



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
ENVIRONMENTAL COMMISSION
REGULAR MEETING
January 5, 2021 7 pm (tentative)

Town Hall Meeting Room, 5151 Marsh Rd, Okemos

ZOOM Option: **867 3903 8953** Password: **5151** (click [here](#) or phone 646 558 8656 or 301 715 8592)

1. CALL MEETING TO ORDER
2. GREEN THEME PRESENTATION: LuAnn Maisner: Meridian Parks 5-Year Plan
3. APPROVAL OF/ ADDITIONS TO AGENDA and CONSENT AGENDA
(Committee [Updates](#) and [Goals](#))
4. APPROVAL OF THE MINUTES
5. PUBLIC REMARKS (please join on Zoom)
6. NEW & OLD BUSINESS
 - A. 5-Year Review: Climate Sustainability Plan Review & Update (see Sarver's plan attached)
 - McConnell proposed discussing one topic per meeting (energy, water, waste, etc.)
 - This month it is suggested that we start with "energy"
 - See the full plan here <https://bit.ly/climatesustainabilityplan>)
 - B. Wetland Use Permit: Silverleaf Development, Brian Shorkey
 - C. Timely Environmental Topics
 - D. Commission/Committee Dialogue
 - E. Nominations and Elections (Chair and Vice Chair)
 - F. New Commissioners Appointments/Openings
 - G. Other
7. COMMISSIONER & STAFF NEWS (personal updates and additions to bit.ly/EC-update)
8. PUBLIC REMARKS
9. ADJOURNMENT

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Environmental Commission Meeting: December 1, 2021 (draft)

Condensed Summary

The Environmental Commission discussed potential next steps to support green infrastructure, welcomed new Senior Planner Brian Shorkey, pondered commission expansion, and considered goals for 2022.

Welcome Brian Shorkey

The Commission welcomed Brian Shorkey, Meridian's new Senior Planner. Brian has been a planner for about 20 years and has served on Meridian's Zoning Board of Appeals. Part of his experience was in Georgetown, which had a stringent stormwater ordinance utilizing green infrastructure.

Green Infrastructure Audit

Harvey mentioned possibilities of moving forward on a regional and local level. Shorkey mentioned that the Planning Staff are discussing utilization some of the ideas in the months to come, especially in parking. He also has experience working with permeable pavement. The Land Use Lunch (mid-MEAC) might be one forum to launch the regional conversation. The Land Use and Health Resource Team, Tri-County Regional Planning Commission, the Drain Commissioner, and surrounding governments may all be interested in regional progress. There is interest in a conversation with the Drain Commissioner and Tim Schmitt about collaboration possibly at the Dec. 15 Green Dialogue. Frazier suggested permeable pavement as a potential focus. Wisinski suggested that we include this in our goal and visioning discussion.

Timely Environmental Topics

Grasseschi has talked with Kurt Armbruster with the Lake Lansing Advisory Council. Harvey has also been discussing one or more shoreline restoration projects with Younes Ishraidi, Chief Engineer. Jackson suggested the Lake Lansing South might be a good location. Lafferty mentioned that the Ingham Parks Commission and MSU might be a potential partners. Harvey asked about Federal infrastructure dollars that might be used for green infrastructure and mentioned a Township property. C. Wisinski mentioned that the \$ may be available in January and she will discuss further with Harvey and Manager Walsh.

Commission and Committee Discussion

Lafferty expressed a desire to explore ways to get more people involved. L. Wisinski echoed a desire to involve more. Frazier asked about how the size of the Environmental Commission compares to other Commissions and suggested that task forces and subcommittee provide involvement opportunities. McConnell said the number varies. C. Wisinski suggested that goals dictate our people needs. Lafferty mentioned a "panel of experts" role that might be called upon as needed.

Commission Opening

Harvey mentioned Graham Dietrich has applied. Sarver suggested that we invite him to the January meeting and the desire involve a student from Haslett schools. Frazier mentioned that Dietrich is running for the House of Representative which might demand most of his time. C. Wisinski asked about the process. Sarver mentioned that the commission receives applications, invites them to attend meetings, and then recommends appointments to Supervisor Styka who makes the appointments. Harvey mentioned that he receives the application, invites them to attend, and encourages involvement on a committee. Grasseschi and Colby expressed appreciation student involvement and an interest in Haslett student involvement.

Meeting Schedule

The E.C. approved the meeting schedule for 2022. (1st Wednesday of each month at 7pm)

Goals for 2022

Harvey shared an [outline of current initiatives](#).

| Topic | Committee |
|--|--|
| Green Grants | Green Grant Committee (John, LeRoy, Kendra, Courtney) |
| Wetland Education/Outreach | Wetland Education Committee (Kendra, Courtney, Emma, LeRoy, Brandie, Paige) |
| Food, Food Waste, and Organics Recycling | Food Team (Valerie, Anna, Tom, Nevin, Anne, Dave +) |
| Climate Action | Energy Team, Food Team, and Others (John, Roger, Valerie, LeRoy, Heidi) |
| Recycling Events | Green Team (Ellen, Tom, Dave, Elaine, Sarah, LeRoy, Luca) |
| Green Neighbors Network | GNN Committee (John, LeRoy, Kendra, Sarah) |
| Student Action | Earth Club/Action (Bernadette, Audrey, Luca, Annaka) |
| Environmental Justice | EJ Study Group (Courtney, Kendra, Sarah) |
| Green Infrastructure Policy Improvements | E.C. plus... (Cliff, Tim, Brian, regional collaborators, others) |

Members suggested some additions. The Climate Sustainability Plan offers a good framework. Lafferty suggested working with ordinances (the Capital Area Sustainability Planning – CASP might offer guidance). The Green Infrastructure Audit and code suggestions should be added. Lafferty suggested that equity, environmental justice, and consistency and protocol for existing policies and procedures. Colby mentioned exploring policies related to food procurement an increase food resilience. Jackson mentioned packaging (especially COVID-related topics like on-line ordering, fast food, masks, etc.). He mentioned "[atom economy](#)." Lafferty mentioned that there is crossover between goals such as food audits and student involvement (guest speaker will discuss this at the Food Group meeting this week). C. Wisinski mentioned that it would be helpful to have a list of the members of each committee and a "point person" or reporter for each. She also asked about mentioning staff that are involved in each of the goals and echoed interest in litter reduction. Grasseschi suggested that communication and collaboration between commissions might be a goal as well. Harvey suggested that each committee provide more detail for each topic. Colby agreed that this would provide the opportunity for non-EC committee members to weigh in. McConnell suggested that the specific sections in the Climate Sustainability Plan could be a framework for future agendas.. i.e. energy, water, waste, etc. and provide an opportunity appreciate progress and future opportunities. Grasseschi mentioned that the Climate Sustainability Plan, the Master Plan, and the Code provide a roadmap. Sarver suggested that members visit the google doc <https://bit.ly/22goals> and add more detail about each goal. C. Winsinki offered to keep the EC updated on the Master Plan Updates. Frazier asked about adding the Environmental Stewardship Awards. Jackson supported. McConnell noted the very broad involvement and partnership in environmental stewardship (Conservation Corps, Recycling volunteers, Tree Planting, etc.. C. Wisinski also suggested the possibility of honoring everyone. Grasseschi invited Audrey, Annaka, and Bernadette to share their wetland

Individual Updates:

Grasseschi mentioned that Land Preservation Board met and discussed protecting the bio diversity of Davis Foster and

purchase of additional properties. The Wetland Education group will meet in December. She spoke with the Lake Lansing Advisory Committee and shared with the Green Neighbor Network and provided some edits on the Green Grants request for proposal. She's given some presentations on Environmental Justice and will share more later.

Frazier mentioned the Coat Drive and the Green Team's progress in planning events for next year. He also encouraged us to explore future involvement with the Green Community Network. There will be awards and this might be part of our future goals.

Harvey asked for clarification about Graham Diedrich. He will invite him to the January meeting. He also mentioned an upcoming meeting with the Haslett Climate Action club. Other updates can be found in the consent agenda.

Lafferty mentioned an upcoming tour of Hammond Farms composting facility next week and extended the invitation to others. She also mentioned upcoming grants through NextCycle and EGLE. Collaboration between governments is encouraged.

Jackson mentioned that the Brownfield Redevelopment Committee did not meet. He expressed interest in the idea of "Be an Eco-Tourist in Your Own Town" which could be a bike tour. He also like the idea of a resource team of experts and offered to create space on the Commission if it's the will of the EC.

C. Wisinski mentioned that she'd like to work with LeRoy to highlight some of the accomplishments of the E.C. She'll check with LuAnn Maisner about volunteer recognition and desire to be involved with the Green Community designation and the Eco-Tour idea.

Osborne mentioned the clothing upcycling of outdated OHS clothing with the old "Chiefs" logo.

Hirschert-Walton is exploring availability of native plants for their greenhouse as well as invasive species eradication.

Sarver mentioned the Solarize Meridian Project, next steps for solar, and progress on our renewable and efficiency progress. We are doing well on our goal! We are over halfway toward solar goal!

Harvey also mentioned recent receipt of our Electric Vehicle Assessment. Contact him if you'd like a copy of the results.

Meeting adjourned at 8:45 pm.

January 2022 Update

| BOARD/COMMISSION | Update, Next Steps, and/or Potential Discussion Topic(s) |
|---|--|
| Land Preservation Advisory Board/MCC (Kendra) | LPAB did not meet in December. |
| STUDY GROUP/TEAM | |
| Food & Organic Waste Study Group (Anna, Valerie, Tom Cary, Tom Frazier, Dave Batten, Nevin Brittain, Elaine Putvin, & Gabi Mayer from Williamstown Twp) | Two meetings and one field trip in Dec. The EGLE Composting specialist presented, including description of a Lansing elementary school cafeteria food audit which educated students/staff about food waste and ways to improve recycling. Then EGLE Recycling Specialist for our area encouraged us to apply for one of several grants. We toured Hammond Farms composting operation in Dimondale. Anna did a goal setting exercise. Starting small with a gleaning program & working with schools scored highest, followed by food scrap collections for composting. Studying/Recommending/Updating Twp food & recycling policy is an aspiration. The next Zoom meeting is Fri, Jan 7 at 1:30pm |
| Earth Club/Student Groups (Bernadette, Luca, Annaka) | Did a used item exchange for the holidays, the recycling committee put away the bottles collected, the sustainable fashion committee is working on a Depop (online thrift store), and Earth Club is setting up a tree planting. |
| Energy Team (John, Roger, Valerie, Heidi, LeRoy) | Discussions about the 2022 Solarize Meridian project and the Public Safety Building solar project continue. Also discussed the EV Assessment of the township fleet.. |
| Environmental Justice (Courtney, Kendra, Sarah Allen) | Ongoing work on Equity issues. |
| Green Infrastructure Grants (John, LeRoy, Kendra, Courtney) | The latest draft of the Green Infrastructure Grant Request for 2022 has been completed. |
| Green Team (Tom, LeRoy, Ellen, Elaine, Sarah, Dave, Luca) | Our December meeting was postponed with our next meeting planned for January 12th. The Green Team is planning for a large recycling event to take place in the spring. |
| Wetland Education & Outreach (Kendra, Courtney, LeRoy, Emma, Brandie) | A wetland education planning meeting took place on 12/14/21. The next monthly meeting is scheduled for 1/11/22 at 3pm. The goal is to start rolling out the educational outreach plan for World Wetland Day on 2/2/22. |
| STAFF (LeRoy) | <ul style="list-style-type: none"> ● Green Infrastructure Grants - follow up proposals from Radmoor and Haslett for remaining funds. Davis Coye presented to the Board on Dec. 7th. ● January Green Gazette distributed to 2020 individuals. ● Attending the Green Dialogues on Wednesdays at 9am ● Continued exploring a natural shoreline restoration on Lake Lansing. ● Wetland Education Team met! ● Drafted a list of accomplishments for 2021. ● Exploring an RFP for Solar on the carports of the Public Safety Building |

Climate Plan 2022 Review and Update

(suggested by Chair Sarver)

Phase 1 – Committee Review

- Energy – Energy Team
- Recycling & Waste Management – Green Team & F-C Committee
- Transportation – Energy Team
- Water – Wetlands Committee
- All sections – Environmental Justice Committee

Phase 2 – Environmental Commission Review

Phase 3 – Review by other boards and staff

- Energy – Public Works
- Recycling & Waste Management – Public Works
- Transportation – Transportation & Planning commissions
- Water – Planning Commission & Public Works

Phase 4 – Environmental Commission Review & Recommendation

Phase 5 – Township Board Review & Approval

See the original plan here: <https://bit.ly/climatesustainabilityplan>

2022 Environmental Commission Goals (draft)

Add a little detail to the description. Keep it general.

| Topic | Committee | Description |
|--|-----------------------------|--|
| Green Grants | Green Grant Committee | <ul style="list-style-type: none"> ● Assist with Green Grants Program ● Select projects that will highlight green infrastructure opportunities |
| Wetland Education/Outreach | Wetland Education Committee | <ul style="list-style-type: none"> ● Create and Conduct a comprehensive Wetland Outreach Educational Campaign ● Collaborate with township, state, and community partners |
| Food, Food Waste, and Organics Recycling | Food-to-Compost Committee | <ul style="list-style-type: none"> ● Develop Food – Waste Opportunities ● Include food issues in Climate Action Plan ● Food procurement - best practices |
| Climate Action | Energy Team and Others | <ul style="list-style-type: none"> ● Review, Revise, and Pursue Climate Action Plans (add green infrastructure, food topics, etc.) |
| Recycling Events | Green Team | <ul style="list-style-type: none"> ● Conduct large events in the spring and fall ● Conduct events at the Farmers Market ● Consider other recycling opportunities and improvements. |
| Green Neighbors Network | GNN Committee | <ul style="list-style-type: none"> ● Continue to expand Green Neighbor Network ● Use GNN for wetland education, Solarize Meridian 2.0, and other initiatives |
| Student Action | Student Commissioners | <ul style="list-style-type: none"> ● Facilitate collaboration between schools & Environmental Commission |
| Ordinance Changes (Green Infrastructure) | Environmental Commission | <ul style="list-style-type: none"> ● Implement green infrastructure audit recommendations |
| Environmental Justice/Equity | EJ Study Group | <ul style="list-style-type: none"> ● Create/Implement consistency in policy, protocol, and procedures |
| Other? | | <ul style="list-style-type: none"> ● Hold Environmental Stewardship event to recognize volunteers and staff ● Identify a point person for each topic ● Discuss staff assignments/roles ● Discuss Commission roles ● Improve communication/collaboration |

**Meridian Township Environmental Commission
January 5th, 2022**

Introduction

- My name is Graham Diedrich, I am a graduate student at Michigan State University studying Public Policy.
- Before going to university I went to Haslett Public Schools and graduated in 2019.
- My professional interests:
 - Climate change mitigation policy
 - Forest's interaction with climate change
 - Program effectiveness
 - Political feasibility
- My current responsibilities:
 - Student at Michigan State University (15 hours a week)
 - Research Assistant at MSU Forest Carbon and Climate Program (12 hours a week)
 - Assistant PIO at Infinite Source Communications (15 hours a week)
 - Campaign for State Representative (varies, but no more than 5– usually on weekends)

My Goals

- Goal 1: To establish the Commission as a leader and educator in the grassroots environmental movement in Meridian Township.
 - Connect with student organizations (university and high school) to see what projects they are working on, how the Commission could help.
 - Community engagement events (recycling, working with partners)
 - Promote the Commission to the general public to make them more aware
- Goal 2: To learn more about the process behind creating policy at a local level.
 - Grant funding
 - How programs and policies are implemented
 - How impactful are these policies? What are the constraints to further action?
- Goal 3: To help in the research and analysis process for Commission activities and implemented programs.
 - Quantitative and qualitative methods
 - Survey design

Questions

- How much time per week should I expect to make for the Commission?
- Will I be able to engage in the policy making process? Participatory or audience member?
- Key roles associated with being a student Commissioner?
- Next steps moving forward?

Addendum 1/3/22 from LeRoy

- 1) Brian Shorkey with Planning is requesting that we review the proposed Silverleaf Development for our recommendations for a Wetland Use Permit. I've included a few of the drawings and it appears that the applicant (Mayberry) has submitted all the required documentation and permits including a [Natural Features Study](#) (160 pages, 18 MB). There is not a landscape plan yet, so we may be able to weigh in on that (planting natives, creative plantings/etc. in the retention pond area, etc.) at a later time. Because it borders on a State-regulated wetland, it is required to have a State Wetland Use Permit which was granted in December. We have also asked for a review from our Wetland Consultant (which may come in the next week).
- 2) LuAnn Maisner, Parks Director, has asked to do a brief 10 min. presentation about the Parks Master Plan Update. She is also inviting feedback from us. The draft plan can be found [here](#). (It's 34 MB... 145 pages). LuAnn will give us an abbreviated overview.



To: Environmental Commission

From: Brian Shorkey, Senior Planner

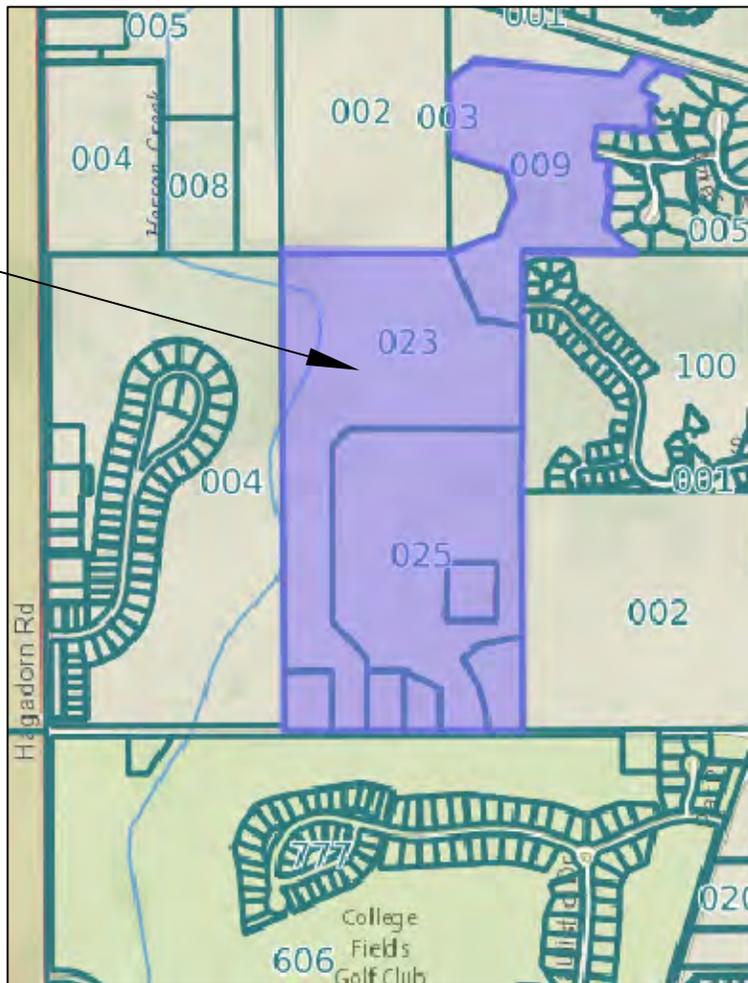
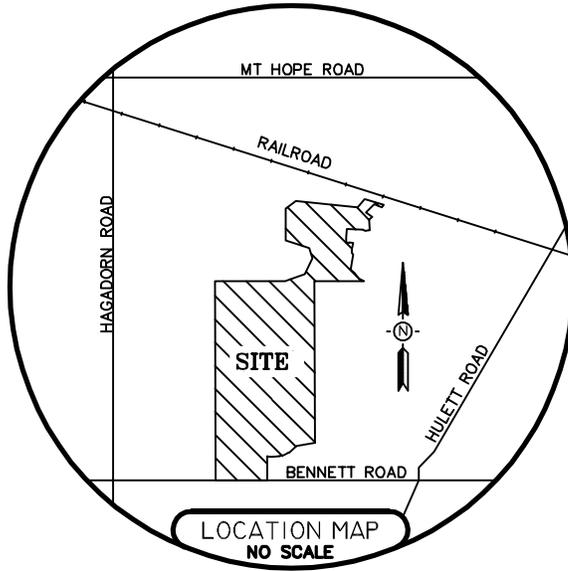
Date: January 5, 2022

Re: Wetland Use Permit #21-01 (Bennett Holding, LLC), to build a drain into a protected wetland at the Silverleaf PUD on Bennett Road.

Bennett Holding, LLC has requested a wetland use permit to build the first three phases of a 150-unit Planned Unit Development (PUD) on Bennett Road. The PUD, named Silverleaf, is proposed to be constructed on a property that is made up of five parcels totaling approximately 76.5 acres in size and zoned RAA (One-Family/Low Density Residential). There is a sixth northern parcel, approximately 22 acres, that is being conveyed to Meridian Township as permanent greenspace.

The subject property is located on the north side of Bennett Road, east of South Hagadorn Road and west of Hulett Road. The Board voted to approve Planned Unit Development #20014 to construct the PUD at its regular meeting held on October 6, 2020. The construction plan that was submitted showed two wetlands on the subject property, as well as five stormwater basins. Detention basin 3 requires the excavation of 14,100 cubic yards of excavation, 2,900 cubic yards of fill, and the construction of a 27-inch storm pipe that is proposed to cross two floodplains and drain into a protected wetland.

The drain into the wetland from detention bason 3 requires a wetland permit from the Township. The project received approval from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on December 6, 2021. The township's wetland consultant was contacted on December 9, 2021.



PROPOSED
SILVERLEAF
CONDOMINIUM
DEVELOPMENT



KEBS, INC.

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

Marshall Office
Ph. 269-781-9800

APPLICANT: MAYBERRY HOMES

SILVERLEAF CONDOMINIUM
SITE LOCATION MAPS

SCALE:
NONE

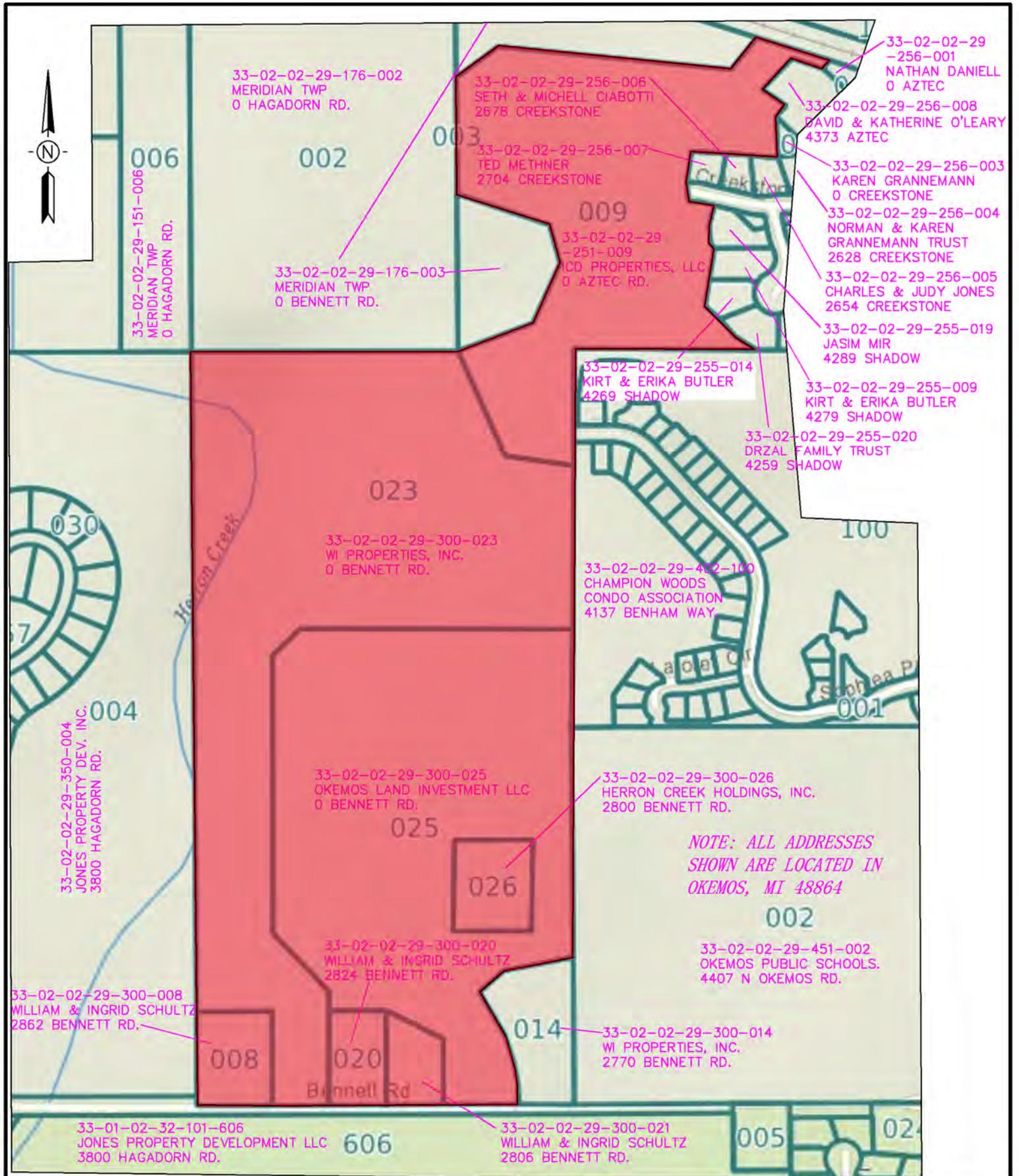
JOB #:
97343

DATE:
8-30-21

LOCATION: SEC 29, T4N, R1W
MERIDIAN TOWNSHIP

EGLE-WRD
SHEET # 19 v.1.0
FIGUREd

Issued On: 12/06/2021
Expires On: 12/06/2026



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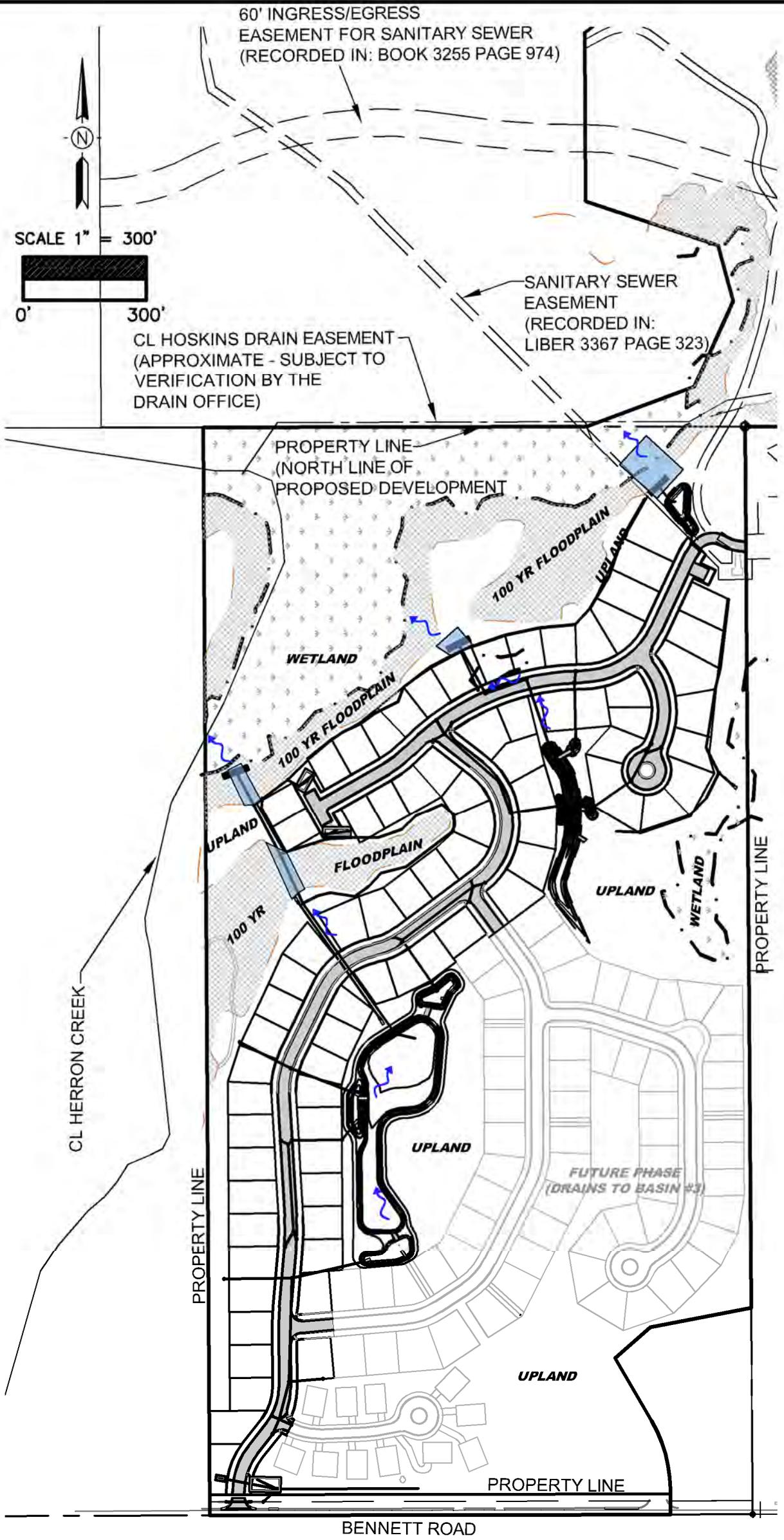
Marshall Office
Ph. 269-761-9800

APPLICANT: MAYBERRY HOMES

**SILVERLEAF CONDOMINIUM
PARCEL IDENTIFICATION NUMBERS MAP**

| | | | | |
|----------------|-----------------|------------------|--|--|
| SCALE: NONE | JOB #: 97343 | DATE: 8-30-21 | LOCATION: SEC 29, T4N, R1W MERIDIAN TOWNSHIP | EGLE-WRD WRKSHEET # 19 v1.0 FIGURE 4 |
|----------------|-----------------|------------------|--|--|

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APPLICANT: MAYBERRY HOMES

SILVERLEAF CONDOMINIUM
 EXISTING EASEMENTS

| | | | | |
|-------------------|----------------|------------------|---|---------------------|
| SCALE: 1"=300' | JOB # 97343 | DATE: 8-30-21 | LOCATION: SEC 29, T4N, R1W MERIDIAN TOWNSHIP | SHEET# FIGURE 10 |
|-------------------|----------------|------------------|---|---------------------|

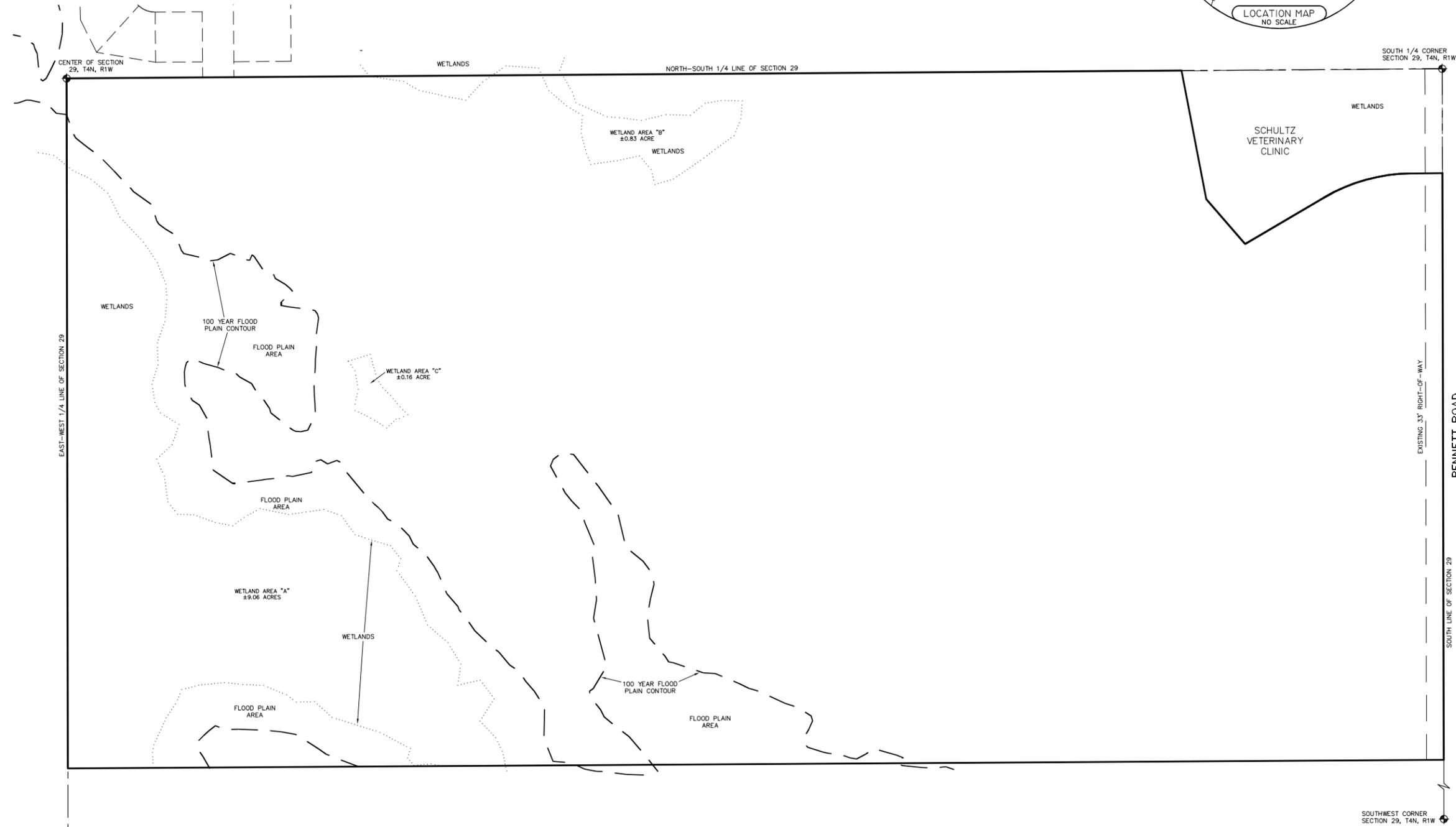
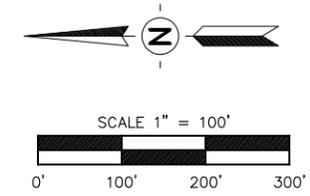
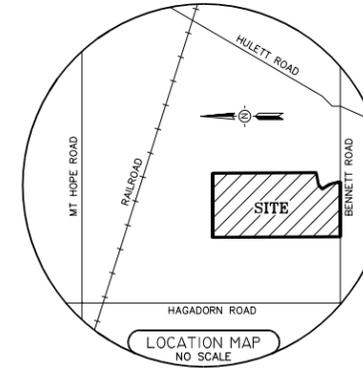
EGLE-WRD

W/REVISED V1.0
 Issued On: 12/06/2021
 Expires On: 12/06/2026

FOR: MAYBERRY HOMES

WETLAND SKETCH PLAN

"STURK PROPERTY"



| REVISIONS | COMMENTS | KEBS, INC. ENGINEERING AND LAND SURVEYING | |
|-----------|----------|---|----------------------|
| 12/5/17 | ORIGINAL | 2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM | |
| | | Marshall Office - Ph. 269-781-9800 | |
| | | DRAWN BY KDB | SECTION 29, T4N, R1W |
| | | FIELD WORK BY CM/SW | JOB NUMBER |
| | | SHEET 1 OF 1 | 87297.SUB - WETLANDS |

ISSUED WRD
WRP0317/19 v1.0
Applied
Issued On: 12/06/2021
Expires On: 12/06/2026

NOTE: SEE FIGURES ATTACHED ELSEWHERE FOR DETAILED DRAWINGS OF AREAS B, C & D.

FLOODPLAIN CUT/FILL CALCULATIONS:

LEVEL SPREADER: **(B)**
EXCAVATION VOLUME TO BOTTOM OF STONE:
AREA INNER RIM (BOTTOM OF STONE) = 4.4' x 52.4' = 231 SFT
AREA OUTER RIM (BOTTOM OF STONE) = 12.9' x 64.5' = 832 SFT
VOLUME = 1/3 (AREA TOP + AREA BOTTOM + SQRT(AREA TOP x AREA BOTTOM)) x (DEPTH)
VOLUME = 1/3 (832 + 231 + SQRT(832 x 231)) x (842.0 - 839.9) = 1051 CFT = 38.9 CYD

FILL VOLUME TO TOP OF STONE: (COVERING LEVEL SPREADER)
VOLUME OF INTERIOR (PORTION WITH NO STONE)
AREA TOP = 7.0' x 55.0' = 385 SFT
AREA BOTTOM = 4.0' x 52.0' = 208 SFT
VOLUME = 1/3 (AREA TOP + AREA BOTTOM + SQRT(AREA TOP x AREA BOTTOM)) x (DEPTH)
VOLUME = 1/3 (385 + 208 + SQRT(385 x 208)) x (841.50 - 841.0) = 146 CFT = 5.4 CYD
THEREFORE, STONE FILL VOLUME = TOTAL EXCAVATION VOLUME - VOLUME OF INTERIOR
= 38.9 CYD - 5.4 CYD = 33.5 CYD

OVERALL NET VOLUME:
38.9 CYD OF EXCAVATION TO CREATE BOTTOM OF LEVEL SPREADER & FILL WITH 33.5 CYD OF RIPRAP YIELDS
5.4 CYD OF FLOODPLAIN CUT.

VOLUMES FOR FLOODPLAIN CROSSING: **(C)**
CUT: 4'x3' + 1/2(4')(3')x2 = 24 SFT
24SFT x 80' = 1920CFT = ±71CYD
FILL: ±71 CYD TO RESTORE
HOWEVER, PIPE PROTRUSION (CONSIDERED FILL) = USING VOL FOR A CONE &
SUBTRACTING INTERIOR SPACE OF PIPE:
 $V = \pi(R^2)(H/3) = \pi((16.75/12)^2)(44'/3) - \pi((13.5/12)^2)(44'/3) = 31 \text{ CFT} = \pm 1.2 \text{ CYD}$

VOLUMES FOR FLOODPLAIN CROSSING: **(D)**
CUT: 4'x4' + 1/2(4')(4')x2 = 32 SFT
32 SFT x 115' = 3680CFT = ±136CYD
FILL: ±136CYD
(i.e., THE SAME TO RESTORE THEREFORE NO NET CHANGE) = 0 CYD

THEREFORE, 5.4 CYD CUT - 1.2 CYD FILL + 0 CYD = 4.2 CYD NET OVERALL CUT.

(B) **(C)** **(D)**



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APPLICANT: MAYBERRY HOMES

SILVERLEAF CONDOMINIUM
FLOODPLAIN CUT/FILL CALCULATIONS

| | | | | |
|---------------|----------------|------------------|---|--|
| SCALE: N/A | JOB # 97343 | DATE: 8-30-21 | LOCATION: SEC 29, T4N, R1W MERIDIAN TOWNSHIP | EGLE-WRD WORKSHEET# 19 v1.0 FIGURE# 11 |
|---------------|----------------|------------------|---|--|

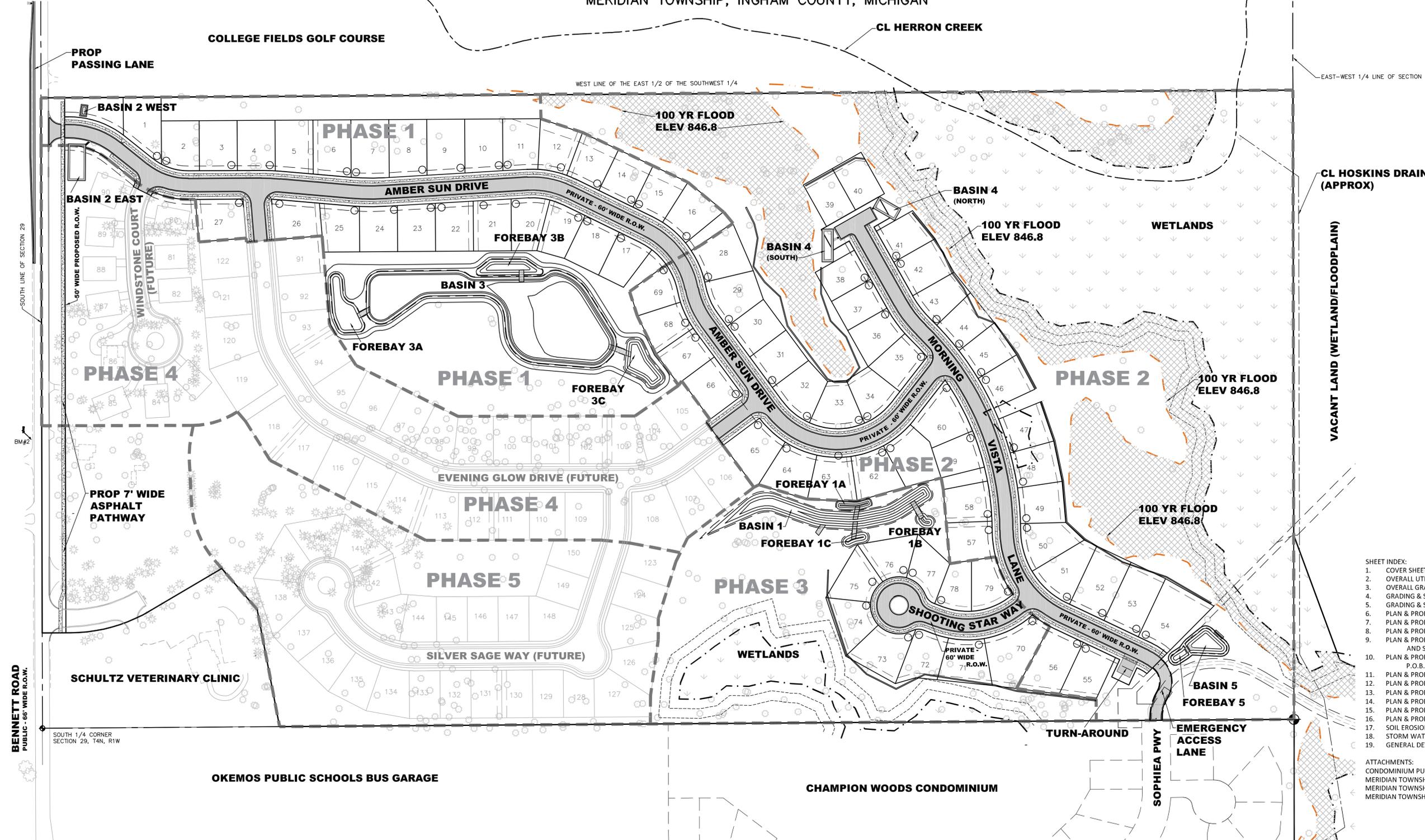
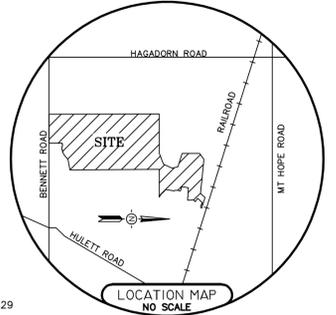
Issued On: 12/06/2021
Expires On: 12/06/2026

CONSTRUCTION PLANS FOR PHASES 1 - 3

SILVERLEAF CONDOMINIUM

MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

BENCHMARKS:
 BM#1 - ELEV. 847.47 N.A.V.D. 88
 SET PK NAIL IN NORTH SIDE POWER POLE ON SOUTH SIDE OF BENNETT ROAD, ±50' WEST OF DRIVE TO LIFT STATION
 BM#2 - ELEV. 863.65 N.A.V.D. 88
 SET PK NAIL IN NORTH SIDE POWER POLE ON SOUTH SIDE OF BENNETT ROAD ACROSS FROM DRIVE TO #2008 BENNETT ROAD
 BM#3 - ELEV. 865.77 N.A.V.D. 88
 TOP OF NINE FLANGE BOLT ON FIRE HYDRANT UNDER "W" IN E/W ON EAST SIDE OF ENTRANCE TO BENNETT WOODS ELEMENTARY SCHOOL.



| EXISTING LEGEND | |
|-----------------|-------------------------------------|
| | 100 YR FLOODPLAIN - ELEV 846.8 NAVD |
| | EX CONTOUR ELEVATION |
| | EX WATER MAIN |
| | EX SANITARY SEWER |
| | EX STORM SEWER |
| | WETLAND LINE |
| | EX GAS LINE |
| | EX OVERHEAD WIRES |
| | EX SANITARY MANHOLE |
| | EX DRAINAGE MANHOLE |
| | EX ELECTRIC MANHOLE |
| | EX TELEPHONE MANHOLE |
| | EX CATCHBASIN |
| | EX FIRE HYDRANT |
| | EX VALVE |
| | EX UTILITY POLE |
| | EX LIGHT POLE |
| | EX GUY WIRE |
| | EX UTILITY PEDESTAL |
| | EX TRANSFORMER |
| | EX SIGN |
| | EX GAS VALVE |
| | EX WETLANDS |
| | EX FLOODPLAIN |

| PROPOSED LEGEND | |
|-----------------|--------------------------------|
| | PROP HYDRANT |
| | PROP GATE VALVE |
| | PROP SANITARY SEWER |
| | PROP STORM SEWER |
| | PROP WATER |
| | PROP SANITARY MANHOLE |
| | PROP DRAINAGE STRUCTURE |
| | PROP CATCHBASIN |
| | PROP UTILITY EASEMENT |
| | PROP CONTOUR ELEVATION |
| | PROP BASEMENT FLOOR ELEV. |
| | PROP GARAGE FLOOR ELEV. |
| | PROP TOP OF CURB ELEV. |
| | MATCH EXISTING ELEV. |
| | DENOTES S.E.S.C. KEYING SYSTEM |
| | PROP ASPHALT |
| | PROP CONCRETE |
| | PROP STD CON. CURB & GUTTER |
| | PROP SILT FENCE |
| | PROP LIMITS OF DISTURBANCE |
| | PROP THRUST BLOCK |

- SHEET INDEX:**
- COVER SHEET
 - OVERALL UTILITY PLAN
 - OVERALL GRADING PLAN
 - GRADING & SESC PLAN - NORTH HALF
 - GRADING & SESC PLAN - SOUTH HALF
 - PLAN & PROFILE - AMBER SUN DRIVE P.O.B. STA 20+00 TO STA 31+50
 - PLAN & PROFILE - AMBER SUN DRIVE STA 31+50 TO P.O.E. STA 42+61
 - PLAN & PROFILE - MORNING VISTA LANE P.O.B. STA 0+00 TO STA 9+50
 - PLAN & PROFILE - MORNING VISTA LANE STA 9+50 TO P.O.E. 13+38 AND SHOOTING STAR WAY P.O.B. STA 70+00 TO P.O.E. 73+67
 - PLAN & PROFILE - EVENING GLOW DRIVE - STUBS FOR FUTURE ROAD P.O.B. STA 50+00 TO 56+50 & 62+50 TO P.O.E. STA 65+34
 - PLAN & PROFILE - BENNETT ROAD P.O.B. STA 110+00 TO STA 120+00
 - PLAN & PROFILE - BENNETT ROAD STA 120+00 TO P.O.E. STA 131+00
 - PLAN & PROFILE - BASIN #1 STORM SEWER INLET/OUTLET
 - PLAN & PROFILE - BASIN #3 STORM SEWER INLETS
 - PLAN & PROFILE - BASIN #1 & BASIN #3 INLETS
 - PLAN & PROFILE - BASIN #3 & #5 STORM SEWER OUTLETS
 - SOIL EROSION & SEDIMENTATION CONTROL DETAILS
 - STORM WATER MANAGEMENT DETAILS
 - GENERAL DETAILS & NOTES

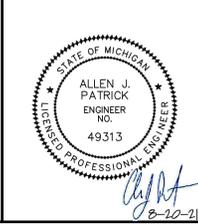
ATTACHMENTS:
 CONDOMINIUM PUD PLAN (AS APPROVED)
 MERIDIAN TOWNSHIP SANITARY DETAILS
 MERIDIAN TOWNSHIP WATER DETAILS
 MERIDIAN TOWNSHIP PATHWAY DETAILS

| ENGINEER | DEVELOPER | CONTRACTOR |
|---|--|---|
| KEBS, INC. 2116 HASLETT RD. HASLETT, MI 48840 (517) 339-1014 | MAYBERRY HOMES 1050 KENDALE BLVD. E. LANSING, MI 48823 (313) 371-5000 | E.T. MACKENZIE CO. 4248 W. SAGINAW HWY. GRAND LEDGE, MI 48837 (517) 627-8408 |

| |
|---|
| ○ DENOTES PROPOSED STREET TREE LOCATIONS |
| STREET TREES REQUIRED |
| 1 STREET TREE FOR EVERY 70 FEET OF FRONTAGE |

- EXISTING DECIDUOUS TREE
- ☼ EXISTING CONIFEROUS TREE

DESCRIPTION OF PROJECT:
 SILVERLEAF CONDOMINIUM IS A MULTI-PHASE RESIDENTIAL DEVELOPMENT ON BENNETT ROAD IN MERIDIAN TOWNSHIP. THE 94 ACRE SITE WILL BE DEVELOPED IN 5 PHASES, RESULTING IN 150 PROPOSED "LOTS"/UNITS. THESE PLANS ARE FOR PHASES 1 - 3, CONSISTING OF UNITS 1-79. THE SITE CONTAINS AREAS OF FLOODPLAIN, WETLANDS, FORESTED AREAS AND OPEN GRASSED AREAS, BOUNDED BY THE HERRON CREEK ON THE WEST SIDE AND THE HOSKINS DRAIN ON THE NORTH SIDE.



REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|--------|-------------------|
| 1 | 4/1/21 | ISSUE FOR PERMITS |
| 2 | 4/1/21 | ISSUE FOR PERMITS |
| 3 | 4/1/21 | ISSUE FOR PERMITS |

KEBS, INC. 2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshall Office Ph. 269-781-9800

Silverleaf Condominium
 COVER SHEET

| | | |
|-------------------------------|------------------|------------------|
| HORIZ. SCALE: 1" = 100' | DESIGNER: DCD | APPROVED BY: AJP |
| DATE: 4/1/21 | PROJECT MGR. JWK | SHEET 1 OF 19 |
| AUTHORIZED BY: MAYBERRY HOMES | JOB #: | 97343 |

SILVERLEAF CONDOMINIUM

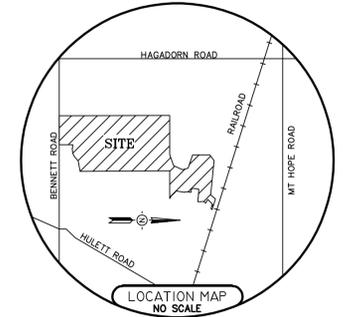
MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

GRADING NOTES

- ALL NEW SIDEWALKS AND PAVEMENTS SHALL BE PLACED AT AN ELEVATION THAT PROVIDES POSITIVE DRAINAGE AND CONSISTENT SLOPES. ENSURE NO LOW SPOTS ARE CREATED. NEW WALKS & PAVEMENT SHALL MEET EXISTING PAVEMENT FLUSH AT EXISTING GRADE. NOTIFY OWNER AND/OR ENGINEER IF GRADES ON PLAN CANNOT BE MET TO ENSURE POSITIVE DRAINAGE.
- CURB RAMP SLOPES SHALL NOT EXCEED 8%.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING GRADES TO ENSURE PROPER DRAINAGE WHERE PROPOSED GRADES MEET EXISTING GRADES. NOTIFY OWNER AND/OR ENGINEER IF GRADES ON PLAN DO NOT MATCH EXISTING ELEVATIONS.

TOTAL PUD ACRES = ±93.9 ACRES
 TOTAL AREA DISTURBED = ±50 ACRES
 (ALL PHASES)

NOTE: WETLAND PROTECTION SIGNS REQUIRED IN THIS AREA PER MERIDIAN TOWNSHIP STANDARDS
 SYMBOL DENOTES AREAS FOR PROTECTION SIGNS



SOILS INFORMATION:
 SOIL SURVEY FROM NATIONAL RESOURCES CONSERVATION SURVEY - WEB SOIL SURVEY



Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|-----------------------------|--|--------------|----------------|
| Ad | Adrian silt, 0 to 1 percent slopes | 2.1 | 2.1% |
| Co | Cotwood-Brookston loams | 12.6 | 13.0% |
| Ed | Edwards silt, 0 to 1 percent slopes | 0.4 | 0.4% |
| Hi | Houghton silt, 0 to 1 percent slopes | 20.4 | 21.1% |
| MAb | Marlette fine sandy loam, 2 to 4 percent slopes | 14.9 | 15.4% |
| Mac | Flint fine sandy loam, Saginaw Ls. & 12 percent slopes | 8.3 | 8.6% |
| MDD | Marlette silt, 12 to 18 percent slopes, eroded | 6.1 | 6.3% |
| ChB | Chatham sandy loam, 0 to 6 percent slopes | 16.3 | 16.9% |
| Dvc | Dutton sandy loam, 6 to 12 percent slopes | 6.1 | 6.3% |
| DIC | Dutton-Spinks loamy sands, 6 to 12 percent slopes | 2.6 | 2.7% |
| Dwb | Dutton-Marlette sandy loams, 2 to 4 percent slopes | 1.1 | 1.1% |
| Dwc | Chatham-Marlette sandy loams, 6 to 12 percent slopes | 0.3 | 0.3% |
| RSC | Ridgely-siltstone sandy loams, 6 to 12 percent slopes | 1.1 | 1.2% |
| RSD | Ridgely-siltstone sandy loams, 12 to 18 percent slopes | 4.1 | 4.2% |
| SpB | Spinks sandy sand, 0 to 6 percent slopes | 0.4 | 0.4% |
| Totals for Area of Interest | | 96.7 | 100.0% |

BENCHMARKS:

BM#1 - ELEV. 847.47 N.A.V.D. 88
 SET PK NAIL IN NORTH SIDE POWER POLE ON SOUTH SIDE OF BENNETT ROAD, ±50' WEST OF DRIVE TO LIFT STATION

BM#2 - ELEV. 863.85 N.A.V.D. 88
 SET PK NAIL IN NORTH SIDE POWER POLE ON SOUTH SIDE OF BENNETT ROAD ACROSS FROM DRIVE TO #2806 BENNETT ROAD

BM#3 - ELEV. 865.77 N.A.V.D. 88
 TOP OF NINE FLANGE BOLT ON FIRE HYDRANT UNDER "M" IN CURB ON EAST SIDE OF ENTRANCE TO BENNETT WOODS ELEMENTARY SCHOOL.

ENGINEER: KEBS, INC. 2116 HASLETT RD., HASLETT, MI 48840 (517) 339-1014
 DEVELOPER: MAYBERRY HOMES 14248 W. SAGINAW HWY., GRAND LEDGE, MI 48837 (517) 371-5000
 CONTRACTOR: E.T. MACKENZIE CO. 14248 W. SAGINAW HWY., GRAND LEDGE, MI 48837 (517) 327-8408

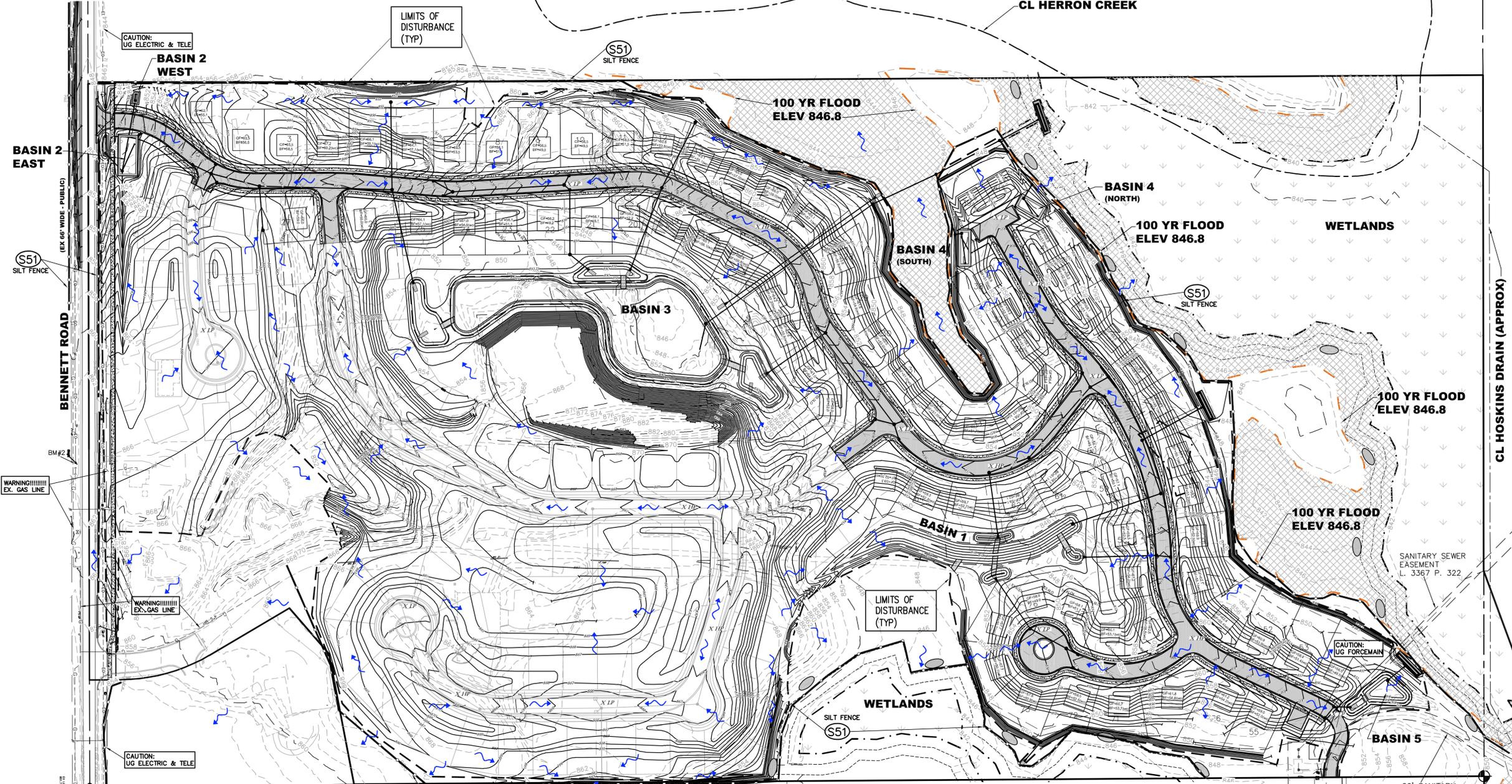
REVISIONS

| | | | |
|---------------|--|------------------|------------------|
| REVI: 5-26-21 | SHIFT ROADWAYS TO MAKE ROOM FOR REAR YARD DRAINAGE | DESIGNER: JWK | APPROVED BY: AJP |
| REVI: 6-20-21 | SUBMITTAL | PROJECT MGR. JWK | SHEET 3 OF 19 |

DATE: 4/1/21
 AUTHORIZED BY: MAYBERRY HOMES
 JOB #: 97343

KEBS, INC. KYES ENGINEERING
 2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047
 Marshall Office Ph. 269-781-9800

Silverleaf Condominium
 OVERALL GRADING/SECC PLAN - ALL PHASES



EXISTING LEGEND

- 100 YR FLOODPLAIN - ELEV 846.8 N.A.V.D.
- EX CONTOUR ELEVATION
- EX WATER MAIN
- EX SANITARY SEWER
- EX STORM SEWER
- EX WETLAND LINE
- EX GAS LINE
- EX OVERHEAD WIRES
- EX SANITARY MANHOLE
- EX DRAINAGE MANHOLE
- EX ELECTRIC MANHOLE
- EX TELEPHONE MANHOLE
- EX CATCHBASIN
- EX FIRE HYDRANT
- EX VALVE
- EX UTILITY POLE
- EX LIGHT POLE
- EX GUY WIRE
- EX UTILITY PEDESTAL
- EX TRANSFORMER
- EX SIGN
- EX GAS VALVE
- EX WETLANDS
- EX FLOODPLAIN

PROPOSED LEGEND

- PROP HYDRANT
- PROP GATE VALVE
- PROP SANITARY SEWER
- PROP STORM SEWER
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- PROP DRAINAGE STRUCTURE
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- PROP GARAGE FLOOR ELEV.
- PROP TOP OF CURB ELEV.
- MATCH EXISTING ELEV.
- NOTES S.E.S.C. KEYING SYSTEM
- PROP ASPHALT
- PROP CONCRETE
- PROP STD CON. CURB & GUTTER
- PROP SILT FENCE
- PROP LIMITS OF DISTURBANCE
- PROP THRUST BLOCK

2021 Annual Report



Environmental Commission

(draft - 12/21/21)

Introduction

2021 was an active year for the Environmental Commission. While COVID presented some challenges, Zoom and other virtual platforms offered an increased ability to meet, communicate, and connect. Virtual meetings saved time, space, money, energy, and tax dollars. Student involvement on the Environmental Commission also increased. The outdoor Marketplace on the Green also provided many opportunities for safe educational opportunities and recycling events.

This report provides an overview of activities related several subcommittees including the:

**Energy Team
Food-to-Compost Group
Green Team
Wetland Education Team
Green Grants Team
Green Dialogue
Environmental Justice Study Group
Green Neighbors Network**

MEMBERS OF THE ENVIRONMENTAL COMMISSION IN 2021

**John Sarver, Chair
Anna Colby, Vice Chair
Tom Frazier, Commissioner
Kendra Grasseschi, Commissioner, Liaison to Land Preservation Advisory Board
Ned Jackson, Commissioner, Liaison to Brownfield Redevelopment Authority
Bill McConnell, Commissioner, Liaison to Planning Commission
Bernadette Osborn, Student Commissioner
Annaka Saffron, Student Commissioner
Rose Vadnais, Commissioner
Luca Wisinski, Student Commissioner
Courtney Wisinski, Trustee Liaison**

STAFF TEAM MEMBERS

**LeRoy Harvey, Environmental Programs Manager
Derek Perry, Deputy Township Manager/Director of Public Works
Emma Campbell, Land Stewardship Coordinator
Denise Green, Administrative Assistant
with support from Rob MacKenzie, Stephen Gebes, Cara Maney,
Brandie Yates, Andrea Smiley, Tom Cary and others.**

Energy

The Energy Team provided support for several Township initiatives including expansion of Meridian's renewable energy usage. Solar photovoltaic systems were installed at the Service Center and the Marketplace on the Green.

Factoring increased energy efficiency of Township operations, increased utility-supplied renewable, and on-site solar generation, Meridian is approaching the halfway point towards its 2035 Climate Sustainability Goals. View Meridian's real-time solar output at bit.ly/meridianPV1.

Energy Team members helped organize a Solar and Sustainable Tour which featured a dozen solar installations as well as other "green" sites. Video documentaries of sites and a full list can be found at bit.ly/SolarSustainable.

Meridian participated in PowerMIFleet, a program designed to help fleet owners and operators reduce operating costs, eliminate emissions, and simplify vehicle maintenance by transitioning to electric vehicles. This study will help with planning for future charging station priorities and vehicle purchase.

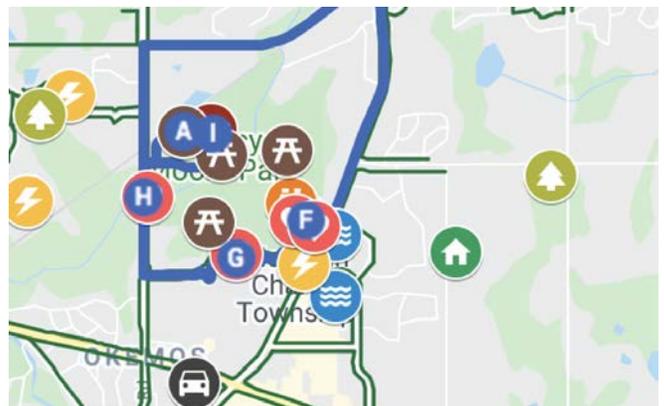
Energy Team
Roger Eberhardt
LeRoy Harvey
Rob Kaercher
Valerie Lafferty
Rob MacKenzie
Derek Perry
Heidi Porter
JoAnn Render
John Sarver



Meridian Township Climate Sustainability Plan
[100% Renewable Energy Goal for Electricity for Township Operations](#)
Status Update – 2018 to 2020

| Baseline is 2018 | 2035 Goal | Status at end of 2020 |
|--------------------|-----------|-----------------------|
| Consumers Energy | 40% | 11% |
| Energy Efficiency | 30% | 14% |
| On-Site Solar | 30% | 17%* |
| Total | 100% | 42% |
| | | Status at end of 2021 |
| On-Site Solar kW's | 406 | 202 |

*On-site solar includes actual and projected kWh's based on 202 kW



Water & Green Infrastructure

A Wetland Education Committee was created in 2021. Initial outreach included distribution of a letter and brochure to 1400+ individuals that either reside or own property on or adjacent to a wetland. A factsheet on the "8Rs of Fall Yard Care" was also distributed.

Green Infrastructure Grants were awarded to two local schools. Projects included an outdoor courtyard renovation at Haslett Middle School and a nature trail, signage, and greenhouse renovation at Montessori Radmoor in Okemos.

Over 500 tree saplings were distributed at the Marketplace on the Green with help from the Green Team, staff, volunteers, and the Ingham Conservation District.

Eight sealcoat contractors applied to provide environmentally-friendlier sealcoating services in the Township.

Several work days were held at the Hidden River Rain Garden (Burcham and Park Lake) which included planting, weeding, and pet rocks painted by residents of Burcham Hills Senior Living.

The Township Board of Trustees budgeted \$5000 to support a wetland education and outreach plan in 2022.

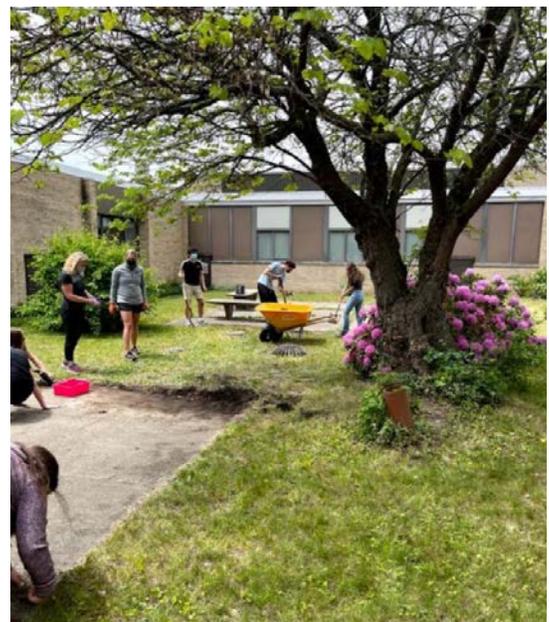


Wetland Education Committee

- Emma Campbell
- Paige Felice
- Kendra Grasseschi
- LeRoy Harvey
- Rose Vadnais
- Courtney Wisinski

Green Grant Committee

- Kendra Grasseschi
- LeRoy Harvey
- John Sarver
- Rose Vadnais
- Courtney Wisinski



Recycling & Waste Reduction

Several recycling events were held during 2021 in partnership with Okemos Schools, Okemos Action, Meridian Farmers Market, Okemo Earth Club, Granger, Delta Dental, Meridian Cares, and others. Over 100 volunteers assisted in recycling electronics, bicycles, eyeglasses, plastic utensils, styrofoam, and coats/clothing.

Other events were also held by the Green Team including a Green Fair, a medicine collection, and a tree distribution.

A Food-to-Compost Committee was launched in 2021 and had explored possibilities for reducing food waste, a gleaning initiative, composting alternatives, and local partnerships. A tour of Hammond Farms' composting operation was held.

A plan and proposal to improve and expand the Meridian Recycling Center was developed in partnership with Reclaimed by Design, Spicer Group, Mid-Michigan Environmental Action Council and others.

Twelve issues of the Green Gazette were published in 2021 (185 issues to date) filled with local, regional, and other environmental news. To subscribe, visit <http://bit.ly/gg-directory>



**GREEN
FAIR**

Green Team

Sarah Allen
Dave Batten
Ellen Dillman
Tom Frazier
LeRoy Harvey
Audrey Herchert-Walton
Bernadette Osborn
Anne Perkins
Elaine Putvin
Luca Wisinski

Food-to-Compost Committee

Dave Batten
Nevin Brittain
Tom Cary
Anna Colby
Tom Frazier
Valerie Lafferty
Gabi Mayer
Elaine Putvin



Other Collaborative Initiatives

Green Neighbors Network

Kick-off of the Green Neighbors Network (GNN) began in January. This is a grassroots movement that allows neighbors to share green topics, practices, knowledge and expertise with neighbors and the greater meridian community.

Over 25 neighborhoods are currently represented in this network. For more information, visit <https://bit.ly/greenneighbor>



GNN Organizers

Sarah Allen
Kendra Grasseschi
LeRoy Harvey
John Sarver

Environmental Justice Study Group

The Environmental Commission's Environmental Justice Study group attended a 3-day conference entitled: "Michigan Environmental Justice: Building Trust, Reimagining Justice, and Removing Barriers." The study group's work has centered on the equitable treatment of all including residents, staff, and the implementation of environmental policies.

"Environmental Justice is the equitable treatment and meaningful involvement of all people, regardless of race, color, national origin, ability, or income and is critical to the development and application of laws, regulations, and policies that affect the environment, as well as the places people live, work, play, worship, and learn."

**-MI Office of the Environmental Justice
Public Advocate**

Environment Justice Study Group

Sarah Allen
Kendra Grasseschi
Rose Vadnais
Courtney Wisinski

