

**SUPERIOR CHARTER TOWNSHIP  
WETLANDS BOARD MEETING**

**WEDNESDAY, JANUARY 20, 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 January 6, 2021
5. CITIZEN PARTICIPATION
6. COMMUNICATIONS
7. OLD BUSINESS
  - A. 5728 Geddes Road Wetland Permit Appeal
8. NEW BUSINESS
9. POLICY DISCUSSION
10. ADJOURNMENT

Ellen Kurath, Secretary

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

Meeting Notice  
Superior Charter Township Wetlands Board  
Virtual Meeting  
7:00 PM  
January 20, 2021

NOTE: THIS MEETING WILL BE HELD ELECTRONICALLY. MEMBERS OF THE PUBLIC BODY AND MEMBERS OF THE PUBLIC MAY PARTICIPATE ELECTRONICALLY, AS DESCRIBED BELOW.

To participate as a member of the public:

- For videoconferencing go to:
  - <https://zoom.us/j/94587941804>
- Or Telephone:
  - 301-715-8592 or 312-626-6799, Webinar ID: 945 8794 1804
- International numbers available: <https://us02web.zoom.us/j/94587941804>

Further instructions on participating in public comment will be provided once the meeting has been called to order in order to ensure two-way communication between the Wetlands Board and the members of the public.

Written comments will be received at [planning@superior-twp.org](mailto:planning@superior-twp.org) until 3:00 p.m. the day of the hearing.

Any person who wishes to contact members of the Wetlands Board to provide input or ask questions on any business coming before the Wetlands Board on January 20, 2021 may do so by emailing [planning@superior-twp.org](mailto:planning@superior-twp.org) until 3:00 p.m. the day of the hearing.

Reasonable auxiliary aids and services can be provided at the meeting to individuals with disabilities by contacting the Township Clerk at: 734-482-6099 or via email at [lynettefindley@superior-twp.org](mailto:lynettefindley@superior-twp.org) at least three business days in advance.

Please Note: This meeting is being recorded

*This notice is posted in compliance with PA 267 of 1976 (as amended) Open Meetings Act, MCL 125.3103 and 125.3502 and the Americans with Disabilities Act (ADA). Individuals with disabilities requiring auxiliary aids or services should contact the Superior Charter Township Clerk's Office 3 business days prior to the meeting. The Clerk's Office can be reached at 734-482-6099 or via email at [lynettefindley@superior-twp.org](mailto:lynettefindley@superior-twp.org).*



**NOTICE OF APPEAL**

**SUPERIOR CHARTER TOWNSHIP  
WETLANDS BOARD**

**Wednesday  
January 20, 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: 945 8794 1804#. Written comments can be received until 3:00 p.m. the day of the meeting at [planning@superior-twp.org](mailto:planning@superior-twp.org), or at the address below.

Laura Bennett, Planning Clerk  
734-482-6099

3040 N. Prospect Road  
Ypsilanti, MI 48198

**SUPERIOR CHARTER TOWNSHIP  
WETLANDS BOARD  
Virtual Meeting – via Zoom  
DRAFT MINUTES OF January 6, 2021**

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. Adoption of the Agenda

Motion by McIntyre, supported by Caviston to approve the agenda as presented. The motion carried.

4. Minutes of the May 1, 2019 regular meeting

Motion by McIntyre, supported by Kurath to approve the minutes as written. The motion carried.

5. Citizen Participation – None.

6. Communications

A. Permit Applications Received - None.

B. Wetland Maps Updates – None.

C. Huron River Watershed Council – None.

D. Rouge River Watershed - Friends of the Rouge Update – None.

7. Old Business – None.

8. New Business

A. 5728 Geddes Road Wetland Permit Appeal

Matt Schuster inquired whether the meeting notice had been published in the paper and if EGLE had been notified, both requirements in the Superior Township Wetlands Ordinance. Laura Bennett replied that both requirements had been met by the Township.

Mr. Schuster stated that he did not see the required signage giving notice of the appeal at the subject site.

**SUPERIOR CHARTER TOWNSHIP  
WETLANDS BOARD – VIRTUAL MEETING  
JANUARY 6, 2021  
DRAFT MINUTES  
Page 2 of 2**

It was determined that the applicant had not posted the sign giving notice of the appeal required by the Superior Township Wetlands Ordinance.

Wetlands Board members unanimously agreed to postpone action until the required signage had been posted by the applicant.

Ellen Kurath explained that she has lived just north of the property since 1960. She described the land near the river, noting that it was made up of layers of clay and sand/gravel with water flowing through to the south. It was noted that the slope is steep from Geddes Road to the river – Kurath estimated it was approximately a 100-foot difference from the road to the river.

Kurath stated that the proposed boardwalk is like a series of bridges and will not affect the water flowing towards the river. She also does not believe that the vertical posts and spans will much obstruct the plants.

Motion by Zelisse, supported by McIntyre, to postpone action until January 20, 2021 to give the applicant time to post the required signage at the subject site.

9. Policy Discussion – None.
10. Adjournment

The meeting was adjourned at 7:30 p.m. (motion by Kurath, supported by Caviston, approved by voice vote).

Respectfully submitted,  
Laura Bennett, Recording Secretary

## 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](mailto: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

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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

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**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

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**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 8<sup>th</sup>, 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 1<sup>st</sup> and March 31<sup>st</sup> 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 1<sup>st</sup> and March 31<sup>st</sup>, 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

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**PHOTOGRAPHIC LOG**

<b>Photo #1</b>	
Date: 4/8/2019	
Feature: Upland	
Direction: North	
Description: A representative photo of the upland forested areas on the northwest portion of the Site.	
<b>Photo #2</b>	
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**

<b>Photo #3</b>	
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.	
<b>Photo #4</b>	
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**

<b>Photo #5</b>	
Date: 4/8/2019	
Feature: Watercourse 5	
Direction: North	
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.	
<b>Photo #6</b>	
Date: 4/8/2019	
Feature: Wetland 1/Old Tennis Court	
Direction: West	
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.	



**PHOTOGRAPHIC LOG**

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

# 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 species<sup>1</sup> 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 Fisheries<sup>2</sup>).

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"> <li>• All Projects: Tier 1 EMR Habitat Present</li> <li>• All Projects: Project is Within EMR Range</li> </ul> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/2202">https://ecos.fws.gov/ecp/species/2202</a>	Threatened

## Clams

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

## Insects

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

## Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/601">https://ecos.fws.gov/ecp/species/601</a>	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 Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

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><b>American Bittern</b> <i>Botaurus lentiginosus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/6582">https://ecos.fws.gov/ecp/species/6582</a></p>	Breeds Apr 1 to Aug 31
<p><b>Bald Eagle</b> <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. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	Breeds Dec 1 to Aug 31
<p><b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a></p>	Breeds May 15 to Oct 10
<p><b>Bobolink</b> <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><b>Cerulean Warbler</b> <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/2974">https://ecos.fws.gov/ecp/species/2974</a></p>	Breeds Apr 22 to Jul 20
<p><b>Dunlin</b> <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><b>Golden-winged Warbler</b> <i>Vermivora chrysoptera</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8745">https://ecos.fws.gov/ecp/species/8745</a></p>	Breeds May 1 to Jul 20

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

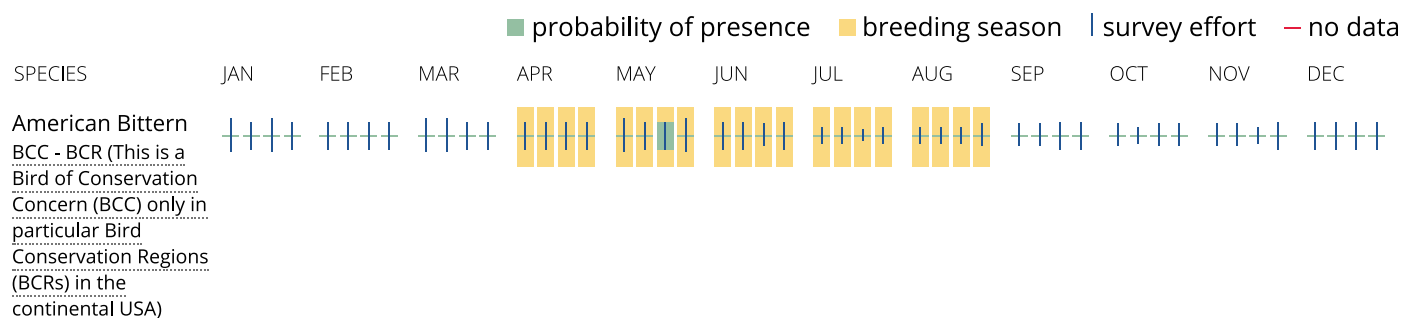
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (-)

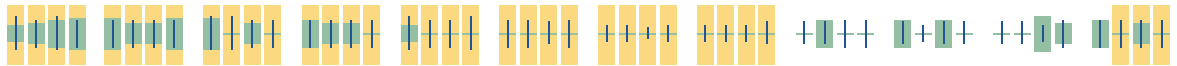
A week is marked as having no data if there were no survey events for that week.

### 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.



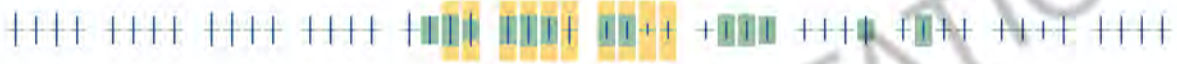
**Bald Eagle**  
 Non-BCC Vulnerable  
 (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



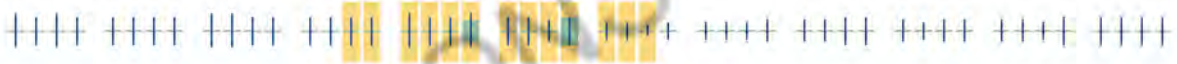
**Black-billed Cuckoo**  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



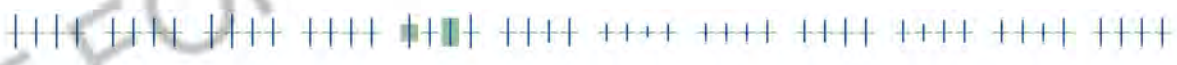
**Bobolink**  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



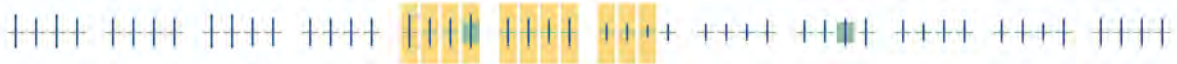
**Cerulean Warbler**  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

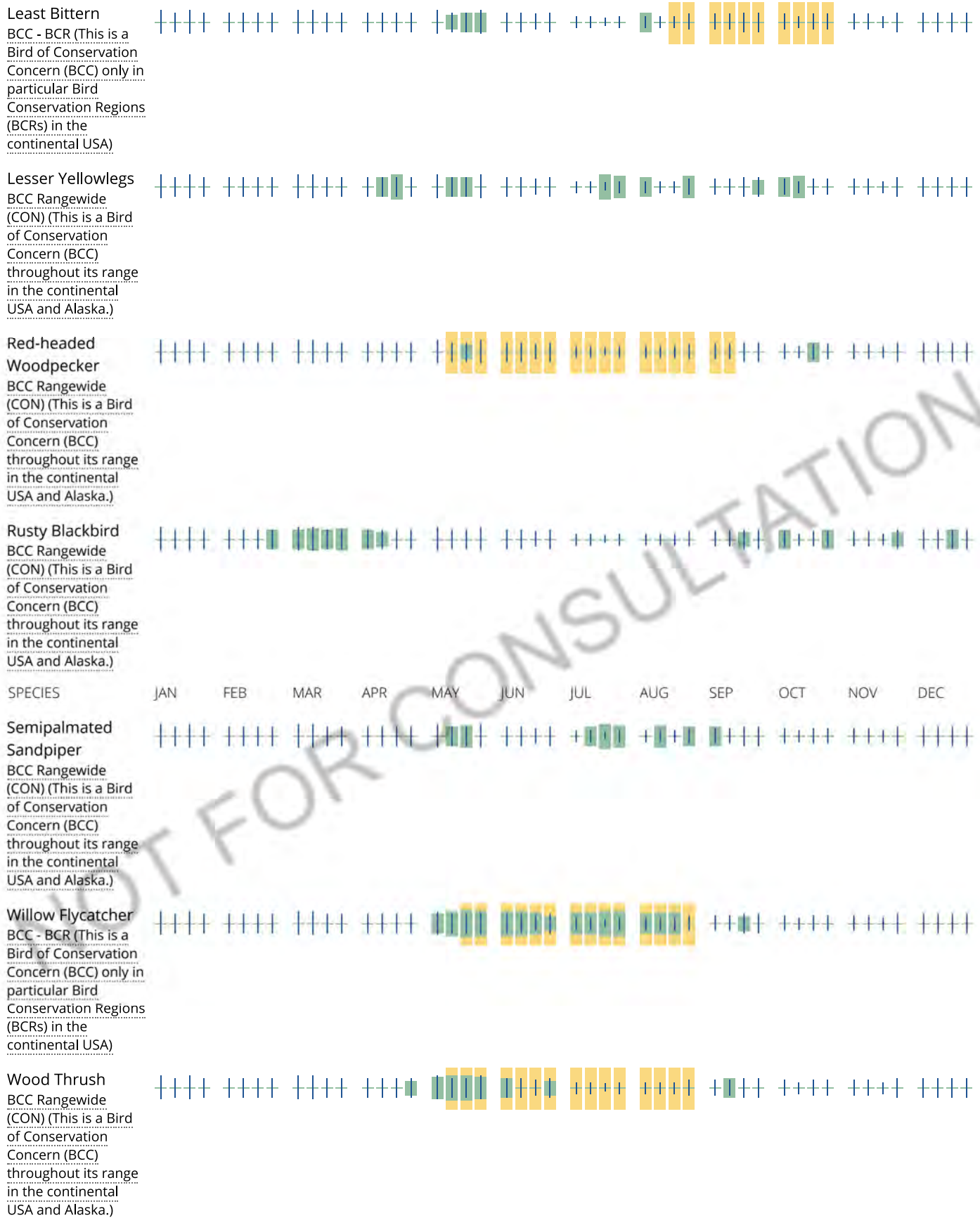


**Golden-winged Warbler**  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



**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.				Washtenaw
Depressed ambernail	Oxyoma poeppoei	SC			Plant		Ann Arbor MI.	Unknown, Unknown Date. 1 collected. Field Museum, Chicago.				Washtenaw
Eastern messesuga	Silene calensis	SC	LT	2018-08-02	Animal	M	Method Baptist Gardens/Fleming Creek	Schneider, G. 1990. #190844, 190845 UMMZ.				Washtenaw
Ginseng	Parax quinquefolius	T		1867	Plant	GX	Ann Arbor East					Washtenaw
Ginseng	Parax quinquefolius	T		2012-07-15	Plant	S	Redick Forest	Washtenaw E.E. 1990. MNFI Special Plant Survey Form and Map.				Washtenaw
Goldenrod	Hydrisis canadensis	T		2018-08-08	Plant	GX	Huron Parkway/Cedar Bend Nature Area	Burnham, S.H. 1886. GH.				Washtenaw
Green violet	Hybanthus concolor	SC		1919-06-01	Plant	G	Superior Township	WALPOLE, B.A. 1919. WUD.				Washtenaw
Green violet	Hybanthus concolor	SC		1919-05-31	Plant	G	Fleming Creek	Walpole, B.A. 1919. #675 MSC.				Washtenaw
Hennock-parsley	Conioselinum chinense	SC		1924-10-30	Plant		Geddes Swamp	Walters, Beverly. 2014. Excel spreadsheet of museum specimens for new SC/TE species.				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.				Washtenaw
King rail	Rallus elegans	E		1948-05-19	Animal	M	Dixboro					Washtenaw
Lambda snaggletooth	Gastrocopta hutchingsi	E		1942	Animal		Huron River at Geddes	Unknown surveyor. 1942. UMMZ Lot No. 159937.				Washtenaw
Little brown bat	Myotis lucifugus	SC		1992-08-23	Animal		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.				Washtenaw
Low-sloped chickweed	Panicum fastigiatum	X		1909-08-21	Plant	M	Geddes					Washtenaw
Northern long-eared bat	Myotis septentrionalis	SC	LT	2003-07-09	Animal		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.				Washtenaw
Pale evers	Gaum virginianum	SC		1895-08-20	Plant	GX	Ypsilanti					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.				Washtenaw
Red mulberry	Morus rubra	T		1880-05-18	Plant	GX	Huron River	Spaulding, U.M. 1880. MICH.				Washtenaw
Rufous-patched bumble bee	Bombus affinis	SC	LE	1893-05-29	Animal		Ann Arbor, Methodist Botanical Gardens	Rowe, Logan, T. Wood, and D. Culbreth. 2019. January 17 - Excel file with museum specimen data for the bumble bees of Michigan project.				Washtenaw
Shoofly orchis	Galeata spectabilis	T		1894-05-23	Plant	GX	Ann Arbor					Washtenaw
Snuffbox	Epipactis atrorubra	E	LE	1956-05-17	Animal	M	US-23, Huron River	Anonymous. 1958. #197202 UMMZ.				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.				Washtenaw
White-tailed sunflower	Helianthus hispidus	SC		1866-08-16	Plant	GX	Penn Central Railroad	Allmendinger, E.C. 1866. MICH.				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"/>	<b>Is the Sampled Area within a Wetland?</b> 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																																	
1. <u>Celtis occidentalis</u>	5	Yes	FAC	<b>Dominance Test worksheet:</b> 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)																																
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: _____)																																				
1. <u>Rhamnus cathartica</u>	15	Yes	FAC	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td></td> <td style="text-align: right;">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">36</td> <td>x 1 =</td> <td style="text-align: center;">36</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">25</td> <td>x 2 =</td> <td style="text-align: center;">50</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">22</td> <td>x 3 =</td> <td style="text-align: center;">66</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">0</td> <td>x 4 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">83 (A)</td> <td></td> <td style="text-align: center;">152 (B)</td> </tr> <tr> <td>Prevalence Index = B/A =</td> <td colspan="3" style="text-align: center;"><u>1.83</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	36	x 1 =	36	FACW species	25	x 2 =	50	FAC species	22	x 3 =	66	FACU species	0	x 4 =	0	UPL species	0	x 5 =	0	Column Totals:	83 (A)		152 (B)	Prevalence Index = B/A =	<u>1.83</u>		
Total % Cover of:		Multiply by:																																		
OBL species	36	x 1 =	36																																	
FACW species	25	x 2 =	50																																	
FAC species	22	x 3 =	66																																	
FACU species	0	x 4 =	0																																	
UPL species	0	x 5 =	0																																	
Column Totals:	83 (A)		152 (B)																																	
Prevalence Index = B/A =	<u>1.83</u>																																			
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: _____)																																				
1. <u>Symplocarpus foetidus</u>	15	Yes	OBL	<b>Hydrophytic Vegetation Indicators:</b> <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 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
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: _____)																																				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																
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 <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/1	100					Sandy	

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

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b>			<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)			
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> ? Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)				

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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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](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx))

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)
<input checked="" type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

<b>Field Observations:</b>	
Surface Water Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u>	
Saturation Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u>	
(includes capillary fringe)	

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 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>	<b>Is the Sampled Area within a Wetland?</b> 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>	
2.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
3.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
4.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
5.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>    </u>	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>    </u> )				
1.	<u>Rhamnus cathartica</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
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>	
5.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>12</u>	=Total Cover		
Herb Stratum	(Plot size: <u>    </u> )				
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>Symphytotrichum lanceolatum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
4.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
5.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
6.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
7.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
8.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
9.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
10.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>11</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
2.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>    </u>	=Total Cover		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  

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>	

**Hydrophytic Vegetation Indicators:**  
     1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
X 3 - Prevalence Index is ≤3.0<sup>1</sup>  
     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

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 <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/1	100					Sandy	

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

<sup>2</sup>Location: 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 Soils<sup>3</sup>:**

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

<sup>3</sup>Indicators 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](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 - Mouliere 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>	<b>Is the Sampled Area within a Wetland?</b> 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>	
2.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
3.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
4.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
5.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>    </u>	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>    </u> )				
1.	<u>Rhamnus cathartica</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	
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>	
5.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>12</u>	=Total Cover		
Herb Stratum	(Plot size: <u>    </u> )				
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>Symphytotrichum lanceolatum</u>	<u>1</u>	<u>No</u>	<u>FAC</u>	
4.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
5.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
6.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
7.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
8.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
9.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
10.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>11</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>    </u> )				
1.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
2.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	
		<u>    </u>	=Total Cover		

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 3 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**  

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>	

**Hydrophytic Vegetation Indicators:**  
     1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
X 3 - Prevalence Index is ≤3.0<sup>1</sup>  
     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

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 <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/1	100					Sandy	

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

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input checked="" type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> Coast Prairie Redox (A16)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12)</p> <p><input type="checkbox"/> Red Parent Material (F21)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
--	--	---

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

<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
--	--

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](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx))

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input checked="" type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input checked="" type="checkbox"/> Water-Stained Leaves (B9)</p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input checked="" type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
--	---

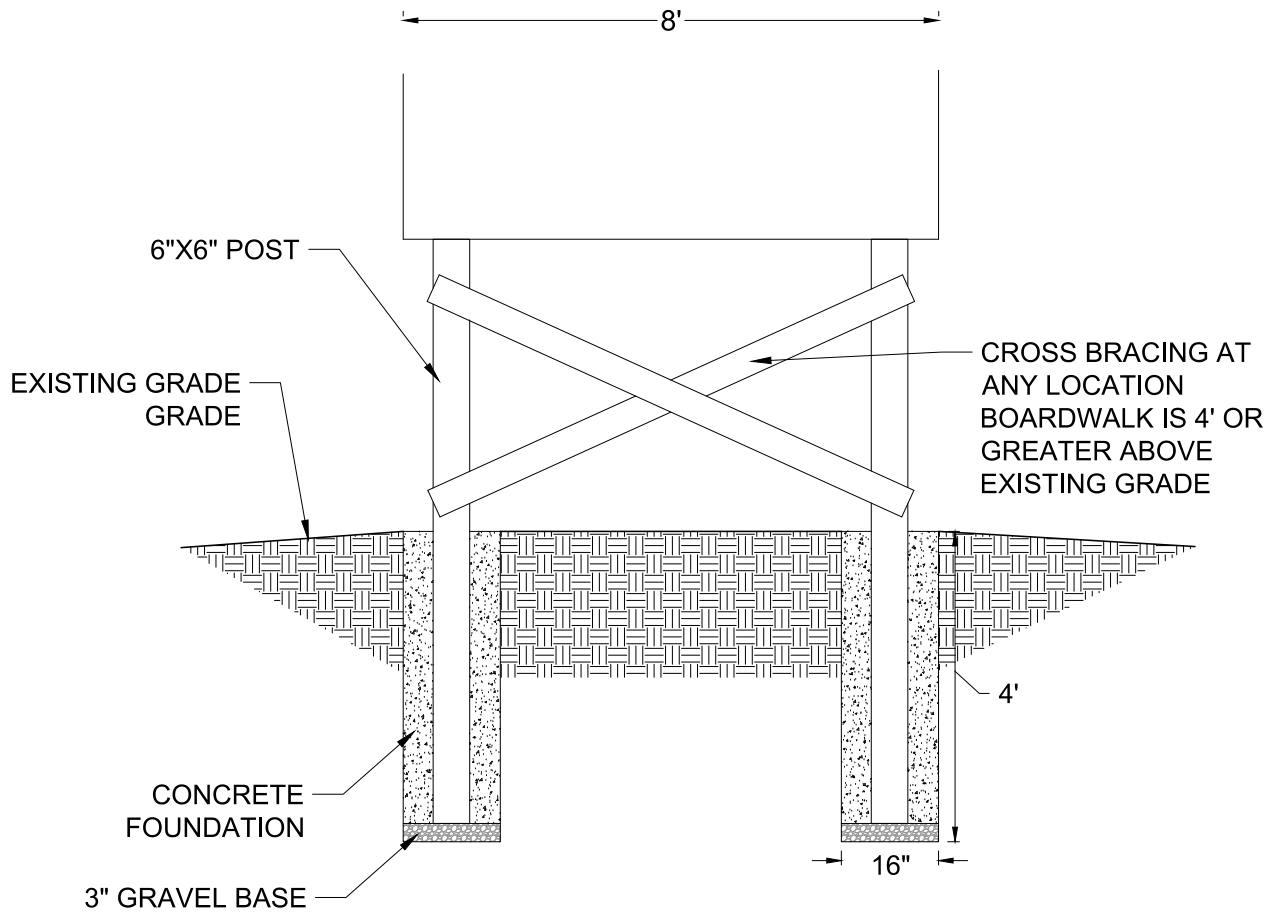
<p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (inches): _____</p> <p>Water Table Present?    Yes <input checked="" type="checkbox"/>    No <input type="checkbox"/>    Depth (inches): <u>0</u></p> <p>Saturation Present?    Yes <input checked="" type="checkbox"/>    No <input type="checkbox"/>    Depth (inches): <u>0</u></p> <p>(includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b>    Yes <input checked="" type="checkbox"/>    No <input type="checkbox"/></p>
--	--

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

Remarks:







# BOARDWALK DETAIL

NOT TO SCALE



Know what's below.  
**Call before you dig.**  
 THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS NOT GUARANTEED. UTILITIES ARE NOT TO BE LOCATED OR DELETED WITHOUT THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND SHALL BE FULLY RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THE CONTRACTOR'S FAILURE TO LOCATE, MARK, PROTECT AND ALL NECESSARY UTILITIES.

**NOTICE:**  
 CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDRESSING ANY PROBLEMS FOR SAFETY OF THE WORKERS ENGAGED IN THE WORK OF ANY NEARBY STRUCTURE OR 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

CLIENT  
 DATE 08/06/2020

REVISIONS	
SCALE	0 15 30
1" = 30 FEET	
DR.	CH.
P.M. DR.	
BOOK	NA
JOB	18002735
SHEET NO.	03

FILE: 18002735\_ISSUE.DWG  
 E:\E-W\RD  
 8-13-2019-11.2  
 Approved  
 Issued On: 07/31/2020  
 Expires On: 07/31/2025

NOT FOR CONSTRUCTION





**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% CHEEPRING RED FESCUE
11% TIMOTHY
1.0% INERT MATTER
1.0% OTHER CROP
0.0% 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/PACKER 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 ANY DAMAGE TO UTILITIES WHICH MUST BE REPAIRED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES WHICH MUST BE REPAIRED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES WHICH MUST BE REPAIRED BY THE CONTRACTOR.

ATWELL  
 1000 W. WASHINGTON ST. SUITE 200  
 TROY, MICHIGAN 48060  
 TEL: 313.286.1000  
 FAX: 313.286.1001

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

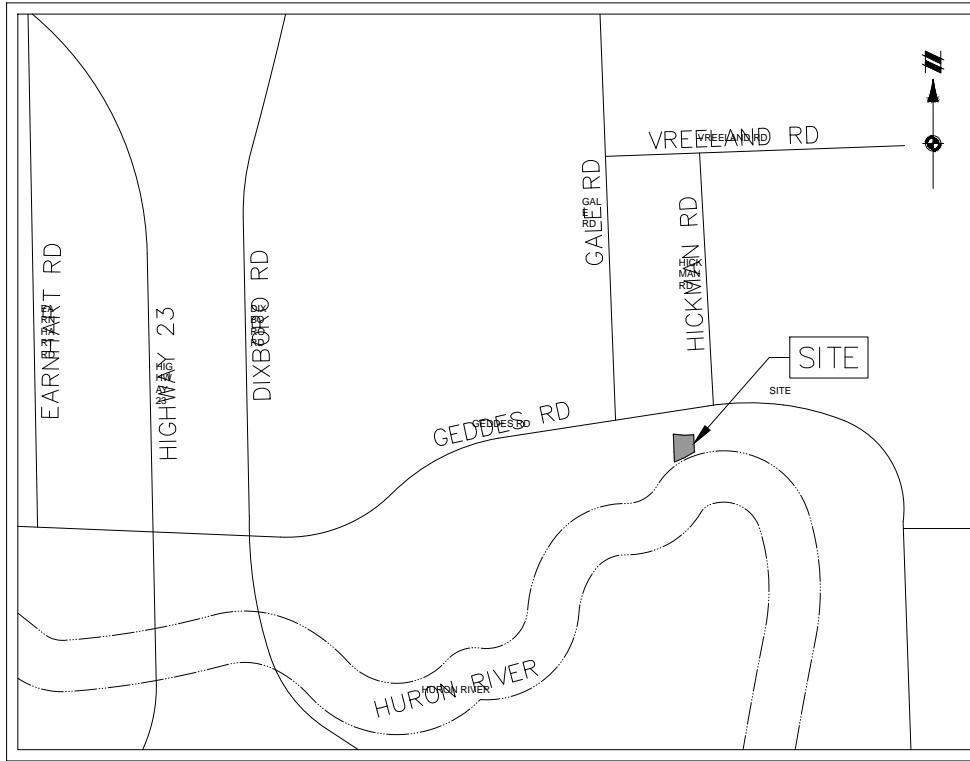
**PROJECT DEVELOPER**

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.

**811**  
Know what's below.  
Call before you dig.  
If the location of any utility is not shown on the map, you must call 811 before you dig. The utility companies will locate the lines for you. It is the responsibility of the digger to ensure that all lines are properly marked and that the digger is aware of the location of all lines. Failure to call 811 before digging can result in injury, property damage, and fines. For more information, visit [www.811.com](http://www.811.com).

**NOTICE:**  
CONSTRUCTION OF THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES.

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**ATWELL**  
PROFESSIONAL ENGINEERS  
10000 W. HURON RD. SUITE 200  
SOUTHFIELD, MI 48076  
TEL: 248.447.2000

SECTION 80	TOWN 2 SOUTH RANGE 2 EAST	WASHTENAW COUNTY: 31010101N
	SUPERIOR TOWNSHIP	

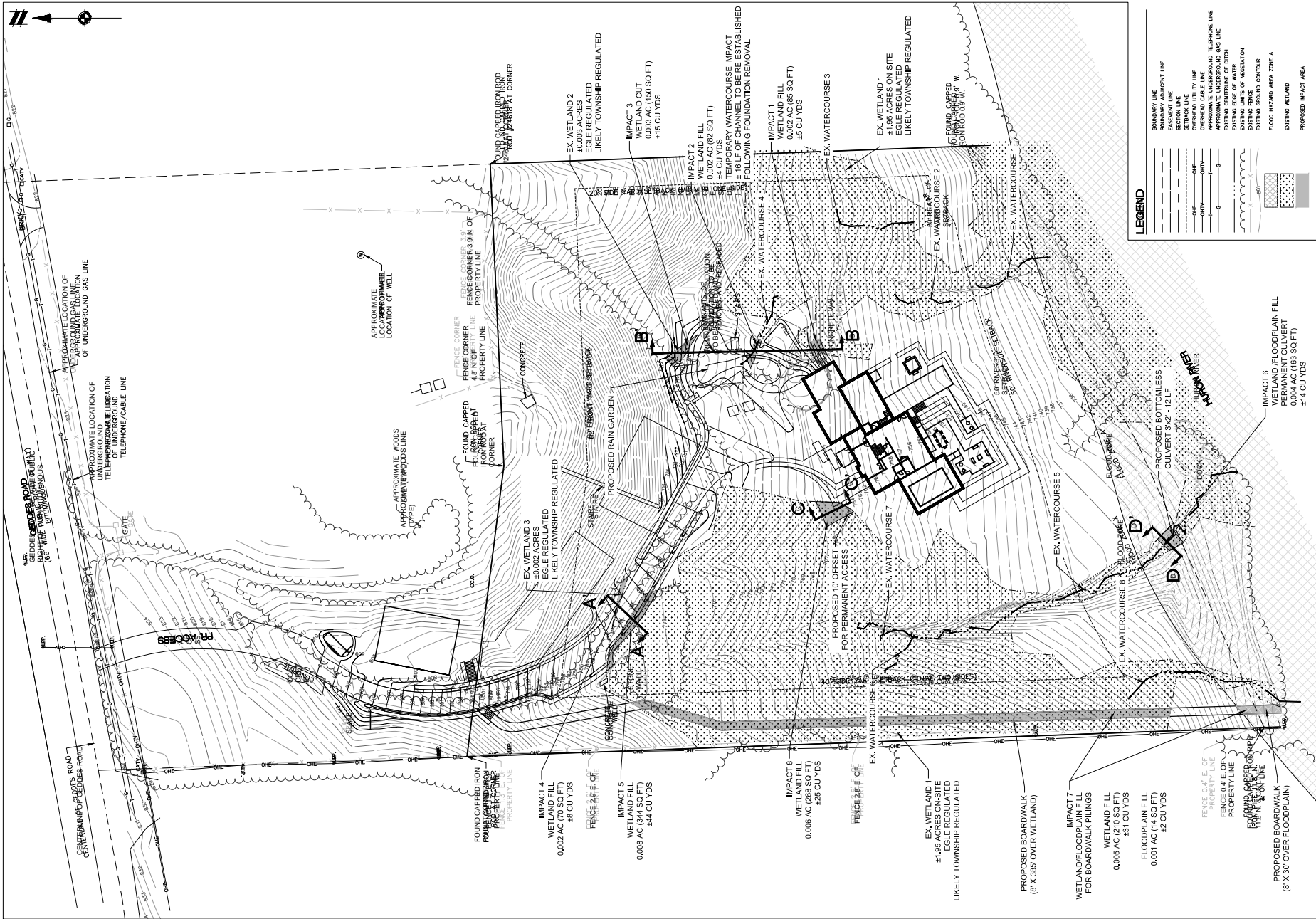
MOULIERE PARCEL EGLE IMPACT PLANS COVER SHEET
---

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

**SHEET INDEX**

- 01 COVER SHEET
- 02 PROPOSED SITE
- 03 EGLE IMPACT PLANS
- 04 CONSTRUCTION DETAILS
- 05 SECS NOTES





**LEGEND**

- BOUNDARY LINE
- EASEMENT LINE
- SETBACK LINE
- OVERHEAD UTILITY LINE
- APPROXIMATE UNDERGROUND TELEPHONE LINE
- APPROXIMATE UNDERGROUND GAS LINE
- EXISTING CONTURNE OF ETC/H
- EXISTING LIMITS OF VEGETATION
- EXISTING FENCE
- EXISTING GROUND CONTOUR
- FLOOD HAZARD AREA, ZONE A
- EXISTING WETLAND
- PROPOSED IMPACT AREA

**NOT FOR CONSTRUCTION**

Know what's below.  
**Call before you dig.**  
 The location of existing underground utilities is shown on this plan. It is your responsibility to verify the location of all utilities before you dig. Call 811 before you dig. For more information, visit [www.call811.com](http://www.call811.com).

**NOTICE:**  
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ATWELL ENGINEERING, INC.  
 1000 W. WASHINGTON ST., SUITE 200  
 WASHINGTON, MI 48090  
 TEL: 519.283.1111 FAX: 519.283.1112  
 WWW.ATWELL-ENG.COM



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

DATE	06/27/2012
REVISION	10/05/11/07/12/20/22/23
REVISIONS	
SCALE	1" = 30' FEET
BY	DB
CHK	DB
DATE	06/27/2012
JOB	18002735
SHEET NO.	02





**LOCAL AND STATE CONDITIONS AND CLARIFICATIONS:**

- THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL AUTHORITY AND THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY (EGLE), IN FORCE ON DATE OF APPROVAL SHALL GOVERN ALL MATERIALS AND WORKMANSHIP INVOLVED IN THE IMPROVEMENTS SHOWN ON THESE PLANS EXCEPT AS SUCH SPECIFICATIONS ARE MODIFIED BY THE FOLLOWING SPECIFICATION, OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS. TOGETHER WITH EXISTING PRECAUTIONS, THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY, IT IS ALSO SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH WORK.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO THE START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND SPECIAL CONDITIONS OF THE APPROVALS ISSUED FOR THE PROJECT.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO MASS DEG (B) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- ALL DRAIN TILE AND STORM SEWERS NOT NOTED TO BE REMOVED/RE-ROUTED WHICH ARE DAMAGED, DISTURBED, OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH THE SAME QUALITY PIPE OR BETTER, MAINTAINING THE SAME GRADIENT AS EXISTING. REPLACED DRAIN TILE SHALL BE LAID ON COMPACTED BEDDING EQUAL IN DENSITY TO SURROUNDING STRATUM. REPLACEMENT SHALL BE DONE AT THE TIME OF THE BACKFILL OPERATION.
- THE FLOW IN ALL SEWERS, DRAINS AND UNDERDRAINS ENCLOSED SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE. AND WHENEVER SURFACE WATERCOURSES AND DRAINS ARE DISTURBED OR DESTROYED DURING THE PROSECUTION OF THE WORK, THEY SHALL BE RESTORED BY THE CONTRACTOR AT HIS OWN COST AND EXPENSE.
- THE CONTRACTOR SHALL RETURN ALL GRADES ALONG THE LIMITS OF DISTURBANCE TO ORIGINAL CONDITION, MATING UNDISTURBED AREAS, SO AS TO MAINTAIN ORIGINAL DRAINAGE.
- DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY. DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED BY A CERTIFIED STORM WATER OPERATOR AT LEAST ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A EVENT PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE OR MORE FREQUENTLY IF REQUIRED BY GOVERNING AGENCIES GENERAL PERMIT. ALL MAINTENANCE REQUIRED BY INSPECTION SHALL COMMENCE WITHIN 24 HOURS AND BE COMPLETED WITHIN 48 HOURS OF REPORT.
- ALL PRACTICES MUST BE MONITORED AND MAINTAINED BY A TRAINED REPRESENTATIVE OF THE CONTRACTOR. THE CONTRACTOR MUST KEEP WRITTEN RECORDS OF SELF-MONITORING AND PROVIDE THEM TO THE LOCAL AUTHORITIES, EGLE, OR OTHER INSPECTING AUTHORITY UPON REQUEST.
- 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.
- APPROPRIATE MEASURES SHALL BE PUT IN PLACE TO PREVENT POLLUTANTS - SEDIMENT, TRASH, FLUID, SOLVENTS, ETC. - FROM LEAVING THE WORK SITE AND/OR ENTERING SURFACE OR GROUND WATER. PROPER HANDLING AND STORAGE OF ALL HAZARDOUS MATERIALS SHALL BE MAINTAINED AT ALL TIMES AND SPILL PREVENTION AND CLEAN-UP PLANS SHALL BE IN PLACE PRIOR TO BRINGING HAZARDOUS MATERIALS ON TO THE WORK SITE. THESE SHALL INCLUDE TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. THESE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION (90% VEGETATIVE COVER) HAS BEEN ACCOMPLISHED.
- STRAW MULCH BLANKETS MUST BE USED ON 3:1 SLOPES OR GREATER.
- ALL EXPOSED AREAS SHALL BE STABILIZED IMMEDIATELY FOLLOWING THE CONCLUSION FINAL GRADING IN THE DESIGNATED AREA.
- AREAS OF DISTURBED SOIL THAT REMAIN INACTIVE FOR 14 DAYS MUST HAVE TEMPORARY OR PERMANENT STABILIZATION IN PLACE. USUALLY, THIS CONSISTS OF MULCH AND MULCH BUT IT CAN ALSO BE GEOTEXTILE COVER, EROSION CONTROL BLANKETS, TURF REINFORCEMENT MATS, OR OTHER APPROPRIATE STABILIZATION PRACTICE.
- THIS PLAN SHALL NOT BE CONSIDERED A CONTRACT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT AND/OR POLLUTANTS FROM LEAVING THE SITE.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT IS 1/3 THE HEIGHT OF THE FENCE.
- CLEANUP WILL BE DONE IN A MANNER TO ENSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
- CONTRACTOR SHALL PAY ALL FEES AND POST A BOND FOR EROSION CONTROL PERFORMANCE BOND, IF REQUIRED, PRIOR TO ANY EARTH CHANGE.
- CONSTRUCTION OPERATION SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
- BORROW AND FILL DISPOSAL AREAS WILL BE SELECTED BY THE CONTRACTOR WITH FULL CONSIDERATION FOR SOIL EROSION AND SEDIMENT CONTROL MEASURES.
- SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- PERMANENT STABILIZATION IS ACHIEVED ONCE THE LOCAL AUTHORITIES PERFORM A FINAL INSPECTION OF THE COMPLETED PROJECT. ONCE THE PROJECT IS INSPECTED, A NOTICE OF TERMINATION (NOT) SHALL BE FILED BY THE CONTRACTOR WITH THE EGLE AND NO FURTHER EARTH DISRUPTION ACTIVITIES MAY OCCUR WITHOUT A NEW PERMIT.
- CONTRACTOR SHALL DENOTE LOCATION OF CONCRETE WASHOUT AREAS (IF USED), ON THE SWPPP.

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY.**

- CONSTRUCTION PERMITS (EES) THAT HAS AUTHORIZATION TO DISCHARGE UNDER A NATIONAL PERMIT (NPDES) SHALL COMPLY WITH THE FOLLOWING PROVISIONS AND REQUIREMENTS (MORE STRINGENT):
- NOT DIRECTLY OR INDIRECTLY DISCHARGE WASTES SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LUBRICANTS, FUELS, LITTER, SANITARY WASTE, OR ANY OTHER SUBSTANCE AT THE CONSTRUCTION SITE INTO WATERS OF THE STATE IN VIOLATION OF PART 31 OF THE PUBLIC HEALTH CODE, 320-1101 ET SEQ., AND RULES PROMULGATED UNDER THE ACT.
  - BE IN COMPLIANCE WITH A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT FOR THE SITE OR, IF THE CONSTRUCTION ACTIVITY IS CARRIED OUT BY AN AUTHORIZED PUBLIC AGENCY, THE APPROVED CONTROL PLAN, INCLUDING THE SELECTED CONTROL MEASURES THAT ARE APPLICABLE TO THE SITE.
  - PROPERLY MAINTAIN AND OPERATE THE SOIL EROSION CONTROL MEASURES.
  - HAVE THE SOIL EROSION CONTROL MEASURES UNDER THE SPECIFIC SUPERVISION AND CONTROL OF A STORM WATER OPERATOR WHO HAS BEEN CERTIFIED BY THE DEPARTMENT AS PROPERLY QUALIFIED TO OPERATE THE SOIL EROSION CONTROL MEASURES. THE CERTIFICATION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF FR 323.1251 ET SEQ.
  - CAUSE THE CONSTRUCTION ACTIVITY TO BE INSPECTED BY A CERTIFIED STORM WATER OPERATOR ONCE PER WEEK, AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE, AND ENSURE THAT ANY NEEDED CORRECTIVE ACTIONS ARE CARRIED OUT. A LOG OF THE INSPECTIONS AND CORRECTIVE ACTIONS SHALL BE MAINTAINED ON FILE BY THE CONSTRUCTION PERMITTEE FOR REVIEW AND SHALL BE RETAINED BY THE CONSTRUCTION PERMITTEE FOR A PERIOD OF THREE (3) YEARS FROM THE DATE OF THE INSPECTION OR CORRECTIVE ACTION.
  - IN ACCORDANCE WITH THE REQUIREMENTS FOR ONLAND FACILITIES AS SET FORTH IN SPILLAGE OF OIL AND POLLUTING MATERIALS, BEING PART 5 OF THESE (MICHIGAN PERMIT-BY-RULE) RULES, PROVIDE FACILITIES AND COMPLY WITH REPORTING PROCEDURES FOR CONTAMINATION OF ANY ACCIDENTAL LOSSES OF OIL OR OTHER POLLUTING MATERIALS.
  - DISPOSED OF SOLIDS, SEDIMENT, FILTER BACKWASH, OR OTHER WASTE THAT IS REMOVED FROM OR RESULTS FROM THE TREATMENT OF CONTROL OF STORM WATER IN COMPLIANCE WITH APPLICABLE STATE LAWS AND REGULATIONS AND IN A MANNER THAT PREVENTS ANY WASTE FROM ENTERING WATERS OF THE STATE.
  - ALLOW THE DEPARTMENT TO ENTER UPON THE SITE AT ANY REASONABLE TIME BEFORE THE EXPIRATION OF THE AUTHORIZATION TO DISCHARGE AS SET FORTH IN SUBRULE (b) OF THIS RULE, UPON PRESENTATION OF CREDENTIALS AND OTHER DOCUMENTS AS MAY BE REQUIRED BY LAW, FOR THE PURPOSE OF INSPECTING CONDITIONS RELATING TO THE POLLUTION OF ANY WATERS OR DETERMINING COMPLIANCE WITH THE PROVISIONS OF THIS RULE.
  - UPON REQUEST, MAKE AVAILABLE FOR PUBLIC INSPECTION OR PROVIDE TO THE DEPARTMENT ALL REPORTS OR LOGS PREPARED PURSUANT TO THE PROVISIONS OF THIS RULE.
  - FILE A REVISED NOTICE OF COMPLIANCE IN COMPLIANCE WITH THE PROVISIONS OF SUBRULE (1) OF THIS RULE BEFORE ANY EXPANSION OF THE CONSTRUCTION ACTIVITY OR CHANGE IN THE SOIL EROSION CONTROL MEASURES THAT IS REQUIRED IN COMPLIANCE WITH THE SOIL EROSION AND SEDIMENTATION PERMIT.

**PROHIBITED CONSTRUCTION ACTIVITIES:**

- THE CONTRACTOR SHALL NOT USE CONSTRUCTION PROCEDURES, OR OPERATIONS THAT MAY UNNECESSARILY IMPACT THE NATURAL ENVIRONMENT OR THE PUBLIC HEALTH AND SAFETY. PROHIBITED CONSTRUCTION ACTIVITIES, PROCEDURES OR OPERATIONS INCLUDE BUT ARE NOT LIMITED TO:
- DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIALS IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE WETLAND OWNERS WITHOUT WETLAND FLOODPLAIN (WLF) PERMIT.
  - DISBURSING, ABANDONING, OR CAPACIOUSLY EQUIPMENT IN A STREAM CORRIDOR, TRIBUTARY, WATERS, WETLANDS OR ANY AREAS OF PROPOSED WORK.
  - PUMPING OF SEDIMENT-ADEN WATER FROM EXCAVATIONS INTO ANY SURFACE WATERS, STREAM CORRIDORS, WETLANDS, OR STORMDRAINS.
  - DISCHARGING OF POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE, AND OTHER HARMFUL WASTE INTO OR ALONGSIDE STREAM, RIVERS, IMPOUNDMENT, OR INTO NATURAL, OR MAN-MADE CHANNELS LEADING THEREFROM.
  - PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW-LINE OF A STREAM.
  - DAMAGING OR DESTROYING VEGETATION OR WORK LIMITS, WITHIN NO-BUILD, TREE PRESERVATION AND GREEN ZONES.
  - DITCHING OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, WETLANDS SURFACE WATERS, OR ANY OTHER UNSPECIFIED LOCATION WITHOUT A PERMIT.
  - OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
  - STORING OF CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED AND APPROVED FOR THE SAID PURPOSE.
  - DISPOSAL OF CHIP WOOD IN SUCH A MANNER THAT WOULD ALLOW CHIP WOOD DECOMPOSITION AND LEACHATE WATER TO FLOW TO ANY SURFACE WATER, STREAM CORRIDOR, OR WETLAND.
  - TRACKING OF MUD AND OTHER CONSTRUCTION RELATED DEBRIS ONTO ROADWAY OR FLUSHING SEDIMENT FROM ROADWAY WITH WATER.

**BMP MAINTENANCE NOTES TO CONTRACTOR:**

- ALL MEASURES STATED ON THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION. SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS (WHO IS ALSO A CERTIFIED STORM WATER OPERATOR), AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
- ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEED AS NEEDED.
  - SILT FENCES SHALL BE REPAIRED TO THE CORRECT CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD THE HEIGHT OF THE SILT FENCE.
  - NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF.
  - EROSION AND SEDIMENT CONTROL PRACTICES THAT DO NOT MEET THE REQUIREMENTS OF MICHIGANS PERMIT-BY-RULE FOR CONSTRUCTION ACTIVITIES, OTHER EROSION AND SEDIMENT CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS.
  - REGULAR INSPECTION AND MAINTENANCE WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES. PERMANENT RECORDS OF MAINTENANCE AND INSPECTIONS MUST BE KEPT THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS MUST BE MADE BY A CERTIFIED STORM WATER OPERATOR ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE. PROVIDED WILL BE THE NAME OF STORM WATER OPERATOR, CERTIFICATION NUMBER, MAJOR OBSERVATIONS, DATE OF INSPECTION AND CORRECTIVE MEASURES TAKEN. AN EGLE SOIL EROSION AND SEDIMENTATION CONTROL INSPECTION LOG SHALL BE FILLED OUT FOR EACH INSPECTION.
  - TEMPORARY EROSION CONTROL MEASURES SHALL BE CHECKED ON A DAILY BASIS BY THE CONTRACTOR AND MISSING OR DEFICIENT MEASURES SHALL BE REPLACED OR REPAIRED IMMEDIATELY.
  - THE CONSTRUCTION ACCESS POINTS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY.
  - EXCESS DIRT/FILL IS NOT TO BE PLACED ON ANY AREAS ON OR ADJACENT TO THE SITE BEYOND THE LIMITS OF DISTURBANCE SHOWN ON THE SOIL EROSION PLANS UNLESS WRITTEN AUTHORIZATION IS PROVIDED BY THE ACCEPTING LAND OWNER AND AGREED TO BY THE DEVELOPER.
  - DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTOR.
  - PRIOR TO LEAVING THE SITE, ALL VEHICLES SHALL BE CLEANED OF DEBRIS, ANY DEBRIS AND/OR SEDIMENT REACHING THE PUBLIC STREET SHALL BE CLEANED IMMEDIATELY BY A METHOD OTHER THAN FLUSHING.

**BEST MANAGEMENT PRACTICES SEQUENCE:**

NOTE: THE FOLLOWING SEQUENCE AND MEASURES ARE GENERAL TO EACH STRUCTURE LOCATION. ADDITIONAL MEASURES AND PHASING MAY BE REQUIRED DEPENDING ON THE SPECIFIC LOCATION. THE LOCATION WORK IS BEING PERFORMED. FOUNDATION SPOIL LOCATIONS SHOWN ON THE PLANS ARE FOR REFERENCE ONLY. CONTRACTOR MAY ADJUST ACTUAL LOCATION AS NECESSARY TO BEST MAINTAIN EXISTING DRAINAGE COURSES AND MINIMIZE IMPACTS TO THE EXISTING CONDITIONS SURROUNDING EACH WORK AREA. ALL EARTH DISTURBANCES ARE TO OCCUR ONLY WITHIN THE PERMITTED EASEMENT.

PULL ALL NECESSARY LOCAL, COUNTY, AND STATE PERMITS. THE CONTRACTOR SHALL CONTACT THE EGLE, IF NECESSARY, TO AMEND THE NOTICE OF COVERAGE (NOC) WITH THE NAME AND CERTIFICATION NUMBER OF THE STORM WATER OPERATOR CHARGED WITH CONDUCTING THE REQUIRED INSPECTIONS. WRITTEN NOTIFICATION FROM THE EGLE APPROVING THE CHANGE TO THE NOC SHALL BE INCLUDED IN THE INSPECTION LOG.

INSTALL SILT FENCING AS CALLED FOR ON PLANS OR AS SPECIFIC SITE CONDITIONS DICTATE. ONLY CLEAR AREAS NECESSARY TO INSTALL FENCING. FENCING SHALL BE ERRECTED PRIOR TO DEMOLITION OF THE EXISTING STRUCTURE AND SHALL BE MAINTAINED UNTIL THE DISTURBED AREAS AND SPOIL STOCKPILE AT THE INDIVIDUAL LOCATION ARE STABILIZED (90% VEGETATIVE COVER). SILT FENCE SHALL NOT BE PLACED ACROSS ANY ACCESS ROAD.

CLEAR AND GRUB AREAS AS NECESSARY TO ALLOW FOR PLACEMENT OF FOUNDATION SPOILS.

DEMOLISH EXISTING STRUCTURE(S) & FOUNDATION(S) AS NECESSARY. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF MATERIALS/CONCRETE AT AN APPROVED AND LICENSED OFF SITE LOCATION.

STOCKPILE TOPSOIL AND EXCAVATE FOUNDATION. STOCKPILE SPOIL MATERIAL AND GRADE ADJACENT TO EXCAVATION AS SHOWN ON THE SITE DETAILS. NO DEWATERING OF EXCAVATED AREAS ARE ANTICIPATED, HOWEVER IF NECESSARY, PLANS WILL BE PROVIDED.

PLACE TOPSOIL AND SEED SOIL STOCKPILE AS SPECIFIED. PLACE EROSION BLANKETS OVER ANY EXPOSED RAW EARTH WITHIN 14 DAYS OF EXCAVATION.

COMPLETE CONSTRUCTION OF NEW STRUCTURE AND REPAIR SURROUNDING AREAS AS NECESSARY.

INSPECT DISTURBED AREA WEEKLY FOR VEGETATIVE GROWTH, RESEED AS NECESSARY.

IF THE AREA HAS ACHIEVED A MINIMUM OF 60% VEGETATIVE COVER, REMOVE SILT FENCE (AND/OR OTHER REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES). STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF BMP'S. SILT FENCE AND OTHER BMP'S WHICH ARE STILL IN A SERVICEABLE CONDITION MAY BE REUSED AS WORK PROGRESSES.

IF IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE THE EARTH CHANGE, THEN MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IN PLACE AND THE AREA IS STABILIZED. AREAS DURING THE NON-GROWING SEASON WILL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING THE COMMENCEMENT OF THE NEXT PLANTING SEASON. ALL STRAW OR HAY MULCH WILL BE REMOVED OR DEEPLY INCORPORATED INTO THE SOIL BEFORE PROVIDING PERMANENT STABILIZATION. DORMANT SEEDING IS ALSO RECOMMENDED FOR EARLY SPRING GROWTH.

LANDOWNER WILL BE RESPONSIBLE FOR PERMANENT STABILIZATION OF DISTURBED AREAS FOR ONE YEAR.

FINAL PROJECT CLOSEOUT (ALL PROPOSED IMPROVEMENTS ARE COMPLETE)

ONCE ALL PERMANENT SOIL EROSION CONTROL MEASURES ARE COMPLETED AND PERMANENT VEGETATION ESTABLISHED, THE CONTRACTOR SHALL CONTACT THE GOVERNING AUTHORITIES FOR A FINAL INSPECTION. ONCE THE SITE HAS PASSED ITS FINAL INSPECTION, THE S.E.S.C. PERMIT IS CLOSED AND NO FURTHER EARTH DISRUPTION CAN OCCUR WITHOUT A NEW PERMIT.

THE NOTICE OF COVERAGE PERMITTEE SHALL FILE A NOTICE OF TERMINATION (NOT) WITH THE EGLE AND RETAIN S.E.S.C. LOGS (HARD COPIES & ELECTRONICALLY) FOR A MINIMUM OF 5 YEARS.

**TEMPORARY STABILIZATION**

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A STREAM AND NOT AT FINAL GRADE	IMMEDIATELY FOLLOWING (2 DAYS MAX) THE MOST RECENT DISTURBANCE. WILL REMAIN LOOSE FOR MORE THAN 14 DAYS

FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED OR STABILIZED IN ANOTHER APPROPRIATE WAY AS SOON AS POSSIBLE.

DISTURBED AREAS THAT WILL BE DUE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER (NOVEMBER 1)
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WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THIS CAN INCLUDE AGGREGATE COVER, EROSION CONTROL BLANKETS, TURF REINFORCEMENT MATS, OR OTHER STABILIZATION PRACTICE.

**PERMANENT STABILIZATION**

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN FIVE (5) CALENDAR DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A STREAM AND AT FINAL GRADE	WITHIN 2 CALENDAR DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN FIVE (5) CALENDAR DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

**CONSTRUCTION DEWATERING PLAN**

**1.0 DEWATERING**

DEFINITION: DEWATERING CONSISTS OF THE REMOVAL OF SURFACE WATER AND/OR GROUNDWATER BY DIVERTING AND/OR REMOVING CONSTRUCTION AREAS WITHIN WATERWAYS (IE, WETLANDS, WATERCOURSE, AND/OR WATERSHED), AS NEEDED FOR CONSTRUCTION.

**A. GENERAL:**

- DEWATERING ACTIVITIES SHALL CONFORM TO APPLICABLE PART 91, SOIL EROSION AND SEDIMENTATION CONTROL (SECO), OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (NREPA), 1994 PA 287, AND ALL OTHER APPLICABLE STATE AND FEDERAL REGULATIONS AND PERMITS.
- DURING DEWATERING ACTIVITIES, THE SEDIMENT LADEN WATER CANNOT BE DIRECTLY DISCHARGED TO SURFACE WATERS. OPTIONS FOR REDUCING THE TURBIDITY OF THE WATER INCLUDE:
  - CONSTRUCTING A TEMPORARY SEDIMENT TRAP FOR TURBID WATER DISCHARGE PRETREATMENT.
  - CONSTRUCTING A SERIES OF DITCHES TO ALLOW FOR NATURAL SEDIMENTATION.
  - APPLICATION OF NATURAL BASED FLOCCULENT TECHNOLOGY SUCH AS CHITOSAN IN SEDIMENT TRAPS OR A SERIES OF DITCH CHECKS TO CONTAIN SEDIMENT.
  - DISCHARGE WATER THROUGH A SERIES OF FIBER LOGS OR A ROCK WEEPER INTO A LARGE VEGETATED BUFFER AREA.
  - ENERGY DISSIPATION SHOULD BE PROVIDED AT ALL DISCHARGE POINTS.
  - DEWATERING OR BASIN DRAINING ACTIVITIES SHOULD NOT OCCUR IN RECEIVING CHANNELS OR ADVERSELY IMPACT WETLANDS.

**B. POLLUTANTS CONTROLLED AND IMPACTS:**

- PROPER DEWATERING TECHNIQUES WILL FILTER WATER OF SEDIMENT, OILS, AND OTHER CHEMICALS, thus PREVENTING THESE POLLUTANTS FROM ENTERING THE SURFACE WATERS.

**C. APPLICATION:**

- DEWATER ACCUMULATED GROUND WATER OR STORMWATER VIA PUMP, DEWATERING BAG AND ENSURE DISCHARGED WATER DOES NOT CONTRIBUTE SEDIMENTATION TO RECEIVING WATERS.

**D. WHEN TO APPLY:**

- APPLY AT THE BEGINNING OF AND DURING CONSTRUCTION WHEN IT IS NECESSARY TO LOWER THE WATER LEVELS WITHIN THE CONSTRUCTION AREA. PUMPING NEEDS TO BE MAINTAINED TO KEEP UTILITY DITCHES AND COFFERDAMS DRY UNTIL UNDERGROUND WORK IS COMPLETED.

**E. WHERE TO APPLY:**

- APPLY ON CONSTRUCTION SITES, WHERE APPROPRIATE, OR ANYWHERE ELSE DEWATERING IS NEEDED.
  - WHEN CONSTRUCTION ENCOUNTERS UNCONTAMINATED GROUND WATER / SPRING WATER
    - CLEAN WATER SHOULD BE PUMPED FROM THE GROUND AND DISCHARGED THROUGH HOSES TO DEWATERING BAGS OR OTHER ADEQUATE ENERGY DISSIPATION PRIOR TO DISCHARGING TO RECEIVING WATERS. THESE BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE EMPLOYED AS APPROPRIATE AND APPLICABLE ACCORDING TO LOCAL PERMITS AND REGULATIONS.
    - WHEN CONSTRUCTION ENCOUNTERS UNCONTAMINATED EXCAVATION DEWATERING
      - CLEAN WATER SHOULD BE DISCHARGED TO A VEGETATED AREA, DITCHES OR OTHER CONVEYANCE VIA HOSE. ENERGY DISSIPATION SHOULD BE APPLIED TO THE DISCHARGE LOCATION TO MINIMIZE SCOUR. ALTERNATIVELY, UNCONTAMINATED WATER COULD BE DISCHARGED TO RECEIVING WATERS AS ALLOWED BY LOCAL PERMITS AND REGULATIONS OR AS LONG AS POSITIVE DRAINAGE IS PROVIDED. THE WATER COULD BE DISCHARGED INTO THE SURROUNDING AGRICULTURAL FIELD AND ALLOWED TO INFILTRATE OR DRAIN ALONG EXISTING DRAINAGE PATTERNS PROVIDED THAT THE WATER DOES NOT CAUSE FLOODING OR CROP DAMAGE.

**F. RELATIONSHIP WITH OTHER BMP'S:**

- DEWATERING IS OFTEN IMPLEMENTED IN CONJUNCTION WITH DEEP FOUNDATION INSTALLATION. SEDIMENT BASINS AND FILTERS SHOULD BE CONSIDERED TO HELP FILTER THE DEWATERED WATER BEFORE IT IS DISCHARGED TO A SURFACE WATER WITHIN UPLANDS.
- UTILIZE EROSION BLANKETS, EROSION CONTROL, FENCING, STRAW BALES, LEVEL SPREADERS, SILT FENCING, ETC., WHERE NECESSARY TO MITIGATE POTENTIAL EXCESSIVE EROSION AND SEDIMENTATION. ENSURE ANY MATERIALS PLACED IN SURFACE WATER BODIES ARE FREE FROM SILT AND OTHER SOIL PARTICLES, KEEP EXTRA EROSION AND SEDIMENT CONTROL MATERIALS ON SITE (E.G., HEAVY DUTY SILT FENCING, STRAW BALES).
- CHITOSAN AND CHITIN BASED ADDITIVES HAVE BEEN SHOWN TO SIGNIFICANTLY INCREASE THE EFFECTIVENESS OF FILTRATION AND SETTLING. CHITOSAN POLY-GLUCOSAMINE IS A LOW-TOXICITY PRODUCT EXTRACTED FROM CHITIN (POLY-N-ACETYL-D-GLUCOSAMINE), A BY-PRODUCT OF THE SHELLFISH INDUSTRY. OTHER PRODUCTS SUCH AS ANIONIC POLYACRYLAMIDE (ANIONIC PAM) ARE COMMERCIALY AVAILABLE TO INCREASE SETTLING. OFTEN THESE ARE UTILIZED THROUGH WET OR DRY DOSING MECHANISMS OR AS WATER RUNS OVER A GEL BACKUP STRIP OF A SETTLING OR FILTRATION PRACTICE. EACH PRODUCT SHOULD BE UTILIZED WITHIN THE MANUFACTURER'S SPECIFICATIONS AND TAILORED TO THE SOIL AND SITE CONDITIONS.
- PARTICULATE FILTER UNITS UTILIZING CARTRIDGES OR ENCLOSED FILTER BAGS CAN REMOVE SMALLER PARTICLES DEPENDING ON THE FILTER SIZE. THIS TYPE OF MEASURE IS USUALLY NECESSARY TO TREAT GLAYS. FILTERS MAY NOT BE CHANGED DAILY OR MORE FREQUENTLY.
- CHECK THAT EROSION CONTROL TOOLS ARE IN GOOD REPAIR AND PROPERLY FUNCTIONING PRIOR TO CONDUCTING DAILY WORK AND RE-INSTALL OR REPAIR AS REQUIRED PRIOR TO COMMENCING DAILY CONSTRUCTION ACTIVITIES.
- KEEP SEDIMENT AND EROSION CONTROL MEASURES IN PLACE UNTIL DISTURBED AREAS HAVE BEEN STABILIZED (IE, RE-VEGETATED).

**G. DESIGN SPECIFICATIONS:**


- DEWATERING MUST BE DONE SO THAT THE VELOCITY OF THE DISCHARGED WATER DOES NOT CAUSE SCOURING OF THE RECEIVING AREA. IF THE RECEIVING AREA IS A STRUCTURAL BMP (IE, BASIN OR SUMP), THE DESIGN OF THE BMP SHOULD BE BASED ON THE ANTICIPATED FLOW FROM THE DEWATERED AREA.
- SEDIMENT-ADEN WATER FROM COFFERDAMS, TRENCHES, FOUNDATION EXCAVATIONS, AND OTHER AREAS WHICH NEED TO BE DEWATERED SHOULD BE PUMPED THROUGH A GEOTEXTILE MATERIAL BEFORE THE WATER IS DISCHARGED TO A SURFACE WATER BODY. THE FILTER BAG SHOULD BE DISPOSED OF BY THE CONTRACTOR AT AN UPLAND SITE.
- IF THE DEWATERED WATER IS DISCHARGED THROUGH A FILTER TO A COUNTY OR INTER-COUNTY DRAIN, PERMITS MUST BE OBTAINED FROM THE DRAIN COMMISSIONER OR DRAIN BOARD.
- A TEMPORARY SUMP AND ROCK BASE SHOULD BE USED WHERE A TEMPORARY PUMP IS INSTALLED TO DEWATER AN AREA OF ACCUMULATED WATER. IF A ROCK BASE CANNOT BE USED, THE PUMP INTAKE SHALL BE ELEVATED TO DRAW WATER FROM THE TOP OF THE WATER COLUMN TO LIMIT SEDIMENTATION.
- IMPLEMENT DEWATERING OF FOUNDATIONS AS NEEDED. A TEMPORARY SUMP AND ROCK BASE SHOULD BE USED WHERE A TEMPORARY PUMP IS INSTALLED TO DEWATER AN AREA OF ACCUMULATED WATER.
- OUTLETS PUMPS SHALL BE PROTECTED FROM SCOUR EITHER BY RIPRAP PROTECTION, FABRIC LINER, AND/OR OTHER ACCEPTABLE METHODS FOR OUTLET PROTECTION.
- ENERGY DISSIPATION (RIPRAP) SHOULD BE APPLIED TO THE DISCHARGE AREA OF THE PUMP HOSE. THE WATER SHOULD BE DISCHARGED TO A LARGE FLAT VEGETATED AREA FOR FILTRATION (INFILTRATION PRIOR TO FLOWING INTO RECEIVING WATERS OF CONVEYANCES) / DITCHES IF DISCHARGE WATER IS TURBID. DEWATERING/BAGS, TEMPORARY TRAPS AND ROCK WEEPERS OR OTHER ADEQUATE BMP IS NEEDED TO CONTROL SEDIMENT DISCHARGE.

**7. PROPOSED BAGS AND WATER TREATMENT**

- GEOTEXTILE FILTER BAGS
  - GEOTEXTILE FILTER BAGS REMOVE SEDIMENT FROM DEWATERING DISCHARGE AND ARE PUMPED INTO A FILTER BAG CHOSEN FOR THE PREDETERMINED SEDIMENT SIZE. FILTER BAGS ARE MANUFACTURED PRODUCTS MADE TYPICALLY FROM WOVEN MONORAILMENT POLYPROPYLENE TEXTILE (GEOTEXTILE MATERIALS, E.G. SANDS OR NONWOVEN GEOTEXTILE (BUTYLGLAYS). THEY ARE SINGLE USE PRODUCTS THAT MUST BE REPLACED WHEN THEY BECOME CLOGGED OR HALF-FULL OF SEDIMENT.
  - GEOTEXTILE FILTER BAGS ARE GENERALLY CONSIDERED HIGH FLOW PRODUCTS, WHICH HAVE LIMITED ABILITY TO TREAT FINE-GRAINED SEDIMENTS. GRAVITY DRAINED FILTER BAGS SHOULD APPLY THE FOLLOWING: 1) THE FILTER BAGS SHOULD BE PLACED OUTSIDE OF A VEGETATED FILTER AREA AND NOT IN CLOSE PROXIMITY TO THE STREAM OR WATER RESOURCE; 2) THEY MUST SIT ON A RELATIVELY FLAT GRADE TO PREVENT EROSION CAUSED BY WATER LEAVING THE BAG; 3) THE PLACEMENT OF THE BAG OVERLAP A FLAT BED OF AGGREGATE WILL MAXIMIZE THE FLOW AND USEFUL SURFACE AREA OF THE BAG; 4) THEY SHOULD BE USED IN CONJUNCTION WITH A LARGE VEGETATED BUFFER OR SECONDARY POND AND/OR BARRIER.
  - FILTER BAGS SHOULD BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH DOUBLE-STITCHED "J" TYPE SEAMS CAPABLE OF TRAPPING PARTICLES LARGER THAN 100 MICRONS.
  - FILTER BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS AND DISCHARGE ONTO STABLE, EROSION RESISTANT SURFACES/AREAS. BAGS SHALL NOT BE PLACED ONTO SLOPES GREATER THAN 5%.
  - THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE FILTER BAG IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
  - A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME HALF FULL. SPARE REPLACEMENT BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED AND/OR BECOME HALF FULL.
  - THE MONITORING FOR TURBIDITY OF THE FILTER BAG DISCHARGE SHOULD OCCUR ON A REGULAR BASIS. IF TURBID WATER IS OBSERVED PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM HAS BEEN RESOLVED. BAGS SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF PUMPING ACTIVITIES.

**H. MAINTENANCE:**

- THE DEWATERING SITE SHOULD BE INSPECTED SEVERAL TIMES DAILY TO ENSURE THAT THE PUMPING PROCEDURE IS ADEQUATELY CONTROLLING THE EXCESS WATER. TO ENSURE THE FILTER BAG IS NOT CLOGGED, AND THAT THE VEGETATIVE FILTER, WHERE USED, IS STILL RETAINING SEDIMENT. IF THE FILTER BAG BECOMES CLOGGED, REPLACE BAG WITH A NEW ONE.




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THE LOCATION OF ALL UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AUTHORITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE AGENCIES AND AUTHORITIES.

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DATE  
06/25/2019

REVISIONS

NO.	DATE	DESCRIPTION

DR. JBL  
PL. DB  
BOOK NA  
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DATE  
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**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 THE (3) 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 (SEE CHART BELOW)	APPLICATION RATE
IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 14 DAYS		60 LBS PER ACRE

PERMANENT SEEDING PLANTING DATES	SEED VARIETY (SEE CHART BELOW)	APPLICATION RATE
PREFERABLE EARLY SPRING OR EARLY FALL		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 (SEE CHART BELOW)	APPLICATION RATE
IMMEDIATELY FOLLOWING LAST DISTURBANCE OR WITHIN 5 DAYS		60 LBS PER ACRE

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

TEMPORARY SEED
SEED: 60 LBS PER ACRE
MIX:
40% SEED OATS
25% KENTUCKY 31 TALL FESCUE
22% CHEEPPING RED FESCUE
11% TIMOTHY
1.0% INERT MATTER
1.0% OTHER CROP
0.0% 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/PACKER 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, STRAWWAY 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.  
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL 811 PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES TO EXCAVATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES TO EXCAVATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES TO EXCAVATE.

ATWELL  
 THE GEOTECHNICAL CONSULTING GROUP  
 1000 W. 10TH AVENUE, SUITE 200  
 DENVER, CO 80202  
 PHONE: 303.733.1111  
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 WWW.ATWELL.COM

SECTION 00  
 TOWN Z. SOILS, GRADE, & EROSION CONTROL/WATERSHIP  
 WASHINGTON COUNTY, MISSOURI

MEADOW LAKE  
 EDGE IMPACT PLANS  
 SECTION NOTES

DATE: 06/25/2019

REVISIONS

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



## 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

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**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 Moulriere  
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 10<sup>th</sup>) 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 sodalists*). 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](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](http://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













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 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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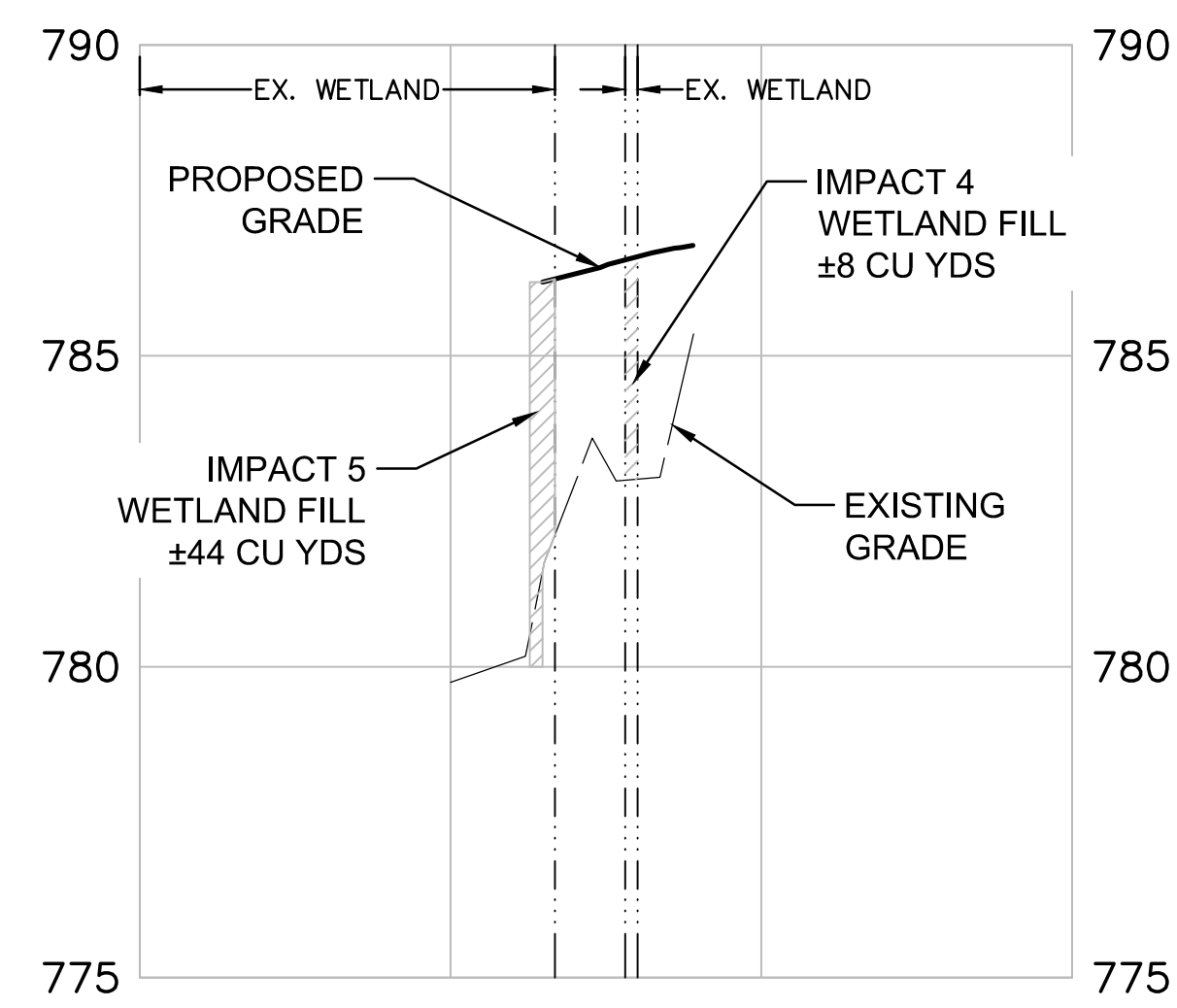


SECTION 30  
TOWN 2 SOUTH, RANGE 7 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

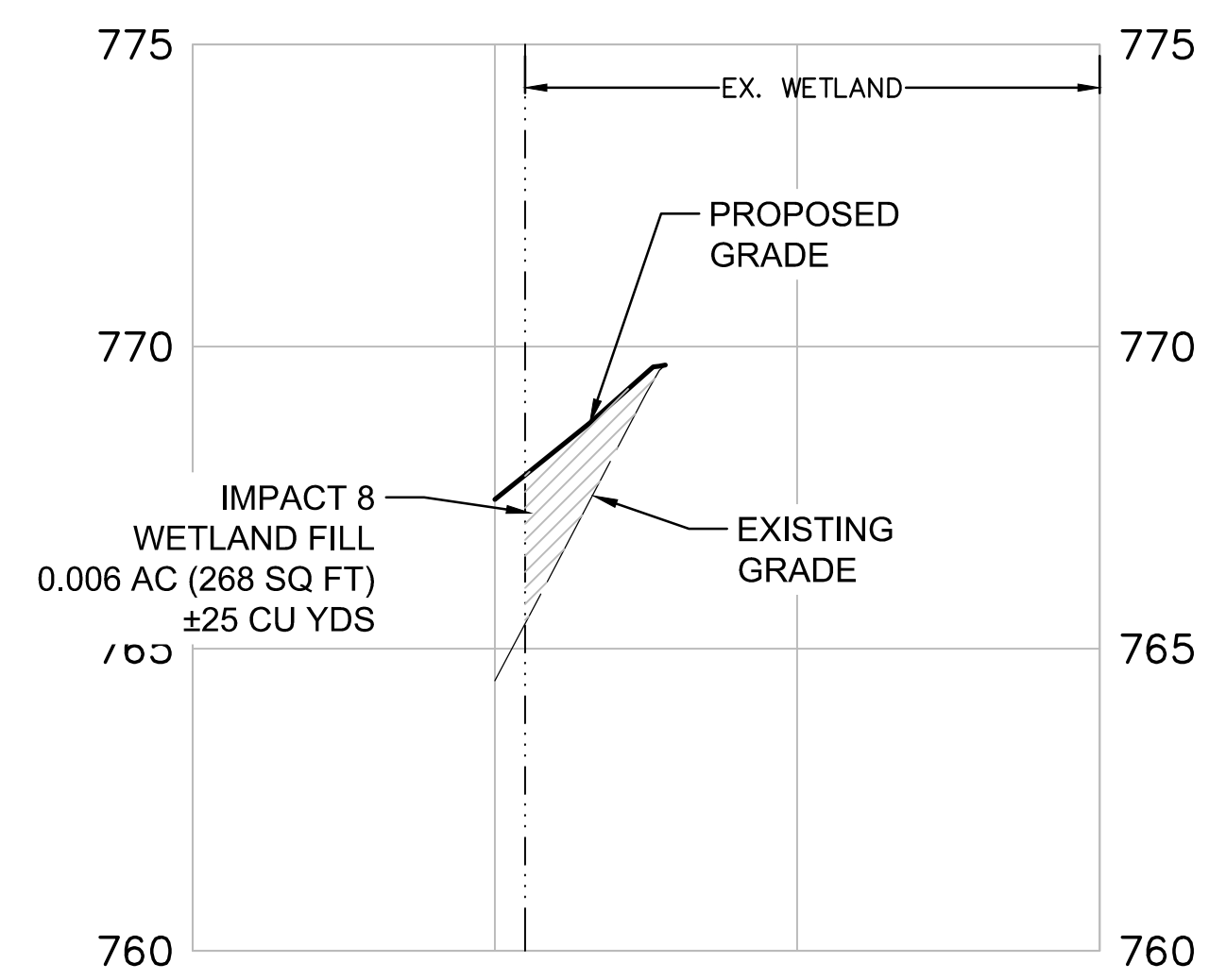
MEADOWLARK  
EGLE IMPACT PLANS  
IMPACT CROSS SECTIONS

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REVISIONS	
SCALE	0 15 30 1" = 30 FEET
DR.	JB CH. -
P.M.	DB
BOOK	NA
JOB	18002735
SHEET NO.	03

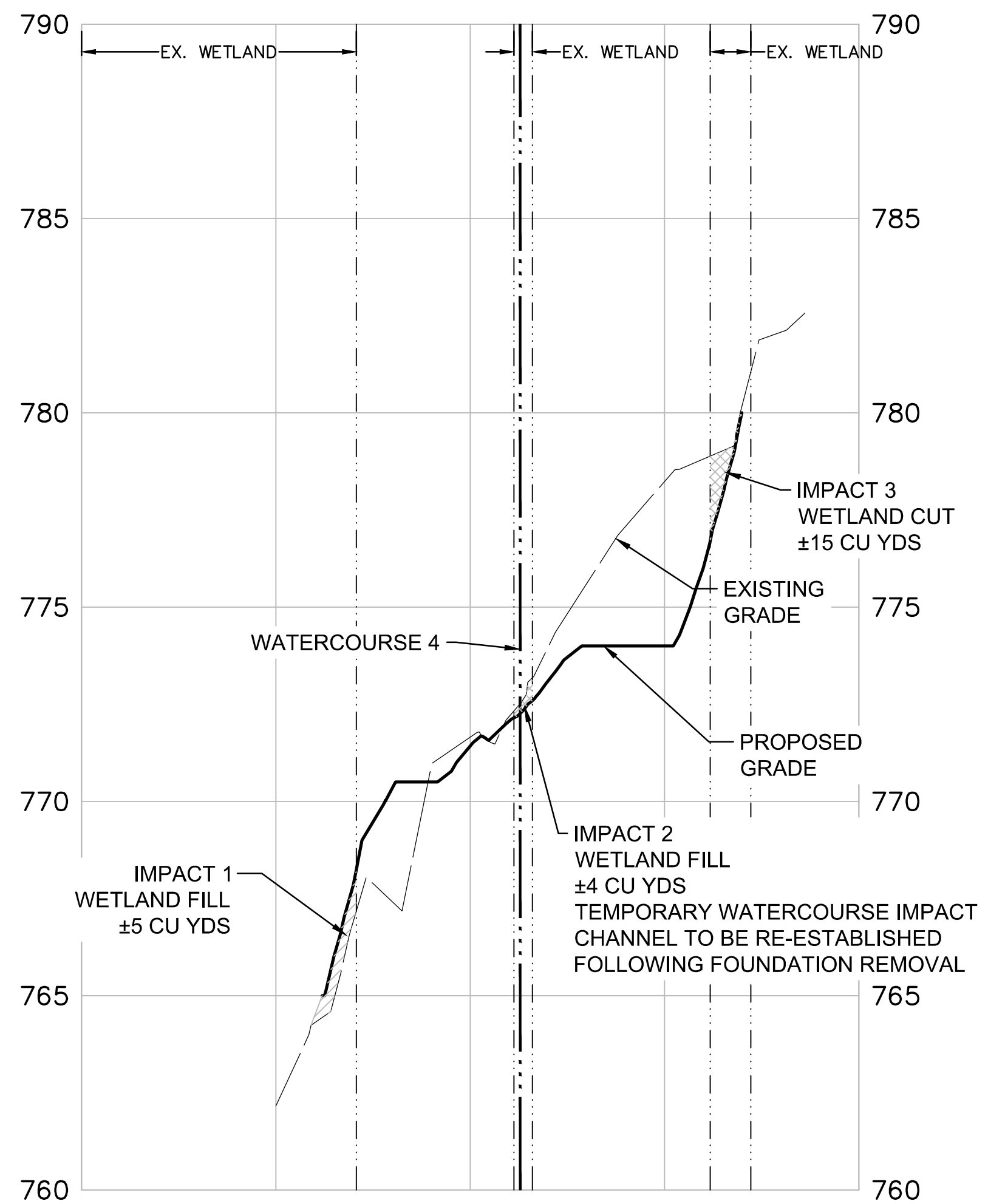
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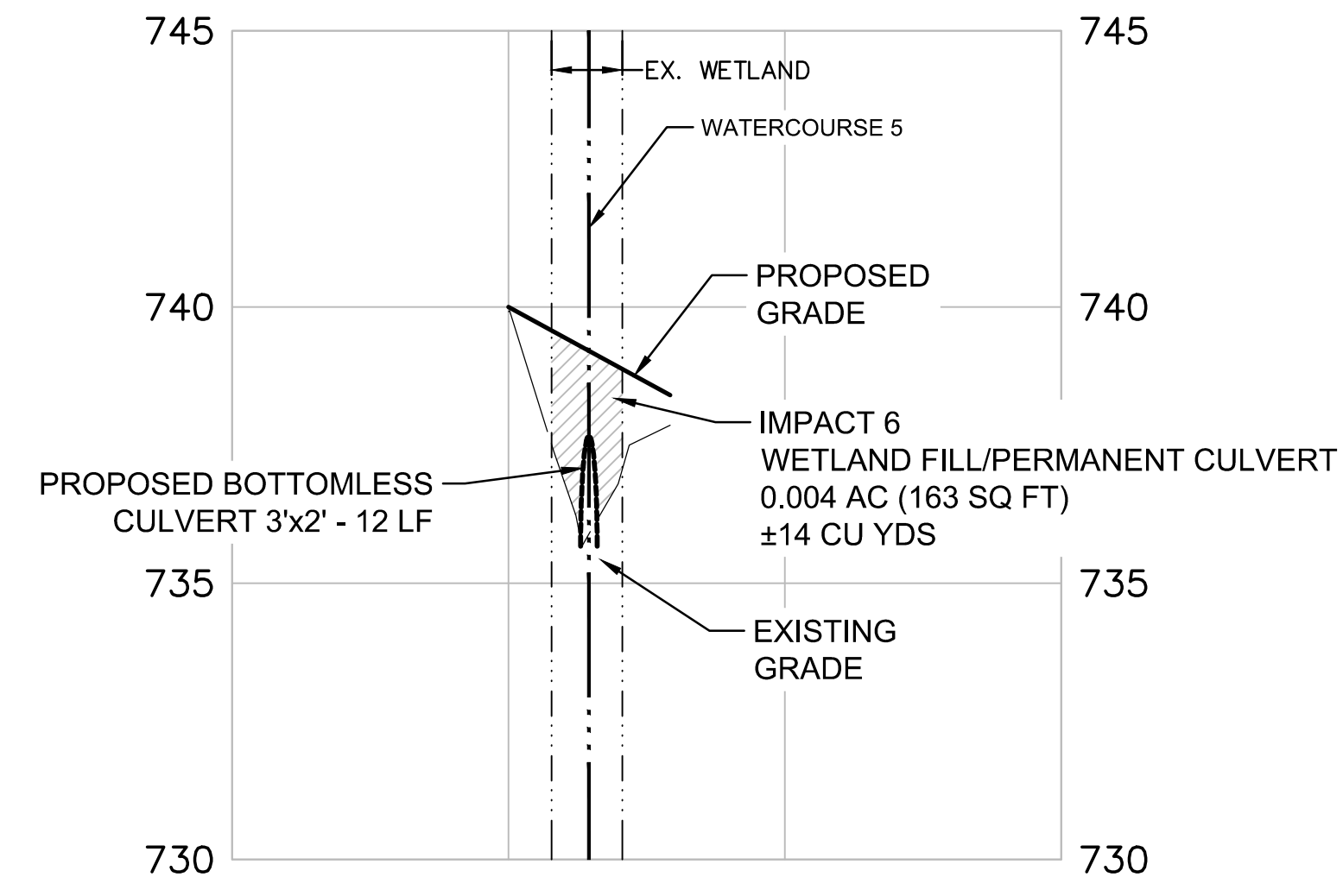
CROSS SECTION A-A'  
VERT: 1"=3'  
HORZ: 1"=30'



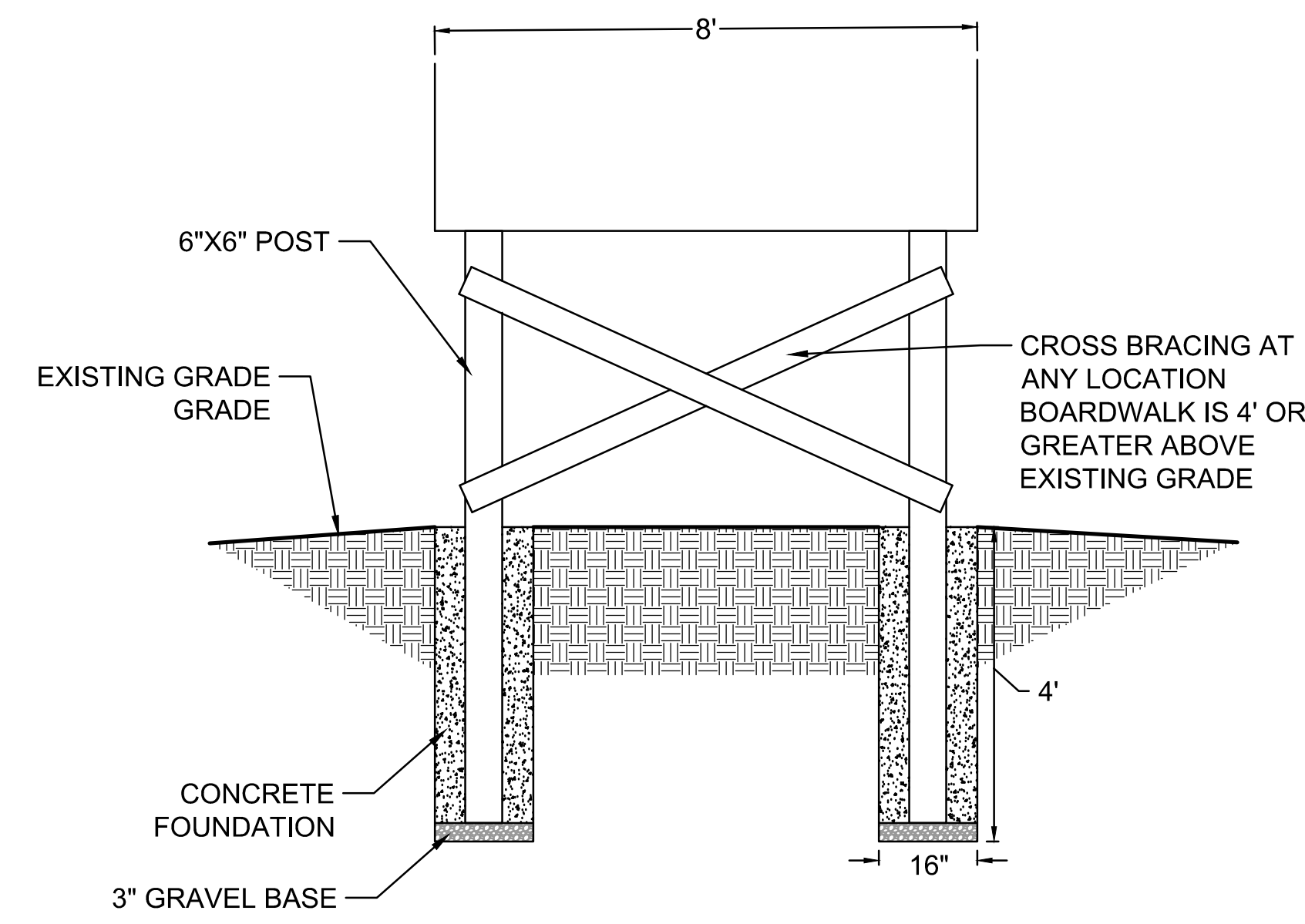
CROSS SECTION C-C'  
VERT: 1"=3'  
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CROSS SECTION B-B'  
VERT: 1"=3'  
HORZ: 1"=30'



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



BOARDWALK DETAIL  
NOT TO SCALE

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**LOCAL AND STATE CONDITIONS AND CLARIFICATIONS:**

- THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL AUTHORITY AND THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY (EGLE), IN FORCE ON DATE OF APPROVAL SHALL GOVERN ALL MATERIALS AND WORKMANSHIP INVOLVED IN THE IMPROVEMENTS SHOWN ON THESE PLANS EXCEPT AS SUCH SPECIFICATIONS ARE MODIFIED BY THE FOLLOWING SPECIFICATION, OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN
- THE CONTRACTOR (AND ALL SUBCONTRACTORS) SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH WORK
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY LICENSES AND PERMITS PRIOR TO THE START OF CONSTRUCTION. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND SPECIAL CONDITIONS OF THE APPROVALS ISSUED FOR THE PROJECT.
- THE CONTRACTOR SHALL CAUSE NOTICE TO BE GIVEN TO MISS DIG (811) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
- ALL DRAIN TILE AND STORM SEWERS NOT NOTED TO BE REMOVED/RE-ROUTED WHICH ARE DAMAGED, DISTURBED, OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH THE SAME QUALITY PIPE OR BETTER, MAINTAINING THE SAME GRADIENT AS EXISTING. REPLACED DRAIN TILE SHALL BE LAID ON COMPACTED BEDDING EQUAL IN DENSITY TO SURROUNDING STRATUM. REPLACEMENT SHALL BE DONE AT THE TIME OF THE BACKFILL OPERATION.
- THE FLOW IN ALL SEWERS, DRAINS, AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND WHENEVER SUCH WATERCOURSES AND DRAINS ARE DISTURBED OR DESTROYED DURING THE PROSECUTION OF THE WORK, THEY SHALL BE RESTORED BY THE CONTRACTOR AT HIS OWN COST AND EXPENSE.
- THE CONTRACTOR SHALL RETURN ALL GRADES ALONG THE LIMITS OF DISTURBANCE TO ORIGINAL CONDITION, MATING UNDISTURBED AREAS, SO AS TO MAINTAIN ORIGINAL DRAINAGE.
- DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY, DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED BY A CERTIFIED STORM WATER OPERATOR AT LEAST ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A EVERY PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE OR MORE FREQUENTLY IF REQUIRED BY GOVERNING NPDES GENERAL PERMIT. ALL MAINTENANCE REQUIRED BY INSPECTION SHALL COMMENCE WITHIN 24 HOURS AND BE COMPLETED WITHIN 48 HOURS OF REPORT.
- ALL PRACTICES MUST BE MONITORED AND MAINTAINED BY A TRAINED REPRESENTATIVE OF THE CONTRACTOR. THE CONTRACTOR MUST KEEP WRITTEN RECORDS OF SELF-MONITORING AND PROVIDE THEM TO THE LOCAL AUTHORITIES, EGLE, OR OTHER INSPECTING AUTHORITY UPON REQUEST.
- 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.
- APPROPRIATE MEASURES SHALL BE PUT IN PLACE TO PREVENT POLLUTANTS - SEDIMENT, TRASH, FUEL, SOLVENTS, ETC. - FROM LEAVING THE WORK SITE AND/OR ENTERING SURFACE OR GROUND WATER. PROPER HANDLING AND STORAGE OF ALL HAZARDOUS MATERIALS SHALL BE MAINTAINED AT ALL TIMES AND SPILL PREVENTION AND CLEAN-UP PLANS SHALL BE IN PLACE PRIOR TO BRINGING HAZARDOUS MATERIALS ON-SITE.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. HE/SHE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION (90% VEGETATED COVER) HAS BEEN ACCOMPLISHED.
- STRAW MULCH BLANKETS MUST BE USED ON 3:1 SLOPES OR GREATER.
- ALL EXPOSED AREAS SHALL BE STABILIZED AS SPECIFIED IMMEDIATELY FOLLOWING THE CONCLUSION FINAL GRADING IN THE DESIGNATED AREA.
- AREAS OF DISTURBED SOIL THAT REMAIN INACTIVE FOR 14 DAYS MUST HAVE TEMPORARY OR PERMANENT STABILIZATION IN PLACE. USUALLY, THIS CONSISTS OF GRASS SEED AND MULCH, BUT IT CAN ALSO INCLUDE AGGREGATE COVER, EROSION CONTROL BLANKETS, TURF REINFORCEMENT MATS, OR OTHER APPROPRIATE STABILIZATION PRACTICES.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT AND/OR POLLUTANTS FROM LEAVING THE SITE.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT IS 1/3 THE HEIGHT OF THE FENCE.
- CLEANUP WILL BE DONE IN A MANNER TO ENSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
- CONTRACTOR SHALL PAY ALL FEES AND POST AN EROSION CONTROL PERFORMANCE BOND, IF REQUIRED, PRIOR TO ANY EARTH CHANGE.
- CONSTRUCTION OPERATION SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
- BORROW AND FILL DISPOSAL AREAS WILL BE SELECTED BY THE CONTRACTOR WITH FULL CONSIDERATION FOR SOIL EROSION AND SEDIMENT CONTROL.
- SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- PERMANENT STABILIZATION IS ACHIEVED ONCE THE LOCAL AUTHORITIES PERFORM A FINAL INSPECTION OF THE COMPLETED PROJECT ONCE THE PROJECT HAS PASSED LOCAL INSPECTION, A NOTICE OF TERMINATION (NOT) SHALL BE FILED BY THE CONTRACTOR WITH THE EGLE AND NO FURTHER EARTH DISRUPTION ACTIVITIES MAY OCCUR WITHOUT A NEW PERMIT.
- CONTRACTOR SHALL DENOTE LOCATION OF CONCRETE WASHOUT AREAS (IF USED) ON THE SWPPP.

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY:**

- CONSTRUCTION PERMITTEE(S) THAT HAS AUTHORIZATION TO DISCHARGE UNDER A NATIONAL PERMIT (NPDES) SHALL COMPLY WITH THE FOLLOWING PROVISIONS (DEVELOPMENT AGREEMENT REQUIREMENTS MAY BE MORE STRINGENT):
- NOT DIRECTLY OR INDIRECTLY DISCHARGE WASTES SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LUBRICANTS, FUELS, LITTER, SANITARY WASTE, OR ANY OTHER SUBSTANCE AT THE CONSTRUCTION SITE INTO WATERS OF THE STATE IN VIOLATION OF PART 31 OF THE 1994 PA 451, MCL 324.3101 ET SEQ., AND RULES PROMULGATED UNDER THE ACT.
  - BE IN COMPLIANCE WITH A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT FOR THE SITE OR, IF THE CONSTRUCTION ACTIVITY IS CARRIED OUT BY AN AUTHORIZED PUBLIC AGENCY, THE APPROVED CONTROL PLAN, INCLUDING THE SELECTED CONTROL MEASURES THAT ARE APPLICABLE TO THE SITE.
  - PROPERLY MAINTAIN AND OPERATE THE SOIL EROSION CONTROL MEASURES.
  - HAVE THE SOIL EROSION CONTROL MEASURES UNDER THE SPECIFIC SUPERVISION AND CONTROL OF A STORM WATER OPERATOR WHO HAS BEEN CERTIFIED BY THE DEPARTMENT AS PROPERLY QUALIFIED TO OPERATE THE SOIL EROSION CONTROL MEASURES. THE CERTIFICATION SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF R 323.1251 ET SEQ.
  - CAUSE THE CONSTRUCTION ACTIVITY TO BE INSPECTED BY A CERTIFIED STORM WATER OPERATOR ONCE PER WEEK, AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE, AND ENSURE THAT ANY NEEDED CORRECTIVE ACTIONS ARE CARRIED OUT. A LOG OF THE INSPECTIONS AND CORRECTIVE ACTIONS SHALL BE MAINTAINED ON FILE BY THE CONSTRUCTION PERMITTEE FOR REVIEW AND SHALL BE RETAINED BY THE CONSTRUCTION PERMITTEE FOR A PERIOD OF THREE (3) YEARS FROM THE DATE OF THE INSPECTION OR CORRECTIVE ACTION
  - IN ACCORDANCE WITH THE REQUIREMENTS FOR ON-LAND FACILITIES AS SET FORTH IN SPILLAGE OF OIL AND POLLUTING MATERIALS, BEING PART 5 OF THESE (MICHIGAN PERMIT-BY-RULE) RULES, PROVIDE FACILITIES AND COMPLY WITH REPORTING PROCEDURES FOR CONTAINMENT OF ANY ACCIDENTAL LOSSES OF OIL OR OTHER POLLUTING MATERIALS.
  - DISPOSED OF SOLIDS, SEDIMENT, FILTER BACKWASH, OR OTHER WASTE THAT IS REMOVED FROM OR RESULTS FROM THE TREATMENT OF CONTROL OF STORM WATER IN COMPLIANCE WITH APPLICABLE STATE LAWS AND REGULATIONS AND IN A MANNER THAT PREVENTS ANY WASTE FROM ENTERING WATERS OF THE STATE
  - ALLOW THE DEPARTMENT TO ENTER UPON THE SITE AT ANY REASONABLE TIME BEFORE THE EXPIRATION OF THE AUTHORIZATION TO DISCHARGE AS SET FORTH IN SUBRULE (5) OF THIS RULE. UPON PRESENTATION OF CREDENTIALS AND OTHER DOCUMENTS AS MAY BE REQUIRED BY LAW, FOR THE PURPOSE OF INSPECTING CONDITIONS RELATING TO THE POLLUTION OF ANY WATERS OR DETERMINING COMPLIANCE WITH THE PROVISIONS OF THIS RULE.
  - UPON REQUEST, MAKE AVAILABLE FOR PUBLIC INSPECTION OR PROVIDE TO THE DEPARTMENT ALL REPORTS OR LOGS PREPARED PURSUANT TO THE PROVISIONS OF THIS RULE.
  - FILE A REVISED NOTICE OF COVERAGE IN COMPLIANCE WITH THE PROVISIONS OF SUBRULE (1) OF THIS RULE BEFORE ANY EXPANSION OF THE CONSTRUCTION ACTIVITY OR CHANGE IN THE SOIL EROSION CONTROL MEASURES THAT REQUIRES A CHANGE IN THE SOIL EROSION AND SEDIMENTATION PERMIT.

**PROHIBITED CONSTRUCTION ACTIVITIES:**

- THE CONTRACTOR SHALL NOT USE CONSTRUCTION ACTIVITIES, PROCEEDINGS, OR OPERATIONS THAT MAY UNNECESSARILY IMPACT THE NATURAL ENVIRONMENT OR THE PUBLIC HEALTH AND SAFETY. PROHIBITED CONSTRUCTION ACTIVITIES, PROCEEDINGS OR OPERATIONS INCLUDE BUT ARE NOT LIMITED TO:
- DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIALS IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER(S) WITHOUT WETLAND AND/OR FLOODPLAIN FILL PERMIT.
  - INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDOR, TRIBUTARY, WATERS, WETLANDS, OR ANY AREAS OUTSIDE OF THE PROPOSED WORK AREA.
  - PUMPING OF SEDIMENT-LADEN WATER FROM EXCAVATIONS INTO ANY SURFACE WATERS, STREAM CORRIDORS, WETLANDS, OR STORM DRAINS.
  - DISCHARGING OF POLLUTANTS SUCH AS CHEMICALS, FUEL, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE, AND OTHER HARMFUL WASTE INTO OR ALONGSIDE STREAM, RIVERS, IMPOUNDMENT, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
  - PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW-LINE OF A STREAM.
  - DAMAGING OF VEGETATION OUTSIDE OF THE PROPOSED WORK LIMITS, WITHIN NO-BUILD, TREE PRESERVATION AND GREEN ZONES.
  - DISPOSAL OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, NO-BUILD SURFACE WATERS, OR ANY OTHER UNSPECIFIED LOCATION WITHOUT A PERMIT.
  - OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
  - STORING OF CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED AND APPROVED FOR THE SAID PURPOSE.
  - DISPOSAL OF CHIP WOOD IN SUCH A MANNER THAT WOULD ALLOW CHIP WOOD DECOMPOSITION AND LEACHATE WATER TO FLOW TO ANY SURFACE WATER, STREAM CORRIDOR, OR WETLAND.
  - TRACKING OF MUD AND OTHER CONSTRUCTION RELATED DEBRIS ONTO ROADWAY OR FLUSHING SEDIMENT FROM ROADWAY WITH WATER.

**BMP MAINTENANCE NOTES TO CONTRACTOR:**

ALL MEASURES STATED ON THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION. SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS (WHO IS ALSO A CERTIFIED STORM WATER OPERATOR), AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

- ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
- SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD THE HEIGHT OF THE SILT FENCE.
- NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST CONFORM TO THE REQUIREMENTS OF MICHIGAN'S PERMIT-BY-RULE FOR CONSTRUCTION ACTIVITIES. OTHER EROSION AND SEDIMENT CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS.
- REGULAR INSPECTION AND MAINTENANCE WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES. PERMANENT RECORDS OF MAINTENANCE AND INSPECTIONS MUST BE KEPT THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS MUST BE MADE BY A CERTIFIED STORM WATER OPERATOR ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT RESULTS IN A DISCHARGE FROM THE SITE. PROVIDED WILL BE THE NAME OF STORM WATER OPERATOR, CERTIFICATION NUMBER, MAJOR OBSERVATIONS, DATE OF INSPECTION AND CORRECTIVE MEASURES TAKEN. AN EGLE "SOIL EROSION AND SEDIMENTATION CONTROL INSPECTION LOG" SHALL BE FILLED OUT FOR EACH INSPECTION.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE CHECKED ON A DAILY BASIS BY THE CONTRACTOR AND MISSING OR DEFICIENT MEASURES SHALL BE REPLACED OR REPAIRED IMMEDIATELY.
- THE CONSTRUCTION ACCESS POINTS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY.
- EXCESS DIRT/FILL IS NOT TO BE PLACED ON ANY AREAS OR ON ADJACENT TO THE SITE BEYOND THE LIMITS OF DISTURBANCE SHOWN ON THE SOIL EROSION PLANS UNLESS WRITTEN AUTHORIZATION IS PROVIDED BY THE ACCEPTING LAND OWNER AND AGREED TO BY THE DEVELOPER.
- DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTOR.
- PRIOR TO LEAVING THE SITE, ALL VEHICLES SHALL BE CLEANED OF DEBRIS. ANY DEBRIS AND/OR SEDIMENT REACHING THE PUBLIC STREET SHALL BE CLEANED IMMEDIATELY BY A METHOD OTHER THAN FLUSHING.

**BEST MANAGEMENT PRACTICES SEQUENCE:**

NOTE: THE FOLLOWING SESC SEQUENCE AND MEASURES ARE GENERAL TO EACH STRUCTURE LOCATION. ADDITIONAL MEASURES AND PHASING MAY BE REQUIRED DEPENDING ON THE INDIVIDUAL CONDITIONS AT THE LOCATION WORK IS BEING PERFORMED. FOUNDATION SPOIL LOCATIONS SHOWN ON THE PLAN(S) ARE FOR REFERENCE ONLY. CONTRACTOR MAY ADJUST ACTUAL LOCATION AS NECESSARY TO BEST MAINTAIN EXISTING DRAINAGE COURSES AND MINIMIZE IMPACTS TO THE EXISTING CONDITIONS SURROUNDING EACH WORK AREA. ALL EARTH DISTURBANCES ARE TO OCCUR ONLY WITHIN THE PERMITTED EASEMENT.

PULL ALL NECESSARY LOCAL, COUNTY, AND STATE PERMITS. THE CONTRACTOR SHALL CONTACT THE EGLE, IF NECESSARY, TO AMEND THE NOTICE OF COVERAGE (NOC) WITH THE NAME AND CERTIFICATION NUMBER OF THE STORM WATER OPERATOR CHARGED WITH CONDUCTING THE REQUIRED INSPECTIONS. WRITTEN NOTIFICATION FROM THE EGLE APPROVING THE CHANGE TO THE NOC SHALL BE INCLUDED IN THE INSPECTION LOG.

INSTALL SILT FENCING AS CALLED FOR ON PLANS OR AS SPECIFIC SITE CONDITIONS DICTATE. ONLY CLEAR AREAS NECESSARY TO INSTALL FENCING. FENCING SHALL BE ERECTED PRIOR TO DEMOLITION OF THE EXISTING STRUCTURE(S) AND SHALL BE MAINTAINED UNTIL THE DISTURBED AREAS AND SPOIL STOCKPILE AT THE INDIVIDUAL LOCATION ARE STABILIZED (90% VEGETATIVE COVER). SILT FENCE SHALL NOT BE PLACED ACROSS ANY ACCESS ROAD.

CLEAR AND GRUB AREA AS NECESSARY TO ALLOW FOR PLACEMENT OF FOUNDATION SPOILS. DEMOLISH EXISTING STRUCTURE(S) & FOUNDATION(S) AS NECESSARY. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF MATERIALS/CONCRETE AT AN APPROVED AND LICENSED OFF-SITE LOCATION.

STOCKPILE TOPSOIL AND EXCAVATE FOUNDATION. STOCKPILE SPOIL MATERIAL AND GRADE ADJACENT TO EXCAVATION AS SHOWN ON THE SITE DETAILS. NO DEWATERING OF EXCAVATED AREAS ARE ANTICIPATED, HOWEVER IF NECESSARY, PLANS WILL BE PROVIDED.

PLACE TOPSOIL AND SEED SOIL STOCKPILE AS SPECIFIED. PLACE EROSION BLANKETS OVER ANY EXPOSED RAW EARTH WITHIN 100 FT OF A DRAIN OR WATERCOURSE.

COMPLETE CONSTRUCTION OF NEW STRUCTURE AND REPAIR SURROUNDING AREAS AS NECESSARY. INSPECT DISTURBED AREA WEEKLY FOR VEGETATIVE GROWTH; RESEED AS NECESSARY.

ONCE THE AREA HAS ACHIEVED A MINIMUM OF 90% VEGETATIVE COVER, REMOVE SILT FENCE (AND/OR OTHER REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES). STABILIZE ANY AREAS DISTURBED BY THE REMOVAL OF BMPS. SILT FENCE AND OTHER BMPS WHICH ARE STILL IN A SERVICEABLE CONDITION MAY BE RE-USED AS WORK PROGRESSES. IF IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE THE EARTH CHANGE, THEN MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IN PLACE AND THE AREA IS STABILIZED. AREAS TEMPORARILY STABILIZED DURING THE NON-GROWING SEASON WILL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING THE COMMENCEMENT OF THE NEXT PLANTING SEASON. ALL STRAW OR HAY MULCH WILL BE REMOVED OR DEEPLY INCORPORATED INTO THE SOIL BEFORE PROVIDING PERMANENT STABILIZATION. DORMANT SEEDING IS ALSO RECOMMENDED FOR EARLY SPRING GROWTH.

LANDOWNER WILL BE RESPONSIBLE FOR PERMANENT STABILIZATION OF DISTURBED AREAS FOR ONE YEAR.

FINAL PROJECT CLOSEOUT (ALL PROPOSED IMPROVEMENTS ARE COMPLETE)

ONCE ALL PERMANENT SOIL EROSION CONTROL MEASURES ARE COMPLETED AND PERMANENT VEGETATION ESTABLISHED, THE CONTRACTOR SHALL CONTACT THE GOVERNING AUTHORITIES FOR A FINAL INSPECTION. ONCE THE SITE HAS PASSED ITS FINAL INSPECTION, THE S.E.S.C. PERMIT IS CLOSED AND NO FURTHER EARTH DISRUPTION CAN OCCUR WITHOUT A NEW PERMIT.

THE NOTICE OF COVERAGE PERMITTEE SHALL FILE A NOTICE OF TERMINATION (NOT) WITH THE EGLE AND RETAIN S.E.S.C. LOGS (HARD COPIES & ELECTRONICALLY) FOR A MINIMUM OF 5 YEARS.

**TEMPORARY STABILIZATION**

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A STREAM AND NOT AT FINAL GRADE	IMMEDIATELY FOLLOWING (2 DAYS MAX) THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A STREAM	DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY IS SCHEDULED TO BE INACTIVE FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED OR STABILIZED IN ANOTHER APPROPRIATE WAY AS SOON AS POSSIBLE.
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER (NOVEMBER 1)

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. THIS CAN INCLUDE AGGREGATE COVER, EROSION CONTROL BLANKETS, TURF REINFORCEMENT MATS, OR OTHER STABILIZATION PRACTICE.

**PERMANENT STABILIZATION**

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN FIVE (5) CALENDAR DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A STREAM AND AT FINAL GRADE	WITHIN 2 CALENDAR DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN FIVE (5) CALENDAR DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

**CONSTRUCTION DEWATERING PLAN**

**1.0 DEWATERING**

DEFINITION: DEWATERING CONSISTS OF THE REMOVAL OF SURFACE WATER AND/OR GROUNDWATER BY DIVERTING AND/OR REMOVING CONSTRUCTION AREAS WITHIN WATER FEATURES (I.E. WETLANDS, WATERCOURSE, AND/OR WATERSHED), AS NEEDED FOR CONSTRUCTION.

**A. GENERAL:**

- DEWATERING ACTIVITIES SHALL CONFORM TO APPLICABLE PART 91, SOIL EROSION AND SEDIMENTATION CONTROL (SESC), OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (NREPA), 1994 PA 451, AS AMENDED.
- DURING DEWATERING ACTIVITIES, THE SEDIMENT LADEN WATER CANNOT BE DIRECTLY DISCHARGED TO SURFACE WATERS. OPTIONS FOR REDUCING THE TURBIDITY OF THE WATER INCLUDE:
  - CONSTRUCTING A TEMPORARY SEDIMENT TRAP FOR TURBID WATER DISCHARGE PRETREATMENT.
  - USE OF A PORTABLE SEDIMENT CONTAINMENT SYSTEM SUCH AS DUMPSTERS.
  - APPLICATION OF NATURAL BASED FLOCCULENT TECHNOLOGY SUCH AS CHITOSAN IN SEDIMENT TRAPS OR A SERIES OF DITCH CHECKS TO CONTAIN SEDIMENT.
  - DISCHARGE WATER THROUGH A SERIES OF FIBER LOGS OR A ROCK WEEPER INTO A LARGE VEGETATED BUFFER AREA.
  - ENERGY DISSIPATION SHOULD BE PROVIDED AT ALL DISCHARGE POINTS.
  - DEWATERING OR BASIN DRAINING ACTIVITIES SHOULD NOT CAUSE EROSION IN RECEIVING CHANNELS OR ADVERSELY IMPACT WETLANDS.

**B. POLLUTANTS CONTROLLED AND IMPACTS:**

- PROPER DEWATERING TECHNIQUES WILL FILTER WATER OF SEDIMENT, OILS, AND OTHER CHEMICALS, THUS PREVENTING THESE POLLUTANTS FROM ENTERING THE SURFACE WATERS.

**C. APPLICATION:**

- DEWATER ACCUMULATED GROUND WATER OR STORMWATER VIA PUMP, DEWATERING BAG AND ENSURE DISCHARGED WATER DOES NOT CONTRIBUTE SEDIMENTATION TO RECEIVING WATERS.

**D. WHEN TO APPLY:**

- APPLY AT THE BEGINNING OF AND DURING CONSTRUCTION WHEN IT IS NECESSARY TO LOWER THE WATER LEVELS WITHIN THE CONSTRUCTION AREA. PUMPING NEEDS TO BE MAINTAINED TO KEEP UTILITY DITCHES AND COFFERDAMS DRY UNTIL ALL UNDERGROUND WORK IS COMPLETED.

**E. WHERE TO APPLY:**

- APPLY ON CONSTRUCTION SITES, WHERE APPROPRIATE, OR ANYWHERE ELSE DEWATERING IS NEEDED.
  - WHEN CONSTRUCTION ENCOUNTERS UNCONTAMINATED GROUND WATER / SPRING WATER:
    - CLEAN WATER SHOULD BE PUMPED FROM THE GROUND AND DISCHARGED THROUGH HOSES TO DEWATERING BAGS OR OTHER ADEQUATE ENERGY DISSIPATION PRIOR TO DISCHARGING TO RECEIVING WATERS. THESE BEST MANAGEMENT PRACTICES (BMPS) SHALL BE EMPLOYED AS APPROPRIATE AND APPLICABLE ACCORDING TO LOCAL PERMITS AND REGULATIONS.
  - WHEN CONSTRUCTION ENCOUNTERS UNCONTAMINATED EXCAVATION DEWATERING:
    - CLEAN WATER SHOULD BE DISCHARGED TO A VEGETATED AREA, DITCHES OR OTHER CONVEYANCE VIA HOSE. ENERGY DISSIPATION SHOULD BE APPLIED TO THE DISCHARGE LOCATION TO MINIMIZE SCOUR. ALTERNATIVELY, UNCONTAMINATED WATER COULD BE DISCHARGED TO RECEIVING WATERS AS ALLOWED BY LOCAL PERMITS AND REGULATIONS OR AS LONG AS POSITIVE DRAINAGE IS PROVIDED. THE WATER COULD BE DISCHARGED INTO THE SURROUNDING AGRICULTURAL FIELDS AND ALLOWED TO INFILTRATE OR DRAIN ALONG EXISTING DRAINAGE PATTERNS PROVIDED THAT THE WATER DOES NOT CAUSE FLOODING OR CROP DAMAGE.

**F. RELATIONSHIP WITH OTHER BMPS:**

- DEWATERING IS OFTEN IMPLEMENTED IN CONJUNCTION WITH DEEP FOUNDATION INSTALLATION. SEDIMENT BASINS AND FILTERS SHOULD BE CONSIDERED TO HELP FILTER THE DEWATERED WATER BEFORE IT IS DISCHARGED TO A SURFACE WATER WITHIN UPLANDS.
- UTILIZE EROSION BLANKETS, EROSION CONTROL FENCING, STRAW BALES, LEVEL SPREADERS, SILT FENCING, ETC., WHERE NECESSARY TO MITIGATE POTENTIAL EXCESSIVE EROSION AND SEDIMENTATION. ENSURE ANY MATERIALS PLACED IN SURFACE WATER BODIES ARE FREE FROM SILT AND OTHER SUCH PARTICLES. KEEP EXTRA EROSION AND SEDIMENT CONTROL MATERIALS ON SITE (E.G., HEAVY DUTY SILT FENCING, STRAW BALES).
- CHITOSAN AND CHITIN BASED ADDITIVES HAVE BEEN SHOWN TO SIGNIFICANTLY INCREASE THE EFFECTIVENESS OF FILTRATION AND SETTLING. CHITOSAN (POLY-D-GLUCOSAMINE) IS A LOW-TOXICITY PRODUCT EXTRACTED FROM CHITIN (POLY-N-ACETYL-D-GLUCOSAMINE), A BY-PRODUCT OF THE SHELLFISH INDUSTRY. OTHER PRODUCTS SUCH AS ANIONIC POLYACRYLAMIDE (ANIONIC PAM) ARE COMMERCIALY AVAILABLE TO INCREASE SETTLING. OFTEN THESE ARE UTILIZED THROUGH WET OR DRY DOSING MECHANISMS OR AS WATER RUNS OVER A GEL BLOCK UPSTREAM OF A SETTLING OR FILTRATION PRACTICE. EACH PRODUCT SHOULD BE UTILIZED WITHIN THE MANUFACTURERS' SPECIFICATIONS AND TAILORED TO THE SOIL AND SITE CONDITIONS.
- PARTICULATE FILTER UNITS UTILIZING CARTRIDGES OR ENCLOSED FILTER BAGS CAN REMOVE SMALLER PARTICLES DEPENDING ON THE FILTER SIZE. THIS TYPE OF MEASURE IS USUALLY NECESSARY TO TREAT FLATS. FILTERS MAY NEED TO BE CHANGED DAILY OR MORE FREQUENTLY.
- CHECK THAT EROSION CONTROL TOOLS ARE IN GOOD REPAIR AND PROPERLY FUNCTIONING PRIOR TO CONDUCTING DAILY WORK AND RE-INSTALL OR REPAIR AS REQUIRED PRIOR TO COMMENCING DAILY CONSTRUCTION ACTIVITIES.
- KEEP SEDIMENT AND EROSION CONTROL MEASURES IN PLACE UNTIL DISTURBED AREAS HAVE BEEN STABILIZED (I.E., RE-VEGETATED).

**G. DESIGN SPECIFICATIONS:**

- DEWATERING MUST BE DONE SO THAT THE VELOCITY OF THE DISCHARGED WATER DOES NOT CAUSE SCOURING OF THE RECEIVING AREA. IF THE RECEIVING AREA IS A STRUCTURAL BMP (I.E. BASIN OR SUMP), THE DESIGN OF THE BMP SHOULD BE BASED ON THE ANTICIPATED FLOW FROM THE DEWATERED AREA.
- SEDIMENT-LADEN WATER FROM COFFERDAMS, TRENCHES, FOUNDATION EXCAVATIONS, AND OTHER AREAS WHICH NEED TO BE DEWATERED SHOULD BE PUMPED THROUGH A GEOTEXTILE MATERIAL BEFORE THE WATER IS DISCHARGED TO A SURFACE WATER BODY. THE FILTER BAG SHOULD BE DISPOSED OF BY THE CONTRACTOR AT AN UPLAND SITE.
- IF THE DEWATERED WATER IS DISCHARGED THROUGH A FILTER TO A COUNTY OR INTER COUNTY DRAIN, PERMISSION MUST BE OBTAINED FROM THE DRAIN COMMISSIONER OR DRAIN BOARD.
- A TEMPORARY SUMP AND ROCK BASE SHOULD BE USED WHERE A TEMPORARY PUMP IS INSTALLED TO DEWATER AN AREA OF ACCUMULATED WATER. IF A ROCK BASE CANNOT BE USED, THE PUMP INTAKE SHALL BE ELEVATED TO DRAW WATER FROM THE TOP OF THE WATER COLUMN TO LIMIT SEDIMENTATION.
- IMPLEMENT DEWATERING OF FOUNDATIONS AS NEEDED. A TEMPORARY SUMP AND ROCK BASE SHOULD BE USED WHERE A TEMPORARY PUMP IS INSTALLED TO DEWATER AN AREA OF ACCUMULATED WATER.
  - ENERGY DISSIPATION (RIPRAP) SHOULD BE APPLIED TO THE DISCHARGE AREA OF THE PUMP HOSE. THE WATER SHOULD BE DISCHARGED TO A LARGE FLAT VEGETATED AREA FOR FILTRATION / INFILTRATION PRIOR TO FLOWING INTO RECEIVING WATERS OF CONVEYANCES / DITCHES. IF DISCHARGE WATER IS TURBID; DEWATERINGBAGS,TEMPORARY TRAPS AND ROCK WEEPERS OR OTHER ADEQUATE BMP IS NEEDED TO CONTROL SEDIMENT DISCHARGE.
- PROPOSED BMPS AND WATER TREATMENT
  - GEOTEXTILE FILTER BAGS
    - GEOTEXTILE FILTER BAGS REMOVE SEDIMENT FROM DEWATERING DISCHARGE AND ARE PUMPED INTO A FILTER BAG CHOLEN FOR THE PREDOMINANT SEDIMENT SIZE. FILTER BAGS ARE MANUFACTURED PRODUCTS MADE TYPICALLY FROM WOVEN MONOFILAMENT POLYPROPYLENE TEXTILE (COARSE MATERIALS, E.G. SANDS) OR NON-WOVEN GEOTEXTILE (SILTS/CLAYS). THEY ARE SINGLE USE PRODUCTS THAT MUST BE REPLACED WHEN THEY BECOME CLOGGED OR HALF-FULL OF SEDIMENT.
    - GEOTEXTILE FILTER BAGS ARE GENERALLY CONSIDERED HIGH FLOW PRODUCTS, WHICH HAVE LIMITED ABILITY TO TREAT FINE-GRAINED SEDIMENTS. GRAVITY DRAINED FILTER BAGS SHOULD APPLY THE FOLLOWING: 1) THE FILTER BAGS SHOULD BE PLACED OUTSIDE OF A VEGETATED FILTER AREA AND NOT IN CLOSE PROXIMITY TO THE STREAM OR WATER RESOURCE; 2) THEY MUST SIT ON A RELATIVELY FLAT GRADE TO PREVENT EROSION CAUSED BY WATER LEAVING THE BAG; 3) THE PLACEMENT OF THE BAG OVERLAIN A FLAT BED OF AGGREGATE WILL MAXIMIZE THE FLOW AND USEFUL SURFACE AREA OF THE BAG; 4) THEY SHOULD BE USED IN CONJUNCTION WITH A LARGE VEGETATIVE BUFFER OR SECONDARY POND AND/OR BARRIER.
    - FILTER BAGS SHOULD BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH DOUBLE-STITCHED "J" TYPE SEAMS CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
    - FILTER BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREAS AND DISCHARGE ONTO STABLE, EROSION RESISTANT SURFACES/AREAS. BAGS SHALL NOT BE PLACED ONTO SLOPES GREATER THAN 5%.
    - THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE FILTER BAG IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
    - A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME HALF FULL. SPARE REPLACEMENT BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED AND/OR ARE HALF FULL.
    - THE MONITORING FOR TURBIDITY OF THE FILTER BAG DISCHARGE SHOULD OCCUR ON A REGULAR BASIS. IF TURBID WATER IS OBSERVED PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM HAS BEEN RESOLVED. BAGS SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF PUMPING ACTIVITIES.

**H. MAINTENANCE:**

- THE DEWATERING SITE SHOULD BE INSPECTED SEVERAL TIMES DAILY TO ENSURE THAT THE PUMPING PROCEDURE IS ADEQUATELY CONTROLLING THE EXCESS WATER, TO ENSURE THE FILTER BAG IS NOT CLOGGED, AND THAT THE VEGETATIVE FILTER, WHERE USED, IS STILL RETAINING SEDIMENT. IF THE FILTER BAG BECOMES CLOGGED, REPLACE WITH A NEW ONE.



Know what's below.

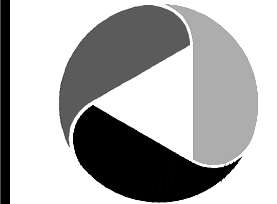
Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ON THESE PLANS. 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 NEARBY UNDERGROUND UTILITIES.

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE RESPONSIBLE FOR ASSUMING 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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 TWO TOWNSHIP, SUITE 700  
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SECTION 30  
 TOWN 2 SOUTH, RANGE 7 EAST  
 SUPERIOR TOWNSHIP  
 WASHTENAW COUNTY, MICHIGAN

MEADOWLARK  
 EGLE IMPACT PLANS  
 & CONSTRUCTION DETAILS  
 CLIENT

DATE 06/25/2019

REVISIONS

DR. JB CH. -  
 P.M. DB  
 BOOK NA  
 JOB 18002735  
 SHEET NO.





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 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 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, APPLICATION RATE. Includes immediate and 14-day follow-up schedules.

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY, APPLICATION RATE. Includes early spring and early fall schedules.

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, APPLICATION RATE. Includes immediate and 5-day follow-up schedules.

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY, APPLICATION RATE. Includes early spring and early fall schedules.

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 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](http://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 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**

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](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



















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 empty rows for revision details.

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

FILE: 18002735\_W502.DWG

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, APPLICATION RATE. Includes rows for immediately following and within 14 days.

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY, APPLICATION RATE. Includes rows for preferable early spring and 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, APPLICATION RATE. Includes rows for immediately following and within 5 days.

Table with 3 columns: PERMANENT SEEDING PLANTING DATES, SEED VARIETY, APPLICATION RATE. Includes rows for preferable early spring and 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 2 columns: START DAY, END DAY. Multiple empty rows for scheduling.

- \*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.

K:\18002735\DWG\18002735\_W502.DWG 8/6/2020 12:54 PM JAC08 BBA\0





**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 read 'DS', is written over a horizontal line.

**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@cwaplan.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@cwaplan.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](mailto:jeanmarie@mouliere.fr)  
**Cc:** Lynette Findley <[lynettesfindley@superior-twp.org](mailto:lynettesfindley@superior-twp.org)>; [leek@ewashtenaw.org](mailto:leek@ewashtenaw.org); [engelhardb@ewashtenaw.org](mailto:engelhardb@ewashtenaw.org); [dberninger@atwell-group.com](mailto:dberninger@atwell-group.com); Chris Kunkle <[ckunkle@atwell-group.com](mailto: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](mailto: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](mailto: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 &amp; 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 &amp; 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

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**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

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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**