

**SUPERIOR CHARTER TOWNSHIP
WETLANDS BOARD MEETING**

**WEDNESDAY, JANUARY 6, 2021
VIRTUAL VIA ZOOM**

7:00 P.M.

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. ADOPTION OF AGENDA
4. APPROVAL OF MINUTES
 - A. Minutes of May 1, 2019
5. CITIZEN PARTICIPATION
6. COMMUNICATIONS
 - A. Permit Applications Received
 - B. Wetlands Map Updates
 - C. Huron River Watershed Council - Representative Update
 - D. Rouge River Watershed – Friends of Rouge Update
7. OLD BUSINESS
8. NEW BUSINESS
 - A. 5728 Geddes Road Wetland Permit Appeal
9. POLICY DISCUSSION
10. ADJOURNMENT

Laura Bennett, Recording Clerk
3040 N. Prospect Rd.
Ypsilanti, MI 48198 (734) 482-6099

**SUPERIOR CHARTER TOWNSHIP
WETLANDS BOARD
MINUTES OF May 1, 2019**

1. The meeting was called to order by Chairman Zelisse at 7:00 p.m.
2. Board members present were Nancy Caviston, Ellen Kurath, Jim McIntyre, and David Zelisse.
3. The agenda was adopted as presented (motion by Cavision, support by Zelisse approved by voice vote).
4. Minutes of the September 19, 2018 regular meeting were approved as written (motion by McIntyre, support by Caviston approved by voice vote).
5. Citizen Participation – None.
6. Communications

A. Permit Applications Received - None.

B. Wetland Maps Updates - None.

C. Huron River Watershed Council

There was no representative update. Zelisse noted concerns about LeForge Dam, favoring attention about its condition to avoid failure in case of heavy rain.

D. Rouge River Watershed - Friends of the Rouge Update

McIntyre report that the Rouge Rescue cleanup would be held on May 18, 2019.

7. Old Business – None.
8. New Business
 - A. 5728 Geddes Road Wetland Inspection

No permit request has been received yet. A lot split south of the existing home at 5728 Geddes Road is proposed to allow a new home site. Existing wetland area could affect this as a site for a new house. More information will be needed, such as wetland quality.

9. Policy Discussion

- A. Sewer proposed along Gotfredson Road from Salem Township to YCUA – Developer proposes this instead of connection east to Plymouth system. Gotfredson to Geddes to Ridge to YCUA is more than 10 miles and due to hills and valleys this would be a pumped system.

As of the April 15, 2019 Superior Township Board of Trustees meeting, Salem Township received another \$10 million in addition to an earlier \$10 million of somewhat obscure origin from the State. At the April 15, 2019 meeting, a member of the audience asked if he could connect to that sewer if his drain field was not in good condition. Supervisor Schwartz said no; nobody in Superior Township could connect to that sewer which will belong to Salem Township.

Supervisor Schwartz said that the sewer would run through Superior Township, but it is a practical issue who would repair it.

Superior Township has enacted an ordinance unfavorable to going ahead with construction of this sewer, and the Master Plan is against it. Also, WCRC has been informed that Superior Township is not in favor of it.

Zelisse reported that there was a survey and marker flagging has been placed alongside Gotfredson Road, to the West of the road.

- B. Kurath reported that WCRC now has three boom mowers and will be mowing ditches along the roads.

10. Next Meeting - The next meeting was scheduled for Wednesday, September 18, 2019 at 7:00 p.m.
11. The meeting was adjourned at 8:00 p.m. (motion by McIntyre, support by Caviston, approved by voice vote).

Respectfully submitted,
Ellen Kurath, Secretary
Laura Bennett, Recording Secretary

NOTICE OF APPEAL

SUPERIOR CHARTER TOWNSHIP WETLANDS BOARD

**Wednesday
January 6, 2021
7:00 p.m.**

The Superior Township Wetlands Board will meet virtually, via Zoom, regarding the appeal of a wetlands permit issued to 5728 Geddes Road (Parcel ID# J-10-30-400-061).

To participate in the Wetlands Board Meeting, please call 1-312-626-6799 and when prompted, enter meeting ID: 910 2264 1775#. Written comments can be received until 3:00 p.m. the day of the meeting at planning@superior-twp.org, or at the address below.

Laura Bennett, Planning Clerk
734-482-6099

3040 N. Prospect Road
Ypsilanti, MI 48198

MEMORANDUM

TO: Superior Township Wetlands Board

FROM: Laura Bennett, Planning Department

RE: Wetlands Permit Appeal

DATE: December 11, 2020

On November 27, 2020, Matt Schuster emailed the Township Clerk indicating he wished to appeal a wetlands permit issued for a boardwalk at 5728 Geddes Road. Mr. Schuster's written appeal, subsequent emails and attachments are included in this packet.

Following the information from Mr. Schuster is a memo from Richard Mayernik, Building/Zoning Official, as well as information and attachments related to the wetland permit.

Please contact our office at 734-482-6099 or at planning@superior-twp.org if you have any questions about the information within this packet.

From: [Rick Mayernik](#)
To: [Matt Schuster](#); [Lynette Findley](#)
Cc: [Sarah Collier](#); [Laura Bennett](#)
Subject: RE: Appeal of Wetland Permit - 5728 Geddes
Date: Monday, November 30, 2020 11:52:50 AM

Mr. Schuster,

We have received your appeal to the Wetlands Permit issued for 5728 Geddes Road. The Wetlands Board will be scheduled to hear your appeal within 60 days of the receipt of your application. You will be contacted with the time and date that the Wetlands Board will hear your appeal.

Richard Mayernik

From: Matt Schuster <mattaschuster@yahoo.com>
Sent: Friday, November 27, 2020 11:35 PM
To: Lynette Findley <lynettefindley@superior-twp.org>
Cc: Rick Mayernik <rmayernik@superior-twp.org>
Subject: Appeal of Wetland Permit - 5728 Geddes

Hello,

I attempted to deliver this appeal to the township office on Wednesday, 11/25 but I found the office closed due to the holiday.

Please accept this email as evidence of an appeal request for an issued wetland permit at the property 5728 Geddes Rd. I have attached a copy of a letter citing my reasons based on information available thus far. Please contact me with any questions or to facilitate further discussion.

Best Regards,

Matt Schuster
5766 geddes
(248) 790-5650

11.25.20

I am writing to appeal the issuance of a wetland permit issued by the township relating to:

Property Tax No. J-10-30-400-061 aka 5728 Geddes Rd

I understand the permit was issued on or about 11/20/20.

I am an adjacent parcel owner located within 300 ft of the proposed activity. I am also the holder of a dominant easement over access through the same parcel.

I have not had the opportunity to review the issued permits. To my understanding, the same parcel has been identified by its owners and/or their agents as having wetlands regulated by EGLE (formerly MDEQ). The owners and/or their agents have also identified the wetlands as regulated under Superior Township Wetland Ordinance. The parcel owner has previously caused and provided notice to the township of the EGLE wetlands determination. It is my understanding that EGLE regulation should designate the identified wetlands as "Protected Wetlands" under the Superior township wetland ordinance. I further believe that finding should result in the parcel being included in the Superior Township Wetlands Map, which I am not aware of occurring. The wetlands are contiguous with and within 500 ft of the Huron river and/or its impoundment. The wetlands should receive the full protection and evaluations afforded the 'protected wetland' status.

I am appealing the issuance of the permit to allow for a fuller review of the related submitted materials by myself, adjacent parcel owners, and the wetlands board. Upon initial review of information provided to me, the Superior Township Building Permit and wetlands permit do not match the location of the activity approved by EGLE in the wetlands per the drawing. The EGLE approved plans identify the entire activity LESS than 20 ft from the parcel border. The building permits stipulate any activity occur entirely MORE than 20 ft from the parcel border (outside the side yard setback) unless the activities extend less than 18" from the ground (which is not as shown in building plans). These location changes also alter the amount of impacted wetland in linear feet, and appear to necessitate an additional review by EGLE.

Please contact me at your convenience to discuss next steps and/or facilitate information review for further evaluation of the appeal.

Best Regards,

Matt Schuster

5766 Geddes Rd

Laura Bennett

From: Matt Schuster <mattaschuster@yahoo.com>
Sent: Monday, December 7, 2020 5:01 PM
To: Lynette Findley; Rick Mayernik
Cc: Sarah Collier; Laura Bennett
Subject: Re: Appeal of Wetland Permit - 5728 Geddes
Attachments: Wetland Permit Appeal Update (PW20-0003).pdf; Wetland Delineation TES Report 5.1.19 compiled.pdf

All,

Attached is supporting documentation which I wish to include in the appeal. All these documents are public records relating to development plans by the permit applicant with EGLE. I believe these have previously been noticed to the Township, but I wish to ensure that they are available to the record.

On Monday, November 30, 2020, 12:07:14 PM EST, Matt Schuster <mattaschuster@yahoo.com> wrote:

Mr Mayernik,

Thank You for the update, I appreciate your prompt support.

Am I correct that the wetland permit is suspended pending the resolution of the appeal? That is what I am interpreting from the wetland ordinance (178-07.4. A). I would like to stop into the office at a convenient time for you to pickup a copy of the issued wetland permit and issued building permit for detailed review.

I will have supporting documentation to you and the clerk less than one week from today for inclusion in the materials to be provided to the wetland board for their consideration.

Best Regards,

Matt Schuster
(248) 790-5650

On Monday, November 30, 2020, 11:52:55 AM EST, Rick Mayernik <rmayernik@superior-twp.org> wrote:

Mr. Schuster,

We have received your appeal to the Wetlands Permit issued for 5728 Geddes Road. The Wetlands Board will be scheduled to hear your appeal within 60 days of the receipt of your application. You will be contacted with the time and date that the Wetlands Board will hear your appeal.

Intention of Appeal

- 1) Reconcile the proposed permit and building plans with details of the approved EGLE permit to ensure the plans MATCH
- 2) Ensure that Superior Township Ordinance Ordinance 178 is observed
- 3) Confirm that all wetland impacts anticipated in development are comprehended (including site plan and all resulting stormwater impacts)
- 4) Apply Conditions to the wetland permit (if approved) such that applicant is required to maintain all improvements indefinitely and prohibit loss or impairment of wetlands (damming, redirecting, etc) by the approved permit activity.

Attachments:

- 1) Property owner Wetland Delineation (5.1.19)
- 2) EGLE approved plans WRP018893 (contested) - full development comprehended
- 3) EGLE approved plans WRP023919 v1.2 - current work proposed

The appeal in its simplest sense is straightforward - the proposed Superior Township wetland permit and building permit does not match the design approved by EGLE for boardwalk placement. The EGLE approved location does not conform to Township side yard setback requirements. EGLE approved a boardwalk entirely within the 20' setback. The township approved a boardwalk entirely outside the setback. The resulting location apparently needs to shift West by at least 8 feet to comply with the ordinance, and this new location should be approved by EGLE prior to township permit approval, since this extends the wetland impact and could have other impacts on threatened and endangered species. In short, the applicant does not have EGLE approval to place the structures at the now proposed location, and a permit should not have been issued yet.

The review of the application is actually more complex than these simple approval details. The applicant has also previously provided the township and EGLE with a wetland delineation identifying parcel wetlands as being regulated by EGLE (EGLE agrees) and also likely by Superior Township. Superior Township wetland ordinance (178) specifies any EGLE/MDEQ regulated wetland as 'protected wetlands' in the Township. With this designation and a wetland delineation, it appears likely that the parcel needs to have its wetlands added to the Township Wetlands map, which has not yet been done.

Given that the wetlands are shown as contiguous with the Huron river and certainly within 500 ft of the Huron river, it would seem prudent to have a full submission of the site plans and impacts reviewed according to Ordinance 178 prior to wetland permit approval. Without other approved activities on the site, there would appear to be no reason to approve a boardwalk in the protected wetland. Previous full development site plans submitted to EGLE (not rescinded by the applicant, but apparently dramatically altered) indicated significant impervious surface impacts and therefore notable water runoff implications which could dramatically change the loads on the existing wetlands and any new structures placed therein.

As a neighbor within 300 feet of these wetlands with an interest in their preservation and responsible improvement, we would ask that any eventual approved permits require the applicant to also maintain the structures in perpetuity. A sinking or broken boardwalk could easily become a dam altering water flow or causing other wetland impairments.



ONE COMPANY.
INFINITE SOLUTIONS.

April 17, 2019

Ms. Rebecca Lussier
Meadowlark
3250 W. Liberty Road
Ann Arbor, Michigan 48103

Atwell, LLC Project No. 18002735

**Re: Wetland Delineation and Threatened and Endangered Species Habitat Letter
Mouliere Parcel
Superior Township, Washtenaw County, Michigan**

Ms. Lussier:

Meadowlark (Client) contracted Atwell, LLC (Agent) to conduct a Wetland Delineation and Threatened and Endangered Species (TES) habitat review for an approximately 4.60-acre parcel, #J-10-30-400-061, in Section 30 of Superior Township (Township 02 South, Range 07 East), Washtenaw County, Michigan (hereinafter referred to as "Site") to support a proposed single-family home project. The Site is located approximately 0.15 miles southwest of the intersection of Geddes Road and Hickman Road. Refer to the enclosed *Site Location Map*.

The purpose of the wetland determination and delineation was to determine if wetlands, watercourses, and/or bodies of water are present on the Site and, if found, to establish whether they fall under the jurisdiction of the Michigan Department of Environment, Great Lakes, and Energy (EGLE), previously Michigan Department of Environmental Quality (MDEQ) by Part 303, Wetlands Protection; Part 301, Inland Lakes and Streams; or Part 31, Water Resources Protection, of the *Natural Resources and Environmental Protection Act, 1994 PA 451* (NREPA), as amended; and/or local ordinances.

In addition, Atwell reviewed the following data for any ecological and environmental constraints: aerial photography, U.S. Geological Survey (USGS) 7.5-Minute Topographic Maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Maps, Flood Insurance Rate Maps (FIRMs) provided by the Federal Emergency Management Agency (FEMA), and soil data from the Natural Resources Conservation Service (NRCS).

The purpose of the TES review was to determine if the Site contains habitat suitable for supporting TES and to determine the likely presence or absence of listed TES on the Site. To complete the TES review, the USFWS Information for Planning and Conservation (IPaC) and the Michigan Natural Features Inventory (MNFI) databases were reviewed followed by an on-site visit to assess the Site for potential TES habitat and potential occurrence of TES species. The results of the wetland delineation and TES site visit conducted on April 8th, 2019 are summarized below.

Site Setting and Characteristics

A review of aerial photography and a site visit were conducted to characterize the Site and surrounding area. The surrounding landscape consists of residential and commercial development, active agriculture, forested areas, wetlands, Radrick Farms Golf Course, and the Huron River. Review of historical aerials shows a portion of the Site was a residence containing a house, pool, tennis court, fire pit and patio, and additional associated infrastructure. The Site contains upland forested areas, multiple wetland scrub-shrub areas, and multiple watercourses with associated groundwater seeps. The most common tree species found on-site include hackberry (*Celtis occidentalis*), chinkapin oak (*Quercus muenlenbergii*), American basswood (*Tilia americana*), black walnut (*Juglans nigra*), and black oak (*Quercus velutina*). Other trees include American elm (*Ulmus americana*), common buckthorn (*Rhamnus cathartica*), and Eastern cottonwood (*Populus deltoides*). Scrub-shrub species found on-site include buckthorn (*Rhamnus spp.*), Eurasian honeysuckle (*Lonicera spp.*), multiflora rose (*Rosa multiflora*), nannyberry (*Viburnum lentago*), and silky dogwood (*Cornus amomum*).

Wetland Delineation

The wetland delineation was performed in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010). The delineation of any wetland depends on 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 present in wetland systems.

A wetland is considered regulated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), under Part 303, Wetlands Protection, of the *Natural Resources and Environmental Protection Act, 1994 PA 451* (NREPA) as amended, if it is five acres in size or larger, and/or if it is connected to, or located within, 500 feet of a lake, pond, river, or stream. A watercourse (river or stream) is considered regulated by the MDEQ under Part 301, Inland Lakes and Streams, of the NREPA if it possesses a defined bed, banks, and evidence of continued flow and/or continued occurrence of water. *The State definition of lake, pond, river and stream is found in Parts 301 and 303 of PA 631 of Public Acts of 2018, amending NREPA, 1994 PA 451.*

In addition, an artificial or natural lake, pond, impoundment or wetland that is regulated under the current federal Waters of the United States (WOTUS) Rule is also considered regulated by EGLE. This includes features that meet any of the following criteria:

- A pond or wetland located within the 100-year floodplain of a tributary and within 1,500 feet of the ordinary high-water mark of that tributary.
- A pond or wetland located within 1,500 feet of the ordinary high-water mark of the Great Lakes.
- A pond or wetland located within the 100-year floodplain of a Section 10 or Interstate water and has a case-specific significant nexus to a Section 10 or Interstate water.
- A pond or wetland located within 4,000 feet of the ordinary high-water mark of a tributary or Section 10 or Interstate water and has a case-specific significant nexus to a Section 10 or Interstate water.
- A pond or wetland that is an Interstate water.

The federal definition of WOTUS is found in the *U.S. Code of Federal Regulations Title 33. Navigation and Navigable Waters. Chapter II. Corps of Engineers, Dept. of the Army, Dept. of Defense, Part 328. Definition of Waters of the United States. Section 328.3. Definitions (CFR § 328.3 - Definitions.)*. The definition of tributary is also included in this section.

A permit is required by the MDEQ for any temporary or permanent work within a regulated wetland, watercourse, lake, or pond (e.g., filling, dredging, construction, bridges, culverts, etc.).

Part 31, Water Resources Protection, of NREPA regulates activities within the 100-year floodplain and floodway of a river or stream-with an upstream drainage area of two square miles or larger. Activities requiring a permit within regulated floodplains include filling, dredging, construction, bridges, culverts, etc.

Based on a memorandum of agreement between the U.S. Environmental Protection Agency (USEPA) and the EGLE (as MDEQ), the EGLE administers Section 404 of the *Federal Water Pollution Control Act of 1972 (Clean Water Act)*, Title 33 of the United States Code, Section 1251 (USEPA 2011) for interior waters in Michigan. However, the U.S. Army Corps of Engineers (USACE) exercises jurisdiction over the Great Lakes and their connecting traditionally navigable waterways (i.e., navigable waters of the U.S.) under the authority of Section 10 of the *Rivers and Harbors Act of 1899*, as well as tributaries and wetlands adjacent to traditionally navigable waters of the U.S. (i.e., waters of the U.S.), under the authority of Section 404 of the Clean Water Act. On navigable waters of the U.S., USACE regulatory jurisdiction extends laterally to the waterbody, whether above-water or below-water, and includes all the land and waters below or waterward of the OHWM of the waterbody. A Section 404 permit is required for discharge of dredged or fill material and structures (temporary, seasonal, and permanent) within navigable waters of the U.S. and their adjacent jurisdictional tributaries and wetlands.

In addition, Superior Township has the authority to regulate any wetland deemed to be essential under Superior Charter Township Ordinance No. 178 (Superior Township 2009). It is likely that Superior Township will regulate all wetlands on-site. A natural features setback of 25 feet for wetlands and 50 feet for watercourses is also included in the Superior Township Zoning Ordinance, 330 Section 14.05.B.

Atwell conducted a wetland determination and delineation for the Site on April 8, 2019 and identified three (3) wetlands (Wetland 1-3) on the Site, totaling approximately 1.97 acres. Atwell also identified eight (8) watercourses on the Site. Please refer to the enclosed *Wetland Location Map* for information and locations of the on-site wetland. Refer to the *Photographic Log* for site conditions and physical characteristics.

Wetland 1 is an approximately 1.95-acre Palustrine Emergent (PEM)/Palustrine Scrub-shrub (PSS) wetland located throughout a large portion of the Site. Wetland hydrological indicators such as geomorphic position, saturation, and standing water were present at the time of the site inspection. Emergent vegetation present in the wetland included skunk cabbage (*Symplocarpus foetidus*; OBL), reed canary grass (*Phalaris arundinacea*; FACW), purple loosestrife (*Lythrum salicaria*; OBL), and lakebank sedge

(*Carex lacustris*; OBL). These species range in wetland indicator status from Facultative wetland (FACW) to Obligate (OBL) wetland, indicating that these species most often occur in wetlands. Scrub-shrub vegetation present in the wetland included common buckthorn (FAC), glossy buckthorn (*Frangula alnus*; FACW), and silky dogwood (FACW). These species range in indicator status from Facultative (FAC) to FACW, indicating that these species generally occur in wetlands. Wetland 1 is within 500 feet and contiguous to the Huron River, which is located along the southern boundary of the Site. Therefore, Wetland 1 is likely regulated by the EGLE. In addition, Wetland 1 is likely regulated by Superior Township.

Wetlands 2 and 3 are both approximately 0.01-acre PEM/PSS wetlands located in the northcentral portion of the Site. Wetland hydrological indicators such as geomorphic position, saturation, and standing water were present at the time of the site inspection. Emergent vegetation present in the wetland included skunk cabbage, reed canary grass, and paniced aster (*Symphotrichum lanceolatum*; FAC). These species range in wetland indicator status from FAC to OBL, indicating that these species generally occur in wetlands. Scrub-shrub vegetation present in the wetland included common buckthorn and silky dogwood. These species range in indicator status from FAC to FACW, indicating that these species generally occur in wetlands. Wetlands 2 and 3 are located within 500 feet of multiple watercourses throughout the Site, as well as the Huron River. Therefore, Wetlands 2 and 3 are likely regulated by the EGLE. In addition, Wetlands 2 and 3 are likely regulated by Superior Township.

Additionally, Part 301, Inland Lakes and Streams, states that a feature is considered a regulated watercourse by the EGLE if it possesses a defined bank, and evidence of continued flow or continued occurrence of water at the time of inspection. Therefore, it is Atwell's professional opinion that all eight (8) on-site watercourses possess the characteristics of a regulated watercourse, and therefore, should be considered regulated by the EGLE. All watercourses on-site likely originate from groundwater seeps and are therefore considered ephemeral, and are more prominent at certain times of the year. Also, the southern portions of Watercourses 5 and 8 show significant channelization and are most likely visible all year.

According to the U.S. Department of Agriculture (USDA) NRCS Web Soil Survey, the soils contained within the Site have been previously mapped as St. Clair clay loam, 18 to 35 percent slopes (StE); Fox sandy loam, 18 to 25 percent slopes (FoE); Fox cobbly sandy loam, cobbly variant, 2 to 6 percent slopes (FpB); and Wawasee loam, 6 to 12 percent slopes (WawabC). Only a small portion of the Site (4%) is classified as having hydric soils or soils with hydric inclusions, however that does not mean that the Site does not currently contain hydric soils. Hydric soils are conducive to the growth and regeneration of hydrophytic vegetation by their ability to hold water for extended periods of time (USDA-NRCS 2010).

FEMA FIRMs were reviewed to determine if portions of the Site are mapped as floodplains, floodways, or other flood prone areas. These maps record the following data: 100-year (1% chance of annual flooding) and 500-year (0.2% annual chance of flooding) floodplains, the height of the base flood elevation, and the risk to premium areas developed across a floodplain. Based on FEMA FIRM Panel #26121C0269E, FEMA maps approximately 0.45 acres of Zone A floodplain in the southern portion of the Site associated with the Huron River. The remainder of the Site is an area of minimal flood hazard (Zone X).

Threatened and Endangered Species Habitat Review

Federally listed species are protected by federal law under the Endangered Species Act (ESA) of 1973 (16 U.S.C §1531-1544). In Michigan, Part 365, Endangered Species Protection, of the NREPA confers legal protection to state listed species, including plants and animals. NREPA does not provide legal protection for species listed as special concern; however, their status is typically a reflection of declining populations, and they have the potential to be listed under Part 365 in the future.

The USFWS IPaC database was reviewed to obtain a preliminary list of federally threatened, endangered, proposed, and candidate species for the Site. The USFWS IPaC results are provided for analysis and initial planning purposes. IPaC results list seven (7) threatened or endangered species: the Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*; federally threatened), eastern massasauga rattlesnake (*Sistrurus catenatus*; federally threatened), snuffbox mussel (*Epioblasma triquetra*; federally endangered), Mitchell's satyr butterfly (*Neonympha mitchellii*; federally endangered), poweshiek skipperling (*Oarisma poweshiek*; federally endangered), and eastern prairie fringed orchid (*Platanthera leucophaea*; federally threatened) (USFWS 2019). Refer to the *IPaC Results* enclosed with this letter.

MNFI's online database indicates that the Site is located within the range of eleven (11) state listed threatened or endangered species including: the Blanchard's cricket frog (*Silphium laciniatum*; state threatened), the compass plant (*Silphium laciniatum*; state threatened), ginseng (*Panax quinquefolius*; state threatened), goldenseal (*Hydrastis canadensis*; state threatened), Indiana bat (*Myotis sodalis*; state endangered), King rail (*Rallus elegans*; state endangered), lambda snaggletooth (*Gastrocopta holzingeri*; state endangered), purple wartyback (*Cyclonaias tuberculata*; state threatened), red mulberry (*Morus rubra*; state threatened), showy orchis (*Galeria spectabilis*; state threatened), and snuffbox (*Epioblasma triquetra*; state endangered) (MNFI 2019). Refer to the *MNFI Results* enclosed with this letter.

It is Atwell's professional opinion that the preferred habitat for the snuffbox mussel, Mitchell's satyr butterfly, poweshiek skipperling butterfly, eastern prairie fringed orchid, Blanchard's cricket frog, ginseng, goldenseal, King rail, lambda snaggletooth snail, purple wartyback mussel, showy orchid are not present on the Site. Habitat types that these species prefer include prairies, streams, lakes, large freshwater marshes, ponds, rich forests with little to no invasive species, fens, railroad right-of-ways, swamps, limestone cliffs, and large floodplain areas. Although there are watercourses on-site, the watercourses cannot support species that require year round habitat because they are ephemeral and originate from groundwater seeps. The Site was historically occupied and maintained with interspersed canopy trees and has since become dominated by a shrub layer of invasive species. Other habitat types within the Site consist of low quality emergent and scrub-shrub wetland, upland scrub-shrub areas dominated by invasive species, and forest habitat primarily dominated by hackberry and oak species. Therefore, due to the lack of potentially suitable habitat required to support these species, it is Atwell's professional opinion that development of the Site will not impact these TES or their preferred habitats.

The eastern massasauga rattlesnake (EMR) is a federally threatened and a state special concern species that occurs throughout Michigan's Lower Peninsula. In Michigan, the populations are typically found in open, shallow wetlands and on adjacent uplands during the summer. Some of the wetlands and nearby upland areas appear to have suitable habitat for the species. Additionally, the USFWS indicates that the Site is within the known range of the eastern massasauga rattlesnake. Based upon Atwell's habitat assessment and review of available USFWS data, the Site is located within Tier 1 habitat.

In 2017, the USFWS Michigan Ecological Services Field Office published a screening tool for the EMR projects that could potentially affect this species in Michigan. The screening tool includes a set of general best management practices (BMPS) recommended for work within suitable EMR habitat as well as activity specific BMPs recommended for work within Tier 1 habitat (USFWS 2017). It is Atwell's professional opinion that if the general and Tier 1 activity-specific BMPS are followed, impacts to the eastern massasauga rattlesnake and its habitat are unlikely.

Additionally, the red mulberry tree is a state threatened species that occurs throughout the southern portion of Michigan's Lower Peninsula. In Michigan, the populations are typically found in forest floodplain areas within close proximity to rivers and fertile slopes. The species also occurs in forests with large areas of wetland. Based on Atwell's habitat assessment and review of available USFWS data, the Site contains a known mulberry species (*Morus spp.*). Therefore, Atwell recommends that a survey be completed between late May and early October, while leaves are visible, in order to determine if the on-site mulberry species is red. If red mulberry is found on-site, additional BMPs could be recommended in order to preserve the species.

Michigan is within the range of both the Indiana bat and northern long-eared bat, which utilize trees for roosting and/or maternity sites. Open forested habitat is limited within the Site, however, the preferred habitat for Indiana bat and northern long-eared bat was identified during site reconnaissance. Still, some adjacent areas include a multi-lane highway, industrial buildings, and agricultural areas which are all not considered ideal habitat for these species.

The USFWS advises that if the proposed project includes tree clearing activities within suitable Indiana bat habitat, then tree clearing activities should be conducted between October 1st and March 31st in order to avoid potential impacts to this species. It should also be noted that if tree clearing impacts more than 10% of the existing forested habitat within the Site and a half-mile buffer, the EGLE will red file the project.

Conclusions and Recommendations

In conclusion, based on the desktop review of online databases and a site visit, the Site contains three (3) wetlands (Wetlands 1-3) and eight (8) watercourses. It is Atwell's professional opinion that all delineated wetlands within the Site (Wetlands 1-3) appears to meet the requirements of Part 303, Wetlands Protection, of NREPA. Therefore, Wetlands 1-3 should be considered regulated by the EGLE. Additionally, all wetlands on site are likely regulated by Superior Township. The Site appears to contain eight (8) features (Watercourses 1-8) that are regulated by the EGLE under Part 301, Inland Lakes and Streams, of the NREPA. Furthermore, all wetlands and watercourses on-site include a 25 and 50 foot natural features setback, respectively, which is detailed in the Superior Township Zoning Ordinance, Section 14.05.B. Based on FEMA FIRM Panel #26161C0269E, the Site contains approximately 0.45 acres of Zone A floodplain in the southern portion of the Site associated with the Huron River.

Please note that natural resources-based field work conducted out of the growing season can create seasonal constraints, due to a lack of herbaceous vegetation, frozen ground and/or snow cover. Atwell used our professional judgement based on current field conditions and coordinated field work with the Client prior to conducting potentially contestable field work. Atwell recommends that delineated wetland lines be reviewed during the growing season for accuracy.

Ms. Rebecca Lussier

April 17, 2019

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A permit is required by the EGLE for any proposed work (*e.g.*, filling, dredging, construction, draining, and/or other development) that takes place within the boundaries of a regulated wetland, watercourse, or floodplain. Although most construction activities that take place outside of these boundaries do not require a permit from the EGLE, the EGLE has the final authority on the extent of regulated wetlands, lakes, streams, ponds, and floodplains in the State of Michigan. Atwell strongly recommends additional reconnaissance with the EGLE prior to any activities on Site. Similarly, a permit from Superior Township is required for any impacts to wetlands.

In addition, it is Atwell's professional opinion that the Site does not appear to contain the preferred habitat for the majority of the above listed TES. However, the Site is in Tier 1 habitat for eastern massasauga rattlesnake (EMR). This means that the Site is either occupied or highly likely to be occupied by the EMR, and therefore has associated BMPs. Atwell suggests that the BMPs and recommendations should be followed in order to avoid and minimize potential impacts to these species and their habitat to the maximum extent practicable. Additionally, mulberry trees (*Morus spp.*) have been documented on the Site, and therefore Atwell recommends a survey between the end of May and the beginning of October to determine the species of the mulberry trees on-site. If the trees are confirmed to be red mulberry trees, additional BMPs could be recommended. Lastly, the Site contains a few trees which could potentially serve as roosting and/or foraging habitat for Indiana bats and/or northern long-eared bats. If tree clearing for this project takes place between October 1st and March 31st, the proposed project is not likely to impact Indiana bats or northern long-eared bats. Additionally, publically available data indicates known northern long-eared bat roost trees exist within Pittsfield Township. Atwell recommends coordinating with the USFWS to determine the exact locations of these roost trees as well as roost type. If the roost trees are not maternity roosts or are not located near the Site, it is Atwell's professional opinion that the development of the Site is not subject to incidental take prohibitions under the final 4(d) rule for the northern-long eared bat and that the proposed project should not have reasonable potential to affect the federally listed northern long-eared bat.

We appreciate the opportunity to be of service to you on this project. Should you have any questions, please contact us at (248) 447-2000.

Sincerely,

ATWELL, LLC



Brittany Wenzel-Zachariahs
Environmental Technician
Environmental Services Group

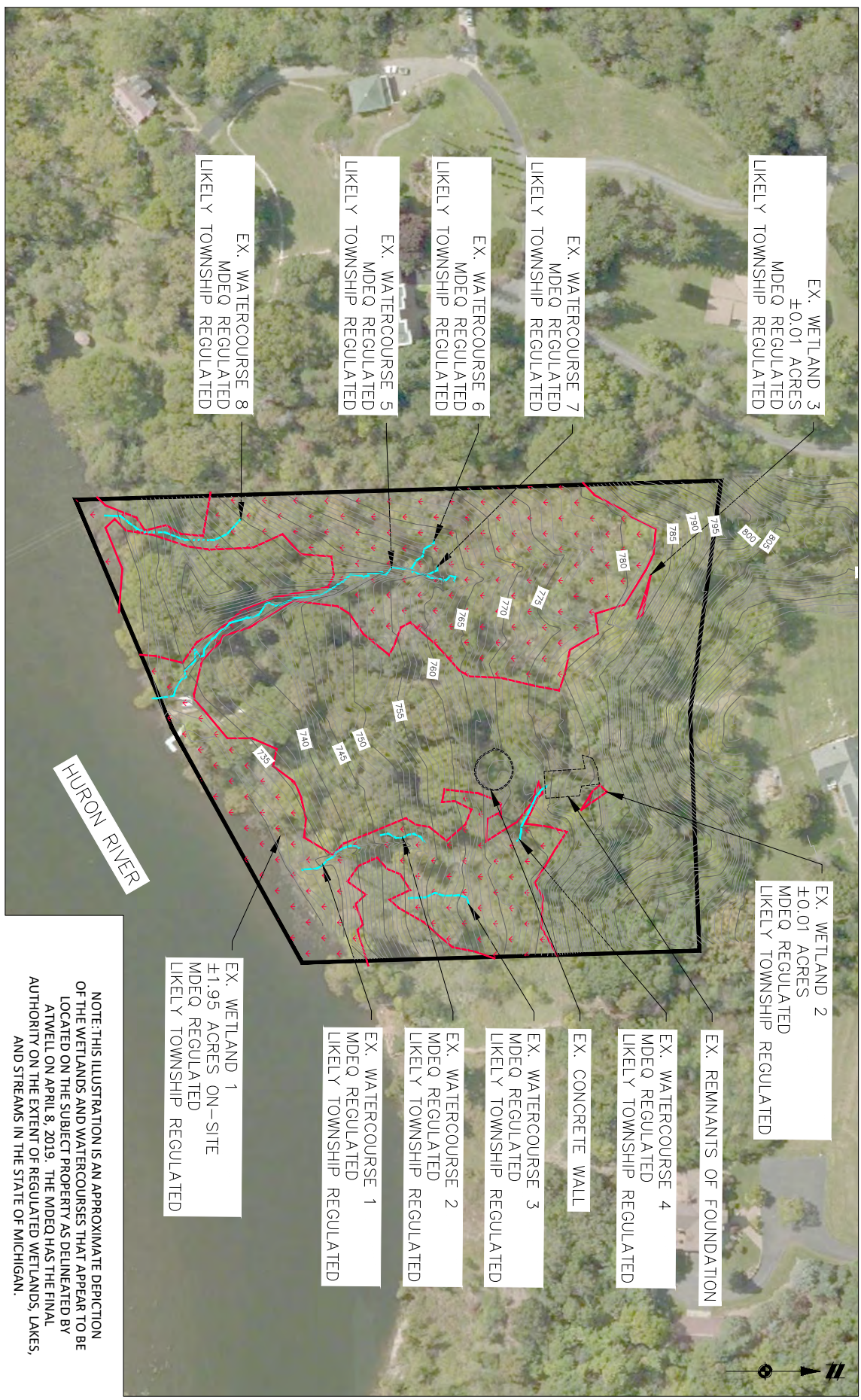


Don Berninger
Team Leader
Environmental Services Group

Enclosures: Wetland Location Map
 Photographic Log
 IPaC Results & MNFI Database Results
 Wetland Data Form

REFERENCES

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EX. WETLAND 3
±0.01 ACRES
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WATERCOURSE 7
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WATERCOURSE 6
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WATERCOURSE 5
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WATERCOURSE 8
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WETLAND 2
±0.01 ACRES
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. REMNANTS OF FOUNDATION

EX. WATERCOURSE 4
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. CONCRETE WALL





EX. WATERCOURSE 3
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WATERCOURSE 2
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

EX. WATERCOURSE 1
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

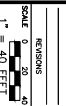

EX. WETLAND 1
±1.95 ACRES ON-SITE
MDEQ REGULATED
LIKELY TOWNSHIP REGULATED

LEGEND



-  SITE (±4.60 ACRES)
-  EXISTING WETLAND
-  EXISTING WATERCOURSE
-  EXISTING CONTOUR

NOTE: THIS ILLUSTRATION IS AN APPROXIMATE DEPICTION OF THE WETLANDS AND WATERCOURSES THAT APPEAR TO BE LOCATED ON THE SUBJECT PROPERTY AS DELINEATED BY ATWELL ON APRIL 8, 2019. THE MDEQ HAS THE FINAL AUTHORITY ON THE EXTENT OF REGULATED WETLANDS, LAKES, AND STREAMS IN THE STATE OF MICHIGAN.



IN ADDITIONAL, ALL WETLANDS AND WATERCOURSES ON-SITE ARE LIKELY REGULATED BY SUPERIOR CHARTER TOWNSHIP UNDER ORDINANCE NO. 178: WETLAND AND WATERCOURSES PROTECTION AND RESTORATION WHICH REPLACES AND REPLACES ORDINANCE NO. 135 - WETLANDS AND WATERCOURSE PROTECTION AND RESTORATION.

 SCALE: 1" = 40 FEET DATE: SEPTEMBER 10, 2019 SHEET NO. 01	CLIENT: MOULIERE PARCEL 5728 GEDDES ROAD WETLAND LOCATION MAP	SECTION: 20 T02S, R07E; SUPERIOR TOWNSHIP WASHTENAW COUNTY, MI	 TWO TOWNE SQUARE, SUITE 700 SOUTHFIELD, MI 48076 248.447.2000	KNOW WHAT'S BELOW. Call before you dig. Michigan Department of Natural and Environmental Services Michigan Department of Transportation Michigan Department of Energy, Labor and Economic Affairs Michigan Department of Health and Human Services Michigan Department of Environment and Great Lakes Science Michigan Department of Education Michigan Department of Agriculture and Rural Affairs Michigan Department of Corrections Michigan Department of Public Safety Michigan Department of State Police Michigan Department of Treasury Michigan Department of Transportation Michigan Department of Water Resources Michigan Department of Workers' Compensation Michigan Department of Youth Services Michigan Department of Corrections Michigan Department of Public Safety Michigan Department of State Police Michigan Department of Treasury Michigan Department of Transportation Michigan Department of Water Resources Michigan Department of Workers' Compensation Michigan Department of Youth Services
	CAD FILE: 18002735_WLM.DWG			

PHOTOGRAPHIC LOG

Photo #1	
Date: 4/8/2019	
Feature: Upland	
Direction: North	
Description: A representative photo of the upland forested areas on the northwest portion of the Site.	
Photo #2	
Date: 4/8/2019	
Feature: Old House	
Direction: Southeast	
Description: A representative photo of the previous house, pool, and infrastructure located on the Site.	



PHOTOGRAPHIC LOG

Photo #3	
Date: 4/8/2019	
Feature: Wetland 3/Old Fire Pit	
Direction: Northeast	
Description: A representative photo of Wetland 3, an EGLE regulated PEM/PSS wetland within the northcentral portion of the Site, and the previous fire pit located on the Site.	
Photo #4	
Date: 4/8/2019	
Feature: Watercourse 4/Wetland 1/House	
Direction: North	
Description: A representative photo of Watercourse 4, which is an ephemeral stream beginning near the old house foundation in the northcentral portion of the Site. Watercourse 1 is contiguous to Wetland 1, which is an EGLE regulated 1.95-acre PEM/PSS wetland that continues throughout a large portion of the Site and is also pictured.	

PHOTOGRAPHIC LOG

<p>Photo #5</p> <p>Date: 4/8/2019</p> <p>Feature: Watercourse 5</p> <p>Direction: North</p> <p>Description: A representative photo of Watercourse 5, an ephemeral stream that is contiguous to the Huron River. The Watercourse is located at the bottom of a large ravine located along the southwest portion of the Site.</p>	
<p>Photo #6</p> <p>Date: 4/8/2019</p> <p>Feature: Wetland 1/Old Tennis Court</p> <p>Direction: West</p> <p>Description: A representative photo of Wetland 1, which is an EGLE regulated 1.95-acre PEM/PSS wetland that is pictured here growing on an old tennis court.</p>	

PHOTOGRAPHIC LOG

<p>Photo #7</p>	
<p>Date: 4/8/2019</p>	
<p>Feature: Pathway/Wetland 1</p>	
<p>Direction: North</p>	
<p>Description: A representative photo the current pathway that comes south from Geddes Road. Wetland 1 is also pictured.</p>	
<p>Photo #8</p>	
<p>Date: 4/8/2019</p>	
<p>Feature: Southern Boundary/Huron River</p>	
<p>Direction: Southwest</p>	
<p>Description: A representative photo of the southern boundary of the Site along the Huron River.</p>	

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Washtenaw County, Michigan



Local office

Michigan Ecological Services Field Office

☎ (517) 351-2555

📠 (517) 351-1443

2651 Coolidge Road Suite 101
East Lansing, MI 48823-6360

<http://www.fws.gov/midwest/endangered/section7/s7process/step1.html>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Indiana Bat *Myotis sodalis* Endangered
 There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/5949>

Northern Long-eared Bat *Myotis septentrionalis* Threatened
 No critical habitat has been designated for this species.
<https://ecos.fws.gov/ecp/species/9045>

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> This species only needs to be considered if any of the following conditions apply: <ul style="list-style-type: none"> • All Projects: Tier 1 EMR Habitat Present • All Projects: Project is Within EMR Range No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Clams

NAME	STATUS
Snuffbox Mussel <i>Epioblasma triquetra</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4135	Endangered

Insects

NAME	STATUS
Mitchell's Satyr Butterfly <i>Neonympha mitchellii mitchellii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8062	Endangered
Poweshiek Skipperling <i>Oarisma poweshiek</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/9161	Endangered

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/601	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR
PROJECT AREA SOMETIME WITHIN
THE TIMEFRAME SPECIFIED,
WHICH IS A VERY LIBERAL
ESTIMATE OF THE DATES INSIDE
WHICH THE BIRD BREEDS
ACROSS ITS ENTIRE RANGE.
"BREEDS ELSEWHERE" INDICATES
THAT THE BIRD DOES NOT LIKELY
BREED IN YOUR PROJECT AREA.)

<p>American Bittern <i>Botaurus lentiginosus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6582</p>	Breeds Apr 1 to Aug 31
<p>Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626</p>	Breeds Dec 1 to Aug 31
<p>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399</p>	Breeds May 15 to Oct 10
<p>Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Jul 31
<p>Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974</p>	Breeds Apr 22 to Jul 20
<p>Dunlin <i>Calidris alpina arctica</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Golden-winged Warbler <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745</p>	Breeds May 1 to Jul 20

<p>Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941</p>	Breeds May 1 to Aug 31
<p>Least Bittern <i>Ixobrychus exilis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6175</p>	Breeds Aug 16 to Oct 31
<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Sep 10
<p>Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482</p>	Breeds May 20 to Aug 31
<p>Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

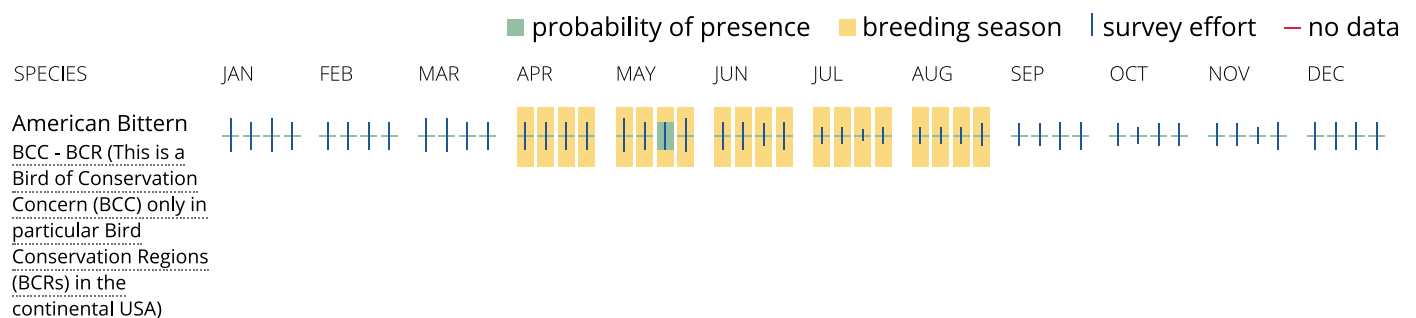
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

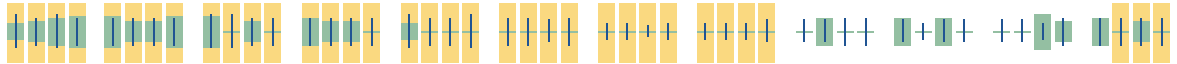
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



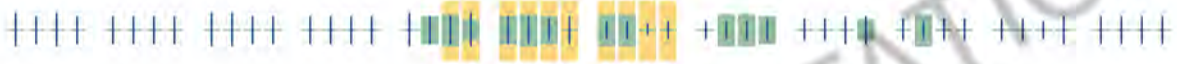
Bald Eagle
 Non-BCC Vulnerable
 (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



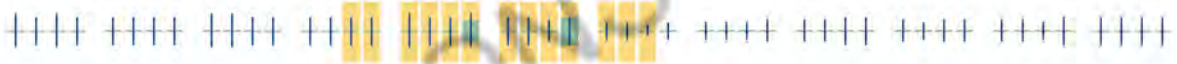
Black-billed Cuckoo
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



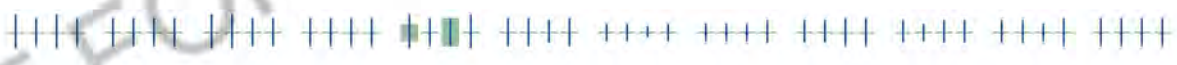
Bobolink
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



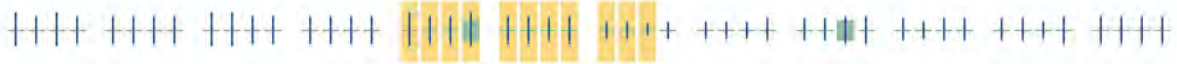
Cerulean Warbler
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



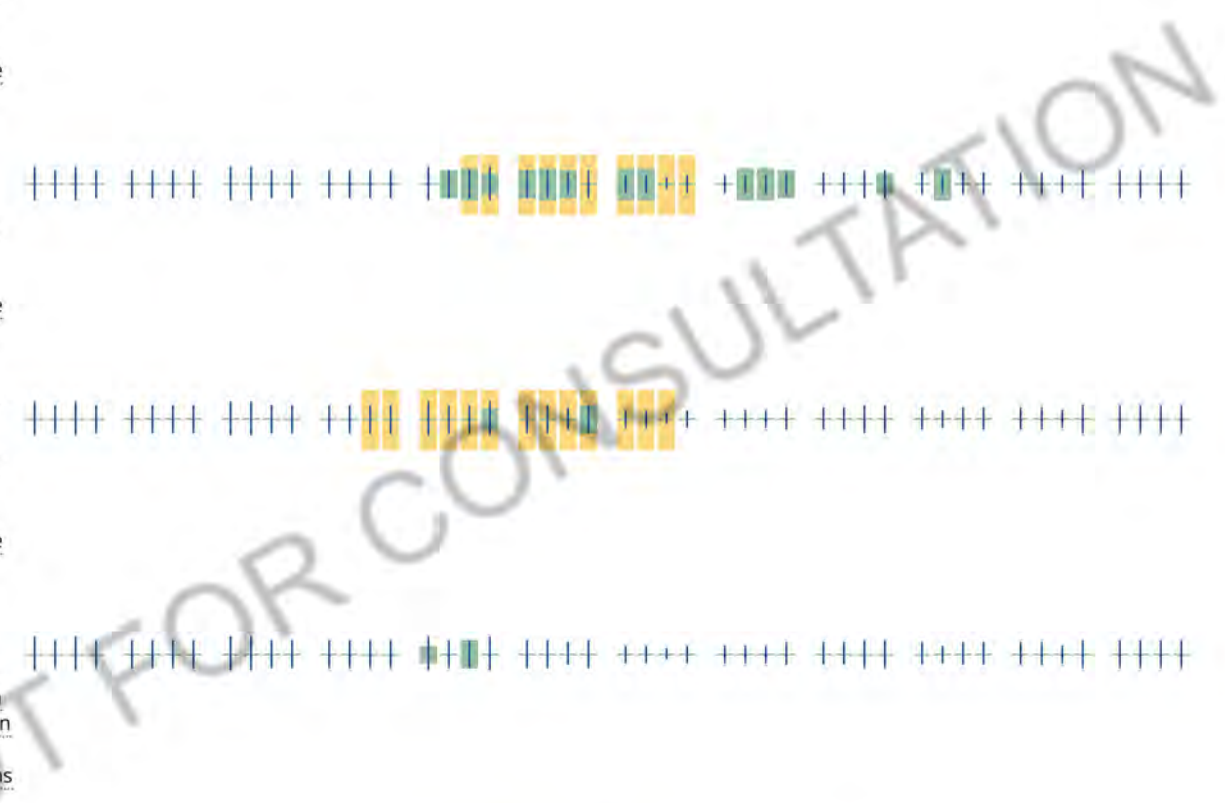
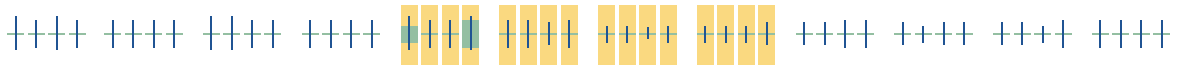
Dunlin
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

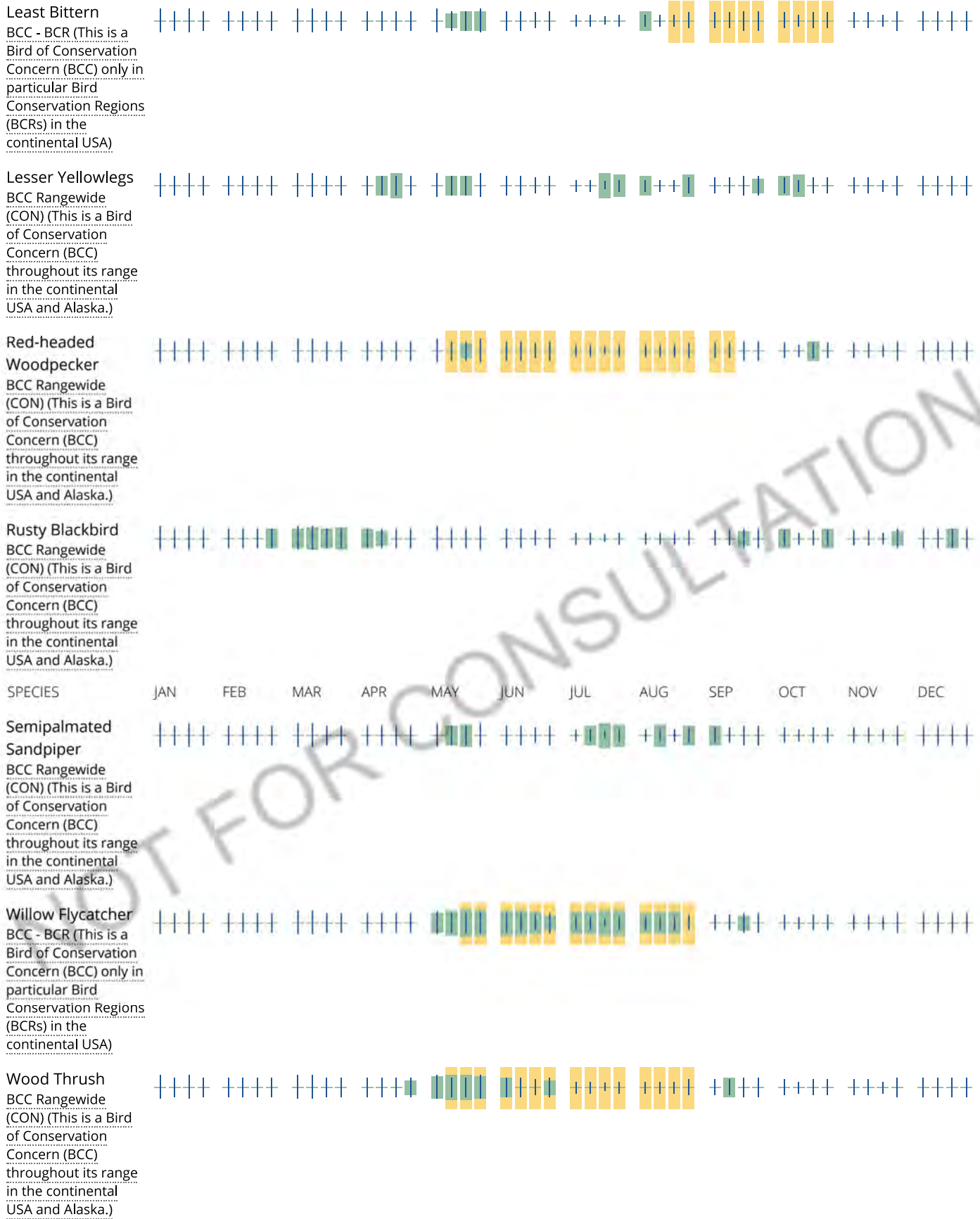


Golden-winged Warbler
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Henslow's Sparrow
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and

avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird

impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

LAKE

[L1UBHh](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Common Name	Scientific Name	State Status	Federal Status	Last Observed Date	Element Category	Mapping Precision	Site of Observation	Best Documentation of EO	Town	Range	Section	County
American burying beetle	Nicrophorus americanus	X	LE	1916-08-07	Animal	GX	Ann Arbor	University of Michigan Museum of Zoology, 1989. Records for Michigan Rare and Endangered Insects.				Washtenaw
Biancher's cricket frog	Acris biancheri	T		1950-05-20	Animal	M	Dixboro				30	Washtenaw
Compass plant	Silphium laciniatum	T		1928-08-27	Plant	GX	Ypsilanti - Ann Arbor Fr. Tracts	Walpole B.A. 1924. Flora of Washtenaw County, Department of Natural Science, Mich. State Normal College (Eastern Michigan University), Ypsilanti, Michigan, 80 pp.			17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, 34, 35	Washtenaw
Depressed ambernail	Oxyoma poeppoei	SC			Plant	SC	Ann Arbor MI.	Unknown, Unknown Date.			7, 18, 19, 30, 31	Washtenaw
Eastern messesuga	Silene calensis	SC	LT	2018-08-02	Animal	M	Methodist Episcopal Gardens/Fleming Creek	Schneider, G., 1990. #190844, 190845 UMMZ.			18, 19, 30	Washtenaw
Ginseng	Parax quinquefolius	T		1867	Plant	GX	Ann Arbor East				7, 18, 19, 30, 31	Washtenaw
Ginseng	Parax quinquefolius	T		2012-07-15	Plant	S	Redick Forest	Washtenaw E.E. 1990. MNNFI Special Plant Survey Form and Map.			19, 30	Washtenaw
Goldenrod	Hydrisis canadensis	T		2018-08-08	Plant	GX	Huron Parkway/Cedar Bend Nature Area	Burnham, S.H. 1886. GH.			7, 8, 16, 17, 18, 19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34	Washtenaw
Green violet	Hybanthus concolor	SC		1919-06-01	Plant	G	Superior Township	WALPOLE, B.A. 1919. WUD.			5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Washtenaw
Green violet	Hybanthus concolor	SC		1919-05-31	Plant	G	Fleming Creek	Walpole, B.A. 1919. #675 MSC.			19, 20, 29, 30, 31, 32	Washtenaw
Hennick-parsey	Conioselinum chinense	SC		1924-10-30	Plant	SC	Geddes Swamp	Walters, Beverly, 2014. Excel spreadsheet of museum specimens for new SC/TE species.			30, 31	Washtenaw
Indiana bat	Myotis sodalis	E	LE	1985-05-11	Animal	GX	Ann Arbor	Kurtz, A. 1990. Status of the Indiana Bat, Myotis sodalis, in Michigan.			18, 19, 30, 31	Washtenaw
King rail	Rallus elegans	E		1948-05-19	Animal	M	Dixboro				8, 16, 17, 18, 19, 20, 21, 28, 29, 30	Washtenaw
Lambda snaggletooth	Gasterocoppa hutchingsi	E		1942	Animal	E	Huron River at Geddes	Unknown surveyor, 1942. UMMZ Lot No. 159937.			30, 31	Washtenaw
Little brown bat	Myotis lucifugus	SC		1992-08-23	Animal	SC	Pittsfield, Village/Ann Arbor	UMMZ online catalog for all collections of the species Myotis lucifugus, downloaded from Vertnet (www.vernet.org), 2015-06-17 for the State of Michigan. Saved in Excel spreadsheet. Also point and polygon shapefiles created from the database catalogue.			7, 18, 19, 30, 31	Washtenaw
Low-sloped chickweed	Panicum fastigiatum	X		1909-08-21	Plant	M	Geddes				30, 31	Washtenaw
Northern long-eared bat	Myotis septentrionalis	SC	LT	2003-07-09	Animal	SC	Ann Arbor	Kurtz, A. Bat survey and Milne database information reviewed 2013-03-15. Not for public viewing. NLEB-1.shp is the spatial representation of Just the NLEB.			18, 19, 30, 31	Washtenaw
Pale evers	Gaum virginianum	SC		1895-08-20	Plant	GX	Ypsilanti				27, 28, 29, 30, 31, 32, 33, 34, 35, 36	Washtenaw
Purple wartyback	Cycloceras tuberculata	T		1997-04	Animal	G	Huron River	Strayer, D. 1979. Some Recent Collections of Mussels from Southeastern Michigan. Malacological Review 12:93-95.			30, 31, 32	Washtenaw
Red mulberry	Morus rubra	T		1880-05-18	Plant	GX	Huron River	Spaulding, U.M. 1880. MICH.			5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33	Washtenaw
Rufous-patched bumble bee	Bombus affinis	SC	LE	1893-05-29	Animal	SC	Ann Arbor, Methodist Episcopal Gardens	Rowe, Logan, T. Wood, and D. Culhrell. 2019. January 17 - Excel file with museum specimen data for the bumble bees of Michigan project.			18, 19, 30	Washtenaw
Shoofly orchis	Galeata spectabilis	T		1894-05-23	Plant	GX	Ann Arbor				30, 31	Washtenaw
Snuffbox	Epipactis atrorubra	E	LE	1956-05-17	Animal	M	U.S. 23, Huron River	Anonymous. 1958. #197202 UMMZ.			30, 31	Washtenaw
Tailing wild bean	Strophosyles heliantha	SC		1924	Plant	M	Shanghai Prairie	WALPOLE, B.A. 1924. FLORA OF WASHTENAW COUNTY, MICHIGAN. MICHIGAN STATE NORMAL COLLEGE YPSILANTI, MICHIGAN, P. 50.			16, 17, 18, 19, 20, 21, 28, 30	Washtenaw
White-tailed sunflower	Helianthus hispidus	SC		1866-08-16	Plant	GX	Penn Central Railroad	Allmendinger, E.C. 1866. MICH.			7, 16, 19, 20, 29, 30, 31, 32	Washtenaw

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 18002735 - Mouliere Parcel City/County: Superior Twp, Washtenaw Co Sampling Date: 4-8-19
 Applicant/Owner: Meadowlark State: MI Sampling Point: WL1
 Investigator(s): C. Kunkle, B. Zachariahs - Atwell, LLC Section, Township, Range: S30, T2S, R7E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-10 Lat: 42.277793 Long: -83.648461 Datum: NAD83
 Soil Map Unit Name: St. Clair clay loam, 18 to 35 percent slopes NWI classification: PEM/PSS

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: WL on slope/bluff outer bend Huron River. Numerous seeps creating some ephemeral, small, stream segments	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
1. <u>Celtis occidentalis</u>	5	Yes	FAC																	
2. <u>Fraxinus pennsylvanica</u>	5	Yes	FACW																	
3. <u>Ulmus americana</u>	5	Yes	FACW																	
4. _____																				
5. _____																				
	15	=Total Cover																		
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>36</u></td> <td>x 1 = <u>36</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>22</u></td> <td>x 3 = <u>66</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>83</u> (A)</td> <td><u>152</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.83</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>36</u>	x 1 = <u>36</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>22</u>	x 3 = <u>66</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>83</u> (A)	<u>152</u> (B)	Prevalence Index = B/A = <u>1.83</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>36</u>	x 1 = <u>36</u>																			
FACW species <u>25</u>	x 2 = <u>50</u>																			
FAC species <u>22</u>	x 3 = <u>66</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>83</u> (A)	<u>152</u> (B)																			
Prevalence Index = B/A = <u>1.83</u>																				
1. <u>Rhamnus cathartica</u>	15	Yes	FAC																	
2. <u>Frangula alnus</u>	5	No	FACW																	
3. <u>Cornus amomum</u>	5	No	FACW																	
4. <u>Carex stricta</u>	2	No	OBL																	
5. _____																				
	27	=Total Cover																		
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Symplocarpus foetidus</u>	15	Yes	OBL																	
2. <u>Lythrum salicaria</u>	10	Yes	OBL																	
3. <u>Carex lacustris</u>	5	No	OBL																	
4. <u>Phalaris arundinacea</u>	5	No	FACW																	
5. <u>Typha angustifolia</u>	2	No	OBL																	
6. <u>Carex stricta</u>	2	No	OBL																	
7. <u>Symphotrichum lanceolatum</u>	2	No	FAC																	
8. _____																				
9. _____																				
10. _____																				
	41	=Total Cover																		
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
1. _____																				
2. _____																				

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

SOIL

Sampling Point: WL1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/1	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- ? Dark Surface (S7)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 2
 Water Table Present? Yes No Depth (inches): 0
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 18002735 - Mouliere Parcel City/County: Superior Twp, Washtenaw Co Sampling Date: 4-8-19
 Applicant/Owner: Meadowlark State: MI Sampling Point: WL2
 Investigator(s): C. Kunkle, B. Zachariahs - Atwell, LLC Section, Township, Range: S30, T2S, R7E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 42.277880 Long: -83.647980 Datum: NAD83
 Soil Map Unit Name: St. Clair clay loam, 18 to 35 percent slopes NWI classification: PEM/PSS

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1.	_____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2.	_____	_____	_____	_____																	
3.	_____	_____	_____	_____																	
4.	_____	_____	_____	_____																	
5.	_____	_____	_____	_____																	
=Total Cover																					
Sapling/Shrub Stratum (Plot size: _____)																					
1.	<u>Rhamnus cathartica</u>	10	Yes	FAC	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>7</u></td> <td>x 2 = <u>14</u></td> </tr> <tr> <td>FAC species <u>11</u></td> <td>x 3 = <u>33</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>23</u> (A)</td> <td><u>52</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.26</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>7</u>	x 2 = <u>14</u>	FAC species <u>11</u>	x 3 = <u>33</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>23</u> (A)	<u>52</u> (B)	Prevalence Index = B/A = <u>2.26</u>	
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OBL species <u>5</u>	x 1 = <u>5</u>																				
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Column Totals: <u>23</u> (A)	<u>52</u> (B)																				
Prevalence Index = B/A = <u>2.26</u>																					
2.	<u>Cornus amomum</u>	2	No	FACW																	
3.	_____	_____	_____	_____																	
4.	_____	_____	_____	_____																	
5.	_____	_____	_____	_____																	
12 =Total Cover																					
Herb Stratum (Plot size: _____)																					
1.	<u>Symplocarpus foetidus</u>	5	Yes	OBL	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2.	<u>Phalaris arundinacea</u>	5	Yes	FACW																	
3.	<u>Symphytotrichum lanceolatum</u>	1	No	FAC																	
4.	_____	_____	_____	_____																	
5.	_____	_____	_____	_____																	
6.	_____	_____	_____	_____																	
7.	_____	_____	_____	_____																	
8.	_____	_____	_____	_____																	
9.	_____	_____	_____	_____																	
10.	_____	_____	_____	_____																	
11 =Total Cover																					
Woody Vine Stratum (Plot size: _____)																					
1.	_____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2.	_____	_____	_____	_____																	
=Total Cover																					
Remarks: (Include photo numbers here or on a separate sheet.)																					

SOIL

Sampling Point: WL2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/1	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 0
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 18002735 - Moulriere Parcel City/County: Superior Twp, Washtenaw Co Sampling Date: 4-8-19
 Applicant/Owner: Meadowlark State: MI Sampling Point: WL3
 Investigator(s): C. Kunkle, B. Zachariahs - Atwell, LLC Section, Township, Range: S30, T2S, R7E
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-5 Lat: 42.278020 Long: -83.648636 Datum: NAD83
 Soil Map Unit Name: Fox sandy loam, 18 to 25 percent slopes NWI classification: PEM/PSS

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 3 </u> (A) Total Number of Dominant Species Across All Strata: <u> 3 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
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1.	<u>Rhamnus cathartica</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> X </u> 2 - Dominance Test is >50% <u> X </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2.	<u>Cornus amomum</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																																	
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>																																	
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>																																	
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1.	<u>Symplocarpus foetidus</u>	<u>5</u>	<u>Yes</u>	<u>OBL</u>																																	
2.	<u>Phalaris arundinacea</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																																	
3.	<u>Symphotrichum lanceolatum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>																																	
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Woody Vine Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1.	<u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																																
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>																																	
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Remarks: (Include photo numbers here or on a separate sheet.)																																					

SOIL

Sampling Point: WL3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/1	100					Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
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- Sandy Gleyed Matrix (S4)
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Indicators for Problematic Hydric Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
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- Aquatic Fauna (B13)
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- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
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- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 0
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PROJECT DEVELOPER

MEADOWLARK
3250 W. LIBERTY ROAD
ANN ARBOR, MI 48103
ATTN: REBECCA LUSSIER

PROJECT CONSULTANTS

ATWELL, LLC
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
PHONE: 248.447.2000
FAX: 248.447.2001
ATTN: BOURKE THOMAS

**MOULIERE PARCEL - 5728 GEDDES RD.
SUPERIOR TOWNSHIP, WASHTENAW COUNTY
EGLE IMPACT PLANS**



VICINITY MAP
NOT TO SCALE

SHEET INDEX

- 01 COVER SHEET
- 02 PROPOSED SITE PLAN
- 03 IMPACT CROSS SECTION
- 04 BMP & CONSTRUCTION DETAILS
- 05 SECS NOTES

VERTICAL DATUM

ELEVATIONS ARE BASED ON THE NAVD 88 DATUM.

BASIS OF BEARING

STATE PLANE, MICHIGAN SOUTH, NAD 83
BASED UPON GPS OBSERVATIONS ALONG WITH SOLUTIONS PROVIDED BY O.P.U.S.



Know what's below.
Call before you dig.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES, PIPELINES AND STRUCTURES ARE NOT GUARANTEED BY ANY PARTY AND ARE NOT BEING REPRESENTED BY THIS DOCUMENT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND STRUCTURES PRIOR TO ANY CONSTRUCTION WORK AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MUST BE INCURRED BY THE CONTRACTOR IN THE COURSE OF ANY UNDERGROUND UTILITIES, PIPELINES AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION WILL SAFETY OF THE PUBLIC BE THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER SHALL BE RESPONSIBLE TO CONDUCT ANY NECESSARY INVESTIGATION FOR THE SAFETY OF PERSONS ENGAGED IN THE WORK OF ANY UNDERGROUND UTILITIES, PIPELINES AND ALL OTHER STRUCTURES.

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SECTION 30
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

CLIENT	MOULIERE PARCEL EGLE IMPACT PLANS COVER SHEET
--------	---

DATE	08/06/2020		
REVISIONS			
DR.	BS	CH.	CK
P.M.	JB		
BOOK	NA		
JOB	18002735		
SHEET NO.	01		

FILE: 18002735_MOU_LY01.dwg
EGLE-WTRD
REVISED 11-2
Approved
Issued On: 07/11/2020
Expire On: 07/11/2025

SEEDING SPECIFICATION

GENERAL
 SEEDING CAN BE USED FOR TEMPORARY OR PERMANENT STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED SHALL BE TEMPORARILY AND/OR PERMANENTLY SEEDED IMMEDIATELY FOLLOWING THE CONCLUSION OF GRADING ACTIVITIES (WEATHER PERMITTING) AND MUST BE COMPLETED WITHIN FIVE (5) DAYS. TEMPORARY AND PERMANENT SEED MIXTURES ARE SPECIFIED BELOW. TEMPORARY SEED MIX SHALL ALSO BE APPLIED DURING THE APPLICATION OF THE PERMANENT SEED MIX TO ENSURE TIMELY VEGETATIVE COVER OF EXPOSED AREAS.

IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY UNIFORMLY AT THE RATE OF 1-1/2 TONS TO 2 TONS PER ACRE OR 100 POUNDS PER 1000 SQUARE FEET. ANCHOR MULCH WITH DISC-TYPE ANCHORING TOOL OR OTHER MEANS APPROVED BY THE LOCAL REGULATORY AGENCY.

SEEDING MIXTURES
 SEE SEED MIXES IN TEMPORARY & PERMANENT SEED CHARTS.

SLOPES FLATTER THAN 3:1 (NOT INCLUDING BASINS)
 APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ.FT. SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

TEMPORARY SEEDING/PLANTING DATES	SEED VARIETY	APPLICATION RATE
IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 14 DAYS	(SEE CHART BELOW)	60 LBS PER ACRE

PERMANENT SEEDING/PLANTING DATES	SEED VARIETY	APPLICATION RATE
PREFERABLE EARLY SPRING OR EARLY FALL	(SEE CHART BELOW)	80 LBS PER ACRE

SLOPES 3:1 OR GREATER (NOT INCLUDING BASINS)
 APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ.FT. AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

TEMPORARY SEEDING/PLANTING DATES	SEED VARIETY	APPLICATION RATE
IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 5 DAYS	(SEE CHART BELOW)	60 LBS PER ACRE

PERMANENT SEEDING/PLANTING DATES	SEED VARIETY	APPLICATION RATE
PREFERABLE EARLY SPRING OR EARLY FALL	(SEE CHART BELOW)	80 LBS PER ACRE

TEMPORARY SEED
SEED: 60 LBS PER ACRE
MIX:
40% SEED OATS
25% KENTUCKY 31 TALL FESCUE
22% CHEEPING RED FESCUE
11% TIMOTHY
1.0% INERT MATTER
1.0% OTHER CROP
0.04% WEED SEED

PERMANENT SEED
SEED: 80 LBS PER ACRE
MIX:
70% TRUE BLUE KENTUCKY (BROOKLAWN, BOUTIQUE, GROME, AND H90-203 KENTUCKY BLUEGRASS)
30% PERENNIAL RYE GRASS (MANHATTAN 4, CHARGER, CITATION 4, AND PIZZAZZ PERENNIAL RYE GRASS)

SEED BED PREPARATION (PERMANENT SEEDING)
 SURFACE WATER CONTROL MEASURES SHALL BE IN PLACE. AREA TO BE SEEDED SHALL BE RIPPED AND SPREAD WITH AVAILABLE TOPSOIL. TOTAL SEEDED PREPARED DEPTH SHOULD BE AT LEAST 4 INCHES. LOOSE ROCKS, ROOTS AND OTHER OBSTRUCTIONS NEED TO BE REMOVED FROM THE SURFACE SO THAT THEY WILL NOT INTERFERE WITH THE ESTABLISHMENT AND MAINTENANCE OF VEGETATION. SURFACE FOR FINAL SEEDING PREPARATION SHOULD BE AT FINISH GRADE AND BE REASONABLY SMOOTH AND UNIFORM.

IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHOULD BE USED ACCORDING TO SEEDING SPECIFICATIONS. IF SOIL TEST IS TAKEN, APPLY FERTILIZER AND LIME ACCORDING TO SOIL TEST REPORT. FERTILIZER AND LIME SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDED PREPARATION. WEIGHTS, SEED SPECIES AND PERCENTAGE OF PURITY AND GERMINATION MUST BE CHECKED PRIOR TO SEEDING.

SEEDING SHALL BE ACCOMPLISHED IN TWO DIRECTIONS AND AT RIGHT ANGLES TO EACH OTHER. LAWN AREAS SHALL BE SEEDED AT THE RATE INDICATED ON THE DRAWINGS BY SCOWING EVENLY WITH AN APPROVED MECHANICAL CUT/PAKAGER SEEDER TO COVER THE SEED AND FORM THE SEEDED IN ONE OPERATION. IF BROADCAST SEEDER IS USED THE SEEDING RATE SHALL BE TWO (2) TIMES THE DRILL RATE. IN INACCESSIBLE AREAS, THE SEED SHALL BE LIGHTLY RAKED WITH FLEXIBLE RAKES AND ROLLED WITH A WATER BALLAST ROLLER. AFTER ROLLING SEEDED AREAS ARE TO BE MULCHED ACCORDING TO SPECIFICATION. IF HYDRO-SEED OPERATION IS USED, SEEDING RATE SHALL BE FIVE (5) TIMES THE DRILL RATE INDICATED ON THE DRAWINGS.

IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON OR UNTIL A UNIFORM STAND OF THE SPECIFIED PERMANENT GRASSES HAVE BEEN ESTABLISHED AND THE SITE HAS REACHED 90% STABILIZATION. PERMANENT AND TEMPORARY SEEDING SHALL BE ACCOMPLISHED THROUGHOUT THE CONSTRUCTION PROCESS.

INSPECTION
 INSPECT SEEDED AREAS FREQUENTLY. IF SEEDED AREAS FAIL TO GERMINATE, OR TO PROVIDE ADEQUATE GROUND COVERAGE, THE AREA SHALL BE RE-SEEDED UNTIL FINAL STABILIZATION IS ACHIEVED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE PLANS. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
- BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
- CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
- ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
- DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
- RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
- ALL DENUDED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE, MUST BE STABILIZED TEMPORARILY WITH THE USE OF FAST-GERMINATING ANNUAL GRASS/GRAIN VARIETIES, STRAW/MULCH, WOOD CELLULOSE FIBERS, TACKIFIERS, NETTING OR BLANKETS.
- ALL MUD/DIRT/MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO PUBLIC ROADWAYS OR INTO WATER COURSES SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
- ON-SITE & OFF-SITE SOIL, STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
- CONTRACTOR TO LIMIT DISTURBANCE OF SITE IN STRICT ACCORDANCE WITH EROSION CONTROL SEQUENCING SHOWN ON THIS PLAN. NO UNNECESSARY OR IMPROPERLY SEQUENCED CLEARING AND/OR GRADING SHALL BE PERMITTED.
- EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURE WHEN REQUIRED. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, STOCKPILES AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED.
- LOW GROUND PRESSURE EQUIPMENT SHALL BE USED TO MINIMIZE LAND DISTURBANCE BETWEEN STRUCTURES.
- ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE WASHTENAW COUNTY WATER RESOURCES COMMISSIONER.
- ALL GRADING TO BE PERFORMED AS NOT TO OBSTRUCT UPSTREAM DRAINAGE.
- SITES WILL BE INSPECTED WEEKLY- ANY AREAS OF OFF-SITE EROSION WILL BE CORRECTED WITHIN 2 BUSINESS DAYS.
- TIMBER CROSSING MATS WILL BE USED AS SHOWN TO MINIMIZE DISRUPTION TO WETLAND AREAS.

SEQUENCE OF CONSTRUCTION FOR SOIL EROSION CONTROL (FOR EACH SITE)

START DAY	END DAY	*SCHEDULE TO BE FILLED OUT BY CONTRACTOR.
		1. PULL ALL NECESSARY PERMITS & LICENSES.
		2. INSTALL SILT AND PROTECTIVE FENCING.
		3. CLEAR AND GRUB WORK AREA
		4. COMPLETELY REMOVE EXISTING STRUCTURE & FOUNDATION.
		5. STRIP AND STOCKPILE TOPSOIL.
		6. EXCAVATE FOR PROPOSE STRUCTURE, STOCKPILE SPOILS AND GRADE ACCORDINGLY
		7. BEGIN FOUNDATION CONSTRUCTION OF NEW STRUCTURE.
		8. REPLACE TOPSOIL, SEED AND STABILIZE DISTURBED AREAS.
		9. REMOVE SILT FENCE, REPAIR DISTURBED AREAS AS NECESSARY.
		10. COORDINATE WITH PERMITTING AGENCIES FOR CLOSEOUT INSPECTION.

NOTE:
 IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON. FOR ALL AREAS LEFT UNSTABILIZED DUE TO SEASONAL CONSTRAINTS, FINAL STABILIZATION SHALL BE ACHIEVED BY APRIL 15TH.



Know what's below. Call before you dig.
 THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION WORK AND ACCESS TO ALL UTILITIES SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF ALL UTILITIES. ANY AND ALL DAMAGES MUST BE COVERED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND PRESERVATION OF ALL UTILITIES. ANY AND ALL DAMAGES MUST BE COVERED BY THE CONTRACTOR.

NOTICE:
 CONSTRUCTION WITHIN THE CITY OF THE LOCAL GOVERNMENT OF THE CITY OF ANN ARBOR FOR THE ENGINEER SHALL BE CONDUCTED TO VERIFY THE LOCATION OF UTILITIES IN THE WORK OF PERSONS ENGAGED IN THE WORK OF ANY OTHER PERSONS.

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ATWELL
 CONSULTING ENGINEERS
 100 TOWN SQUARE, SUITE 700
 ANN ARBOR, MICHIGAN 48106-1400
 TEL: 734.769.2000

SECTION 30
 SOUTH RANGE 7 EAST
 SUPERIOR TOWNSHIP
 WASHTENAW COUNTY, MICHIGAN

MEADOWLARK
 EGLE IMPACT PLANS
 SESC NOTES

DATE 08/06/2020

DR. JB CH. -
 P.L. JB NA
 BOOK 18002735
 JOB 18002735
 SHEET NO. 05

REVISIONS

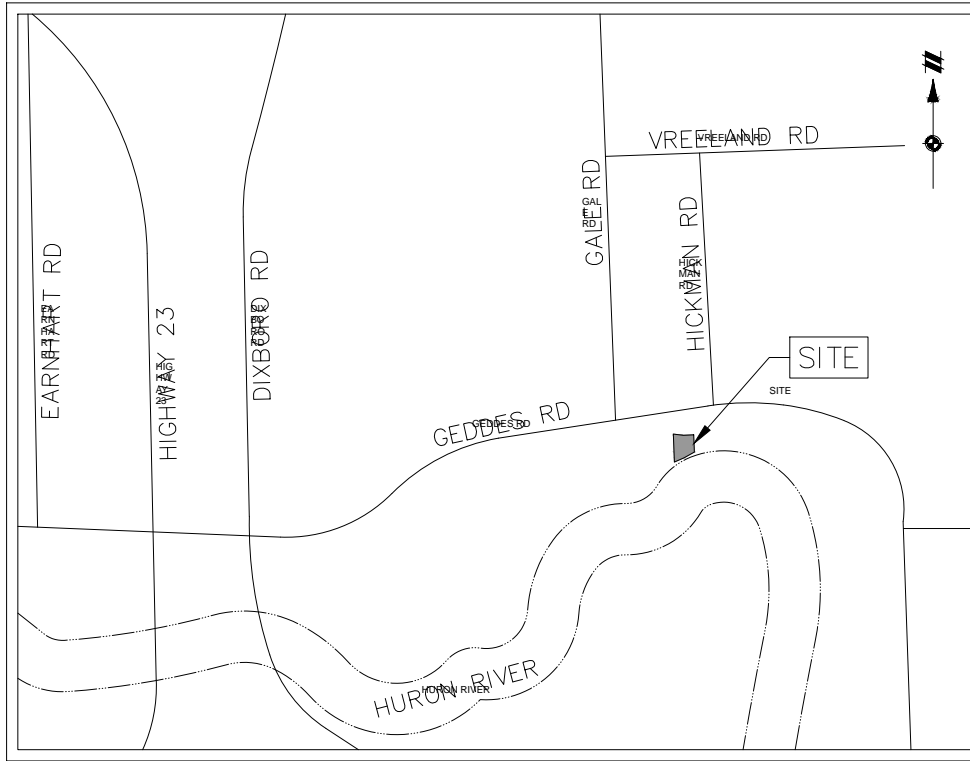
PROJECT DEVELOPER

MEADOWLARK
3250 W. LIBERTY ROAD
ANN ARBOR, MI 48103
ATTN: REBECCA LUSSIER

PROJECT CONSULTANTS

ATWELL, LLC
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
PHONE: 248.447.2000
FAX: 248.447.2001
ATTN: BOURKE THOMAS

**MOULIERE PARCEL - 5728 GEDDES RD.
SUPERIOR TOWNSHIP, WASHTENAW COUNTY
EGLE IMPACT PLANS**



VICINITY MAP
NOT TO SCALE

VERTICAL DATUM

ELEVATIONS ARE BASED ON THE NAVD 88 DATUM.

BASIS OF BEARING

STATE PLANE, MICHIGAN SOUTH, NAD 83
BASED UPON GPS OBSERVATIONS ALONG WITH SOLUTIONS PROVIDED BY O.P.U.S.

SHEET INDEX

- 01 COVER SHEET
- 02 PROPOSED SITE
- 03 PROPOSED SITE PLAN
- 04 PROPOSED SITE PLAN
- 05 SECS NOTES



Know what's below.
Call before you dig.

THE LOCATION OF ANY UTILITIES OR STRUCTURES ARE NOT GUARANTEED. THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE USE OF THIS INFORMATION. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AUTHORITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AUTHORITIES.

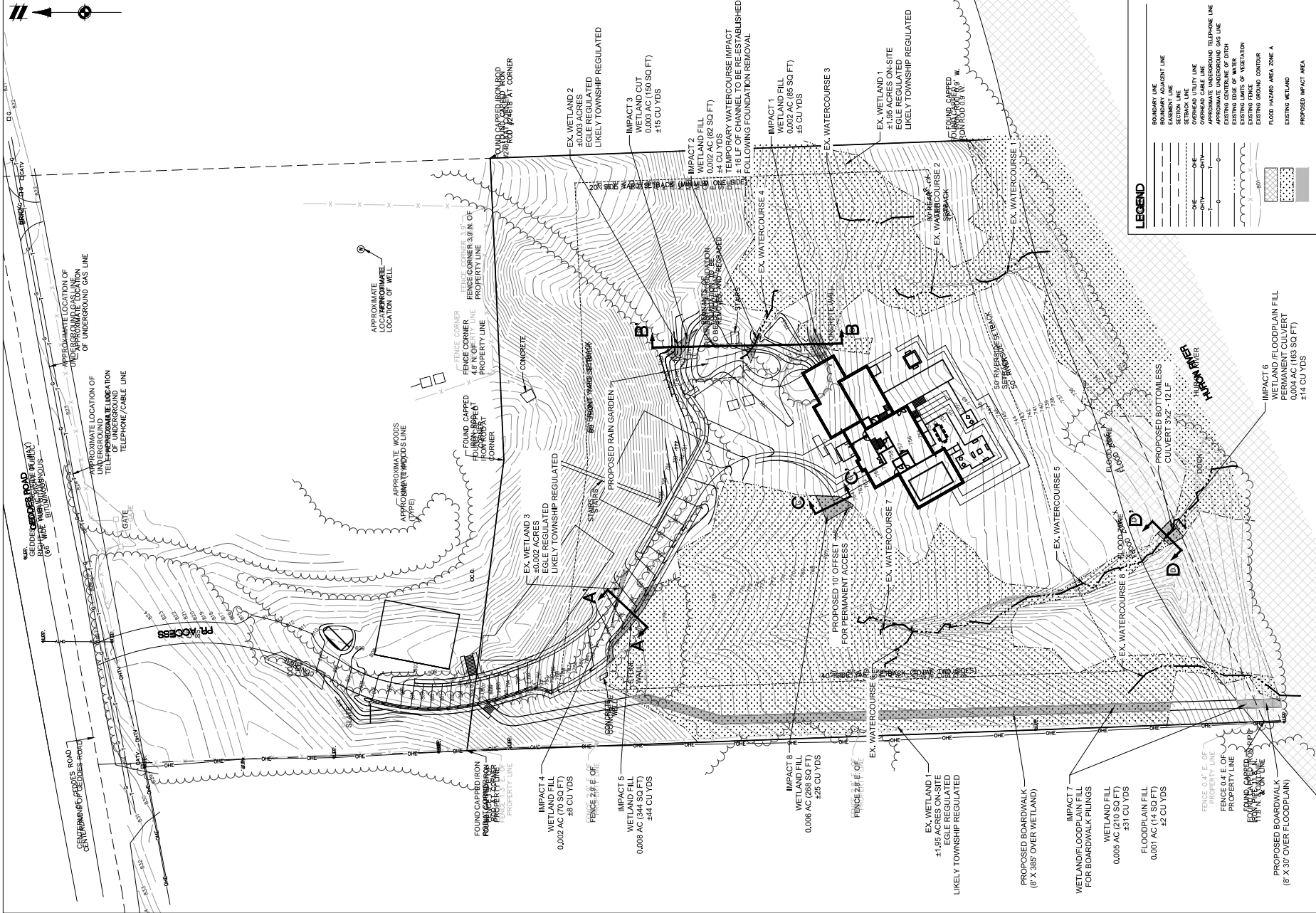
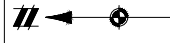
NOTICE: THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AUTHORITIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AUTHORITIES.

ATWELL
PROFESSIONAL ENGINEERS & SURVEYORS
10000 W. HURON RD., SUITE 200
ANN ARBOR, MI 48106
TEL: 248.447.2000
FAX: 248.447.2001

SECTION 80	TOWN 2 SOUTH RANGE 2 EAST
	SUPERIOR TOWNSHIP
	WASHTENAW COUNTY, MICHIGAN

MOULIERE PARCEL EGLE IMPACT PLANS COVER SHEET

DATE	06/25/2019		
REVISIONS			
DR.	BS	CH.	CK
P.M.	DB		
BOOK	NA		
JOB	18002735		
SHEET NO.	01		



LEGEND

---	BOUNDARY LINE
- - - -	EASEMENT LINE
- · - · -	SETBACK LINE
— · — · —	OVERHEAD UTILITY LINE
- - - -	APPROXIMATE UNDERGROUND TELEPHONE LINE
- - - -	APPROXIMATE UNDERGROUND GAS LINE
- - - -	EXISTING CONTURLINE OF EARTH
- - - -	EXISTING LIMITS OF VEGETATION
- - - -	EXISTING FENCE
- - - -	EXISTING GROUND CONTOUR
- - - -	FLOOD HAZARD AREA, ZONE A
- - - -	EXISTING WETLAND
- - - -	PROPOSED IMPACT AREA

NOTICE

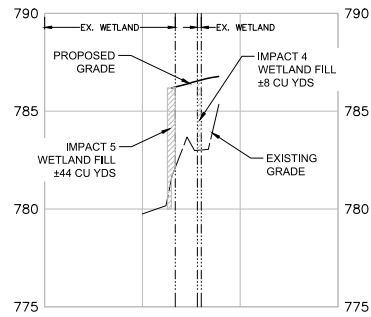
OPERATION OF THIS SITE IS SUBJECT TO THE REQUIREMENTS OF THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES (DNR) AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ). THE USER OF THIS SITE IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER OF THIS SITE IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.



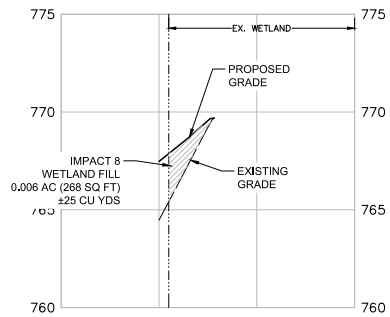
SECTION 30
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

CLIENT: MEADOWLARK
EGLE IMPACT PLAN
PROPOSED SITE PLAN

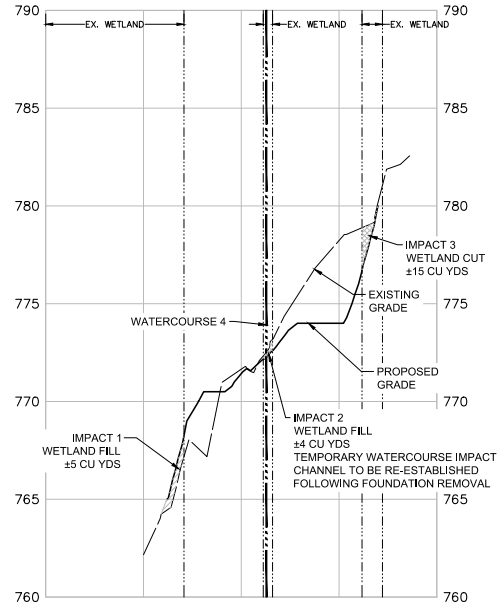
DATE	06/27/2016
REV	11/05/15, 07/15/15, 02/20/15
REVISIONS	
SCALE	1" = 30' FEET
BY	DB
CHK	NA
JOB	18002735
SHEET NO.	02



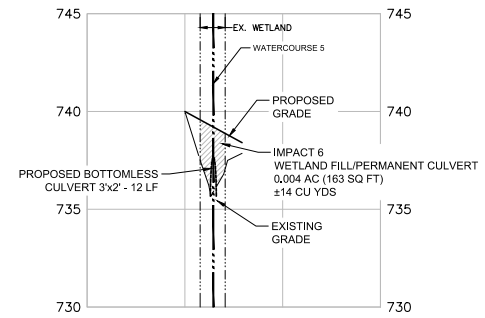
CROSS SECTION A-A'
VERT: 1"=3'
HORIZ: 1"=30'



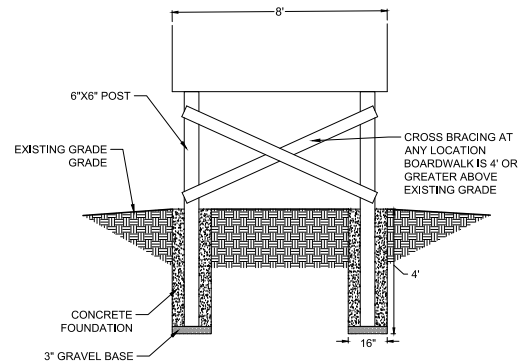
CROSS SECTION C-C'
VERT: 1"=3'
HORIZ: 1"=30'



CROSS SECTION B-B'
VERT: 1"=3'
HORIZ: 1"=30'



CROSS SECTION D-D'
VERT: 1"=3'
HORIZ: 1"=30'



BOARDWALK DETAIL
NOT TO SCALE



Know what's below.
Call before you dig.

THE LOCATION OF ANY
UNDERGROUND UTILITIES AND
OTHER OBSTACLES ARE NOT
GUARANTEED BY THE
PROVIDER OF THIS SERVICE.
IT IS THE RESPONSIBILITY OF
THE USER TO VERIFY THE
ACCURACY OF THE DATA
BEFORE ANY AND ALL
CONSTRUCTION ACTIVITIES.

NOTICE:
CONSTRUCTION SHALL BE IN
ACCORDANCE WITH THE
REQUIREMENTS OF THE
STATE OF ARIZONA AND THE
SPECIAL PERMITS REQUIRED
FOR CONSTRUCTION OF
THE PROJECT.



SECTION 02
TOWN OF SOUTH GAVAZO
SURVEYOR/INSURANCE
WASHINGTON COUNTY, ARIZONA

MEADOWLARK
EDGE IMPACT PLANS
IMPACT CROSS SECTIONS

DATE: 06/25/2019
REV: 07/15/2019

REVISIONS
SCALE: 0 15 30
1" = 30 FEET
DR: AB
P.L. DR
BOOK: NA
JOB: 18002735
SHEET NO.

NOT FOR CONSTRUCTION

MEMO

DATE: December 9, 2020, 2020

TO: Superior Township Wetlands Board

FROM: Richard Mayernik, Building/Zoning Official

RE: 5728 Geddes Wetlands Appeal

Please review the following information and attachments relating to the wetlands appeal by Mr. Schuster.

In 2019, I was contacted by Rebecca Lussier of Meadowlark Construction to discuss wetlands at the subject property. The Atwell Group had prepared a wetland survey of the property and Ms. Lussier had contacted me to discuss step required by the Township. I facilitated setting up a site meeting between Mr. Chris Nordstrom (Township Wetlands Administrator) and Ms. Lussier. That site visit occurred on March 15, 2019 and Mr. Nordstrom prepared a memo (see attached) dated March 18, 2019 which essentially concurred with the Atwell Group's findings relating to the extent of wetlands on the property. It was clear that wetlands existed on the property which would be under the jurisdiction of both EGLE and Superior Township.

On October 9, 2019, EGLE issued Permit No. WRP018893 v.1 (see attached) which authorized work necessary to construct a driveway, raingarden, and grading for the construction of a home. As I understand it, the property owner may be revising the proposed location of the home so, a new or modified EGLE permit may be required.

On July 31, 2020, EGLE issued permit no. WRP023919 v1.2 (see attached) which authorized work necessary to construct a boardwalk and stairs in the wetland.

On November 16, 2020, Snyder Contracting, LLC submitted a building permit application to construct a boardwalk and stairs at the subject property. The drawings submitted did not exactly dimensionally locate the position of the boardwalk, but it was apparent that some portions of the boardwalk would be closer than 20 foot from the side yard property line. I advised the contractor that any portions of the boardwalk that exceeded 18 inches above grade would need to comply with the 20-foot side yard setback requirement. The contractor submitted a letter agreeing to the 20-foot set back (see attached). Upon receipt of the permit application, I contacted our Wetlands Administrator (Mr. Nordstrom) and asked him to review the EGLE drawings and let me know if he saw any issues. Mr. Nordstrom responded to my email (see attached) on November 19, 2020 and indicated he saw no issue with the proposed boardwalk.

On November 23, 2020, Building and Wetlands permits were processed (copies attached) and the contractor was advised that the permit were available for pick up.

On November 27, 2020, I was copied on an email from Mr. Schuster which indicated he wished to appeal the decision to issue the wetlands permit. A letter dated November 25, 2020 was attached to the email. (copies of the email and letter are attached).

Upon receipt of the appeal by Mr. Schuster, I advised the contractor in writing (copy attached) of the appeal and that per the Wetland Ordinance, his permit was suspended until such time as the Wetlands Board took action on the appeal. At that time, I did not realize that the contractor had not picked up or paid for his permits (no contact lobby drop off and pick up) so, the permits were not yet actually valid.

After the receipt of the appeal, I contacted our Wetlands Administrator to discuss the appeal. Since his November 19, 2020 email was very brief, I ask that he prepare a more detailed memo relating to his reasoning relating to the permit application. I received his memo dated December 3, 2020 which is attached.

On Monday, December 7, 2020 Mr. Schuster sent three additional emails to the Township which included addition information for the Boards consideration. These documents are included in your packet.

It appears to me that the main point of Mr. Schuster's appeal is the relocation of the boardwalk to comply with Zoning setback requirements. Much like the contractors plan submission, the EGLE drawings also did not give exacting dimensions of the boardwalk location. Reviewing the EGLE drawings, it was apparent to me that placement of the boardwalk to comply with setbacks would involve no more and no less wetlands than originally considered by EGLE for their permit and as such, I was comfortable issuing the permit. In my view, the minor change in the boardwalk's location is a distinction without a difference.



Carlisle | Wortman

ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

To: Rick Mayernik, Superior Township Building and Zoning Official
From: Chris Nordstrom, Township Wetland Consultant
Ben Carlisle, Township Planner
Date: March 18, 2019
RE: Wetlands Inspection for 5728 Geddes Road

As requested by the Township, Chris Nordstrom of CWA completed a site inspection on Friday, March 15, 2019, to evaluate the accuracy of a wetlands survey prepared by the Atwell Group on February 12, 2019. Chris was accompanied by Rebecca Lussier of Meadowlark Construction.

The site contains relatively steep slopes leading down to the Huron River. The site contains a sizeable plateau that roughly corresponds to the position of an abandoned cottage in the center of the parcel. We noted standing water across most of the property, with running streams in at least two locations. While it was still early in the season, we also spotted a number of plants that are indicative of wetlands, including skunk cabbage, red-twig dogwood, and green ash.

Based on this inspection, we are confident that the Atwell survey, dated February 12, 2019 provides an accurate representation of the site conditions and wetland boundaries. Per Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), these wetlands would be considered protected by the Michigan Department of Environmental Quality as they are connected or are within 500 feet of the Huron River.

Please let me know if you have any questions.

CARLISLE/WORTMAN ASSOC., INC.

Chris Nordstrom, PLA, ASLA

Landscape Architect



**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
WATER RESOURCES DIVISION
PERMIT**

Issued To:

**Jean-Marie Mouliere
5123 Buckley Drive
Ypsilanti, Michigan 48197**

**Permit No: WRP018893 v.1
Submission No.: HNQ-EGNG-7DEA2
Site Name: 81-5728 Geddes Road-Ann Arbor
Issued: October 9, 2019
Revised:
Expires: October 9, 2024**

This permit is being issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Part 301, Inland Lakes and Streams | <input type="checkbox"/> Part 323, Shorelands Protection and Management |
| <input checked="" type="checkbox"/> Part 303, Wetlands Protection | <input type="checkbox"/> Part 325, Great Lakes Submerged Lands |
| <input type="checkbox"/> Part 315, Dam Safety | <input type="checkbox"/> Part 353, Sand Dunes Protection and Management |
| <input checked="" type="checkbox"/> Part 31, Water Resources Protection (Floodplain Regulatory Authority) | |

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

Authorized Activity:

Excavate approximately 15 cubic yards of material and place approximately 86 cubic yards of fill in wetland for the construction of a driveway, a raingarden, and grading for the construction of a home. Restore approximately 16 linear feet of stream to existing conditions following the construction of a raingarden. Install a bottomless 12 foot long, 3 foot by 2 foot culvert in an unnamed stream and place approximately 12 cubic yards of material on top of the culvert to create a stream crossing. Install an 8 foot wide by 385 foot long, elevated, open pile boardwalk in wetland. Install an 8 foot wide by 30 foot long, elevated, open pile boardwalk in regulated floodplain.

All work shall be completed in accordance with the approved plans dated October 9, 2019 and the specifications of this permit.

**Waterbody Affected: Wetland, Huron River, and Unnamed Tributaries to the Huron River
Property Location: Washtenaw County, Superior Township, Town 02S, Range 07E, Section 30,
Property Tax No. J-10-30-400-061**

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.

**EGLE-WRD
WRP018893 v1.0
Approved
Issued On:10/09/2019
Expires On:10/09/2024**

- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify EGLE within one week after the completion of the activity authorized by this permit by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of EGLE.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, EGLE has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, EGLE may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, EGLE may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from EGLE. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by EGLE prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of EGLE. The permittee must submit a written request to EGLE to transfer the permit to the new owner. The new owner must also submit a written request to EGLE to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all the above information may be provided to EGLE. EGLE will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.

- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:

Site Isolation

1. Prior to the initiation of any permitted construction activities, a sedimentation barrier shall be constructed immediately down gradient of the construction site. Sedimentation barriers shall be specifically designed to handle the sediment type, load, water depth, and flow conditions of each construction site throughout the anticipated time of construction and unstable site conditions. The sedimentation barrier shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland (non-wetland, non-floodplain) site and stabilized with seed and mulch. The sedimentation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.
2. Prior to the initiation of any permitted construction activity, a sedimentation barrier shall be installed along the entire route of the disturbed wetland area and maintained in good working order until permanent stabilization and re-vegetation of all disturbed areas has occurred. The sedimentation barrier shall be removed after re-vegetation.
3. Construction must be undertaken and completed during the dry period of the wetland, or when frozen.
4. If the area does not dry out or freeze, construction shall be done on equipment mats to prevent compaction of the soil.
5. Upon completion of the project, the disturbed wetland areas shall be restored to the original contour elevation, revegetated and reseeded with species native to Michigan appropriate to the site, and mulched to prevent erosion.
6. All raw areas in uplands resulting from the permitted construction activity shall be effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity, and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.

7. All raw earth within 100 feet of a lake, stream, or wetland that is not brought to final stabilization by the end of the active growing season (October 10th) shall be temporarily stabilized with mulch blankets.

Threatened and Endangered Species

8. The following federally threatened or endangered species are known to occur on or near this project site and may be impacted by your activities: Eastern Massasauga Rattlesnake (EMR) (*Sistrurus catenatus*) and Indiana Bat (*Myotis sodalist*). Please be advised that any activity that would cause harm to these species may require a federal permit under the Endangered Species Act or other federal regulations. The permittee shall continue Endangered Species Act Consultation with the U.S. Fish and Wildlife Service, 2651 Coolidge Road, East Lansing, Michigan 48829.

Indiana Bat

9. To avoid take of Indiana Bat, any trees larger than five (5) inches dbh on the project site shall not be cut between April 1 and September 30 in any permit year.

Eastern Massasauga Rattlesnake

10. When working during the EMR active season (generally April 15 through October 15), exclusionary fencing shall be used to separate EMR habitat from the work site to prevent EMR from accessing the disturbance area.
11. Any areas using exclusionary fencing shall first be "cleared" by a qualified individual before beginning construction activities. Fencing shall be installed a minimum of 1 day before construction activities occur and walked weekly to ensure the integrity of the fence. If snakes are seen within the work zone, activity shall stop until the snake can be safely moved by a qualified individual, and the fence examined for breeches.
12. Fencing materials that can entangle or injure snakes shall not be used for exclusionary fencing.
13. When working during the EMR inactive season, protentional hibernation areas shall be avoided to the extent possible.
14. Exclusionary fencing is not necessary if the work can be conducted entirely within the inactive season.
15. Water levels in known/presumed occupied habitats shall not be artificially manipulated during the inactive season.
16. Wildlife-safe materials shall be used for erosion control and site restoration throughout the project area. Erosion control products containing plastic mesh netting or other similar material that could entangle EMR shall not be used.
17. Best management practices shall be used to prevent the spread of invasive species into EMR habitat. Equipment and vehicles shall be inspected and cleaned between work sites as needed to prevent the spread of invasive plant materials.
18. All imported fill material shall be free from contaminants or invasive species. Exclusionary fencing shall be used around areas to be filled and must be inspected for EMR by a qualified individual prior to placing fill.

19. Vehicle activity shall be minimized in known/presumed occupied EMR habitat to the extent possible. When feasible, vehicle activity will be limited to after mid-October but before mid-April. After mid-April and before mid-October, travel speeds will be reduced to give vehicle operators adequate time to identify and avoid EMR and other wildlife. Speeds should be below 15 MPH.
20. To increase human safety and awareness of EMR, those implementing the project should first watch Michigan Department of Natural Resources "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/endangered/reptiles/eama/pdf/EMRfactsheetSep2016.pdf>), or call 517-351-2555.
21. Any EMR observations, or observation of any other listed threatened or endangered species, during project implementations shall be reported to the USFWS within 24 hours.
22. All disturbed habitat areas shall be restored with appropriate, native plant species.
23. Upon completion of the project, the exclusionary fencing shall be removed.

Wetland Fill

24. All fill/backfill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be contained in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be stabilized with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.

Culvert Installation

25. The placement of the new culvert and the initial placement of fill in the stream shall be done in the dry or in such a manner that all flow is immediately passed through the culvert. The major placement of fill shall be done in the dry or in still water where erosion and siltation will be minimized. The fill material used in this initial placement shall be washed gravel, coarse aggregate, or rock and shall be placed at both ends of the culvert above normal water level before backfill material is placed.
26. The culvert shall be installed to align with the center line of the existing stream at both the inlet and outlet ends.
27. If the project, or any portion of the project, is stopped and lies incomplete for any length of time (other than that encountered in a normal work week) every precaution shall be taken to protect the incomplete work from erosion, including the placement of temporary gravel bag riprap, temporary seed and mulch, or other acceptable temporary protection.
28. No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.
29. Exposed streambanks resulting from this construction shall be stabilized with temporary measures in accordance with appropriate Best Management Practices based on site conditions, and if necessary, may be riprapped extending above the ordinary high water mark, to provide adequate erosion protection. Temporary stabilization measures shall be maintained until permanent measures are in place.

30. All other exposed slopes, ditches, and other raw areas draining directly to the stream may be protected with riprap, sod and/or seed and mulch as may be necessary to provide effective erosion protection. The placement of riprap shall be limited to the minimum necessary to ensure proper stabilization of the side slopes and fill in the immediate vicinity of the structure.

Boardwalk

31. Additional attachments to permitted structures, including but not limited to roofs, sidewalls, benches, decks, docks, piers, or extensions thereof, are not authorized by this permit.

Floodplain

32. The design flood or one percent (1%) annual chance (100-year) floodplain elevation at this location on the Huron River is approximately 738 feet N.A.V.Datum of 1988.
33. The structure(s) shall be firmly anchored to prevent flotation or lateral movement.
34. Any other filling, grading, or construction within the 100-year floodplain will require a separate EGLE permit before starting the work.
35. No fill, excess soil, or other material shall be placed in the 100-year floodplain, any wetland or surface water area not specifically authorized by this permit, its plans, and specifications.
36. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.

General Permit Conditions

37. Authority granted by this permit does not waive permit or program requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/deqstormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
38. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
39. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
40. The permit placard shall be kept posted at the work site in a prominent location at all times for the duration of the project or until permit expiration.

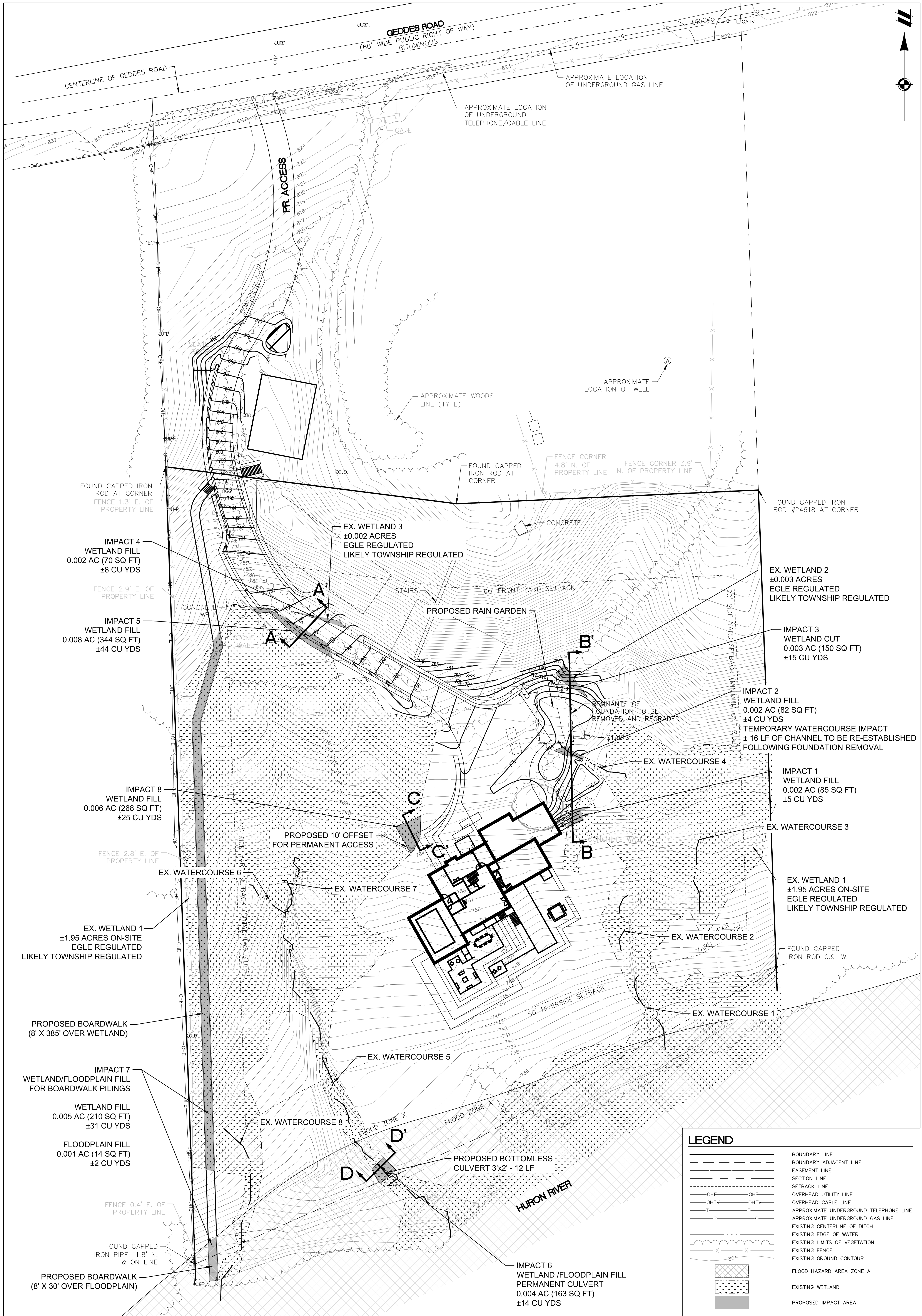
41. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by EGLE, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.



Issued By: _____

Melissa Letosky
Jackson District Office
Water Resources Division
517-416-7001

cc: Superior Township Clerk
Washtenaw County SESC
Ms. Carrie Tansy, USFWS
Mr. Don Berninger, Atwell, LLC
Mr. Keto Gyekis, EGLE



LEGEND	
	BOUNDARY LINE
	BOUNDARY ADJACENT LINE
	EASEMENT LINE
	SECTION LINE
	SETBACK LINE
	OVERHEAD UTILITY LINE
	OVERHEAD CABLE LINE
	APPROXIMATE UNDERGROUND TELEPHONE LINE
	APPROXIMATE UNDERGROUND GAS LINE
	EXISTING CENTERLINE OF DITCH
	EXISTING EDGE OF WATER
	EXISTING LIMITS OF VEGETATION
	EXISTING FENCE
	EXISTING GROUND CONTOUR
	FLOOD HAZARD AREA ZONE A
	EXISTING WETLAND
	PROPOSED IMPACT AREA

SCALE	0 15 30
1" = 30 FEET	
REVISIONS	
DATE	06/25/2019
CLIENT	MEADOWLARK
SECTION	SECTION 30
PROJECT	EGLE IMPACT PLAN
SHEET NO.	02

DATE	06/25/2019
CLIENT	MEADOWLARK
SECTION	SECTION 30
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811
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THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OR PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SECTION 30
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

MEADOWLARK
EGLE IMPACT PLANS
IMPACT CROSS SECTIONS

DATE 06/25/2019

REV1: 07/15/2019

REVISIONS

SCALE 0 15 30
1" = 30 FEET

DR. JB CH. -

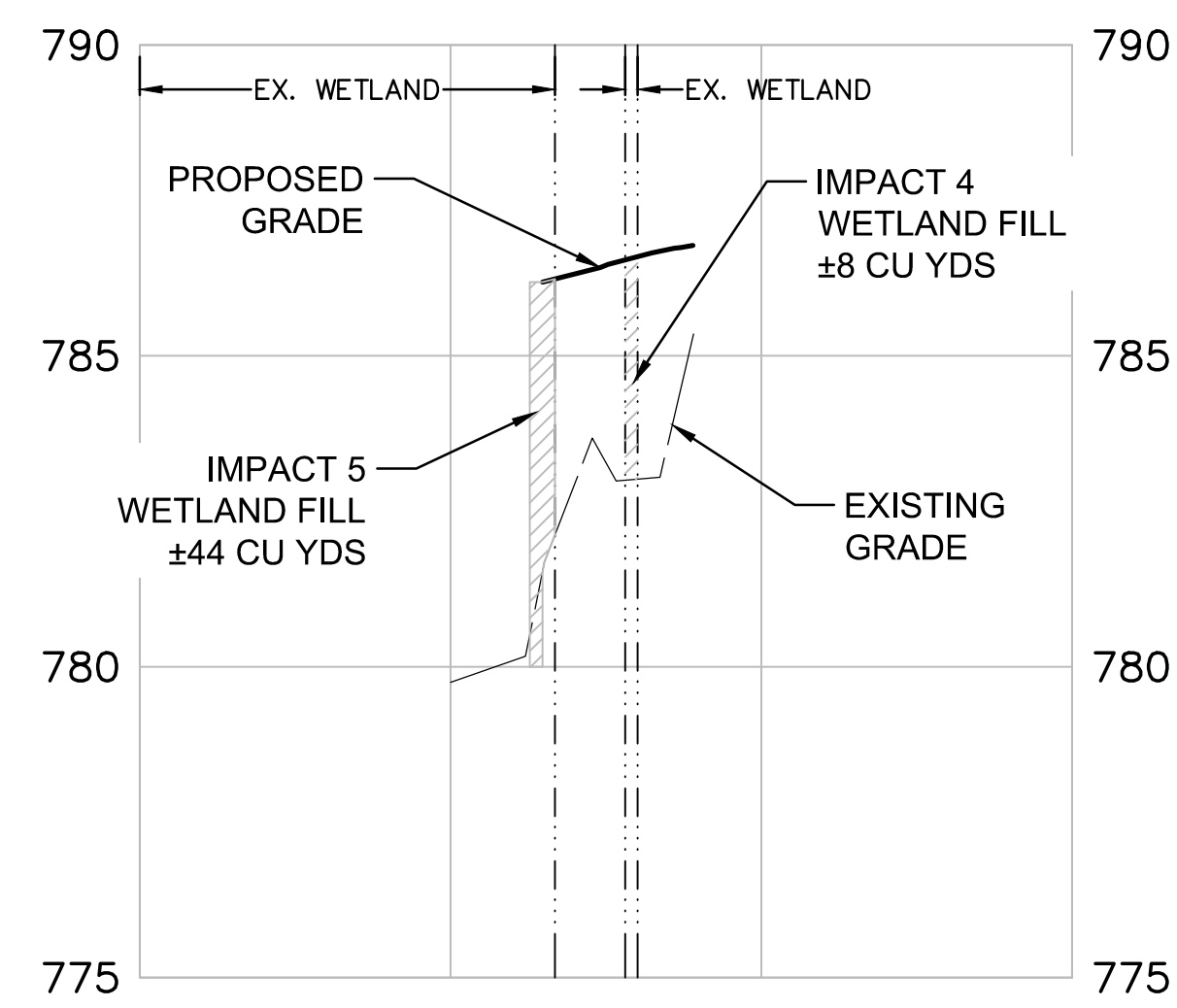
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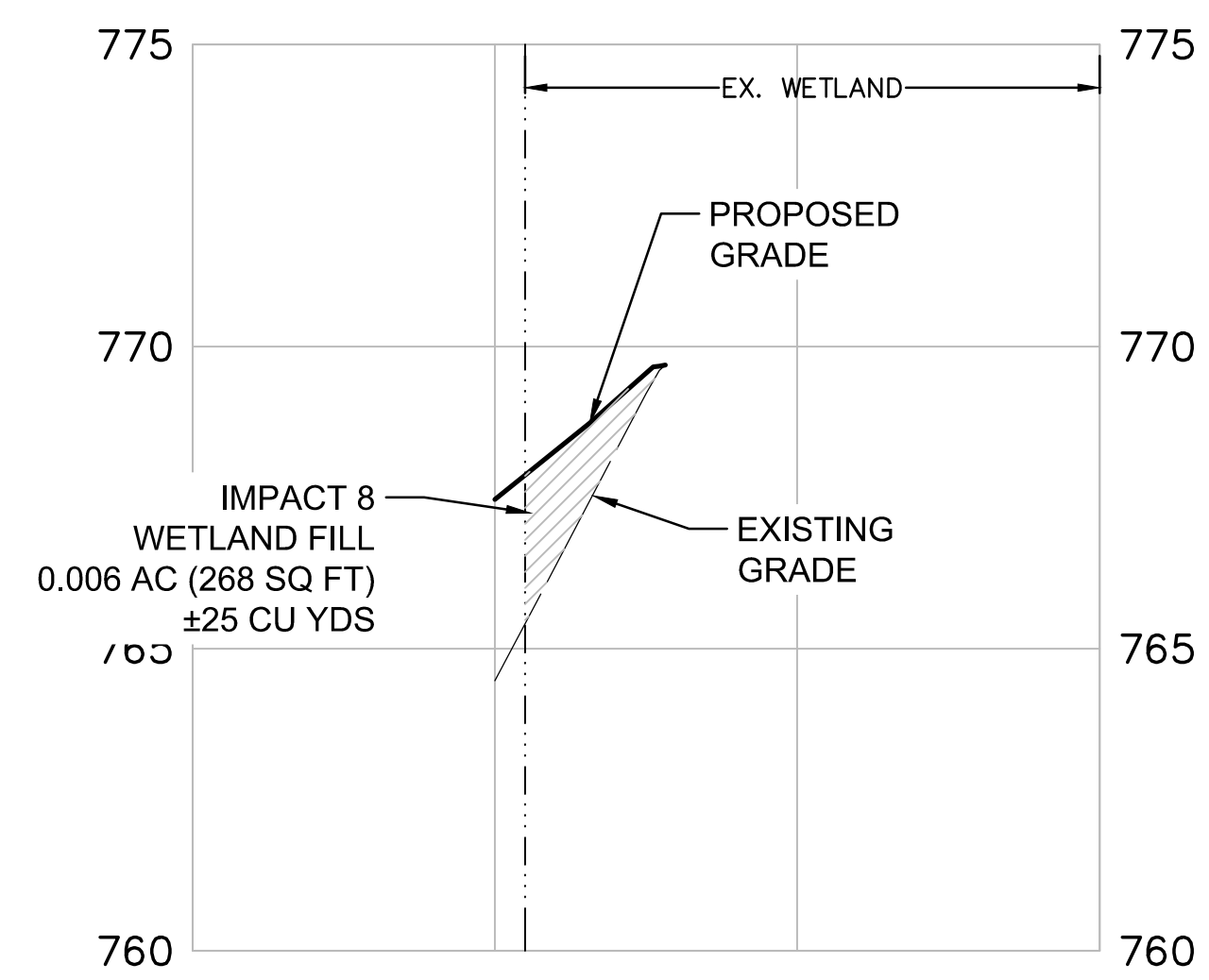
JOB 18002735

SHEET NO. 03

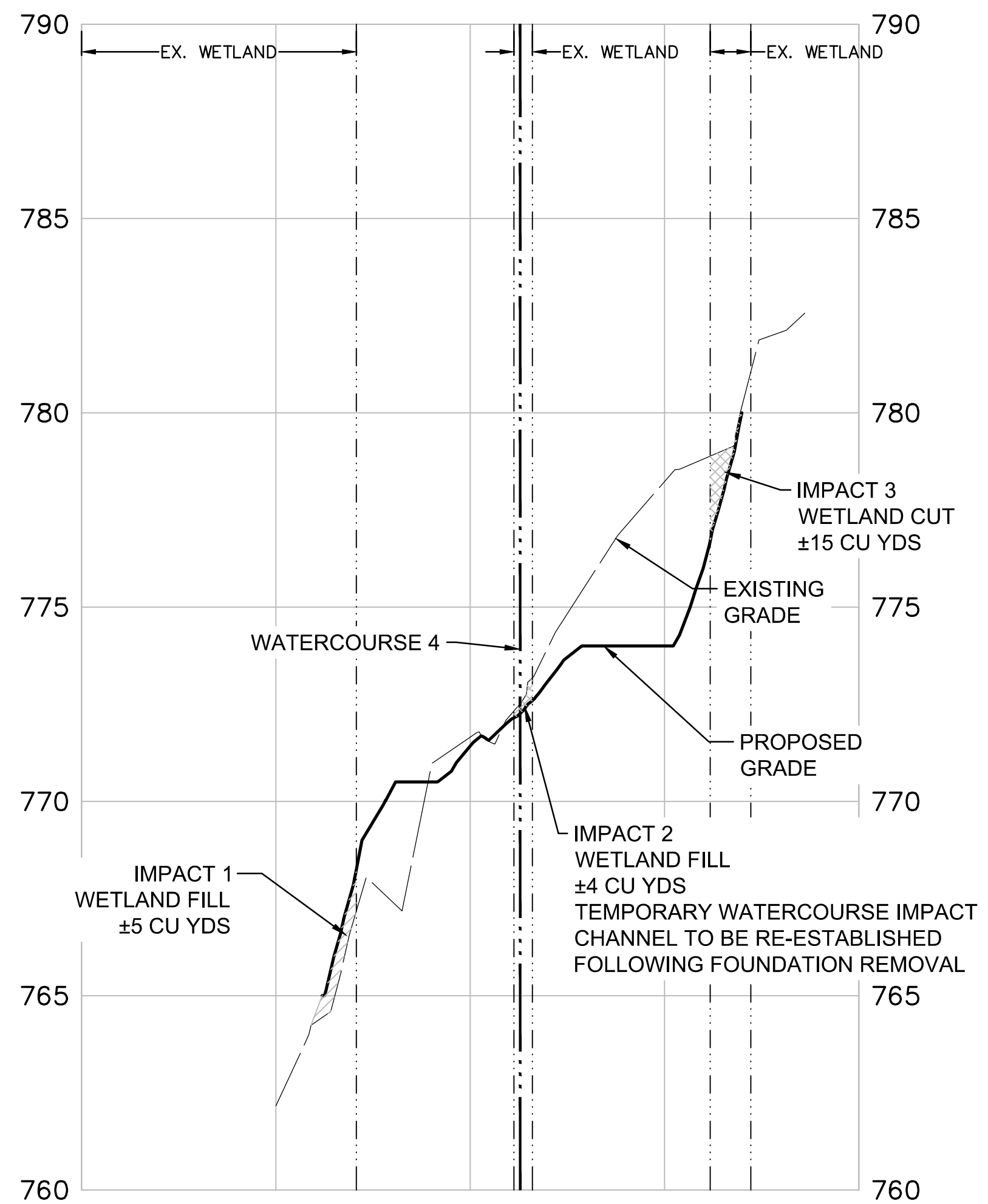
NOT FOR CONSTRUCTION



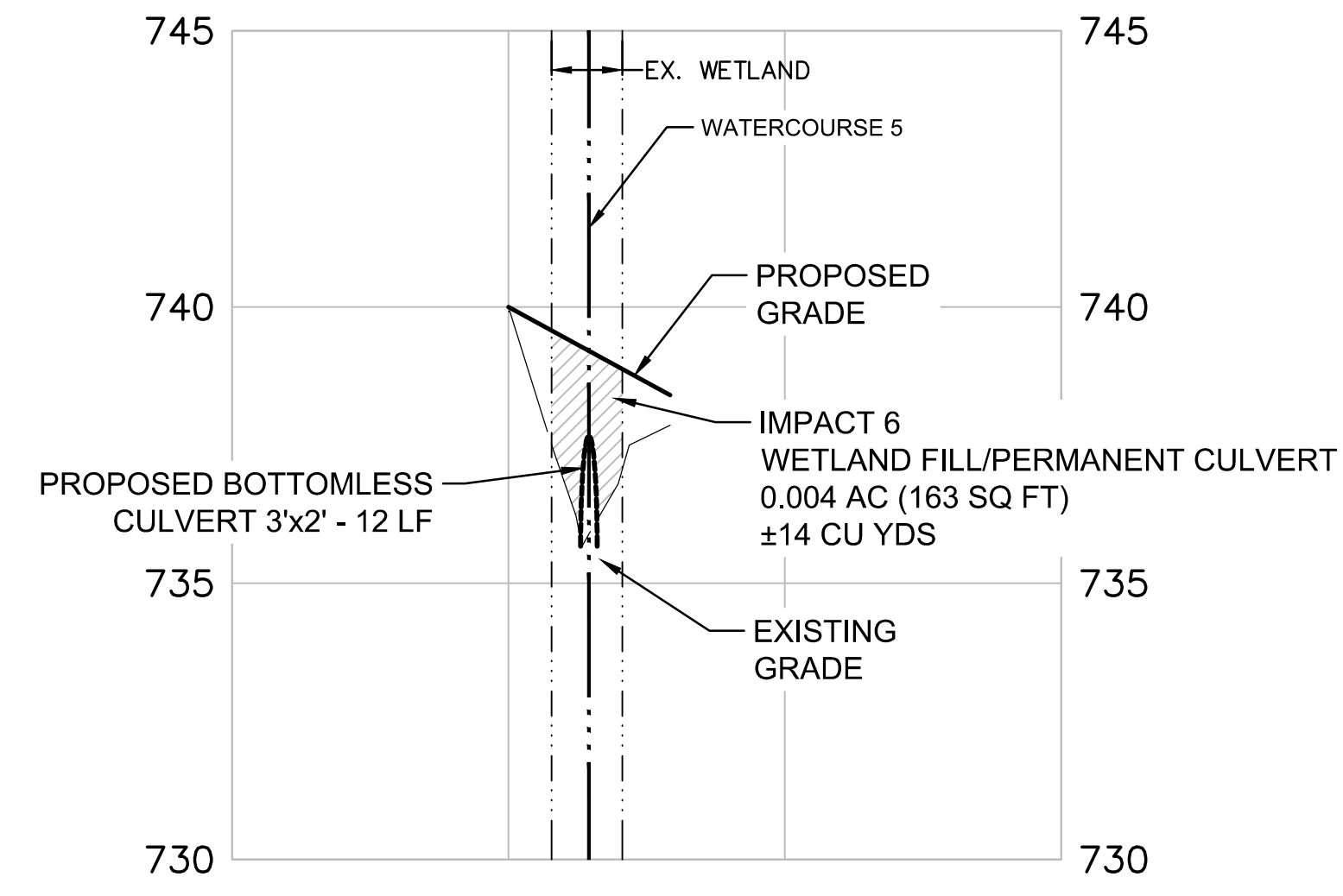
CROSS SECTION A-A'
VERT: 1"=3'
HORZ: 1"=30'



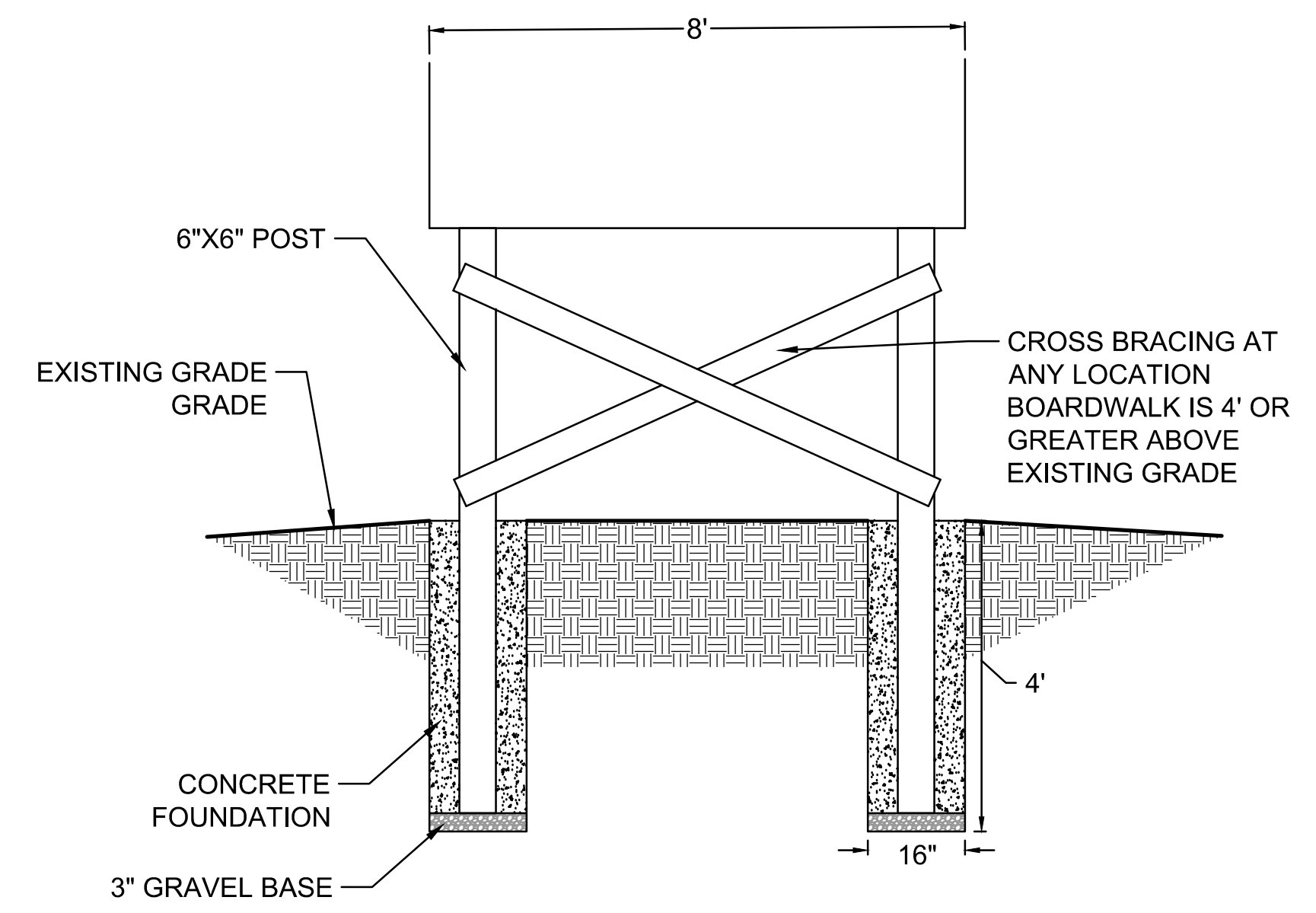
CROSS SECTION C-C'
VERT: 1"=3'
HORZ: 1"=30'



CROSS SECTION B-B'
VERT: 1"=3'
HORZ: 1"=30'



CROSS SECTION D-D'
VERT: 1"=3'
HORZ: 1"=30'



BOARDWALK DETAIL
NOT TO SCALE

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SECTION 30
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

MEADOWLARK
EGLE IMPACT PLANS
SESC NOTES
CLIENT

DATE 06/25/2019

Table with 2 columns: REVISIONS, and empty rows for revision details.

Table with 2 columns: DR. (P.M. DB), CH. (NA), and values for BOOK, JOB (18002735), SHEET NO. (05).

SEEDING SPECIFICATION

GENERAL SEEDING CAN BE USED FOR TEMPORARY OR PERMANENT STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED SHALL BE TEMPORARILY AND/OR PERMANENTLY SEEDED IMMEDIATELY FOLLOWING THE CONCLUSION OF GRADING ACTIVITIES (WEATHER PERMITTING) AND MUST BE COMPLETED WITHIN FIVE (5) DAYS. TEMPORARY AND PERMANENT SEED MIXTURES ARE SPECIFIED BELOW. TEMPORARY SEED MIX SHALL ALSO BE APPLIED DURING THE APPLICATION OF THE PERMANENT SEED MIX TO ENSURE TIMELY VEGETATIVE COVER OF EXPOSED AREAS.

IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY UNIFORMLY AT THE RATE OF 1-1/2 TONS TO 2 TONS PER ACRE OR 100 POUNDS PER 1000 SQUARE FEET. ANCHOR MULCH WITH DISC-TYPE ANCHORING TOOL OR OTHER MEANS APPROVED BY THE LOCAL REGULATORY AGENCY.

SEEDING MIXTURES
SEE SEED MIXES IN TEMPORARY & PERMANENT SEED CHARTS.

SLOPES FLATTER THAN 3:1 (NOT INCLUDING BASINS)
APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ/FT. SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

Table with 3 columns: TEMPORARY SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (60 LBS PER ACRE).

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (80 LBS PER ACRE).

SLOPES 3:1 OR GREATER (NOT INCLUDING BASINS)
APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ/FT. AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

Table with 3 columns: TEMPORARY SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (60 LBS PER ACRE).

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (80 LBS PER ACRE).

TEMPORARY SEED SEED: 60 LBS PER ACRE MIX: 40% SEED OATS, 25% KENTUCKY 31 TALL FESCUE, 22% CREEPING RED FESCUE, 11% TIMOTHY, 1.0% INERT MATTER, 1.0% OTHER CROP, 0.01% WEED SEED

PERMANENT SEED SEED: 80 LBS PER ACRE MIX: 70% TRUE BLUE KENTUCKY (BROOKLAWN, BOUTIQUE, GROME, AND H92-203 KENTUCKY BLUEGRASS), 30% PERENNIAL RYE GRASS (MANHATTAN 4, CHARGER, CITATION 4, AND PIZZAZZ PERENNIAL RYE GRASS)

SEED BED PREPARATION (PERMANENT SEEDING)
SURFACE WATER CONTROL MEASURES SHALL BE IN PLACE. AREA TO BE SEEDED SHALL BE RIPPED AND SPREAD WITH AVAILABLE TOPSOIL. TOTAL SEEDBED PREPARED DEPTH SHOULD BE AT LEAST 4 INCHES. LOOSE ROCKS, ROOTS AND OTHER OBSTRUCTIONS NEED TO BE REMOVED FROM THE SURFACE SO THAT THEY WILL NOT INTERFERE WITH THE ESTABLISHMENT AND MAINTENANCE OF VEGETATION. SURFACE FOR FINAL SEEDBED PREPARATION SHOULD BE AT FINISH GRADE AND BE REASONABLY SMOOTH AND UNIFORM.

IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHOULD BE USED ACCORDING TO SEEDING SPECIFICATIONS. IF SOIL TEST IS TAKEN, APPLY FERTILIZER AND LIME ACCORDING TO SOIL TEST REPORT. FERTILIZER AND LIME SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION. WEIGHTS, SEED SPECIES AND PERCENTAGE OF PURITY AND GERMINATION MUST BE CHECKED PRIOR TO SEEDING.

SEEDING SHALL BE ACCOMPLISHED IN TWO DIRECTIONS AND AT RIGHT ANGLES TO EACH OTHER. LAWN AREAS SHALL BE SEEDED AT THE RATE INDICATED ON THE DRAWINGS BY SOWING EVENLY WITH AN APPROVED MECHANICAL CUL-T-PACKER SEEDER TO COVER THE SEED AND FORM THE SEEDBED IN ONE OPERATION. IF BROADCAST SEEDER IS USED THE SEEDING RATE SHALL BE TWO (2) TIMES THE DRILL RATE. IN INACCESSIBLE AREAS, THE SEED SHALL BE LIGHTLY RAKED WITH FLEXIBLE RAKES AND ROLLED WITH A WATER BALLAST ROLLER. AFTER ROLLING SEEDED AREAS ARE TO BE MULCHED ACCORDING TO SPECIFICATION. IF HYDRO-SEED OPERATION IS USED, SEEDING RATE SHALL BE FIVE (5) TIMES THE DRILL RATE INDICATED ON THE DRAWINGS.

IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON OR UNTIL A UNIFORM STAND OF THE SPECIFIED PERMANENT GRASSES HAVE BEEN ESTABLISHED AND THE SITE HAS REACHED 90% STABILIZATION. PERMANENT AND TEMPORARY SEEDING SHALL BE ACCOMPLISHED THROUGHOUT THE CONSTRUCTION PROCESS.

INSPECTION
INSPECT SEEDED AREAS FREQUENTLY. IF SEEDED AREAS FAIL TO GERMINATE, OR TO PROVIDE ADEQUATE GROUND COVERAGE, THE AREA SHALL BE RE-SEEDED UNTIL FINAL STABILIZATION IS ACHIEVED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- 1. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE PLANS. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION. BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE. ALL DENUDED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE, MUST BE STABILIZED TEMPORARILY WITH THE USE OF FAST-GERMINATING ANNUAL GRASS/GRAIN VARIETIES, STRAW/HAY MULCH, WOOD CELLULOSE FIBERS, TACKIFIERS, NETTING OR BLANKETS. ALL MUD/DIRT/MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO PUBLIC ROADWAYS OR INTO WATER COURSES SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS. ALL STOCKPILED SOILS SHALL BE MAINTAINED IN SUCH A WAY AS TO PREVENT EROSION FROM THE WORK AREA. CONTRACTOR TO LIMIT DISTURBANCE OF SITE IN STRICT ACCORDANCE WITH EROSION CONTROL SEQUENCING SHOWN ON THIS PLAN. NO UNNECESSARY OR IMPROPERLY SEQUENCED CLEARING AND/OR GRADING SHALL BE PERMITTED. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURE WHEN REQUIRED. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, STOCKPILES AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED. LOW GROUND PRESSURE EQUIPMENT SHALL BE USED TO MINIMIZE LAND DISTURBANCE BETWEEN STRUCTURES. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE WASHTENAW COUNTY WATER RESOURCES COMMISSIONER. ALL GRADING TO BE PERFORMED AS NOT TO OBSTRUCT UPSTREAM DRAINAGE. SITES WILL BE INSPECTED WEEKLY- ANY AREAS OF OFF-SITE EROSION WILL BE CORRECTED WITHIN 2 BUSINESS DAYS. TIMBER CROSSING MATS WILL BE USED AS SHOWN TO MINIMIZE DISRUPTION TO WETLAND AREAS.

SEQUENCE OF CONSTRUCTION FOR SOIL EROSION CONTROL (FOR EACH SITE)

Table with 2 columns: START DAY, END DAY

- *SCHEDULE TO BE FILLED OUT BY CONTRACTOR. 1. PULL ALL NECESSARY PERMITS & LICENSES. 2. INSTALL SILT AND PROTECTIVE FENCING. 3. CLEAR AND GRUB WORK AREA 4. COMPLETELY REMOVE EXISTING STRUCTURE & FOUNDATION. 5. STRIP AND STOCKPILE TOPSOIL. 6. EXCAVATE FOR PROPOSE STRUCTURE, STOCKPILE SPOILS AND GRADE ACCORDINGLY 7. BEGIN FOUNDATION CONSTRUCTION OF NEW STRUCTURE. 8. REPLACE TOPSOIL, SEED AND STABILIZE DISTURBED AREAS. 9. REMOVE SILT FENCE, REPAIR DISTURBED AREAS AS NECESSARY. 10. COORDINATE WITH PERMITTING AGENCIES FOR CLOSEOUT INSPECTION.

NOTE: IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON. FOR ALL AREAS LEFT UNSTABILIZED DUE TO SEASONAL CONSTRAINTS, FINAL STABILIZATION SHALL BE ACHIEVED BY APRIL 15TH.



**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
WATER RESOURCES DIVISION
PERMIT**

Issued To:

**Jean-Marie Mouliere
5123 Buckley Drive
Ypsilanti, Michigan 48197**

**Permit No: WRP023919 v1.2
Submission No.: HP2-BCP8-1P3FW
Site Name: 81-5728 Geddes Road-Ann Arbor
Issued: July 31, 2020
Revised: September 29, 2020
Expires: July 31, 2025**

This permit is being issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Water Resources Division, under the provisions of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); specifically:

- | | |
|--|---|
| <input type="checkbox"/> Part 301, Inland Lakes and Streams | <input type="checkbox"/> Part 323, Shorelands Protection and Management |
| <input checked="" type="checkbox"/> Part 303, Wetlands Protection | <input type="checkbox"/> Part 325, Great Lakes Submerged Lands |
| <input type="checkbox"/> Part 315, Dam Safety | <input type="checkbox"/> Part 353, Sand Dunes Protection and Management |
| <input type="checkbox"/> Part 31, Water Resources Protection (Floodplain Regulatory Authority) | |

Permission is hereby granted, based on permittee assurance of adherence to State of Michigan requirements and permit conditions, to:

Authorized Activity:

Construct a permanent 8-foot-wide by 105-foot-long, elevated, open pile boardwalk in wetland.

All work shall be completed in accordance with the attached approved plans and the specifications of this permit.

Waterbody Affected: wetland
Property Location: Washtenaw County, Superior Township, Town 02S, Range 07E, Section 30, Property Tax No. J-10-30-400-061

Authority granted by this permit is subject to the following limitations:

- A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.
- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.

**EGLE-WRD
WRP023919 v1.2
Approved
Issued On:07/31/2020
Expires On:07/31/2025**

- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify EGLE within one week after the completion of the activity authorized by this permit by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of EGLE.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, EGLE has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, EGLE may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, EGLE may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from EGLE. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by EGLE prior to being implemented.
- Q. This permit may be transferred to another person upon written approval of EGLE. The permittee must submit a written request to EGLE to transfer the permit to the new owner. The new owner must also submit a written request to EGLE to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all the above information may be provided to EGLE. EGLE will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.

- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
1. Authority granted by this permit does not waive permit or program requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/degstormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
 2. Prior to the start of construction, all adjacent non-work wetland areas shall be protected by properly trenched sedimentation barrier to prevent sediment from entering the wetland. Orange construction fencing shall be installed as needed to prohibit construction personnel and equipment from entering or performing work in these areas. Fence shall be maintained daily throughout the construction process. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site, the sedimentation barrier shall then be removed in its entirety and the area restored to its original configuration and cover.
 3. Additional attachments to permitted structures, including but not limited to roofs, sidewalls, benches, decks, docks, piers, or extensions thereof, are **not** authorized by this permit.
 4. Dredging is not authorized by this permit.
 5. Filling is not authorized by this permit.
 6. No fill, excess soil, or other material shall be placed in any wetland, floodplain, or surface water area not specifically authorized by this permit, its plans, and specifications.
 7. The following federally threatened or endangered species are known to occur on or near this project site and may be impacted by your activities: Eastern Massasauga Rattlesnake (EMR) (*Sistrurus catenatus*) and Indiana Bat (*Myotis sodalister*). Please be advised that any activity that would cause harm to these species may require a federal permit under the Endangered Species Act or other federal regulations. The permittee shall continue Endangered Species Act Consultation with the U.S. Fish and Wildlife Service, 2651 Coolidge Road, East Lansing, Michigan 48829.


Indiana Bat

8. To avoid take of Indiana Bat, any trees larger than five (5) inches dbh on the project site shall not be cut between April 1 and September 30 in any permit year.

Eastern Massasauga Rattlesnake

9. When working during the EMR active season (generally April 15 through October 15), exclusionary fencing shall be used to separate EMR habitat from the work site to prevent EMR from accessing the disturbance area.
10. Any areas using exclusionary fencing shall first be "cleared" by a qualified individual before beginning construction activities. Fencing shall be installed a minimum of one (1) day before construction activities occur and walked weekly to ensure the integrity of the fence. If snakes are seen within the work zone, activity shall stop until the snake can be safely moved by a qualified individual, and the fence examined for breaches.
11. Fencing materials that can entangle or injure snakes shall not be used for exclusionary fencing.
12. When working during the EMR inactive season, protentional hibernation areas shall be avoided to the extent possible.
13. Exclusionary fencing is not necessary if the work can be conducted entirely within the inactive season.
14. Water levels in known/presumed occupied habitats shall not be artificially manipulated during the inactive season.
15. Wildlife-safe materials shall be used for erosion control and site restoration throughout the project area. Erosion control products containing plastic mesh netting or other similar material that could entangle EMR shall not be used.
16. Best management practices shall be used to prevent the spread of invasive species into EMR habitat. Equipment and vehicles shall be inspected and cleaned between work sites as needed to prevent the spread of invasive plant materials.
17. All imported fill material shall be free from contaminants or invasive species. Exclusionary fencing shall be used around areas to be filled and must be inspected for EMR by a qualified individual prior to placing fill.
18. Vehicle activity shall be minimized in known/presumed occupied EMR habitat to the extent possible. When feasible, vehicle activity will be limited to after mid-October but before mid-April. After mid-April and before mid-October, travel speeds will be reduced to give vehicle operators adequate time to identify and avoid EMR and other wildlife. Speeds should be below 15 MPH.
19. To increase human safety and awareness of EMR, those implementing the project should first watch Michigan Department of Natural Resources "60-Second Snakes: The Eastern Massasauga Rattlesnake" video (available at https://youtu.be/~PFnXe_e02w), or review the EMR factsheet (available at <https://www.fws.gov/midwest/angered/reptiles/eama/pdf/EMRfactsheetSep2016.pdf>), or call 517-351-2555.
20. Any EMR observations, or observation of any other listed threatened or endangered species, during project implementations shall be reported to the USFWS within 24 hours.

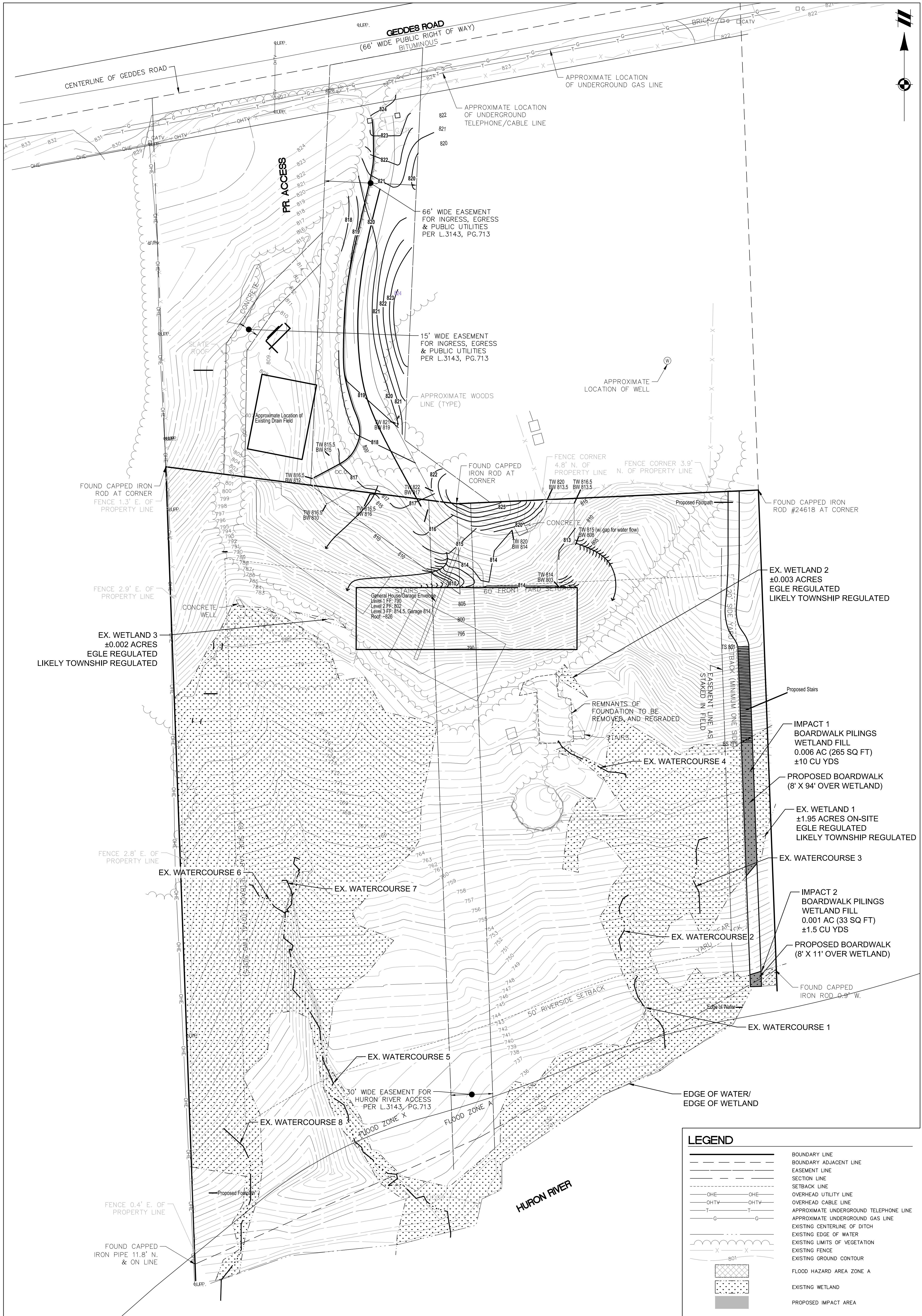
21. All disturbed habitat areas shall be restored with appropriate, native plant species.
22. Upon completion of the project, the exclusionary fencing shall be removed.
23. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
24. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
25. The permit placard shall be kept posted at the work site in a prominent location at all times for the duration of the project or until permit expiration.
26. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by EGLE, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.



Issued By: _____

Melissa Letosky
Jackson District Office
Water Resources Division
517-416-7001

cc: Superior Township Clerk
Washtenaw County SESC
Mr. Don Berninger, Atwell, LLC
Mr. Chris Kunkle, Atwell, LLC



EX. WETLAND 3
±0.002 ACRES
EGLE REGULATED
LIKELY TOWNSHIP REGULATED

EX. WETLAND 2
±0.003 ACRES
EGLE REGULATED
LIKELY TOWNSHIP REGULATED

IMPACT 1
BOARDWALK PILINGS
WETLAND FILL
0.006 AC (265 SQ FT)
±10 CU YDS

PROPOSED BOARDWALK
(8' X 94' OVER WETLAND)

EX. WETLAND 1
±1.95 ACRES ON-SITE
EGLE REGULATED
LIKELY TOWNSHIP REGULATED

IMPACT 2
BOARDWALK PILINGS
WETLAND FILL
0.001 AC (33 SQ FT)
±1.5 CU YDS

PROPOSED BOARDWALK
(8' X 11' OVER WETLAND)

LEGEND	
	BOUNDARY LINE
	BOUNDARY ADJACENT LINE
	EASEMENT LINE
	SECTION LINE
	SETBACK LINE
	OVERHEAD UTILITY LINE
	OVERHEAD CABLE LINE
	APPROXIMATE UNDERGROUND TELEPHONE LINE
	APPROXIMATE UNDERGROUND GAS LINE
	EXISTING CENTERLINE OF DITCH
	EXISTING EDGE OF WATER
	EXISTING LIMITS OF VEGETATION
	EXISTING FENCE
	EXISTING GROUND CONTOUR
	FLOOD HAZARD AREA ZONE A
	EXISTING WETLAND
	PROPOSED IMPACT AREA

SCALE	0 15 30
1" = 30 FEET	
REVISIONS	
DATE	08/06/2020
CLIENT	MEADOWLARK
	EGLE IMPACT PLAN
	PROPOSED SITE PLAN
SECTION	SECTION 30
	TOWN 2 SOUTH, RANGE 7 EAST
	SUPERIOR TOWNSHIP
	WASHTENAW COUNTY, MICHIGAN

ATWELL
866.850.4200 www.atwell-group.com

TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

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

NOTICE: THE LOCATION OF EXISTING UTILITIES SHOWN IN AN APPROXIMATE MANNER IS FOR INFORMATION ONLY AND IS NOT A GUARANTEE OF THE LOCATION OR DEPTH OF ANY UTILITIES. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION WORK AND SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES TO FACILITY LOCATE AND UNDERGROUND UTILITIES.



Know what's below.

Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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SECTION 30
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

MEADOWLARK
EGLE IMPACT PLANS
SESC NOTES

CLIENT

DATE

08/06/2020

Table with 2 columns: REVISIONS, and rows for revision tracking.

Table with 2 columns: DR. JB, CH. - and rows for project details like P.M. DB, BOOK NA, JOB 18002735, SHEET NO. 05.

SEEDING SPECIFICATION

GENERAL SEEDING CAN BE USED FOR TEMPORARY OR PERMANENT STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED SHALL BE TEMPORARILY AND/OR PERMANENTLY SEEDED IMMEDIATELY FOLLOWING THE CONCLUSION OF GRADING ACTIVITIES (WEATHER PERMITTING) AND MUST BE COMPLETED WITHIN FIVE (5) DAYS. TEMPORARY AND PERMANENT SEED MIXTURES ARE SPECIFIED BELOW. TEMPORARY SEED MIX SHALL ALSO BE APPLIED DURING THE APPLICATION OF THE PERMANENT SEED MIX TO ENSURE TIMELY VEGETATIVE COVER OF EXPOSED AREAS.

IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY UNIFORMLY AT THE RATE OF 1-1/2 TONS TO 2 TONS PER ACRE OR 100 POUNDS PER 1000 SQUARE FEET. ANCHOR MULCH WITH DISC-TYPE ANCHORING TOOL OR OTHER MEANS APPROVED BY THE LOCAL REGULATORY AGENCY.

SEEDING MIXTURES SEE SEED MIXES IN TEMPORARY & PERMANENT SEED CHARTS.

SLOPES FLATTER THAN 3:1 (NOT INCLUDING BASINS) APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ/FT. SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

Table with 3 columns: TEMPORARY SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (60 LBS PER ACRE). Includes note: IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 14 DAYS.

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (80 LBS PER ACRE). Includes note: PREFERABLE EARLY SPRING OR EARLY FALL.

SLOPES 3:1 OR GREATER (NOT INCLUDING BASINS) APPLY 17-17-17 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 20 LBS PER 1000 SQ/FT. AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

Table with 3 columns: TEMPORARY SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (60 LBS PER ACRE). Includes note: IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 5 DAYS.

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY (SEE CHART BELOW), APPLICATION RATE (80 LBS PER ACRE). Includes note: PREFERABLE EARLY SPRING OR EARLY FALL.

TEMPORARY SEED SEED: 60 LBS PER ACRE MIX: 40% SEED OATS, 25% KENTUCKY 31 TALL FESCUE, 22% CREEPING RED FESCUE, 11% TIMOTHY, 1.0% INERT MATTER, 1.0% OTHER CROP, 0.01% WEED SEED

PERMANENT SEED SEED: 80 LBS PER ACRE MIX: 70% TRUE BLUE KENTUCKY (BROOKLAWN, BOUTIQUE, GROME, AND H92-203 KENTUCKY BLUEGRASS), 30% PERENNIAL RYE GRASS (MANHATTAN 4, CHARGER, CITATION 4, AND PIZZAZZ PERENNIAL RYE GRASS)

SEED BED PREPARATION (PERMANENT SEEDING) SURFACE WATER CONTROL MEASURES SHALL BE IN PLACE. AREA TO BE SEEDED SHALL BE RIPPED AND SPREAD WITH AVAILABLE TOPSOIL. TOTAL SEEDBED PREPARED DEPTH SHOULD BE AT LEAST 4 INCHES. LOOSE ROCKS, ROOTS AND OTHER OBSTRUCTIONS NEED TO BE REMOVED FROM THE SURFACE SO THAT THEY WILL NOT INTERFERE WITH THE ESTABLISHMENT AND MAINTENANCE OF VEGETATION. SURFACE FOR FINAL SEEDBED PREPARATION SHOULD BE AT FINISH GRADE AND BE REASONABLY SMOOTH AND UNIFORM.

IF NO SOIL TEST IS TAKEN, FERTILIZER AND LIME SHOULD BE USED ACCORDING TO SEEDING SPECIFICATIONS. IF SOIL TEST IS TAKEN, APPLY FERTILIZER AND LIME ACCORDING TO SOIL TEST REPORT. FERTILIZER AND LIME SHALL BE APPLIED UNIFORMLY AND MIXED WITH THE SOIL DURING SEEDBED PREPARATION. WEIGHTS, SEED SPECIES AND PERCENTAGE OF PURITY AND GERMINATION MUST BE CHECKED PRIOR TO SEEDING.

SEEDING SHALL BE ACCOMPLISHED IN TWO DIRECTIONS AND AT RIGHT ANGLES TO EACH OTHER. LAWN AREAS SHALL BE SEEDED AT THE RATE INDICATED ON THE DRAWINGS BY SOWING EVENLY WITH AN APPROVED MECHANICAL CULT-PACKER SEEDER TO COVER THE SEED AND FORM THE SEEDBED IN ONE OPERATION. IF BROADCAST SEEDER IS USED THE SEEDING RATE SHALL BE TWO (2) TIMES THE DRILL RATE. IN INACCESSIBLE AREAS, THE SEED SHALL BE LIGHTLY RAKED WITH FLEXIBLE RAKES AND ROLLED WITH A WATER BALLAST ROLLER. AFTER ROLLING SEEDED AREAS ARE TO BE MULCHED ACCORDING TO SPECIFICATION. IF HYDRO-SEED OPERATION IS USED, SEEDING RATE SHALL BE FIVE (5) TIMES THE DRILL RATE INDICATED ON THE DRAWINGS.

IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON OR UNTIL A UNIFORM STAND OF THE SPECIFIED PERMANENT GRASSES HAVE BEEN ESTABLISHED AND THE SITE HAS REACHED 90% STABILIZATION. PERMANENT AND TEMPORARY SEEDING SHALL BE ACCOMPLISHED THROUGHOUT THE CONSTRUCTION PROCESS.

INSPECTION INSPECT SEEDED AREAS FREQUENTLY. IF SEEDED AREAS FAIL TO GERMINATE, OR TO PROVIDE ADEQUATE GROUND COVERAGE, THE AREA SHALL BE RE-SEEDED UNTIL FINAL STABILIZATION IS ACHIEVED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- 1. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE PLANS. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION. BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORMWATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE. ALL DENUDED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE, MUST BE STABILIZED TEMPORARILY WITH THE USE OF FAST-GERMINATING ANNUAL GRASS/GRAIN VARIETIES, STRAW/HAY MULCH, WOOD CELLULOSE FIBERS, TACKIFIERS, NETTING OR BLANKETS. ALL MUD/DIRT/MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO PUBLIC ROADWAYS OR INTO WATER COURSES SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR. ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS. ALL STOCKPILED SOILS SHALL BE MAINTAINED IN SUCH A WAY AS TO PREVENT EROSION FROM THE WORK AREA. CONTRACTOR TO LIMIT DISTURBANCE OF SITE IN STRICT ACCORDANCE WITH EROSION CONTROL SEQUENCING SHOWN ON THIS PLAN. NO UNNECESSARY OR IMPROPERLY SEQUENCED CLEARING AND/OR GRADING SHALL BE PERMITTED. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURE WHEN REQUIRED. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, STOCKPILES AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED. LOW GROUND PRESSURE EQUIPMENT SHALL BE USED TO MINIMIZE LAND DISTURBANCE BETWEEN STRUCTURES. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE WASHTENAW COUNTY WATER RESOURCES COMMISSIONER. ALL GRADING TO BE PERFORMED AS NOT TO OBSTRUCT UPSTREAM DRAINAGE. SITES WILL BE INSPECTED WEEKLY- ANY AREAS OF OFF-SITE EROSION WILL BE CORRECTED WITHIN 2 BUSINESS DAYS. TIMBER CROSSING MATS WILL BE USED AS SHOWN TO MINIMIZE DISRUPTION TO WETLAND AREAS.

SEQUENCE OF CONSTRUCTION FOR SOIL EROSION CONTROL (FOR EACH SITE)

Table with 3 columns: START DAY, END DAY, and SCHEDULE TO BE FILLED OUT BY CONTRACTOR. Lists 10 construction steps from pulling permits to coordinate with agencies.

NOTE: IF SEEDING CAN NOT BE ACCOMPLISHED DUE TO SEASONAL CONSTRAINTS, APPLY STRAW MULCH AND TACKIFIER TO ALL SLOPES AND DISTURBED AREAS UNTIL PERMANENT SEEDING IS ALLOWED. IN THE EVENT SEEDING OCCURS OUT OF SEASON, MAINTENANCE SHALL OCCUR AND CONTINUE INTO THE FOLLOWING GROWING SEASON. FOR ALL AREAS LEFT UNSTABILIZED DUE TO SEASONAL CONSTRAINTS, FINAL STABILIZATION SHALL BE ACHIEVED BY APRIL 15TH.



**Superior Township Hall
3040 N Prospect Rd
Superior Charter TWP, MI 48198**

To whom it may concern,

On the east easement located on 5728 Geddes Rd. We will keep the stairs and boardwalk at least 20' away from the easternmost property line.

The provided plot plan shows a house and boat house which are not correct representations of the actual house and no boat house is currently proposed.

We are currently only proposing to build a boardwalk and stairs on the east easement at this time. No other work outside of necessary site clearing will take place at this time.

Dan Snyder

A handwritten signature in black ink, appearing to be 'DS' with a stylized flourish extending to the right.

11/19/2020

**Snyder Contracting LLC
(734)545-4840**

Snyder Contracting LLC

8650 Huron River Dr
Dexter, MI 48130

(734) 545-4840
tdsnydercontracting@gmail.com

Rick Mayernik

From: Chris Nordstrom <cnordstrom@waplan.com>
Sent: Thursday, November 19, 2020 7:14 AM
To: Rick Mayernik
Cc: Laura Bennett
Subject: RE: EGLE Revised Permit No. WRP023919 v1.2

I have no issues with the proposed boardwalk; any disturbance created by it will be minimal. They're showing a house envelope on the plan, however, and I would have the same concerns here as I did previously. The permit is specifically for the boardwalk, though, so maybe that's something they're considering for the future?

From: Rick Mayernik <rmayernik@superior-twp.org>
Sent: Wednesday, November 18, 2020 4:14 PM
To: Chris Nordstrom <cnordstrom@waplan.com>
Cc: Laura Bennett <planning@superior-twp.org>
Subject: FW: EGLE Revised Permit No. WRP023919 v1.2

Chris,

Back in March of 2019, you did a site visit at this property with Rebecca Lussier of Meadowlark Construction and issued a letter dated 3-18-19. Quite a bit of time has passed and I don't think Meadowlark is still involved. A new contractor has requested a permit to build a boardwalk and stairs at the far eastern side of the property. EGLE has issued a permit for this work which is attached. Can you please review the EGLE permit and let me know if you have any issues with it??

If not, I will issue a Township wetland permit referencing the EGLE permit and issue the building permit. I think they still plan on building the house and will be submitting for a revised EGLE permit for that portion of the construction.

Regards,

Rick Mayernik

From: Coffey, Kristina (EGLE) <COFFEYK@michigan.gov>
Sent: Tuesday, September 29, 2020 10:47 AM
To: jeanmarie@mouliere.fr
Cc: Lynette Findley <lynettefindley@superior-twp.org>; leek@ewashtenaw.org; engelhardb@ewashtenaw.org; dberninger@atwell-group.com; Chris Kunkle <ckunkle@atwell-group.com>
Subject: EGLE Revised Permit No. WRP023919 v1.2

Please see attached EGLE issued revised permit for your records.

If you have any questions, please contact Melissa Letosky directly at LetoskyM@Michigan.gov or 517-416-7001.

Thank you,

Kris Coffey
Secretary
Water Resources Division/Jackson District Office
Michigan Department of Environment, Great Lakes, and Energy (EGLE)
517-780-7904 | coffeyk@michigan.gov
Follow Us | [Michigan.gov/EGLE](https://www.michigan.gov/EGLE)

SUPERIOR CHARTER TOWNSHIP**Wetlands Permit No: PW20-0003**

Building and Zoning Department

3040 North Prospect

Ypsilanti, Michigan 48198

Phone: (734) 482-6099

Fax: (734) 482-3842

Hours: Monday-Friday 8:30 am - 4:30 pm

5728 GEDDES RD

Location

J -10-30-400-061

MOULIERE JEAN-MARIE L & INGRID D

Owner

2107 HILL ST

ANN ARBOR

MI

48104

Issued: 11/23/20***PLEASE CALL (734) 482-6099 FOR AN INSPECTION 24 HOURS IN ADVANCE.***

Contractor

Work Description: Construct a stair and boardwalk in wetland at the east side of the property as per EGLE Permit #WRP023919 v1.2

Permit Item	Work Type	No. of Items	Item Total
Administrative Fee	Administrative Fee	1.00	\$0.00

Richard Mayernik - Building Official**Fee Total: \$0.00**

I agree this permit is only for the work described, and does not grant permission for additional or related work which requires separate permits. I understand that this permit will expire, and become null and void if work is not started within 180 days, or if work is suspended or abandoned for a period of 180 days at any time after work has commenced; and, that I am responsible for assuring all required inspections are requested in conformance with the applicable code. I hereby certify that the proposed work is authorized by the owner, and that I am authorized by the owner to make this application as his authorized agent. I agree to conform to all applicable laws of the State of Michigan and the local jurisdiction. All information on the permit application is accurate to the best of my knowledge.

Payment of permit fee constitutes acceptance of the above terms.

SUPERIOR CHARTER TOWNSHIP**Building Permit No: PB20-0199**

Building and Zoning Department

3040 North Prospect

Ypsilanti, Michigan 48198

Phone: (734) 482-6099

Fax: (734) 482-3842

Hours: Monday-Friday 8:30 am - 4:30 pm

5728 GEDDES RD

Location

J -10-30-400-061

MOULIERE JEAN-MARIE L & INGRID D

Owner

2107 HILL ST

ANN ARBOR

MI

48104

Issued: 11/23/20***PLEASE CALL (734) 482-6099 FOR AN INSPECTION 24 HOURS IN ADVANCE.***

Snyder Contracting LLC

Contractor

8650 Huron River Dr

Dexter

MI

48130

Work Description: Construct stairs and boardwalk at east side of property. Stairs and boardwalk to maintain minimum 20 foot setback from east property line. EGLE Permit - WRP023919 v1.2

Permit Item	Work Type	No. of Items	Item Total
Permit Fee	Standard Item	1.00	\$100.00

Richard Mayernik - Building Official**Fee Total: \$100.00**

I agree this permit is only for the work described, and does not grant permission for additional or related work which requires separate permits. I understand that this permit will expire, and become null and void if work is not started within 180 days, or if work is suspended or abandoned for a period of 180 days at any time after work has commenced; and, that I am responsible for assuring all required inspections are requested in conformance with the applicable code. I hereby certify that the proposed work is authorized by the owner, and that I am authorized by the owner to make this application as his authorized agent. I agree to conform to all applicable laws of the State of Michigan and the local jurisdiction. All information on the permit application is accurate to the best of my knowledge.

Payment of permit fee constitutes acceptance of the above terms.

Rick Mayernik

From: Matt Schuster <mattaschuster@yahoo.com>
Sent: Friday, November 27, 2020 11:35 PM
To: Lynette Findley
Cc: Rick Mayernik
Subject: Appeal of Wetland Permit - 5728 Geddes
Attachments: Appeal of Wetland Permit 5728.docx

Hello,

I attempted to deliver this appeal to the township office on Wednesday, 11/25 but I found the office closed due to the holiday.

Please accept this email as evidence of an appeal request for an issued wetland permit at the property 5728 Geddes Rd. I have attached a copy of a letter citing my reasons based on information available thus far. Please contact me with any questions or to facilitate further discussion.

Best Regards,

Matt Schuster
5766 geddes
(248) 790-5650

11.25.20

I am writing to appeal the issuance of a wetland permit issued by the township relating to:

Property Tax No. J-10-30-400-061 aka 5728 Geddes Rd

I understand the permit was issued on or about 11/20/20.

I am an adjacent parcel owner located within 300 ft of the proposed activity. I am also the holder of a dominant easement over access through the same parcel.

I have not had the opportunity to review the issued permits. To my understanding, the same parcel has been identified by its owners and/or their agents as having wetlands regulated by EGLE (formerly MDEQ). The owners and/or their agents have also identified the wetlands as regulated under Superior Township Wetland Ordinance. The parcel owner has previously caused and provided notice to the township of the EGLE wetlands determination. It is my understanding that EGLE regulation should designate the identified wetlands as "Protected Wetlands" under the Superior township wetland ordinance. I further believe that finding should result in the parcel being included in the Superior Township Wetlands Map, which I am not aware of occurring. The wetlands are contiguous with and within 500 ft of the Huron river and/or its impoundment. The wetlands should receive the full protection and evaluations afforded the 'protected wetland' status.

I am appealing the issuance of the permit to allow for a fuller review of the related submitted materials by myself, adjacent parcel owners, and the wetlands board. Upon initial review of information provided to me, the Superior Township Building Permit and wetlands permit do not match the location of the activity approved by EGLE in the wetlands per the drawing. The EGLE approved plans identify the entire activity LESS than 20 ft from the parcel border. The building permits stipulate any activity occur entirely MORE than 20 ft from the parcel border (outside the side yard setback) unless the activities extend less than 18" from the ground (which is not as shown in building plans). These location changes also alter the amount of impacted wetland in linear feet, and appear to necessitate an additional review by EGLE.

Please contact me at your convenience to discuss next steps and/or facilitate information review for further evaluation of the appeal.

Best Regards,

Matt Schuster

5766 Geddes Rd

NOV 30 2020

CHARTER TOWNSHIP OF SUPERIOR
WASHTENAW COUNTY, MICHIGAN

Snyder Contracting LLC
Attn: Daniel Snyder
8650 Huron River Dr.
Dexter, MI 48130

Mr. Snyder,

Please be advised that my office has received a written appeal relating to the issuance of the wetland permit for the boardwalk construction at 5728 Geddes Road. This appeal was received within ten calendar days of the issuance of the permit. Per Section 178-07.4(A) of the Wetlands Ordinance, this letter is your notification that an appeal has been received and that your Wetland Permit # PW20-0003 is now suspended until the outcome of the appeals process is known. A hearing will be scheduled within 60 days of the receipt of the appeal.

Since the Wetlands Permit has been suspended, your Building Permit # PB20-0199 is likewise suspended and no work may be performed under it until such time as the Wetlands Board takes action on the appeal.

Please contact me if you have any questions.

Regards,



Richard Mayernik, CBO
Building/Zoning Official
734-482-6099



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

To: Rick Mayernik, Superior Township Building and Zoning Official
From: Chris Nordstrom, Township Wetland Administrator
Ben Carlisle, Township Planner
Date: December 3, 2020
RE: Boardwalk Installation at 5728 Geddes Road

CWA prepared a report in March of 2019 evaluating the presence and quality of wetlands at the subject site. We determined that the site survey prepared by Atwell Hicks in February 2019 provided an accurate depiction of the wetland boundaries. Because of the subject site's location within 500 feet of the Huron River, we noted that the wetlands would be considered protected by the Michigan Department of Environment, Great Lakes, and Energy (EGLE, formerly Department of Environmental Quality). On September 29, 2020, EGLE issued a permit authorizing construction of an 8-foot wide by 105-foot long elevated open pile boardwalk in the wetland.

An "open pile" system refers to the driven columns that support the elevated walkway. Because interaction with the soil is limited to the support points, open pile systems are considered minimally disruptive. Per EGLE, an open pile boardwalk minimizes soil disturbance, reduces the potential for soil erosion, and does not impede surface or ground water movement. Open pile boardwalks are very common across southeast Michigan, and are used to allow visitor access to otherwise inaccessible natural areas.

In our opinion, boardwalk construction is a reasonable alternative for this site. While the topography and proximity to the river make it an unusual wetland worthy of protection, we did not see any rare or endangered plants or animals during our inspection that suggest the site should be completely free from development.

The current drawings include generic details that are not appropriate for construction in a wetland setting, e.g. using turf grass seed as an erosion technique. We suggest that the Township reserve the right to approve final construction details to ensure that the construction is as sustainable and minimally disruptive as possible.

Please let me know if you have any questions.

CARLISLE/WORTMAN ASSOC., INC.
Chris Nordstrom, PLA, ASLA
Landscape Architect