



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION – REGULAR MEETING
April 4, 2018 7:00 pm

1. CALL MEETING TO ORDER AT 7:00 PM
2. GREEN THEMES PRESENTATION
 - A. Rebecca Esselman – PAH Contamination

3. APPROVAL OF THE AGENDA
4. APPROVAL OF THE MINUTES
 - A. March 7, 2018

5. PUBLIC REMARKS
6. NEW BUSINESS
 - A. Township Wetland Ordinance Review
 - B. Environmental Commission Rules of Procedure
 - C. Ember Oaks Wetland Use Permit #18-02 (SP Investments)

7. OLD BUSINESS
 - A. 2018 Strategic Plan

8. CHAIR'S REPORT
9. STAFF REPORT
 - A. Projects update

10. COMMISSION/LIASON/WORKGROUP REPORTS
 - A. Planning
 - B. Land Preservation
 - C. Energy
 - D. Parks and Recreation
 - E. Transportation
 - F. Student Report
 - G. Brownfield Redevelopment Authority Report

11. PUBLIC REMARKS
12. ADJOURNMENT

Individuals with disabilities requiring auxiliary aids or services should contact the Meridian Township Board by contacting:
Township Manager Frank L. Walsh, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4258 - Ten Day Notice is Required.
Meeting Location: 5151 Marsh Road, Okemos, MI 48864 Township Hall

Coal-Tar-Based Pavement Sealcoat—Potential Concerns for Human Health and Aquatic Life

Sealcoat is the black, viscous liquid sprayed or painted on many asphalt parking lots, driveways, and playgrounds to protect and enhance the appearance of the underlying asphalt. Studies by the U.S. Geological Survey (USGS), academic institutions, and State and local agencies have identified coal-tar-based pavement sealcoat as a major source of polycyclic aromatic hydrocarbon (PAH) contamination in urban and suburban areas and a potential concern for human health and aquatic life.¹

Key Findings:

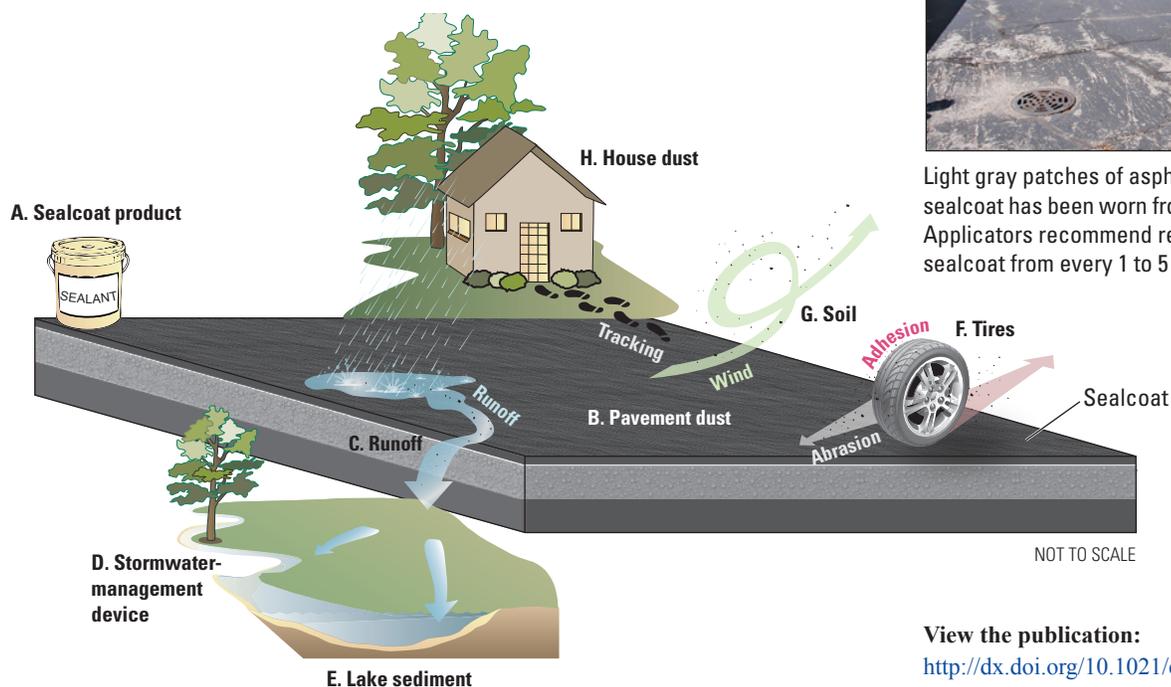
Human Health Concerns—As coal-tar-based sealcoat ages, it wears into small particles with high levels of PAHs that can be tracked into homes and incorporated into house dust. For people who live adjacent to coal-tar-sealcoated pavement, ingestion of PAH-contaminated house dust and soil results in an elevated potential cancer risk, particularly for young children. Exposure to PAHs, especially early in childhood, has been linked by health professionals to an increased risk of lung, skin, bladder, and respiratory cancers.²

Aquatic Life Concerns—Runoff from coal-tar-sealcoated pavement, even runoff collected more than 3 months after sealcoat application, is acutely toxic to fathead minnows and water fleas, two species commonly used to assess toxicity to aquatic life. Exposure to even highly diluted runoff from coal-tar-sealcoated pavement can cause DNA damage and impair DNA repair. These findings demonstrate that coal-tar-sealcoat runoff can remain a risk to aquatic life for months after application.

Coal-tar-sealcoat, which contains elevated levels of PAHs, is commonly applied to parking lots, driveways, and some recreational areas across the central and eastern parts of the United States. Friction from vehicle tires abrades sealcoat into small particles that can be tracked indoors or washed down storm drains and into streams, potentially harming human and aquatic life.



As Sealcoat Wears Off, Where Does It Go?



Light gray patches of asphalt show where sealcoat has been worn from the pavement. Applicators recommend reapplication of sealcoat from every 1 to 5 years.¹

View the publication:
<http://dx.doi.org/10.1021/es203699x>

Worn particles of coal-tar-based sealcoat containing high concentrations of PAHs and related chemicals are transported by rain, wind, tires, and even our feet from pavement to other environmental settings. Sealcoat product (A), after it dries, gradually abrades to a powder and becomes part of the dust on the pavement (B). Pavement dust is transported by rainfall runoff (C) to stormwater-management devices (D) or to receiving streams and lakes (E). Pavement dust also adheres to tires (F) that track it onto unsealed pavement, and wind and runoff transport the dust to nearby soils (G). Sealcoat particles tracked into residences can become incorporated into the house dust (H). Associated PAH concentrations for these settings, from studies by the USGS, other government agencies, and academic institutions, are given below.

Write From Karen, CC BY-NC-ND 2.0



Setting	PAH concentration* (milligrams per kilogram)	
	Coal-tar-sealcoat settings	Non-coal-tar-sealcoat settings
(A) Sealcoat products	66,000	50
(B) Pavement dust	2,200	11
(C) Runoff, particles	3,500	54
Runoff, unfiltered water	62	4
(D) Stormwater-management-device sediment	646	2
(E) Lake sediment	33	0.4
(F) Particles adhered to tires	1,380	3
(G) Soil	105	2
(H) House dust	129	5

*Concentrations are means or medians. References and additional information are provided in Mahler and others (2012).¹

PAH Levels in Asphalt-Based and Coal-Tar-Based Sealcoat

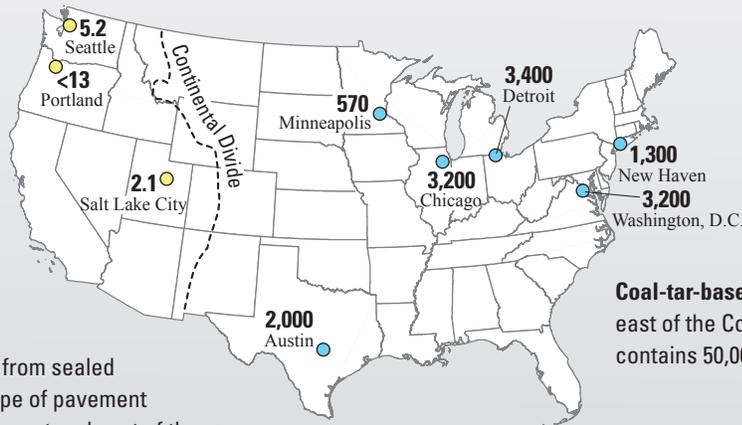
Pavement sealcoat is a commercial product that is applied to many asphalt parking lots, driveways, and playgrounds in North America in an effort to protect and beautify the underlying asphalt. It rarely is used on public roads.

Most sealcoat products are either coal-tar or asphalt emulsion, although some alternative products now are available.³ Coal tar and coal-tar pitch have extremely high concentrations of PAHs as do coal-tar-based sealcoat products, which typically are 20–35 percent coal tar or coal-tar pitch. Asphalt and asphalt-based sealcoat products have much lower concentrations of PAHs.

For historical and economic reasons, use of asphalt-based sealcoat in the United States is more common west of the Continental Divide and use of coal-tar-based sealcoat is more common east of the Continental Divide, except in States, counties, and municipalities where use of coal-tar-based sealcoat is prohibited.³



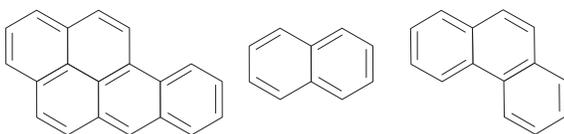
Asphalt-based sealcoat, primarily used west of the Continental Divide, typically contains about 50 mg/kg PAHs.⁴



Coal-tar-based sealcoat, primarily used east of the Continental Divide, typically contains 50,000 to 100,000 mg/kg PAHs.⁴

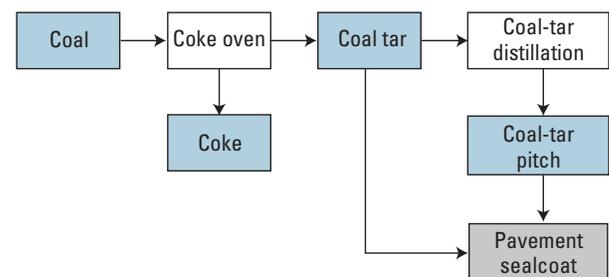
PAH levels in dust swept from sealed parking lots reflect the type of pavement sealcoat commonly used west and east of the Continental Divide.¹ Concentrations, in units of milligrams per kilogram (mg/kg), also referred to as “parts per million” (ppm), shown here are for the sum of the 16 PAHs listed by the U.S. Environmental Protection Agency as Priority Pollutants. Concentrations are for composite samples from multiple parking lots or a median of several individual samples.⁵

Polycyclic aromatic hydrocarbons (PAHs) are a group of chemicals created by heating or burning material that contains carbon. The many sources of PAHs to the urban environment span a wide range of PAH concentrations and include asphalt (2–9 mg/kg), tire particles (84 mg/kg), used motor oil (730 mg/kg), and coal-tar-based sealcoat (34,000–202,000 mg/kg).⁶ PAHs are an environmental concern because many cause cancer, mutations, birth defects, or death in fish, wildlife, and invertebrates.⁷ Exposure to sunlight greatly intensifies the adverse effects of several PAHs. The U.S. Environmental Protection Agency (EPA) has classified seven PAHs as probable human carcinogens (Class B2) and 16 PAHs as Priority Pollutants. Environmental and health effects depend on which PAHs are present and their concentrations.



PAHs are made up of various arrangements of benzene rings. PAHs commonly occur in the environment as mixtures, which typically include at least some of the PAHs that are classified as probable human carcinogens.

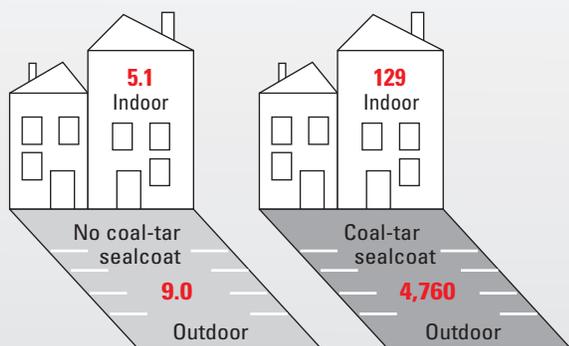
Coal tar is a byproduct of the coking, liquefaction, or gasification of coal and is a complex mixture composed primarily of aromatic hydrocarbons. Coal-tar pitch is the residue that remains after the distillation of coal tar; it is a complex mixture of high molecular weight aromatic hydrocarbons and black carbon solids. The primary use of coal-tar pitch is in electrode manufacturing for the aluminum industry.⁸ Coal-tar emulsion pavement sealants contain either crude coal tar (Chemical Abstracts Service [CAS] Registry Number 8007–45–2) or coal-tar pitch (CAS Registry Number 65996–93–2). Coal tar and coal-tar pitch are known human carcinogens.⁹



Potential Risks to Human Health

PAHs from coal-tar-based sealcoat contaminate house dust¹⁰

In a study of 23 ground-floor apartments in Austin, Texas, PAH levels in house dust in apartments with parking lots sealed with a coal-tar-based product were 25 times higher than in house dust in apartments with parking lots with other surface types (concrete, unsealed asphalt, and asphalt-based sealcoat). No relation was found between PAHs in house dust and other



PAH-contaminated dust on coal-tar-sealcoated pavement (right) is tracked indoors.¹⁰ Concentrations shown are median values for the sum of the 16 Priority Pollutant PAHs, in units of milligrams per kilogram, in house dust and parking lot dust.

View the publication:

<http://pubs.acs.org/doi/pdf/10.1021/es902533r>

Living adjacent to coal-tar-sealed pavement increases cancer risk¹²

The USGS partnered with a human-health-risk analyst to estimate the excess lifetime cancer risk associated with the ingestion of house dust and soil for people living adjacent to parking lots with and without coal-tar-based sealcoat. Excess cancer risk is the extra risk of developing cancer caused by exposure to a toxic substance. The excess cancer risk for people living adjacent to coal-tar-sealcoated pavement (1.1 cancer incidences for every 10,000 individuals exposed) was 38 times higher, on average (central tendency), than for people living adjacent to unsealed pavement. The central tendency excess cancer risk estimated for people living adjacent to coal-tar-sealcoated pavement exceeds the threshold generally considered by the EPA as making remediation advisable.

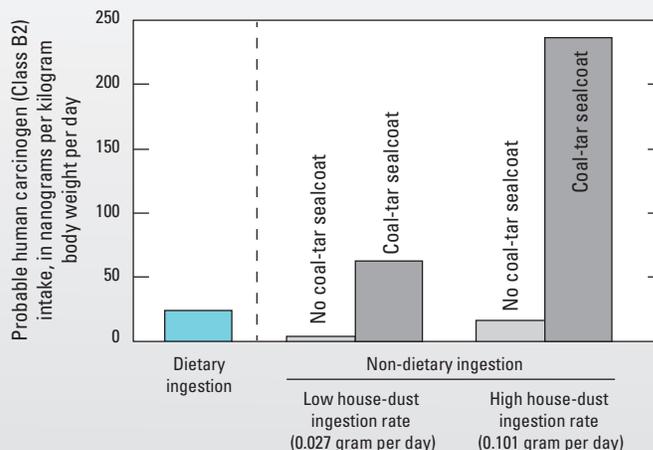
The assessment used measured concentrations of the B2 PAHs in house dust and soils adjacent to coal-tar-sealed pavement (adjusted for relative potency to the PAH benzo[a]pyrene), established house dust and soil ingestion rates, and the EPA-established slope factor to estimate the excess cancer risk. Much of the estimated excess risk comes from exposures to PAHs in early childhood (that is, 0–6 years of age). The study did not consider the excess cancer risk associated with exposure to the sealcoated pavement itself, which has PAH concentrations 10 or more times greater than in adjacent residence house dust or soils.^{5, 10}

View the publication:

<http://pubs.acs.org/doi/pdf/10.1021/es303371t>

possible indoor PAH sources such as tobacco smoking and fireplace use.

House dust is an important pathway for human exposure to many contaminants, including PAHs. This is particularly true for small children, who spend time on the floor and put their hands and objects into their mouths.



The preschooler living in a residence adjacent to coal-tar-sealed pavement who has relatively low hand-to-mouth activity consumes about 2.5 times more PAHs from house dust than from their diet.¹¹ For the more active preschooler, whose hand-to-mouth activity is higher, the PAH intake from house dust is nearly 10 times more than the PAH intake from their diet.



Children ingest house dust and soil when they put their hands or objects into their mouth. Much of the estimated excess cancer risk associated with the ingestion of PAH-contaminated soil and house dust is incurred during early childhood.

Potential Risks to Aquatic Life

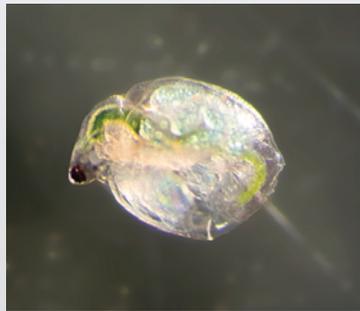
Runoff from coal-tar-sealcoated pavement is acutely toxic to aquatic biota¹³

Exposure to runoff from coal-tar-sealed pavement collected as much as 42 days after sealcoat application resulted in 100 percent mortality to two commonly tested laboratory organisms: day-old fathead minnows (*Pimephales promelas*) and water fleas (*Ceriodaphnia dubia*). In contrast, minnows and water fleas exposed to runoff from unsealed pavement experienced no more than 10 percent mortality. When the minnows and water fleas were also exposed to simulated sunlight, which intensifies the toxicity of some PAHs, runoff collected 111 days (more than 3 months) after sealcoat application caused 100 percent mortality to both species, and caused 100 percent mortality to water fleas even when diluted to 10 percent of its original strength.

The USGS collected samples of runoff from 5 hours to 111 days following sealcoat application to pavement by a

professional applicator. Total PAH concentrations varied relatively little, as rapid decreases in concentrations of low molecular weight and nitrogen-substituted PAHs were offset by increases in high molecular weight PAHs.¹⁴ These results demonstrate that runoff from coal-tar-sealcoated pavement continues to contain elevated concentrations of PAHs and related compounds long after a 24-hour curing time.

A subsequent study by researchers at the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Fish and Wildlife Service found that coal-tar-sealcoat runoff is acutely lethal to juvenile coho salmon (*Oncorhynchus kisutch*) and causes a wide spectrum of abnormalities to zebrafish (*Danio rerio*) embryos.¹⁵ They also reported that filtration of the runoff through a biorention system substantially reduced toxicity.



Runoff from coal-tar-sealcoated pavement is acutely toxic to fathead minnows (*Pimephales promelas*; left) and water fleas (*Ceriodaphnia dubia*; right).

View the publication:

<http://pubs.acs.org/doi/abs/10.1021/acs.est.5b00933>



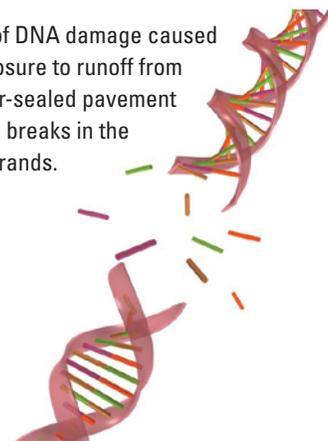
Runoff from coal-tar-sealcoated pavement goes down storm drains to receiving water bodies. The runoff contains high concentrations of PAHs and related chemicals that can harm aquatic life.¹⁶

Runoff from coal-tar-sealcoated pavement damages DNA and impairs DNA repair¹⁷

Simultaneous exposure to runoff from coal-tar-sealed pavement and simulated sunlight damaged DNA in rainbow trout liver cells, even when the runoff was diluted to 1 percent of its initial concentration. The cells were from a cell line developed to assess the effects of PAHs on DNA. The test assessed two types of DNA damage: strand breaks and alkylated bases.

Although cells can repair some DNA damage, a second experiment demonstrated that cells exposed to the coal-tar-sealcoat runoff had an impaired capacity to perform at least one type of DNA repair. The combination of DNA damage and impaired repair capacity intensifies the potential for long-term damage to cell health. DNA damage has many possible consequences, including aging, cell death, and mutations. Mutations can affect the function of genes and can potentially lead to cancer.

Types of DNA damage caused by exposure to runoff from coal-tar-sealed pavement include breaks in the DNA strands.

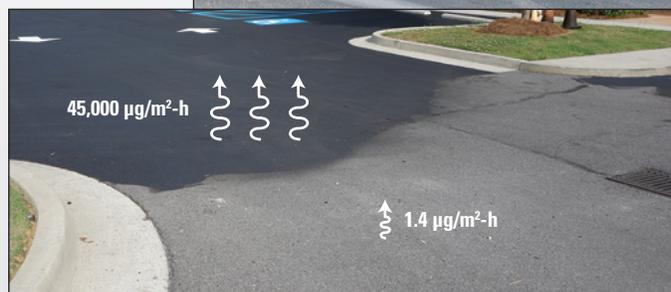


(Image from Genetic Science Learning Center, <http://learn.genetics.utah.edu>.)

Air-Quality Concerns^{18, 19}

Although unseen, releases of PAHs to the atmosphere (volatilization) from freshly coal-tar-sealed pavement are tens of thousands of times higher than from unsealed pavement. Volatilization is a potential human-health concern because inhalation is an important pathway for human exposure to PAHs. Although volatilization decreases rapidly over the weeks following application, it nonetheless continues long after application—PAH releases to the atmosphere from parking lots sealed from 3 to 8 years prior to sampling were on average 60 times higher than PAH releases from unsealed pavement.

Nationwide, the combined PAH releases each year from newly applied coal-tar-based sealcoat are estimated to exceed annual vehicle emissions of PAHs.¹⁸ PAH releases shown here are in units of micrograms per meter squared per hour ($\mu\text{g}/\text{m}^2\text{-h}$).



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By Barbara J. Mahler,* Michael D. Woodside, and Peter C. Van Metre

For more information

Access publications and learn more about PAHs and coal-tar-based pavement sealcoat at <http://tx.usgs.gov/sealcoat.html>.

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ORDINANCE REGULATING PAVEMENT SEALANT PRODUCTS

A CITY ORDINANCE REGULATING THE USE OF COAL TAR AND OTHER HIGH- PAH SEALER PRODUCTS

ORDINANCE NO. _____

AN ORDINANCE TO ENFORCE THE STATUTORY PROHIBITION ON THE USE AND SALE OF COAL TAR AND OTHER HIGH PAH CONTENT SEALANT PRODUCTS WITHIN THE CITY OF _____.

THE CITY COUNCIL OF THE CITY OF _____ DOES ORDAIN:

SECTION 1. PURPOSE.

The City of _____ understands that lakes, rivers, streams and other bodies of water are natural assets which enhance the environmental, recreational, cultural and economic resources and contribute to the general health and welfare of the community.

The use of sealers on asphalt driveways is a common practice. However, scientific studies on the use of driveway sealers have demonstrated a relationship between the use of coal tar-based sealers and certain health and environmental concerns, including increased cancer risk to humans and impaired water quality in streams.

The purpose of this ordinance is to prohibit the use and sale of sealant products containing >0.1% Polycyclic Aromatic Hydrocarbons (PAHs) by weight, including coal tar-based sealer in the City of _____, in order to protect, restore, and preserve the quality of its waters and protect the health of its residents.

SECTION 2. DEFINITIONS.

Except as may otherwise be provided or clearly implied by context, all terms shall be given their commonly accepted definitions. For the purpose of this ordinance, the following definitions shall apply unless the context clearly indicates or requires a different meaning:

ASPHALT BASED SEALER. A petroleum based sealer material that is commonly used on driveways, parking lots, and other surfaces.

COAL TAR. A byproduct of the process used to manufacture coke from coal.

COAL TAR SEALANT PRODUCT. A surface applied sealing product containing coal tar, coal tar pitch, coal tar pitch volatiles, RT-12, Refined Tar or any variation assigned the Chemical Abstracts Service (CAS) numbers 65996-92-1, 65996-93-2, 65996-89-6, or 8007-45-2 or related substances containing more than 0.1% PAHs, by weight.

CITY. The City of _____.

HIGH PAH CONTENT SEALANT PRODUCT. A surface-applied product containing steam cracked petroleum residues, steam-cracked asphalt, pyrolysis fuel oil, heavy fuel oil, ethylene tar, or any variation of those substances assigned the chemical abstracts service number 64742-90-1, 69013-21-4 or related substances containing more than 0.1% PAHs, by weight.

PERSON. An individual, trustee, executor, fiduciary, corporation, firm, partnership, association, organization, or other legal entity acting as a unit.

PAHs. Polycyclic Aromatic Hydrocarbons. A group of organic chemicals formed during the incomplete burning of coal, oil, gas, or other organic substances. Present in coal tar and known to be harmful to humans, fish, and other aquatic life.

SECTION 3. PROHIBITIONS.

In accordance with this ordinance:

- A. No person shall apply a coal tar or other high PAH content sealant product on asphalt paved surfaces within the City.
- B. No person shall sell a coal tar or other high PAH content sealant product that is formulated or marketed for application on asphalt-paved surfaces within the City.
- C. No person shall allow a coal tar or other high PAH content sealant product to be applied upon property that is under that person's ownership or control.
- D. No person shall contract with any commercial sealer product applicator, residential or commercial developer, or any other person for the application of any coal tar or other high PAH content sealant product to any driveway, parking lot, or other surface within the City.
- E. No commercial sealer product applicator, residential or commercial developer, or other similar individual or organization shall direct any employee, independent contractor, volunteer, or other person to apply any coal tar or other high PAH content sealant product to any driveway, parking lot, or other surface within the City.

SECTION 4. REGISTRATION AND REPORTING REQUIREMENTS AND PROCEDURES FOR COMMERCIAL APPLICATORS

- (1) All commercial applicators shall register with the city prior to applying pavement sealant in the city in any calendar year.
- (2) Registration under this chapter shall be valid until expiration. Registration shall begin on January 1 and shall expire on December 31 of each calendar year.
- (3) Commercial applicators shall submit a complete registration application to the City Offices, along with the registration fee according to the schedule established by resolution of City

Council. The fee shall be calculated to include the cost of registration application review and periodic field inspection.

(4) The following information shall be included in a complete application for registration:

- (a) The legal name of the commercial applicator, any other names used, the address, telephone number and contact person for the applicant.
- (b) The product name, type of use, MSDS sheet and CAS numbers.
- (c) A notarized, sworn statement signed by an owner or duly authorized representative of a commercial applicator indicating that the applicator will comply with the requirements of the Ordinance of the city throughout the registration period.
- (d) All other information requested on the application.

(5) The application shall be approved if it is complete, the applicator has complied with the previous year's reporting requirement, and the use of pavement sealant complies with this chapter.

(6) The application for registration shall be approved or denied within 21 days of submission of a completed application.

(7) A registered applicator shall notify the City in writing of any change in the information in the application for registration within 7 days of any such change.

SECTION 5. PENALTY.

Any person convicted of violating any provision of this ordinance is guilty of a misdemeanor and shall be punished by a fine not to exceed ten thousand dollars (\$10,000.00) or imprisonment for not more than ninety (90) days, or both, plus all costs of prosecution, including but not limited to staff and time and attorney costs, in either case.

SECTION 6. SEVERABILITY.

If any provision of this ordinance is found to be invalid for any reason by a court of competent jurisdiction, the validity of the remaining provisions shall not be affected.

SECTION 7. EFFECTIVE DATE.

This ordinance becomes effective on the date of its publication.

This ordinance was adopted by Council on _____ and is effective upon its publication on _____.

Mayor

Attested:

Clerk

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

DRAFT

**March 7, 2018
5151 Marsh Road, Okemos, MI 48864-1198
517-853-4560, Town Hall Room, 7:00 P.M.**

PRESENT: Commissioners Jim Kielbaso, Ned Jackson, John Sarver, Kirk Lapham, Ben Holland
ABSENT: Chair Bill McConnell, Commissioners Susan Masten, Marina Ionescu
STAFF: Principal Planner Peter Menser
OTHERS: None

1. Call meeting to order

Vice-Chair Ned Jackson called the meeting to order at 7:04 p.m.

2. Green Themes Presentation – NONE

3. Approval of Agenda

Commissioner Keilbaso moved to approve the agenda as written.
Supported by Commissioner Sarver.
VOICE VOTE: Motion approved unanimously.

4. Approval of Minutes

A. December 6, 2017 Regular Meeting Minutes
Commissioner Kielbaso moved to approve the minutes as drafted.
Supported by Commissioner Lapham.
VOICE VOTE: Motion approved unanimously.

5. Public Remarks – NONE

6. New Business – NONE

A. Township Wetland Ordinance Review - Commissioner Lapham explained that he was working on scheduling a meeting to identify changes proposed to the Township's wetland ordinance but has not yet been able to do so due to scheduling conflicts. Vice-Chair Jackson provided an overview of the concerns identified by Chair McConnell, which included the consideration of wetland essentiality and the public interest component of the wetland use permit review criteria.

7. Old Business

A. 2018 Strategic Plan - The Environmental Commission chose to move discussion on this agenda item to the next agenda due to the absence of Chair McConnell.

8. Chair's Report

Vice-Chair Jackson noted his appreciation for Township staff plowing the Interurban Trail during the winter season as he uses it for commuting.

9. Staff Report – NONE

10. Commissioner/Liaison/Workgroup Reports

Planning: Principal Planner Menser provided an overview of Planning Commission activities.

Land Preservation: Commissioner Kielbaso shared the publication of an article in the Town Courier announcing the acquisition of new Land Preservation properties. The Land Preservation program now consists of approximately 915 acres.

Energy: Commissioner Sarver reported that the Township has issued a request for proposals to install a 20kw solar system at the Public Works building. He also noted that solar education workshops are scheduled and that he attended a recent intergovernmental meeting related to development of a climate and sustainability plan for the City of Lansing.

Parks and Recreation: No report.

Transportation: No report.

Student Report: Student Commissioner Holland announced an upcoming Spaghetti Dinner at Okemos High School and the related Earth Club.

11. Public Remarks – Commissioner Lapham announced the City of East Lansing is now offering recycling of Styrofoam.

12. Adjournment

Vice-Chair Jackson adjourned the regular meeting at 7:35 p.m.



September 25, 2017
Project No. 170164

Mr. Mark Kieselbach
Director of Community Planning and Development
Charter Township of Meridian
5151 Marsh Road
Okemos, MI 48864-1198

Re: Township Wetland Ordinance and NREPA Part 303 Regulatory Review

Dear Mark:

As requested, we have reviewed Part 303 of the State of Michigan's Natural Resources and Environmental Protection Act (NREPA), Act 451 of 1994 (Wetlands Protection) and compared it to Meridian Township's wetland ordinance (Chapter 22, Article IV). The intent of this evaluation was to identify inconsistencies between the two statutes and recommend potential updates to the Township's ordinance. Table 1 summarizes the results of my review.

Within recent years, the Michigan Department of Environmental Quality has refined and updated Section 324.30305 of Part 303, which discusses activities not requiring a permit under Part 303. Updated sections pertain to farming in wetlands and incidental creation of wetlands. Table 1 compares relevant portions of Section 324.30305 to the Township's wetland ordinance and presents recommendations for updating the Township's ordinance. Key words are bolded and italicized to highlight differences between the statutes. In general, the state's statute provides stronger definition and clarity that would be beneficial for the Township to adopt into their wetland ordinance. In addition, several other statute differences not pertaining to Section 324.30305 of Part 303 are highlighted in the table.

Please review and let me know if you have any questions and comments. As always, you may contact me at 616.464.3738 or ehtripp@ftch.com.

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

Elise Hansen Tripp, PWS

pmb
Attachment
By email

Table 1. Comparison of NREPA Part 303 and Chapter 22, Article IV (Wetland Protection) of the Meridian Township Code of Ordinances

NREPA Part 303 Citation	Corresponding Part 303 Statute	Township Ordinance Citation	Corresponding Township Statute	Comments and Recommendations
324.30305(1)e(i)	Beginning October 1, 2013, to be allowed in a wetland without a permit, these activities shall be part of an established ongoing farming, ranching, horticultural, or silvicultural operation. <i>Farming and silvicultural activities on areas lying fallow as part of a conventional rotational cycle are part of an established ongoing operation, unless modifications to the hydrological regime or mechanized land clearing are necessary to resume operation. Activities that bring into farming, ranching, horticultural, or silvicultural use an area not in any of these uses, or that convert an area from a forested or silvicultural use to a farming, ranching, or horticultural use, are not part of an established ongoing operation.</i>	22-152(a)(5) and (6)	The following uses shall be allowed in a wetland without a permit subject to other laws of this state and the owner's regulation: (5) Farming, horticulture, silviculture, lumbering, and ranching activities, including plowing, irrigation, irrigation ditching, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices. A wetland altered under this article shall not be used for a purpose other than a purpose described in this subsection without a permit from the Township. (6) An activity in a wetland that was effectively drained for farming before October 1, 1980, and that on and after October 1, 1980, has continued to be effectively drained as part of an ongoing farming operation.	Part 303 provides a stronger definition of established, ongoing farming operations. Add the following to 22-152(a)(5): " Established, on-going farming, horticulture, silviculture, lumbering, and ranching activities, including plowing, irrigation, ...". The Township may also wish to incorporate the additional bolded, italicised language to strengthen the definition of established ongoing farming operations.
324.30305(1)j	Placement of biological residuals from activities, including the cutting of woody vegetation or the in-place grinding of tree stumps, performed under this section within a wetland; if all the biological residuals originate within that wetland.	No corresponding statute.		Include this exemption in Section 22-152
324.30305(4)	A wetland that is incidentally created as a result of 1 or more of the following activities is not subject to regulation under this part: (b) Construction and operation of a water treatment pond, lagoon, or storm water facility in compliance with the requirements of state or federal water pollution control laws.	22-152(a)(17)b	A wetland that is incidentally created as a result of one or more of the following activities: b. Construction and operation of a water treatment pond or lagoon in compliance with the requirements of state or federal water pollution control regulations.	Add or storm water facility to Section 22-152(a)(17)b
324.30305(4)	A wetland that is incidentally created as a result of 1 or more of the following activities is not subject to regulation under this part: (d) Construction of drains in upland for the sole purpose of removing excess soil moisture from upland areas that are primarily in agricultural use. (e) Construction of roadside ditches in upland for the sole purpose of removing excess soil moisture from upland. (f) An agricultural soil and water conservation practice designed, constructed, and maintained for the purpose of enhancing water quality.	No corresponding statute.		Include these exemptions to Section 22-152(a)(17)

NREPA Part 303 Citation	Corresponding Part 303 Statute	Township Ordinance Citation	Corresponding Township Statute	Comments and Recommendations
324.30305(5)	An area that <i>becomes contiguous</i> to a water body created as a result of commercial excavation for sand, gravel, or mineral mining is not subject to regulation under this part solely because it is contiguous to the created water body. This exemption from regulation applies until the property on which the wetland is located meets both of the following requirements: (a) is no longer used for excavation as part of commercial sand, gravel, or mineral mining. (b) is being used for another purpose unrelated to excavation as part of commercial sand, gravel, or mineral mining.	22-152(a)(17)	A wetland that is incidentally created as a result of one or more of the following activities: a. Excavation for mineral or sand mining, if the area was not a wetland before excavation. This exemption does not include a wetland on or adjacent to a water body of one acre or more in size.	Part 303 clarifies the regulatory status of wetlands in the vicinity of sand and gravel mining operations as these operations expand. The Township should decide if it would accept this exemption. It may wish to require a Wetland Use Permit for mining within 300 feet of regulated wetlands, but outside a 40 foot or 20 foot buffer.
No corresponding statute.		22-152(a)(16)	Construction of iron and copper mining tailings basins and water storage areas.	Delete Section 22-152(a)(16). It is not relevant to the Township.
Pertaining to other aspects of the state and local statutes:				
324.30305(1)(e)(ii)	Minor drainage does not include drainage associated with the immediate or gradual conversion of a wetland to a nonwetland, or conversion from 1 wetland use to another. Minor drainage does not include the construction of a canal, ditch, dike, or other waterway or structure that drains or otherwise significantly modifies a stream, lake, or wetland.	This clarification of the definition of minor drainage is not present in the Township statute.		Expand the definition of minor drainage in 22-116 (Definitions) to include the Part 303 clarification.
		22-122(2)a.2.ii	Presence of or lack of accepted wetland hydrology layers.	Change to: Presence of or lack of accepted wetland hydrology indicators.

Chapter 22. Environment

ARTICLE IV. Wetland Protection

[1] *State law references: Wetland protection, MCL 324.30301 et seq.; local wetland protection ordinances, MCL 324.30307(4), 324.30308.*

DIVISION 1. Generally

§ 22-116. Definitions.

[Code 1974, § 105-3; Ord. No. 2002-02, 3-19-2002; Ord. No. 2003-11, 7-6-2003; Ord. No. 2011-04, 3-15-2011]

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

AQUATIC LIFE

Vertebrates or invertebrates that are dependent on wetlands for some vital portion of their life cycle, including any of the following: breeding, spawning, nesting, rearing of young, feeding, and resting or protection.

CONTIGUOUS

Any of the following:

- (1) A permanent surface water connection or other direct contact with an inland lake, pond, river or stream.
- (2) A seasonal or intermittent direct surface water connection to an inland lake, pond, river or stream.
- (3) A wetland which is partially or entirely located within 500 feet of the ordinary high water mark of an inland lake, pond, river or stream, unless it is demonstrated by the property owner by clear and convincing evidence that there is no relation whatever between the wetland and the inland lake, pond, river or stream taking into the purposes of this article, as set forth in § 22-118.
- (4) Two or more areas of wetland separated only by barriers, such as dikes, roads, berms or other similar features, but only with any of the wetland areas contiguous under the criteria described in subsection (1), (2) or (3) of this definition.

DEPOSIT

To fill, place or dump.

DIRECTOR OF COMMUNITY PLANNING AND DEVELOPMENT

The Director of Community Planning and Development for the Township or his designee.

ENVIRONMENTAL COMMISSION

The body created pursuant to Chapter 2, Article VI, Division 3, and designated by the Township Board to advise the Township on wetland issues.

FILL MATERIAL

Soil, rocks, sand, or waste of any kind, or any other material which displaces soil or water, or reduces water retention potential.

INLAND LAKE, STREAM, RIVER OR POND

Any of the following:

- (1) A river or stream that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water.
- (2) A natural or permanent artificial inland lake or impoundment that has definite banks, a bed, a visible evidence of a continued occurrence of water, and a surface area of water that is more than five acres, not including lakes constructed by excavating or diking dry land and maintained for the sole purpose of cooling or storing water and not including lagoons for treating polluted water.
- (3) A natural or permanent artificial pond that has permanent open water with a surface area that is more than one acre but less than five acres, not including ponds constructed by excavating or diking dry land and maintained for the sole purpose of cooling or storing water and not including lagoons used for treating polluted water.

INTERESTED PERSON

Either:

- (1) A resident of the Township who will suffer an identifiable injury, loss, or potential loss as a result of a wetland use permit decision; or
- (2) An owner of property within 500 feet of the wetland that is the subject of a wetland use permit decision.

LOT

Land occupied or to be occupied by a building, structure, land use, or group of buildings, together with such open space or yards as are required under the code of ordinances and having its principal frontage upon a street.

MINOR DRAINAGE

Includes ditching and tiling for the removal of excess soil moisture incidental to the planting, cultivating, protecting, or harvesting of crops or improving the productivity of land in established use for agriculture, horticulture, silviculture, or lumbering.

MITIGATION OF WETLANDS

- (1) Methods for eliminating or reducing potential impact to regulated wetlands; or
- (2) Creation of new wetlands of the same or similar function to offset unavoidable loss of existing wetlands to meet the Township goal of no net loss of wetlands.

PERSON

An individual, sole proprietorship, partnership, corporation, association, municipality, of the state; an instrumentality or agency of this state; the federal government, or an instrumentality or agency of the federal government, or other legal entity.

PROTECTED WETLANDS

Any of the following:

- (1) Wetlands, regardless of size, which are contiguous to any inland lake stream, river, or pond, whether partially or entirely within the project site.
- (2) Wetlands, regardless of size, which are partially or entirely within 500 feet of the ordinary high water mark of any inland lake, stream, river or pond, unless it is determined by the state department of environmental quality that there is no surface or groundwater connection between the wetland and the water body.

- (3) Wetlands which are larger than two acres, whether partially or entirely contained within a lot, and which are not contiguous to any inland lake, stream, river or pond.
- (4) Wetlands, regardless of size, which are not contiguous to any inland lake, stream, river or pond, if the state department of environmental quality determines the protection of the wetland is essential to the preservation of the natural resources of the state from pollution, impairment or destruction.
- (5) Wetlands, equal to or greater than one-quarter acre and equal to or less than two acres in size, which are not contiguous to any inland lake, stream, river or pond and are determined to be essential to the preservation of the natural resources of the Township as provided in § 22-156.

REMOVE

To dig, dredge, suck, pump, bulldoze, drag line, or blast.

RESTORATION

To return from a disturbed or totally altered condition to a previously existing natural or altered condition by some action of man.

STRUCTURE

Any assembly of materials above or below the surface of the land or water, including, but not limited to, buildings, bulkheads, piers, docks, landings, dams, waterway obstructions, paving and roadways, poles, towers, cables, pipelines, drainage tiles, and other underground installations.

TOWNSHIP BOARD

The legislative body of the Charter Township of Meridian, Ingham County, Michigan.

TOWNSHIP ENVIRONMENTAL CONSULTANT

A person professionally knowledgeable in wetland delineation and resource value assessment, wetland protection, wetland restoration and wetland mitigation, appointed pursuant to § 3.4 of the Township personnel policy to carry out certain duties hereunder. Any firm or individual appointed on a contract basis shall be selected competitively under the Township purchasing policy.

TOWNSHIP WETLAND INVENTORY MAP

The Meridian Township Wetland Inventory Map created to comply with § 30308 (1), of the Natural Resources and Environmental Protection Act (MCL § 324.30308). The Township wetland inventory map is based on the National Wetland Inventory Map of the U.S. Fish and Wildlife Service, the Michigan Resource Information System Mapping (MIRIS) of the state department of natural resources, the soils maps of the soil conservation service, aerial photography and on-site inspections.

WETLAND

Land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life and commonly referred to as a bog, swamp, or marsh.

WETLAND VEGETATION

Plants that exhibit adaptations to allow germination and growth with at least their root systems in the water or saturated soils under normal conditions.

Cross reference: Definitions generally, § 1-2.

§ 22-117. Findings.

[Code 1974, § 105-1; Ord. No. 2002-02, 3-19-2002]

- (a) The Township Board finds that wetlands are indispensable and fragile natural resources that provide many public benefits, including maintenance of water quality through nutrient cycling and sediment trapping as well as flood and stormwater runoff control through temporary water storage, slow release, and groundwater recharge. In addition, wetlands provide open space; passive outdoor recreation opportunities;

fish and wildlife habitat for many forms of wildlife, including migratory waterfowl, and rare, threatened or endangered wildlife and plant species; and pollution treatment by serving as biological and chemical oxidation basins.

- (b) Preservation of the remaining Township wetlands in a natural condition shall be and is necessary to maintain hydrological, economic, recreational, and aesthetic natural resource values for existing and future residents of the Township, and, therefore, the Township Board declares a policy of no net loss of wetlands. Furthermore, the Township Board declares a long-term goal of net gain of wetlands to be accomplished through review of degraded or destroyed wetlands in the Township and, through cooperative work with landowners, using incentives and voluntary agreements to restore wetlands.
- (c) Pursuant to Article 4, § 52 of the Constitution of the State of Michigan, the conservation and development of natural resources of the state is a matter of paramount public concern in the interest of the health, safety, and general welfare of the people. Therefore, with authority from § 30307(4) of the Natural Resources and Environmental Protection Act (MCL § 324.30307 et seq.), the Township Board finds that this article is essential to the long-term health, safety, economic, and general welfare of the people of the Township and to the furtherance of the policies set forth in Part 17 of the Natural Resources and Environmental Protection Act (MCL § 324.101 et seq.).

§ 22-118. Purpose.

[Code 1974, § 105-2; Ord. No. 2002-07, 3-19-2002; Ord. No. 2011-04, 3-15-2011]

The purposes of this article are to provide for:

- (1) The protection, preservation, replacement, proper maintenance, restoration, and use in accordance with the character, adaptability, and stability of the Township's wetlands in order to prevent their pollution or contamination; minimize their disturbance and disturbance to the natural habitat therein; and prevent damage from erosion, siltation, and flooding.
- (2) The encouragement of proper and reasonable economic use of wetlands, the discouragement and limitation of improper use, the reduction of financial burdens improper uses impose on the community, the maintenance of harmonious and compatible land use balance within the Township, and the prevention of nuisance conditions that arise with the indiscriminate development of wetlands.
- (3) The coordination with, and support for, the enforcement of applicable federal, state, and county statutes, ordinances, and regulations, including, but not limited to:
 - a. Part 303, Wetland Protection of the Natural Resources and Environmental Protection Act (MCL § 324.30301 et seq.), enforced by the State Department of Environmental Quality; and
 - b. Part 91 of the Natural Resources and Environmental Protection Act (MCL § 324.9101 et seq.), enforced by the Township.
- (4) Compliance with Part 17 of the Natural Resources and Environmental Protection Act (MCL § 324.1701 et seq.), which imposes a duty on government agencies and private individuals and organizations to prevent or minimize the pollution, impairment or destruction of the natural resources that is likely to be caused by their activities.
- (5) The establishment of standards and procedures for the review and regulation of the use of wetlands.
- (6) The issuance of wetland use permits for approved activities.
- (7) A procedure for amending wetland use permits.
- (8) A procedure for appealing decisions.
- (9) The establishment of enforcement procedures and penalties for the violation of this article.
- (10) Assurance that the right to reasonable use of private property is maintained.

§ 22-119. Penalties and enforcement.

[Code 1974, § 105-19; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) In the event of a violation of this article, the Township may commence a civil action for appropriate relief, including injunctive relief. An action under this article may be brought in the circuit court for the county. The court has jurisdiction to restrain the violation and to require compliance with this article. In addition to any other relief granted under this article, the court may impose a civil fine of not more than \$10,000 per day of violation. A person who violates an order of the court is subject to a civil fine not to exceed \$10,000 for each day of violation.
- (b) A person who violates this article is guilty of a misdemeanor, punishable by a fine of not more than \$2,500.
- (c) A person who willfully or recklessly violates a condition or limitation in a permit issued by the Township under this article, or a corporate officer who has knowledge of or is responsible for a violation, is guilty of a misdemeanor, punishable by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. A person who violates this article a second or subsequent time is guilty of a felony, punishable by a fine of not more than \$50,000 for each day of violation, or by imprisonment for not more than two years, or both.
- (d) In addition to the penalties provided under subsections (a), (b), and (c) of this section, the court may order a person who violates this article to restore as nearly as possible the wetland that was affected by the violation to its original condition immediately before the violation. The restoration may include the removal of fill material deposited in the wetland or the replacement of soil, sand, or minerals.
- (e) Whenever any work is performed contrary to the provision of this article or of a condition set forth in a wetland use permit, the Township Manager or his agent shall order the work to cease by notice in writing served on any persons engaged in the doing or causing such work to be performed, and any such persons shall, upon receipt of the order, forthwith stop such work until authorized by the Township Manager or his agent to proceed. In addition, if a person acts in violation of this article the Township may refuse a certificate of occupancy or other construction permits related to the project whenever there is failure to comply with the provisions of this article.
- (f) The Director of Community Planning and Development or his agent shall have authority under this article to enter upon privately owned land for the purpose of performing the Township's duties under this article and may take or cause to be made such examinations, surveys or samplings as are deemed necessary.
- (g) Law enforcement officials or other officials having the police power shall have authority to assist the Department of Community Planning and Development in the enforcement of this article.
- (h) In the event of a violation of this article, the Township Board shall have the power to order wetland restoration for the damaged or destroyed wetland area by the owner of the property affected or the person or agent responsible for the violation. If the owner or person responsible does not complete the restoration measures within the ordered period of time, the Township Board may order the affected wetland restored to its prior condition and/or create or restore other wetlands for the purpose of offsetting losses sustained as a result of this violation. The owner or other person responsible for the original violation shall be responsible to the Township for the full cost of all such remedial activity.

§ 22-120. Existing nonconforming lots, uses and structures.

[Code 1974, § 105-9; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

Building sites or lots, uses and structures lawfully existing on September 2, 1991, shall be subject to the requirements of this article, except as follows:

- (1) Any activity, structure, or use lawfully existing prior to September 2, 1991, but not in conformity with the provisions of this article, may be continued, maintained and operated. No nonconforming activity, structure or use shall be enlarged or increased or extended to occupy a greater area of land than was occupied at the

effective date of Ordinance No. 2011-04, from which this article is derived without first obtaining a wetland use permit.

- (2) Any structure lawfully existing prior to September 2, 1991, if destroyed by any means to an extent of more than 50% of its replacement costs, exclusive of the foundation, may be reconstructed only in conformity with the provisions of this article. The estimated cost of reconstruction shall be determined by the Township Chief Building Inspector. Persons aggrieved by the determination of estimated replacement cost by the Chief Building Inspector may appeal such determination to the Zoning Board of Appeals.

§ 22-121. Township wetland inventory map.

[Code 1974, § 105-5, Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

The Township wetland inventory map is a guide to the location of wetlands in the Township. The map shall be used in the administration of this article and Chapter **86**, Article **V**.

- (1) The Township wetland inventory map, together with all explanatory matter thereon and attached thereto, as may be amended through the wetland verification and delineation process, is hereby adopted by reference and declared to be part of this article. The Township wetland inventory map shall be on file in the Department of Community Planning and Development.
- (2) The Township wetland inventory map shall serve as a general guide for the location of protected wetlands.
- (3) The Township wetland inventory map does not create any legally enforceable presumptions regarding whether property that is or is not included on the inventory map is or is not in fact a wetland.
- (4) Map amendment process:
 - a. Any change to the Township wetland inventory map, approved by the Director of Community Planning and Development through verification or delineation, shall be added to the Township wetland inventory map on an annual basis.
 - b. The Township shall ensure that each recorded owner of property on the property tax roll shall be notified of any amendment to the Township wetland inventory map on an annual basis. The notice shall include the following information:
 1. The maps have been amended.
 2. The location to review the maps shall be indicated.
 3. The owner's property may be designated as a wetland on the inventory map.
 4. The Township has an ordinance regulating wetlands.
 5. The inventory map does not necessarily include all of the wetlands within the Township that may be subject to this article.

§ 22-122. Wetland delineation and verification.

[Code 1974, § 105-6; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

The Township wetland inventory map shall be validated through the wetland delineation process or the wetland verification process. The wetland delineation process shall be used to establish the actual boundaries of wetlands by the Township environmental consultant. The wetland verification process shall be used to verify the boundaries of wetlands through the review by the Township environmental consultant of a wetland delineation prepared by a qualified professional or wetland consultant.

Prior to issuance of a building permit or land development approval, the Director of Community Planning and Development shall determine the necessity for establishing the boundary of wetlands based on the proximity and relationship of the project to wetlands shown on the Township wetland map.

- (1) Wetland delineation process.

- a. A property owner or an applicant with the property owner's written permission shall submit a wetland delineation application and fee authorized by the Township Board to the Department of Community Planning and Development with the following material:
 1. A survey, site plan, or plot plan drawn to an appropriate scale. The survey, site plan, or plot plan shall include the following:
 - i. Property lines and dimensions.
 - ii. North arrow and scale.
 - iii. Existing topography contours depicted at two-foot intervals.
 - iv. Adjacent and on-site roads; railroads; and streams, lakes, and ponds.
 - v. Footprints of existing buildings, parking lots, accessory structures, and other structures.
 - vi. Any notable man-made or natural features along the suspected wetlands.
 - b. The property boundaries shall be clearly flagged or staked prior to the field investigation.
 - c. Upon receiving a complete application, the Department of Community Planning and Development shall transmit the request to the Township environmental consultant for a field investigation. In the event that weather conditions prohibit the Township environmental consultant from conducting a thorough field investigation including the evaluation of vegetation, soil, and hydrology, the application and fee will be held until such time that the review can be conducted.
 - d. Identification, flagging, or staking of the wetland boundaries in the field shall be completed by the Township environmental consultant during a field investigation. An arc-map compatible digital copy of the delineated wetland boundary shall be provided to the Director of Community Planning and Development.
 - e. Wetland delineations completed by the Township environmental consultant shall be valid for a period of three years from the date of the delineation report.
 - f. In delineating wetland boundaries, all delineations shall apply the technical wetland delineation standards set forth in the U.S. Army Corps of Engineers, January 1987 Wetland Delineation Manual, technical report y-87-1, and appropriate regional U.S. Army Corps of Engineers supplements.
 - g. Wetlands under the jurisdiction of the department of environmental quality may need to have the delineation reviewed and approved by representatives of the state.
- (2) Wetland verification process.
- a. A property owner or an applicant with the property owner's written permission shall submit a wetland verification application and fee authorized by the Township Board to the Department of Community Planning and Development with the following material:
 1. A survey, site plan, or plot plan that includes the following information:
 - i. Property lines and dimensions.
 - ii. North arrow and scale.
 - iii. Existing topography contours depicted at two-foot intervals.
 - iv. The boundary of all wetlands identified on the site.
 - v. Adjacent and on-site roads; railroads; and streams, lakes, and ponds.
 - vi. Footprints of existing buildings, parking lots, accessory structures, and other structures.
 - vii. Surveyed points of reference.

- viii. Any notable man-made or natural features along the wetland boundaries.
- 2. A wetland delineation report that is no more than three years old. The report shall at a minimum include the following information:
 - i. Dominant vegetation in the tree, sapling, shrub, and herb layers.
 - ii. Presence of or lack of accepted wetland hydrology layers.
 - iii. Analysis of soil including a description of the soil profile to at least 20 inches.
 - iv. Comparison of county soil survey to the wetland shown in a manner that allows comparison to the Township wetland inventory map.
 - v. A notation in the report whether potential off-site wetlands (within 40 feet of the property line) can be observed from the subject site.
- b. Upon receiving a complete application, the Department of Community Planning and Development shall transmit the request to the Township environmental consultant for a field investigation. In the event that weather conditions prohibit the Township environmental consultant from conducting a thorough field investigation including the evaluation of vegetation, soil, and hydrology, the application and fee will be held until such time that the review can be conducted.

§ 22-123. Duties of the environmental commission.

[Code 1974, § 105-16; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

The environmental commission created pursuant to Chapter 2, Article VI, Division 3, shall perform the following duties with regard to this article:

- (1) Advise the Township Board, Planning Commission, and Director of Community Planning and Development, as necessary, on wetland use permits, appeals of wetland use permits, and mitigation plans.
- (2) Serve in an advisory role in setting policy guidelines on wetland issues in the Township.
- (3) Identify conflicts and propose solutions to resolve conflicts regarding wetland protection by present Township ordinances, Township operating procedures, and Township activities.
- (4) Identify and propose solutions to problems associated with wetland management.
- (5) Provide recommendations to the Director of Community Planning and Development on map administration.
- (6) Assist landowners who are interested in the voluntary protection of wetlands.
- (7) Promote wetland education at all levels. Develop education programs for the public and for Township schools. The program should promote the values of wetlands and awareness of the hazards and threats to wetlands. The program should be particularly targeted to landowners with wetlands and emphasize how best to protect wetland values on their property.
- (8) Coordinate a voluntary wetland stewardship program. Develop an adopt-a-wetland program for interested citizens to participate more directly in preservation of specific wetlands.

§ 22-124. through § 22-150. (Reserved)

DIVISION 2. Permit

[1] *State law reference: Wetland permits, MCL 324.30306 et seq.*

§ 22-151. Activities requiring a wetland use permit.

[Code 1974, § 105-8; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) It shall be unlawful for any person to conduct any activity listed below within a protected wetland without first obtaining a wetland use permit in accordance with the requirements of this division. Activities governed by this section include, but are not limited to, the following:
- (1) Depositing, permitting the placement of fill material or maintaining fill material in a protected wetland.
 - (2) Grading in a protected wetland.
 - (3) Dredging, removing, or permitting the removal of soil or minerals from a protected wetland.
 - (4) Draining, or causing to be drained, any water into or from a protected wetland.
 - (5) Constructing, operating, or maintaining any use or development in a protected wetland.
 - (6) Diverting, obstructing or impeding the flow of water into a protected wetland.

§ 22-152. Activities not requiring a permit.

[Code 1974, § 105-7; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) The following uses shall be allowed in a wetland without a permit subject to other laws of this state and the owner's regulation:
- (1) Fishing, trapping or hunting.
 - (2) Swimming or boating.
 - (3) Hiking.
 - (4) Grazing of animals.
 - (5) Farming, horticulture, silviculture, lumbering, and ranching activities, including plowing, irrigation, irrigation ditching, seeding, cultivating, minor drainage, harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices. A wetland altered under this article shall not be used for a purpose other than a purpose described in this subsection without a permit from the Township.
 - (6) An activity in a wetland that was effectively drained for farming before October 1, 1980, and that on and after October 1, 1980, has continued to be effectively drained as part of an ongoing farming operation.
 - (7) Maintenance or operation of serviceable structures in existence on October 1, 1980, or constructed pursuant to part 303, of the Natural Resources and Environmental Protection Act (MCL § 324.30301 et seq.).
 - (8) Construction or maintenance of farm or stock ponds.
 - (9) Maintenance, operation, or improvement which includes the straightening, widening or deepening of the following which is necessary for the production or harvesting of agricultural products:
 - a. An existing private agricultural drain.
 - b. That portion of a drain legally established pursuant to the drain code of 1956 (MCL § 282.1 et seq.) which has been constructed or improved for drainage purposes.
 - c. A drain constructed pursuant to other provisions of part 303 of the Natural Resources and Wetland Protection Act (MCL § 324.30301 et seq.).
 - (10) Construction or maintenance of farm roads, forest roads, or temporary roads for moving mining or forestry equipment, if the roads are constructed and maintained in a manner to ensure that adverse effect on the wetland will be otherwise minimized.

- (11) Drainage necessary for the production and harvesting of agricultural products if the wetland is owned by a person who is engaged in commercial farming and the land is to be used for the production and harvesting of agricultural products. Except as otherwise provided in part 303 of the Natural Resources and Environmental Protection Act (MCL § 324.30301 et seq.), a wetland improved under this subsection after October 1, 1980, shall not be used for nonfarming purposes without a permit from the state department of environmental quality. This subsection shall not apply to a wetland which is contiguous to a lake or stream, or to a tributary of a lake or stream, or to a wetland which the state department of environmental quality has determined by clear and convincing evidence to be a wetland which is necessary to be preserved for the public interest, in which case a permit shall be required.
- (12) Maintenance or improvement of public streets, highways or roads, within the right-of-way and in such a manner as to ensure that any adverse effect on the wetland will be otherwise minimized. Maintenance or improvement does not include adding extra lanes; or deviating from the existing location of the street, highway, or road.
- (13) Maintenance, repair, or operation of gas or oil pipelines and construction of gas or oil pipelines having a diameter of six inches or less, if the pipelines are constructed, maintained, or repaired in a manner to ensure that any adverse effect on the wetland will be otherwise minimized.
- (14) Maintenance, repair, or operation of electric transmission and distribution power lines and construction of distribution power lines, if the distribution power lines are constructed, maintained, or repaired in a manner to ensure that any adverse effect on the wetland will be otherwise minimized.
- (15) Operation or maintenance, including reconstruction of recently damaged parts, of serviceable dikes and levees in existence on October 1, 1980, or constructed pursuant to part 303 of the Natural Resources and Environmental Protection Act (MCL § 324.30301 et seq.).
- (16) Construction of iron and copper mining tailings basins and water storage areas.
- (17) A wetland that is incidentally created as a result of one or more of the following activities:
 - a. Excavation for mineral or sand mining, if the area was not a wetland before excavation. This exemption does not include a wetland on or adjacent to a water body of one acre or more in size.
 - b. Construction and operation of a water treatment pond or lagoon in compliance with the requirements of state or federal water pollution control regulations.
 - c. A diked area associated with a landfill if the landfill complies with the terms of the landfill construction permit and if the diked area was not a wetland before diking.
- (18) Cranberry beds.
 - a. The construction of cranberry beds, including associated dikes and water control structures associated with dikes, such as headgates, weirs, and drop inlet structures shall be considered a water-dependent activity.
 - b. The following activities associated with cranberry operations are not considered to be water dependent:
 1. The construction of roads, ditches, reservoirs, and pump houses that are used during cultivation of cranberries.
 2. The construction of secondary support facilities for shipping, storage, packaging, parking, and similar purposes.
 - c. The demonstration by an applicant that there is no feasible and prudent alternative to the construction of cranberry beds, including dikes, is not subject to either of the following presumptions:
 1. That the feasible and prudent alternatives that do not involve a wetland are available.

2. That a feasible and prudent alternative that does not affect a wetland will have less adverse effects on the aquatic ecosystem.

§ 22-153. Relationship to state and federal permits.

[Ord. No. 2002-07, 8-20-2002]

Whenever persons requesting a wetland use permit are also subject to state and/or federal permit requirements, the following shall apply:

- (1) The Township shall have jurisdiction for the regulation of wetlands under this article concurrent with the jurisdiction of the state department of environmental quality.
- (2) Approvals under this division shall not relieve a person of the need to obtain a permit from the state department of environmental quality and/or the U.S. Army Corps of Engineers, if required.
- (3) Issuance of a permit by the state department of environmental quality and/or the U.S. Army Corps of Engineers shall not relieve a person of the need to obtain approval under this division, if applicable.

§ 22-154. Application requirements for wetland use permits.

[Code 1974, § 105-10; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) Application for approval, appeal, and issuance of wetland use permits shall be concurrent with the application for approval, appeal, and issuance of other necessary Township approvals. The applicant for a wetland use permit shall submit the following to the Director of Community Planning and Development.
 - (1) An application completed in full, on a form supplied by the state department of environmental quality and made available by the Township with such other information as required by the Director of Community Planning and Development.
 - (2) Wetland delineation documentation prepared by the Township environmental consultant pursuant to § 22-122(1) or wetland delineation documentation prepared by a qualified wetland professional or wetland consultant in accordance with the requirements listed in § 22-122(2), including verification by the Township environmental consultant.
 - (3) Soil erosion and stormwater management plans with runoff calculations. The plans shall be prepared and sealed by a professional engineer licensed by the State of Michigan.
 - (4) A mitigation plan, which complies with all federal, state and local laws, if the proposed activity will result in the loss of wetland resources.
- (b) The applicant may elect to have the application processed under the following procedure:
 - (1) The wetland application shall be reviewed immediately, either prior to or concurrent with the review of the proposed land use review, with the understanding that the land use review may not be completed at the time a decision is rendered on the wetland application. Election of this alternative may require a reopening of the wetland application if the land use approval is inconsistent with the wetland approval.

§ 22-155. Method of review of wetland use permit application.

[Code 1974, § 105-11; Ord. No. 2002-07, 8-20-2002; Ord. No. 2003-11, 7-6-2003; Ord. No. 2006-04, 9-25-2006; Ord. No. 2011-04, 3-15-2011]

- (a) The Director of Community Planning and Development shall ensure that all required information including a wetland delineation and payment of a fee has been submitted. If an application is not complete, it shall not be processed until the applicant provides all of the required information to the Department of Community

Planning and Development. The receipt of a complete application shall constitute permission from the owner to conduct an on-site investigation.

- (b) Upon receipt of a complete application, the Director of Community Planning and Development shall:
- (1) Transmit one copy of the application to the state department of environmental quality.
 - (2) Cause to be published a notice of the application and the date and time for submission of written public comments.
 - (3) Transmit one copy of the application and supporting materials to the Township environmental consultant to confirm the boundaries of the wetland and to review the proposal in light of the purpose and review standards of § 22-157 of this article and other applicable sections of this article.
- (c) The Township environmental consultant shall prepare and transmit a report and recommendation to the Director of Community Planning and Development documenting the review required by subsection (b)(3) of this section.
- (d) The following process shall apply to wetland use permit decisions by the Director of Community Planning and Development:
- (1) For wetland use permit applications submitted in conjunction with activities that do not require approval by the Planning Commission and/or Township Board, the Director of Community Planning and Development shall approve, approve with conditions or deny the application within 90 days after receipt of a complete application.
 - (2) The Director of Community Planning and Development shall transmit application materials and the report and recommendation prepared by the Township environmental consultant to the environmental commission. The environmental commission may review the materials and transmit comments for consideration to the Director of Community Planning and Development.
 - (3) The applicant shall post a notice of the wetland use permit application on a form provided by the Township, on the subject property within five days of submittal of a complete application.
 - (4) Persons wishing to comment on the application must submit their comments in writing to the Director of Community Planning and Development prior to the date and time set in the notice. Persons wishing to receive notice of the Director of Community Planning and Development's decision must submit a written request to the Director of Community Planning and Development.
 - (5) The Director of Community Planning and Development's decision shall be made only after reviewing the report and recommendation from the Township environmental consultant, written public comments, and any comments submitted by the environmental commission.
 - (6) When a wetland use permit is approved, approved with conditions, or denied by the Director of Community Planning and Development, written notice shall be sent to the applicant and to all persons who have requested notice of the Director of Community Planning and Development's decision. The denial of a permit shall be accompanied by a written reason of denial.
 - (7) A permit approved by the Director of Community Planning and Development shall not be issued or effective until 10 calendar days following the date of the approval and compliance with § 22-159(c).
- (e) The following process shall apply to appeals of decisions made by the Director of Community Planning and Development or Planning Commission:
- (1) Any interested person may appeal a decision by the Director of Community Planning and Development or Planning Commission, as applicable, to approve, approve with conditions, or deny a wetland use permit to the Township Board by filing a written statement containing the specific reasons for the appeal and setting forth the facts establishing status as an interested person. This written statement must be filed with the Township Clerk within 10 calendar days following the date of decision. The timely filing of a statement satisfying the requirements of this provision shall have the effect of staying the permit pending the Township Board's decision on appeal.

- (2) The Township Board shall determine whether an individual pursuing an appeal is an interested person as defined by this article before addressing the merits of that appeal.
 - (3) The Township Board shall hold a hearing on the appeal, which shall be open to public comment, and shall include opportunity for the appealing party to present their appeal.
 - (4) Notice of the time and place for consideration of an appeal shall be placed in a newspaper of general circulation in the Township not less than five days prior to the date of the hearing. A notice shall also be sent by mail or personal delivery to the owners of the property considered in the appeal and to all owners listed on the most recent tax roll of real property within 500 feet of the boundary of the property in question. Such notice shall be sent not less than five days prior to the hearing.
 - (5) The Township Board shall affirm, affirm with conditions, or reverse the decision of the Planning Commission or Director of Community Planning and Development. The board's decision shall be based on written findings.
- (f) The following process shall apply to wetland use permit decisions by the Township Board and Planning Commission:
- (1) Wetland use permit applications submitted in conjunction with a related land development activity shall be decided by the same entity that decides the related land development activity consistent with part 303 of the Natural Resources and Environmental Protection Act (MCL § 324.30301 et seq.). The Director of Community Planning and Development shall transmit application materials and the report and recommendation prepared by the Township environmental consultant to the Township Board, Planning Commission, and the environmental commission. The environmental commission may review the materials and provide comments for consideration by the Township Board or Planning Commission, as applicable.
 - (2) After review and study of the application materials, the Township environmental consultant's report and recommendation, and comments from the environmental commission, the Township Board or Planning Commission, as applicable, shall hold one public hearing after publication in a newspaper of general circulation in the Township not less than 15 days prior to the date of the hearing. Such notice shall indicate the place, time and subject of the hearing and the place and time the proposed wetland use permit may be examined. The wetland use permit hearing may be held in conjunction with a review of the related land use request.
 - (3) The notice shall be sent by mail or personal delivery to the owners of property for which approval is being considered and to all owners of property, as listed on the most recent tax roll, within 500 feet of the boundary of the property in question. Notification need not be given to more than one occupant of a structure, except that if a structure contains more than one dwelling unit or spatial area owned or leased by different persons, one occupant of each unit shall receive notice. In the case of a single structure containing more than four dwelling units, notice may be given to the manager or owner of the structure, who shall be requested to post the notice at the primary entrance to the structure. A notice containing the time, date, place and purpose of the hearing shall be posted by the applicant on a form provided by the Township, on the subject property at least 15 days prior to the hearing.
 - (4) After completing the review and holding one public hearing, if so required, the Township Board or Planning Commission shall approve, approve with conditions or deny the application within 90 days after receipt of an application, in accordance with this division.
 - (5) Written notice shall be sent to the applicant upon approval, approval with conditions or denial of a wetland use permit by the Township Board or Planning Commission. The denial of a permit shall be accompanied by a written reason for denial.
 - (6) A permit approved by the Township Board or Planning Commission shall not be issued or effective until 10 calendar days following the date of the approval and compliance with § 22-159(c).

§ 22-156. Criteria for wetlands under two acres in size.

[Code 1974, § 105-12; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) Where an applicant proposes to perform a regulated activity in a protected wetland less than two acres in size, the Director of Community Planning and Development shall be so advised in writing. The Director of Community Planning and Development shall forward the location and other information concerning the wetland to the Township environmental consultant, who shall issue a preliminary finding as to whether one or more of the following criteria are likely to apply to the wetland:
- (1) The wetland supports state or federal endangered or threatened plants, fish, or wildlife appearing on a list specified in part 365 of the Natural Resources and Environmental Protection Act (MCL § 324.36501 et seq.).
 - (2) The wetland represents what is identified as a locally rare or unique ecosystem.
 - (3) The wetland supports plants or animals of an identified local importance.
 - (4) The wetland provides groundwater recharge documented by a public agency.
 - (5) The wetland provides flood and storm control by the hydrologic absorption and storage capacity of the wetland.
 - (6) The wetland provides wildlife habitat by providing breeding, nesting, or feeding grounds or cover for forms of wildlife or waterfowl, including migratory waterfowl and rare, threatened, or endangered wildlife species.
 - (7) The wetland provides protection of subsurface water resources and provision of valuable watersheds and recharging groundwater supplies.
 - (8) The wetland provides pollution treatment by serving as a biological and chemical oxidation basin.
 - (9) The wetland provides erosion control by serving as a sedimentation area and filtering basin, absorbing silt and organic matter.
 - (10) The wetland provides sources of nutrients in water food cycles and nursery grounds and sanctuaries for fish.
- (b) The Township environmental consultant's report shall be forwarded to the Township Board, which shall determine whether a wetland use permit application meeting the requirements of § 22-154 shall be required, based on a finding that the wetland is essential to the preservation of the natural resources of the Township. Such determination shall be based on a finding that one or more of the criteria set forth in subsection (a) of this section are met.
- (c) If the Township Board determines that the wetland is not essential to the preservation of the natural resources of the Township, the Township Board's decision shall be so noted on the Township wetland inventory map at the time it is amended. The requested activity shall be approved subject to all other applicable laws and regulations.
- (d) When a wetland under two acres in size has been determined to be essential to the natural resources of the Township and the Township has found that one or more of the criteria set forth in subsection (a) of this section exist at the site, the Township shall notify the applicant in writing, stating the reasons for determining the wetland to be essential to the preservation of the natural resources.
- (e) After determining that a wetland less than two acres in size is essential to the preservation of the natural resources of the Township, the wetland use permit application shall be reviewed according to the standards in § 22-157.

§ 22-157. Review standards for wetland use permits.

[Code 1974, § 105-13; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

The criteria to evaluate wetland use permits under this division and to determine whether a permit is granted are as follows:

- (1) A permit for any activity listed in § 22-151 shall not be approved unless the proposed activity is in the public interest, the permit is necessary to realize the benefits derived from the activity, and the proposed activity is otherwise lawful in all respects. Public input shall be evaluated in approving, approving with conditions, or denying the application. The reasonable use of the property involved in accordance with applicable local ordinances and state law shall also be considered.
- (2) In determining whether the proposed activity is in the public interest, the benefit which reasonably may be expected to accrue from the proposed activity shall be balanced against the reasonably foreseeable detriments of the activity. The decision shall reflect the national, state, and local concern for the protection of natural resources from pollution, impairment, and destruction. The following general criteria shall be considered:
 - a. The relative extent of the public and private need for the proposed activity.
 - b. The availability of feasible and prudent alternative locations and methods to accomplish the expected benefits from the activity.
 - c. The extent and permanence of the beneficial or detrimental effects which the proposed activity may have on the public and private uses to which the area is suited, including the benefits the wetlands provide.
 - d. The probable impact of each proposal in relation to the cumulative effect created by other existing and anticipated activities in the watershed.
 - e. The probable impact on recognized historic, cultural, scenic, ecological, or recreational values and on the public health or safety, or fish or wildlife.
 - f. Economic value, both public and private, of the proposed land change to the general Township area.
 - g. The size and quality of the wetland being considered.
 - h. The findings of necessity for the proposed activity which have been made by other agencies.
 - i. Amount of wetland remaining in the general area and proximity to a waterway.
 - j. Proximity to any water body.
 - k. Extent to which upland soil erosion adjacent to the protected wetland is controlled.
- (3) A wetland use permit shall not be issued unless it is shown that an unacceptable disruption will not result to the aquatic resources. In determining whether a disruption to the aquatic resources is unacceptable, the benefits outlined in § 22-117 and the criteria set forth in subsection (2) of this section shall be considered. A permit shall not be issued unless the applicant also shows either of the following:
 - a. The proposed activity is primarily dependent upon being located in the wetland; or
 - b. A feasible and prudent alternative does not exist.
- (4) Failure to submit a complete application may be reason for denial of a wetland use permit.
- (5) While determining the expected benefits of a proposed wetland use permit and its alternatives, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity may be considered as a feasible and prudent alternative for permitted activities.
- (6) An alternative that entails higher costs, as described in R281.922a(11) of the Michigan Administrative Code is not feasible and prudent if those higher costs are unreasonable. In determining whether such costs are unreasonable, the Director of Community Planning and Development, Planning Commission, or Township Board whichever is applicable shall consider both of the following:

- a. The relation of the increased cost to the overall scope and cost of the project.
 - b. Whether the projected cost is substantially greater than the costs normally associated with the particular type of project.
- (7) Following approval of the application, a wetland use permit shall be issued upon determination that all other requirements of the ordinance and law have been met, including site plan, plat or land use approval, as applicable, and including issuance of a permit by the state department of environmental quality if required under MCL § 324.30301 et seq. In cases where a state department of environmental quality permit allows activities not permitted by the wetland use permit approval granted under this section, the restrictions of the approval granted under this section shall govern.

§ 22-158. Consideration of wetland mitigation proposals.

[Code 1974, § 105-14; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

To ensure no net loss of wetlands in the Township, mitigation shall be required in instances where there are losses of wetland resources. The Township environmental consultant shall review an applicant's mitigation plan and transmit a recommendation to the Director of Community Planning and Development. The Director of Community Planning and Development, Planning Commission, or Township Board, as applicable shall review the applicant's mitigation plan and consider the Township environmental consultant's recommendation as part of the wetland use permit review process. A mitigation plan, if required, shall be approved as part of the wetland use permit decision. Mitigation shall not be considered a substitute for making all prudent attempts to avoid wetland impacts.

- (1) Prior to considering a proposal for wetland mitigation, it must be shown that it is practical to replace the wetland resource values which will be impacted, including flood prevention, wildlife habitat, groundwater resource protection and recharge, pollution treatment, erosion control, nutrient sources, aesthetics, recreation, open space and any other values identified.
- (2) If determined by the Township environmental consultant that the requirements of subsection (1) of this section are met, the following criteria shall be considered when reviewing an applicant's mitigation proposal:
 - a. Mitigation shall be provided on site where practical and beneficial to the wetland resources. If on-site mitigation is not practical and beneficial, then mitigation in the immediate vicinity, within the same watershed of the permitted activity may be considered. Only if all of these options are impractical shall mitigation be considered elsewhere.
 - b. Any proposal shall ensure that there will be no net loss to the wetland resource values.
 - c. The mitigation plan must comply with all applicable federal, state, and local laws.
 - d. A plan to monitor preserved and replacement wetlands.
- (3) Wetland mitigation and monitoring plans shall become conditions to the wetland use permit and shall be the responsibility of the applicant or its successors.
- (4) Financial assurances that mitigation is accomplished as specified by the permit condition may be required by the Director of Community Planning and Development, Planning Commission, or Township Board, as applicable.
- (5) Any mitigation activity shall be completed before initiation of other permitted activities, unless a phased concurrent schedule can be agreed upon between the Director of Community Planning and Development, Planning Commission, or Township Board, as applicable, and the applicant.
- (6) Wetland mitigation plans that create less than two acre wetlands shall meet one of the conditions listed in Subsection 22-156(a).

§ 22-159. Wetland use permit conditions of issuance.

[Code 1974, § 105-15; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) The Director of Community Planning and Development, Planning Commission, or Township Board, as applicable, shall attach any reasonable conditions considered necessary to ensure that the intent of this article will be fulfilled, to minimize or mitigate damage or impairment to, encroachment in, or interference with natural resources and processes within the protected wetland, or to otherwise improve or maintain the water quality.
- (b) The Director of Community Planning and Development, Planning Commission, or Township Board shall fix a reasonable time for the undertaking and completion of all activities and structures, as applicable.
- (c) Following the approval of the wetland use permit application, a permit shall be issued upon determination that all other requirements of the ordinance and law have been met, including site plan, plat or land use approvals, as applicable, and including issuance of required permits by the county or the state department of environmental quality under part 303 of the Natural Resources and Environmental Protection Act (MCL § 324.30301 et seq.).
- (d) The Director of Community Planning and Development, Planning Commission, or Township Board, as applicable, upon issuance of a wetland use permit, may require the applicant to file with the Township Treasurer cash, certified check, or an irrevocable bank letter of credit in an amount the Director of Community Planning and Development, Planning Commission or Township Board, as applicable, determines is necessary to ensure compliance with the wetland use permit approval conditions and this article.
- (e) At no time shall the Director of Community Planning and Development, Planning Commission, or Township Board, as applicable, issue a wetland use permit that allows a more extensive alteration of the wetland than permitted by state or federal law.
- (f) Wetland use permits for seasonal operations need not be renewed annually unless otherwise stated in the permit.
- (g) Any change that increases the size or scope of the operation and that affects the criteria considered in approving the permit, as determined by the Director of Community Planning and Development, Planning Commission, or Township Board, as applicable, shall require the filing of a new wetland use permit application.
- (h) Any temporary, seasonal, or permanent operation that is discontinued for two years or two seasons shall be presumed to have been abandoned and the wetland use permit automatically voided.
- (i) Any permit granted under this division may be revoked or suspended by the Township Board, after notice and an opportunity for a hearing, for any of the following causes:
 - (1) A violation of a condition of the permit.
 - (2) Misrepresentation or failure to fully disclose relevant facts in the application.
 - (3) A change in a condition that requires a temporary or permanent change in the activity.
- (j) An applicant who has received a wetland use permit under this division shall comply with the following in connection with any construction or other activity on the property for which the wetland use permit has been issued:
 - (1) Maintain all soil erosion control structures and measures, including, but not limited to, silt fences, straw bale berms, and sediment traps. The permittee shall provide for periodic inspections throughout the duration of the project.
 - (2) Maintain clear delineation of the protected wetlands, so marked by the Township environmental consultant during the on-site inspection, so that such locations are visible to all construction workers.
 - (3) Post on the site, prior to commencement of work on the site and continuing throughout the duration of the project, a copy of the approved wetland use permit containing the conditions of issuance, in a conspicuous manner such that the wording of such permit is available for public inspection.

- (4) Provide to the Township written notice of commencement prior to work beginning on the site.
- (k) The wetland use permit shall remain effective for a time period coincidental with any other land use permit reviewed and approved concurrent with the wetland use permit. If applied for prior to the expiration date and concurrent with the expiring land use permit, the applicant may be granted an extension that corresponds to additional time granted for the underlying land use permit. Extensions shall be approved by the same person or body that made the original decision. The maximum number of extensions shall coincide with the maximum number allowed for the underlying land use permit.
- (l) Where there is no other activity or permit involved, the wetland use permit shall remain effective for two years. One extension may be granted for a period not to exceed 12 months from the expiration date of the wetland use permit if requested in writing prior to the expiration date. An extension shall be reviewed and approved or denied in writing by the same person or body that made the original decision.

§ 22-160. Amendments.

[Code 1974, § 105-17; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

- (a) Any applicant who has been granted a wetland use permit may apply for an amendment in writing to the Director of Community Planning and Development.
- (b) Amendments to an approved wetland use permit shall be granted by the same entity that decided the original wetland use permit in accordance with the procedures and criteria set forth in this section.
 - (1) Application. An application for an amended wetland use permit shall be submitted to the Director of Community Planning and Development prior to the expiration date of the existing wetland use permit.
 - (2) Public hearing. The application for an amended wetland use permit shall be subject to the same notices and hearings and all other procedures required for the initial application.
 - (3) Decision. Prior to deciding the application, the Township Board, Planning Commission, or Director of Community Planning and Development shall refer the application to the Township environmental consultant for a recommendation and to the environmental commission for comments.
 - (4) Appeals. Appeals of a decision on an amendment by the Director of Community Planning and Development and the Planning Commission shall follow the criteria established in Subsection 22-155(e).

§ 22-161. Request for revaluation of affected property.

[Code 1974, § 105-18; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

The owner of any property for which a wetland use permit was applied for under this division and was denied, upon appeal, by the Township Board, may request a revaluation of the affected property by the Township Board of review for assessment purposes to determine its fair market value under the use restriction. A landowner who is aggrieved by a determination, action, or inaction under this article may protest and appeal that determination, action or inaction pursuant to the General Property Tax Act (MCL § 211.1 et seq.).

§ 22-162. through § 22-170. (Reserved)

I have two points I would like to be considered in the Commission's review of the Township's Wetland Protection Ordinance.

1. The first concerns the question of essentiality, covered in:

§ 22-156 **Criteria for wetlands under two acres in size.**

[Code 1974, § 105-12; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

It was recently suggested to me by someone with vast expertise in wetland use permits in Meridian Township that the exhaustive nature of these criteria effectively ensures that no wetland will be considered not to be essential. It is worth confirming with staff whether this has ever happened. If not, the process of determining "essentiality" may constitute an unnecessary procedure that hampers the process of permit review.

2. The second concerns the criteria for issuing a permit, covered in:

§ 22-157 **Review standards for wetland use permits.**

[Code 1974, § 105-13; Ord. No. 2002-07, 8-20-2002; Ord. No. 2011-04, 3-15-2011]

(2) In determining whether the proposed activity is in the public interest, the benefit which reasonably may be expected to accrue from the proposed activity shall be balanced against the reasonably foreseeable detriments of the activity. The decision shall reflect the national, state, and local concern for the protection of natural resources from pollution, impairment, and destruction. The following general criteria shall be considered:

a. The relative extent of the public and private need for the proposed activity.

We have had cases in which applicants specified the private need in terms of the financial benefits they expect from the project. This bears examination, as no applicant is likely to request a permit in the absence of such a benefit.

MERIDIAN TOWNSHIP ENVIRONMENTAL COMMISSION

RULES OF PROCEDURE

RULE 1. AUTHORIZATION.

The Meridian Township Environmental Commission, hereinafter called the Commission, is established pursuant to Chapter 121 of the Code of Ordinances, Charter Township of Meridian.

RULE 2. RESPONSIBILITIES.

The Environmental Commission shall:

- a. Advise the Township Board, officials and staff on matters pertaining to environmental protection and water conservation, management of natural resources and preservation of open space.
- b. Identify ways to ensure and improve the quality of the Township's environment in the interest of the public health, safety and general welfare.
- c. Develop educational and outreach programs for local schools, businesses and individuals to encourage environmental stewardship, protect property values and avoid unnecessary financial costs for correcting environmental problems.
- d. Review and offer recommendations for Township ordinances, operating procedures and programs in order to achieve the stated purposes in Chapter 121 and ensure compliance with applicable state and federal environmental laws.
- e. Assume the duties of the Township Wetland Board as outlined in Section 105-16(c) of the Township Code of Ordinances.
- f. Offer recommendations for the Township budget as it pertains to the Commission.
- g. Assume such other duties as may be assigned by the Township Board.
- h. Encourage and utilize the involvement of residents and experts in achieving the environmental goals of the Township.

RULE 3. COMPOSITION, TERMS AND VACANCIES.

3.1 **Composition and Appointment.** The Commission shall consist of seven (7) members appointed by the Township Board. Members shall be Township residents and shall have an interest or expertise in natural resources, environmental protection or ecology. In addition, two student members shall be appointed. These two members shall be voting members.

3.2 **Terms.** Terms of appointment shall be for three (3) years or until a successor is appointed, the student members shall serve one (1) year terms.

3.3 **Unexpired Terms.** A member appointed to fill an unexpired term shall serve for the remainder of the unexpired term or until a successor is appointed.

RULE 4. REMOVAL FROM OFFICE.

A member may be removed from office by the Township Board for nonperformance of duty or misconduct in office, following written charges and after a public hearing.

RULE 5. OFFICERS.

5.1 **Selection.** At its first meeting in January, the Commission shall select a chair and a vice chair from among its members.

5.2 **Terms.** Term of office shall be one (1) year, or until a successor is selected.

5.3 **Duties.**

- a. The chair shall preside at all meetings, authorize calls for special meetings, and perform such other duties as may be specified by the Commission.
- b. The vice-chair shall act in the capacity of the chair in the chair's absence.
- c. In the event the office of the chair becomes vacant, the vice chair shall succeed to this office for the unexpired term and the Commission shall select a successor to the office of vice-chair for the unexpired term.

RULE 6. COMMITTEES.

6.1 **Purpose.** The Commission may establish committees necessary to assist it in fulfilling its responsibilities and shall define the purpose, functions, tenure, selection of chair, meeting and reporting requirements for each committee. The establishment of committees shall not preclude the use of individuals or study groups in the exploration or research of specific environmental issues.

6.2 **Appointments.** Committee members shall be appointed by the chair, with concurrence of the Commission. A committee may be discharged from its responsibilities by the Commission

6.3 **Public Participation.** Committees shall meet all requirements for public participation and access to records as provided in Rule 7 of these Rules.

RULE 7. MEETINGS.

7.1 **Regular Meetings.** The Commission may call one regular meeting each month, pending business.

7.2 **Special Meetings.** Special meetings may be called by the chair or shall be called at the written request of two (2) or more Commission members. The meeting notice shall include the purpose of the special meeting. At least forty-eight (48) hours notice of special meetings shall be given to Commission members.

7.3 **Meeting Schedule.** A schedule of regular meetings, including date, time and place, shall be established for each calendar year and shall be made available to the public in advance of said meetings. Changes in the schedule shall be posted for the public.

7.4 **Location.** Meetings shall be held at a Township facility unless otherwise indicated.

7.5 **Quorum.** Four (4) members shall constitute a quorum for the transaction of business unless otherwise indicated in these rules or required by Township ordinance, state or federal law. A member shall notify the chair or designated staff if the member will be absent from a meeting.

7.6 **Public Participation.**

- a. All regular and special meetings, work sessions or public hearings shall be open to the public, unless otherwise provided for in Township ordinance, state or federal law.
- b. Opportunity for public comment shall be provided in accordance with established Commission or Township rules and procedures (See attached Exhibit A).
- c. The chair may call to order any person who disrupts the orderly conduct of a meeting and prohibit said person from further participation or attendance at such meeting.

7.7 **Agenda.**

- a. An agenda shall be established for each meeting by the chair and designated Township staff and be made available to the Commission and public in advance of the meeting. The order of business shall be determined by the chair with concurrence of the Commission.

- b. Agenda items to be considered at a special meeting shall be limited to those included in the call-to-meeting notice unless all members are present and vote otherwise.

7.8 **Decisions.** Providing a quorum is present, a simple majority of those present and voting shall be required for Commission action, unless otherwise provided for in these rules, other Township or state statutes or parliamentary authority, as adopted.

7.9 **Records.** Designated Township staff shall be responsible for minutes and other official records of all Commission meetings and actions, including supporting documentation. Notice of meetings, minutes and other records shall be available to the public in accordance with the Freedom of Information Act (P.A. 442, 1976, as amended) and Open Meetings Acts (P.A. 267, 1976, as amended).

RULE 8. PARLIAMENTARY AUTHORITY.

Roberts Rules of Order, Newly Revised, shall govern all questions of procedure not otherwise provided for in these rules or by Township, state or federal law.

RULE 9. SUSPENSION OF RULES AND AMENDMENT.

9.1 **Suspension.** A rule may be suspended by a two-thirds (2/3) vote of Commission members present and voting at a meeting, provided said action is in accordance with established state or federal law, Township ordinance and parliamentary authority.

9.2 **Amendment.** Rules not required by state or federal law or Township ordinance may be amended by a two-thirds (2/3) vote of the Commission, provided thirty (30) days notice and an opportunity for comment is given to the public.

EXHIBIT A: PROCEDURES FOR PUBLIC PARTICIPATION AT MEETINGS**RULE 7.6**

1. The number of persons admitted to a meeting room will be in keeping with public safety requirements and availability of space. Efforts will be made to provide adequate room to accommodate those in attendance.
2. Established protocols for public participation will be announced at the beginning of the meeting.
3. Opportunity to speak will be granted either under Public Remarks or during a public hearing, as most appropriate.
4. Reasonable time limits may be allotted for public comments, in keeping with other business which must be considered at a particular meeting.
5. A member of the public will be provided no less than three minutes to speak.
6. Those completing a request form in writing shall be called upon first to speak.
7. Members of the public will identify themselves by name and address prior to presenting their comments.
8. Written communications will be read into the record during a meeting when requested by the author. All written communications will become part of the Commission record.
9. The Chair, without objections from the Commission, may invite members of the public to participate in informal discussion on all or selected agenda items during Commission work sessions.



KEBS, INC

Engineering • Surveying

February 15, 2018

Peter Menser
Meridian Township Planning
5151 Marsh Road
Okemos, Michigan 48864-1104

Re: Ember Oaks Ph. 4

Dear Mr. Menser:

Please find attached 10 sets of construction/wetland use permit plans of the Ember Oaks Phase 4 project for review.

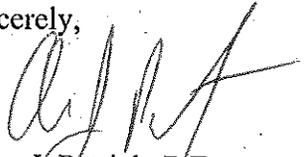
The existing culverts that were placed for road crossings for Celesk Point and Vineyard Trail are not long enough to allow for the side slopes of the roadway to be constructed. The culverts are proposed to be extended at each end which will cause wetland disturbance for the road side slope fill, culvert end sections, and riprap.

An MDEQ wetland disturbance permit application is being submitted concurrently. Attached is a copy of the application and associated cross sections.

The total are of wetlands impacted is ± 0.07 acre. Also attached is the \$500 wetland use permit fee and the \$2,000 escrow account check.

If you have any questions regarding the plans or need any additional information, please feel free to contact me at (517) 339-1014 or ajpatrick@kebs.com.

Sincerely,


Allen J. Patrick, P.E.
KEBS, Inc.



AGENCY USE	Previous USACE File Number	Date Received	DEQ File Number
	USACE File Number		Fee received \$

- Validate that all parts of this checklist are submitted with the application package. Fill out application and additional pages as needed.
- All items in Sections 1 through 9 are completed.
 - Project-specific Sections 10 through 20 are completed.
 - Dimensions, volumes, and calculations are provided for all impact areas.
 - All information contained in the headings for the appropriate Sections (1-20) are addressed, and identified attachments (☛) are included.
 - Map, site plan(s), cross sections; one set must be black and white on 8 1/2 by 11 inch paper; photographs.
 - Application fee is attached.

1 Project Location Information For Latitude, Longitude, and TRS info anywhere in Michigan see www.mcgi.state.mi.us/wetlands/

Project Address (road, if no street address) JOLLY ROAD	Zip Code 48864	Municipality (Township/Village/City) MERIDIAN CHARTER TOWNSHIP	County INGHAM
Property Tax Identification Number(s) 33-02-02-35-151-004 AND 3302-02-35-176-001	Latitude 42.6916 N	Township/Range/Section (TRS) T 4 N or S; R 1 E or W; Sec 35	
Subdivision/Plat and Lot Number	Longitude - 84 3970 W	OR Private Claim # _____	

2 Applicant and Agent Information

Owner/Applicant (individual or corporate name) SP INVESTMENTS LP	Agent/Contractor (firm name and contact person) KEBS, INC. - JEFF KYES
Mailing Address 4665 DOBIE ROAD	Mailing Address 2116 HASLETT ROAD
City OKEMOS State MI Zip Code 48864	City HASLETT State MI Zip Code 48840
Contact Phone Number 517-339-0560 Fax 517-349-1370	Contact Phone Number 517-339-1014 Fax 517-339-8047
Email Duff@Schroederhomes.com	E-mail jkyes@kebs.com
<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Is the applicant the sole owner of all property on which this project is to be constructed and all property involved or impacted by this project? ➔ If no, attach letter(s) of authorization from all property owners including the owner of the disposal site.	
Property Owner's Name (If different from applicant)	Mailing Address
Contact Phone Number	City State Zip Code

3 Project Description

Project Name EMBER OAKS SUBDIVISION	Preapplication File Number - - -P
Name of Water body EMBER OAKS DRAIN	Date project staked/flagged

<p>The proposed project is on, within, or involves (check all that apply)</p> <ul style="list-style-type: none"> <input type="checkbox"/> an inland lake (5 acres or more) <input type="checkbox"/> a pond (less than 5 acres) <input checked="" type="checkbox"/> a stream, river, ditch or drain <input checked="" type="checkbox"/> a legally established County Drain Date Drain was established 2013 - EMBER OAKS DRAIN <input type="checkbox"/> a channel/canal <input type="checkbox"/> 500 feet of an existing water body <input type="checkbox"/> a Great Lake or Section 10 Waters <input checked="" type="checkbox"/> a wetland <input type="checkbox"/> a 100-year floodplain <input type="checkbox"/> a dam <input type="checkbox"/> a designated high risk erosion area <input type="checkbox"/> a designated critical dune area <input type="checkbox"/> a designated environmental area 	<p>Project Use</p> <ul style="list-style-type: none"> <input type="checkbox"/> private <input checked="" type="checkbox"/> commercial <input type="checkbox"/> public/government <input type="checkbox"/> project is receiving federal/state transportation funds <input type="checkbox"/> Wetland Restoration <input type="checkbox"/> other
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Indicate the type of permit being applied for: General Permit Minor Project Individual (All other projects.) ➔ See Appendix C.

Written Summary of All Proposed Activities **EXTEND EXISTING CULVERTS TO PROPOSED PUBLIC ROAD AND SIDEWALK SLOPE LIMITS FOR PROPOSED CELESK AND VINEYARD TRAIL**

**4 Project Purpose, Use and Alternatives** *Attach additional sheets as necessary.*

Describe the purpose of the project and its intended use; include any new development or expansion of an existing land use.

EXISTING CULVERTS WERE PREVIOUSLY INSTALLED FOR FUTURE PUBLIC ROADS THAT WERE PROPOSED WITH THE PLAT OF EMBER OAKS SUBDIVISION BUT WERE NOT INSTALLED LONG ENOUGH FOR FILL SLOPES OF THE PROPOSED ROAD AND WALKS. THE PROPOSED PROJECT WILL EXTEND THE EXISTING CULVERTS TO THE PROPOSED TOE OF SLOPE OF THE ROADWAY.

Describe the alternatives considered to avoid or minimize resource impacts. Include factors such as, but not limited to, alternative locations, project layout and design, and construction technologies. For utility crossings include alternative routes and construction methods.

ALTERNATIVES:**A DESIGN WAS CONSIDERED USING RETAINING WALLS ALONG THE LENGTH OF THE ROADWAY TO MINIMIZE WETLAND IMPACT. HOWEVER, THE DESIGN REQUIRED PUSHING THE SIDEWALK ADJACENT TO THE CURB, ±800 LF OF RETAINING WALL, ±500 LF OF GUARDRAIL, AND THE WETLAND WOULD STILL HAVE BEEN IMPACTED BY THE RETAINING WALL AND RIPRAP AT THE OUTLETS. THE PROPOSED DESIGN PROVIDES SAFER VEHICULAR AND PEDESTRIAN USE OF THE ROAD R.O.W. AND PROVIDES SUFFICIENT ROOM FOR CONSTRUCTION AND FUTURE MAINTENANCE OF PUBLIC UTILITIES.****5 Locating Your Project Site** *Attach a legible black and white map with a North arrow.*Names of roads of closest intersection **NORTH ON AMBASSADOR DRIVE FROM JOLLY ROAD**Directions from main intersection to the project site, with distances from the best and nearest visible landmark and water body **NORTH FROM JOLLY ROAD ON AMBASSADOR DRIVE AND CORBET TRAIL, EAST ON WANDERING WAY, NORTH ON BANDERA LANE, FOLLOW THE TRAILS ON THE PROPOSED ROADS PAST THE LIMITS OF PAVED BANDERA LANE TO THE SITE**Description of buildings on the site (color; 1 or 2 story, other)
EXISTING 2-STORY HOMES THROUGHOUT SUBDIVISIONDescription of adjacent landmarks or buildings (address; color; etc)
PROJECT SITE BEGINS ±500 LF NORTH OF ROUND-A-BOUNT AT INTERSECTION OF WANDERING WAY AND BANDERA LANE, RAILROAD TRACKS ALONG THE NORTH PROPERTY LINE.How can your site be identified if there is no visible address? **FOLLOW THE ABOVE DIRECTIONS****6 Easements and Other Permits** No Yes Is there a conservation easement or other easement, deed restriction, lease, or other encumbrance upon the property?

➔ If yes, attach a copy. Provide copies of court orders and legal lake levels if applicable.

List all other federal, interstate, state, or local agency authorizations including required assurances for Critical Dune Area projects.

Agency	Type of Approval	Number	Date Applied	Date approved /denied	Reason for denial
MERIDIAN CHARTER TOWNSHIP	SANITARY SEWER AND LIFT STATION WETLAND USE PERMIT SOIL EROSION CONTROL PERMIT		2013 FEB. 2018 TO BE APPLIED FOR PRIOR TO CONSTRUCTION	APPROVED 2013	
INGHAM COUNTY DRAIN COMMISSIONER	COUNTY DRAIN EASEMENT		2013	APPROVED 2013	

7 ComplianceIf a permit is issued, when will the activity begin? (M/D/Y) **APRIL 2018**Proposed completion date (M/D/Y) **AUGUST 2018** No Yes Has any construction activity commenced or been completed in a regulated area?

➔ If Yes, identify the portion(s) underway or completed on drawings or attach project specifications and give completion date(s).

 No Yes Were the regulated activities conducted under a DEQ and/or USACE permit?➔ If Yes, list the permit numbers **ORIGINAL MDEQ PERMIT FOR EMBER OAKS - CULVERTS AND OUTLETS TO WETLANDS** No Yes Are you aware of any unresolved violations of environmental law or litigation involving the property?

➔ If Yes, attach explanation.

8 Adjoining Property Owners *Provide current mailing addresses. Attach additional sheets/labels for long lists.*

<input type="checkbox"/> Established Lake Board	Contact Person	Mailing Address	City	State and Zip Code
<input type="checkbox"/> Lake Association				

List all adjoining property owners.

If you own the adjoining lot, provide the requested information for the first adjoining parcel that is not owned by you.

Property Owner's Name	Mailing Address	City	State and Zip Code
MERIDIAN CHARTER TOWNSHIP	SYLVAN GLEN ROAD	OKEMOS	MI. 48864
JENNIFER FENTON	1485 SYLVAN GLEN ROAD	OKEMOS	MI. 48864



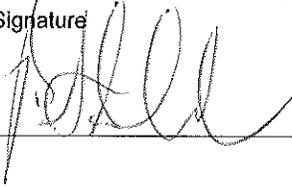
<i>BYDEN K. STALEY</i>	<i>3538 SYLVAN GLEN ROAD</i>	<i>OKMOS</i>	<i>MI. 48864</i>
<i>INGHAM COUNTY FARM</i>	<i>JOLLY ROAD</i>	<i>OKEMOS</i>	<i>MI. 48864</i>
<i>SP INVESTMENTS</i>	<i>4665 DOBIE ROAD</i>	<i>OKEMOS</i>	<i>MI. 48864</i>
<i>PONDAROSA LLC</i>	<i>JOLLY ROAD</i>	<i>OKEMOS</i>	<i>MI. 48864</i>
<i>THOMAS W. AND MARTHA L. REPASKEY</i>	<i>3663 STAGE COACH DRIVE</i>	<i>OKEMOS</i>	<i>MI. 48864</i>



9 Applicant's Certification

Read carefully before signing.

I am applying for a permit(s) to authorize the activities described herein. I certify that I am familiar with the information contained in this application; that it is true and accurate; and, to the best of my knowledge, that it is in compliance with the State Coastal Zone Management Program. I understand that there are penalties for submitting false information and that any permit issued pursuant to this application may be revoked if information on this application is untrue. I certify that I have the authority to undertake the activities proposed in this application. By signing this application, I agree to allow representatives of the DEQ, USACE, and/or their agents or contractors to enter upon said property in order to inspect the proposed activity site before and during construction and after the completion of the project. I understand that I must obtain all other necessary local, county, state, or federal permits and that the granting of other permits by local, county, state, or federal agencies does not release me from the requirements of obtaining the permit requested herein before commencing the activity. I understand that the payment of the application fee does not guarantee the issuance of a permit.

<input checked="" type="checkbox"/> Property Owner <input type="checkbox"/> Agent/Contractor <input type="checkbox"/> Corp. or Public Agency / Title	Printed Name PHILIP L. SCHROEDER	Signature 	Date 2.14.18
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**10 Projects Impacting Inland Lakes, Streams, Great Lakes, Wetlands or Floodplains**

- Complete only those sections A through M applicable to your project.
- If your project impacts wetlands also complete Section 12. If your project impacts regulated floodplains also complete Section 13.
- To calculate volume in cubic yards (cu yd), multiply the average length in feet (ft) times the average width (ft) times the average depth (ft) and divide by 27. Example: (25 ft long x 10 ft wide x 2 feet deep) / 27 = 18.5 cubic yards
- Some projects on the Great Lakes require an application for conveyance prior to Joint Permit Application completeness.
 - ➔ Provide a black and white overall site plan, with cross-section and profile drawings. Show existing lakes, streams, wetlands, and other water features; existing structures; and the location of all proposed structures, land change activities and soil erosion and sedimentation control measures. Review Appendix B and EZ Guides for aid in providing complete site-specific drawings.
 - ➔ Provide tables for multiple impact areas or multiple activities such as multiple fill areas or multiple culverts. Include your calculations.

Water Level Elevation

On inland waters NAVD 88 other Observed water elevation (ft) date of observation (M/D/Y)
 On a Great Lake IGLD 85 surveyed converted from observed still water elevation.

 A. PROJECTS REQUIRING FILL (See All Sample Drawings)

- ➔ Attach a site plan and cross-section views to scale showing maximum and average fill dimensions with calculations.
- ➔ For multiple impact areas on a site provide a table with location, dimensions and volumes for each fill area.

Purpose bioengineered shore protection boat ramp boat well bridge or culvert crib dock
 riprap seawall swim area other

Dimensions of fill (ft) Length Width Maximum Depth <i>SEE</i> ATTACHED TABLE	Total volume (cubic yards) 348	Volume below OHWM (cubic yards)
Maximum water depth in fill area (ft) <i>N/A</i>	Area filled (sq ft) 3,138	Will filter fabric be used under proposed fill? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If Yes, type)

Fill will extend feet into the water from the shoreline and upland feet out of the water.

Type of clean fill peastone % sand % gravel % other **COMMERCIAL**

Source of clean fill commercial on-site other
 ➔ If on-site, show location on site plan.
 ➔ If other, attach description of location.

 B. PROJECTS REQUIRING DREDGING OR EXCAVATION (See Sample Drawings)

- Refer to www.mi.gov/jointpermit for spoils disposal and authorization requirements.
- ➔ Attach a site plan and cross-section views to scale showing maximum and average dredge or excavation dimensions with calculations.
- ➔ For multiple impact areas on a site provide a table with location, dimensions and volumes for each dredge/excavation area.

Purpose boat ramp boat well bridge or culvert maintenance dredge
 navigation pond/basin other

Dimensions (ft) Length Width Maximum Depth	Total volume (cu yds)	Volume below OHWM (cu yds)
Has this same area been previously dredged?	<input type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, provide date and permit number:
Will the previously dredged area be enlarged?	<input type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, when and how much?
Is long-term maintenance dredging planned?	<input type="checkbox"/> No <input type="checkbox"/> Yes	If Yes, how often?

Dredge or Excavation Method Hydraulic Mechanical other

Spoils Disposal
 Dredged or excavated spoils will be placed on-site landfill USACE confined disposal facility other upland off-site
 For disposal, provide a ➔ Detailed spoils disposal area location map and site plan with property lines.
 ➔ Letter of authorization from property owner of spoils disposal site, if disposed off-site.
 For volumes less than 5,000 cu yards, has proposed dredge material been tested for contaminants within the past 10 years?
 No Yes ➔ If Yes, provide test results with a map of sampling locations.

 C. PROJECTS REQUIRING RIPRAP (See Sample Drawings 2, 3, 8, 12, 14, 22, and 23)

Riprap water ward of the ordinary high water mark: dimensions (ft) length width depth <i>SEE</i> ATTACHED TABLE	Volume(cu yd) 16
Riprap landward of the ordinary high water mark: dimensions (ft) length width depth	Volume(cu yd)
Type and size of riprap (inches) <input type="checkbox"/> field stone <input checked="" type="checkbox"/> angular rock .67 <input checked="" type="checkbox"/> other .67	Will filter fabric or pea stone be used under proposed riprap? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes, Type AMOCO 4551

**12 Activities That May Impact Wetlands** (See Sample Drawings 8 & 9). Complete other Sections as applicable.

- Locate your site and wetland information with the DEQ Wetlands Map Viewer at www.mcqi.state.mi.us/wetlands/
- For information on the DEQ's Wetland Identification Program (WIP) visit www.mi.gov/wetlands.
 - ➔ Provide a detailed site plan with labeled property lines, upland and wetland areas, and dimensions and volumes of wetland impacts.
 - ➔ Complete the wetland dredge and wetland fill dimension information below for each impacted wetland area.
 - ➔ Attach tables for multiple impact areas or activities.
 - ➔ Attach at least one cross-section for each wetland dredge and/or fill area; show wetland and upland boundaries on the cross-section.

Has the DEQ conducted a wetland assessment for this parcel?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➔ If Yes, provide a copy or WIP number:
Has a professional wetland delineation been conducted for this parcel?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	➔ If Yes, provide a copy with data sheets
Is there a recorded DEQ easement on the property?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➔ If Yes, provide the easement number
Did the applicant purchase the property before October 1, 1980?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➔ If Yes, provide documentation.
Is any grading or mechanized land clearing proposed?	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	➔ If Yes, label the locations on the site plan.
Has any of the proposed grading or mechanized land clearing been completed?	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	➔ If Yes, label the locations on the site plan

Proposed Activity	<input type="checkbox"/> boardwalk or deck (Section 10I)	<input checked="" type="checkbox"/> bridges and culverts (Section 14)	<input type="checkbox"/> designated environmental area
	<input type="checkbox"/> dewatering	<input type="checkbox"/> draining surface water	<input type="checkbox"/> driveway / road
	<input type="checkbox"/> fences (Section 10L)	<input checked="" type="checkbox"/> fill or dredge	<input type="checkbox"/> restoration
	<input type="checkbox"/> septic system	<input type="checkbox"/> stormwater discharge (Section 10J)	<input type="checkbox"/> other

FILL	Dimensions maximum length (ft) SEE ATTACHED TABLE maximum width (ft)	Area <input type="checkbox"/> acres <input checked="" type="checkbox"/> sq ft 3138	Average depth (ft) 3.25	Volume (cu yd) 348
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DREDGE	Dimensions maximum length (ft) maximum width (ft)	Area <input type="checkbox"/> acres <input type="checkbox"/> sq ft	Average depth (ft)	Volume (cu yd)
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Spoils Disposal	Dredged or excavated spoils will be placed <input checked="" type="checkbox"/> on-site <input type="checkbox"/> landfill <input type="checkbox"/> USACE confined disposal facility <input type="checkbox"/> other upland off-site
	For disposal, provide a <ul style="list-style-type: none"> ➔ Detailed spoils disposal area location map and site plan with property lines. ➔ Letter of authorization from property owner of spoils disposal site, if disposed off-site.

Septic System	The proposed project will be serviced by: <input checked="" type="checkbox"/> public sewer <input type="checkbox"/> private septic system ➔ Show system on plans.	If a private septic system is proposed, has an application for a permit been made to the County Health Department? <input type="checkbox"/> No <input type="checkbox"/> Yes If Yes, has a permit been issued? <input type="checkbox"/> No <input type="checkbox"/> Yes ➔ Provide a copy of the permit.
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Describe the wetland impacts, the proposed use or development, and the alternatives considered:

EXISTING CULVERTS WERE PREVIOUSLY INSTALLED FOR FUTURE PUBLIC ROADS THAT WERE PROPOSED WITH THE PLAT OF EMBER OAKS SUBDIVISION BUT WERE NOT INSTALLED LONG ENOUGH FOR FILL SLOPES OF THE PROPOSED ROAD AND WALKS. THE PROPOSED PROJECT WILL EXTEND THE EXISTING CULVERTS TO THE PROPOSED TOE OF SLOPE OF THE ROADWAY.

ALTERNATIVES:

A DESIGN WAS CONSIDERED USING RETAINING WALLS ALONG THE LENGTH OF THE ROADWAY TO MINIMIZE WETLAND IMPACT. HOWEVER, THE DESIGN REQUIRED PUSHING THE SIDEWALK ADJACENT TO THE CURB, ±800 LF OF RETAINING WALL, ±500 LF OF GUARDRAIL, AND THE WETLAND WOULD STILL HAVE BEEN IMPACTED BY THE RETAINING WALL AND RIPRAP AT THE OUTLETS. THE PROPOSED DESIGN PROVIDES SAFER VEHICULAR AND PEDESTRIAN USE OF THE ROAD R.O.W. AND PROVIDES SUFFICIENT ROOM FOR CONSTRUCTION AND FUTURE MAINTENANCE OF PUBLIC UTILITIES.

Does the project impact more than 1/3 acre of wetland? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
➔ If Yes, submit a Mitigation Plan with the type and amount of mitigation proposed. For more information go to www.mi.gov/wetlands



Describe how impacts to waters of the United States will be avoided and minimized:

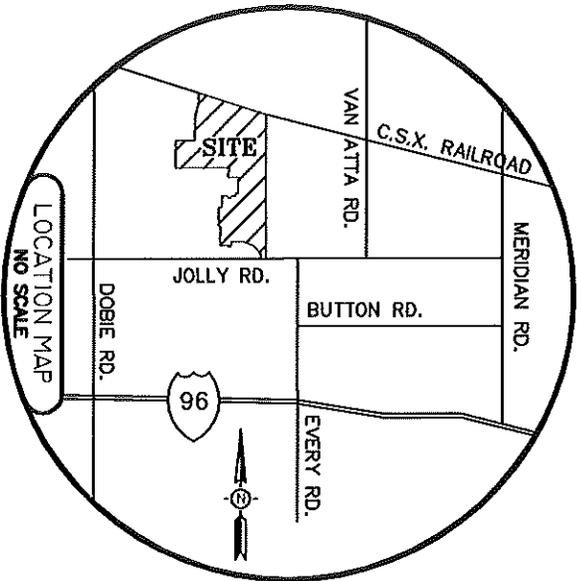
GRADING WILL BE DONE AT THE MAXIMUM SLOPES PERMITTED BY THE INGHAM COUNTY ROAD DEPARTMENT TO AVOID THE USE OF GUARD RAILS

Describe how the impact to waters of the United States will be compensated. OR Explain why compensatory mitigation should not be required for the proposed impacts.

A FLOW RESTRICTOR AT VINEYARD TRAIL WILL BE IMPROVED WITH CONSTRUCTION OF PHASE IV OF THE SUBDIVISION TO REDUCE PEAK FLOWS WHILE MAINTAINING BASE FLOW TO THE CENTER CULVERT UNDER THE RAILROAD AND ELIMINATE EROSION FLOWS TO THE BANKS OF THE COUNTY DRAIN DOWNSTREAM OF THE RAILROAD. THE DETENTION POND PROPOSED WITH PHASE IV OF THE SUBDIVISION AND FUTURE PHASES WILL WILL REDUCE THE PEAK DISCHARGES TO ALL THREE CULVERTS UNDER THE RAILROAD TRACKS; THEREBY, REDUCING EROSION AND IMPROVING WATER QUALITY.

EMBER OAKS

MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



LEGAL DESCRIPTION:

THAT PART OF THE WEST 1/2 OF SECTION 35, T4N, R1W, MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN, THE BOUNDARY OF SAID PARCEL DESCRIBED AS: BEGINNING AT THE SOUTH 1/4 CORNER OF SAID SECTION 35; THENCE S89°48'12"W ALONG THE SOUTH LINE OF SAID SECTION 35 A DISTANCE OF 148.06 FEET; THENCE N00°20'13"W 141.22 FEET; THENCE N42°38'54"W 280.74 FEET; THENCE SOUTHWESTERLY 109.28 FEET ON A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 142.00 FEET, A DELTA ANGLE OF 44°05'15" AND A CHORD LENGTH OF 106.59 BEARING S22°00'36"W; THENCE S00°02'01"E 249.69 FEET TO SAID SOUTH LINE; THENCE S89°48'12"W ALONG SAID SOUTH LINE 66.00 FEET; THENCE N00°20'13"W 249.87 FEET; THENCE N08°28'13"E 151.70 FEET ON A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 208.00 FEET, A DELTA ANGLE OF 41°47'10" AND A CHORD LENGTH OF 148.36 BEARING N20°51'34"E; THENCE N69°50'47"W 290.13 FEET; THENCE N89°52'50"W 346.50 FEET; THENCE S00°16'23"W 136.58 FEET; THENCE S82°45'53"W 72.18 FEET; THENCE N00°01'54"E 30.56 FEET; THENCE S89°48'12"W PARALLEL WITH SAID SOUTH LINE 246.21 FEET TO THE SOUTHEAST CORNER OF EMBER OAKS NO. 2, AS RECORDED IN LIBER 57 OF PLATS, PAGES 25-26, INGHAM COUNTY RECORDS; THENCE ALONG THE EASTERLY LINE OF SAID EMBER OAKS NO. 2 THE FOLLOWING FOUR COURSES: N17°12'23"W 50.91 FEET, N00°20'16"W 199.25 FEET, N04°56'41"E 66.12 FEET, N01°25'57"E 220.14 FEET; THENCE N24°03'26"W CONTINUING ALONG SAID EASTERLY LINE AND THE EASTERLY LINE OF EMBER OAKS AS RECORDED IN LIBER 54 OF PLATS, PAGES 34-38, INGHAM COUNTY RECORDS; THENCE ALONG SAID SOUTHERLY LINE THE FOLLOWING SEVEN COURSES: S89°59'57"E 89.73 FEET, N00°20'13"W 345.67 FEET, N89°39'38"E 135.85 FEET, SOUTHEASTERLY 96.06 FEET ON A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 61.15 FEET, A DELTA ANGLE OF 90°00'00" AND A CHORD LENGTH OF 86.48 BEARING S45°20'32"E, N89°39'38"E 66.00 FEET, NORTHEASTERLY 96.06 FEET ON A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 61.15 FEET, A DELTA ANGLE OF 90°00'00" AND A CHORD LENGTH OF 86.48 BEARING N44°39'47"E AND N89°39'38"E 84.41 FEET; THENCE N00°20'13"W ALONG THE EASTERLY LINE OF SAID EMBER OAKS NO. 3 A DISTANCE OF 68.00 FEET; THENCE SOUTHEASTERLY 34.48 FEET ON A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 241.00 FEET, A DELTA ANGLE OF 81°15'00" AND A CHORD LENGTH OF 34.48 FEET BEARING S88°14'27"E TO SAID EASTERLY LINE AS EXTENDED; THENCE N00°20'13"W ALONG SAID EXTENDED EASTERLY LINE 469.33 FEET; THENCE CONTINUING ALONG SAID EASTERLY LINE OF EMBER OAKS NO. 3 THE FOLLOWING FOUR COURSES: S89°38'47"W 283.50 FEET, N00°20'13"W AND NORTHEASTERLY 59.61 FEET ON A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 333.00 FEET, A DELTA ANGLE OF 22°37'34" AND A CHORD LENGTH OF 130.65 FEET BEARING N10°58'34"E EAST-WEST 1/4 LINE OF SAID SECTION 35; THENCE S89°52'07"W ALONG SAID EAST-WEST 1/4 LINE 1598.10 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 35, THENCE N00°24'24"E ALONG THE WEST LINE OF THE NORTHWEST 1/4 OF SAID SECTION 35 A DISTANCE OF 804.33 FEET; THENCE S89°53'36"E 560.00 FEET; THENCE N00°42'24"E PARALLEL WITH SAID WEST LINE 699.25 FEET; THENCE N13°39'57"E 391.78 FEET; THENCE N01°32'07"E 318.59 FEET TO THE SOUTHERLY RIGHT OF WAY LINE OF THE C & O RAILROAD; THENCE S72°26'47"E ALONG SAID SOUTHERLY LINE 2077.02 FEET TO THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 35; THENCE S00°15'59"W ALONG SAID NORTH-SOUTH 1/4 LINE 1556.55 FEET TO THE CENTER OF SAID SECTION 35; THENCE S00°21'8"E CONTINUING ALONG SAID NORTH-SOUTH 1/4 LINE 2632.29 FEET TO THE POINT OF BEGINNING, CONTAINING 161.88 ACRES OF LAND, MORE OR LESS.



REVISIONS
2-12-18
SHEET 1 OF 8



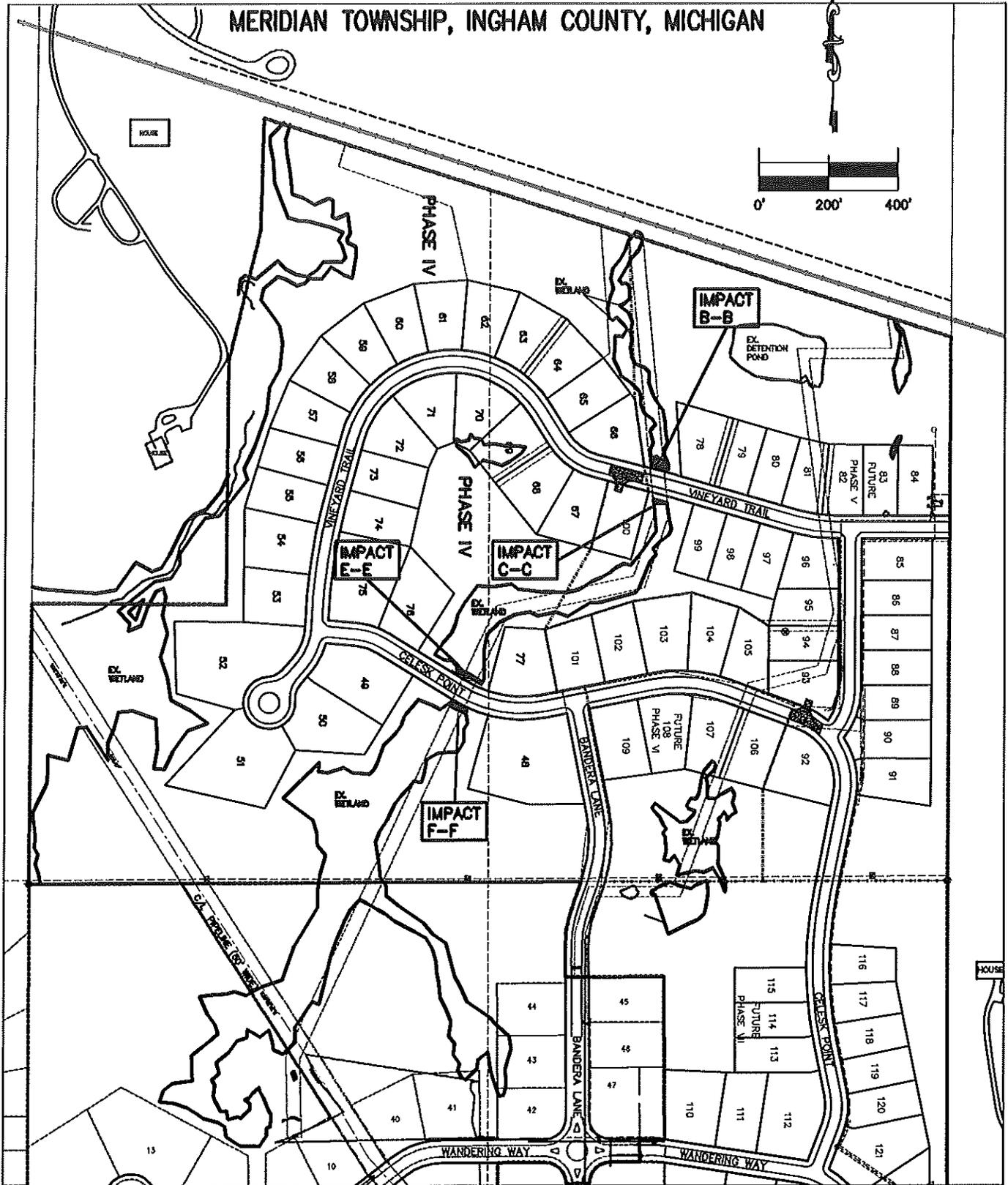
KEBS, INC.
 2118 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshal Office
 PP 268-781-9600

SCALE: 1"=40'
PROJECT MGR. JHK
APPROVED BY: JHK
DRAWN BY: SEB-BP

EMBER OAKS	
WETLAND DISTURBANCE	
AUTHORIZED BY: SBI LIMITED PARTNERSHIP	JOB #: 91147

EMBER OAKS

MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



SHEET 2 OF 8

REVISIONS
2-12-18



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Marshall Office
Ph. 269-781-9800

SCALE: 1"=40'

PROJECT MGR.
JWK

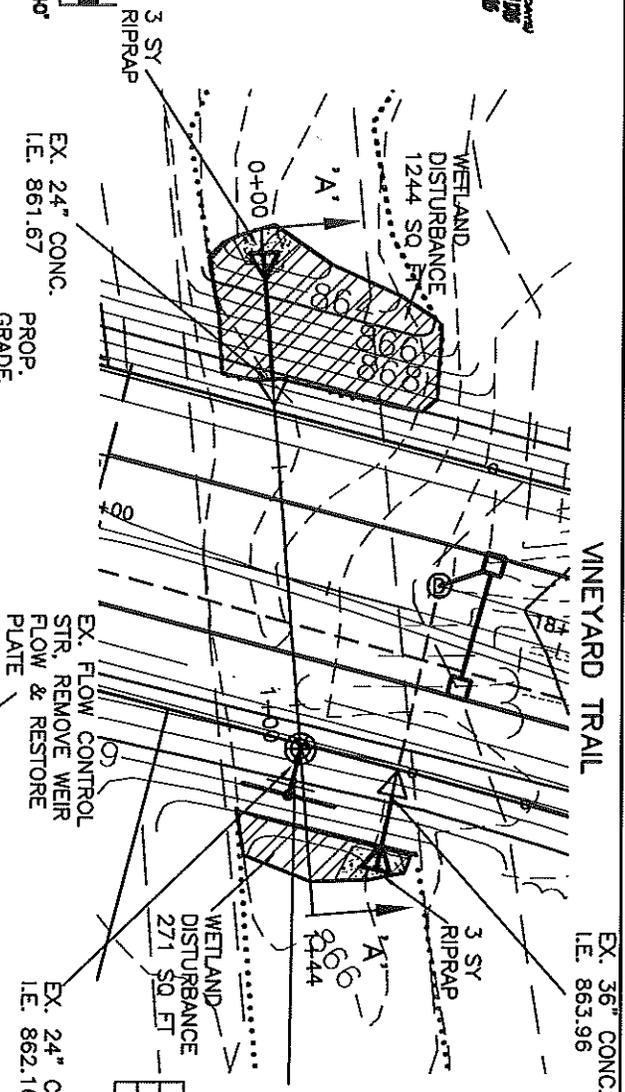
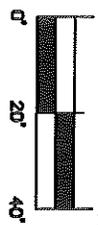
APPROVED BY: JWK

DRAWN BY: SEB-BP

EMBER OAKS
OVERALL SITE PLAN
WETLAND DISTURBANCE

AUTHORIZED BY:
SBI LIMITED PARTNERSHIP

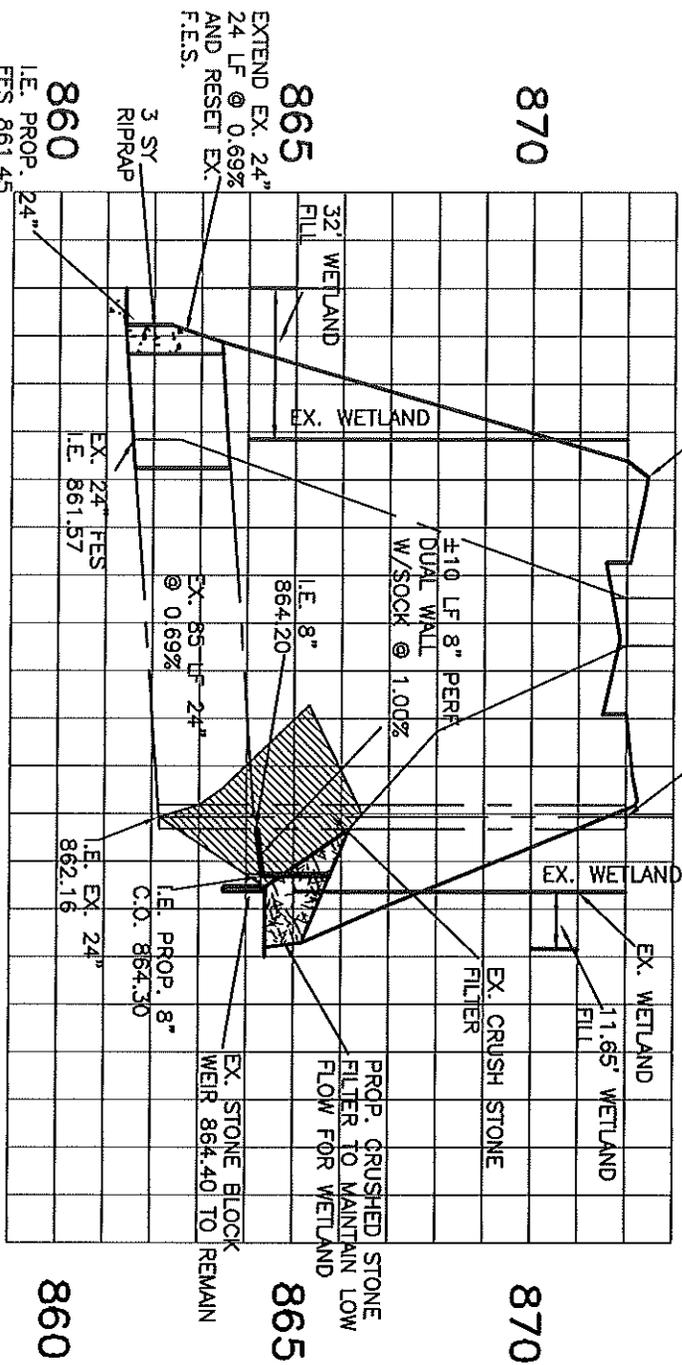
JOB #:
91147



RIP RAP TABLE

LOCATION	WIDTH	LENGTH	DEPTH	VOLUME
A-A (NORTH)	9'	14'	0.67'	3 CY
A-A (SOUTH)	9'	14'	0.67'	3 CY

PLAN VIEW
SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

	MAX. WIDTH	MAX. LENGTH	MAX. DEPTH	DISTURBANCE AREA	FILL VOLUME
NORTH (B-B)	46'	32'	±7.0'	1,244 SF	136 CY
SOUTH (C-C)	38'	11.65'	±1.2'	271 SF	8 CY

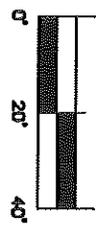
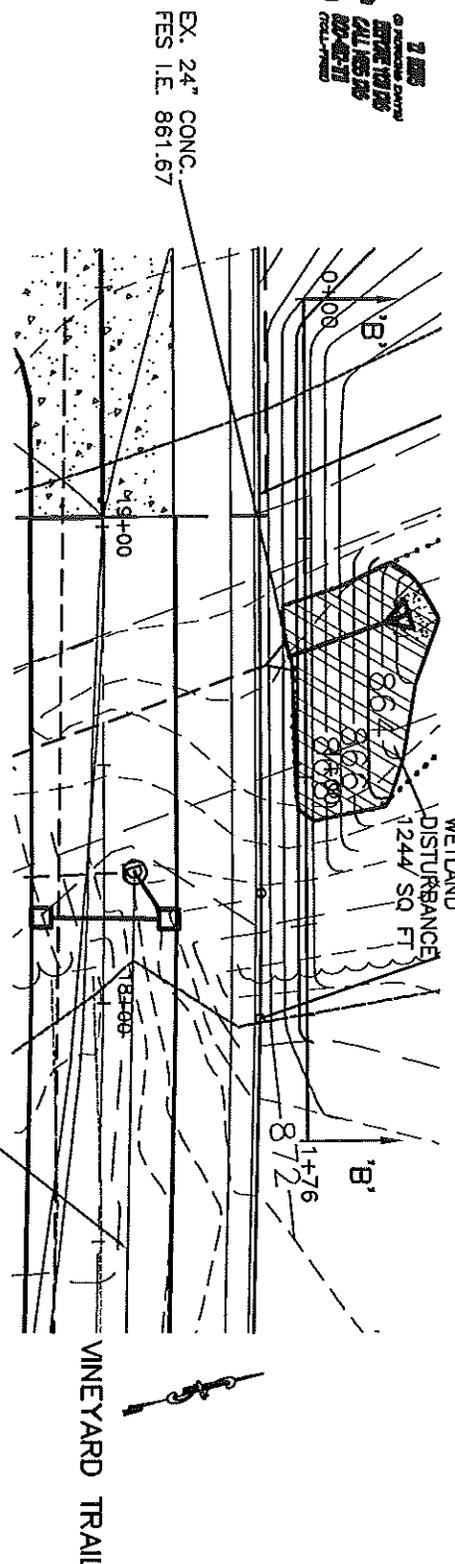


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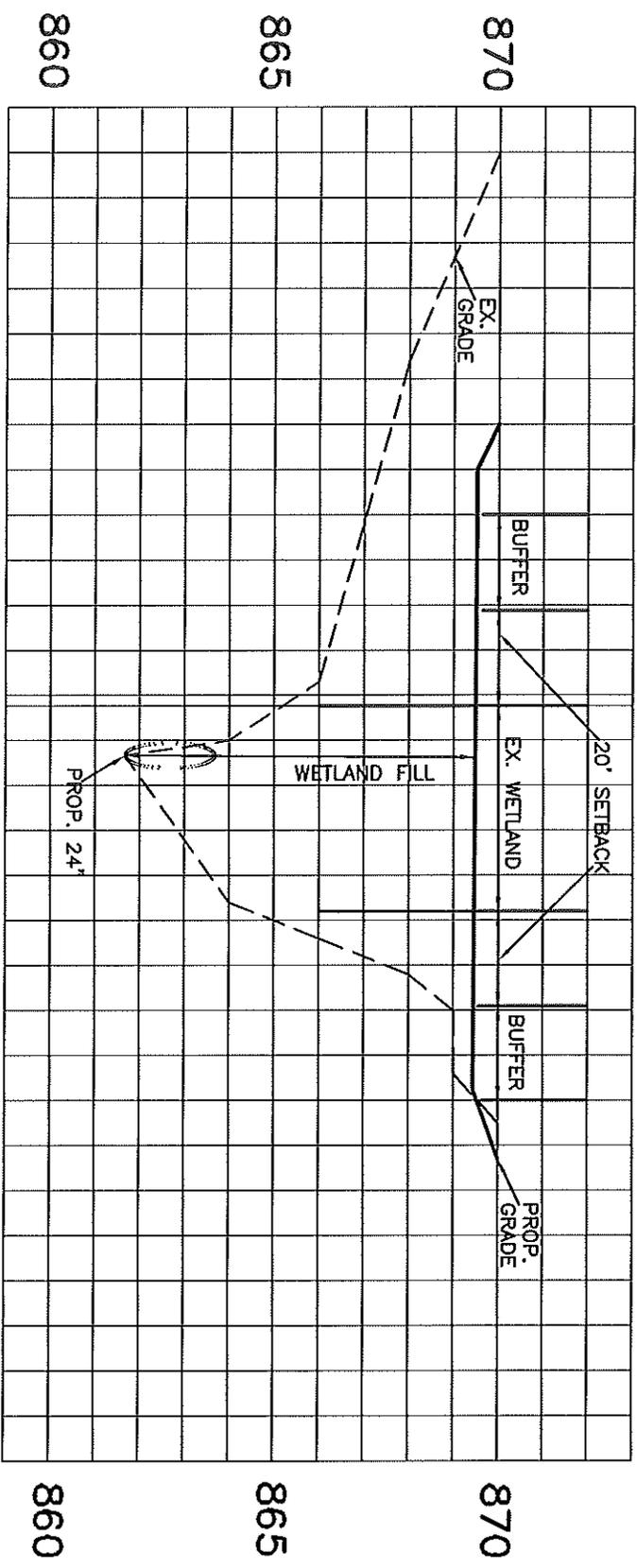
SCALE: 1"=40'
PROJECT MGR. JWK
APPROVED BY: JWK
DRAWN BY: SEB-BP

EMBER OAKS
CROSS SECTION A-A
WETLAND DISTURBANCE
AUTHORIZED BY: SBI LIMITED PARTNERSHIP
JOB #: 91147

REVISIONS
2-12-18
SHEET 3 OF 8



PLAN VIEW
SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SECTION B-B

WETLAND	MAX. WIDTH	MAX. LENGTH	MAX. DEPTH	DISTURBANCE AREA	FILL VOLUME
FILL	46'	32'	±7.0'	1,244 SF	136 CY

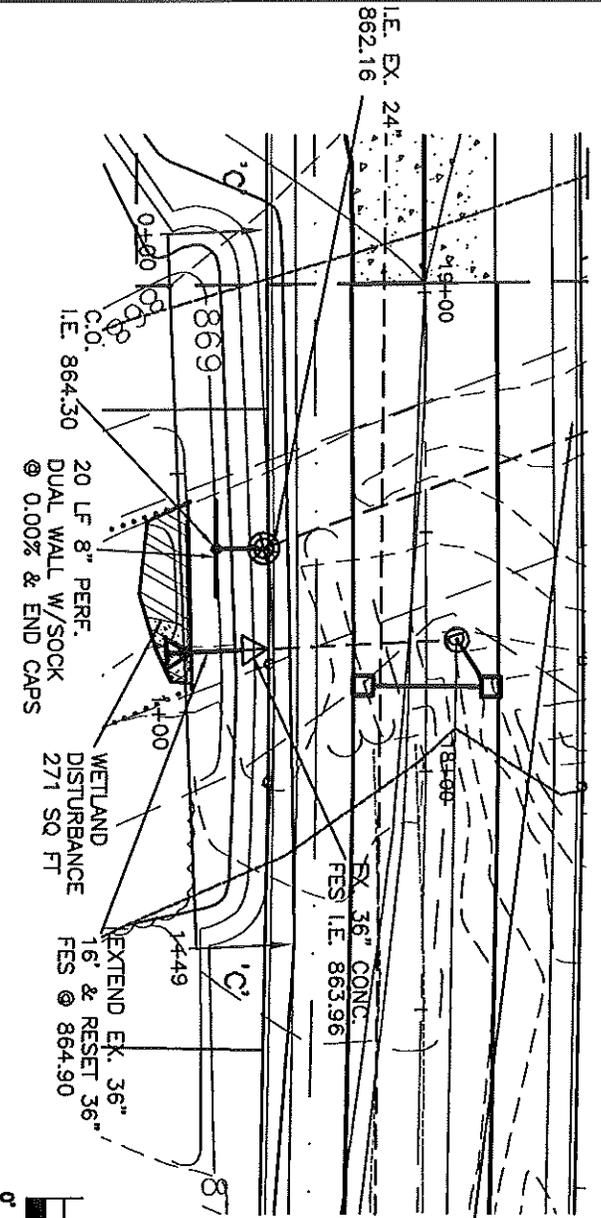
REVISIONS	2-12-18
SHEET	4 OF 8



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2118 HASLETT ROAD, HASLETT, MI 48840
PH. 517-339-1014 FAX. 517-339-8047
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Ph. 269-781-9800

SCALE: 1"=40'
PROJECT MGR. JWK
APPROVED BY: JWK
DRAWN BY: SEB-BP

EMBER OAKS	
CROSS SECTION B-B	
WETLAND DISTURBANCE	
AUTHORIZED BY:	JOB #:
SBI LIMITED PARTNERSHIP	91147

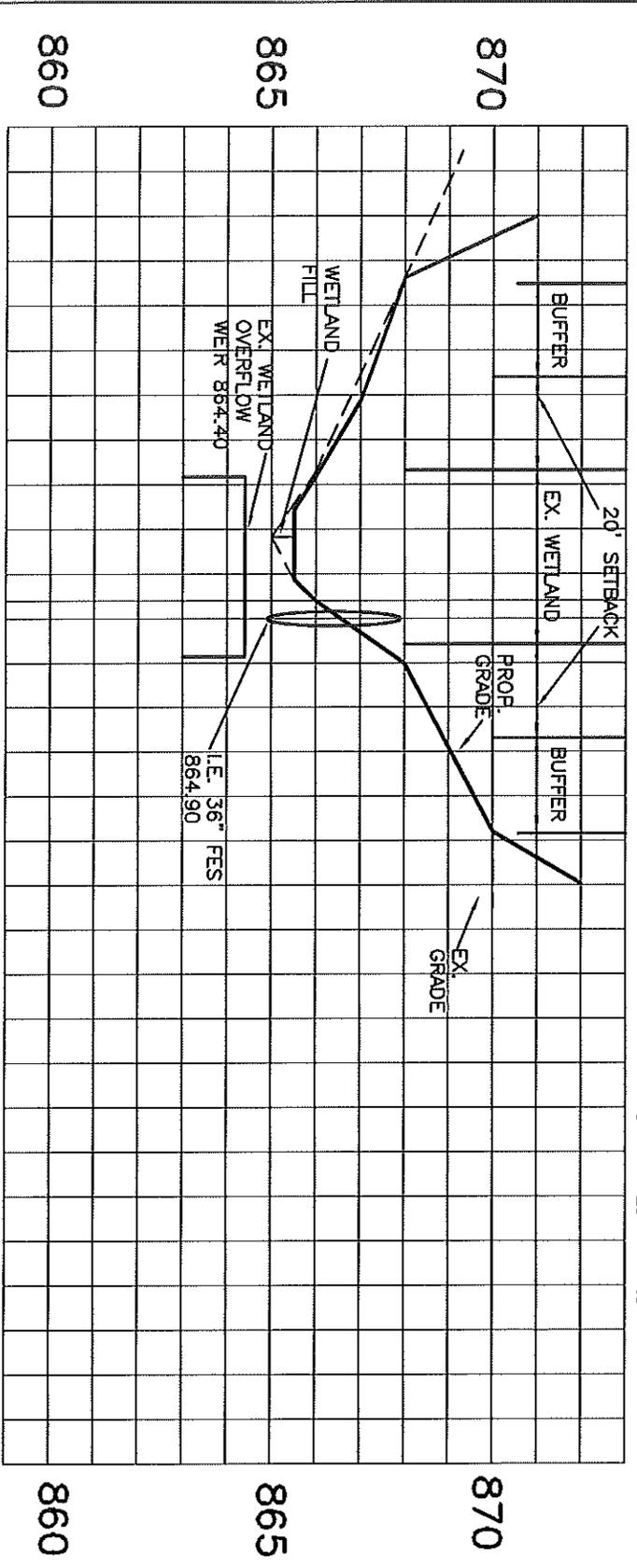
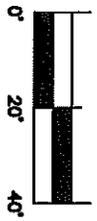


PLAN VIEW
SCALE: 1" = 40'

EX. 24" CONC.
FES I.E. 861.67

VINEYARD TRAIL

WETLAND FILL	MAX WIDTH	MAX LENGTH	MAX DEPTH	DISTURBANCE AREA	FILL VOLUME
	38'	11'	±1.2'	271 SF	8 CY



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SECTION C-C



REVISIONS
2-12-18

SHEET 5 OF 8



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Marshall Office
Ph. 289-781-9800

SCALE: 1"=40'
PROJECT MGR.
JWK
APPROVED BY: JWK
DRAWN BY: SEB-BP

EMBER OAKS
CROSS SECTION C-C
WETLAND DISTURBANCE

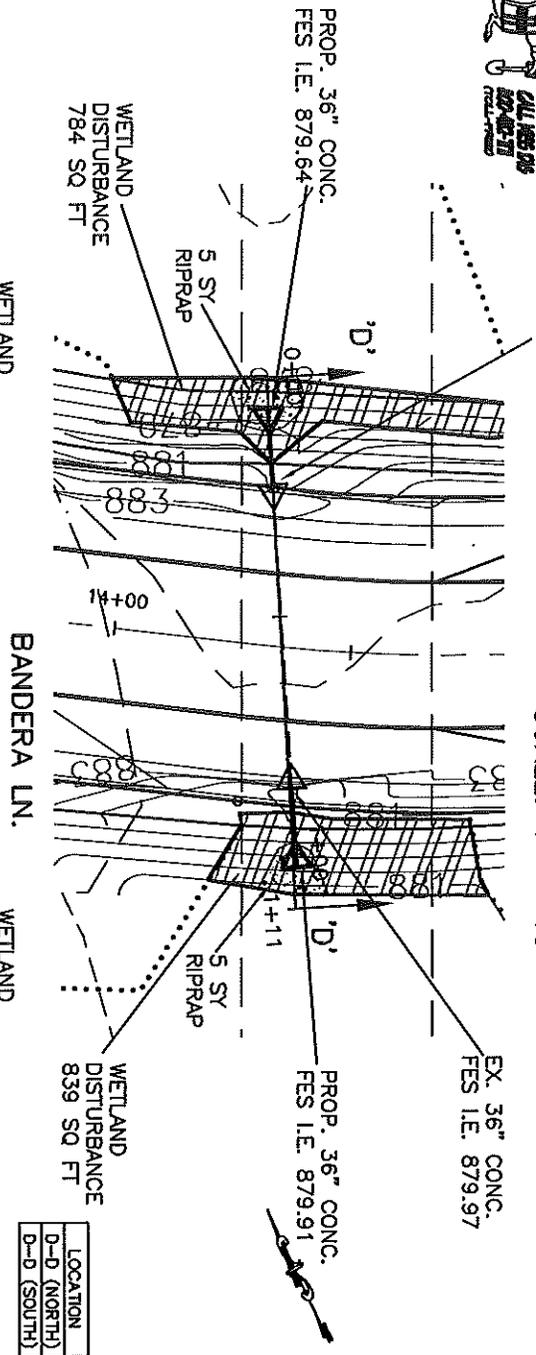
AUTHORIZED BY:
SBI LIMITED PARTNERSHIP

JOB #:
91147



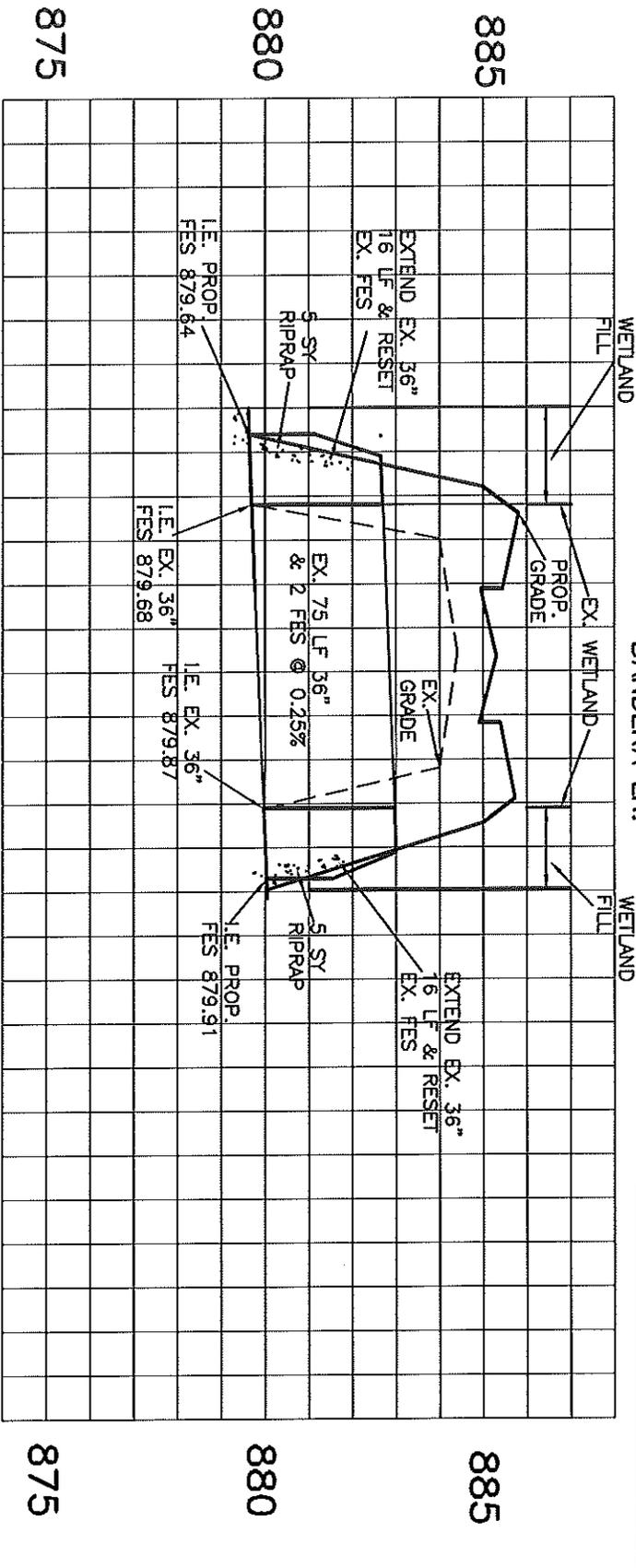
EX. 36" CONC.
FES I.E. 879.68

PLAN VIEW
SCALE: 1" = 40'



RIP RAP TABLE

LOCATION	WIDTH	LENGTH	DEPTH	VOLUME
D-D (NORTH)	12'	16'	0.67'	5 CY
D-D (SOUTH)	12'	16'	0.67'	5 CY



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SECTION D-D

NORTH (E-E)
DISTURBANCE
SOUTH (F-F)
DISTURBANCE

MAX WIDTH	MAX LENGTH	MAX DEPTH	DISTURBANCE AREA	FILL VOLUME
84'	17'	±5.0'	784 SF	114 CY
58'	17'	±5.5'	839 SF	90 CY

REVISIONS
2-12-18

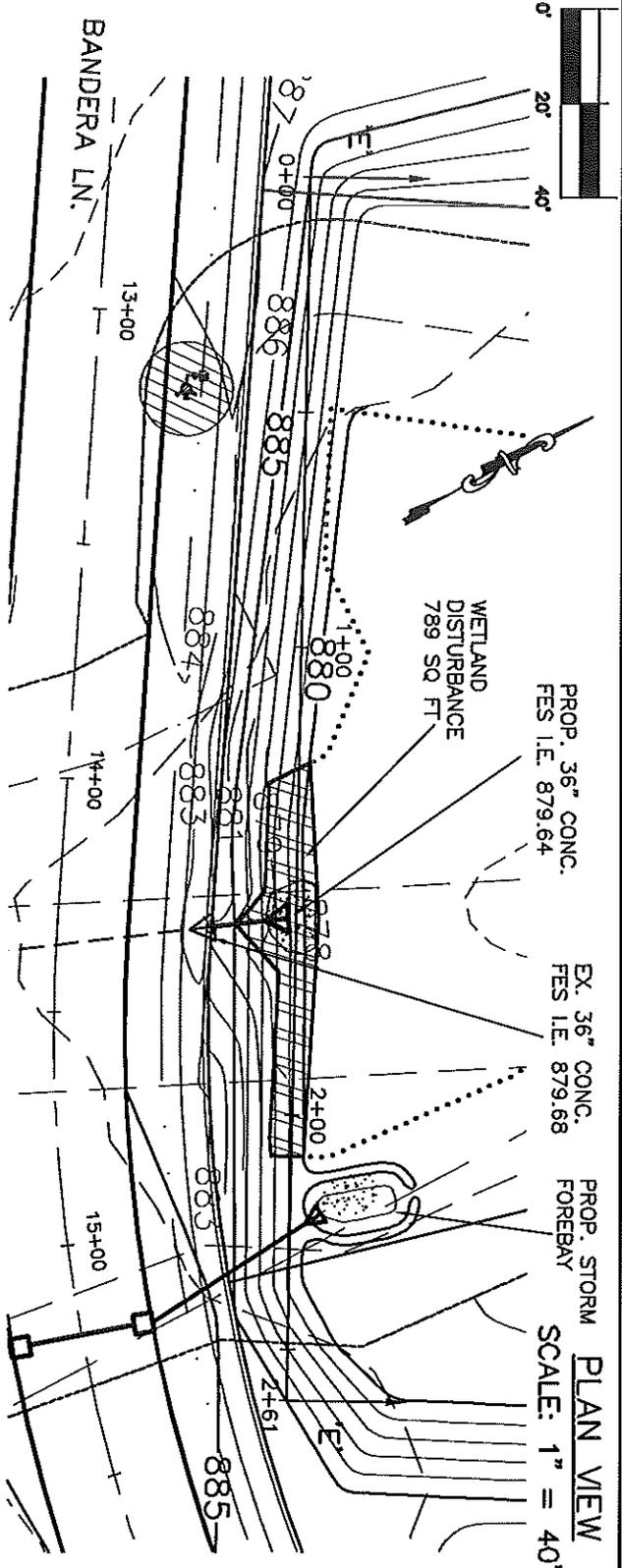
SHEET 6 OF 8



KEBS, INC.
2116 HASLETT ROAD, HASLETT, MI 48840
PH. 517-339-1014 FAX. 517-339-8047
Marshall Office
Ph. 269-761-8800

SCALE: 1" = 40'
PROJECT MGR. JWK
APPROVED BY: JWK
DRAWN BY: SEB-BP

EMBER OAKS
CROSS SECTION D-D
WETLAND DISTURBANCE
AUTHORIZED BY: SBI LIMITED PARTNERSHIP
JOB #: 91147

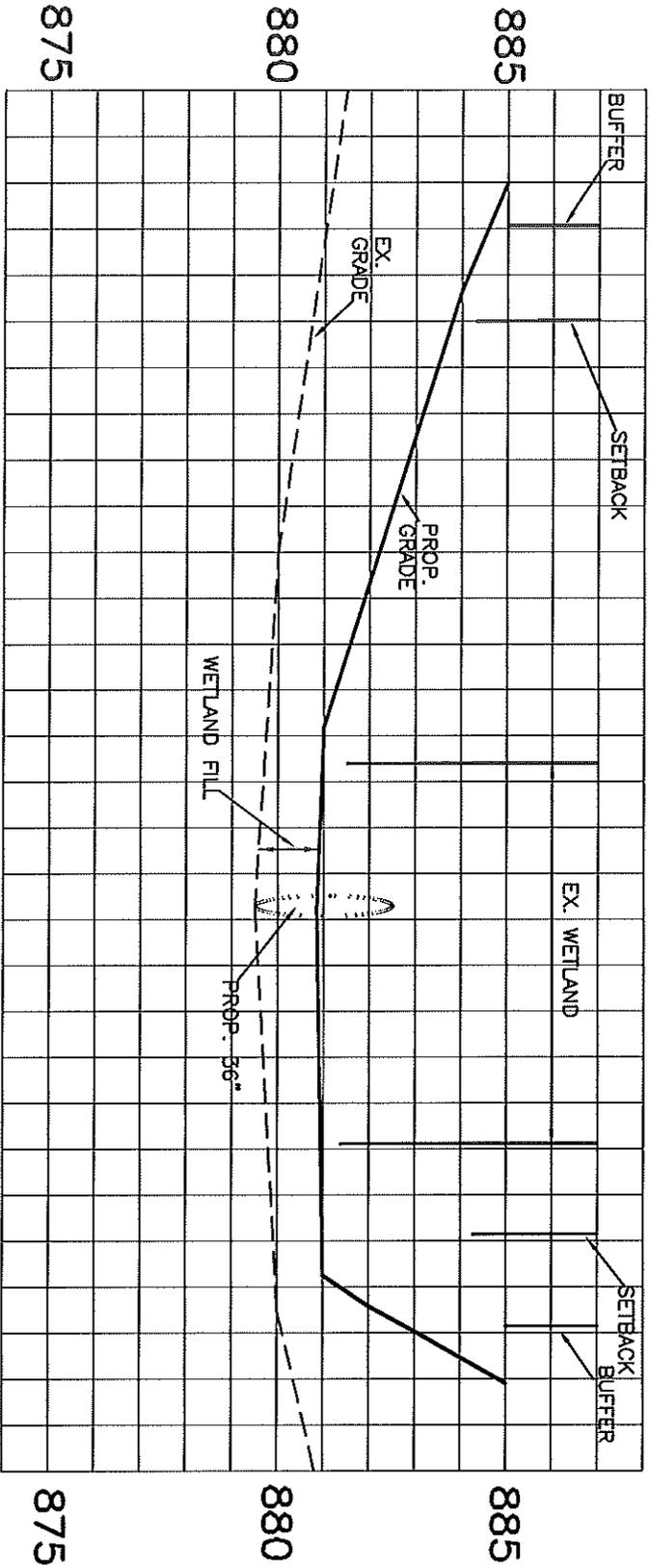


PROP. 36" CONC.
FES I.E. 879.64

EX. 36" CONC.
FES I.E. 879.68

PROP. STORM
FOREBAY

SCALE: 1" = 40'



PROFILE VIEW
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SECTION E-E

WETLAND FILL	MAX. WIDTH	MAX. LENGTH	MAX. DEPTH	DISTURBANCE AREA	FILL VOLUME
WETLAND	84'	17'	±5.0'	789 SF	114 CY



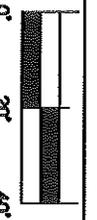
REVISIONS	2-12-18
SHEET	7 OF 8



KEBS, INC.
2116 HASLETT ROAD, HASLETT, MI 48840
PH. 517-339-1014 FAX. 517-339-8047
Marshall Office
Ph. 289-781-8800

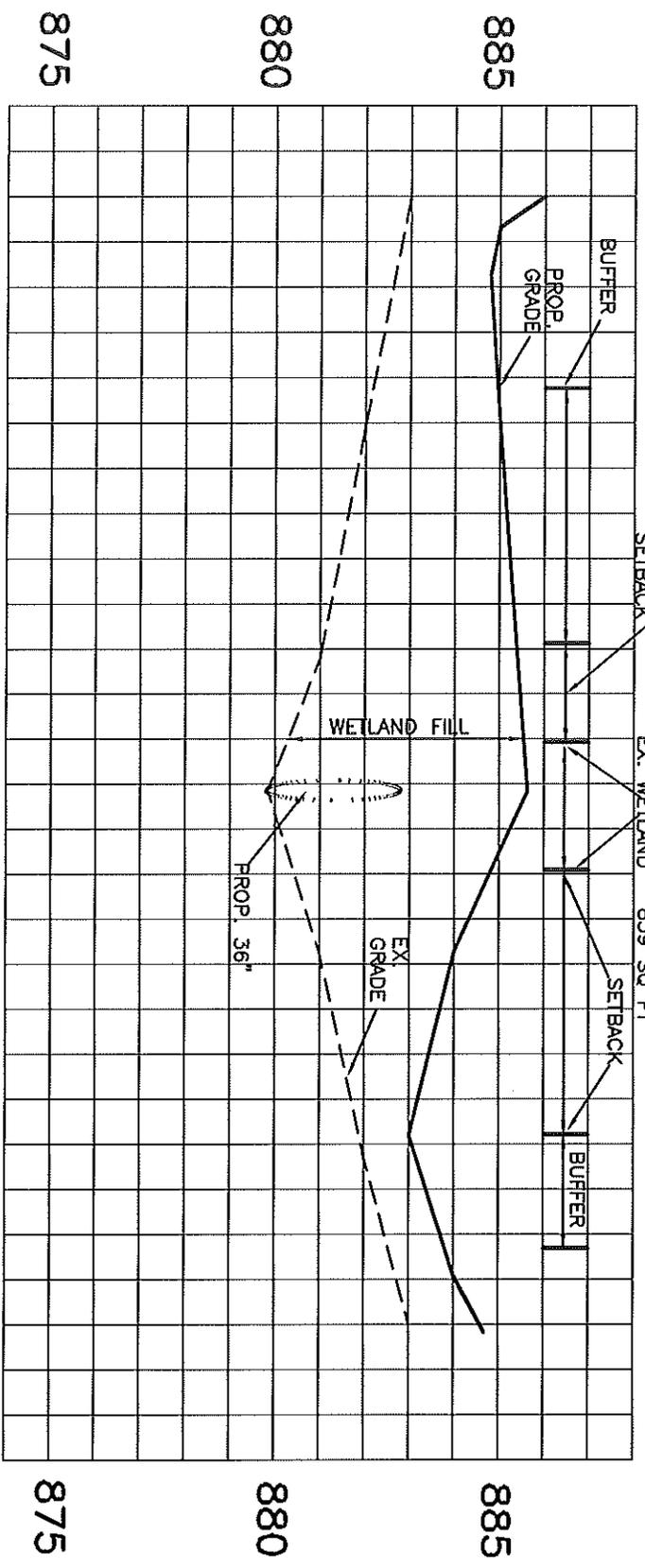
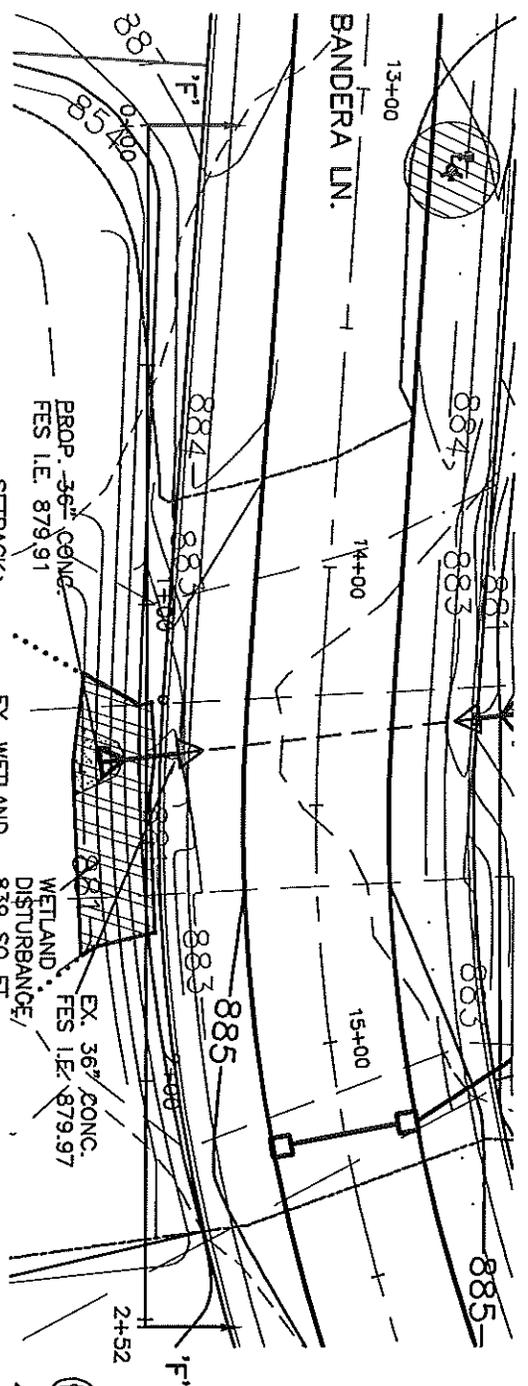
SCALE: 1" = 40'
PROJECT MGR. JMK
APPROVED BY: JMK
DRAWN BY: SEB-BP

EMBER OAKS
CROSS SECTION E-E
WETLAND DISTURBANCE
AUTHORIZED BY: SBI LIMITED PARTNERSHIP
JOB #: 91147



PLAN VIEW

SCALE: 1" = 40'



PROFILE VIEW

SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

SECTION F-F

WETLAND FILL	MAX WIDTH	MAX LENGTH	MAX DEPTH	DISTURBANCE AREA	FILL VOLUME
	58'	17'	±5.5'	839 SF	90 CY

REVISIONS
2-12-18



KEBS, INC.
 2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshall Office
 Ph. 269-781-8800

SCALE: 1" = 40'
 PROJECT MGR. JWK
 APPROVED BY: JWK
 DRAWN BY: SEB-BP

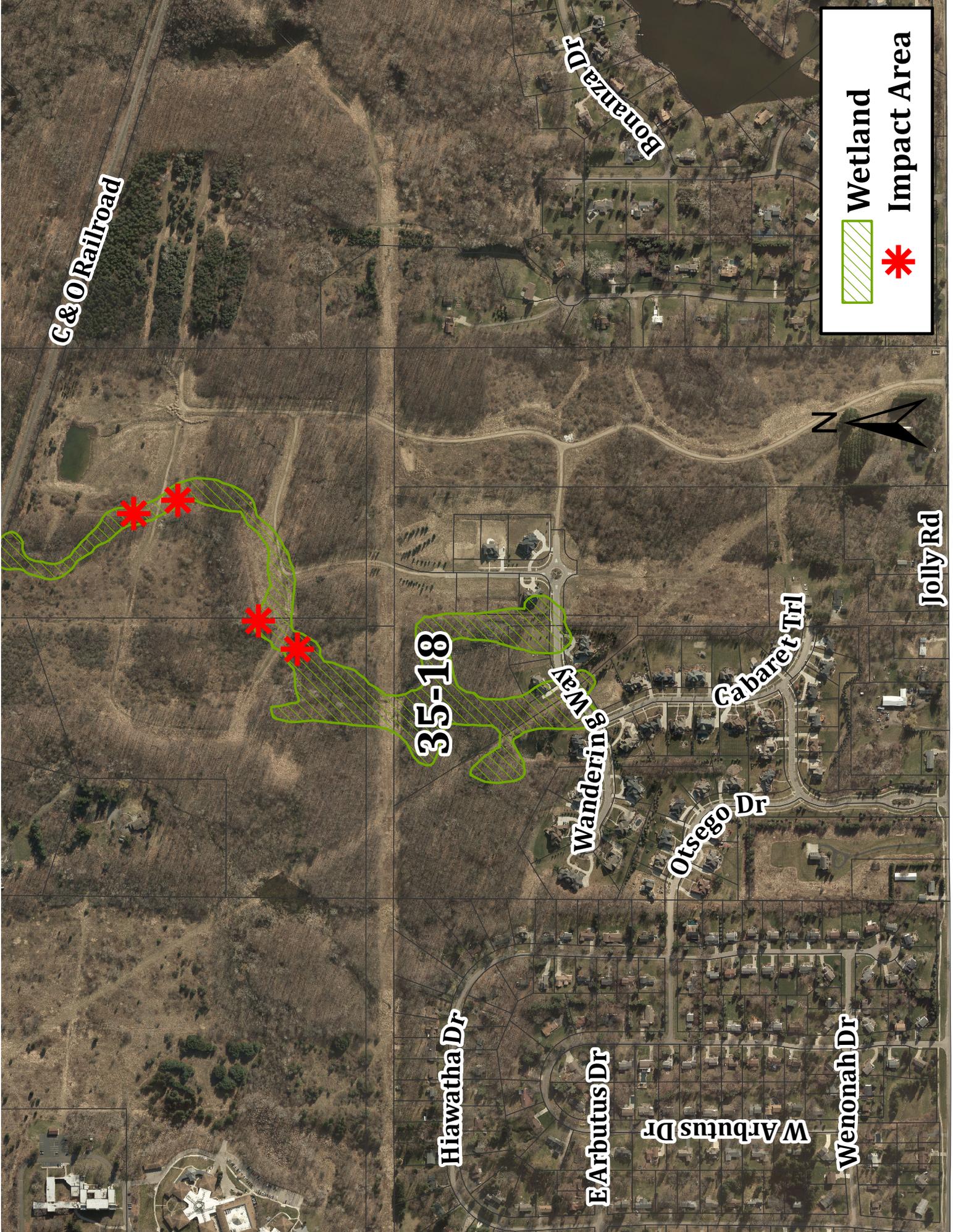
EMBER OAKS
CROSS SECTION F-F
WETLAND DISTURBANCE
 AUTHORIZED BY: SBI LIMITED PARTNERSHIP
 JOB #: 91147

WETLAND DISTURBANCE TABLE

	MAX WIDTH	MAX LENGTH	MAX DEPTH	DISTURBANCE AREA	FILL VOLUME
B-B	46'	32'	±7.0'	1,244 SF	136 CY
C-C	38'	11.65'	±1.2'	271 SF	8 CY
D-D	84'	17'	±5.0'	784 SF	114 CY
E-E	58'	17'	±5.5'	839 SF	90 CY

RIP RAP TABLE

LOCATION	WIDTH	LENGTH	DEPTH	VOLUME
A-A (NORTH)	9'	14'	0.67'	3 CY
A-A (SOUTH)	9'	14'	0.67'	3 CY
D-D (NORTH)	12'	16'	0.67'	5 CY
D-D (SOUTH)	12'	16'	0.67'	5 CY



C&O Railroad

Bonanza Dr



Legend:

- Wetland (Green hatched box)
- Impact Area (Red asterisk)

35-18

Wanderin g Ave

Cabaret Trl

Jolly Rd

Otsego Dr

Hiawatha Dr

E Arbutus Dr

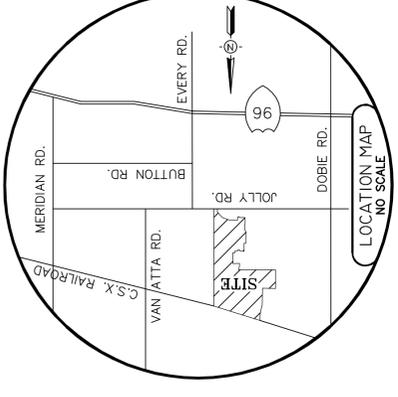
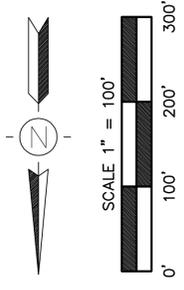
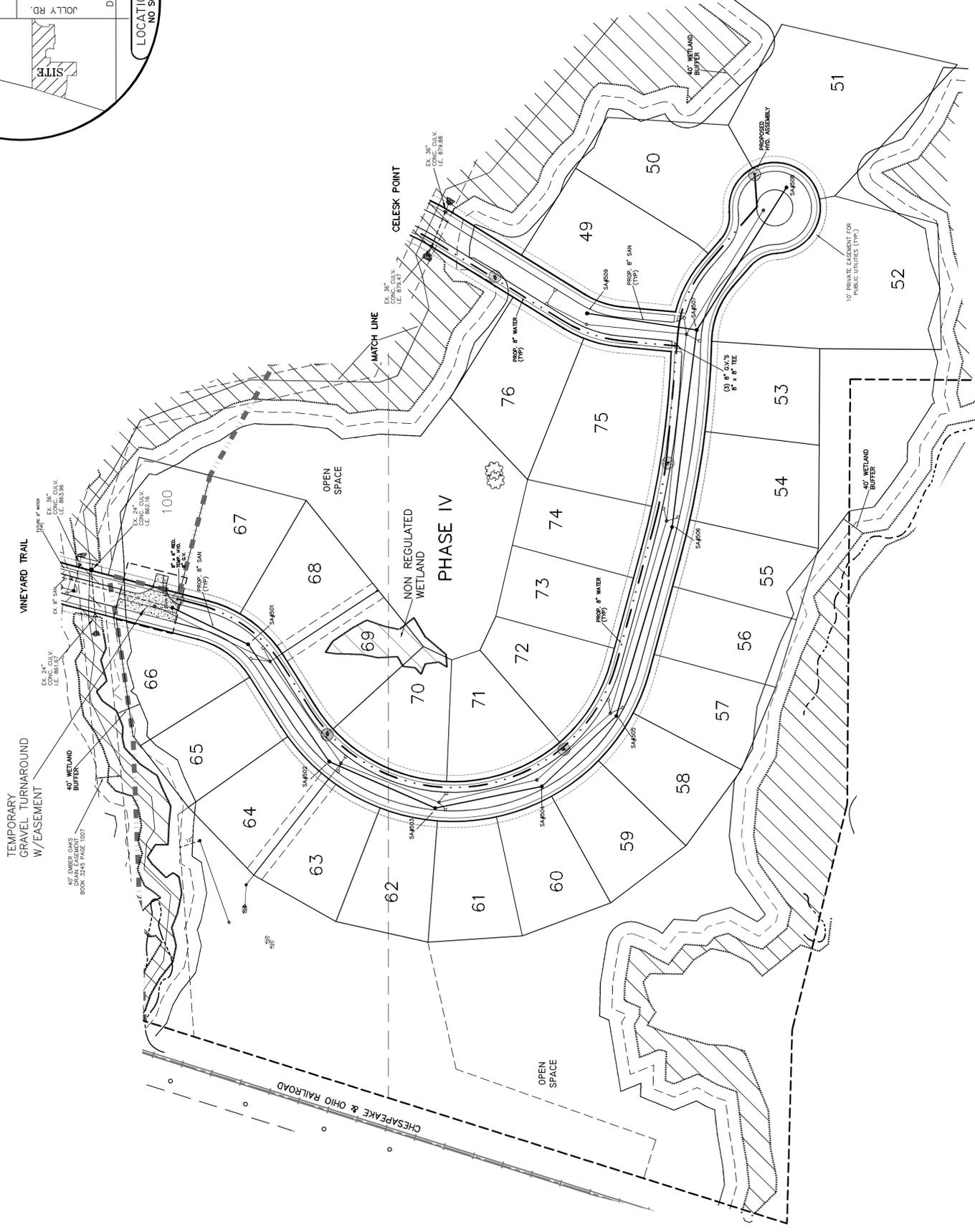
W Arbutus Dr

Wenonah Dr

Ember Oaks No.4B

MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

FUTURE PHASE V



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

LEGEND	
	EXT. CONTOURS
	EXT. WATER MAIN
	EXT. STORM SEWER
	EXT. SANITARY SEWER
	EXT. ELEVATIONS
	PROPOSED WATER MAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	PROPOSED GAS LINE
	PROPOSED (EX.) MANHOLE
	UTILITY EASEMENT
	CENTER LINE OF ROAD
	PROPERTY LINE
	FIRE HYDRANT
	GAS METER
	WATER METER
	FIRE ALARM BOX
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUSH
	AIR CONDITIONING UNIT
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	SANITARY CLEANOUT
	FIRE HYDRANT
	VALVE
	UTILITY POLE
	LIGHT POLE
	GUY POLE
	UTILITY BOX
	TRANSFORMER
	MANHOLE
	ELECTRIC METER
	GAS METER
	WATER METER
	FIRE ALARM BOX
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUSH
	AIR CONDITIONING UNIT

EX. LEGEND

	1/2" BAR WITH CAP
	FOUND IRON AS NOTED
	FENCE
	CONCRETE
	GRAVEL
	EXISTING SPOT ELEVATION
	GAS LINE
	UNDERGROUND TELEPHONE
	UNDERGROUND ELECTRIC
	UNDERGROUND GAS
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUSH
	AIR CONDITIONING UNIT

BENCHMARKS

BENCHMARK #1 ELEVATION: 806.88 (NAVD 88)
TOP OF EAST-NORTHEAST FLANGE BELT OF HYDRANT UNDER NORTH OF THE END OF THE ROAD. THE GRAVEL DRIVE, 75' N.

BENCHMARK #2 ELEVATION: 806.88 (NAVD 88)
TOP OF NORTHERLY FLANGE BELT OF HYDRANT UNDER "A" IN THE CENTER OF TRAFFIC CIRCLE OF BANDERA LANE & WANDERING WAY.

REVISIONS	
2-7-18	SUBMITTAL

DESIGNER: KEBS, INC. BRYAN LAND SURVEYS	
2116 HASLETT ROAD, HASLETT, MI 48840	
PH. 517-339-1014 FAX: 517-339-8047	
Morshall Office Ph. 269-781-9900	
Ember Oaks No.4	
UTILITY PLAN NORTH	
SCALE: 1" = 100'	APPROVED BY: JMK
DATE: 11-9-16	PROJECT MGR: JMK
AUTHORIZED BY: SBI LIMITED PARTNERSHIP	SHEET 3 OF 17
JOB #:	91147

E-91147-PH4B-CONSTR
E-91147-PH4B
SURVEY/91147.PP



To: Environmental Commission

From: Peter Menser, Principal Planner

Date: January 3, 2018

Re: 2018 Strategic Plan

At its last meeting on December 6, 2017 the Environmental Commission discussed the establishment of goals for 2018, settling on the following items:

1. Collaborate with the Park Commission and Transportation Commission on wayfinding
2. Review progress on the Greenspace Plan
3. Actualize the Climate Sustainability Plan and review ordinances related to the Climate Sustainability Plan
4. Work with the Economic Development Director to discuss how greening the Township might attract green businesses
5. Collaborate with the Land Preservation Advisory Board

The above goals will not preclude the Environmental Commission from working on other projects; they simply provide a guide for activities for the year. The following motion is included to formally adopt the 2018 Environmental Commission Strategic Plan.

- **MOTION to adopt the 2018 Environmental Commission Strategic Plan**