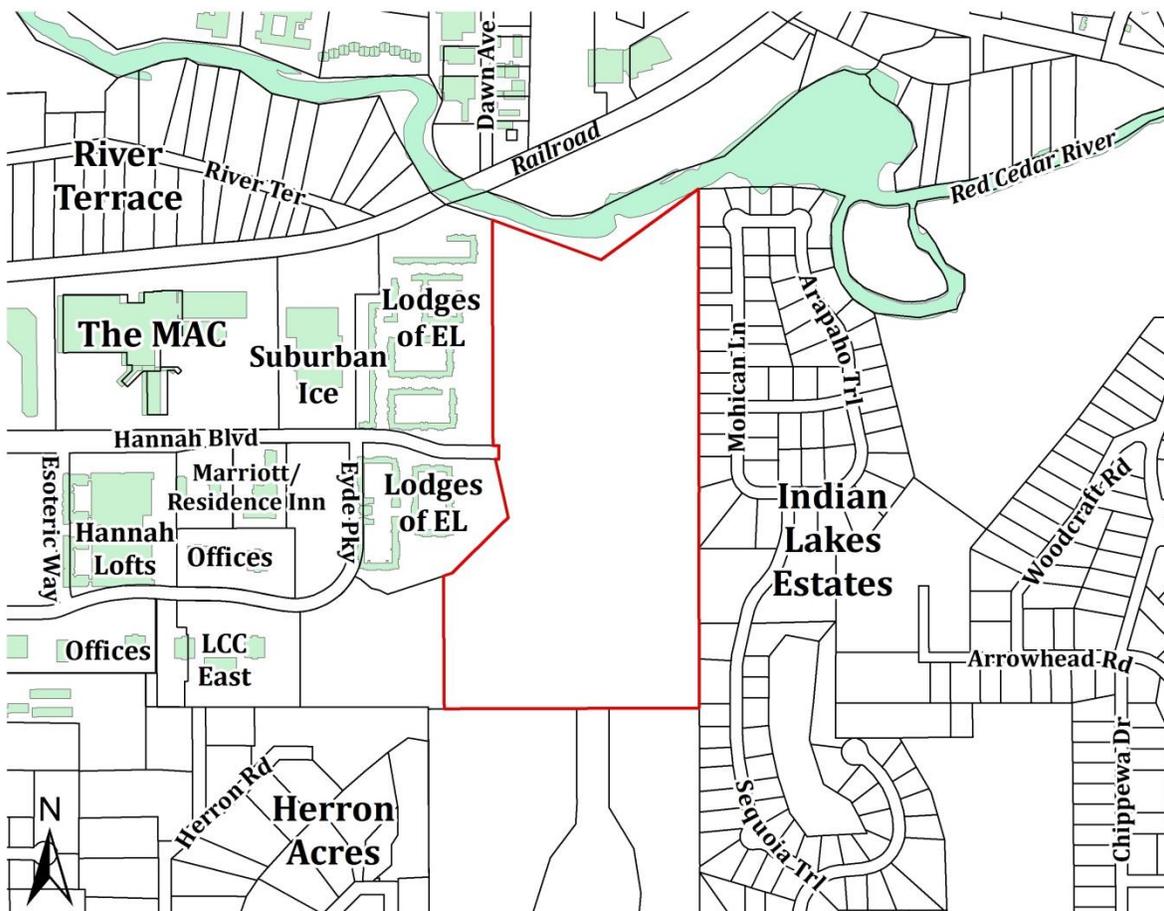
The building varies in height by wing, with the independent living wing at four stories tall, the assisted living wing at three stories tall, and the memory care wing at two stories tall. At its tallest point, the building is approximately 52 feet in height.

To facilitate the proposed development, and others like it, in 2019 the Township Board initiated a zoning amendment (ZA #19040) to allow Senior Living Communities to locate in residential zoning districts subject to approval of a special use permit. The amendment was approved for final adoption by the Board at its meeting on May 21, 2019. It added Senior Living Communities under the Institutions for Human Care category in Section 86-654(c) of the Code of Ordinances, which permitted those types of development by special use permit as a nonresidential use in residential zoning districts.

The adopted ordinance defines a Senior Living Community as: “a facility comprised of a building or group of buildings providing a continuity of residential occupancy and health care for elderly persons. This type of facility includes dwelling units for independent living, assisted living, and memory care or other licensed professional care for residents; it may include ancillary facilities for the further service or care of the residents. The facility is restricted to persons 55 years of age or older or married couples or domestic partners where either spouse or partner is 55 years of age or older.”

The ordinance allows the age restricted (persons 55 years of age or older) independent living units only in conjunction with the provision of licensed professional care units for residents, such as assisted living or memory care. A maximum 2:1 ratio of independent living units to required licensed professional care units is proposed. With 121 independent living units and 109 memory care/assisted living units proposed the project meets the established 2:1 maximum ratio.

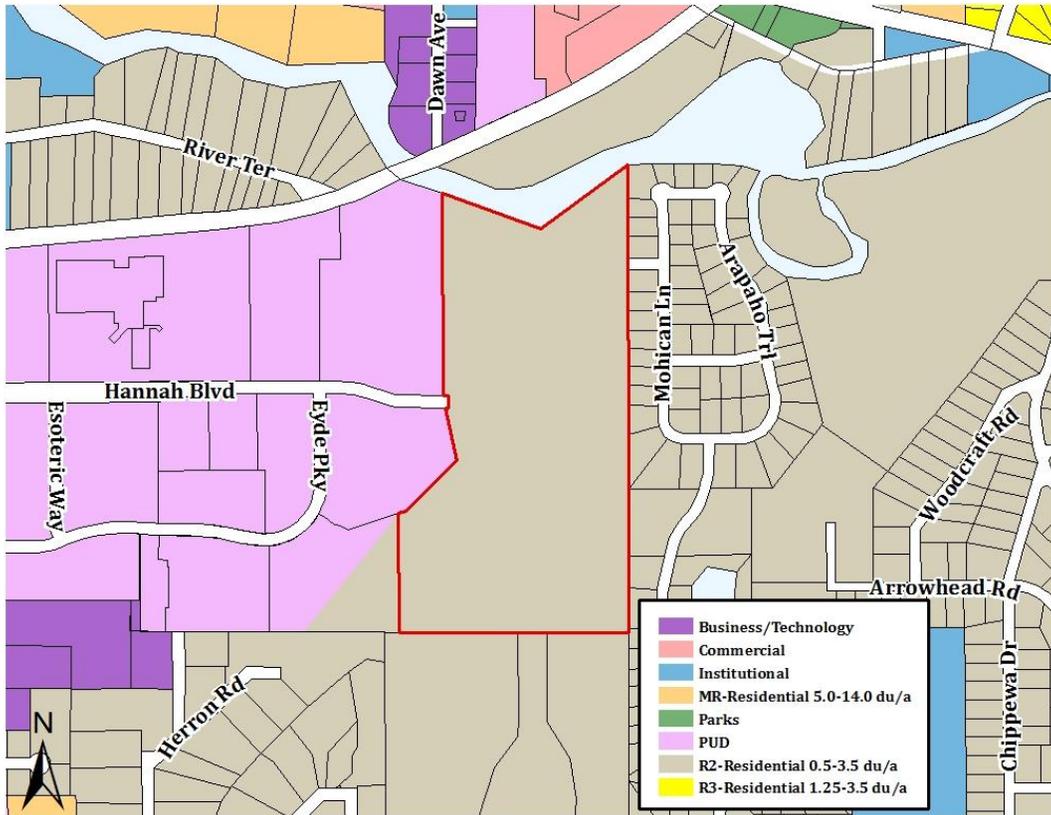
### LOCATION MAP



### Master Plan

The Future Land Use Map from the 2017 Master Plan designates the subject site in the R2-Residential 0.5 – 3.5 dwelling units per acre category.

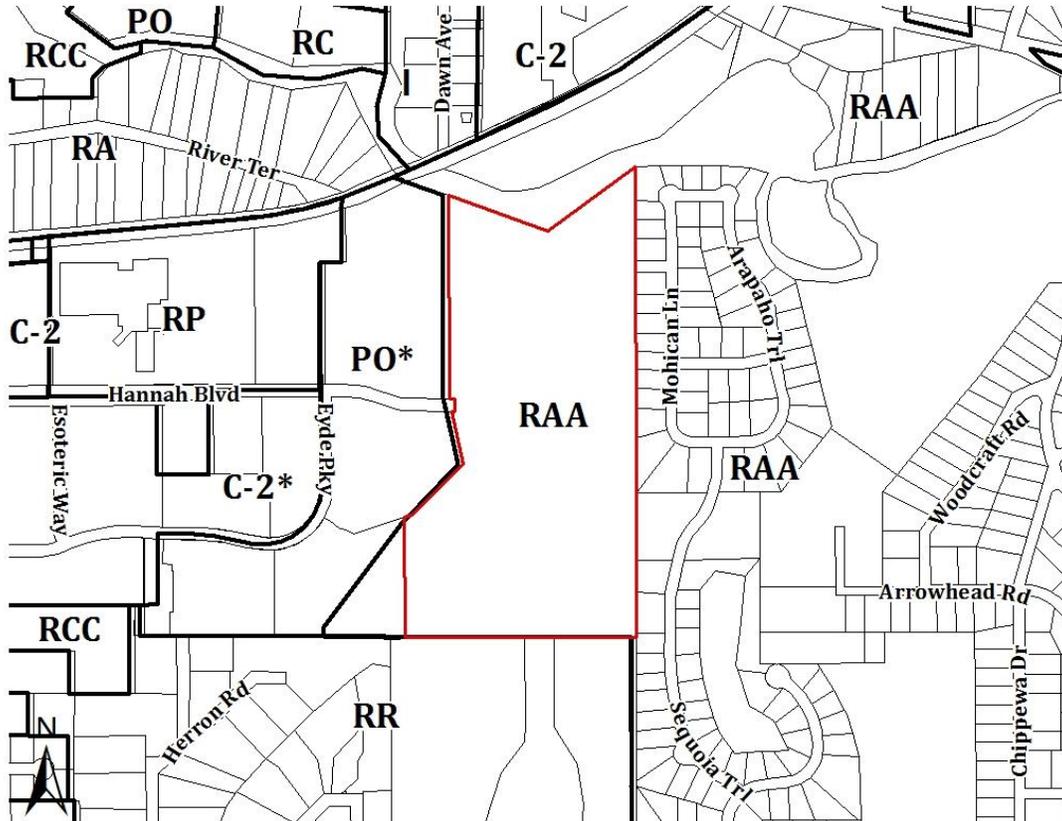
### FUTURE LAND USE MAP



### Zoning

The subject site is zoned RAA (Single Family-Low Density). The applicant is proposing to divide the current 58 acre parcel into three different parcels, the middle of which is proposed for development at this time. 10 acres is the minimum lot area requirement for a senior living community development. The minimum lot width requirement is 100 feet. Upon division the project site has 10.73 acres of lot area and over 300 feet of frontage on the to-be-extended Hannah Boulevard.

ZONING MAP



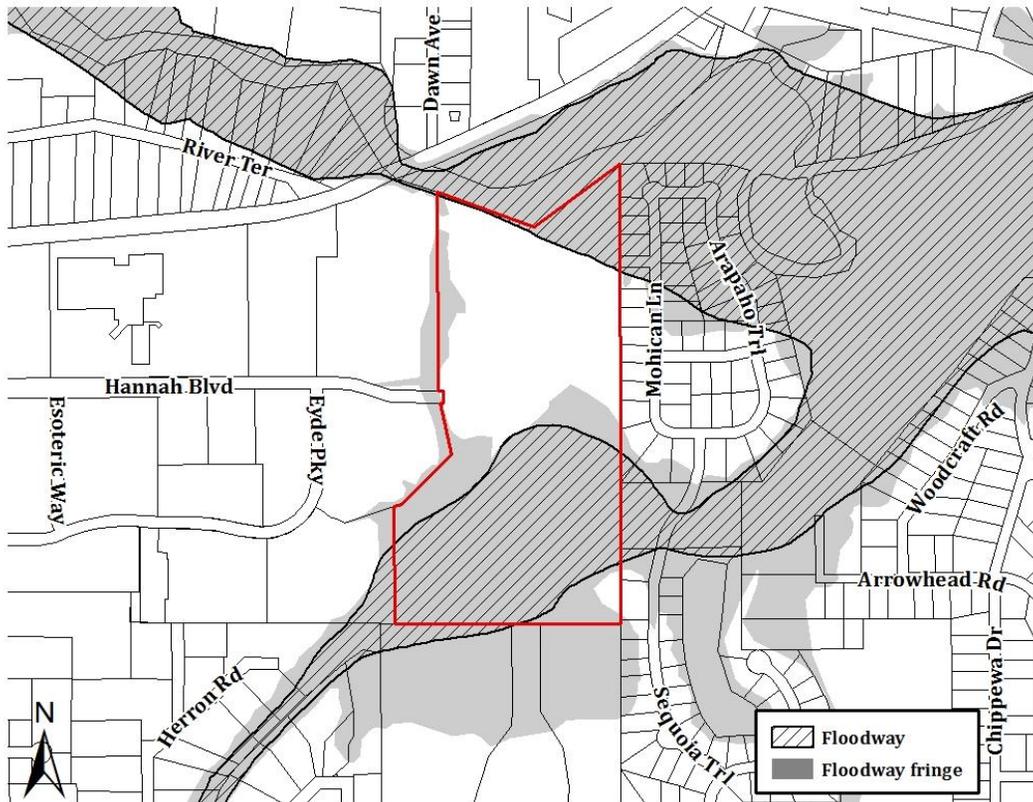
**Physical Features**

The site is currently undeveloped. The topography of the site, with corresponding elevations, is depicted on the property survey provided by the applicant. The applicant has also provided a natural features study prepared by Marx Wetlands LLC describing the vegetation on the site and an inventory of significant trees.

**Floodplain**

Portions of the property are located in both the floodway and 100 year floodplain. The proposed development project is located outside of the floodplain. The applicant's site plan shows the location and elevations of the floodplain on the property.

### FLOODPLAIN MAP



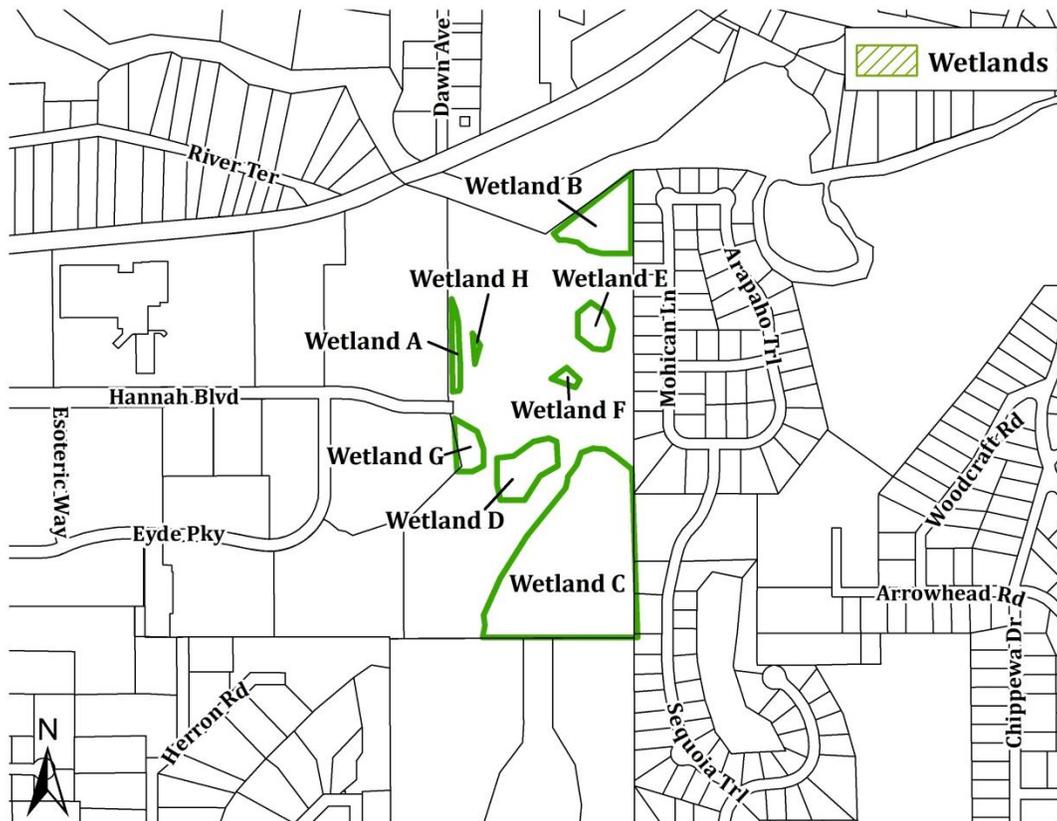
### Wetlands

The applicant submitted a wetland delineation report prepared by Marx Wetlands LLC for the northern two-thirds of the 58 acre parcel in 2018, which are the limits of the developable portion of the property. The report has been verified by the Township’s wetland consultant. There are a total of eight wetlands distributed over the property, identified as A through H on the site plan and map below. Meridian Township regulates wetlands 0.25 acre or greater in size, or those contiguous to or within 500 feet of a regulated inland lake, stream, river, or pond. For wetlands equal to or greater than two acres in area the Township requires a 40 foot setback from the delineated wetland boundary. For wetlands equal to or greater than 0.25 acre, but less than two acres in size, a 20 foot setback is required from the delineated boundary.

Six of the eight wetlands on the site are regulated by the Township and the Department of Environment, Great Lakes, and Energy (EGLE). The applicant is proposing to fill Wetland F, which at 0.04 acre in size is not regulated. A permit is not required to fill Wetland F as it is not regulated by the State or Township due to it being under 0.25 acre in size. The following table shows the size, regulatory status, and required setback, if any, of each wetland on the property.

|           | <b>Delineated Size</b> | <b>Regulatory Authority</b> | <b>Required Setback</b> |
|-----------|------------------------|-----------------------------|-------------------------|
| Wetland A | Off-site               | Township and State          | 40 feet                 |
| Wetland B | 2.21 acres             | Township and State          | 40 feet                 |
| Wetland C | 5+ acres               | Township and State          | 40 feet                 |
| Wetland D | 0.21 acre              | Township and State          | 20 feet                 |
| Wetland E | 0.30 acre              | Township and State          | 20 feet                 |
| Wetland F | 0.04 acre              | Not regulated               | No setback required     |
| Wetland G | 5+ acres               | Township and State          | 40 feet                 |
| Wetland H | 0.38 acre              | Township and State          | 20 feet                 |

**WETLAND MAP**

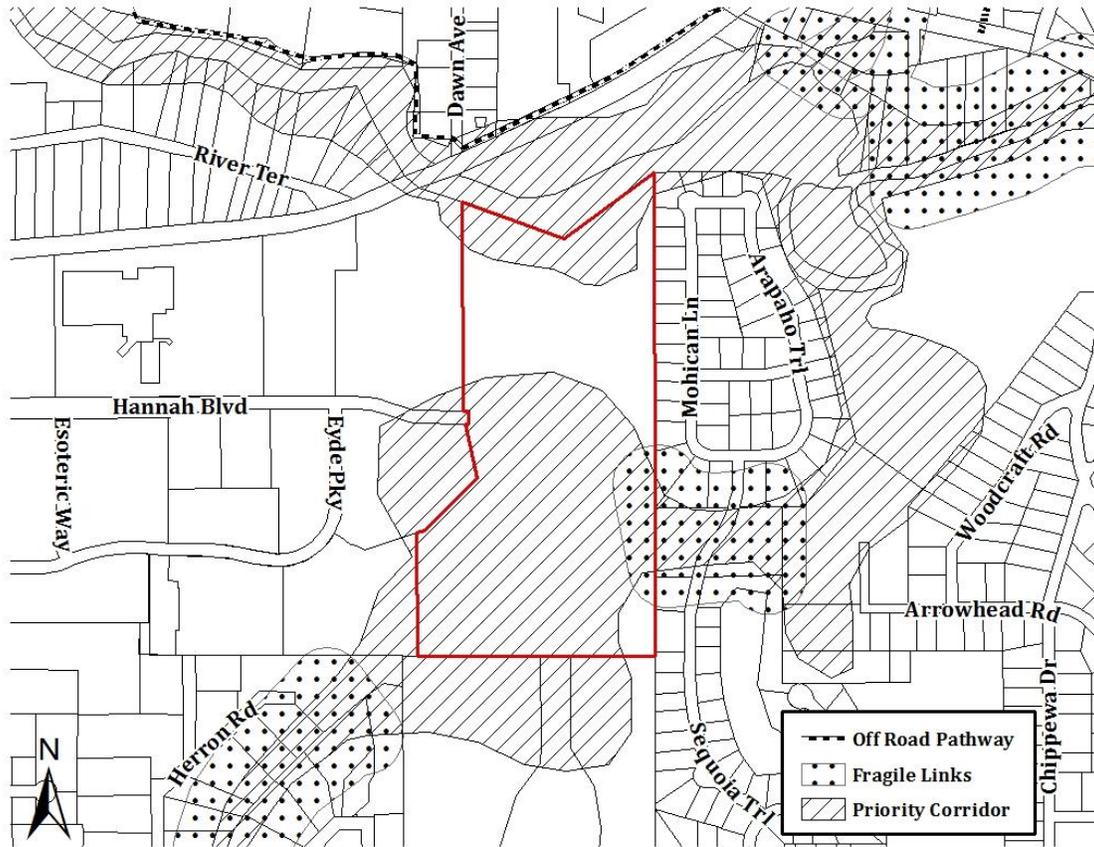


*\*Wetlands depicted by staff; see attached delineation report for details.*

**Greenspace Plan**

The Township Greenspace Plan shows a Priority Conservation Corridor (PCC) south of the area of the property proposed for development and a Fragile Link to the east of the project area. A PCC is a network of ecologically significant open spaces and a Fragile Link is an area where a PCC is exceptionally narrow or fragmented.

### GREENSPACE MAP



### Streets and Traffic

The site fronts on what is proposed to be an extension of Hannah Boulevard, which is designated as a Local Street on the Street Setbacks and Service Drives Map in the zoning ordinance. Neither the Ingham County Road Department (ICRD) nor the Michigan Department of Transportation (MDOT) has recent traffic count information for Hannah Boulevard. The applicant is proposing to construct a five foot wide sidewalk along the east side of the extended road, which will connect it with the other developments in the immediate area.

The applicant has submitted a trip generation letter prepared by Traffic Engineering Associates, Inc. providing information on the number of vehicle trips expected to be generated by the proposed development. The letter uses the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th edition) to identify expected traffic generation for the proposed land use. Land Use Code 255 (Continuing Care Community) was used to represent the proposed development.

A traffic impact study is required for new special uses which would generate over 100 directional trips during morning and afternoon peak hours of traffic, or over 750 trips on an average day. An average day is the average 24-hour total of all vehicle trips counted to and from a study site from Monday through Friday. A traffic assessment is required for new special uses which could generate between 50 and 99 directional trips during morning and afternoon peak hours of traffic. Based on the projected traffic volumes neither a traffic assessment nor traffic impact study is required.

### **Parking**

The ordinance uses the following formula for determining required parking for a senior living community: One space for each dwelling unit of independent living + one space for every four units of licensed professional care + one space for each employee working on the largest shift.

With 121 independent living units + 109 assisted living/memory care units ( $109/4 = 27.25$  or 28 spaces) + 40 employees at the largest shift a total of 189 parking spaces are required for the project. 227 parking spaces are proposed by the applicant.

### **Public Utilities**

Municipal water and sanitary sewer are available to extend to serve the subject site. The location and capacity of utilities will be reviewed in detail during site plan review if the special use permit is approved.

### **Staff Analysis**

The applicant is requesting a special use permit to construct a 230 unit senior living community in one 267,543 square foot building. The nine general special use permit criteria listed in Section 86-126 of the zoning ordinance and specific standards for senior living communities found in Section 86-654(f)(5) should be used for consideration of the request. The Planning Commission has the authority to approve the SUP for the senior living community, however the SUP for construction of a building greater than 25,000 square feet in size will go on to the Township Board for a final decision.

The following table provides a summary of the project's consistency with the ordinance standards for a senior living community development.

*Density.* The ordinance allows up to 25 dwelling units per acre (du/a). With 230 units on 10.73 acres the proposed density of the project is 21.4 du/a.

*Maximum independent living unit to licensed professional care unit ratio.* A maximum 2:1 ratio of independent living units to required licensed professional care units is proposed. With 121 independent living units and 109 memory care/assisted living units proposed the project meets the established 2:1 maximum ratio.

*Accessory Uses.* The ordinance allows a senior living community to have accessory uses such as places of worship, indoor and outdoor recreation, retail and banking facilities, dining facilities, beauty salons, gift shops, security facilities, medical offices, and pharmacies, provided that the accessory use is ancillary to the primary use of the property as a senior living community and not advertised for public use. A letter from the applicant indicates such uses as a dining facility, salon, medical clinic, and chapel, among others, are planned for the building.

*Setbacks adjacent to residential property line.* Buildings 35 feet or less in height can be no closer than 50 feet to a residential property line. When buildings taller than 35 feet are proposed, this setback is increased 1.5 feet for each foot the building exceeds 35 feet in height. At its tallest point the proposed building is 52 feet 4 inches tall, which requires a 76 foot setback from the north, east, and southern property lines, all of which have been met and exceeded.

*Building height:* The applicant is proposing a three-story building that is 39 feet, 2 inches in height measured at the midpoint of the peak and eaves. Building elevations are provided in the MUPUD application materials, which indicate the building complies with the maximum height limitation of 45 feet.

Other ordinance requirements related specifically to the senior living community ordinance are summarized in the table below.

| <b>Criteria</b>                  | <b>Requirement</b> | <b>Proposed</b>                   |
|----------------------------------|--------------------|-----------------------------------|
| <b>Minimum lot area</b>          | 10 acres           | 10.73 acres                       |
| <b>Minimum lot width</b>         | 100 feet           | 300+ feet                         |
| <b>Maximum building coverage</b> | 35%                | 19%                               |
| <b>Front yard setback</b>        | 25 feet            | ~90 feet at closest point         |
| <b>Maximum building height</b>   | 60 feet            | 52 feet 4 inches at tallest point |

The following is a review of additional considerations for the project.

*Emergency access road.* The submitted site plan depicts a 20 foot wide emergency access road from the north side of the cul-de-sac and out to the parking lot of the Lodges of East Lansing Development. The Fire Code requires that anytime there are 30 or more dwelling units on a road with one access then a second means of access is required. The width and composition of the emergency access road is subject to approval by the Fire Department. Prior to issuing a building permit for the project the applicant must provide an executed access agreement with the adjacent property owner.

*Phasing.* The project is proposed to be developed in two phases. Phase 1 of the project is the memory care/assisted living portion of the building and Phase 2 is the independent living portion of the building. Phase 1 will also include the extension of Hannah Boulevard and the emergency access road. Special use permit approval grants the applicant 24 months to commence the project. All construction on the project has to be completed within 36 months, unless specifically approved as a phased development. Site Plan Review provides 24 months for approval of a building permit.

**Special Use Permit #20011 (Andev Group, LLC)  
Planning Commission (March 16, 2020)  
Page 10**

For phased developments the first building permit has to be approved within 24 months and all subsequent building permits have to be issued within 5 years of the date of Site Plan Review approval.

If the special use permit for the senior living community is approved by the Planning Commission, and the special use permit for the building size is approved by the Township Board, the applicant will be required to submit for Site Plan Review before work on the project can begin. Site Plan Review is a detailed staff-level analysis of the project which includes reviews of storm water, utilities, landscaping, grading, and other issues to ensure compliance with all applicable ordinances as well as confirmation of approvals from local agencies such as the Ingham County Drain Commissioner's Office and Road Department.

**Planning Commission Options**

The Planning Commission may approve, approve with conditions, or deny the special use permit. A resolution will be provided at a future meeting.

**Attachments**

1. Special use permit application and attachments received by the Township on February 11, 2020.
2. Letter from Michael Samuels dated February 28, 2020.
3. Site plans prepared by Kebs, Inc. dated March 25, 2019 and received by the Township on March 3, 2020.
4. Building elevations and floor plans prepared by Ganther Construction Architecture, Inc. dated February 11, 2020 and received by the Township on March 3, 2020.
5. Conceptual landscape plan prepared by Teska Associates dated February 28, 2020 and received by the Township on March 3, 2020.
6. Trip generation analysis prepared by Traffic Engineering Associates, Inc. dated February 3, 2020.
7. Natural Features Study prepared by Marx Wetlands LLC dated January 25, 2016.
8. Wetland delineation report prepared by Marx Wetlands LLC dated August 28, 2018.
9. Wetland verification prepared by FTCH dated December 10, 2018.

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**CHARTER TOWNSHIP OF MERIDIAN  
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT  
5151 MARSH ROAD, OKEMOS, MI 48864  
PLANNING DIVISION PHONE: (517) 853-4560, FAX: (517) 853-4095**

**SPECIAL USE PERMIT APPLICATION**

**Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.**

**Part I**

- A. Applicant ANDEV Group, LLC  
 Address of Applicant 680 N. Lake Shore Dr., Unit 1103, Chicago, IL 60611  
 Telephone - Work 847-525-6681 Home \_\_\_\_\_ Fax \_\_\_\_\_ Email anbarholdings@  
 Interest in property (circle one): Owner \_\_\_\_\_ Tenant \_\_\_\_\_ Option \_\_\_\_\_ **Other** gmail.com  
 (Please attach a list of all persons with an ownership interest in the property.) ~~Contract Purchaser~~  
 See attached page from title commitment.
- B. Site address / location / parcel number "Hannah Farms" Parcel #33-02-02-20-401-005  
 Legal description (please attach if necessary) See Attached.  
 Current zoning RAA  
 Use for which permit is requested / project name Development of a Senior Living Community / TBD  
 Corresponding ordinance number 2019-09 \* Non Residential use in Res. District  
 Building over 25,000 S.F.
- C. Developer (if different than applicant) Same as above.  
 Address \_\_\_\_\_  
 Telephone – Work \_\_\_\_\_ Home \_\_\_\_\_ Fax \_\_\_\_\_
- D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:  
 Name Ganther Construction|Architecture  
 Address 4825 County Road A, Oshkosh, WI 54901  
 Telephone – Work 920-426-4774 Home \_\_\_\_\_ Fax 920-426-4788
- E. Acreage of all parcels in the project: Gross 10.7 Net \_\_\_\_\_
- F. Explain the project and development phases: Project consists of an interconnected series of 2 story memory care, 3 story assisted living and 4 story independent senior residences. The project may be  
phased to build the 2&3 story sections first and add the 4 story section later.
- G. Total number of:  
 Existing: structures 0 bedrooms 0 offices 0 parking spaces 0 carports 0 garages 0  
 Proposed: structures 1\* bedrooms 262 offices 8 parking spaces 227 carports 0 garages 1  
 \*may be constructed in two phases
- H. Square footage: existing buildings 0 proposed buildings 267,543  
 Usable Floor area: existing buildings 0 proposed buildings 267,543
- I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: See the attached schedule.
- J. Existing Recreation: Type None. Private property, no trespassing. Acreage 0  
 Proposed Recreation: Type Landscaped grounds, walkways and patios Acreage 5.6  
 Existing Open Space: Type Undeveloped land. Acreage 10.7  
 Proposed Open Space: Type Fully landscaped and maintained. Acreage 5.6



- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, **RD, RC, RCC, RN, and CV** and **Group Housing Residential Developments** the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
  2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
  3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
  4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district **RP** requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
  2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste tailings, or unusable by-products.
  3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district **CV** requires the following:
1. A letter of approval from the State Department of Environmental Quality.
  2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
  3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
  4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district **CV** requires the following:
1. A location map including existing topographic data at two-foot interval contours.
  2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
  3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.

**Part II**

**SUP REQUEST STANDARDS  
Township Code of Ordinances, Section 86-126**

**Applications for Special Land Uses will be reviewed with the standards stated below. An application that complies with the standards stated in the Township Ordinance, conditions imposed pursuant to the Ordinance, other applicable Ordinances, and State and Federal statutes will be approved. Your responses to the questions below will assist the Planning Commission in its review of your application.**

- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

**Part III**

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes     No    (Please check one)

By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate

  
\_\_\_\_\_  
Signature of Applicant

February 10, 2020  
\_\_\_\_\_  
Date

Dan E. Anbar, manager, ANDEV Group, LLC  
\_\_\_\_\_  
Type/Print Name

Fee: \_\_\_\_\_

Received by/Date: \_\_\_\_\_

**Special Use Permit Application Attachment**  
**Site Plan Requirements Per Section 86-124(c)(4)**

A site plan, drawn to a legible scale, containing the following information where applicable:

- a. Boundaries of the subject property.
- b. Total area of the subject property.
- c. Location of all existing and proposed structures.
- d. Approximate location and distance of all structures within 100 feet of the subject property.
- e. Uses of existing and proposed buildings, on the subject site.
- f. Proposed means of vehicular and pedestrian ingress and egress to the subject property.
- g. Public and private roads and streets, rights-of-way, and easements, indicating names and widths, which abut or cross the site.
- h. Existing and proposed parking spaces, and vehicular and pedestrian circulation patterns.
- i. The buildable area of the subject property indicating all required setbacks, yards and open space.
- j. Zoning classification of the subject and adjacent properties.
- k. Existing and proposed fencing, screening, landscaping, and buffers.
- l. Location and sizes of existing utilities including power lines and towers, both above and below the ground.
- m. Amount and location of all impervious surfaces.
- n. The verified boundaries of all natural water features and required setback lines.

SCHEDULE A

Issuing Office File No.: [REDACTED]  
Commitment No.: [REDACTED]  
Property Address: V/L Hannah Blvd, East Lansing, MI 48823

1. Commitment Date: June 20, 2019 at 8:00 am

2. Policy or Policies to be issued:

2006 ALTA Owner's Policy

Policy Amount: [REDACTED]

Proposed Insured: Andev Group, LLC, an Illinois Limited Liability Company

3. The estate or interest in the land described or referred to in this Commitment is Fee Simple

4. Title to the estate or interest in the Land is at the Commitment Date vested in

George F. Eyde Family, LLC, a Michigan limited liability company

5. The Land is described as follows:

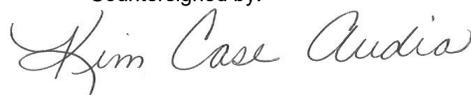
Located in the Township of Meridian, County of Ingham, State of Michigan,

SEE ATTACHED EXHIBIT "A"

*This page is only a part of a 2016 ALTA Commitment for Title Insurance issued by Fidelity National Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I – Requirements; and Schedule B, Part II – Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.*

Underwritten by Fidelity National Title Insurance Company  
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27C165B

Countersigned by:



Kim Case Audia

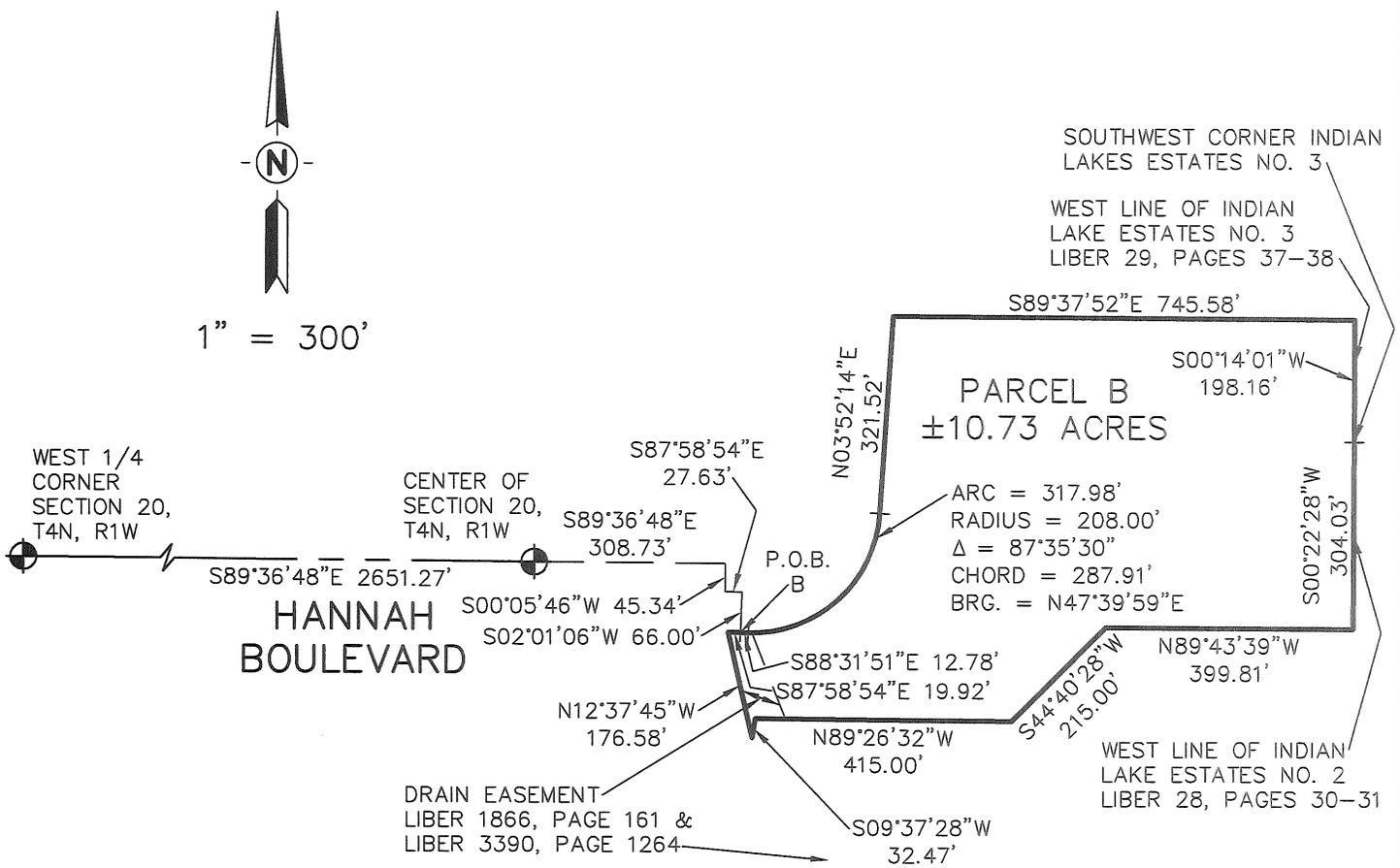
**SKETCH OF DESCRIPTION**

For:  
 Andev Group, LLC  
 680 N. Lake Shore Drive, Unit 1103  
 Chicago, IL 60611

Survey Address:  
 Vacant Hannah Boulevard  
 East Lansing, MI 48823  
 ID: 33-02-02-20-401-005

**Parcel B:**

A parcel of land in the Northeast 1/4 and the Southeast 1/4 of Section 20, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the West 1/4 corner of said Section 20; thence S89°36'48"E along the East-West 1/4 line of said Section 20 a distance of 2651.27 feet to the Center of said Section 20; thence continuing S89°36'48"E along said East-West 1/4 line 308.73 feet; thence S00°05'46"W 45.34 feet to the North line of Hannah Boulevard; thence S87°58'54"E along said North line 27.63 feet; thence S02°01'06"W 66.00 feet to the South line of Hannah Boulevard and the point of beginning of this description; thence S88°31'51"E 12.78 feet; thence Northeasterly 317.98 feet along a curve to the left, said curve having a radius of 208.00 feet, a delta angle of 87°35'30", and a chord of 287.91 feet bearing N47°39'59"E; thence N03°52'14"E 321.52 feet; thence S89°37'52"E 745.58 feet to the West line of Indian Lakes Estates No. 3 Subdivision, as recorded in Liber 29 of Plats, Pages 37-38, Ingham County Records; thence S00°14'01"W along said West line 198.16 feet to the Southwest corner of said Indian Lakes Estates No. 3 Subdivision; thence S00°22'28"W along the West line of Indian Lakes Estates No. 2 Subdivision, as recorded in Liber 28 of Plats, Pages 30-31, Ingham County Records, a distance of 304.03 feet; thence N89°43'39"W 399.81 feet; thence S44°40'28"W 215.00 feet; thence N89°26'32"W 415.00 feet; thence S09°37'28"W 32.47 feet; thence N12°37'45"W 176.58 feet to said South line of Hannah Boulevard; thence S87°58'54"E along said South line 19.92 feet to the point of beginning; said parcel containing 10.73 acres more or less; said parcel subject to all easements and restrictions if any.



This plan was made at the direction of the parties hereon and intended solely for their immediate use and no survey has been made and no property lines were monumented, all easements recorded or unrecorded may not be shown, unless specifically noted, and no dimensions are intended for use in establishing property lines.

— = Deed Line  
 - - - = Distance Not to Scale



**KEBS, INC.** KYES ENGINEERING  
 BRYAN LAND SURVEYS

2116 HASLETT ROAD, HASLETT, MI 48840  
 PH. 517-339-1014 FAX. 517-339-8047

13432 PRESTON DRIVE, MARSHALL, MI 49068  
 PH. 269-781-9800 FAX. 269-781-9805

|                          |                             |
|--------------------------|-----------------------------|
| DRAWN BY <b>SSF</b>      | SECTION <b>20, T4N, R1W</b> |
| FIELD WORK BY <b>---</b> | JOB NUMBER:                 |
| SHEET <b>3 OF 5</b>      | <b>94114.PLT</b>            |

*[Signature]* 06/05/19  
**ERICK R. FRIESTROM** DATE  
**PROFESSIONAL SURVEYOR** NO. **53497**

# ANDEV Group, LLC Employee and Shift Projections for Meridian Township Senior Living Community

|                                      | Positions |         | FTE          | Staff Projected | Positions |         | FTE          | Employees | Employees Per Shift |             |             |              |
|--------------------------------------|-----------|---------|--------------|-----------------|-----------|---------|--------------|-----------|---------------------|-------------|-------------|--------------|
|                                      | Shift 1   | Shift 2 | Shift 3      | Total           | Shift 1   | Shift 2 | Shift 3      | Total     | Shift 1             | Shift 2     | Shift 3     | Total        |
| <b>Independent Living Building</b>   |           |         |              |                 |           |         |              |           |                     |             |             |              |
| Assistant Manager                    | 1         | 1       | 1.00         |                 | 1         | 1       | 1.00         |           | 1.00                |             |             | 1.00         |
| Concierge                            | 1         | 1       | 1.40         |                 | 1         | 1       | 1.40         |           | 1.40                |             |             | 1.40         |
| Sales and Marketing                  |           |         | 2.80         |                 | 2         | 1.4     | 2.80         |           | 2.80                |             |             | 2.80         |
| Office                               | 1         | 1.4     | 1.40         |                 | 1         | 1.4     | 1.40         |           | 1.40                |             |             | 1.40         |
| Maintenance and Janitorial           | 2         | 1.4     | 2.80         |                 | 2         | 1.4     | 2.80         |           | 2.80                | 1.40        |             | 2.80         |
| Cooks                                | 2         | 1.4     | 2.80         |                 | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Kitchen Assistance                   | 2         | 1.4     | 2.80         |                 | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Servers                              | 3         | 1.4     | 4.20         |                 | 3         | 1.4     | 4.20         |           | 2.10                | 2.10        |             | 4.20         |
| Housekeeping                         | 2         | 1.4     | 2.80         |                 | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Recreational directors               | 2         | 1.4     | 2.80         |                 | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Drivers and Valet Parking            | 2         | 1.4     | 2.80         |                 | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| <b>Total Employees - IL Building</b> |           |         | <b>30.00</b> |                 | <b>21</b> |         | <b>29.00</b> |           | <b>17.80</b>        | <b>9.80</b> | <b>1.40</b> | <b>29.00</b> |

(Accounted for in Marketing Project Budget Through Month 36)

|   | Ratio   |         | Residents    | Projected | Positions |         | FTE          | Employees | Employees Per Shift |             |             |              |
|---|---------|---------|--------------|-----------|-----------|---------|--------------|-----------|---------------------|-------------|-------------|--------------|
|   | Shift 1 | Shift 2 | Shift 3      | Total     | Shift 1   | Shift 2 | Shift 3      | Total     | Shift 1             | Shift 2     | Shift 3     | Total        |
| <b>Assisted Living &amp; Memory Care Building</b> |         |         |              |           |           |         |              |           |                     |             |             |              |
| LPN - Manager                                     | 3.00    | 0       | 3.00         |           | 3         | 1       | 3.00         |           | 1.00                | 1.00        |             | 3.00         |
| Shift 1   | 7       | 1.40    | 36.1491      | 5.16      | 5         | 1.4     | 7.23         |           | 7.23                |             |             | 7.23         |
| Shift 2   | 7       | 1.40    | 36.1491      | 5.16      | 5         | 1.4     | 7.23         |           | 7.23                |             |             | 7.23         |
| Shift 3   | 14      | 1.40    | 36.1491      | 2.58      | 3         | 1.4     | 3.61         |           | 8.23                | 8.23        | 4.61        | 21.07        |
| <b>Total Caregiver Staffing</b>                   |         |         | <b>15.91</b> |           | <b>16</b> |         | <b>21.07</b> |           | <b>8.23</b>         | <b>8.23</b> | <b>4.61</b> | <b>21.07</b> |
| Convert To Full Time Equivalents                  |         |         | 1.40         |           |           |         |              |           |                     |             |             |              |
| <b>Total 7 Day a Week Caregiver Staffing</b>      |         |         | <b>22.27</b> |           |           |         |              |           |                     |             |             |              |

|  | FTE     |         | Residents    | Projected | Positions |         | FTE          | Employees | Employees Per Shift |             |             |              |
|--|---------|---------|--------------|-----------|-----------|---------|--------------|-----------|---------------------|-------------|-------------|--------------|
|  | Shift 1 | Shift 2 | Shift 3      | Total     | Shift 1   | Shift 2 | Shift 3      | Total     | Shift 1             | Shift 2     | Shift 3     | Total        |
| <b>Other staffing (Expressed in Full Time Equivalents)</b> |         |         |              |           |           |         |              |           |                     |             |             |              |
| On site manager  | 1       | 1       | 1.00         |           | 1         | 1       | 1.00         |           | 1.00                |             |             | 1.00         |
| Assistant Manager  | 1       | 1       | 1.00         |           | 1         | 1       | 1.00         |           | 1.00                |             |             | 1.00         |
| Sales and Marketing  |         |         | 2.80         |           | 2         | 1.4     | 2.80         |           | 2.80                |             |             | 2.80         |
| Receptionists  | 1       | 1.4     | 1.40         |           | 1         | 1.4     | 1.40         |           | 1.40                | 1.40        |             | 1.40         |
| Office   | 1       | 1.4     | 1.40         |           | 1         | 1.4     | 1.40         |           | 1.40                | 1.40        |             | 1.40         |
| Nursing Staff - LPN  | 3       | 1.4     | 4.20         |           | 3         | 1.4     | 4.20         |           | 1.40                | 1.40        |             | 4.20         |
| Maintenance Director                                       | 1       | 1.00    | 1.00         |           | 1         | 1       | 1.00         |           | 1.00                |             |             | 1.00         |
| Maintenance and Janitorial                                 | 1       | 1.4     | 1.40         |           | 1         | 1.4     | 1.40         |           | 0.70                | 0.70        |             | 1.40         |
| Dietary Supervisor   | 1       | 1       | 1.00         |           | 1         | 1       | 1.00         |           | 1.00                |             |             | 1.00         |
| Cooks  | 2       | 1.4     | 2.80         |           | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Kitchen Assistance   | 2       | 1.4     | 2.80         |           | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Servers  | 4       | 1.4     | 5.60         |           | 3         | 1.4     | 4.20         |           | 2.10                | 2.10        |             | 4.20         |
| Housekeeping   | 2       | 1.4     | 2.80         |           | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| Recreational directors                                     | 2       | 1.4     | 2.80         |           | 2         | 1.4     | 2.80         |           | 1.40                | 1.40        |             | 2.80         |
| <b>Total 7 Day a Week Caregiver Staffing</b>               |         |         | <b>21.51</b> |           | <b>23</b> |         | <b>30.60</b> |           | <b>19.40</b>        | <b>9.10</b> | <b>2.10</b> | <b>30.60</b> |

|  |  | Total AL / MC Building | Totals Both Buildings |
|--|--|------------------------|-----------------------|
|  |  | 37.24                  | 25.94                 |
|  |  | 11.01                  | 74.19                 |
|  |  | 55.04                  | 35.74                 |
|  |  | 12.41                  | 103.19                |





February 6, 2020

Mr. John Scott-Craig, Chairman  
Members of the Meridian Township Plan Commission  
c/o Mr. Mark Kieselbach, Community Planning and Development Director [Kieselbach@meridian.mi.us](mailto:Kieselbach@meridian.mi.us)

**Re: Application for Design Review and Application for Site Plan Review**

Ladies and Gentlemen,

Andev Group, LLC is the contract purchaser of the approximately 10.7-acre parcel located at the eastern end of Hannah Blvd. The attached proposal is for a Senior Living Community as defined by local ordinance to be located at the current terminus at the eastern end of Hannah Blvd. The property at this location is currently undeveloped land. The proposed purchaser of the property is ANDEV Group, LLC, or its nominee, who would be purchasing in order to provide the Senior Living Community facility to be operated by a yet-to-be-named, but major senior living operator. ANDEV Group, LLC is a Midwest developer of senior housing having developed multiple sites located in Wisconsin and Illinois.

The existing site is zoned RAA which requires a conditional use approval for a Senior Living Community facility. The proposed building will house three separate types of housing, specifically designed for and restricted to residents over the age of 55. The building will house an assisted living section with 67 apartments, a memory care section with 42 units and a section consisting of 121 independent living apartments with full kitchens and amenities. The assisted living and memory care portions of the facility will be licensed as a Home for the Aged through the Michigan Department of Licensing and Regulatory Affairs (LARA); whereas the independent living apartments will be age-restricted to residents 55 and older and will not require licensing through LARA.

The site is surrounded by zoning types: RAA to the north, RAA to the east, RAA to the south and RAA to the west. Based on the use of the facility, the road, and driveway design and landscaping features, the impact on neighboring parcels will be minimal.

Parking per zoning code is required to be 1 space per unit for the independent residences for a total of 121. Parking required for licensed professional care is to be 1 space/4 units plus 1 space for each employee in the largest shift for a total of 84 spaces. The total parking required for the entire development is 205 spaces. 227 spaces are proposed.

Parking for the assisted living and memory care portions of the facility is limited to staff and visitors, as residents do not drive, and transportation is provided by the operator by van or bus. Visitation is typically light, with an increase on certain holidays or special events. The day shift is the maximum staffed shift and includes approximately 56 employees. Shifts will most likely operate on a 7-3, 3-11 and 11-7, 24-hour rotation.



As residents of the memory care units are impaired and pose a wandering risk, that section of the building is a “secure” facility. Exterior courtyards are fenced and building exiting is controlled. Residents needing to go off-site are supervised. Fire exits are controlled through the use of code-approved delayed egress devices.

Like the country as a whole, East Lansing’s population is becoming significantly older, and the demographic and social changes that are beginning to affect the city will forever alter how the community looks and feels. With an aging population, this community will face both new opportunities and challenges in responding to older people’s needs and wishes.

In 2010, over 13% of Michigan’s population were 65 and older (an estimated 2 million people), and this percentage is rising. By 2023 this proportion will rise to almost 19% (an estimated 3 million people). In 2009, about 5.3 million Americans are living with Alzheimer’s disease, according to the national Alzheimer’s Association. This includes 5.1 million people age 65 and older and 200,000 individuals under age 65 with early-onset Alzheimer’s disease.

One out of eight people age 65 and older (13 percent) has Alzheimer’s disease. As older people move toward retirement, local governments, community and health organizations and families are becoming more aware of the challenges of our aging population:

- Local governments are realizing the demand for accessible, age-friendly infrastructure and transportation options.
- Families are navigating the social and economic challenges of parents and grandparents that require extra care and who may have to move from their homes and communities to access services and specialized accommodations.

All of ANDEV Group’s senior housing establishments are conceived and designed specifically to meet the needs of the growing segment of the senior population, many of whom are no longer capable of independently performing activities of daily living such as cooking, cleaning, laundry, dressing, bathing, etc. but are not so ill or incapacitated that they need full-time nursing care. Additionally, many of these older persons suffer from dementia and memory loss. These people are at risk to themselves as they become easily confused, disoriented and lost. They are not, however, necessarily in need of being placed in a nursing home. Assisted living housing provides a safe and protective environment for them in which their needs can be met while maintaining a residential setting for their comfort.

Older adults are a vibrant cohort of all communities and contribute to the economy, support extended families, participate in volunteerism, and generally enhance the social health of our neighborhoods. By encouraging creative housing solutions such as assisted living communities, transportation alternatives, and social and recreational programs we have the opportunity to play an important role in facilitating the ability of older adults to age in place in East Lansing.



With respect to the factors applicable to the Special Use contained within Meridian Township's ordinance section 86-126 for ANDEV's proposed Senior Living Community we submit the following:

(1) We believe that the project is consistent with the intent and purposes of the chapter and, specifically according to the provisions of Meridian Township ordinance 2019-09 to provide a variety of safe and secure senior housing alternatives for an aging population within a single integrated community.

(2) The project is consistent with applicable land-use policies contained in the Township's Master Plan of current adoption in that all building codes and zoning restrictions are being incorporated and respected without variance.

(3) The project, as can be seen from the elevations and renderings has been designed, and will be constructed, landscaped, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area. This area is currently vacant land covered with vegetation that is of no particular character and will improve that character with engineered stormwater control management, aesthetically pleasing buildings, and professional landscape design.

(4) The project will not adversely affect or be hazardous to existing neighboring uses. ANDEV will be meeting with the neighbors and their representatives prior to presenting its application to the Plan Commission to ensure that their questions, opinions, and preferences are heard and satisfactorily addressed. The developer has been informed that the primary concern of the residents of the single-family homeowners that will be nearest to the project is that there be no connection with Mohican Lane that would allow for cut-through traffic from Hannah Blvd. into their neighborhood. The project design has respected this preference. The second concern is with regard to building height. As previously stated, the proposed building respects the zoning requirements regarding height and setback requirements and has been designed and laid out to orient only the two-story element of the facility adjacent to the existing homes and will have an extra-large setback incorporating a large, heavily landscaped berm as an additional noise and visual barrier to the homesites.

(5) The project will not be detrimental to the economic welfare of surrounding properties or the community. To the contrary, the project anticipates the direct creation of approximately 110 new jobs and will support local businesses and suppliers – generating increased sales and real estate taxes that will benefit the residents of the entire township.

(6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service. All of the utilities necessary for the project's construction and maintenance will be extended to the site either within the proposed extension of Hannah Blvd or through the vacant property to the north and are sized of sufficient capacity to accommodate the needs of the proposed new community.

(7) The project is adequately served by public sanitation facilities. The same factors listed above regarding roads, stormwater, etc. are applicable to the availability and capacity of the water main and sanitary sewer connections.



(8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors. The project has been specifically designed and engineered to provide all necessary traffic improvements to accommodate further development consistent with existing zoning to the north of the project without connecting to the single-family neighborhood to the east, but still providing a second route for fire and emergency services from the north if necessary.

(9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas, all of which are being respected in the design of stormwater detention and avoidance of natural wetlands.

I am available to answer questions or provide further clarification if necessary,

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael D. Samuels", written over a horizontal line.

Michael D. Samuels, authorized agent for  
Andev Group, LLC

February 28, 2020

FROM: ANDEV Group, LLC

TO: Meridian Township Project for Hannah Boulevard

Ladies and Gentlemen,

ANDEV is pleased to present its vision for the development of the eastern terminus of Hannah Boulevard. In a recently enacted ordinance, Meridian Township encapsulated the concept of a senior living campus (referred to as a Senior Living Community) to allow for the development in one integrated site of the following types of senior residences:

- Independent Living Apartments
  - Fully functional—includes fully equipped kitchen and in-unit washer/dryer
  - Choice of floorplans from Studio to Two-bedroom, two bath units available.
  - Community dining
  - Cafe
  - Chef-run kitchen for meal service
  - On site hair salon
  - Sports lounge
  - Card room
  - Exercise room
  - Media room/theater
  - Chapel
  - Meeting rooms
  - Concierge service
  - Housekeeping services available
  - In-home assistive services can be available (from third-party providers)
- Assisted Living Apartments
  - Choice of floorplans from Studio to Two-bedroom, two bath units available.
  - Community dining – all meals included
  - Cafe
  - Chef-run commercial kitchen for meal service
  - On site hair salon
  - Medical clinic room for visiting physicians
  - Card room
  - Exercise room
  - Media room/theater
  - Chapel
  - Housekeeping and laundry services included.
  - Activity director
  - Assisted living services included (Bathing, dressing, medication reminders, etc.)
  - Care givers and RN on staff.
  - Bus/van Transportation supplied

- Memory Care
  - All units (1 or 2 beds) are studio suites with handicap-accessible bathrooms.
  - *All features and services included above for assisted living PLUS:*
  - Specially trained care-giver staff
  - Full time RN
  - Controlled access to ensure residents are safe and secure within the building
  - Fully fenced and secure separate outdoor patio.

ANDEV intends to incorporate all three of the above housing types in its Senior Living Community proposed development. We have designed a single, integrated building to house all three types of senior residences. Each type will be contained within well-defined areas of the complex. It is anticipated that the building will be constructed in two phases. The first phase will entail the construction of the two-story memory care portion, containing 42 suites and the three-story assisted living section, containing 67 apartments. The second phase of development will add the four-story element housing 121 independent living apartments. This section will tie-in to the previously completed portion and will be constructed without disturbing the lives or services and amenities used by the existing residents.

As the project will be built in phases, the area shown as phase 2 on the site plan will not be constructed initially. The 4-story independent apartments, including the western parking area adjacent to Hannah Boulevard, will not be built. Perimeter and parking lot landscaping adjacent to the 4-story building will also not be installed during phase 1. The central courtyard sidewalks will be temporarily modified to function to only serve phase 1 until phase 2 is completed. The phase 2 area will be stripped, graded, and reseeded only as necessary to maintain proper drainage of that area until the construction of phase 2 commences. The remainder of the site outside of phase 2 will be completed, including required street, access lanes, utilities, and infrastructure.

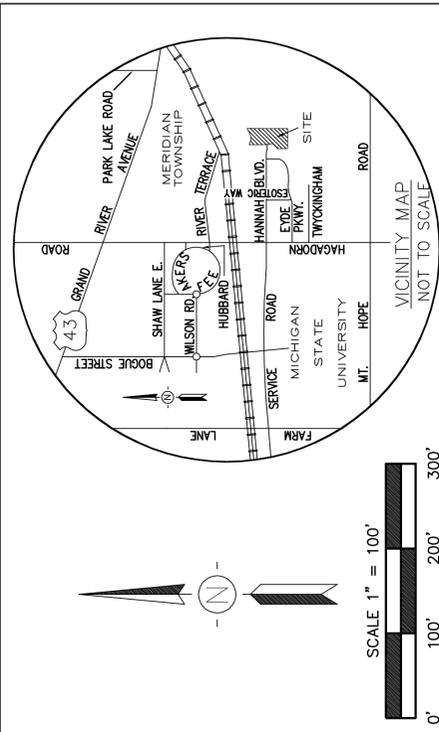
We anticipate commencing construction within a short time after the final approval of the project. Construction of phase one will take approximately 18 months. Construction of phase two will start after the completed phase one is 50% occupied, or 18 months from the completion of phase one, whichever comes first. Its construction should also be completed approximately 18 months from commencement.

Michael Samuels, for  
ANDEV Group, LLC

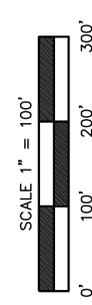
SUP PLAN FOR:  
**Hannah Farms East**  
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

CLIENT:  
 GRONK, LLC  
 680 N. WILSON SHORE DR.  
 CHICAGO, IL 60611  
 PH: (312) 927-4449  
 FAX: (312) 927-4449

ENGINEER/SURVEYOR:  
 KEBS, INC.  
 2116 HASLETT RD.  
 HASLETT, MI 48840  
 PH: (517) 339-1014  
 FAX: (517) 339-8047



**LEGAL DESCRIPTION:**  
 Parcel B of land in the Northeast 1/4 of Section 20, T4N, R17W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the West 1/4 corner of said Section 20; thence S89°36'46"E along the East-West 1/4 line of said Section 20 a distance of 2651.27 feet to the Center of said Section 20; thence continuing S89°36'46"E along said East-West 1/4 line 308.77 feet; thence S20°05'46"W 453.34 feet to the North line of Hannah Farm; thence S89°36'46"E along said Hannah Farm 12.78 feet; thence Northwesterly 317.98 feet along a curve to the left, said curve having a radius of 208.00 feet, a deflection angle of 87°32'30", and a chord of 287.91 feet bearing N47°29'59"E, 321.52 feet; thence S89°37'52"E 745.58 feet to the West line of Indian Lakes Estates No. 2; thence S89°37'52"E 745.58 feet to the West line of Indian Lakes Estates No. 2 Subdivision; thence S00°22'28"W along the West line of Indian Lakes Estates No. 2 Subdivision, as recorded in Liber 28 of Plats, Page 30-31, Ingham County Records, a distance of 304.03 feet; thence N89°43'39"W 399.61 feet; thence S44°09'28"W 215.00 feet; thence N89°26'32"W 415.00 feet; thence beginning said parcel containing 10.73 acres more or less, said parcel subject to all easements and restrictions if any.



**SITE DATA**

EXISTING ZONING RAA  
 SPECIAL USE PERMITS REQUIRED: RESIDENTIAL DISTRICT  
 TOTAL SITE AREA = 10.73 ACRES  
 ALLOWABLE DENSITY = 25 UNITS/ACRE  
 267.3 ACRES @ 25 UNITS/ACRE = 268 UNITS  
 230 UNITS PROPOSED

PROPOSED USE:  
 INDEPENDENT LIVING (IL)  
 SINGLE-FAMILY (S.F.)  
 MEMORY CARE (MC)

MAXIMUM BUILDING COVERAGE = 35%  
 PROPOSED BUILDING COVERAGE = 88,200 SF / 467,621 SF = 19%  
 PROPOSED BUILDING SURFACE = 267,543 SF, GARAGE 720 SF  
 TOTAL = 268,263 SF

MAXIMUM IMPERVIOUS SURFACE = 75%  
 PROPOSED IMPERVIOUS SURFACE 244,352 SF / 467,621 SF = 52.26%

**REQUIRED SETBACKS**

**FRONT:** 25' FROM EDGE OF RIGHT-OF-WAY  
 SIDE AND REAR - 25' FROM NON-RESIDENTIAL DISTRICT  
 50' MIN FROM RESIDENTIAL DISTRICT IF BUILDING LESS THAN 35' IN HEIGHT.  
 BUILDINGS OVER 35' IN HEIGHT THEN INCREASE SETBACK 1.5' FOR EACH 1' OVER 35' HIGH

**PROPOSED BUILDING SETBACKS:**  
 IL WING - 52'4" HIGH  
 S.F. WING - 30'9" HIGH (52'4" - 35') 1.5 = 76'  
 SETBACK = 50' + (39'9" - 35') 1.5 = 58'  
 MC WING - 29' HIGH  
 SETBACK = 50'

**PARKING:**  
 20' FROM ROAD RIGHT OF WAY  
 20' FROM RESIDENTIAL DISTRICT IF LESS THAN 50 SPACES  
 40' FROM RESIDENTIAL DISTRICT IF MORE THAN 50 SPACES

**REQUIRED PARKING:**  
 IL - 1 SPACE PER UNIT  
 AL AND MC 1 SPACE FOR EVERY 4 UNITS + 1 SPACE FOR EACH EMPLOYEE IN THE LARGEST SHIFT

IL - 121 UNITS = 121 SPACES REQUIRED  
 AL & MC - 109 UNITS / 4 = 28 SPACES REQUIRED  
 LARGEST SHIFT - 40 EMPLOYEES = 40 SPACES REQUIRED  
 TOTAL SPACES REQUIRED = 189 SPACES  
 TOTAL SPACES PROPOSED = 227 SPACES

BIKE PARKING PROPOSED FOR IL UNITS AND EMPLOYEES = 16 TOTAL  
 INTERIOR LANDSCAPE ISLAND REQUIRED = 200 SF FOR EACH 10 PARKING SPACES  
 2000 SF @ 200 SF = 4,540 SF REQUIRED  
 8,087 SF PROPOSED

**UTILITIES**  
 WATER: PUBLIC WATER MAIN  
 SANITARY: PUBLIC SANITARY  
 STORM: PUBLIC SANITARY  
 ON-SITE DETENTION BASIN  
 TRASH: ON-SITE DUMPSTERS

**NOTES**  
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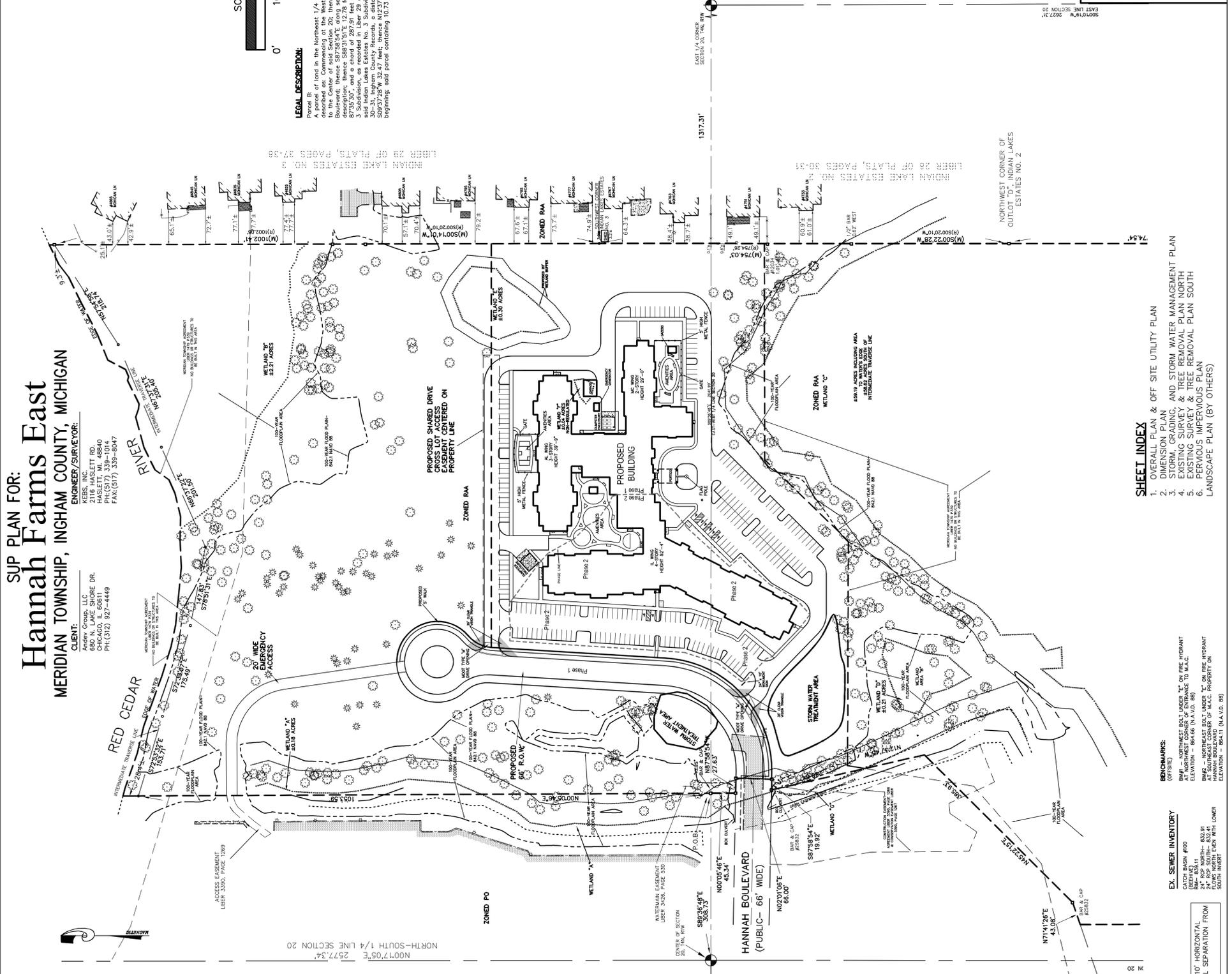
E-960344Y1  
 E-94114  
 SURVEY#B98985TOPJEFF

**KEBS, INC.**  
 KYES ENGINEERING  
 2116 HASLETT ROAD, HASLETT, MI 48840  
 PH. 517-339-1014 FAX. 517-339-8047

**Hannah Farms East**  
 Overall Plan & Off Site Utility Plan  
 APPROVED BY: JMK  
 SCALE: 1" = 100'  
 DATE: 3-25-19  
 PROJECT MGR: JMK  
 AUTHORIZED BY: JMK  
 JOB #: 96034  
 Andev Group, LLC

REVISIONS  
 2-11-20 SUP  
 03-09-20 SUP

STATE OF MICHIGAN  
 JEFFREY W. KYES  
 ENGINEER  
 NO. 46796  
 LICENSED PROFESSIONAL ENGINEER



CLIENT:  
 GRONK, LLC  
 680 N. WILSON SHORE DR.  
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**EX. LEGEND**

- SET 1/2" BAR WITH CAP
- FOUND MONUMENT UNLESS NOTED
- DRAINAGE MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- CATCH BASIN
- SANITARY CLEANOUT
- FIRE HYDRANT
- VALVE
- UTILITY POLE
- LIGHT POLE
- GUY WIRE
- UTILITY PEDESTAL
- TRANSFORMER
- ELECTRIC METER
- GAS METER
- WATER METER
- SOIL BORING
- SIGN
- POST



**LEGEND**

- EXT. CONTOURS
- EXT. WATER MAIN
- EXT. SANITARY SEWER
- EXT. STORM SEWER
- EXT. ELEVATIONS
- PROPOSED WATER MAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- MANHOLE (NEW)
- MANHOLE (EX)
- UTILITY EASEMENT
- CENTER LINE OF ROAD
- ROAD RIGHT OF WAY
- PROPERTY LINE
- FIRE HYDRANT
- WATER VALVE
- THRUST STOP
- PROPOSED TOP OF CURB ELEV.

**EX. SEWER INVENTORY**

CONSTRUCTION #100  
 (SEE PLAN)  
 24" RCP SOUTH-83.24  
 24" RCP SOUTH-83.24  
 SOUTH INVERT  
 SOUTH INVERT

**EX. SEWER INVENTORY**

CONSTRUCTION #100  
 (SEE PLAN)  
 24" RCP NORTH-83.91  
 24" RCP NORTH-83.91  
 SOUTH INVERT  
 SOUTH INVERT

**EX. SEWER INVENTORY**

CONSTRUCTION #100  
 (SEE PLAN)  
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**SHEET INDEX**

- OVERALL PLAN & OFF SITE UTILITY PLAN
- DIMENSION PLAN
- STORM GRADING AND STORM WATER MANAGEMENT PLAN
- EXISTING SURVEY & TREE REMOVAL PLAN NORTH
- EXISTING SURVEY & TREE REMOVAL PLAN SOUTH
- PERVIOUS IMPERVIOUS PLAN
- LANDSCAPE PLAN (BY OTHERS)

**BOUNDARIES**

(OFFSITE)  
 BM1 - NORTHWEST BOLT UNDER "I" ON FIRE HYDRANT AT NORTHWEST CORNER OF EASEMENT TO M.A.C.  
 BM2 - NORTHWEST BOLT UNDER "C" ON FIRE HYDRANT AT SOUTHWEST CORNER OF M.A.C. PROPERTY ON ELEVATION = 84.11 (N.A.V.D. 89)

**NOTES**

NOTE: WATER SHALL HAVE 10' HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.

**12 HRS**  
 (3 WORKING DAYS)  
**BEFORE YOU DIG**  
**CALL 800-487-7111**  
 (TOLL-FREE)





# BOUNDARY & TOPOGRAPHIC SURVEY

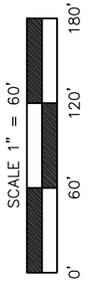
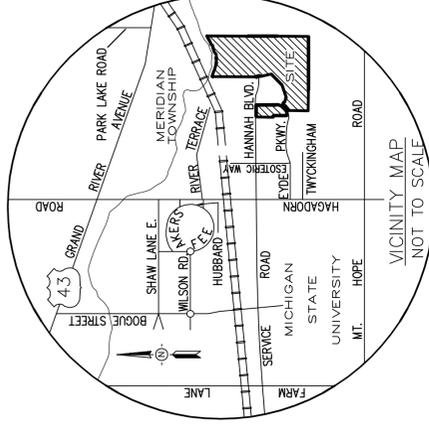
## "HANNAH FARMS EAST- NORTH PORTION"

EXISTING SURVEY & TREE REMOVAL PLAN NORTH

FOR: EYDE COMPANY

- LEGEND**
- SET 1/2" BAR WITH CAP
  - ◻ FOUND IRON AS NOTED
  - DEED LINE
  - DISTANCE NOT TO SCALE
  - FENCE
  - ASPHALT
  - CONCRETE
  - DECK
  - EXISTING SPOT ELEVATION
  - EXISTING CONTOUR ELEVATION
  - SANITARY SEWER
  - STORM SEWER
  - WATER LINE
  - GAS LINE
  - UNDERGROUND TELEPHONE
  - UNDERGROUND TELEVISION
  - UNDERGROUND ELECTRIC
  - OVERHEAD WIRES
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - DRAINAGE MANHOLE
  - ELECTRIC MANHOLE
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  - GUY WIRE
  - UTILITY PEDESTAL
  - TRANSFORMER
  - ELECTRIC METER
  - GAS METER
  - WATER METER
  - SOIL BORING
  - SIGN
  - POST
  - WETLAND BOUNDARY
  - TREE IDENTIFICATION NUMBER

- SEWER INVENTORY**
- CATCH BASIN #100  
(BEEHIVE)  
RIM - 839.11  
24" RCP NORTH - 832.91  
24" RCP SOUTH - 832.41  
FLOWS NORTH EVEN WITH LOWER SOUTH INVERT
- BENCHMARKS:**
- BENCHMARK #1 ELEVATION: 864.68 (N.A.V.D. 88)  
NORTHWEST BOLT UNDER "E" ON FIRE HYDRANT AT NORTHWEST CORNER OF ENTRANCE TO M.A.C. (OFF-SITE)
- BENCHMARK #2 ELEVATION: 864.09 (N.A.V.D. 88)  
NORTHEAST BOLT UNDER "E" ON FIRE HYDRANT AT SOUTHEAST CORNER OF M.A.C. PROPERTY ON HANNAH BOULEVARD (OFF-SITE)
- BENCHMARK #3 ELEVATION: 864.41 (N.A.V.D. 88)  
BIG ARM OF FIRE HYDRANT ON THE WEST SIDE OF EYDE PARKWAY, FIRST HYDRANT SOUTH OF THE INTERSECTION OF EYDE PARKWAY AND HANNAH BOULEVARD. (SEE SHEET 4)
- BENCHMARK #4 ELEVATION: 863.87 (N.A.V.D. 88)  
BIG ARM OF FIRE HYDRANT AT THE NORTHEAST CORNER OF THE LANSING COMMUNITY COLLEGE PARKING LOT ON THE WEST SIDE OF THE SOUTHWEST PARCEL. (SEE SHEET 5)
- BENCHMARK #5 ELEVATION: 853.12 (N.A.V.D. 88)  
SOUTHWEST FLANGE BOLT OF FIRE HYDRANT ON THE SOUTH SIDE OF HANNAH BOULEVARD, FIRST HYDRANT EAST OF THE INTERSECTION OF EYDE PARKWAY AND HANNAH BOULEVARD. (SEE SHEET 4)
- BENCHMARK #6 ELEVATION: 846.60 (N.A.V.D. 88)  
CHISELED "X" ON SOUTHWEST CORNER OF THE HEADWALL ON THE SOUTH SIDE OF HANNAH BOULEVARD ON THE WEST SIDE OF THE EASTERN PARCEL. (SEE SHEET 5)
- BENCHMARK #7 ELEVATION: 865.46 (N.A.V.D. 88)  
NORTHEAST FLANGE BOLT UNDER "E" ON FIRE HYDRANT AT THE NORTHWEST CORNER OF PARKING LOT FOR BUILDING #2852. (SEE SHEET 4)



○ DENOTES TREES TO BE REMOVED



| REVISIONS | COMMENTS         | DATE |
|-----------|------------------|------|
| 12/22/15  | ORIGINAL         |      |
| 12/23/15  | ADDED FLOODPLAIN |      |
| 01/13/16  | ADDED SHEETS 4&5 |      |
| 2-11-20   | SUBMITTAL        |      |

|                                    |               |
|------------------------------------|---------------|
| ENGINEERING AND LAND SURVEYING     | 89986.TOP/BNB |
| 216 HASELT ROAD, HASELT, MI 48840  |               |
| PH. 517-339-1014 FAX. 517-339-8647 |               |
| Meridian Office                    |               |
| Ph. 269-781-8800                   |               |
| PROFESSIONAL SURVEYOR NO. 53497    |               |
| ERICK R. FRIESTROM                 |               |
| DATE                               |               |
| SECTION                            | 20, T4N, R1W  |
| DRAWN BY                           | SLH           |
| FIELD WORK BY                      | RF            |
| JOB NUMBER                         | 96034         |
| SHEET                              | 4 OF 6        |

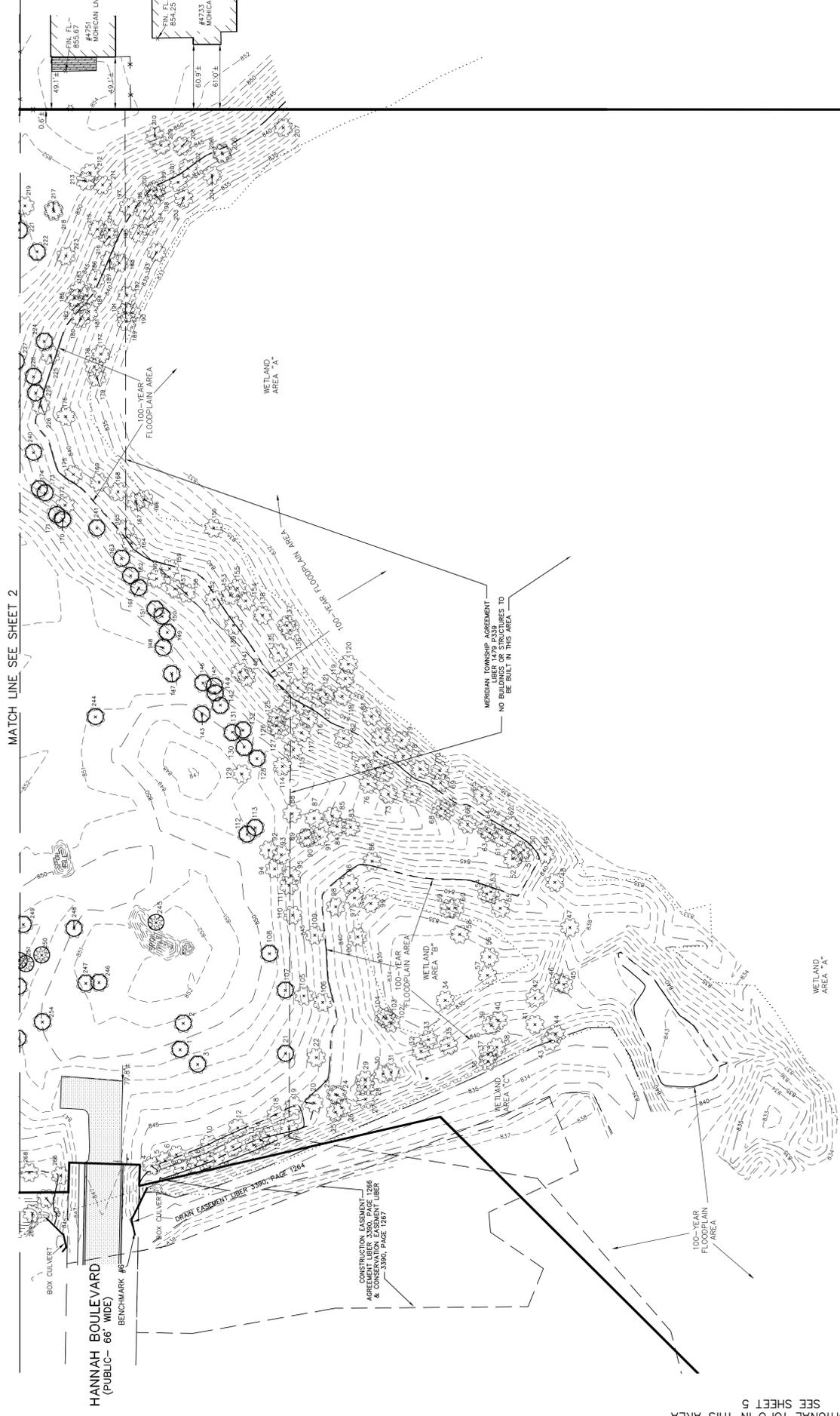
# BOUNDARY & TOPOGRAPHIC SURVEY

## "HANNAH FARMS EAST- SOUTH PORTION"

EXISTING SURVEY & TREE REMOVAL PLAN SOUTH

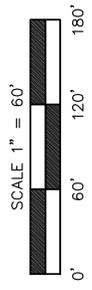
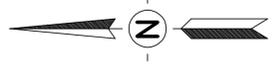
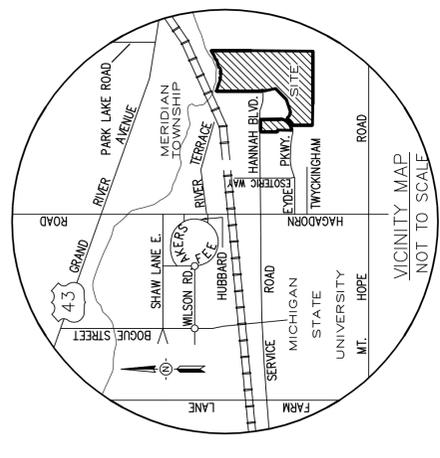
FOR: EYDE COMPANY

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  - = GAS METER
  - = WATER METER
  - = SOIL BORING
  - = SIGN
  - = POST
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  - = TREE IDENTIFICATION NUMBER



FOR ADDITIONAL TOPO IN THIS AREA SEE SHEET 5

○ DENOTES TREES TO BE REMOVED



**BENCHMARKS:**

- BENCHMARK #1 ELEVATION: 864.68 (N.A.V.D. 88) NORTHWEST BOLT UNDER "E" ON FIRE HYDRANT AT NORTHWEST CORNER OF ENTRANCE TO M.A.C. (OFF-SITE)
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- BENCHMARK #7 ELEVATION: 865.46 (N.A.V.D. 88) NORTHEAST FLANGE BOLT UNDER "W" IN EJIW" ON FIRE HYDRANT AT THE NORTHEAST CORNER OF PARKING LOT FOR BUILDING #2852. (SEE SHEET 4)

| REVISIONS | COMMENTS         | DATE | BY | CHKD |
|-----------|------------------|------|----|------|
| 12/22/15  | ORIGINAL         |      |    |      |
| 12/23/15  | ADDED PLAN       |      |    |      |
| 01/15/16  | ADDED SHEETS 4&5 |      |    |      |
| 2-11-20   | SUP SUBMITTAL    |      |    |      |

|   |  |
|---|--|
| 89986.TOP/BND                                       |  |
| <b>KEBS, INC.</b><br>ENGINEERING AND LAND SURVEYING | 2116 HASLETT ROAD, HASLETT, MI 48840<br>PH. 517-339-1014 FAX. 517-339-8047 |
| Drawn By: SLH                                       | Checked By: RF   |
| Section: 20, T4N, R1W                               | Job Number: 96034  |
| Field Work By: RF                                   | Sheet: 5 of 6  |

ERICK R. FRIESTROM  
PROFESSIONAL SURVEYOR NO. 53497

DATE  
NO. 53497























**Traffic Engineering  
Associates, Inc.**  
**517/627-6028 FAX: 517/627-6040**

PO Box 100  
Saranac, Michigan 48881

Michael D. Samuels  
Attorney at Law  
414 W. Burr Oak Drive  
Arlington Heights, IL 60004

February 3, 2020

Dear Mr. Samuels:

Traffic Engineering Associates, Inc. (TEA) conducted a trip generation analysis for the proposed senior housing development which will be located on Hannah Boulevard in Meridian Charter Township, Ingham County, Michigan.

### **PROJECT DESCRIPTION**

The proposed development will consist of 121 units of independent senior apartments, 67 units of assisted living and 42 memory care units, for a total of 230 units. The project site is located at the east end of Hannah Boulevard. There are two (2) proposed driveways on Hannah Boulevard.

### **TRAFFIC ANALYSIS**

For this analysis, trip generation rates were derived from the ITE TRIP GENERATION MANUAL (10th edition). The ITE trip generation rates for Continuing Care Retirement Community (Land Use Code 255) were selected as representing the 230 units for the site. The ITE description of Continuing Care Retirement Community is as follows:

*A continuing care retirement community (CCRC) is a land use that provides multiple elements of senior adult living. CCRCs combine aspects of independent living with increased care, as lifestyle needs change with time. Housing options may include various combinations of senior adult (detached), senior adult (attached), congregate care, assisted living, and skilled nursing care—aimed at allowing the residents to live in one community as their medical needs change. The communities may also contain special services such as medical, dining, recreational, and some limited, supporting retail facilities. CCRCs are usually self-contained villages.*

It is projected that the proposed development will generate 45 vehicle trips during the AM peak hour, 47 vehicle trips during the PM peak hour, and a weekday (24-hour) total of 552 vehicle trips.



| Land Use  | Size      | AM Peak Hour |     |       | PM Peak Hour |     |       | Weekday |
|---|-----------|--------------|-----|-------|--------------|-----|-------|---------|
|   |           | In           | Out | Total | In           | Out | Total |         |
| Continuing Care Retirement Community, Land Use Code 255 | 230 Units | 29           | 16  | 45    | 18           | 29  | 47    | 552     |

## FINDINGS

In accordance with the guidelines set forth in “Evaluating Traffic Impact Studies, A Recommended Practice for Michigan Communities,” sponsored by the Tri-County Regional Planning Commission and the Michigan Department of Transportation, if a proposed site is expected to generate at least 100 directional trips during the peak hour or at least 750 trips during an average day, a traffic impact statement is required. If the traffic generated by the site is expected to be between 50 and 99 directional trips during a peak hour, a traffic impact assessment shall be required.

Using the guidelines, neither a traffic impact assessment nor a traffic impact statement would be required for this development based on projected volumes.

If you have any questions, please write or call.

Sincerely,



Heather L. Zull, PE





MARX  
WETLANDS  
LLC

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- II. Tree Survey Results

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## 1.0 INTRODUCTION

Marx Wetlands, LLC (Marx) was contracted by Capstone Companies and the Eyde Company to perform a natural features assessment for an approximately 60-acre parcel in Meridian Township, Ingham County, Michigan.

As part of a Special Use Permit Application, the Charter Township of Meridian Department of Community Planning and Development requires a "Natural Features Assessment," which is to include "a written description of the anticipated impacts on the natural features at each phase and at project completion that contains the following:

- a. An inventory of natural features proposed to be retained, removed, or modified. Natural features shall include, but are not limited to, wetlands, significant stands of trees or individual trees greater than 12 inches dbh, floodways, floodplains, water bodies, identified groundwater vulnerable areas, slopes greater than 20 percent, ravines, and vegetative cover types with potential to sustain significant or endangered wildlife.
- b. Description of the impacts on natural features.
- c. Description of any proposed efforts to mitigate any negative impacts."

After obtaining site location information, Marx conducted desktop information reviews, site assessments, a tree survey, and information analysis in order to help address the Township's natural features assessment requirements. This report provides results of Marx's natural features assessment.

## 2.0 SITE LOCATION AND PROJECT DESCRIPTION

The approximately 60-acre subject site (hereafter referred to as the Site) is located along the east side of the Lodges of East Lansing housing complex, on the south bank of the Red Cedar River, and west of a residential subdivision in the east half of Section 20, Meridian Charter Township, Ingham County, Michigan. Capstone Companies/Eyde Company (Developer) is proposing to construct a senior residential complex on the Site. The proposed structures and parking facilities on this parcel will be completed in one phase. Prior to site clearing and grading, soil erosion and sediment control measures will be installed and will be inspected and maintained



during the construction project. All soil erosion and sedimentation control measures will be removed upon completion of construction and stabilization. Please refer to Figure 1: Site Location Map in Appendix I.

The Site is +/- 60 acres in size and is currently vacant. It is bordered by The Lodges of East Lansing, the Red Cedar River, a residential subdivision, and a privately owned residential compound. The topography of the Site is rolling, higher in the middle of the site and lower on the south end and in the northeast corner. The Site contains areas of planted pines, a large wetland at its south end, and areas of open field and floodplain forest. Refer to the Figure 2: Aerial Imagery Map in Appendix I.

### 3.0 METHODS

Marx Wetlands conducted a desktop review for the Site using existing information and imagery, including the United States Geological Service (USGS) topographic map, aerial photographs, Meridian Township's Wetland Inventory Map, National Wetland Inventory (NWI) map, USDA county soil survey map, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), and the Township's groundwater vulnerability map.

From November 19 to 30, 2015, Marx conducted an on-Site assessment and a tree survey. The on-Site assessment consisted of a site walkthrough to conduct a current and prior land use evaluation, habitat type determination, habitat quality evaluation, preliminary wetland assessment, wildlife observations, and floodplain or other special concern observations.

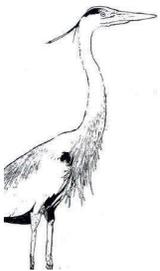
The tree survey consisted of identifying the species, general health status, and dbh (diameter-breast-height) of each tree on the subject site with a dbh of 12 inches or larger, and to these affixing a uniquely numbered metal tag and collecting a GPS location point.

The findings from the desktop review, site assessment, and tree survey were combined to help interpret the subject Site's natural features and evaluate potential project impacts upon those natural features.

### 4.0 RESULTS, FINDINGS, AND DISCUSSION

#### 4.1 Existing Structures, Materials, and Adjacent Land use

Other than the road end of Hannah Blvd, there are no existing structures on the site.



Much of the land immediately surrounding the Site is already developed. The nearest structures are Lodges of East Lansing residential buildings just to the west. To the east is the Indian Lakes Estates residential subdivision. South of the site is a large private residential compound, and the Red Cedar River borders the site on the north. Refer to Figure 2: Aerial Imagery Map in Appendix I.

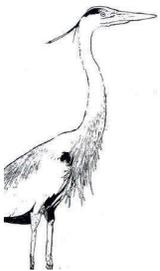




Photo 1. Upland field/planted trees area near center of site.



Photo 2. Floodplain forest at northeast part of site.





Photo 3. White pines in the planted tree area.



Photo 4. Southern wetland and the adjacent forest on the slope.



#### 4.2 Topography

The lowest elevations on the Site are about 830 feet MSL, found in both the large wetland to the south and the edge of the Red Cedar River to the north. The highest elevation is about 856 found near the center west part of the site. The Site is rolling, with relatively steep slopes dropping down to the river and the wetlands at the north and south ends of the site (refer to Figure 1: Site Location Map in Appendix I).

#### 4.3 Vegetation

A vegetation assessment was conducted during the Site survey. Marx found three distinct community types present on the Site. The north central high part of the Site contains Field/Tree Plantings, which is characterized by herbs, grasses, shrubs, with several stands of planted pine. In its northeast corner is a Floodplain Forest in the floodplain of the Red Cedar River. A similar but brushier floodplain forest lies along the west boundary of the site along the County Drain. The southern third or so of the site is characterized by a large Forested Wetland with an adjacent mature forest on a slope. The number of identifiable species was limited by the winter season, although the lack of deep snow cover allowed identification of numerous species and did not prevent an evaluation of the ecological stage and value of the two areas. The species identified in these three areas during the field investigation are provided in tables (refer to Appendix II).

The Field/Tree Plantings area is dominated by species which are associated with disturbed lands in the Great Lakes region. These include non-native species, invasive species, native species that are tolerant of human land uses, and native pioneer species that normally colonize land after activities are abandoned. Examples of these species present on the Site include blackberry (*Rubus alleghaniensis*), Tartarian honeysuckle (*Lonicera tartarica*), tall goldenrod (*Solidago altissima*), black raspberry (*Rubus occidentalis*), wild carrot (*Daucus carota*), switch grass (*Panicum virgatum*), panicked aster (*Aster lanceolatus*), ground ivy (*Glechoma hederacea*), common plantain (*Plantago major*), common buckthorn (*Rhamnus cathartica*), multi-flora rose (*Rosa multiflora*), and common mint (*Mentha arvensis*). The trees in this area include the many planted white pines (*Pinus strobus*), as well as box elder (*Acer negundo*), cottonwood (*Populus deltoides*), and green ash (*Fraxinus pennsylvanica*) which were largely in poor condition due to the emerald ash bore infestation.

The Vegetation circa 1800 map produced by the Michigan Natural Features Inventory shows the Site to be part of an extensive beech-maple forest that extended many miles southward from the Red Cedar



River (refer to Figure 3: Presettlement Vegetation/MNFI ca. 1800 map in Appendix I). Prior to extensive land clearing these shady forests were common on the flatter till plains of mid-Michigan. They often contained a wide variety of tree species, such as sugar maple, red maple, red oak, white oak, American beech, white ash, basswood, tulip tree, walnut, and hop hornbeam. These forests were commonly cleared to enable agricultural production, and it is likely that most higher elevation part of the Site was cleared many decades ago for this purpose; notice the lighter color indicating open land in the 1970 USGS Topographic map (refer to Figure 1 in Appendix I). As twentieth century commercial development began to fill in lands between East Lansing and Okemos, the Site was probably eventually left idle due to commercial property expectations and to the infeasibility of continuing agriculture on a small scale. Whether the Site had been used for hay or crops, the cessation of this use would have spurred numerous plant species to colonize (or recolonize) from field edges and the surrounding landscape. Along the way, numerous white pine were planted. The resulting native and non-native plants currently present are adept at this type of recolonization.

The Floodplain Forest areas are dominated by native hardwood forest trees, and relatively weedy shrubs and groundcover plants. This assemblage includes almost exclusively native species, with only the occasional Siberian Elm (*Ulmus pumila*) being the exceptions. Examples of the species present on the Site include red oak (*Quercus rubra*), swamp white oak (*Quercus bicolor*), silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), hackberry (*Celtis occidentalis*), basswood (*Tilia americana*), and black walnut (*Juglans nigra*). Again, the Site was apparently once part of an extensive beech-maple forest that extended many miles southward from the Red Cedar River. Parts of the floodplain areas where the floodplain forests are now may have been cleared for agriculture, but the many large trees indicates that the frequent flooding of these areas made them infeasible for agriculture, and the forests were largely left standing. These areas were likely selectively logged and the wood used for many purposes including building, fencing, and firewood. The changes on this Site over the last two-hundred years have left a significant remnant forest, with many of the maple, walnut, oak, hackberry, sycamore, basswood and hop hornbeam trees in the floodplain forest are probably directly descendent and/or residual from the original floodplain forest in this location.

The Forested Wetland area of the site are dominated by native hardwood forest trees typically found in such forests in southern Michigan. The area is characterized by muck soils and these soils are



saturated to the surface much of the time. The dominant species in this area include silver maple (*A. saccharinum*), red maple (*Acer rubrum*), green ash (*F. pennsylvanica*), cottonwood (*P. deltoides*), American elm (*Ulmus americana*), sycamore (*Platanus occidentalis*), swamp white oak (*Q. bicolor*), and hackberry (*C. occidentalis*). This area has likely been relatively undisturbed for many years due to the high water table and unstable soils that make it unsuitable for agriculture or any type of construction. The relatively small number of large trees in this wetland area is likely due to the unstable soils which provides poor support to larger trees which often blow down in storms. This area will remain undisturbed by the proposed activity on the site. Adjacent to the forested wetland is an area of mature forest on the slope that connects the wetland with the Field/Tree Planting area in the middle of the site. This forested area contains many large trees of several species, including sugar maple (*A. saccharum*), red oak (*Quercus rubra*), black cherry (*Prunus serotina*), white oak (*Quercus alba*), hackberry (*Celtis occidentalis*), and American beech (*Fagus grandifolia*). This sloped area will not likely be disturbed by the proposed development.

There are two small wetland areas the center of the site that lie in low areas extending south and west from the Red Cedar floodplain, and another small wetland in the southwest corner of the site. These areas are more disturbed than the southern wetland area, and are dominated by a less diverse assemblage of trees which are considerably smaller than the trees dominating the large wetland. These areas are dominated by cottonwood (*P. deltoides*), green ash (*F. pennsylvanica*) and silver maple (*A. saccharinum*), and have sandbar and pussy willow (*Salix exigua and discolor*), and silky and gray dogwood (*Cornus amomum and foemina*) shrubs around the margins. These areas have standing water in the middle of the depressions in the spring and after large precipitation events, and dry out in the late summer and fall. These areas will be likely be removed by the proposed development which will require a wetland permit from the Township.





Photo 5. Southern forested wetland viewing south.





Photo 6. Small forested wetland in southwest corner of site.





Photo 7. Area of mixed vegetation in Field/Planted Tree portion of site.



Development of the Site will require clearing most vegetation that is present in the Field/Tree Planting area and in the two small central wetlands. While no formal mitigation for vegetation removal has been planned, traditional landscape grass, shrub, and tree plantings are expected. The existing vegetation in the Floodplain Forest and in the Forested Wetland will remain intact. Existing vegetation in the upland areas, particularly some of the larger trees, may be incorporated into the traditional landscaping to the extent possible.

#### 4.4 Significant Tree Inventory

As part of the vegetation assessment, a tree survey was also conducted in the non-wetland areas of the site. The survey included trees considered “significant” or deserving special protection because of their size, relative rarity, or historical importance. During the inventory, trees with a diameter at breast height (DBH) (the standard measure for tree size) of 12 inches or greater were located on the Site and mapped. The trees were identified to species and their size recorded (Appendix III). Results of the inventory identified 648 significant trees of 22 different species on the parcel. Of the 648 trees, 17 were larger than 30 inches in diameter, the largest being a cottonwood with a diameter of 55 inches, and second a red oak (*Quercus rubra*) with a diameter of 47 inches. Thirty six of the trees had multiple trunks of varying sizes. One hundred seven of the trees were between 20 and 30 inches and 428 were between 12 and 20 inches DBH.





Photo 8. Forested area near southern forested wetland.



Photo 8. Forested area near southern forested wetland.

#### 4.5 Wetlands

Marx conducted a preliminary review for wetlands while on the Site. In accordance with the Midwestern Interim Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, wetland are defined by the presence of three basic parameters: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time). The above parameters are virtually always inter-related and normally present in wetland systems. Marx's site visit occurred during relatively dry late fall conditions. These conditions resulted in relatively dry conditions in the small central wetlands, in the forested floodplain wetland at the north end of the site, and the forested wetland along the drain on the west boundary of the site. The large forested wetland at the south end of the site exhibited saturated soils throughout most of its area.

Marx's inspection of these wetland areas found a predominance of hydrophytic vegetation in all of the areas. Delineations are not typically conducted in late fall due to the onset plant dormancy in the herbaceous vegetation, making many species difficult to identify, while some senesce and are no longer visible. Some remain identifiable in dormant form. Based upon this inspection, Marx believes the Site contains six areas of wetland, as indicated above. This finding is supported by the National Wetland Inventory Map, which show the large wetland areas at the north and south ends of the site, but not the small wetlands near the center or the narrow strip of wetland along the site's west boundary and by the Township's Wetland Inventory Map which shows all six areas. These include the floodplain forest wetland in the northeast corner of the site, the forested wetland that makes up approximately the southern third of the site, the linear wetland along the drain on the site's west boundary, and the two small isolated wetlands near the the center of the site, and the forested depression near the site's southwest corner (refer to Figure 4: Township Wetland Map and Figure 5: National Wetland Inventory Map in Appendix I).

#### 4.6 Special Flood Hazard Area

Flood Hazard Areas are those which are most likely to be inundated during flood events. Flood Hazard Areas are regulated by local, state, and federal regulations designed to reduce the damage to structures



during floods. The regulations apply to areas within 100-year floodplains, which are defined by a one percent (1%) annual probability of flood occurrence. These areas are mapped by the Federal Emergency Management Agency on Flood Insurance Rate Maps, or FIRMs. These maps were developed using flow modeling and the existing USGS topographic maps. The modeling produces an elevation associated with 100-year flood events, and areas below these elevations are designated as the 100-year floodplains.

The FIRM for the subject area shows that a significant portion of the Site is included within the 100-year floodplain, which means that it is regulated pursuant to the floodplain regulatory statutes (refer to Figure 6: Flood Insurance Rate Map in Appendix I). Portions of the floodplains of the Red Cedar River and Herron Creek occur on the site. The Floodplain Forest at the north end of the site is within the Red Cedar floodplain, and the Forested Wetland in the south part of the site is within the Herron Creek floodplain. The FIRM shows the floodplain elevation in the north part of the site to be 842 feet above sea level, which the elevation associated with Herron Creek on the south part of the property is 843. There is also a narrow corridor of floodplain along the drain that runs along the site's west boundary. When an area is within the floodplain, a permit must be obtained to allow construction within the floodplain, and the project designed to the flood proofing standards that would minimize the risk of flood damage.

Sometimes FIRM maps can incorrectly show areas of 100-year floodplain. In such cases, a site's topography can be surveyed using modern techniques. When such studies show that the mapped floodplain is above the determined flood elevation or that the FIRM is otherwise inaccurate, this information can be sent to the National Flood Insurance Program to obtain a Letter of Map Amendment (LOMA) which officially changes the area included within the floodplain. It does not appear that this site will require such additional work.

#### 4.7 Floodways

A floodway is the portion of the floodplain that is required to carry and discharge flood waters during a flood event. They have more rapidly moving water during flood events. They include river channels, upper banks, and adjacent areas that effectively become part of the water transit process during a flood. The FIRM for Meridian Township shows that there are two floodway areas on the subject property, one along the Red Cedar River and the other along Herron Creek. Both occupy much of the wetland area adjacent to these watercourses. No



activities at the Site will have any impact upon these floodway areas, nor will these floodway areas have any impact on development at the Site.

#### 4.8 Water Bodies

Streams, rivers, lakes, and many ponds are afforded legal protection under a combination of Township, county, state, and federal regulations pertaining to wetlands, flood prone areas, and water bodies. Any filling or alteration of these areas would typically require one or more permits from state agencies, county agencies, federal agencies, or Meridian Township.

There are three open water bodies on or directly adjacent to the Site. These include the Herron Creek, the Red Cedar River, and the drain along the site's west boundary that functions as a stream. Activities on the Site are not expected to directly impact these water bodies or any others.

#### 4.9 Soils

The NRCS digital county soils map identifies the soils on the Site. The map identifies six soil types: Houghton muck, 0 to 1 percent slopes (11.7% of the site), Oshtemo-Spinks loamy sands, 0 to 6 percent slopes (34% of the site), Oshtemo-Spinks loamy sands 6 to 12 % slopes 43.3% of the site, Sebewa loam, 0 to 2 percent slopes (3.4 % of the site), Urban land-Boyer-Spinks complex, 0 to 10 % slopes (1% of the site) and Urban land-Fluvaquents complex (6.4% of the site).

(refer to Figure 8: County Soils Survey Map in Appendix I).

The Oshtemo Spinks loamy sands found in the higher upland parts of the site, consist of well drained, moderately rapidly permeable soils on outwash plans, and are formed in moderately coarse and coarse textured deposits. Houghton muck, which is found in the large southern wetland on the site, form in deep organic deposits formed in stable wetland areas, and have organic material greater than 51 inches deep. They are very poorly drained soils as are typically found in these wetlands. Sebewa loam, also found in the southern wetland and in the small wetland in the southwest corner of the site, is also a poorly drained soil found in outwash plains. It is a hydric soil, as is the Houghton muck, and is typically found in wetland areas. Urban land-Fluvaquents complex soils are found in urban area floodplains, and typically include 55 percent urban land.

Site balancing, filling, and subsurface excavation activities will take place within the limits of disturbance which are contained within the



areas of the well drained soil types. The wetland and floodplain areas will remain undisturbed by the project. The most suitable soils will be utilized on the Site during parking lot, driveway, and building construction. Unsuitable and excess soil will be trucked to authorized off-site areas.

Soil erosion and sedimentation control (SESC) measures will be installed and maintained by the developer throughout the construction period, as required by the State of Michigan, Meridian Township, and the Ingham County Drain Commissioner, and will be removed once the entire Site has been stabilized. These measures will significantly reduce the possibility of soil erosion and the water transport of these soil materials, which could cause the degradation of areas receiving the Site's stormwater.

#### 4.10 Identified Areas of Groundwater Vulnerability

Areas of groundwater vulnerability are those areas where the hydrologic and geologic surface and subsurface setting makes the groundwater more vulnerable to contamination than in other areas. The 2005 Meridian Township Master Plan groundwater vulnerability map shows areas identified as being vulnerable (refer to Figure 7: Identified Areas of Groundwater Vulnerability in Appendix I). This map is based upon the aggregation of four different vulnerability assessments or estimates. A small part of the subject Site falls within one of the designated areas. This area is located in the southeast corner of the site, within the large forested wetland that makes up the southern third of the site. This area will not be disturbed in any way by the proposed project. Therefore all construction activity on the Site will be outside the bounds of Identified Areas of Groundwater Vulnerability. Stormwater on the site will be collected and treated in accordance with local regulations designed to protect water quality and runoff volumes.

#### 4.11 Slopes Greater than 20 Percent

Slopes of greater than 20% are highly susceptible to soil erosion which can lead to sedimentation in other on and off-site areas such as ponds, streams and lakes. On the Site, slopes steeper than 20% do not exist. While slopes do exist adjacent to the southern Forested Wetland and the northern Floodplain Forest, the slopes are less than 20%. Even though the slopes are less than 20%, they will not be disturbed by the proposed project.

The development project will observe the structure and grading setbacks provided in Meridian Township ordinances. During construction, the spoils piles will be removed. Any slopes created by



the project that are over 20% will be intentionally designed and stabilized with appropriate landscaping materials. Soil erosion and sedimentation measures will be placed and maintained in the areas necessary to control any erosion that may occur during construction.

#### 4.12 Wildlife

Evidence of wildlife presence has been observed throughout the Site in the form of tracks, droppings, and holes, the amount of animal usage being greater than in the surrounding areas as this is a large undeveloped area with forest, field, and swamp areas surrounded by urbanized development. Evidence of white tailed deer (*Odocoileus virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*), gray squirrels (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and paper wasps (species undetermined) were observed. Squirrel evidence was mainly in the forested areas. Deer usage seemed to be throughout the site. One freshly dug animal den which was found may be used by raccoon or woodchuck (*Marmota monax*), though this was not certain. It is highly likely that the Site also serves as foraging or resting ground for numerous other insects and birds, such as Monarch butterflies (*Danaus plexippus*), honeybees (*Apis mellifera*), robins (*Turdus migratorius*), mourning doves (*Zenaida macroura*), and black capped chickadees (*Poecile atricapillus*).

Overall, the fauna at the Site can be viewed as urban and suburban wildlife. Urban and suburban wildlife species are common across the Midwest. Urban and suburban wildlife are mainly generalists species that have wide tolerance in diet and behavioral flexibility. They are very unlike threatened and endangered species, which are almost all specialized and intolerant of numerous human disturbances. Some urban and suburban wildlife species have become so common that they are actually reducing the populations of less common native species (e.g. raccoons that feed on human food waste and garbage are believed to be a factor behind a widespread decline in turtle numbers). Therefore the decline in certain very abundant wildlife species should not be assumed to bear negative consequences. Wildlife will be displaced to a degree by the proposed development, but even after the development is completed, some of these common urban and suburban wildlife species will continue to use the Site.

Photograph 11. Animal usage of Site. Here a possible raccoon den in the east Tree Line.      Photograph 12. Animal usage of Site. Here is an old paper wasp nest on a fallen branch.

#### 5.0 CONCLUSIONS AND RECOMMENDATIONS



The proposed Site was reviewed for remnant and existing natural resources and features. The Site contains three major habitats and 4 small wetland areas. The Field/Tree Plantings habitat occupies most of the high upland area in the middle of the site, the Floodplain Forest occupies the northeast corner of the site adjacent to the Red Cedar River, and the Forested Wetland habitat is in the southern third of the site. The Site is vacant, but contains the road end of Hannah Boulevard. The Site apparently contains six wetland areas, two water bodies, and contains areas of floodplain and floodway. The Site is rolling, a result of its glacial moraine past and location adjacent to the Red Cedar River. The soils are likely original to the Site, and are upland loamy sands and muck soils that formed under what was once a beech maple forest, and under the large wetland area. The upland portion of the Site was once a small portion of that upland forest which covered thousands of acres, but was cut down to make way for agriculture. Within the last few decades this particular Site has been surrounded by residential and growing commercial development.

Wildlife that use the site are common in the urban and suburban landscape and their populations won't be significantly affected by the development of this site. Vegetation on the Site includes planted pines, native trees, and relatively common native and non-native groundcover species. The loss of vegetation due to development on the Site will occur, though the species lost are very unlikely to include any that are locally rare (i.e. rare county-wide) or state threatened and endangered. There are numerous trees on the Site which are in good condition, including both planted pines and unplanted hardwoods. The only significant remaining natural heritage on this Site appears to be the original topography, soils, and the relatively undisturbed areas of the floodplain forest and the southern forested wetland. The commercialized land use context, vehicle access, and economic valuation might limit some design options, but for this Site the primary likelihood of preserving natural resource values within the developed would be associated with incorporating some of the larger or native trees into the landscape design, and thereby preserving them on the post development landscape. The proposed development will not impact the larger wetlands on the site, nor will it encroach into the floodway of the adjacent waterways.



Eyde Company  
Hannah Farms East

January 25, 2016

Should you have any questions regarding this or any other matter,  
please feel free to contact our office at (517) 898-4187.  
Sincerely,

Marx Wetlands, LLC



Gary F. Marx, Ph.D.



APPENDIX I

Figure 1: Site Location Map

Figure 2: Aerial Imagery Map

Figure 3: Presettlement Vegetation/MNFI ca. 1800 map

Figure 4: Township Wetland Map

Figure 5: National Wetland Inventory Map

Figure 6: Flood Insurance Rate Map

Figure 7: Identified Areas of Groundwater Vulnerability

Figure 8: County Soils Survey Map

APPENDIX II

Vegetation Lists and FQA

APPENDIX III

Tree Survey Results



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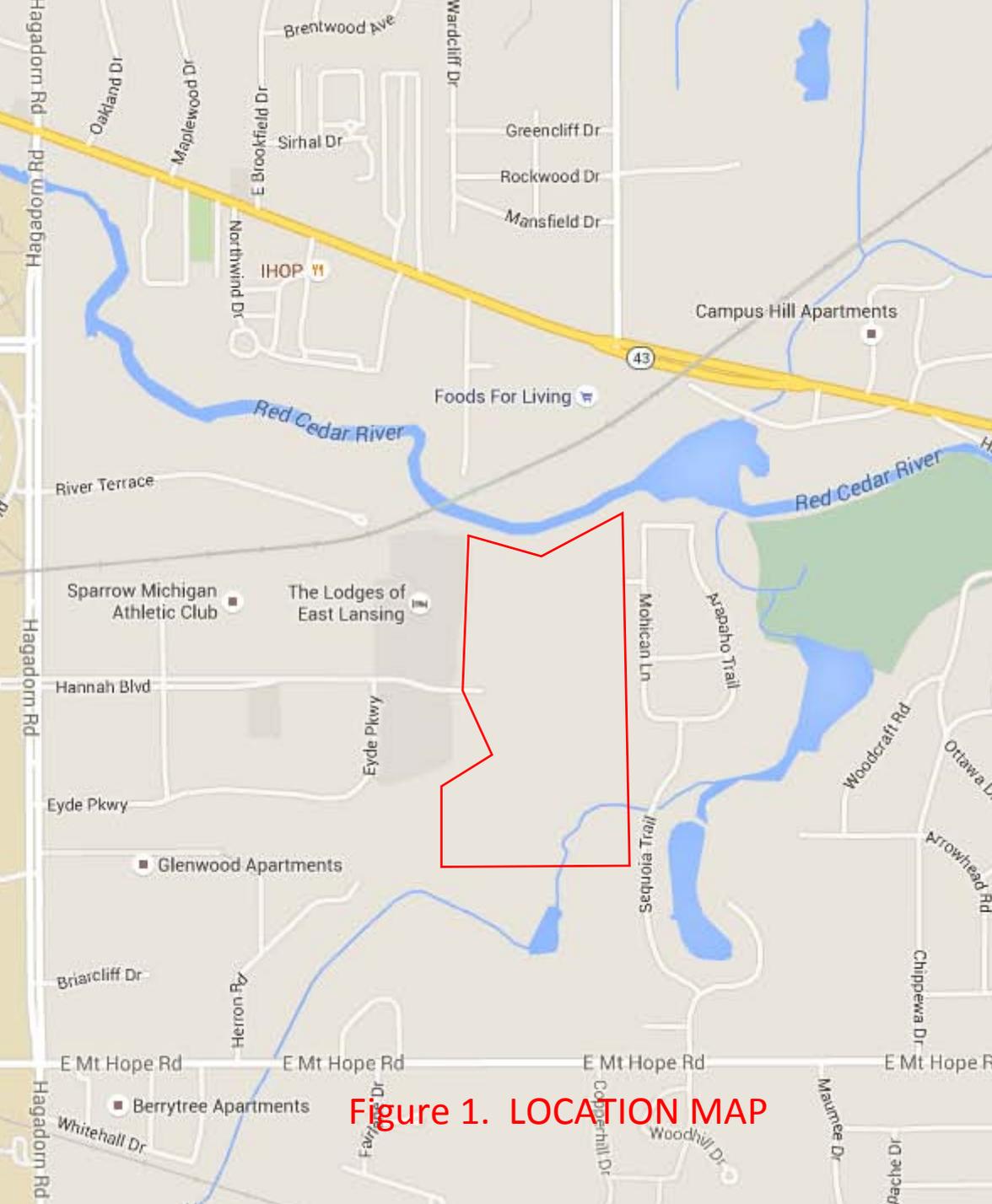
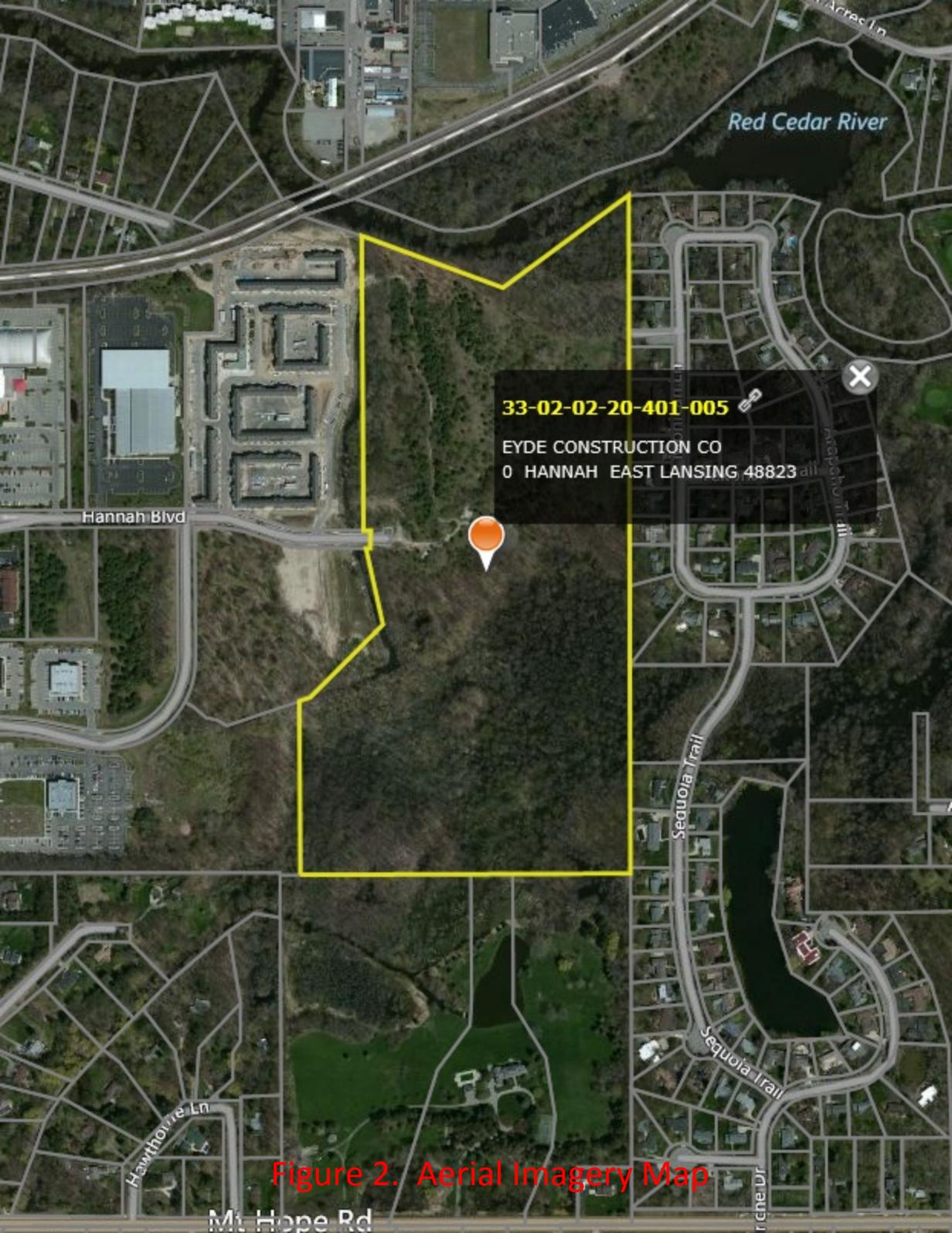


Figure 1. LOCATION MAP



Red Cedar River

**33-02-02-20-401-005**  
EYDE CONSTRUCTION CO  
0 HANNAH EAST LANSING 48823

Hannah Blvd

Sequoia Trail

Sequoia Trail

Hawthorne Ln

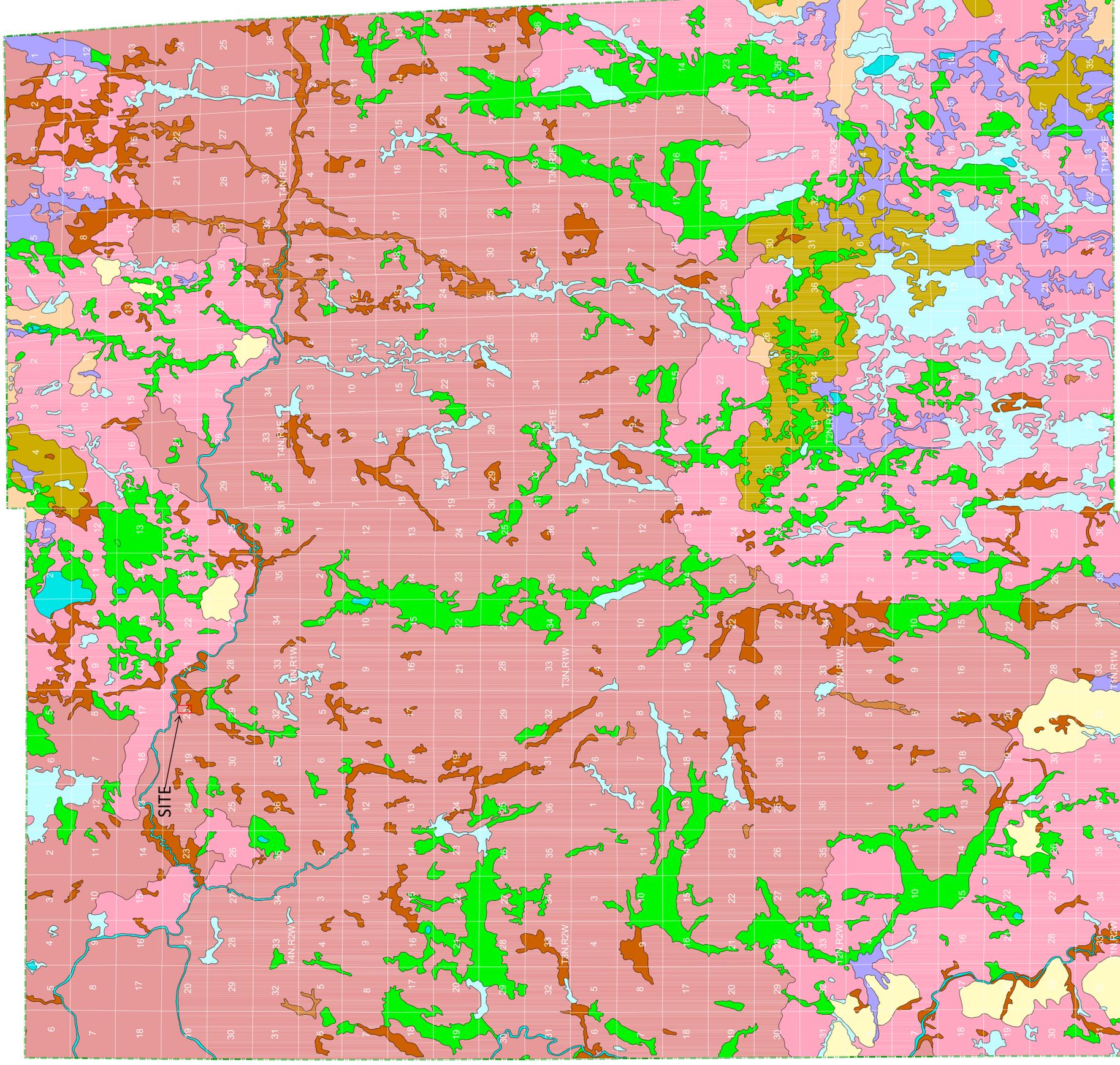
Mt Hope Rd

Figure 2. Aerial Imagery Map

# Vegetation circa 1800 of Ingham County, Michigan

An Interpretation of the General Land Office Surveys

By P. J. Comer and D. A. Albert  
Michigan Natural Features Inventory  
1997

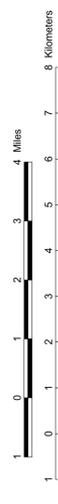


## Legend

- ✓ ASPEN-BIRCH FOREST
  - ✓ BEECH-SUGAR MAPLE FOREST
  - ✓ BEECH-SUGAR MAPLE-HEMLOCK FOREST
  - BLACK ASH SWAMP
  - BLACK OAK BARREN
  - CEDAR SWAMP
  - GRASSLAND
  - HEMLOCK-WHITE PINE FOREST
  - HEMLOCK-YELLOW BIRCH FOREST
  - JACK PINE-RED PINE FOREST
  - LAKE/RIVER
  - ✓ MIXED CONIFER SWAMP
  - ✓ MIXED HARDWOOD SWAMP
  - ✓ MIXED OAK FOREST
  - ✓ MIXED OAK SAVANNA
  - ✓ MIXED PINE-OAK FOREST
  - ✓ MUSKEG/BOG
  - ✓ OAK-HICKORY FOREST
  - ✓ OAK-PINE BARREN
  - ✓ PINE BARREN
  - ✓ SAND DUNE
  - ✓ SHRUB SWAMP/EMERGENT MARSH
  - ✓ SPRUCE-FIR-CEDAR FOREST
  - ✓ WET PRAIRIE
  - WHITE PINE-MIXED HARDWOOD FOREST
  - WHITE PINE-RED PINE FOREST
  - WHITE PINE-WHITE OAK FOREST
- ✓ = LAND COVER TYPE PRESENT ON THIS MAP



Scale 1:80,000



Map Projection: Lambert Conformal Conic

SOURCE: Comer, P. J., D. A. Albert, H. A. Wells, B. L. Hart, J. B. Raab,  
D. L. Price, D. W. Kashian, F. A. Comer, D. W. Schuen (Map Interpretation),  
C. B. Austin, L. J. Salbreid, K. M. Crook, L. Prange-Gogarty, J. G. Spitzley,  
C. J. Belsky, J. S. Salinger (Digital Map Production), 1997.  
Michigan Presettlement Vegetation, as interpreted from the General  
Land Office Surveys 1816-1865.  
Michigan Natural Features Inventory, Lansing, MI. Digital Map.



MICHIGAN STATE  
UNIVERSITY  
EXTENSION



Figure 3. Presettlement Vegetation/MNFI cs. 1800 Map

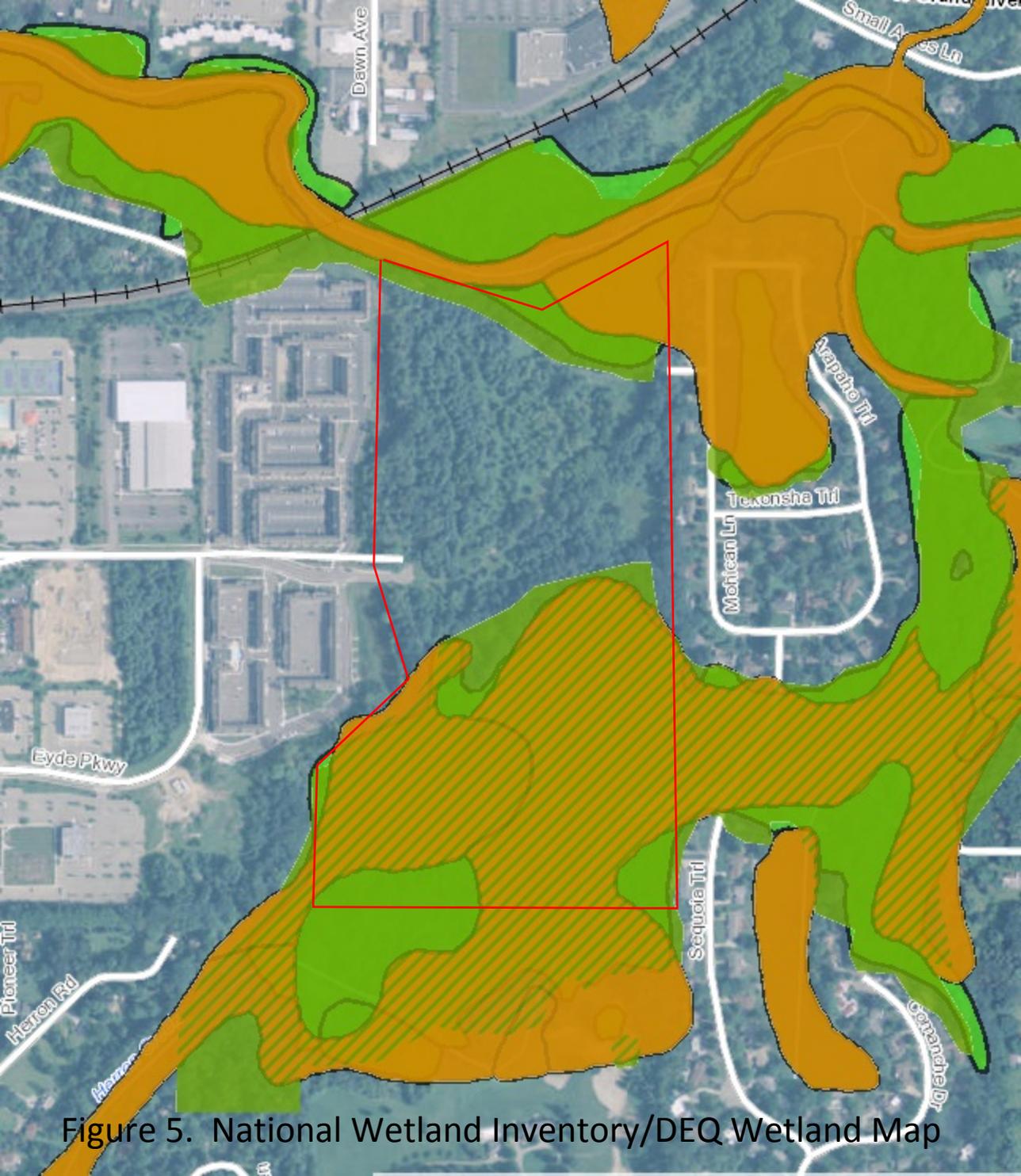


Figure 5. National Wetland Inventory/DEQ Wetland Map



Map 7-3  
GROUNDWATER VULNERABILITY

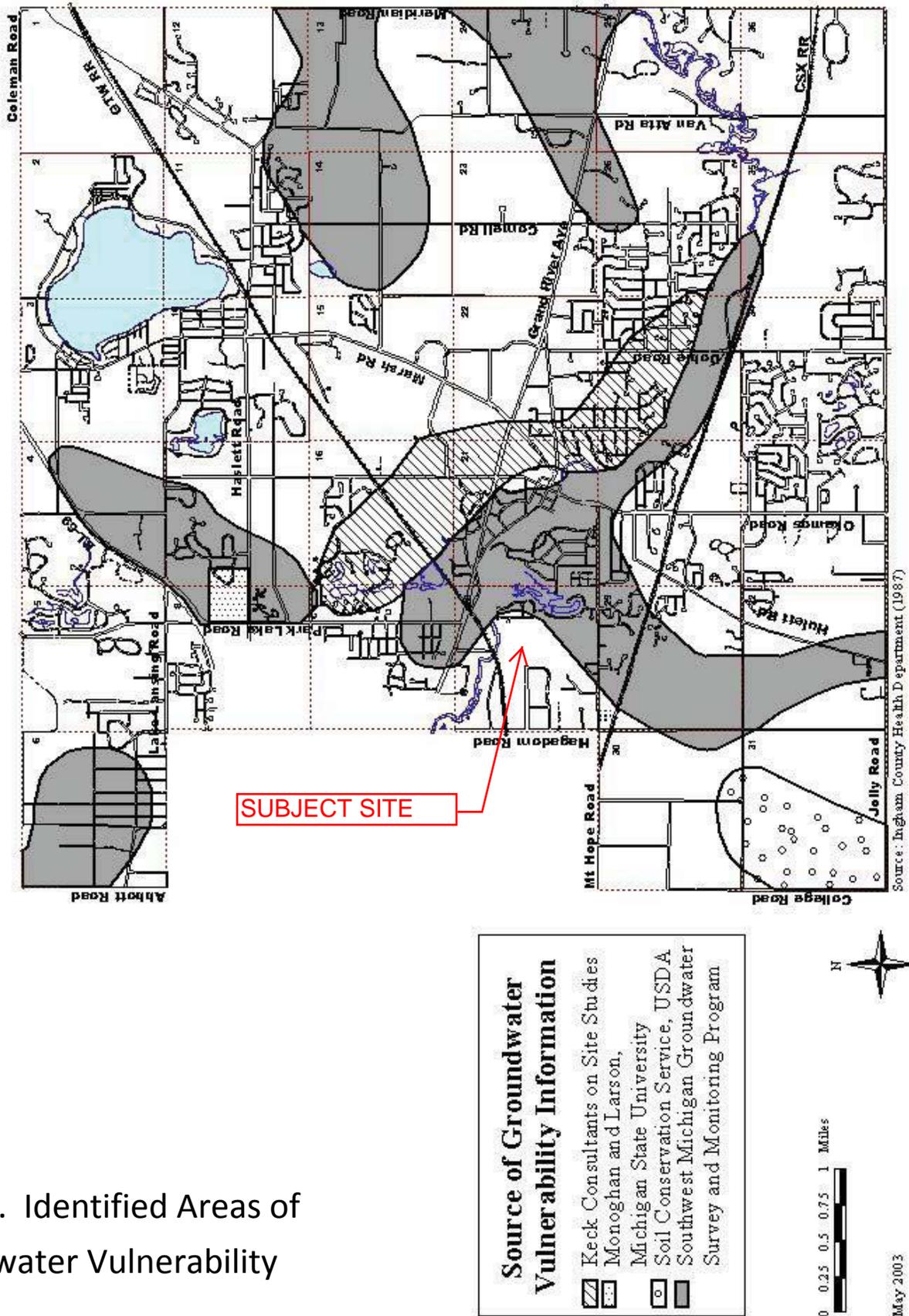
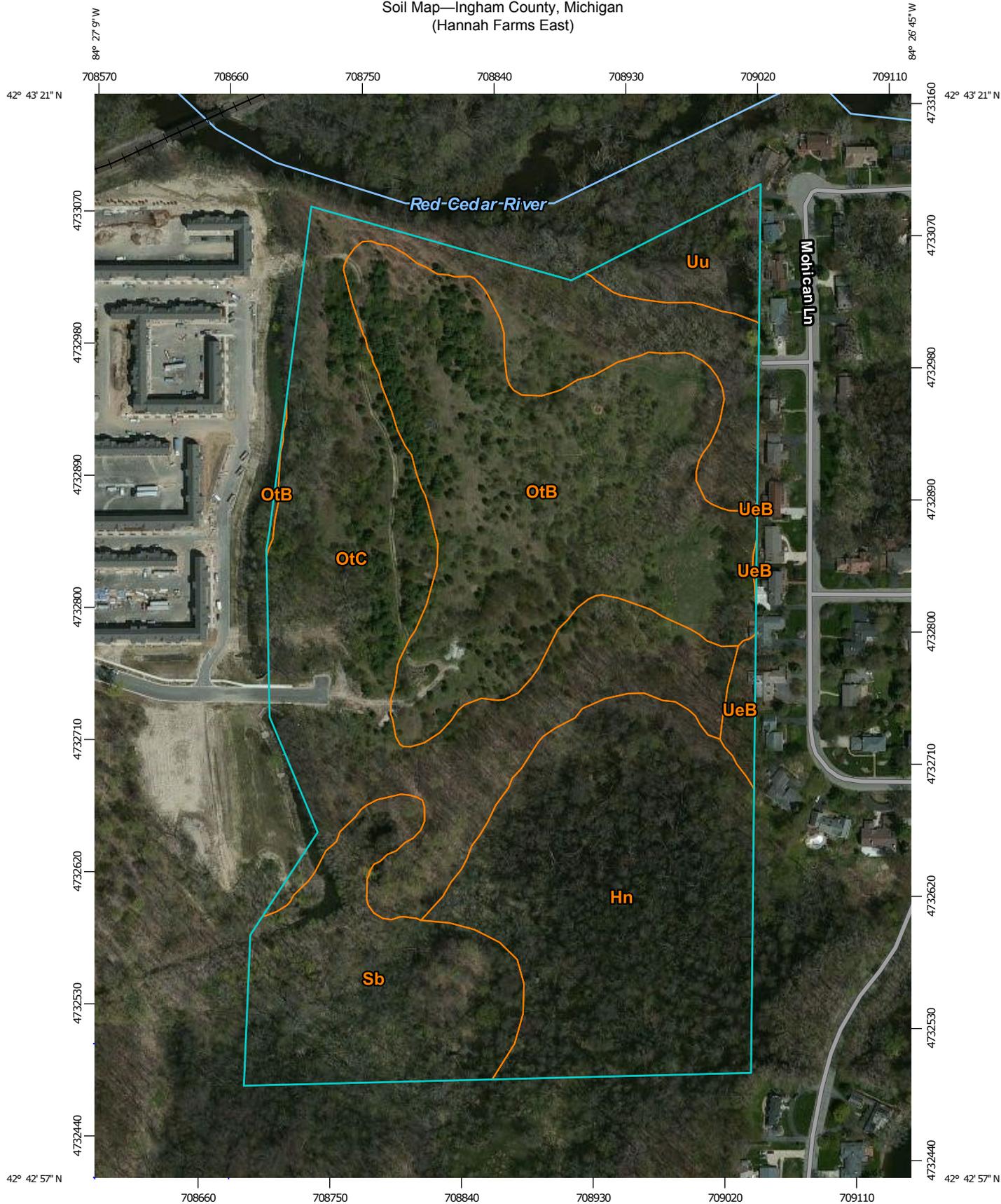
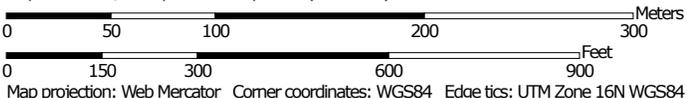


Figure 7. Identified Areas of Groundwater Vulnerability

Soil Map—Ingham County, Michigan  
(Hannah Farms East)



Map Scale: 1:3,600 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84



Figure 8. County  
Soil Survey Map



## MAP LEGEND

|  |   |
|--|---|
|  Area of Interest (AOI) |  Spoil Area            |
|  Soil Map Unit Polygons |  Stony Spot            |
|  Soil Map Unit Lines    |  Very Stony Spot       |
|  Soil Map Unit Points   |  Wet Spot              |
|  Soil Map Unit Points   |  Other                 |
|  Soil Map Unit Points   |  Special Line Features |
|  Soil Map Unit Points   |  Streams and Canals    |
|  Soil Map Unit Points   |  Rails                 |
|  Soil Map Unit Points   |  Interstate Highways   |
|  Soil Map Unit Points   |  US Routes             |
|  Soil Map Unit Points   |  Major Roads           |
|  Soil Map Unit Points   |  Local Roads           |
|  Soil Map Unit Points   |  Aerial Photography    |
|  Soil Map Unit Points   |   |
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|  Soil Map Unit Points |   |
|  Soil Map Unit Points |   |

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.  
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Ingham County, Michigan  
 Survey Area Data: Version 13, Sep 18, 2015

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

Date(s) aerial images were photographed: Data not available.

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

## Map Unit Legend

| Ingham County, Michigan (MI065)    |   |              |                |
|------------------------------------|---|--------------|----------------|
| Map Unit Symbol                    | Map Unit Name   | Acres in AOI | Percent of AOI |
| Hn                                 | Houghton muck, 0 to 1 percent slopes                    | 10.5         | 22.7%          |
| OtB                                | Oshtemo-Spinks loamy sands, 0 to 6 percent slopes       | 12.4         | 26.6%          |
| OtC                                | Oshtemo-Spinks loamy sands, 6 to 12 percent slopes      | 15.7         | 33.9%          |
| Sb                                 | Sebewa loam, 0 to 2 percent slopes                      | 5.9          | 12.7%          |
| UeB                                | Urban land-Boyer-Spinks complex, 0 to 10 percent slopes | 0.4          | 0.9%           |
| Uu                                 | Urban land-Fluvaquents complex                          | 1.5          | 3.2%           |
| <b>Totals for Area of Interest</b> |   | <b>46.4</b>  | <b>100.0%</b>  |

Tree Survey Data - Hannah Farms East Site

| Tag # | Scientific Name               | Common Name  | DBH               | Condition | Multiple | TOTALS          |                               |                 |
|-------|-------------------------------|--------------|-------------------|-----------|----------|-----------------|-------------------------------|-----------------|
|       |                               |              |                   |           |          | Scientific Name | Common Name                   | Count           |
| 1     | <i>Juglans nigra</i>          | Black Walnut | 16                | G         |          |                 |                               |                 |
| 2     | <i>Juglans nigra</i>          | Black Walnut | 21                | G         |          | 1               | <i>Acer negundo</i>           | Box Elder       |
| 3     | <i>Juglans nigra</i>          | Black Walnut | 16.5              | G         |          | 2               | <i>Acer rubrum</i>            | Red Maple       |
| 4     | <i>Tilia americana</i>        | Basswood     | 14                | G         |          | 3               | <i>Acer saccharinum</i>       | Silver Maple    |
| 5     | <i>Prunus serotina</i>        | Black Cherry | 14,14,14          | G         | M        | 4               | <i>Acer saccharum</i>         | Sugar Maple     |
| 6     | <i>Tilia americana</i>        | Basswood     | 18,13.5,13        | G         | M        | 5               | <i>Celtis occidentalis</i>    | Hackberry       |
| 7     | <i>Tilia americana</i>        | Basswood     | 17                | F         |          | 6               | <i>Fagus grandifolia</i>      | American Beech  |
| 8     | <i>Tilia americana</i>        | Basswood     | 13,15,15          | G         | M        | 7               | <i>Fraxinus pennsylvanica</i> | Green Ash       |
| 9     | <i>Tilia americana</i>        | Basswood     | 12.5              | F         |          | 8               | <i>Juglans nigra</i>          | Black Walnut    |
| 10    | <i>Tilia americana</i>        | Basswood     | 16                | G         |          | 9               | <i>Ostrya virginiana</i>      | Ironwood        |
| 11    | <i>Tilia americana</i>        | Basswood     | 17,13,12          | G         | M        | 10              | <i>Pinus strobus</i>          | White Pine      |
| 12    | <i>Tilia americana</i>        | Basswood     | 20,18             | G         | M        | 11              | <i>Pinus sylvestris</i>       | Scotch Pine     |
| 13    | <i>Tilia americana</i>        | Basswood     | 17.5              | G         |          | 12              | <i>Platanus occidentalis</i>  | Sycamore        |
| 14    | <i>Prunus serotina</i>        | Black Cherry | 12,14.5           | G         | M        | 13              | <i>Populus deltoides</i>      | Cottonwood      |
| 15    | <i>Tilia americana</i>        | Basswood     | 16.5              | G         |          | 14              | <i>Populus tremuloides</i>    | Quaking Aspen   |
| 16    | <i>Tilia americana</i>        | Basswood     | 13,12             | G         | M        | 15              | <i>Prunus serotina</i>        | Black Cherry    |
| 17    | <i>Prunus serotina</i>        | Black Cherry | 12                | F         |          | 16              | <i>Quercus alba</i>           | White Oak       |
| 18    | <i>Tilia americana</i>        | Basswood     | 12,18,18,12       | G         | M        | 17              | <i>Quercus macrocarpa</i>     | Bur Oak         |
| 19    | <i>Prunus serotina</i>        | Black Cherry | 15.5,15.5         | G         | M        | 18              | <i>Quercus bicolor</i>        | Swamp White Oak |
| 20    | <i>Tilia americana</i>        | Basswood     | 13,22,22,12,21,20 | G         | M        | 19              | <i>Quercus rubra</i>          | Red Oak         |
| 21    | <i>Juglans nigra</i>          | Black Walnut | 20.5              | G         |          | 20              | <i>Tilia americana</i>        | Basswood        |
| 22    | <i>Juglans nigra</i>          | Black Walnut | 22                | G         |          | 21              | <i>Ulmus americana</i>        | American Elm    |
| 23    | <i>Acer saccharum</i>         | Sugar Maple  | 13.5              | G         |          | 22              | <i>Ulmus pumila</i>           | Siberian Elm    |
| 24    | <i>Prunus serotina</i>        | Black Cherry | 14                | G         |          |                 |                               |                 |
| 25    | <i>Quercus alba</i>           | White Oak    | 20                | G         |          |                 |                               |                 |
| 26    | <i>Quercus rubra</i>          | Red Oak      | 21.5              | G         |          |                 |                               |                 |
| 27    | <i>Quercus macrocarpa</i>     | Bur Oak      | 22                | G         |          | 1               | <i>Populus deltoides</i>      | Cottonwood      |
| 28    | <i>Quercus rubra</i>          | Red Oak      | 14                | G         |          | 2               | <i>Quercus rubra</i>          | Red Oak         |
| 29    | <i>Acer saccharum</i>         | Sugar Maple  | 15.5              | G         |          | 3               | <i>Populus deltoides</i>      | Cottonwood      |
| 30    | <i>Quercus rubra</i>          | Red Oak      | 23.5              | G         |          | 4               | <i>Quercus rubra</i>          | Red Oak         |
| 31    | <i>Prunus serotina</i>        | Black Cherry | 15,16             | G         | M        | 5               | <i>Acer saccharinum</i>       | Silver Maple    |
| 32    | <i>Quercus rubra</i>          | Red Oak      | 20,16.5           | G         | M        | 6               | <i>Acer saccharum</i>         | Sugar Maple     |
| 33    | <i>Tilia americana</i>        | Basswood     | 14.5              | F         |          | 7               | <i>Quercus rubra</i>          | Red Oak         |
| 34    | <i>Acer saccharinum</i>       | Silver Maple | 42                | G         |          | 8               | <i>Quercus rubra</i>          | Red Oak         |
| 35    | <i>Populus deltoides</i>      | Cottonwood   | 15                | G         |          | 9               | <i>Fraxinus pennsylvanica</i> | Green Ash       |
| 36    | <i>Populus deltoides</i>      | Cottonwood   | 14                | G         |          | 10              | <i>Populus deltoides</i>      | Cottonwood      |
| 37    | <i>Populus deltoides</i>      | Cottonwood   | 14.5              | G         |          | 11              | <i>Populus deltoides</i>      | Cottonwood      |
| 38    | <i>Populus deltoides</i>      | Cottonwood   | 17.5              | G         |          | 12              | <i>Quercus rubra</i>          | Red Oak         |
| 39    | <i>Populus deltoides</i>      | Cottonwood   | 12                | F         |          | 13              | <i>Quercus rubra</i>          | Red Oak         |
| 40    | <i>Populus deltoides</i>      | Cottonwood   | 14                | G         |          | 14              | <i>Prunus serotina</i>        | Black Cherry    |
| 41    | <i>Populus deltoides</i>      | Cottonwood   | 13                | G         |          | 15              | <i>Populus deltoides</i>      | Cottonwood      |
| 42    | <i>Populus deltoides</i>      | Cottonwood   | 18                | G         |          | 16              | <i>Prunus serotina</i>        | Black Cherry    |
| 43    | <i>Ulmus pumila</i>           | Siberian Elm | 20.5              | F         |          | 17              | <i>Prunus serotina</i>        | Black Cherry    |
| 44    | <i>Populus deltoides</i>      | Cottonwood   | 12                | G         |          |                 |                               |                 |
| 45    | <i>Populus deltoides</i>      | Cottonwood   | 19                | G         |          |                 |                               |                 |
| 46    | <i>Populus deltoides</i>      | Cottonwood   | 12                | G         |          |                 |                               |                 |
| 47    | <i>Acer saccharum</i>         | Sugar Maple  | 22                | G         |          |                 |                               |                 |
| 48    | <i>Acer saccharum</i>         | Sugar Maple  | 16                | G         |          |                 |                               |                 |
| 49    | <i>Acer saccharum</i>         | Sugar Maple  | 25.5              | G         |          |                 |                               |                 |
| 50    | <i>Acer saccharum</i>         | Sugar Maple  | 15.5              | G         |          |                 |                               |                 |
| 51    | <i>Acer saccharum</i>         | Sugar Maple  | 17.5              | G         |          |                 |                               |                 |
| 52    | <i>Acer saccharum</i>         | Sugar Maple  | 21                | G         |          |                 |                               |                 |
| 53    | <i>Acer saccharum</i>         | Sugar Maple  | 25                | G         |          |                 |                               |                 |
| 54    | <i>Acer saccharum</i>         | Sugar Maple  | 19.5              | G         |          |                 |                               |                 |
| 55    | <i>Acer saccharum</i>         | Sugar Maple  | 18                | G         |          |                 |                               |                 |
| 56    | <i>Acer saccharinum</i>       | Silver Maple | 20.5              | G         |          |                 |                               |                 |
| 57    | <i>Acer saccharinum</i>       | Silver Maple | 27                | G         |          |                 |                               |                 |
| 58    | <i>Acer saccharinum</i>       | Silver Maple | 29                | G         |          |                 |                               |                 |
| 59    | <i>Acer saccharinum</i>       | Silver Maple | 22                | G         |          |                 |                               |                 |
| 60    | <i>Fraxinus pennsylvanica</i> | Green Ash    | 20                | P         |          |                 |                               |                 |
| 61    | <i>Acer saccharum</i>         | Sugar Maple  | 16.5              | G         |          |                 |                               |                 |
| 62    | <i>Acer saccharum</i>         | Sugar Maple  | 28                | G         |          |                 |                               |                 |
| 63    | <i>Acer saccharum</i>         | Sugar Maple  | 14.5              | G         |          |                 |                               |                 |
| 64    | <i>Acer saccharum</i>         | Sugar Maple  | 18                | G         |          |                 |                               |                 |
| 65    | <i>Acer saccharum</i>         | Sugar Maple  | 22.5              | G         |          |                 |                               |                 |
| 66    | <i>Acer saccharum</i>         | Sugar Maple  | 20.5              | F         |          |                 |                               |                 |
| 67    | <i>Acer saccharum</i>         | Sugar Maple  | 19                | G         |          |                 |                               |                 |
| 68    | <i>Acer saccharum</i>         | Sugar Maple  | 18                | G         |          |                 |                               |                 |
| 69    | <i>Acer saccharum</i>         | Sugar Maple  | 13.5              | G         |          |                 |                               |                 |
| 70    | <i>Prunus serotina</i>        | Black Cherry | 13.5              | F         |          |                 |                               |                 |
| 71    | <i>Acer saccharum</i>         | Sugar Maple  | 16                | G         |          |                 |                               |                 |
| 72    | <i>Acer saccharum</i>         | Sugar Maple  | 24                | G         |          |                 |                               |                 |
| 73    | <i>Quercus rubra</i>          | Red Oak      | 26                | G         |          |                 |                               |                 |
| 74    | <i>Acer saccharum</i>         | Sugar Maple  | 16                | G         |          |                 |                               |                 |
| 75    | <i>Prunus serotina</i>        | Black Cherry | 12.5              | F         |          |                 |                               |                 |
| 76    | <i>Acer saccharum</i>         | Sugar Maple  | 13                | G         |          |                 |                               |                 |
| 77    | <i>Quercus rubra</i>          | Red Oak      | 26                | G         |          |                 |                               |                 |
| 78    | <i>Quercus rubra</i>          | Red Oak      | 14                | G         |          |                 |                               |                 |
| 79    | <i>Prunus serotina</i>        | Black Cherry | 14                | G         |          |                 |                               |                 |
| 80    | <i>Prunus serotina</i>        | Black Cherry | 14                | G         |          |                 |                               |                 |
| 81    | <i>Prunus serotina</i>        | Black Cherry | 13.5              | G         |          |                 |                               |                 |
| 82    | <i>Quercus rubra</i>          | Red Oak      | 18                | G         |          |                 |                               |                 |
| 83    | <i>Prunus serotina</i>        | Black Cherry | 15.5              | G         |          |                 |                               |                 |
| 84    | <i>Quercus rubra</i>          | Red Oak      | 14                | G         |          |                 |                               |                 |
| 85    | <i>Quercus rubra</i>          | Red Oak      | 13                | G         |          |                 |                               |                 |
| 86    | <i>Acer saccharum</i>         | Sugar Maple  | 26                | G         |          |                 |                               |                 |
| 87    | <i>Acer saccharum</i>         | Sugar Maple  | 16                | G         |          |                 |                               |                 |
| 88    | <i>Acer saccharum</i>         | Sugar Maple  | 20,16,20          | G         | M        |                 |                               |                 |
| 89    | <i>Prunus serotina</i>        | Black Cherry | 18                | G         |          |                 |                               |                 |
| 90    | <i>Prunus serotina</i>        | Black Cherry | 16                | G         |          |                 |                               |                 |
| 91    | <i>Quercus rubra</i>          | Red Oak      | 25                | G         |          |                 |                               |                 |
| 92    | <i>Quercus rubra</i>          | Red Oak      | 15                | G         |          |                 |                               |                 |
| 93    | <i>Acer saccharum</i>         | Sugar Maple  | 12.5              | G         |          |                 |                               |                 |
| 94    | <i>Quercus rubra</i>          | Red Oak      | 15.5              | G         |          |                 |                               |                 |
| 95    | <i>Quercus rubra</i>          | Red Oak      | 16                | G         |          |                 |                               |                 |
| 96    | <i>Quercus rubra</i>          | Red Oak      | 19                | G         |          |                 |                               |                 |
| 97    | <i>Quercus rubra</i>          | Red Oak      | 16.5              | G         |          |                 |                               |                 |
| 98    | <i>Prunus serotina</i>        | Black Cherry | 30.5              | G         |          |                 |                               |                 |
| 99    | <i>Tilia americana</i>        | Basswood     | 18                | G         |          |                 |                               |                 |
| 100   | <i>Prunus serotina</i>        | Black Cherry | 30                | G         |          |                 |                               |                 |
| 102   | <i>Tilia americana</i>        | Basswood     | 13                | G         |          |                 |                               |                 |
| 103   | <i>Tilia americana</i>        | Basswood     | 16.5              | G         |          |                 |                               |                 |
| 104   | <i>Tilia americana</i>        | Basswood     | 20                | G         |          |                 |                               |                 |
| 105   | <i>Acer saccharum</i>         | Sugar Maple  | 12                | G         |          |                 |                               |                 |
| 106   | <i>Prunus serotina</i>        | Black Cherry | 19                | G         |          |                 |                               |                 |
| 107   | <i>Acer saccharum</i>         | Sugar Maple  | 15                | P         |          |                 |                               |                 |
| 108   | <i>Juglans nigra</i>          | Black Walnut | 15.5,16.5         | G         | M        |                 |                               |                 |
| 109   | <i>Prunus serotina</i>        | Black Cherry | 12.5              | F         |          |                 |                               |                 |

| LARGEST TREES                 |              |       |
|-------------------------------|--------------|-------|
| Scientific Name               | Common Name  | Count |
| <i>Populus deltoides</i>      | Cottonwood   | 55    |
| <i>Quercus rubra</i>          | Red Oak      | 47    |
| <i>Populus deltoides</i>      | Cottonwood   | 46    |
| <i>Quercus rubra</i>          | Red Oak      | 44    |
| <i>Acer saccharinum</i>       | Silver Maple | 42    |
| <i>Acer saccharum</i>         | Sugar Maple  | 38    |
| <i>Quercus rubra</i>          | Red Oak      | 36    |
| <i>Quercus rubra</i>          | Red Oak      | 35    |
| <i>Fraxinus pennsylvanica</i> | Green Ash    | 34    |
| <i>Populus deltoides</i>      | Cottonwood   | 34    |
| <i>Populus deltoides</i>      | Cottonwood   | 32.5  |
| <i>Quercus rubra</i>          | Red Oak      | 31.5  |
| <i>Quercus rubra</i>          | Red Oak      | 31.5  |
| <i>Prunus serotina</i>        | Black Cherry | 31    |
| <i>Populus deltoides</i>      | Cottonwood   | 31    |
| <i>Prunus serotina</i>        | Black Cherry | 30.5  |
| <i>Prunus serotina</i>        | Black Cherry | 30    |

| MULTIPLES                      |       |  |
|--------------------------------|-------|--|
| Multiples                      | Count |  |
| Total Multiple Stems           | 36    |  |
| Total Stems 12" dbh or Greater | 95    |  |
|                                | 648   |  |

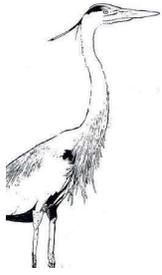
|     |                               |                |       |   |   |
|-----|-------------------------------|----------------|-------|---|---|
| 110 | <i>Acer saccharinum</i>       | Silver Maple   | 18,15 | G | M |
| 111 | <i>Quercus rubra</i>          | Red Oak        | 17    | G |   |
| 112 | <i>Acer negundo</i>           | Box Elder      | 15.5  | F |   |
| 113 | <i>Acer saccharum</i>         | Sugar Maple    | 12    | G |   |
| 114 | <i>Juglans nigra</i>          | Black Walnut   | 13    | P |   |
| 115 | <i>Acer saccharum</i>         | Sugar Maple    | 12    | F |   |
| 116 | <i>Quercus rubra</i>          | Red Oak        | 18    | G |   |
| 117 | <i>Quercus rubra</i>          | Red Oak        | 20    | G |   |
| 118 | <i>Quercus alba</i>           | White Oak      | 16    | G |   |
| 119 | <i>Acer saccharinum</i>       | Silver Maple   | 22.5  | G |   |
| 120 | <i>Celtis occidentalis</i>    | Hackberry      | 13    | G |   |
| 121 | <i>Prunus serotina</i>        | Black Cherry   | 12.5  | G |   |
| 122 | <i>Prunus serotina</i>        | Black Cherry   | 18    | G |   |
| 123 | <i>Acer saccharum</i>         | Sugar Maple    | 19    | G |   |
| 124 | <i>Quercus rubra</i>          | Red Oak        | 18    | G |   |
| 125 | <i>Quercus rubra</i>          | Red Oak        | 16    | G |   |
| 126 | <i>Quercus rubra</i>          | Red Oak        | 20    | G |   |
| 127 | <i>Quercus rubra</i>          | Red Oak        | 20    | G |   |
| 128 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 129 | <i>Quercus rubra</i>          | Red Oak        | 13    | G |   |
| 130 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 131 | <i>Prunus serotina</i>        | Black Cherry   | 20.5  | G |   |
| 132 | <i>Quercus rubra</i>          | Red Oak        | 20    | G |   |
| 133 | <i>Tilia americana</i>        | Basswood       | 17    | G |   |
| 134 | <i>Tilia americana</i>        | Basswood       | 17    | G |   |
| 135 | <i>Quercus rubra</i>          | Red Oak        | 21    | G |   |
| 136 | <i>Fagus grandifolia</i>      | American Beech | 13.5  | G |   |
| 137 | <i>Tilia americana</i>        | Basswood       | 14.5  | G |   |
| 138 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 139 | <i>Quercus rubra</i>          | Red Oak        | 23    | G |   |
| 140 | <i>Prunus serotina</i>        | Black Cherry   | 14    | G |   |
| 141 | <i>Ulmus americana</i>        | American Elm   | 13.5  | F |   |
| 142 | <i>Acer saccharum</i>         | Sugar Maple    | 14    | G |   |
| 143 | <i>Acer saccharum</i>         | Sugar Maple    | 13    | G |   |
| 144 | <i>Quercus rubra</i>          | Red Oak        | 19    | G |   |
| 145 | <i>Quercus rubra</i>          | Red Oak        | 22    | G |   |
| 146 | <i>Quercus rubra</i>          | Red Oak        | 19    | G |   |
| 147 | <i>Quercus rubra</i>          | Red Oak        | 13.5  | G |   |
| 148 | <i>Quercus rubra</i>          | Red Oak        | 15    | G |   |
| 149 | <i>Fraxinus pennsylvanica</i> | Green Ash      | 13.5  | P |   |
| 150 | <i>Prunus serotina</i>        | Black Cherry   | 22    | G |   |
| 151 | <i>Ulmus americana</i>        | American Elm   | 22    | G |   |
| 152 | <i>Prunus serotina</i>        | Black Cherry   | 20    | G |   |
| 153 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 154 | <i>Acer saccharinum</i>       | Silver Maple   | 12.5  | G |   |
| 155 | <i>Acer saccharinum</i>       | Silver Maple   | 17.5  | G |   |
| 156 | <i>Acer saccharum</i>         | Sugar Maple    | 21    | G |   |
| 157 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 158 | <i>Prunus serotina</i>        | Black Cherry   | 31    | G |   |
| 159 | <i>Acer saccharum</i>         | Sugar Maple    | 14.5  | G |   |
| 160 | <i>Acer saccharum</i>         | Sugar Maple    | 15    | G |   |
| 161 | <i>Prunus serotina</i>        | Black Cherry   | 14.5  | G |   |
| 162 | <i>Prunus serotina</i>        | Black Cherry   | 15    | G |   |
| 163 | <i>Prunus serotina</i>        | Black Cherry   | 18    | G |   |
| 164 | <i>Fraxinus pennsylvanica</i> | Green Ash      | 17    | P |   |
| 165 | <i>Tilia americana</i>        | Basswood       | 18.5  | G |   |
| 166 | <i>Quercus rubra</i>          | Red Oak        | 22    | G |   |
| 167 | <i>Quercus alba</i>           | White Oak      | 22.5  | G |   |
| 168 | <i>Acer saccharum</i>         | Sugar Maple    | 17.5  | G |   |
| 169 | <i>Prunus serotina</i>        | Black Cherry   | 21.5  | G |   |
| 170 | <i>Acer negundo</i>           | Box Elder      | 16    | F |   |
| 171 | <i>Acer negundo</i>           | Box Elder      | 15    | G |   |
| 172 | <i>Prunus serotina</i>        | Black Cherry   | 15    | G |   |
| 173 | <i>Tilia americana</i>        | Basswood       | 13    | G |   |
| 174 | <i>Prunus serotina</i>        | Black Cherry   | 14    | G |   |
| 175 | <i>Ostrya virginiana</i>      | Ironwood       | 12    | G |   |
| 176 | <i>Acer saccharum</i>         | Sugar Maple    | 13    | G |   |
| 177 | <i>Quercus rubra</i>          | Red Oak        | 44    | G |   |
| 178 | <i>Tilia americana</i>        | Basswood       | 14    | G |   |
| 179 | <i>Acer saccharum</i>         | Sugar Maple    | 17    | F |   |
| 180 | <i>Prunus serotina</i>        | Black Cherry   | 26    | G |   |
| 181 | <i>Prunus serotina</i>        | Black Cherry   | 14    | F |   |
| 182 | <i>Prunus serotina</i>        | Black Cherry   | 15    | G |   |
| 183 | <i>Prunus serotina</i>        | Black Cherry   | 27    | G |   |
| 184 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 185 | <i>Prunus serotina</i>        | Black Cherry   | 13    | G |   |
| 186 | <i>Prunus serotina</i>        | Black Cherry   | 20    | G |   |
| 187 | <i>Prunus serotina</i>        | Black Cherry   | 14.5  | G |   |
| 188 | <i>Prunus serotina</i>        | Black Cherry   | 12    | G |   |
| 189 | <i>Tilia americana</i>        | Basswood       | 16    | G |   |
| 190 | <i>Tilia americana</i>        | Basswood       | 13    | F |   |
| 191 | <i>Tilia americana</i>        | Basswood       | 16.5  | G |   |
| 192 | <i>Fraxinus pennsylvanica</i> | Green Ash      | 34    | P |   |
| 193 | <i>Tilia americana</i>        | Basswood       | 13    | G |   |
| 194 | <i>Prunus serotina</i>        | Black Cherry   | 20    | G |   |
| 195 | <i>Prunus serotina</i>        | Black Cherry   | 14    | G |   |
| 196 | <i>Quercus rubra</i>          | Red Oak        | 19    | G |   |
| 197 | <i>Quercus rubra</i>          | Red Oak        | 12    | G |   |
| 198 | <i>Prunus serotina</i>        | Black Cherry   | 20    | G |   |
| 199 | <i>Prunus serotina</i>        | Black Cherry   | 20    | G |   |
| 200 | <i>Quercus rubra</i>          | Red Oak        | 25    | G |   |
| 201 | <i>Quercus rubra</i>          | Red Oak        | 19    | G |   |
| 202 | <i>Prunus serotina</i>        | Black Cherry   | 27.5  | G |   |
| 203 | <i>Tilia americana</i>        | Basswood       | 14    | G |   |
| 204 | <i>Fraxinus pennsylvanica</i> | Green Ash      | 17.5  | P |   |
| 205 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 206 | <i>Prunus serotina</i>        | Black Cherry   | 16    | G |   |
| 207 | <i>Quercus rubra</i>          | Red Oak        | 36    | F |   |
| 208 | <i>Quercus rubra</i>          | Red Oak        | 21    | G |   |
| 209 | <i>Quercus rubra</i>          | Red Oak        | 14    | G |   |
| 210 | <i>Quercus rubra</i>          | Red Oak        | 16    | G |   |
| 211 | <i>Quercus rubra</i>          | Red Oak        | 25    | G |   |
| 212 | <i>Quercus rubra</i>          | Red Oak        | 22    | G |   |
| 213 | <i>Quercus rubra</i>          | Red Oak        | 21    | F |   |
| 214 | <i>Quercus rubra</i>          | Red Oak        | 26    | G |   |
| 215 | <i>Prunus serotina</i>        | Black Cherry   | 20    | G |   |
| 216 | <i>Prunus serotina</i>        | Black Cherry   | 16    | F |   |
| 217 | <i>Quercus rubra</i>          | Red Oak        | 12.5  | G |   |
| 218 | <i>Quercus rubra</i>          | Red Oak        | 13.5  | G |   |
| 219 | <i>Quercus rubra</i>          | Red Oak        | 13.5  | G |   |
| 220 | <i>Quercus rubra</i>          | Red Oak        | 16    | G |   |

|     |                               |                 |                   |   |   |
|-----|-------------------------------|-----------------|-------------------|---|---|
| 221 | <i>Quercus rubra</i>          | Red Oak         | 16.5              | G |   |
| 222 | <i>Quercus rubra</i>          | Red Oak         | 13                | G |   |
| 223 | <i>Prunus serotina</i>        | Black Cherry    | 19                | G |   |
| 224 | <i>Acer saccharinum</i>       | Silver Maple    | 12                | G |   |
| 225 | <i>Acer saccharinum</i>       | Silver Maple    | 17                | G |   |
| 226 | <i>Quercus rubra</i>          | Red Oak         | 14                | G |   |
| 227 | <i>Quercus rubra</i>          | Red Oak         | 15                | G |   |
| 228 | <i>Quercus rubra</i>          | Red Oak         | 18                | G |   |
| 229 | <i>Quercus rubra</i>          | Red Oak         | 17                | G |   |
| 230 | <i>Acer negundo</i>           | Box Elder       | 12                | G |   |
| 231 | <i>Acer negundo</i>           | Box Elder       | 12                | G |   |
| 232 | <i>Acer negundo</i>           | Box Elder       | 13                | G |   |
| 233 | <i>Prunus serotina</i>        | Black Cherry    | 18                | G |   |
| 234 | <i>Acer negundo</i>           | Box Elder       | 14.5              | G |   |
| 235 | <i>Prunus serotina</i>        | Black Cherry    | 12                | G |   |
| 236 | <i>Prunus serotina</i>        | Black Cherry    | 12                | G |   |
| 237 | <i>Prunus serotina</i>        | Black Cherry    | 13                | G |   |
| 238 | <i>Prunus serotina</i>        | Black Cherry    | 14                | G |   |
| 239 | <i>Quercus rubra</i>          | Red Oak         | 23.5              | G |   |
| 240 | <i>Quercus rubra</i>          | Red Oak         | 19                | G |   |
| 241 | <i>Prunus serotina</i>        | Black Cherry    | 12.5              | F |   |
| 242 | <i>Prunus serotina</i>        | Black Cherry    | 15                | G |   |
| 243 | <i>Pinus strobus</i>          | White Pine      | 12.5              | G |   |
| 244 | <i>Acer negundo</i>           | Box Elder       | 16                | G |   |
| 245 | <i>Pinus strobus</i>          | White Pine      | 12                | G |   |
| 246 | <i>Pinus strobus</i>          | White Pine      | 13                | G |   |
| 247 | <i>Pinus strobus</i>          | White Pine      | 15                | G |   |
| 248 | <i>Acer negundo</i>           | Box Elder       | 13                | G |   |
| 249 | <i>Acer negundo</i>           | Box Elder       | 15                | G |   |
| 250 | <i>Pinus strobus</i>          | White Pine      | 16                | G |   |
| 251 | <i>Pinus strobus</i>          | White Pine      | 13                | G |   |
| 252 | <i>Pinus strobus</i>          | White Pine      | 13                | G |   |
| 253 | <i>Acer negundo</i>           | Box Elder       | 12,13,12          | G | M |
| 254 | <i>Pinus strobus</i>          | White Pine      | 18.5              | G |   |
| 255 | <i>Acer negundo</i>           | Box Elder       | 26                | F |   |
| 256 | <i>Acer negundo</i>           | Box Elder       | 12                | G |   |
| 257 | <i>Acer negundo</i>           | Box Elder       | 15                | G |   |
| 258 | <i>Pinus strobus</i>          | White Pine      | 15                | G |   |
| 259 | <i>Pinus strobus</i>          | White Pine      | 17                | G |   |
| 260 | <i>Pinus strobus</i>          | White Pine      | 13                | G |   |
| 261 | <i>Acer negundo</i>           | Box Elder       | 14                | G |   |
| 262 | <i>Pinus strobus</i>          | White Pine      | 14                | G |   |
| 263 | <i>Pinus strobus</i>          | White Pine      | 13                | G |   |
| 264 | <i>Pinus strobus</i>          | White Pine      | 14                | G |   |
| 265 | <i>Pinus strobus</i>          | White Pine      | 14                | G |   |
| 266 | <i>Quercus rubra</i>          | Red Oak         | 18.5              | G |   |
| 267 | <i>Quercus rubra</i>          | Red Oak         | 28,20,5,21        | G | M |
| 268 | <i>Prunus serotina</i>        | Black Cherry    | 18,16             | G | M |
| 269 | <i>Tilia americana</i>        | Basswood        | 15.5              | G |   |
| 270 | <i>Celtis occidentalis</i>    | Hackberry       | 15                | G |   |
| 271 | <i>Prunus serotina</i>        | Black Cherry    | 23                | G |   |
| 272 | <i>Tilia americana</i>        | Basswood        | 15                | G |   |
| 273 | <i>Tilia americana</i>        | Basswood        | 14                | G |   |
| 274 | <i>Quercus macrocarpa</i>     | Bur Oak         | 22.5,13           | G | M |
| 275 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 12,14             | P | M |
| 276 | <i>Tilia americana</i>        | Basswood        | 14.5,12,13,13     | G | M |
| 277 | <i>Tilia americana</i>        | Basswood        | 12                | G |   |
| 278 | <i>Juglans nigra</i>          | Black Walnut    | 15.5              | F |   |
| 279 | <i>Juglans nigra</i>          | Black Walnut    | 17                | P |   |
| 280 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 15                | P |   |
| 281 | <i>Acer negundo</i>           | Box Elder       | 20                | F |   |
| 282 | <i>Prunus serotina</i>        | Black Cherry    | 14                | F |   |
| 283 | <i>Prunus serotina</i>        | Black Cherry    | 26                | G |   |
| 284 | <i>Populus deltoides</i>      | Cottonwood      | 13                | G |   |
| 285 | <i>Populus deltoides</i>      | Cottonwood      | 20                | G |   |
| 286 | <i>Populus deltoides</i>      | Cottonwood      | 25                | G |   |
| 287 | <i>Populus deltoides</i>      | Cottonwood      | 23                | G |   |
| 288 | <i>Populus deltoides</i>      | Cottonwood      | 19                | G |   |
| 289 | <i>Populus deltoides</i>      | Cottonwood      | 13,18             | G | M |
| 290 | <i>Populus deltoides</i>      | Cottonwood      | 25                | G |   |
| 291 | <i>Populus deltoides</i>      | Cottonwood      | 12                | G |   |
| 292 | <i>Prunus serotina</i>        | Black Cherry    | 25                | F |   |
| 293 | <i>Prunus serotina</i>        | Black Cherry    | 25                | G |   |
| 294 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 12                | P |   |
| 295 | <i>Pinus strobus</i>          | White Pine      | 13,12             | G | M |
| 296 | <i>Pinus strobus</i>          | White Pine      | 14                | G |   |
| 297 | <i>Pinus strobus</i>          | White Pine      | 12                | G |   |
| 298 | <i>Pinus strobus</i>          | White Pine      | 14.5              | G |   |
| 299 | <i>Pinus strobus</i>          | White Pine      | 14                | G |   |
| 300 | <i>Pinus strobus</i>          | White Pine      | 16                | G |   |
| 301 | <i>Prunus serotina</i>        | Black Cherry    | 20,12             | G | M |
| 302 | <i>Pinus strobus</i>          | White Pine      | 15                | G |   |
| 303 | <i>Acer negundo</i>           | Box Elder       | 15                | G |   |
| 304 | <i>Pinus strobus</i>          | White Pine      | 14.5              | G |   |
| 305 | <i>Pinus strobus</i>          | White Pine      | 16.5              | G |   |
| 306 | <i>Pinus strobus</i>          | White Pine      | 14                | G |   |
| 307 | <i>Pinus strobus</i>          | White Pine      | 15.5              | G |   |
| 308 | <i>Pinus strobus</i>          | White Pine      | 18                | G |   |
| 309 | <i>Pinus strobus</i>          | White Pine      | 12                | G |   |
| 310 | <i>Pinus strobus</i>          | White Pine      | 16                | G |   |
| 311 | <i>Prunus serotina</i>        | Black Cherry    | 12                | G |   |
| 312 | <i>Acer negundo</i>           | Box Elder       | 17                | G |   |
| 313 | <i>Tilia americana</i>        | Basswood        | 13                | G |   |
| 314 | <i>Acer negundo</i>           | Box Elder       | 13                | F |   |
| 315 | <i>Prunus serotina</i>        | Black Cherry    | 13                | G |   |
| 316 | <i>Acer negundo</i>           | Box Elder       | 20                | G |   |
| 317 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 14                | P |   |
| 318 | <i>Prunus serotina</i>        | Black Cherry    | 12                | G |   |
| 319 | <i>Prunus serotina</i>        | Black Cherry    | 13                | G |   |
| 320 | <i>Acer negundo</i>           | Box Elder       | 15                | G |   |
| 321 | <i>Tilia americana</i>        | Basswood        | 18,12,12,13,13,13 | G | M |
| 322 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 22                | P |   |
| 323 | <i>Populus deltoides</i>      | Cottonwood      | 14                | G |   |
| 324 | <i>Populus deltoides</i>      | Cottonwood      | 46                | G |   |
| 325 | <i>Quercus bicolor</i>        | Swamp White Oak | 17                | G |   |
| 326 | <i>Quercus bicolor</i>        | Swamp White Oak | 26                | G |   |
| 327 | <i>Quercus bicolor</i>        | Swamp White Oak | 25                | G |   |
| 328 | <i>Quercus bicolor</i>        | Swamp White Oak | 15                | G |   |
| 329 | <i>Acer negundo</i>           | Box Elder       | 12                | G |   |
| 330 | <i>Acer negundo</i>           | Box Elder       | 15.5              | F |   |
| 331 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 27                | P |   |

|     |                               |                 |               |   |   |
|-----|-------------------------------|-----------------|---------------|---|---|
| 332 | <i>Acer negundo</i>           | Box Elder       | 17            | G |   |
| 333 | <i>Acer negundo</i>           | Box Elder       | 13            | F |   |
| 334 | <i>Prunus serotina</i>        | Black Cherry    | 12            | G |   |
| 335 | <i>Acer negundo</i>           | Box Elder       | 12.5          | G |   |
| 336 | <i>Acer negundo</i>           | Box Elder       | 13            | G |   |
| 337 | <i>Prunus serotina</i>        | Black Cherry    | 12            | G |   |
| 338 | <i>Populus deltoides</i>      | Cottonwood      | 55            | G |   |
| 339 | <i>Populus deltoides</i>      | Cottonwood      | 18            | G |   |
| 340 | <i>Quercus bicolor</i>        | Swamp White Oak | 19            | G |   |
| 341 | <i>Populus deltoides</i>      | Cottonwood      | 27            | P |   |
| 342 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 17            | P |   |
| 343 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 17            | P |   |
| 344 | <i>Quercus rubra</i>          | Red Oak         | 15            | G |   |
| 345 | <i>Populus deltoides</i>      | Cottonwood      | 27            | G |   |
| 346 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 12            | P |   |
| 347 | <i>Celtis occidentalis</i>    | Hackberry       | 13            | G |   |
| 348 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 12            | P |   |
| 349 | <i>Pinus strobus</i>          | White Pine      | 17            | G |   |
| 350 | <i>Pinus strobus</i>          | White Pine      | 15            | G |   |
| 351 | <i>Populus tremuloides</i>    | Quaking Aspen   | 14            | G |   |
| 352 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 353 | <i>Acer negundo</i>           | Box Elder       | 17            | F |   |
| 354 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 355 | <i>Pinus strobus</i>          | White Pine      | 13.5          | G |   |
| 356 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 357 | <i>Pinus strobus</i>          | White Pine      | 13.5          | G |   |
| 358 | <i>Acer negundo</i>           | Box Elder       | 14            | G |   |
| 359 | <i>Prunus serotina</i>        | Black Cherry    | 17            | G |   |
| 360 | <i>Acer negundo</i>           | Box Elder       | 12            | G |   |
| 361 | <i>Pinus strobus</i>          | White Pine      | 14            | G |   |
| 362 | <i>Acer negundo</i>           | Box Elder       | 13            | G |   |
| 363 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 364 | <i>Prunus serotina</i>        | Black Cherry    | 14            | G |   |
| 365 | <i>Pinus strobus</i>          | White Pine      | 16            | G |   |
| 366 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 367 | <i>Pinus sylvestris</i>       | Scotch Pine     | 12            | G |   |
| 368 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 369 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 370 | <i>Pinus strobus</i>          | White Pine      | 13.5          | G |   |
| 371 | <i>Pinus strobus</i>          | White Pine      | 16.5          | G |   |
| 372 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 373 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 374 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 375 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 376 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 377 | <i>Acer negundo</i>           | Box Elder       | 14            | G |   |
| 378 | <i>Pinus strobus</i>          | White Pine      | 14            | G |   |
| 379 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 380 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 381 | <i>Prunus serotina</i>        | Black Cherry    | 15            | G |   |
| 382 | <i>Pinus strobus</i>          | White Pine      | 16            | G |   |
| 383 | <i>Pinus strobus</i>          | White Pine      | 15            | G |   |
| 384 | <i>Pinus strobus</i>          | White Pine      | 15            | G |   |
| 385 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 386 | <i>Pinus strobus</i>          | White Pine      | 14            | G |   |
| 387 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 388 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 389 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 390 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 391 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 392 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 393 | <i>Pinus strobus</i>          | White Pine      | 13.5          | G |   |
| 394 | <i>Pinus strobus</i>          | White Pine      | 13.5          | G |   |
| 395 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 396 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 397 | <i>Pinus strobus</i>          | White Pine      | 14            | G |   |
| 398 | <i>Quercus rubra</i>          | Red Oak         | 13.5          | G |   |
| 399 | <i>Pinus strobus</i>          | White Pine      | 12.5          | G |   |
| 400 | <i>Pinus strobus</i>          | White Pine      | 12            | G |   |
| 401 | <i>Quercus rubra</i>          | Red Oak         | 12            | G |   |
| 402 | <i>Quercus rubra</i>          | Red Oak         | 14            | G |   |
| 403 | <i>Pinus strobus</i>          | White Pine      | 13            | G |   |
| 404 | <i>Pinus strobus</i>          | White Pine      | 15            | G |   |
| 405 | <i>Tilia americana</i>        | Basswood        | 13            | G |   |
| 406 | <i>Quercus rubra</i>          | Red Oak         | 28,27         | G | M |
| 407 | <i>Celtis occidentalis</i>    | Hackberry       | 12            | G |   |
| 408 | <i>Tilia americana</i>        | Basswood        | 12.5,12.5     | G | M |
| 409 | <i>Tilia americana</i>        | Basswood        | 14            | G |   |
| 410 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 13            | P |   |
| 411 | <i>Fraxinus pennsylvanica</i> | Green Ash       | 29.5          | P |   |
| 412 | <i>Tilia americana</i>        | Basswood        | 13.5          | G |   |
| 413 | <i>Tilia americana</i>        | Basswood        | 19,17,17,13   | G | M |
| 414 | <i>Tilia americana</i>        | Basswood        | 12,12         | G | M |
| 415 | <i>Quercus bicolor</i>        | Swamp White Oak | 15            | G |   |
| 416 | <i>Tilia americana</i>        | Basswood        | 18,15         | G | M |
| 417 | <i>Tilia americana</i>        | Basswood        | 18            | G |   |
| 418 | <i>Tilia americana</i>        | Basswood        | 13.5,12,13,13 | G | M |
| 419 | <i>Quercus rubra</i>          | Red Oak         | 13            | G |   |
| 420 | <i>Quercus rubra</i>          | Red Oak         | 12            | G |   |
| 421 | <i>Quercus rubra</i>          | Red Oak         | 25            | G |   |
| 422 | <i>Quercus bicolor</i>        | Swamp White Oak | 27            | P |   |
| 423 | <i>Quercus rubra</i>          | Red Oak         | 16            | G |   |
| 424 | <i>Quercus bicolor</i>        | Swamp White Oak | 20            | G |   |
| 425 | <i>Quercus rubra</i>          | Red Oak         | 47            | G |   |
| 426 | <i>Populus deltoides</i>      | Cottonwood      | 19            | G |   |
| 427 | <i>Quercus alba</i>           | White Oak       | 19            | G |   |
| 428 | <i>Prunus serotina</i>        | Black Cherry    | 16            | F |   |
| 429 | <i>Quercus rubra</i>          | Red Oak         | 21            | G |   |
| 430 | <i>Quercus rubra</i>          | Red Oak         | 35            | G |   |
| 431 | <i>Quercus rubra</i>          | Red Oak         | 21.5          | G |   |
| 432 | <i>Acer saccharum</i>         | Sugar Maple     | 38            | G |   |
| 433 | <i>Quercus rubra</i>          | Red Oak         | 31.5          | F |   |
| 434 | <i>Quercus rubra</i>          | Red Oak         | 29            | G |   |
| 435 | <i>Quercus rubra</i>          | Red Oak         | 21            | G |   |
| 436 | <i>Quercus rubra</i>          | Red Oak         | 31.5          | G |   |
| 437 | <i>Acer saccharinum</i>       | Silver Maple    | 13            | G |   |
| 438 | <i>Quercus rubra</i>          | Red Oak         | 19.5          | G |   |
| 439 | <i>Acer negundo</i>           | Box Elder       | 12            | G |   |
| 440 | <i>Acer saccharum</i>         | Sugar Maple     | 27            | G |   |
| 441 | <i>Tilia americana</i>        | Basswood        | 14.5          | G |   |
| 442 | <i>Celtis occidentalis</i>    | Hackberry       | 12            | G |   |

|     |                               |              |       |   |   |
|-----|-------------------------------|--------------|-------|---|---|
| 443 | <i>Quercus rubra</i>          | Red Oak      | 21.5  | G |   |
| 444 | <i>Quercus rubra</i>          | Red Oak      | 16    | G |   |
| 445 | <i>Platanus occidentalis</i>  | Sycamore     | 21    | G |   |
| 446 | <i>Acer saccharum</i>         | Sugar Maple  | 15    | G |   |
| 447 | <i>Tilia americana</i>        | Basswood     | 13    | P |   |
| 448 | <i>Tilia americana</i>        | Basswood     | 24    | G |   |
| 449 | <i>Quercus alba</i>           | White Oak    | 19    | G |   |
| 450 | <i>Acer saccharinum</i>       | Silver Maple | 49,14 | G | M |
| 451 | <i>Tilia americana</i>        | Basswood     | 19    | F |   |
| 452 | <i>Celtis occidentalis</i>    | Hackberry    | 15.5  | F |   |
| 453 | <i>Celtis occidentalis</i>    | Hackberry    | 14    | G |   |
| 454 | <i>Acer saccharum</i>         | Sugar Maple  | 18    | G |   |
| 455 | <i>Tilia americana</i>        | Basswood     | 15    | G |   |
| 456 | <i>Quercus rubra</i>          | Red Oak      | 22    | G |   |
| 457 | <i>Quercus rubra</i>          | Red Oak      | 13    | G |   |
| 458 | <i>Celtis occidentalis</i>    | Hackberry    | 28,12 | G | M |
| 459 | <i>Quercus rubra</i>          | Red Oak      | 15    | G |   |
| 460 | <i>Quercus rubra</i>          | Red Oak      | 19.5  | G |   |
| 461 | <i>Platanus occidentalis</i>  | Sycamore     | 26    | G |   |
| 462 | <i>Quercus rubra</i>          | Red Oak      | 14    | G |   |
| 463 | <i>Acer saccharinum</i>       | Silver Maple | 12    | G |   |
| 464 | <i>Acer saccharinum</i>       | Silver Maple | 13,12 | G | M |
| 465 | <i>Populus deltoides</i>      | Cottonwood   | 22.5  | G |   |
| 466 | <i>Populus deltoides</i>      | Cottonwood   | 24.5  | G |   |
| 467 | <i>Ulmus americana</i>        | American Elm | 14    | G |   |
| 468 | <i>Ulmus americana</i>        | American Elm | 18    | G |   |
| 469 | <i>Ulmus americana</i>        | American Elm | 12    | G |   |
| 470 | <i>Populus deltoides</i>      | Cottonwood   | 20    | G |   |
| 471 | <i>Prunus serotina</i>        | Black Cherry | 25    | G |   |
| 472 | <i>Populus deltoides</i>      | Cottonwood   | 19    | G |   |
| 473 | <i>Acer negundo</i>           | Box Elder    | 14.5  | F |   |
| 474 | <i>Populus deltoides</i>      | Cottonwood   | 12    | F |   |
| 475 | <i>Populus deltoides</i>      | Cottonwood   | 15,15 | G | M |
| 476 | <i>Acer rubrum</i>            | Red Maple    | 12.5  | G |   |
| 477 | <i>Populus deltoides</i>      | Cottonwood   | 19    | G |   |
| 478 | <i>Populus deltoides</i>      | Cottonwood   | 16    | G |   |
| 479 | <i>Populus deltoides</i>      | Cottonwood   | 15.5  | G |   |
| 480 | <i>Populus deltoides</i>      | Cottonwood   | 21    | G |   |
| 481 | <i>Ulmus americana</i>        | American Elm | 13    | G |   |
| 482 | <i>Populus deltoides</i>      | Cottonwood   | 18    | G |   |
| 483 | <i>Populus deltoides</i>      | Cottonwood   | 18    | G |   |
| 484 | <i>Populus deltoides</i>      | Cottonwood   | 12    | G |   |
| 485 | <i>Populus deltoides</i>      | Cottonwood   | 16    | G |   |
| 486 | <i>Populus deltoides</i>      | Cottonwood   | 17    | G |   |
| 487 | <i>Populus deltoides</i>      | Cottonwood   | 22    | G |   |
| 488 | <i>Populus deltoides</i>      | Cottonwood   | 18    | G |   |
| 489 | <i>Populus deltoides</i>      | Cottonwood   | 13.5  | G |   |
| 490 | <i>Ulmus americana</i>        | American Elm | 13    | G |   |
| 491 | <i>Fraxinus pennsylvanica</i> | Green Ash    | 13    | P |   |
| 492 | <i>Prunus serotina</i>        | Black Cherry | 17    | G |   |
| 493 | <i>Populus deltoides</i>      | Cottonwood   | 20,17 | G | M |
| 494 | <i>Populus deltoides</i>      | Cottonwood   | 16    | G |   |
| 495 | <i>Populus deltoides</i>      | Cottonwood   | 23.5  | G |   |
| 496 | <i>Populus deltoides</i>      | Cottonwood   | 20.5  | G |   |
| 497 | <i>Populus deltoides</i>      | Cottonwood   | 31    | G |   |
| 498 | <i>Populus deltoides</i>      | Cottonwood   | 24    | G |   |
| 499 | <i>Populus deltoides</i>      | Cottonwood   | 26.5  | G |   |
| 500 | <i>Populus deltoides</i>      | Cottonwood   | 32.5  | G |   |
| 501 | <i>Prunus serotina</i>        | Black Cherry | 15    | G |   |
| 502 | <i>Prunus serotina</i>        | Black Cherry | 15    | G |   |
| 503 | <i>Prunus serotina</i>        | Black Cherry | 14    | G |   |
| 504 | <i>Prunus serotina</i>        | Black Cherry | 12    | G |   |
| 505 | <i>Populus deltoides</i>      | Cottonwood   | 12    | G |   |
| 506 | <i>Populus deltoides</i>      | Cottonwood   | 18    | G |   |
| 507 | <i>Populus deltoides</i>      | Cottonwood   | 12    | G |   |
| 508 | <i>Populus deltoides</i>      | Cottonwood   | 13.5  | G |   |
| 509 | <i>Populus deltoides</i>      | Cottonwood   | 12.5  | G |   |
| 510 | <i>Populus deltoides</i>      | Cottonwood   | 13    | G |   |
| 511 | <i>Populus deltoides</i>      | Cottonwood   | 13    | G |   |
| 512 | <i>Populus deltoides</i>      | Cottonwood   | 14    | G |   |
| 513 | <i>Acer negundo</i>           | Box Elder    | 17    | G |   |
| 514 | <i>Populus deltoides</i>      | Cottonwood   | 14    | G |   |
| 515 | <i>Acer negundo</i>           | Box Elder    | 14.5  | G |   |
| 516 | <i>Prunus serotina</i>        | Black Cherry | 15    | G |   |
| 517 | <i>Acer negundo</i>           | Box Elder    | 13    | G |   |
| 518 | <i>Acer negundo</i>           | Box Elder    | 24    | G |   |
| 519 | <i>Quercus rubra</i>          | Red Oak      | 14.5  | G |   |
| 520 | <i>Quercus rubra</i>          | Red Oak      | 16    | G |   |
| 521 | <i>Prunus serotina</i>        | Black Cherry | 16    | G |   |
| 522 | <i>Tilia americana</i>        | Basswood     | 14    | G |   |
| 523 | <i>Tilia americana</i>        | Basswood     | 14    | G |   |
| 524 | <i>Juglans nigra</i>          | Black Walnut | 23.5  | G |   |
| 525 | <i>Populus deltoides</i>      | Cottonwood   | 34    | G |   |
| 526 | <i>Quercus rubra</i>          | Red Oak      | 21    | G |   |
| 527 | <i>Populus deltoides</i>      | Cottonwood   | 17    | G |   |
| 528 | <i>Prunus serotina</i>        | Black Cherry | 13    | G |   |
| 529 | <i>Populus deltoides</i>      | Cottonwood   | 25    | G |   |
| 530 | <i>Populus deltoides</i>      | Cottonwood   | 21    | G |   |
| 531 | <i>Populus deltoides</i>      | Cottonwood   | 19    | G |   |
| 532 | <i>Populus deltoides</i>      | Cottonwood   | 18    | G |   |
| 533 | <i>Populus deltoides</i>      | Cottonwood   | 21    | G |   |
| 534 | <i>Acer negundo</i>           | Box Elder    | 12    | G |   |
| 535 | <i>Populus deltoides</i>      | Cottonwood   | 17    | G |   |
| 536 | <i>Populus deltoides</i>      | Cottonwood   | 19    | G |   |
| 537 | <i>Populus deltoides</i>      | Cottonwood   | 13    | G |   |
| 538 | <i>Populus deltoides</i>      | Cottonwood   | 20.5  | G |   |
| 539 | <i>Acer saccharinum</i>       | Silver Maple | 16    | G |   |
| 540 | <i>Prunus serotina</i>        | Black Cherry | 12    | F |   |
| 541 | <i>Acer negundo</i>           | Box Elder    | 13    | G |   |
| 542 | <i>Pinus strobus</i>          | White Pine   | 12.5  | G |   |
| 543 | <i>Pinus strobus</i>          | White Pine   | 15    | G |   |
| 544 | <i>Pinus strobus</i>          | White Pine   | 13.5  | G |   |
| 545 | <i>Pinus strobus</i>          | White Pine   | 12    | G |   |
| 546 | <i>Acer negundo</i>           | Box Elder    | 12    | G |   |
| 547 | <i>Acer negundo</i>           | Box Elder    | 16    | G |   |
| 548 | <i>Pinus strobus</i>          | White Pine   | 14    | G |   |
| 549 | <i>Pinus strobus</i>          | White Pine   | 13    | G |   |
| 550 | <i>Pinus strobus</i>          | White Pine   | 14    | G |   |
| 551 | <i>Pinus strobus</i>          | White Pine   | 16    | G |   |
| 552 | <i>Pinus strobus</i>          | White Pine   | 14    | G |   |
| 553 | <i>Pinus strobus</i>          | White Pine   | 13    | G |   |

|     |                          |              |      |   |
|-----|--------------------------|--------------|------|---|
| 554 | <i>Pinus strobus</i>     | White Pine   | 15   | G |
| 555 | <i>Pinus strobus</i>     | White Pine   | 13   | G |
| 556 | <i>Pinus strobus</i>     | White Pine   | 14   | G |
| 557 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 558 | <i>Pinus strobus</i>     | White Pine   | 14   | G |
| 559 | <i>Pinus strobus</i>     | White Pine   | 13   | G |
| 560 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 561 | <i>Pinus strobus</i>     | White Pine   | 15   | G |
| 562 | <i>Pinus strobus</i>     | White Pine   | 14   | G |
| 563 | <i>Populus deltoides</i> | Cottonwood   | 12   | G |
| 564 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 565 | <i>Pinus strobus</i>     | White Pine   | 13.5 | G |
| 566 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 567 | <i>Pinus strobus</i>     | White Pine   | 15   | G |
| 568 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 569 | <i>Pinus strobus</i>     | White Pine   | 15   | G |
| 570 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 571 | <i>Pinus strobus</i>     | White Pine   | 13   | G |
| 572 | <i>Quercus rubra</i>     | Red Oak      | 16   | G |
| 573 | <i>Quercus rubra</i>     | Red Oak      | 14.5 | G |
| 574 | <i>Acer saccharum</i>    | Sugar Maple  | 13   | G |
| 575 | <i>Populus deltoides</i> | Cottonwood   | 24   | G |
| 576 | <i>Pinus strobus</i>     | White Pine   | 13   | G |
| 577 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 578 | <i>Acer negundo</i>      | Box Elder    | 12   | G |
| 579 | <i>Acer negundo</i>      | Box Elder    | 15   | G |
| 580 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 581 | <i>Pinus strobus</i>     | White Pine   | 14   | G |
| 582 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 583 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 584 | <i>Pinus strobus</i>     | White Pine   | 13   | G |
| 585 | <i>Pinus strobus</i>     | White Pine   | 13   | G |
| 586 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 587 | <i>Pinus strobus</i>     | White Pine   | 12   | G |
| 588 | <i>Acer negundo</i>      | Box Elder    | 13   | F |
| 589 | <i>Prunus serotina</i>   | Black Cherry | 12   | F |



MARX  
WETLANDS  
LLC

August 28, 2018

Erick Friestrom  
**Kebs, Inc.**  
2116 Haslett Road  
Haslett, MI 48840

**Re: Wetland Determination & Delineation Report: Hannah Boulevard  
Section 20, Meridian Township, Ingham County, Michigan**

Dear Mr. Erick Friestrom:

Pursuant to your request, Marx Wetlands LLC conducted a wetland determination and delineation for an approximately 30-acre property for the above-referenced ("Project Site"). The Site is located directly east of the dead-end of Hannah Blvd, approximately 0.10 miles east of its intersection with Eyde Parkway in Section 20 of Meridian Township (T4N, R1W), Ingham County, Michigan. The intent of this determination is to provide a report of the character of any wetland areas within the subject parcel and an opinion as to the possible jurisdiction of the Michigan Department of Environmental Quality (MDEQ) and/or local governments over wetland areas identified on-site.

The wetland determination was performed in accordance with the Michigan Department of Environmental Quality Wetland Identification Manual (2001), the Northcentral-Northeast Manual to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. The delineation of any wetland depends on three basic parameters. These parameters are: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time). The above parameters are virtually always inter-related and present in wetland systems. The wetland determination consisted of desktop review of available background documentation and mapping followed by a site visit performed on August 8, 2018. A review of the findings is provided below.

**Site Characteristics**

Based on review of aerial photographs and the on-site visits, the Site contains primarily undeveloped land, consisting of areas of upland open fields, scrub-shrub, forested, and wetland. Mowed paths were observed scattered throughout the Site. Upland scrub-shrub and forested areas were identified in the central portions of the Site. The Red Cedar is located along the northern boundary of the Site. The Site is within a largely commercial and residential region of Meridian Township, Michigan. The Site is bounded by undeveloped land to the north and south, and off-campus student housing to the west, and single-family residences to the east.

**Cover Type Descriptions**

Upland herbaceous species found in the open fields include orchard grass (*Dactylus glomerata*), common milkweed (*Asclepias syriaca*), smooth brome (*Bromus inermis*), Japanese hedge-parsley (*Torilis japonica*), common primrose

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(*Oenothera biennis*), bluegrasses (*Poa pratensis* & *P. compressa*), Queen Anne’s lace (*Daucus carota*), big bluestem (*Andropogon gerardii*), wild-bergamot (*Monarda fistulosa*), purple coneflower (*Echinacea purpurea*), sunflowers (*Helianthus spp.*), and goldenrods (*Solidago altissima* and *S. canadensis*).

The upland, scrub-shrub and mixed deciduous forested areas contain the following species: white avens (*Geum canadense*), ebony spleenwort (*Asplenium platyneuron*), white vervain (*Verbena urticifolia*), bluestem goldenrod (*Solidago caesia*), beggar’s lice (*Hackelia virginiana*), penn sedge (*Carex pennsylvanica*), orchard grass, Virginia creeper (*Parthenocissus quinquefolia*), oaks (*Quercus alba*, *Q. macrocarpa*, and *Q. rubra*), black walnut (*Juglans nigra*), white pine (*Pinus strobus*), box-elder (*Acer negundo*), sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), cottonwood (*Populus deltoides*), scattered with basswood (*Tilia americana*), American elm (*Ulmus americana*), bitternut hickory (*Carya cordiformis*), trembling aspen (*Populus tremuloides*), Siberian elm (*Ulmus pumila*), and ash (*Fraxinus spp.*) trees. Common native and non-native shrub species include common buckthorn (*Rhamnus cathartica*), Eurasian honeysuckle (*Lonicera spp.*), staghorn sumac (*Rhus typhina*), blackberry (*Rubus allegheniensis*), and black raspberry (*Rubus occidentalis*). Refer to the enclosed *Photographic Log*.

**Wetland Determination & Delineation**

Eight (8) wetlands (Wetlands A, B, C, D, E, F, G, and H) and the Red Cedar River were identified within the Site and/or along the site’s perimeters. No ponds appear within the Site. Refer to the enclosed Wetland Sketch.

| Feature Name                  | Wetland/Watercourse Type                 | Regulatory Status  |
|-------------------------------|--|--|
| Wetland A                     | Open water (ponded)/Emergent/Scrub-shrub | <b>Likely MDEQ &amp; Township Regulated;</b> within 500 Feet of Red Cedar River                                      |
| Wetland B                     | Emergent/Scrub-shrub/Forested            | <b>Likely MDEQ Regulated &amp; Township Regulated;</b> connected to Red Cedar River                                  |
| Wetland C                     | Emergent/Scrub-shrub/Forested            | <b>Likely MDEQ &amp; Township regulated;</b> > 5 acres in size & connected to off-site watercourse                   |
| Wetland D                     | Forested                                 | <b>Likely MDEQ and Township Non-Regulated;</b> isolated and < 0.25 ac in size  |
| Wetland E                     | Forested                                 | <b>Likely MDEQ Non-Regulated;</b> isolated and < 5 ac in size; <b>Likely Township Regulated:</b> > 0.25 acre in size |
| Wetland F                     | Forested                                 | <b>Likely MDEQ and Township Non-Regulated;</b> isolated and < 0.25 ac in size  |
| Wetland G                     | Open water (ponded)/Emergent/Scrub-shrub | <b>Likely MDEQ &amp; Township Regulated;</b> likely connects to Wetland C off-site and would be > 5 ac in size       |
| Wetland H                     | Forested                                 | <b>Likely MDEQ &amp; Township Regulated;</b> within 500 Feet of Red Cedar River                                      |
| Watercourse 1/Red Cedar River | Perennial                                | <b>Likely MDEQ &amp; Township Regulated;</b> defined bed, banks, and evidence of continuance of water/flow           |

Hannah Blvd (EYDE Property)  
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#### Wetlands

Wetland A and G are linear multi-classified wetland containing open water, emergent, and scrub-shrub components observed along the western boundary of the Site, which extend off-site to the west and south respectively. Herbaceous vegetation within these wetlands include: reed canary grass (*Phalaris arundinacea*), rice-cut grass (*Leersia oryzoides*), cattails (*Typha angustifolia* and *T. latifolia*), grass-leaved goldenrod (*Euthamia graminifolia*), dark green bushrush (*Scirpus atrovirens*), and sedges (*Carex grayii*, *C. scoparia*, and *C. vulpinoidea*). Woody vines include riverbank grape (*Vitis riparia*) and poison-ivy (*Toxicodendron radicans*); and shrub species include: common buckthorn, and dogwoods (*Cornus amomum* and *C. racemosa*). Overhanging trees observed within Wetlands A & G include silver maple (*Acer saccharinum*), white swamp oak (*Quercus bicolor*), elm, and cottonwood. The species range in wetland indicator status from obligate (OBL) to facultative (FAC), indicating species that typically occur in wetlands. Wetland hydrology indicators observed include: standing water (~18 inches), saturation, water-stained leaves, water marks, geomorphic position, and FAC Neutral Test. These wetlands appear to receive hydrology from precipitation, runoff from adjacent developed areas, and roadways, resulting in seasonally saturated to seasonally inundated water regimes. Refer to the enclosed Wetland Sketch.

Wetlands D, E, F, and H are primarily forested wetlands. Herbaceous vegetation within these wetlands include: false nettle (*Boehmeria cylindrica*), reed canary grass, white grass (*Leersia virginica*), fowl manna grass (*Glyceria striata*), water-pepper (*Persicaria hydropiper*), and sedges (*Carex grayii*, *C. scoparia*, and *C. vulpinoidea*). Woody vines include riverbank grape and poison-ivy; and a few shrub species include: common buckthorn, and dogwoods. Eurasian honeysuckles were observed along the margins of most of these wetlands. Trees observed within Wetlands D, E, F, and H include silver maple, box-elder, white swamp oak, elm, and cottonwood. The species range in wetland indicator status from obligate (OBL) to facultative (FAC), indicating species that typically occur in wetlands. Wetland hydrology indicators observed include: saturation, water-stained leaves, water marks, geomorphic position, and FAC Neutral Test. These wetlands appear to receive hydrology from precipitation, runoff from adjacent developed areas, and roadways, resulting in seasonally saturated to seasonally inundated water regimes. Refer to the enclosed Wetland Sketch

Wetlands B and C are multi-classified wetlands containing, emergent, forested, and scrub-shrub components. Wetland B is a floodplain wetland associated with the Red Cedar River, extending off-site to the north and east. Wetland C is a large wetland system associated with Herron's Creek, extending south and west off-site. Herbaceous vegetation within these wetlands include: rice-cut grass, white grass, reed canary grass, moneywort (*Lysimachia nummularia*), bulrush (*Bolboschoenus fluviatilis*), sensitive fern (*Onoclea sensibilis*), and sedges (*Carex grayii*, *C. intumescens*, *C. scoparia*, *C. stipata*, and *C. vulpinoidea*). Shrub vegetation include dogwoods, elderberry (*Sambucus canadensis*), and common buckthorn. Trees

Hannah Blvd (EYDE Property)  
Meridian Township, Ingham County, Michigan  
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observe include silver maple, white swamp oak, elm, and cottonwood. Wetland C also contains the following species: leafy satin grass (*Muhlenbergia mexicana*), lady fern (*Athyrium filix-femina*), tamarack (*Larix laricina*), Louisiana iris (*Iris xvinicolor*), and sedges (*C. lacustris* and *C. stricta*).

The species range in wetland indicator status from obligate (OBL) to facultative (FAC), indicating species that typically occur in wetlands. Wetland hydrology indicators observed include saturation, water-stained leaves, water marks, geomorphic position, and FAC Neutral Test. These wetlands appear to receive hydrology from precipitation, runoff from adjacent developed areas, roadways, and overflow from adjacent watercourses/wetland areas, resulting in seasonally saturated to seasonally inundated water regimes. Refer to the enclosed Wetland Sketch for the approximate location.

#### Regulations

Part 301, Inland Lakes and Streams, states that a feature is considered a regulated watercourse by the MDEQ if it possesses a defined bed, bank, and evidence of continued flow or a continued occurrence of water. Additionally, Part 301 states that if a pond with a surface area larger than five (5) acres should be considered regulated. Based on the site visit, one (1) regulated watercourse (Red Cedar River) is located along the northern periphery of the Site. No ponds were observed on-site.

Part 303, Wetlands Protection, of the NREPA states that if a wetland is five acres in size or larger and/or connected to or located within 500 feet of a river, stream, lake, or pond, it is considered regulated by the MDEQ. Marx Wetlands, LLC has the professional opinion that five (5) wetlands (Wetlands A, B, C, G, and H) are likely regulated by the MDEQ, because they appear to be within 500 feet and/or connected to a regulating feature (i.e., Red Cedar River or Herron's Creek). Wetlands D, E, and F are not likely regulated by the MDEQ because they appear less than 5 acres in size and isolated (i.e., not connected to or located within 500 feet of a regulating feature). Therefore, Marx Wetlands LLC has the professional opinion that Wetlands A, B, C, G, and H do appear to meet the requirements of Part 303, Wetlands Protection, of the NREPA.

In addition, Meridian Township (Township) has its own wetland protection ordinance. The township's Wetland Protection ordinance (Chapter 22, Article IV) states that wetlands are protected if they are:

- contiguous to any inland lake stream, river, or pond.
- Partially or entirely within 500 feet of the ordinary high-water mark of any inland lake, stream, river or pond.

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- Two or more areas of wetland separated only by barriers, such as dikes, roads, berms or other similar features, if any of those wetlands are contiguous to an inland lake, stream, river or pond.
- larger than two acres, even if not contiguous to an inland lake, stream, river or pond.
- not contiguous to any inland lake, stream, river or pond, if the state department of environmental quality determines the protection of the wetland is essential to the preservation of the natural resources of the state from pollution, impairment or destruction.
- wetlands, equal to or greater than one-quarter acre and equal to or less than two acres in size, which are not contiguous to any inland lake, stream, river or pond and are determined to be essential to the preservation of the natural resources of the Township as provided in township code § 22-156. Code § 22-156 provides that a wetland is essential to the preservation of the township's natural resources if it fulfills any of ten criteria.

The Red Cedar River is located along the northern boundary of the Site. Based upon proximity to this stream, Wetlands A, B, and H are likely MDEQ and Township regulated. In addition, Wetlands C and G extend south off-site and presumably connect and appear to be part of a wetland system larger than 5 acres in size, thus Wetlands C and G are also likely MDEQ and Township regulated.

Wetland E is at least one-quarter acre in size. By meeting at least one of ten Township criteria, this wetland may be found essential to the preservation of the natural resources of the Township as provided in township code § 22-156. Therefore, this feature is likely regulated by the Township.

Wetlands D and F are both non-contiguous to, and evidently not directly connected to a lake, stream, river, or pond. Furthermore, these wetlands each appear less than one-quarter acre in total size. It is Marx Wetlands' professional opinion that Wetlands D and F do not fall under MDEQ or Township jurisdiction.

Therefore, it is the professional opinion of Marx Wetlands LLC that six (6) wetlands (Wetlands A, B, C, E, G, and H) may be protected under the Meridian Township's *Chapter 22 Environment, Article IV Wetland Protection*, if it is determined that the protection of these wetland areas is important for the preservation of the local natural resources (Meridian Township- Code 1974, § 105-3; Ord. No. 2002-02, 3-19-2002; Ord. No. 2003-11, 7-6-2003; Ord. No. 2011-04, 3-15-2011).

A permit or approval is likely required by the Meridian Township for any proposed work (e.g., filling, dredging, construction, and draining and/or other development) that takes place within the boundaries of a regulated wetland. Most construction activities that take place outside of these boundaries do not require a wetland

August 28, 2018

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permit from the MDEQ or Meridian Township. Please note that the MDEQ and Township have the final authority on the extent of regulated wetlands, lakes, and streams in the State of Michigan and Meridian Township, respectively.

Please be advised the information provided in this report is a professional opinion. The ultimate decision on wetland boundary locations and jurisdiction thereof rests with the MDEQ or Township and, in some cases, the Federal government. Therefore, there may be adjustments to boundaries based upon review of a regulatory agency. An agency determination can vary, depending on various factors including, but not limited to, experience of the agency representative making the determination and the season of the year. In addition, the physical characteristics of the site can change with time, depending on the weather, vegetation patterns, drainage, activities on adjacent parcels, or other events. Any of these factors can change the nature / extent of wetlands on the site.

Thank you for the opportunity to provide this wetland determination. If you have any questions, please contact me at your convenience.

Sincerely,



**Marx Wetlands LLC**  
Bryana J. Guevara, PWS 2949  
ISA Certified Arborist MI-4204A  
Environmental Consultant

**Enclosures: 1) Photographic Log 2) Wetland Sketch**

**PHOTOGRAPHIC LOG**



1) An east-facing view of existing two track.



2) A view of an upland old field with scattered shrubs and trees.



3) View of existing mowed paths observed throughout the Site.



4) View of upland mixed deciduous forested areas observed throughout the Site.

**PHOTOGRAPHIC LOG**



5) Another view of the central portion of the Site.



6) View of upland old field areas observed in the central portion of the Site.



7) View of Wetland A, an emergent wetland, observed along the western boundary of the Site.



8) A north-facing view of Wetland B, a forested wetland observed along the northern boundary. Red Cedar River observed in the background of the Site.

**PHOTOGRAPHIC LOG**



9) View of Wetland C, a forested and emergent wetland, observed along the southern boundary of the Site.



10) A north-facing view of Wetland D, a forested and scrub-shrub wetland observed in the central portion of the Site.



11) View of Wetland E, a forested wetland, observed in the northeastern portion.



12) A north-facing view of Wetland F, a scrub-shrub wetland observed in the central portion of the Site.

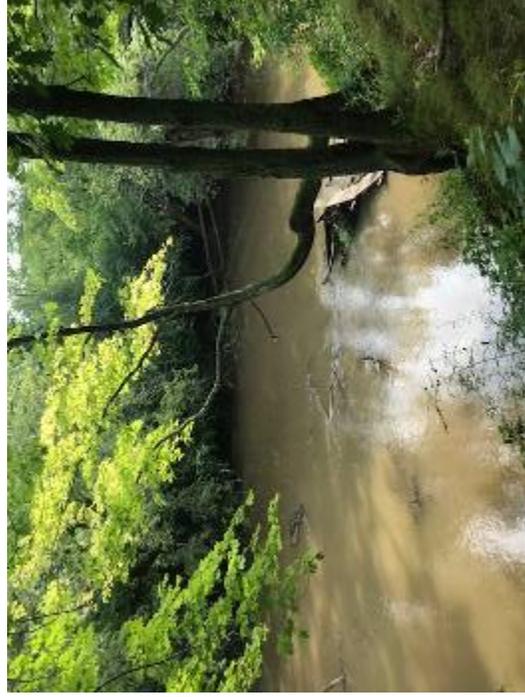
PHOTOGRAPHIC LOG



13) View of Wetland G, an emergent wetland, observed in the western boundary of the Site.



14) A north-facing view of Wetland H, a linear scrub-shrub and forested wetland observed in the western portion of the Site.



15) An east-facing view of Red Cedar River observed along the northern boundary of the Site. .



16) A west-facing view of Red Cedar River observed along the northern boundary of the Site.

# WETLAND SKETCH



River Terrace - River Terrace

Hannah Blvd

Eysenck Pkwy

Mohican Ln  
Tekonsha Trail

B-5 OPEN

B-1 OPEN

B-36 OPEN

C-1 OPEN

B-1 OPEN

A-25 OPEN

A-1 OPEN

G-13 OPEN

G-1 OPEN

E-1 CLOSE TO E-14

F-1 CLOSE TO F-9

C-26 OPEN

H-1 CLOSE TO H-15

H-15

WETLAND B

WETLAND E

WETLAND F

WETLAND C

WETLAND H

WETLAND D

WETLAND A





December 10, 2018  
Project No. 1817787

Mr. Peter Menser  
Charter Township of Meridian  
5151 Marsh Road  
Okemos, MI 48864-1198

Re: Wetland Boundary Verification – WDV 18-15  
Hannah Boulevard Property, Okemos, Ingham County, Michigan

Dear Peter:

On December 5, 2018, Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) staff conducted a field investigation and verified wetland boundaries on approximately 30 acres of Parcel Number 33-02-02-20-401-005 (the Site). The Site contains vacant property in Section 20 of Meridian Township (Township) (Town 4 North, Range 1 West). The Red Cedar River is located along the Site's northern boundary and a county drain (the Hannah Farm Drain) is located along its western boundary. The Hannah Farm Drain is under the jurisdiction of the Ingham County Drain Commissioner.

Wetlands were delineated with pink survey ribbon by Marx Wetlands LLC (Marx), as described in its August 28, 2018, report entitled *Wetland Determination & Delineation Report: Hannah Boulevard, Section 20, Meridian Township, Ingham County, Michigan* (Report). Wetland boundary flags were surveyed and placed on base maps by the EYDE Company (EYDE). These maps were submitted to the Township and did not contain a scale.

## Site Investigation

FTCH staff met Ms. Bryana Guevara of Marx at the site on December 5th and inspected the flagged wetland boundaries for eight wetlands. FTCH made minor changes to the wetland boundaries by eliminating and moving flags as follows:

**Wetland A:** Moved Flags A18, A19, and A20 west, closer to the Hannah Farm Drain.

**Wetland F:** Deleted Flag F6; Flag F5 connects to F7. Deleted Flag F9; Flag 1 connects to F8.

**Wetlands B, C, D, E, G, and H:** No changes.

We recommend EYDE update its base maps to reflect these changes.

## Regulatory Review

The regulatory review was based upon the Report, Google Earth aerial photographs, and site observations. Section 22-116 of the Township's Wetland Protection Ordinance defines "protected wetlands" as any of the following:

- (1) Wetlands, regardless of size, which are contiguous (i.e. within 500 feet of) to any inland lake, stream, river, or pond, whether partially or entirely within the project site.
- (2) Wetlands which are larger than two acres, whether partially or entirely contained within a lot, and which are not contiguous to any inland lake, stream, river, or pond.

(3) Wetlands, equal to or greater than one-quarter acre and equal to or less than two acres in size, which are not contiguous to any inland lake, stream, river, or pond and are determined to be essential to the preservation of the natural resources of the Township as provided in Section 22-156 of the Township’s Wetland Ordinance.

Table 1 summarizes the regulatory status of the Site’s delineated wetlands.

**Table 1 – Summary of Wetland Regulatory Status**

Wetland Verification WDV 18-15  
 Hannah Boulevard Property, Meridian Township

| Wetland | Wetland Type  | Size (on Subject Property) (acres) | Corresponding Meridian Wetland | Regulated by the State of Michigan? | Regulated by Meridian?             |
|---------|---|------------------------------------|--------------------------------|-------------------------------------|------------------------------------|
| A       | Emergent/Scrub-shrub, contiguous to the Hannah Farm Drain and Red Cedar River |                                    | 20-9                           | Yes                                 | Yes                                |
| B       | Emergent/Scrub-shrub/Forested, contiguous to the Red Cedar River              | 2.21                               | 20-4                           | Yes                                 | Yes                                |
| C       | Emergent/Scrub-shrub/Forested   | >5                                 | 20-18                          | Yes                                 | Yes                                |
| D       | Forested, contiguous to the Hannah Farm Drain                                 | 0.21                               | 20-10                          | Yes                                 | Yes                                |
| E       | Forested  | 0.30                               | 20-12                          | No                                  | Yes, if determined to be essential |
| F       | Forested  | 0.04                               | 20-11                          | No                                  | No                                 |
| G       | Emergent/Scrub-shrub, contiguous to the Hannah Farm Drain                     |                                    | 20-9                           | Yes                                 | Yes                                |
| H       | Forested, contiguous to the Hannah Farm Drain                                 | 0.38                               | None                           | Yes                                 | Yes                                |

Because EYDE base maps containing the surveyed wetland boundaries did not contain a scale, FTCH estimated the distance from the Wetland E and F boundaries to the Red Cedar River and Hannah Farm Drain using Google Earth aerial photographs. These distances appear to exceed 600 feet. An essentiality determination is required to determine if Wetland E is regulated by the Township, because Wetland E is greater than 0.25 acre in size.

A Wetland Use Permit is required from the Township for any of the following activities within wetlands regulated by the Township:

- Placing fill or permitting the placement of fill.
- Dredging, removing, or permitting the removal of soil or minerals.
- Constructing, operating, or maintaining any use or development.
- Draining surface water.

In addition, the Township requires that all structures and grading activities during site development shall be set back 40 feet from delineated wetland boundaries and a natural vegetation strip shall be maintained within 20 feet of the wetland boundaries. Wetland mitigation will be required for wetland impacts, creating new wetland at a ratio of 1:1.5.

Mr. Peter Menser – Wetland Verification – WDV 18-15

Page 3

December 10, 2018



If you have any questions regarding this letter or any other wetland-related issues, please contact me at 616.464.3738 or [ehtripp@ftch.com](mailto:ehtripp@ftch.com).

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, reading 'Elise Hansen Tripp'. The signature is written in a cursive style with a long horizontal flourish at the end.

Elise Hansen Tripp, PWS

pmb

By email

cc: Mr. Mark Kieselbach – Charter Township of Meridian



**To: Planning Commission**

**From: Peter Menser, Principal Planner**

**Date: March 12, 2020**

**Re: Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard.**

---

Andev Group, LLC has submitted a special use permit (SUP #20011) proposal to construct a 230 unit senior living community at the east end of Hannah Boulevard. The proposal includes the construction of a new 267,543 square foot senior living community building with 230 dwelling units. Overall, 268,263 total square feet of building area is proposed, consisting of the senior living community building and a 720 square foot garage. The project is proposed to be constructed in two phases, with 111,105 square feet consisting of 109 assisted living and memory care units in Phase 1 and 156,438 square feet consisting of 121 independent living units in Phase 2.

The construction of any building or group of buildings with a combined gross floor area greater than 25,000 square feet requires a special use permit due to the significant impact such development may have upon adjacent property owners, neighborhoods, and public infrastructure. The Code of Ordinances requires the special use permit to ensure that public utilities, roads, and other infrastructure systems are or will be adequate to support the proposed development.

The SUP for building size is being processed concurrently with the SUP for the senior living community development. The staff report for SUP #20011 should be referenced for a more complete overview of the project.

### **Staff Analysis**

The special use permit review criteria found in Section 86-126 of the Code of Ordinances should be used when evaluating the proposed special use permit. The Planning Commission makes a recommendation on the special use permit request and the Township Board has final approval.

### **Planning Commission Options**

The Planning Commission may recommend approval, approval with conditions, or denial of the proposed special use permit. A resolution will be provided at a future meeting.

G:\Community Planning & Development\Planning\SPECIAL USE PERMITS (SUP)\2020\SUP 20021 (Andev\_blg. greater than 25,000 sq. ft.)\SUP 20021.pc1.docx



**To:** Planning Commission

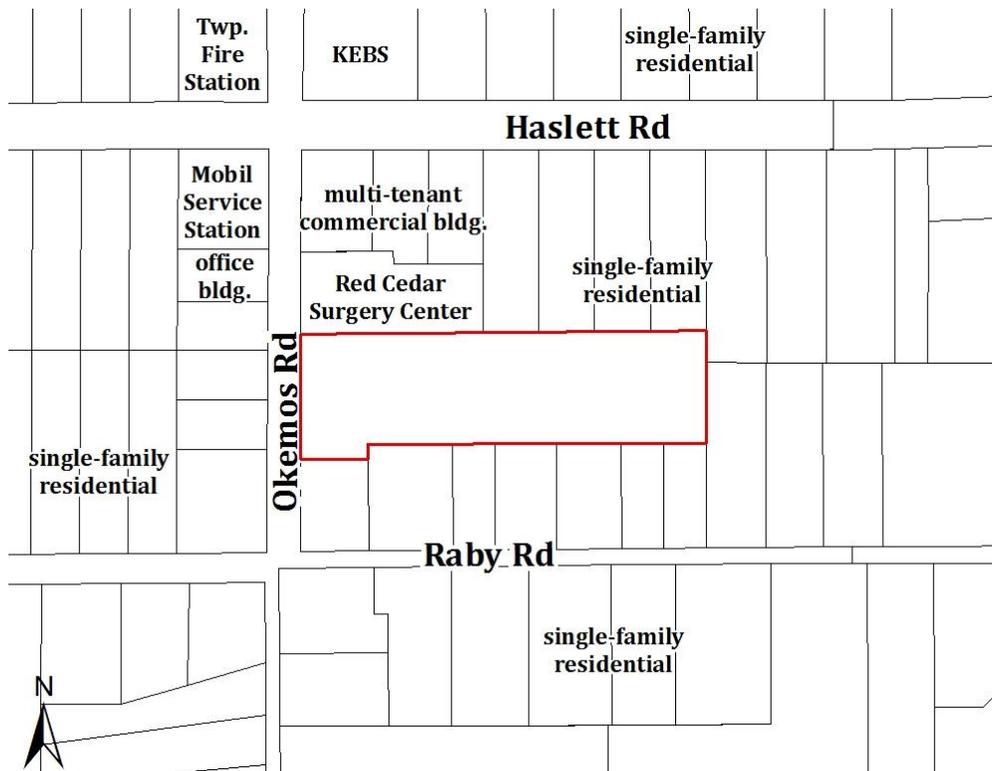
**From:** Peter Menser, Principal Planner

**Date:** March 13, 2020

**Re:** Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).

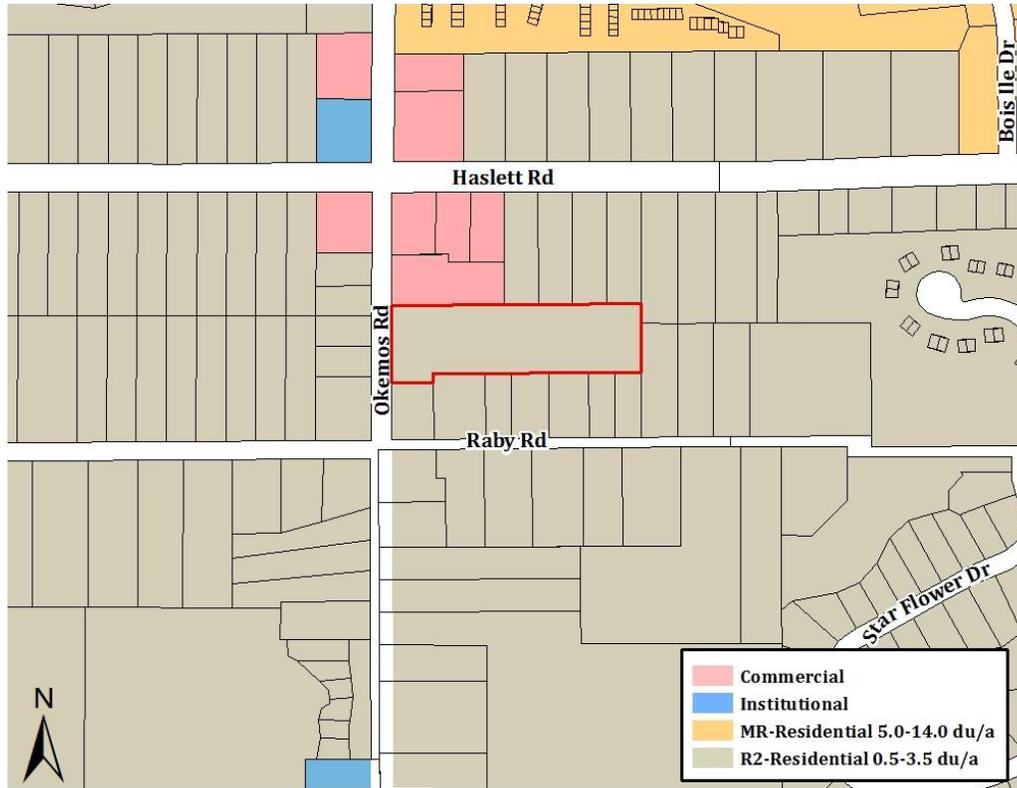
Young Ho Cho has requested the rezoning of approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density). The site is located on the east side of Okemos Road, south of Haslett Road, and north of Raby Road. The property has 280 feet of frontage on Okemos Road.

#### LOCATION MAP



The Future Land Use Map from the 2017 Master Plan designates the subject property in the R2 Residential 0.5 – 3.5 dwelling units per acre (du/a) category.

**2017 FUTURE LAND USE MAP**

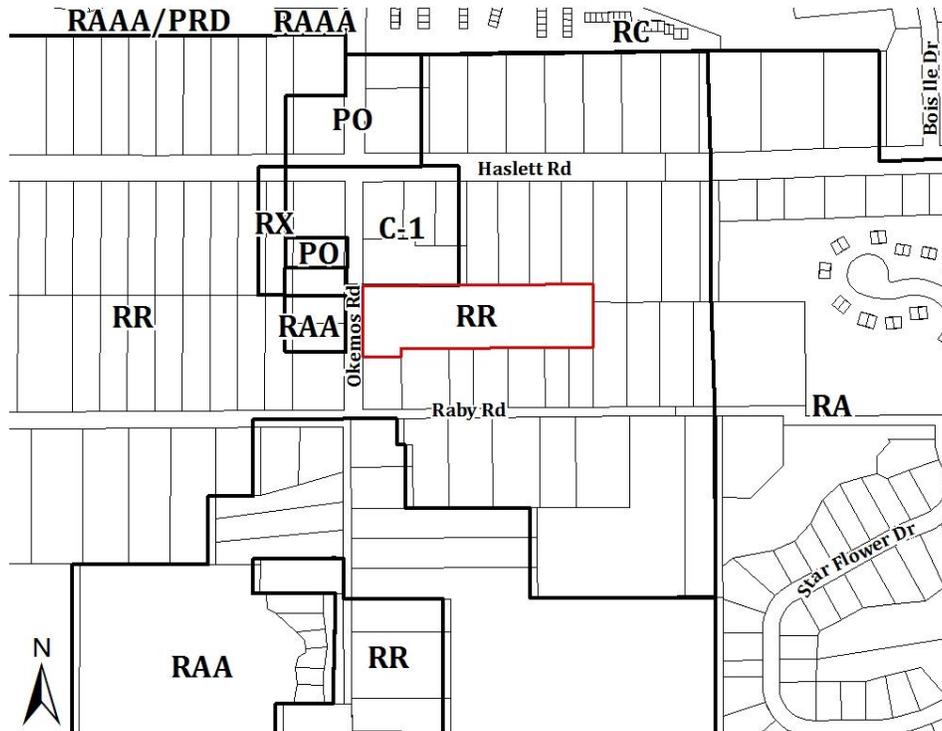


**Zoning**

The subject site is zoned RR (Rural Residential). With 280 feet of lot width on Okemos Road and 4.67 acres (203,425.2 square feet) in lot area, the site meets the minimum standards for both lot area and lot width for both the current RR and proposed RAA zoning districts. The following table illustrates the minimum lot width and lot area requirements for the existing RR and proposed RAA zoning districts:

| ZONING DISTRICT | MINIMUM LOT AREA | MINIMUM LOT WIDTH |
|-----------------|------------------|-------------------|
| RR              | 40,000 sq. ft.   | 200 ft.           |
| RAA             | 13,500 sq. ft.   | 90 ft.            |

ZONING MAP



**Physical Features**

The site contains a 2,513 square foot, two-story single family house built in 1875. The topography of the site slopes from 854 feet above mean sea level where the existing house is located to a high point of 861 feet above mean sea level near the eastern edge of the site. The Flood Insurance Rate Map (FIRM) for Meridian Township indicates the property is not located in a floodplain. The site has no special designation on the Township Greenspace Plan.

Wetlands

The Township Wetland Map shows a potential wetland on the site. If development is proposed a wetland delineation report will be required to determine the boundary, size, and regulatory status of any wetlands. Future development of the site will be required to comply with the wetland protection ordinance and water features setbacks as applicable.

**WETLANDS MAP**



**Streets & Traffic**

The site fronts on Okemos Road, which in the segment adjacent to the subject site, is a two-lane road classified as a Minor Arterial on the Street Setbacks and Service Drives Map in the zoning ordinance. A seven foot wide pedestrian and bicycle pathway is located along the Okemos Road property frontage. The most recent (2017) traffic count information from the Ingham County Road Department (ICRD) for Okemos Road, between Haslett Road and Raby Road, showed a total of 10,679 vehicles in a 24 hour period.

The following table compares estimated traffic generation for the existing RR zoning district and proposed RAA zoning district. It estimates future traffic using data from the highest potential traffic generator allowed in each zoning district, which in this case is one single family house. Traffic generation was calculated using the estimated maximum number of dwelling units that could be developed on the property under the existing RR and proposed RAA zoning districts.

|                 | Existing RR zoning<br>1 single family dwelling | Proposed RAA zoning<br>3 single family dwellings | Change         |
|-----------------|--|--|----------------|
| Peak Hour trips | 0.74 (a.m.)<br>0.99 (p.m.)                     | 2.22 (a.m.)<br>2.97 (p.m.)                       | +1.48<br>+1.98 |
| Weekday trips   | 9.44   | 28.32  | +18.88         |

A rezoning traffic study is required when the trips from the highest potential traffic generator in the requested zoning district would generate more than 100 additional directional trips during a peak hour than the highest potential traffic generator permitted under the current zoning. In this case, the rezoning does not generate greater than 100 peak hour trips so a traffic study was not required.

**Utilities**

Municipal water and sanitary sewer serve the subject site. The location and capacity of utilities for any proposed development will be reviewed in detail by the Department of Public Works and Engineering at the time of a development submittal.

**Staff Analysis**

The applicant has requested the rezoning of an approximate 4.67 acre parcel from RR to RAA. When evaluating a rezoning request, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts, as well as the reasons for rezoning listed on page two of the rezoning application (attached).

One option for development of the site would be through the land division process. The RR zoning district requires parcels to have at least 200 feet of lot frontage; therefore the property, with 280 feet of frontage on Okemos Road, could not be divided into additional parcels without receiving a variance from the Zoning Board of Appeals (ZBA). If rezoned to RAA the property could likely be divided into three parcels with 90 feet of lot frontage each.

The subject property is Lot 61 of the Pleasant Acres subdivision, which when platted in 1946 contained 79 lots. There is potential to re-plat the subject property to facilitate the division of land to create lots in a different configuration than metes and bounds parcels with frontage on Okemos Road. Approval from the Township and the Ingham County Road Department would be required to construct a public road (cul-de-sac) to serve additional parcels.

The following chart outlines the differences in lot area, lot width, and building setbacks between the RR and RAA zoning districts.

|                       | <b>RR</b>          | <b>RAA</b>         |
|-----------------------|--------------------|--------------------|
| Side/Rear Setback:    | 20 feet/35 feet    | 10 feet/30-40 feet |
| Lot Area:             | 40,000 square feet | 13,500 square feet |
| Lot Width:            | 200 feet           | 90 feet            |
| Maximum Lot Coverage: | 20 percent         | 30 percent         |
| Building Height:      | 35 feet            | 35 feet            |

**Planning Commission Options**

The Planning Commission may recommend approval or denial of the request to rezone from RR to RAA. A resolution will be provided at a future meeting.

**Attachments**

1. Rezoning application and attachments dated February 7, 2020 and received by the Township on February 7, 2020.
2. Rezoning criteria.

CHARTER TOWNSHIP OF MERIDIAN  
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT  
5151 MARSH ROAD, OKEMOS, MI 48864  
PHONE: (517) 853-4560, FAX: (517) 853-4095

REZONING APPLICATION

Part I, II and III of this application must be completed. Failure to complete any portion of this form may result in the denial of your request.

Part I

A. Owner/Applicant Young Ho Cho  
Address of applicant 5053 Okemos Rd  
Telephone: ~~at~~ Work (517) 902-4488 Home \_\_\_\_\_  
Fax \_\_\_\_\_ Email Joanokgarnian@yahoo.com

If there are multiple owners, list names and addresses of each and indicate ownership interest. Attach additional sheets if necessary. If the applicant is not the current owner of the subject property, the applicant must provide a copy of a purchase agreement or instrument indicating the owner is aware of and in agreement with the requested action.

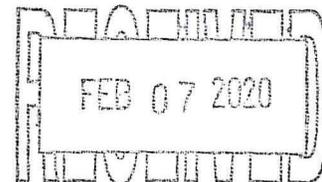
B. Applicant's Representative, Architect, Engineer or Planner responsible for request:  
Name / Contact Person \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone: Work \_\_\_\_\_ Home \_\_\_\_\_  
Fax \_\_\_\_\_ Email \_\_\_\_\_

C. Site address/location 5654 Okemos Rd  
Legal description (Attach additional sheets if necessary) \_\_\_\_\_  
Parcel number \_\_\_\_\_ Site acreage 4.6 Ac

D. Current zoning RR Requested zoning RAA

E. The following support materials must be submitted with the application:

1. Nonrefundable fee.
2. Evidence of fee or other ownership of the subject property.
3. A rezoning traffic study prepared by a qualified traffic engineer based on the most current edition of the handbook entitled *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation, is required for the following requests:
  - a. Rezonings when the proposed district would permit uses that could generate more than 100 additional directional trips during the peak hour than the principal uses permitted under the current zoning.
  - b. Rezonings having direct access to a principal or minor arterial street, unless the uses in the proposed zoning district would generate fewer peak hour trips than uses in the existing zoning district.  
(Information pertaining to the contents of the rezoning traffic study will be available in the Department of Community Planning and Development.)
4. Other information deemed necessary to evaluate the application as specified by the Director of Community Planning and Development.



Part II

REASONS FOR REZONING REQUEST

Respond only to the items which you intend to support with proof. Explain your position on the lines below, and attach supporting information to this form.

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: NO
- 2) The conditions of the surrounding area have changed in the following respects: NA
- 3) The current zoning is inconsistent with the Township's Master Plan, explain: \_\_\_\_\_
- 4) The Township did not follow the procedures that are required by Michigan laws, when adopting the Zoning Ordinance, specifically: NO
- 5) The Township did not have a reasonable basis to support the current zoning classification at the time it was adopted; and the zoning has exempted the following legitimate uses from the area: NO
- 6) The current zoning restrictions on the use of the property do not further the health safety or general welfare of the public, explain: NO

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is yes consistent with the Township's Master Plan, explain: \_\_\_\_\_
- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: Surrounding Area is RAA (Zone)
- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: NO
- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: NO
- 5) Requested rezoning addresses a proven community need, specifically: Rezoning will allow for another single family parcel.
- 6) Requested rezoning results in logical and orderly development in the Township, explain: Consistent with same residential use.
- 7) Requested rezoning will result in better use of Township land, resources and properties and therefore more efficient expenditure of Township funds for public improvements and services, explain: it could increase property tax (Build new House)

Part III

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes     No    (Please check one)

By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate

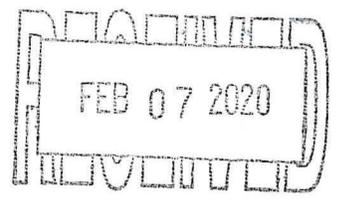
*Y Ho Cho*  
Signature of Applicant

2/7/2020  
Date

Young Ho Cho  
Type/Print Name

Fee: \$740.<sup>00</sup>

Received by/Date: Justin Quagliata  
2/7/20



**Part II**

**REASONS FOR REZONING REQUEST**

**Respond only to the items which you intend to support with proof. Explain your position on the lines below, and attach supporting information to this form.**

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 2) The conditions of the surrounding area have changed in the following respects: \_\_\_\_\_  
\_\_\_\_\_
- 3) The current zoning is inconsistent with the Township's Master Plan, explain: \_\_\_\_\_  
\_\_\_\_\_
- 4) The Township did not follow the procedures that are required by Michigan laws, when adopting the Zoning Ordinance, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 5) The Township did not have a reasonable basis to support the current zoning classification at the time it was adopted; and the zoning has exempted the following legitimate uses from the area: \_\_\_\_\_  
\_\_\_\_\_
- 6) The current zoning restrictions on the use of the property do not further the health safety or general welfare of the public, explain: \_\_\_\_\_  
\_\_\_\_\_

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is consistent with the Township's Master Plan, explain: \_\_\_\_\_  
\_\_\_\_\_
- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: \_\_\_\_\_  
\_\_\_\_\_
- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: \_\_\_\_\_  
\_\_\_\_\_
- 5) Requested rezoning addresses a proven community need, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 6) Requested rezoning results in logical and orderly development in the Township, explain: \_\_\_\_\_  
\_\_\_\_\_
- 7) Requested rezoning will result in better use of Township land, resources and properties and therefore more efficient expenditure of Township funds for public improvements and services, explain: \_\_\_\_\_  
\_\_\_\_\_



**To: Planning Commission**

**From: Peter Menser, Principal Planner**

**Date: March 13, 2020**

**Re: Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).**

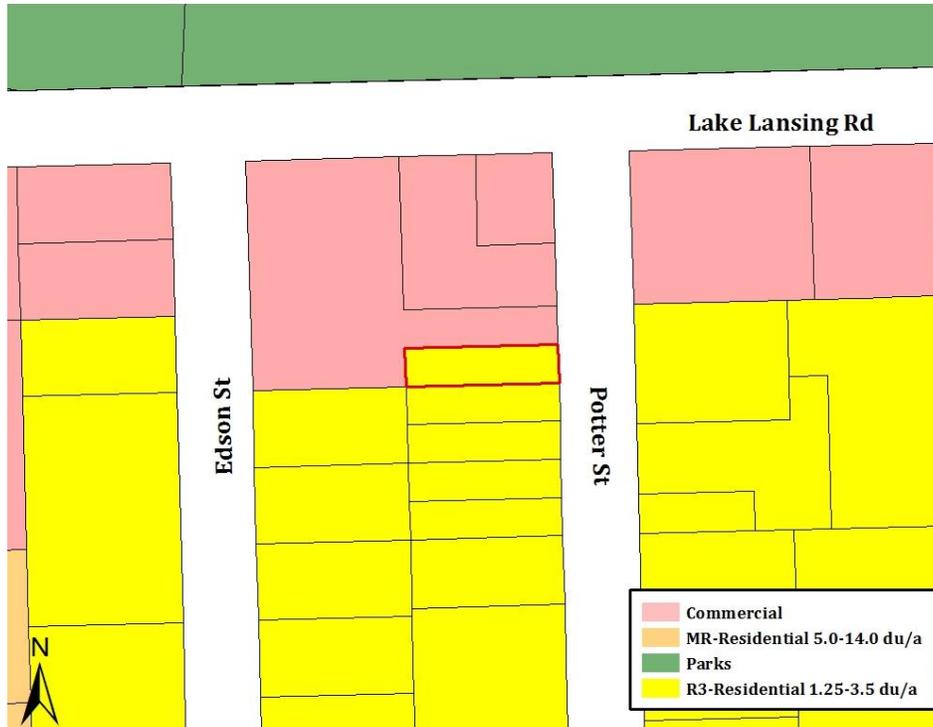
At its meeting on February 10, 2020 the Planning Commission initiated the rezoning of approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential). The site is located on the west side of Potter Street and south of Lake Lansing Road. The property is one-half of Lot 5 of the Village of Nemoka subdivision, which was platted in 1883. The site has 33 feet of frontage on Potter Street.

### LOCATION MAP



The Future Land Use Map from the 2017 Master Plan designates the subject property in the R3 Residential 1.25 – 3.5 dwelling units per acre (du/a) category.

2017 FUTURE LAND USE MAP



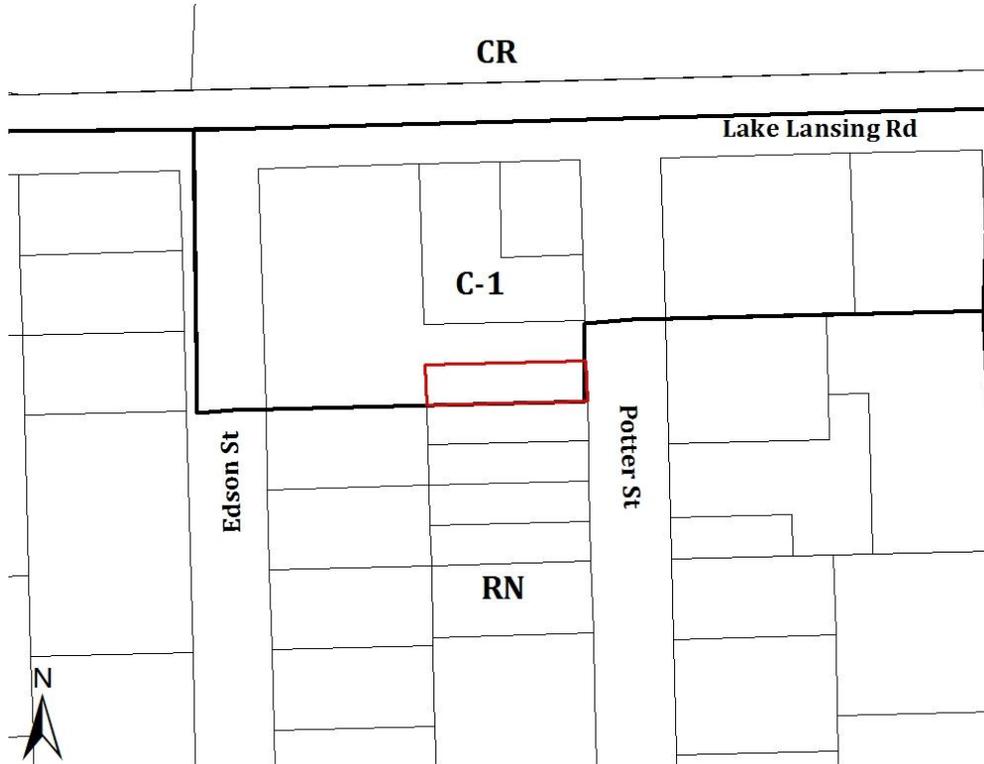
**Zoning**

The subject site is zoned C-1 (Commercial). With 33 feet of lot width on Potter Street and 0.10 acre (4,356 square feet) in lot area, the site does not meet the lot area and lot width minimum standards for either the current C-1 or proposed RN zoning districts. The following table illustrates the minimum lot width and lot area requirements for the existing C-1 and proposed RN zoning districts:

| ZONING DISTRICT | MINIMUM LOT AREA | MINIMUM LOT WIDTH |
|-----------------|------------------|-------------------|
| C-1             | 4,000 sq. ft.    | 50 ft.            |
| RN              | 8,000 sq. ft.    | 65 ft.            |

The RN zoning district permits a mixture of single family and multiple family residential dwellings within the area commonly known as the Village of Nemoka, which is generally described as the area bounded on the north by Lake Lansing Road, on the west by Marsh Road, on the east by Lake Lansing, and on the south by Haslett Road. The RN district allows single family and duplex development by right and multiple family buildings at a maximum density of 14 units per acre by special use permit. Single family detached structures in the RN district must comply with the dimensional requirements for RB district (Single Family-High Density) construction contained in Section 86-374(d).

## ZONING MAP



### Physical Features

The site contains an 816 square foot, two-story single family house built in 1921. The house on the site is in disrepair and will likely be demolished by the new owner. The Township Wetland Map and the Flood Insurance Rate Map (FIRM) for Meridian Township indicate neither wetlands nor floodplain are present on the site. The site has no special designation on the Township Greenspace Plan.

### Streets & Traffic

The site fronts on Potter Street, which is a two-lane road classified as a Local Street on the Street Setbacks and Service Drives Map in the zoning ordinance. A four foot wide sidewalk is located along the property's Potter Street frontage, however sidewalks are not consistently present throughout the Village of Nemoka subdivision. The Ingham County Road Department (ICRD) does not have traffic count information for Potter Street.

A rezoning traffic study is required when the trips from the highest potential traffic generator in the requested zoning district would generate more than 100 additional directional trips during a peak hour than the highest potential traffic generator permitted under the current zoning. In this case, the proposed rezoning does not generate greater than 100 peak hour trips so a traffic study was not required.

### **Utilities**

Municipal water and sanitary sewer serve the subject site.

### **Staff Analysis**

The Planning Commission has initiated the rezoning of an approximate 0.10 acre parcel from C-1 to RN. When evaluating a rezoning, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts.

In 2007 the Planning Commission initiated the rezoning of five parcels (REZ #07100) in the area around the subject site from C-1 to RN. At the time the owner of the subject site objected to the rezoning. When the Township Board approved the rezoning the subject site was excluded while the other properties were rezoned to RN.

Single family detached structures in the RN district must comply with the dimensional requirements for RB district construction. RB zoning standards include a minimum lot area requirement of 8,000 square feet and a minimum lot width requirement of 65 feet. With 4,356 square feet of lot area and 33 feet of lot width the subject site does not meet the minimum lot area and lot width standards for RN/RB single family residential parcels. Variances from the minimum dimensional standards would be required from the Zoning Board of Appeals to construct a new single family house if the existing house is demolished.

The subject site was split in the past and therefore has lost lot of record status. A lot of record is a parcel created prior to 1960 which has retained its current configuration since creation. The zoning ordinance provides measures of relief for variance requirements for lots of record. As the subject site has been split, those measures of relief are not applicable. Additionally, Section 86-368(b)(1)(e) of the zoning ordinance requires single family dwellings to be a minimum of 20 feet in width. The required seven foot side yard setback in the RN/RB zoning district could not be met from both side lot lines if the property owner constructed a 20 foot wide house, therefore a variance from the side yard setback would be required from the Zoning Board of Appeals if a new house is proposed.

The current zoning of C-1 poses nonconforming status on the residential use of the property, making variances from the Zoning Board of Appeals necessary to make improvements to the existing single family house. However, because the lot is dimensionally nonconforming variances from the Zoning Board of Appeals would still be required to make improvements to the property if rezoned to RN.

**Rezoning #20030 (Planning Commission)**  
**Planning Commission (March 16, 2020)**  
**Page 5**

Uses permitted in the RB zoning district include single family dwellings and related home occupations. The home occupation ordinance (Section 86-368(b)(2) of the Code of Ordinances) allows home offices for professional services, personal service establishments, and offices of professionals licensed by the state to treat human patients. Home occupations cannot utilize more than 500 square feet of a dwelling and can only be used on an appointment basis.

The C-1 commercial district is intended to provide day-to-day retail and personal services to persons living in adjacent residential areas with a minimum impact upon surrounding residential development. The following commercial uses are allowed in C-1 zoning:

- Personal service establishments which perform services on the premises
- Retail merchandise establishments
- Restaurants and cafes
- Financial institutions
- Offices

The following chart outlines the differences in lot area, lot width, and building setbacks between the C-1 and RN zoning districts.

|  | <b>C-1</b>                                 | <b>RN (RB for single family)</b> |
|--|--|----------------------------------|
| Side/Rear Setback:                             | 15 feet                                    | 15 feet/30-40 feet               |
| Setback when adjacent to Residential district: | 50 feet (35 feet with landscape screening) | N/A                              |
| Lot Area:                                      | 4,000 square feet                          | 8,000 square feet                |
| Lot Width:                                     | 50 feet                                    | 65 feet                          |
| Maximum Lot Coverage/ Impervious Surface:      | 70 percent                                 | 35 percent                       |
| Building Height:                               | 35 feet                                    | 35 feet                          |

**Planning Commission Options**

The Planning Commission may recommend approval or denial of the request. A resolution will be provided at a future meeting.

**Attachment**

1. Rezoning criteria.

**Part II**

**REASONS FOR REZONING REQUEST**

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