

MARION TOWNSHIP
BOARD OF TRUSTEES
REGULAR MEETING
Thursday, February 13, 2020
7:30 p.m.

Call to Order
Pledge of Allegiance
Members Present/Members Absent
Call to the Public

- 1) Approval of Agenda
- 2) Consent Agenda
 - a. Approval of January 23, 2020 Regular Meeting Minutes
 - b. DPW Report
 - c. Zoning Report
 - d. January 2020 Financial Report
- 3) MHOG
- 4) Final Review-Amend up #01-03 Commercial Stable at 2699 Cedar Lk Rd
- 5) Final Review-Proposed TXT #04-17 Section 8.01.B.3 Nursery Operation Section 10.01.B.16 Landscape Contractors Yard
- 6) Final Review-Revised TXT #03-18 Section 6.14 Home Occupation, Section 17.32 Home Based Business
- 7) Final Review-Annual Report from Secretary of the Planning Commission
- 8) Board of Review Resolution
- 9) Meadows West REU Reassignment
- 10) Engineering Hourly Inspection Rates
- 11) Development Standards (bring back)
- 12) Township Roads

Correspondence and Updates
CIRAB Report
Livingston County Updates

Call to the Public
Adjournment

Reminder: Next Board Packet will be ready after 3pm on Thursday, February 20, 2020

Request for Zoning Administrator, Dave Hamann, to be present at
the Board of Trustee meeting on Feb. 13-2020
Date

Requested by Robert Hamann
Signature

MARION TOWNSHIP
BOARD OF TRUSTEES
REGULAR MEETING
JANUARY 23, 2020

MEMBERS PRESENT: Les Andersen, Tammy Beal, Duane Stokes, Scott Lloyd, Greg Durbin, Dan Lowe, and Bob Hanvey

MEMBERS ABSENT: None

OTHERS PRESENT: Phil Westmoreland, Spicer; Dave Hamann, Zoning Administrator

CALL TO ORDER

Bob Hanvey called the meeting to order at 7:30 pm.

PLEDGE OF ALLEGIANCE

BOARD MEMBERS PRESENT

The board members introduced themselves.

CALL TO THE PUBLIC

Stacy Fountain, 5842 Crofoot, said he would like to talk about his road, and said he would wait for that agenda item.

Paul Junge from Brighton, who is a candidate running for the 8th Congressional District representative, currently held by Elissa Slotkin, introduced himself to the board members.

APPROVAL OF AGENDA

Item #9 on Township Parks was added. Les Andersen motioned to approve as amended. Duane Stokes seconded. **Motion carried.**

CONSENT AGENDA

Bob Hanvey said the correct account number for the computer upgrades budget amendment should be 6903-979, not 797, on page 2 of the January 9, 2020 board minutes. Les Andersen motioned to approve the consent agenda as amended. Duane Stokes seconded. **Motion carried.**

HEALTH INSURANCE PA #152 OPT-OUT

Les Andersen motioned to adopt a resolution that Marion Township opts-out of Health Insurance PA #152. Tammy Beal seconded. Roll call vote: Lowe, Lloyd, Beal, Hanvey, Durbin, Andersen, Stokes—all yes. **Resolution passed 7-0.**

TRIANGLE LAKE GOOSE CONTROL PERMIT RESOLUTION

Les Andersen asked if this only applies to Canadian geese. Bob Hanvey explained it is a multi-step process, and there are three permits: one for nest destruction, one to gather the geese, and one to relocate. The permit does specify Canadian geese.

Tammy Beal motioned to adopt a resolution to approve the five-year permit for Triangle Lake Geese Management funded by the existing special assessment district, as presented. Greg Durbin seconded. Roll call vote: Stokes, Durbin, Hanvey, Lloyd, Beal, Andersen, Lowe—all yes. **Resolution passed 7-0.**

DARAKJIAN PROPERTY

The township board members have decided to not take action on this item until the shredder issue is resolved. The most recent Howell city ZBA meeting was postponed.

MHOG

Bob Hanvey provided the board members with MHOG's Water Reliability Study and a letter from Ken Palka with possible suggestions for financing without selling bonds. Mr. Hanvey said he will invite Mr. Palka to a future meeting.

DEVELOPMENT STANDARDS

Bob Hanvey had a few items he questioned such as the relationship between SUP and site plan review. He suggested a list of definitions, and also felt the section on roads was too strict. He suggested adding the word "new" in Section XII—Paving and Roads, item A, to read "All new public roads shall meet the requirements of the Livingston County Road Commission and the Marion Township Zoning Ordinance."

Dan Lowe asked about the number of parcels on a cul-de-sac, and Bob Hanvey asked about XII item J. Phil Westmoreland will provide a diagram. Mr. Westmoreland will provide a final copy with the suggested changes for the second meeting in February.

Les Andersen motioned to postpone action on this item. Greg Durbin seconded. **Motion carried.**

TOWNSHIP ROADS

Stacy Fountain, 5842 Crofoot, is concerned about the condition of his road. Tim Johnson from the LCRC told him to talk to the township. Les Andersen explained that Crofoot is one of the lesser traveled roads.

Larry Grunn, 3969 Love's Creek, asked the board to consider paving Cedar Lake Road between Coon Lake Road and Jewell. He said the road conditions ruin vehicles and affect pools and ponds in the area.

Les Andersen said that Schafer Road needs chip seal, and Cedar Lake by the "park and hunt" needs repair.

Mason Road near Burkhart is being fixed by the county with some grant funding.

Forrest Wyckoff, 3145 Cedar Lake, said the hill on Cedar Lake Road needs to be fixed before someone is injured.

Les Andersen suggested that the supervisor, two board members, and the engineer meet with the LCRC to discuss Cedar Lake Road.

PARKS

Bob Hanvey said at the Trail Summit meeting, the Michigan Horse Council is again interested in the Girl Scout Camp on Schafer Road and are applying for Wilson Foundation grants. He will get more details for the next meeting.

Tammy Beal said the HAPRA activity director would like to host a family campout on the township grounds on Saturday, June 20. Port-a-johns will be provided. Les Andersen motioned to authorize the clerk to gather more information. Duane Stokes seconded. **Motion carried.**

CORRESPONDENCE & UPDATES

A thank you letter was received from Livingston County Catholic Charities for use of the basement for the 2019 Christmas Blessing project.

The CIRAB meeting is scheduled for February 3 at 4 pm, at Howell City Hall, third floor.

Dan Lowe asked Phil Westmoreland if Woolly Bully's has a grease trap now that they're hooked up to the municipal sewer. Mr. Westmoreland will check.

CALL TO THE PUBLIC

No response.

ADJOURNMENT

Duane Stokes motioned to adjourn at 9:30 pm. Greg Durbin seconded. **Motion carried.**

Submitted by: S. Longstreet

Tammy L. Beal, Township Clerk Date

Robert W. Hanvey, Township Supervisor Date

FISCAL YEAR 2019-20 MARION TOWNSHIP FINANCIAL REPORT

Jan-20

GENERAL FUND CHECKING

Previous Balance	\$	1,046,395.99
Receipts	\$	178,291.00
Interest	\$	796.54
	\$	<u>1,225,483.53</u>
Expenditures	\$	169,224.62
Balance	\$	<u>1,056,258.91</u>

CEMETERY FUND

Previous Balance	\$	15,862.77
Receipts	\$	-
Interest		
	\$	<u>15,862.77</u>
Expenditures	\$	45.00
Balance	\$	<u>15,817.77</u>

PARKS & RECREATION FUND

Previous Balance	\$	2,513.76
Receipts	\$	-
Interest		
	\$	<u>2,513.76</u>
Expenditures	\$	25.23
Balance	\$	<u>2,488.53</u>

WATER - NEW USER

Previous Balance	\$	422,319.48
Receipts	\$	27,651.96
Interest	\$	305.78
	\$	<u>450,277.22</u>
Expenditures	\$	10,894.00
Balance	\$	<u>439,383.22</u>

11/10/11 11:45 AM
 11/10/11 11:45 AM
 11/10/11 11:45 AM

SEWER OPERATING & MANAGEMT

Previous Balance	\$	116,391.16
Receipts	\$	4,933.18
Interest		
	\$	<u>121,324.34</u>
Expenditures	\$	4,879.23
Balance	\$	<u>116,445.11</u>

SEWER - NEW USER

Previous Balance	\$	215,928.08
Receipts	\$	18,750.00
Interest		
	\$	<u>234,678.08</u>
Expenditures	\$	-
Balance	\$	<u>234,678.08</u>

SPEC ASSESS. FUND

Previous Balance	\$	165,257.02
Receipts	\$	49,276.62
	\$	<u>214,533.64</u>
Expenditures	\$	976.00
Balance	\$	<u>213,557.64</u>

SUMMARY TOTALS

General Fund	\$	1,056,258.91
Cemetery Fund	\$	15,817.77
Parks & Rec Capital Chk	\$	2,488.53
Water - New User	\$	439,383.22
Sewer Operating & Mana	\$	116,445.11
Sewer - New User	\$	234,678.08
Special Assess. Fund	\$	213,557.64
TOTAL	\$	<u>2,078,629.26</u>

02/06/20

#101 General Fund Account QuickReport As of January 31, 2020

Date	Num	Name	Memo	Amount
001 - CASH - GENERAL - FNB				
01/02/2020	10822	Kitsey A Rennells	APRIL & MAY 2019 MILEAGE	-14.50
01/02/2020	10823	Karen Hawkins	DECEMBER 2019 MILEAGE AND LUNCH STI...	-110.26
01/02/2020	10824	Loreen Judson	DECEMBER 2019 MILEAGE AND EXPENSES	-147.62
01/02/2020	10825	Gail Ann Burlingame	DECEMBER 2019 MILEAGE	-34.80
01/02/2020	10826	AT&T -General	ACT# 517 546 6622 125 8 / INVOICE# 5175466...	-286.19
01/02/2020	10827	Jessica Timberlake	DECEMBER 2019 MILEAGE	-27.84
01/02/2020	10828	PNC Bank	ACCOUNT# 0532 - 11/19/19 - 12/11/19	-2,679.42
01/02/2020	10829	KCI	2020 ASSESSMENT NOTICES - POSTAGE O...	-2,144.80
01/02/2020	ACH	STAPLES	ACT# 6389 - 0/21/19 - 11/19/19	-155.00
01/02/2020	10830	STAPLES	VOID: ACT# 6389 - 0/21/19 - 11/19/19	0.00
01/02/2020	10831	STAPLES	ACT# 6389 - 0/21/19 - 11/19/19	-459.70
01/02/2020	10832	STAPLES	ACT# 6389 - 11/20/19 - 12/18/19	-100.56
01/02/2020	2020REM...		2020 REMOTE DEPOSIT MACHINE FEE (\$50 ...	-600.00
01/02/2020	2020POS...		2020 POSITIVE PAY FEE (\$10 MONTHLY)	-120.00
01/02/2020	10833	Tammy Beal	NOVEMBER & DECEMBER 2019 MILEAGE	-71.92
01/02/2020			Deposit	1,160.00
01/03/2020	2019 W2 ...		ADP FEE - W2 PROCESSING FEE 2019	-238.95
01/03/2020	2019 W2 ...		ADP FEE - W2 PROCESSING FEE 2019 CRE...	238.95
01/03/2020	DEC 19 F...		ADP FEE - DECEMBER 2019	-298.40
01/06/2020			Deposit	168,308.00
01/07/2020			Deposit	1,258.00
01/08/2020	10834	Applied Imaging Systems Inc.	INVOICE# 1471063 / SERVICE INVOICE 1/2/2...	-247.50
01/08/2020	10835	DES MOINES STAMP	CUSTOMER# 7831072 / INVOICE# 7831072	-71.00
01/08/2020	10836	Culligan of Ann Arbor	ACCOUNT 760811 / INVOICE# 582311	-41.50
01/08/2020	10837	MICHAEL J. KEHOE, P.C.	INVOICE# 3087 & 3088 / JANUARY 2, 2020	-246.50
01/08/2020	10838	FOWLerville NEWS & VIEWS	INVOICE# 38487 / DECEMBER 2019 PUBLICA...	-236.50
01/08/2020	10839	NEOFUNDS BY NEOPOST	ACCOUNT# 7900-0444-4962-6229 - DECEMBE...	-1,000.00
01/09/2020	10840	VOYA Institutional Trust	DECEMBER 2019 PAYROLL	-300.00
01/09/2020	10841	Marion Township Flex Fund	DECEMBER 2019 PAYROLL	-2,005.32
01/09/2020	10842	ALERUS PAYMENT SOLUTIONS	DIVISION# 400381 / PLAN ID# 628223 / #4720-1	-3,678.56
01/09/2020	76100855	RICHARD C. DELL	DECEMBER 2019 PAYROLL	-23.09
01/09/2020	76100856	LESLIE D. ANDERSEN	DECEMBER 2019 PAYROLL	-392.36
01/09/2020	76100857	SCOTT R. LLOYD	DECEMBER 2019 PAYROLL	-276.58
01/09/2020	76100858	DANIEL F. LOWE	DECEMBER 2019 PAYROLL	-516.94
01/09/2020	76100859	CHERYL A. RANGE	DECEMBER 2019 PAYROLL	-23.09
01/09/2020	5301127	TAMMY L. BEAL	DECEMBER 2019 PAYROLL	-2,687.09
01/09/2020	5301128	JESSICA S. TIMBERLAKE	DECEMBER 2019 PAYROLL	-2,186.17
01/09/2020	5301129	THOMAS A. LLOYD	DECEMBER 2019 PAYROLL	-501.37
01/09/2020	5301130	KITSEY A. RENNELLS	DECEMBER 2019 PAYROLL	-2,109.25
01/09/2020	5301132	DIANE D. BOCKHAUSEN	DECEMBER 2019 PAYROLL	-23.09
01/09/2020	5301133	BARBARA J. HAMANN	DECEMBER 2019 PAYROLL	-23.09
01/09/2020	5301134	GAIL A. BURLINGAME	DECEMBER 2019 PAYROLL	-2,840.89
01/09/2020	5301135	DUANE M. STOKES	DECEMBER 2019 PAYROLL	-2,978.74
01/09/2020	5301136	SANDRA J. LONGSTREET	DECEMBER 2019 PAYROLL	-2,188.49
01/09/2020	5301137	GREGORY L. DURBIN	DECEMBER 2019 PAYROLL	-1,075.36
01/09/2020	5301138	DAVE HAMANN	DECEMBER 2019 PAYROLL	-3,360.96
01/09/2020	5301139	ROBERT W. HANVEY	DECEMBER 2019 PAYROLL	-3,598.13
01/09/2020	5301140	KAREN D. HAWKINS	DECEMBER 2019 PAYROLL	-2,234.28
01/09/2020	5301141	PATRICIA J. HUGHES	DECEMBER 2019 PAYROLL	-1,821.32
01/09/2020	5301142	LOREEN B. JUDSON	DECEMBER 2019 PAYROLL	-3,580.73
01/09/2020	5301250FIX	SANDRA J. LONGSTREET	DECEMBER 2019 PAYROLL (2ND PAYROLL ...	-106.20
01/09/2020	DEC 19 T...		TOTAL TAXES FOR DECEMBER 2019 PAYRO...	-10,669.07
01/09/2020	DEC 19 T...		TOTAL TAXES FOR DECEMBER 2019 PAYRO...	-17.60
01/09/2020	10843	DTE ENERGY	ACCOUNT# 9100 104 3211 0 - GENERAL OFF...	-482.35
01/09/2020	10844	LIV CO EQUALIZATION DEPT	KEY TOPICS FOR KAREN HAWKINS ON 1-24...	-10.00
01/09/2020	10845	MICHIGAN ELECTION RESOURCES	INVOICE# 10839 / AV SECURITY, INNER, OUT...	-2,068.00
01/13/2020	10846	BURNHAM & FLOWER AGENCY	Liability Insurance for 2020	-43,789.00
01/13/2020	REVER. ...		CHECKS RETURNED FROM BANK W/OUT SI...	-20.00
01/15/2020	10847	B&L Services	SNOWPLOW 12/17, 12/31, 1/12 - 2019-2020	-845.00
01/15/2020	10848	Charter Communications	ACT# 8245 12 487 0024359 / INV# 0024359010...	-406.65
01/15/2020			Deposit	484.00
01/16/2020	10849	PNC Bank	ACCOUNT# 0532 - 12/19/2019 - 01/14/2020	-1,420.96
01/16/2020			Deposit	126.07
01/17/2020	DEC 19 F...		ADP FEE - DECEMBER 2019	-298.40
01/17/2020	2019 W2 ...		ADP FEE - W2 PROCESSING FEE 2019	-102.10
01/17/2020	2019 W2 ...		ADP FEE - W2 PROCESSING FEE 2019 CRE...	102.10
01/21/2020	10850	MICHAEL SAWNICK	HALL RENTAL REFUND 01/18/2020	-100.00

02/06/20

**#101 General Fund
Account QuickReport
As of January 31, 2020**

Date	Num	Name	Memo	Amount
01/22/2020	10851	I.T. Right	INV# 20462763, 20162762, 20162573 - NEW P...	-17,836.00
01/22/2020	10852	Blue Cross Blue Shield of Michigan	GROUP 007017906710 / COVERAGE 2-15-202...	-15,263.82
01/22/2020	10853	CONSUMERS ENERGY	ACT# 8245 12 487 0024359 / INV# 0024359010...	-314.90
01/22/2020	REVER. ...		BANK REVERSED FEE FOR RETURNED CHE...	20.00
01/22/2020	ATT- JAN...		AT&T CELL TOWER LEASE PAYMENT JANU...	2,281.31
01/22/2020	2020TAX ...		ADP FEE - TAX CORRECTION 2020	-22.89
01/22/2020			Deposit	75.00
01/23/2020			Deposit	200.00
01/23/2020	10854	ABRA CA DABRA LOCK SERVICE	INVOICE# 14626 - CHECKED MAIN LOCKS A...	-65.00
01/27/2020	10855	EDWARD LATSON	January 2020 CLEANING	-300.00
01/27/2020	10857	B&L Services	SNOW PLOW 1/13, 1/18, 1/19, 1/20 - 2020	-950.00
01/27/2020	10856	B&L Services	VOID: SNOW PLOW 1/13, 1/18, 1/19, 1/20 - 2020	0.00
01/28/2020			Deposit	4,057.57
01/30/2020	10858	AT&T -General	ACT# 517 546 6622 125 8 / INVOICE# 5175466...	-285.42
01/30/2020	10859	BEAR WATER TREATMENT	TICKET# 984940 / SERVICE DATE: 1/29/2020	-66.44
01/30/2020	10860	MailFinance	CUST.# 01246949 / INVOICE# N8117640	-382.35
01/30/2020	10861	Colonial Life	BCN# E4270229 INVOICE# 42702259-0101499	-485.09
01/30/2020	10862	Greg Durbin	JANUARY 2020 MILEAGE	-13.23
01/30/2020	10863	DAVID HAMANN	JANUARY 2020 MILEAGE	-74.18
01/30/2020	10864	Duane Stokes	DECEMBER 2019- JANUARY 2020 MILEAGE	-41.52
01/31/2020			Interest	796.54
Total 001 - CASH - GENERAL - FNB				34,913.51
TOTAL				34,913.51

MEMO

To: Marion Township Board
From: Bob Hanvey
Subject: MHOG Water Reliability Study Implications
Date: January 23, 2020

Attached to this memo is a summary of the MHOG Water Reliability Study that is required by the State of Michigan to demonstrate that the authority will be able to meet the demands for water service by the residents in the service area. It looks at the existing conditions and projections for five and twenty-five years in the future.

As currently constructed, the wells and water treatment plant have the ability to produce more water than be distributed by the existing water mains.

To resolve this situation, MHOG has been working on plans to add water main from Sanitorium Road to the water tower at Hometown with a projected cost of about \$3,500,000 to meet demand in the near-term.

Looking at water demand in the five year term, an additional water main from the water plant on Norton Road to the ground storage tanks on Sanitorium will be required at an estimated cost of \$2,500,000.

Because the two water mains are located in the same area, there should be substantial savings if they are contracted and constructed as a single project.

These two improvements are considered "system improvements" that benefit all four townships and as such the cost should be shared equally.

Also attached to this memo is a letter from Ken Palka with possible suggestions for financing the project without the need to sell bonds.

This is an appropriate time for the Township to begin discussion on the issue.

Water Reliability Study

December 2019

PRESENTED TO

MHOG Sewer and Water Utilities
2911 Dorr Road
Brighton, Michigan 48116

PRESENTED BY

Tetra Tech P +1-517-316-3930
401 S. Washington Square F +1-517-484-8140
Suite 100 tetratech.com
Lansing, Michigan 48933



complex world | CLEAR SOLUTIONS™

EXECUTIVE SUMMARY

Marion-Howell-Oceola-Genoa Sewer and Water Utilities (MHOG) operates a public drinking water system in portions of Marion, Howell, Oceola, and Genoa Townships in Livingston County, surrounding the City of Howell and west of the City of Brighton. As such, Part 12 of Michigan Public Act 399 of 1976, known as the Safe Drinking Water Act, requires each owner of a public drinking water system to complete a study every five years to evaluate the reliability of the system to ensure a continuous supply of water. Compliance is enforced by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). MHOG initiated this study to comply with the reporting requirement and assess the performance of the MHOG water system. The last reliability study was completed in 2014. This past year, Tetra Tech was retained to complete the study, which includes compiling water demand data, calibrating and running a numerical model of the distribution system, and mapping efforts, among other tasks. The purpose of this report is to present the required data, provide an assessment of the system's performance, and look at future growth and demand conditions to make Capital Improvement recommendations.

Existing System Data

The MHOG system has approximately 5,507 current service connections. Residential customers account for 4,947 of them. Most of the commercial customers are located along Grand River Avenue and M-59. Since 2014, just under 5 miles of new water main was added to the distribution system.

MHOG's water is supplied by wells that can produce up to 12 million gallons per day (MGD) of raw water. The water is treated by one of the two interconnected water treatment plants and pumped into the distribution system. The North Plant has a capacity of 4 MGD and the South Plant has a capacity of 8 MGD. There are six wells in the system, located adjacent to the water treatment plant, where softening, pH adjustment, filtration, disinfection, and fluoride addition occurs. The wells have a firm capacity of 10 MGD. Wells are performance tested annually, and one well each year is pulled, televised, and reconditioned as necessary. All wells were in good operating condition in 2019.

The water distribution network is comprised of 4- to 24-inch diameter water mains. The water main is primarily ductile iron, with small percentages of PVC and HDPE. The oldest water mains in the system were installed in the late 1980s.

There are four major booster stations (Butler, Industrial Drive, Sanitorium Road West, and Sanitorium Road East) in MHOG's system to maintain levels in the water towers, and one smaller, local booster station (Georgetown) to maintain pressure for 10 homes near the ground storage tanks in Marion Township. The six storage facilities in the system have a total storage volume of 6.8 million gallons (MG). The two ground storage tanks are filled while the water treatment plant is operating and supply water to the system via the Sanitorium Road Booster Station. All towers were inspected, cleaned, and painted as necessary between 2016 and 2019 and were found to be in good overall condition.

In case of a power failure, the water supply and treatment plant have three permanent auxiliary power sources which can operate all six wells and the treatment process. MHOG also has permanent or portable power sources at all booster stations and towers.

MHOG has completed several tasks in the last five years to ensure that they continue to provide a reliable source of drinking water to their customers. On a regular basis they review and update planning materials, flush the system, test auxiliary power sources, exercise valves, and have the wells and storage facilities inspected. MHOG has also replaced two of the 2 MGD high service pumps with one 4 MGD high service pump, replaced the programmable logic controller (PLC) and replaced the north plant claricone lime sludge waste pump. They also upgraded their SCADA system and replaced the PLCs at Butler Road Booster Station, Golf Club Road PRV, and Oceola Tower.

MHOG's current Capital Improvement Plan includes eight projects, including six which were identified as recommended improvements in the 2014 Reliability Study.

The MHOG System Emergency Response Plan was updated in December 2019.

Water Production and Demands

The average day demand (ADD) from January 2015 through November 2019 was 1.74 MGD averaged over all months and 2.24 MGD for the May to September period, including backwashing and hydrant flushing operations. During the summer months, the ADD is more than 250 gallons per day (gpd) per REU. Since 2015, the average day demand has been increasing at approximately 3 percent per year.

The maximum day demand (MDD) recorded for the system is 4.5 MGD, which occurred in 2007. Since 2008, the maximum day demand has not exceeded 4.45 MGD, which occurred in July 2018.

The future service area boundaries projected for MHOG's system are approximately the same as the existing service boundaries for the 5-year planning period, with development outside of the existing service boundaries projected within the 20-year planning period. The growth in the 5-year planning period is assumed to occur at the same rate as the last two years. By 2024, growth is projected to increase the ADD, MDD, and PHD of the system to 2.9, 5.8, and 9.0 MGD, respectively. The growth in the 20-year planning period was projected to increase the demand to about 8.0 MGD during the maximum day demand.

The difference between the amount of water that is produced but not billed is called non-revenue water. A portion of the non-revenue water is used by MHOG for purposes such as hydrant flushing or firefighting (unbilled utility use), but the remaining water is considered lost water. The average non-revenue water between 2015 and 2019 was approximately 9 percent of the total water production which is considered low. As a general rule, water losses in excess of 15 percent are considered high in the industry.

Hydraulic Model Updates

MHOG maintains a hydraulic model of its water distribution network. As part of the water reliability study, the pipe network, demands, and the calibration were reviewed and updated. The model uses summer demands and system controls for the extended period performance simulations.

Static and residual pressure measurements were made at 26 locations in the system in June 2019. Five tests were discarded for the calibration because upon review the data did not appear accurate or the pressure drop was not satisfactory. Pump operation and tower levels were also recorded. A 2 psi threshold was used to ensure satisfactory calibration of the static pressures and a 15 percent threshold of the projected available flow rate at 20 psi residual pressure was used to ensure satisfactory calibration of the system's energy losses.

The modeled pressures matched the measured pressures well and the model was verified to be within 9 to 7 percent of predicted flow rates at 20 psi. Overall the difference between the modeled and measured static pressures was 0 psi. For the residual calibration, the model is conservative since it underestimated the available fire flow at 20 psi residual pressure by 3 percent (60 gpm) on average.

System Performance and Recommendations

The system performance, including supply capacity, storage volume capacity, and distribution capacity, was assessed for existing, 5-, and 20-year planning periods. Pressures were evaluated using the extended period simulation function of the model, which calculates the pressure throughout a 24-hour period as demand, pump operation, and tank levels change. Typically, the minimum pressure occurs during the peak hour demand. Available fire flows were evaluated with a steady state simulation at the maximum day demand.

The supply capacity should equal or exceed the maximum day demand to provide a reliable supply of water, while the peak hour demand should be accommodated by storage in the system. The current condition maximum day demand does not exceed MHOG's supply and treatment firm capacities.

During a power failure, there is adequate auxiliary power and storage to maintain normal system operation and maintain sufficient volume in storage in case of a fire on an average demand day. There is also adequate storage volume during the maximum day demand during the existing, projected 2024, and projected 2039 conditions. Additional storage volume in case of a power failure is not critical at this time.

For existing conditions, minimum pressures during the peak hour demand remain above 35 psi throughout the system and all portions of the service area have at least 1,000 gpm of available fire flow at 20 psi residual pressure. No distribution improvements are recommended for the existing conditions based on the current system performance.

During the projected 2024 conditions, with the current system, the minimum pressures during the peak hour demand drop to below 20 psi in Pressure Districts 2, 3 and 4. Hometown, Oceola, and Marion #1 and #2 Towers completely dewater and fire flows in Pressure District 2 and 3 drop below 1,000 gpm.

Several improvements are recommended to mitigate the lower tower levels, improve pressure and fire flow, and reduce the operating time of the water treatment plant for the projected year 2024 conditions:

- Improvement A: Move the portion of the service area along Latson Road in Oceola Township from Pressure District 2 to Pressure District 3 by opening and closing existing valves.
- Improvement B: Switch the pumping direction of the high and low head pumps at the Sanitorium Road Booster Station and construct 7,000 feet of 20-inch water main from County Farm Road to Peavy Road.
- Improvement C: Construct 10,000 feet of 24-inch water main from Norton Road to the Marion tanks to provide a dedicated feed line from the water treatment plant.

With the recommended improvements, the model predicts that the pressures will rebound to at least 35 psi in all locations during the peak hour demand and all towers will maintain a sufficient reserve volume.

By 2039, MHOG plans on connecting to the existing Genoa Township Oak Pointe water system which is south of Pressure District 3 and is projected to add 1 MGD to the MDD. During the projected 2039 conditions with the 2024 improvements in place and the water treatment plant operating at 12 MGD, the minimum pressures during the peak hour demand drop to below 20 psi in Pressure District 3 and 4. Hometown and Genoa Towers completely dewater and fire flows in Pressure District 3 drop below 1,000 gpm.

Several improvements are necessary to mitigate the lower tower levels and improve pressure and fire flow for the projected year 2039 conditions:

- Improvement D: Abandon the Industrial Drive Booster Station and construct a 3,600 gpm (firm capacity) booster station on Lucy Road near I-96.
- Improvement E: Construct 8,300 feet of 16-inch water main from Lucy Road to Grand Oaks Drive.
- Improvement F: Construct 1,700 feet of 16-inch water main on Latson Road between Vicksburg Way and Rainier Drive.
- Improvement G: Construct 14,400 feet of 12-inch water main on south Latson, from Beck Road to Siem Road, to connect to the existing Oak Pointe water distribution network and construct an 1100 GPM pump station at the east end of Siem Road to supply Oak Pointe's elevated tower.

With the recommended improvements, the model predicts that the pressures will rebound to at least 35 psi in all locations during the peak hour demand.

Conclusions

MHOG operates a safe and reliable potable water system for its customers and has been proactive in its efforts to maintain and improve its infrastructure and planning for future needs. Using a calibrated model of the distribution system, pressures were shown to remain above 35 psi for the existing peak hour demand and fire flows at 20 psi residual pressure exceed 1,000 gpm in all locations.

For the projected year 2024 conditions, several infrastructure improvements are projected to be necessary to maintain a reliable system. MHOG should continue to plan for these improvements, as they are all high priority improvements. For the projected 2039 conditions, several additional infrastructure improvements are projected to be necessary to maintain a reliable system and to be able to connect the existing Oak Pointe water system to MHOG's system.

This report meets the requirements of a water reliability study, including:

- Population, service connections, and residential equivalency units within the service area.
- Current and projected 5- and 20-year average day, maximum day, and peak hour demands.
- Historical water supply by source.
- Water supplied to other water systems (none) and water use by customer class.
- Summary of facility conditions.
- Analysis of unaccounted water and potential sources.
- Demonstration of adequate capacity for existing and future demands and continuous distribution capacity.
- Demonstration of adequate backup power service.
- Calibrated hydraulic model with model runs for existing, 5-, and 20-year conditions and capital improvements for the 5- and 20-year planning periods.
- General Plan Map with water main location, size, material, and age and other critical facilities.
- Emergency Response Plan



PFEFFER ■ HANNIFORD ■ PALKA
Certified Public Accountants

225 E. Grand River - Suite 104
Brighton, Michigan 48116-1575
(810) 229-5550
FAX (810) 229-5578

John M. Pfeffer, C.P.A.
Patrick M. Hanniford, C.P.A.
Kenneth J. Palka, C.P.A.

Members:
AICPA Private Practice Companies Section
MACPA

January 10, 2020

Dr. Greg Tatara
Utility Director
Marion-Howell-Oceola-Genoa Water Authority (MHOG)
2911 Dorr Road
Brighton, Michigan 48116

Dear Greg,

You have requested we give to you our recommendation as to how to finance the construction of two water system projects in the MHOG water system. The projects and respective budgets are as follows:

- 1) Water Transmission from Sanitorium to Hometown Village \$3,500,000;
- 2) Water Transmission from Water Treatment Plant to Sanitorium Water Storage Tanks \$2,500,000.

The total estimated cost is \$6,000,000. Both of these projects are considered common costs (beneficial to all users), therefore the costs should be applied evenly over all users.

The Authority has the option of bonding for the projects. You have explained the Authority really does not want to do this because of the financing costs (legal, interest, etc) involved.

We believe the Authority has the ability to pay cash for the projects. The Authority has approximately \$2,000,000 and the Townships have approximately \$4,000,000. We suggest the water new user monies at the township level be contributed toward the projects on an equal basis. We believe this can be done even though each Township does not have at this time monies available in its water new user (tap) funds.

Based on discussions with Township officials and knowing the amount of monies available in MHOG Reserves, we are providing the following example for the financing of the projects.

Contribution from MHOG Reserves - \$2,000,000

Contribution from Oceola Township - \$3,000,000

Contribution from Genoa Township - \$1,000,000

Contribution from Howell Township - \$0.00

Contribution form Marion Township - \$0.00

The Townships will settle up in the future with additional contributions (outside of the current required \$3,500 per REU) in order to equalize overall contributions. An accounting would be maintained tracking the original contributions and amounts of future contributions.

In this case, each Township would be required to contribute \$1,500,000 ($\$6,000,000 / 4$ townships). Since Oceola Township is contributing \$3,000,000 at this time, it would have a credit of \$1,500,000. Genoa Township will have an amount due of \$500,000. Howell and Marion Townships will have amounts due of \$1,500,000 per each township.

The amounts used are for example purposes only and could be changed depending on how much each Township has in its water new user tap funds available for contribution to MHOG.

We look forward to discussing the aforementioned at your convenience.

Sincerely,

A handwritten signature in cursive script, appearing to read "K Palka".

Kenneth Palka

**MARION TOWNSHIP
2877 W. COON LAKE ROAD
HOWELL, MI 48843
Phone 517-546-1588
Fax 517-546-6622**

TRANSMITTAL

TO: Board of Trustees

DATE February 13, 2020
PROJECT **FINAL REVIEW**

Amend SUP#01-03 Commercial Stable
At 2699 Cedar Lake Rd to new Owner

VIA Hand Delivery

WE ARE SENDING: Herewith Under Separate Cover

THE FOLLOWING:

- o Packet containing original Special Use Agreement with plot plan and supporting information
- o New SUP drawn up by Township Attorney for new owner to sign along with Supervisor and Clerk and then get registered.
- o Planning Commission Minutes from January 28, 2020 recommending approval

FOR YOUR: approval/ denial as requested
 other review & comment

REMARKS:

This information is for your review and approval and to authorized having Supervisor and Clerk to sign along with new owners and then have it registered. Let me know if you have any questions.

FROM: Dave Hamann, Zoning Administrator

Copy: file

CONDITIONS OF
SPECIAL USE PERMIT

 ORIGINAL

At a meeting of the Marion Township Board of Trustees held on the 11th day of September, 2003, pursuant to the application of Cheryl Carsley and Charles Carsley, and a recommendation from the Marion Township Planning Commission that Section 16.05 A, Basis for Determination items 1 through 11, has been met, the Board of Trustees by motion duly made and passed granted a Special Use Permit to Cheryl Carsley and Charles Carsley to operate a Commercial Stable to be located at 2699 Cedar Lake Road, Howell, MI, Tax I.D. # 4710-17-200-012 subject to the following conditions.

The use of the property and Commercial Stable shall be in accordance with the following terms, and the provisions of the Marion Township Zoning Ordinance that are not in conflict with this Special Use Permit.

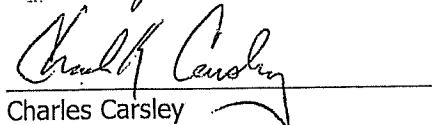
1. All fencing to meet all township ordinances/standards.
2. The use of the property shall at all times comply with Article XVII Standards for Specific Land Uses, Section 17.28 Stables (Commercial), with the exception of 17.28.D.7 – a variance to relax the 200' set back requirement and allow a 161' set back for the south property line was granted by the Zoning Board of Appeals on September 6, 2003 (ZBA #04-03.)
3. Hours of operation shall be from 9 a.m. to 9 p.m.
4. The required ten (10) off-street parking spaces must meet the requirements for off-street parking site development standards as per Section 14.04 of the Township's Zoning Ordinance.
5. Every two years the Zoning Administrator will administratively recertify the Special Use Permit to insure the conditions of this Special Use are being complied with. The first recertification will be on or about September 11, 2005.
6. In the event the property is sold the new owner must apply for an amendment to the Special Use Permit and agree to be bound by the terms.

We, the undersigned, Cheryl Carsley and Charles Carsley, agree to abide by the terms of the Special Use Permit as above described. Further, we understand that said permit may be revoked by the Marion Township Board of Trustees if a violation of any of these conditions occurs.

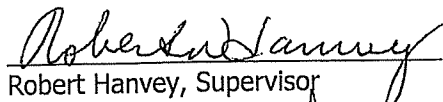
DATED: 10-28, 2003


Cheryl Carsley

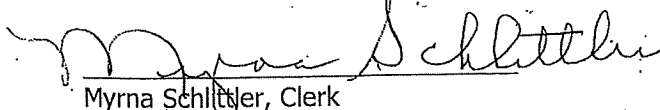
DATED: 10-28, 2003

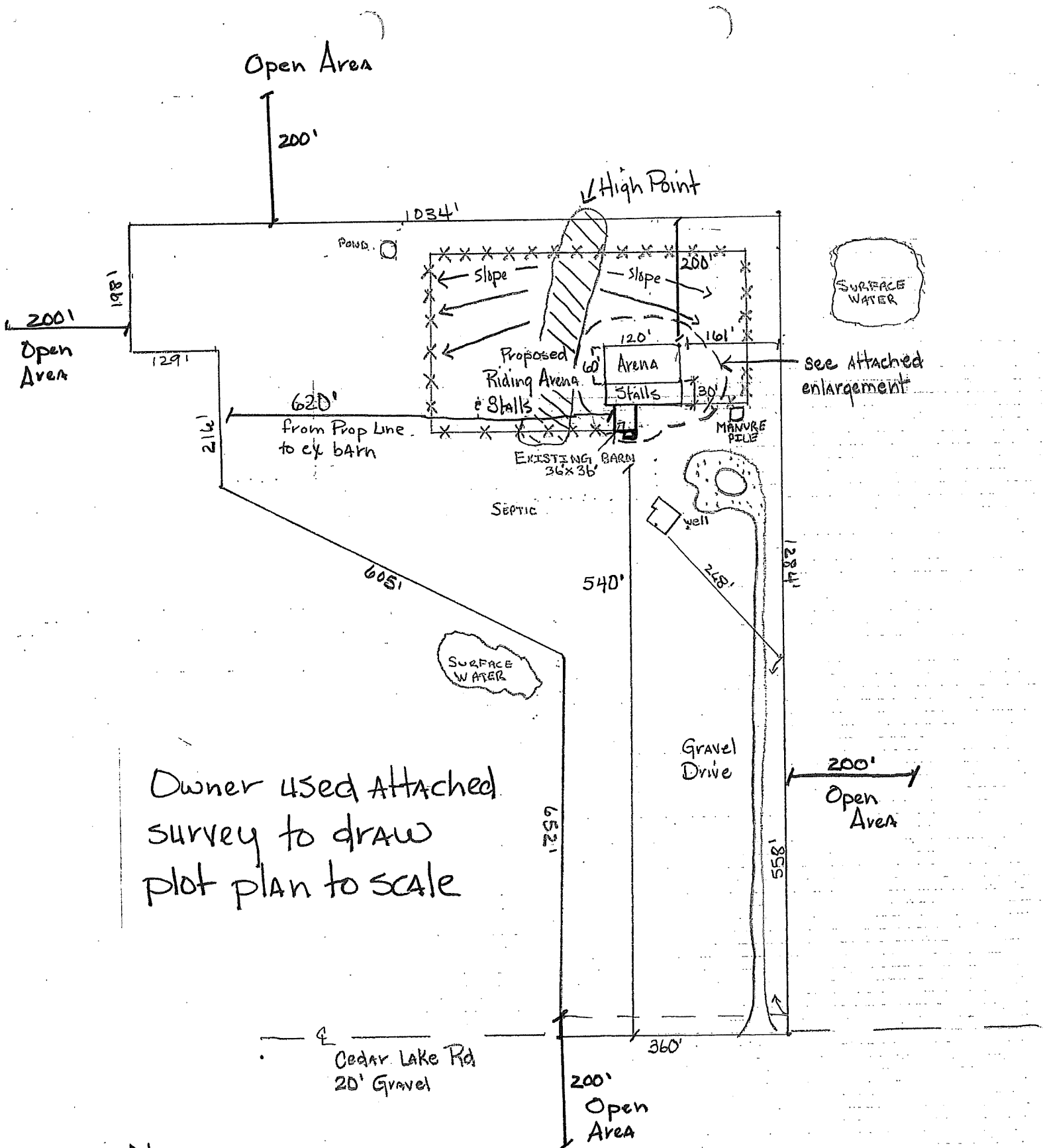

Charles Carsley

DATED: 10-14, 2003

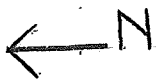

Robert Hanvey, Supervisor

DATED: 10-14, 2003


Myrna Schlittler, Clerk



Owner used Attached survey to draw plot plan to scale

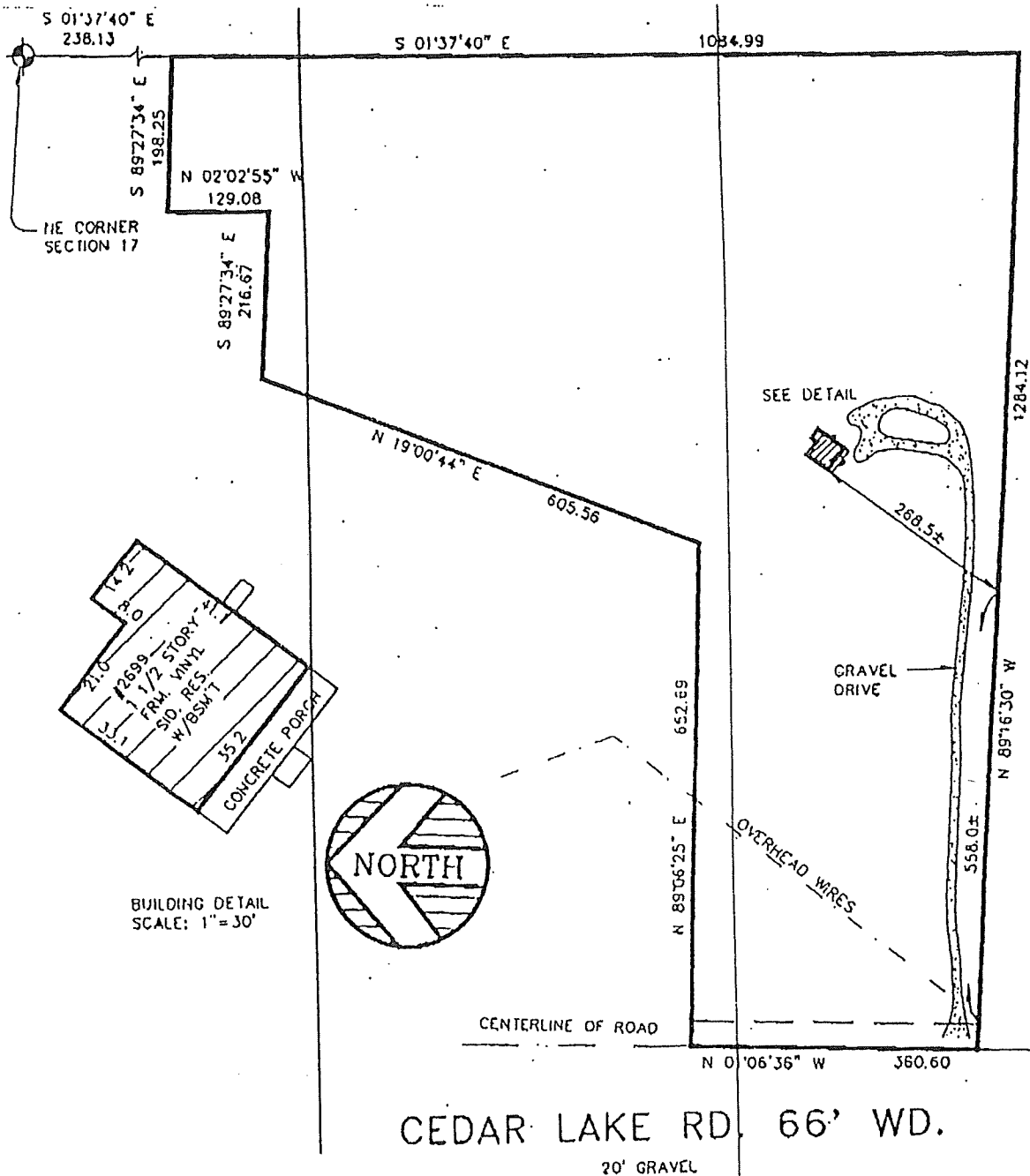


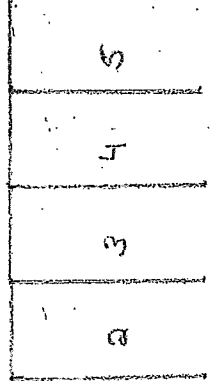
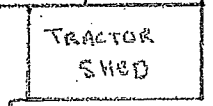
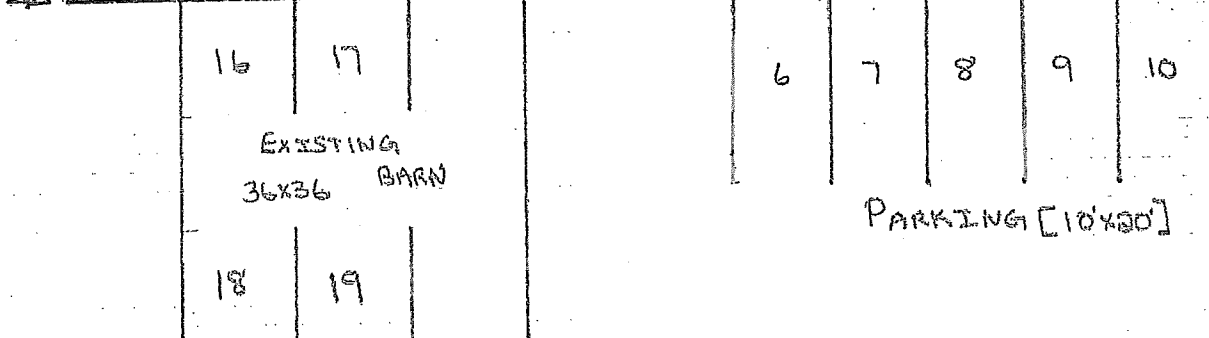
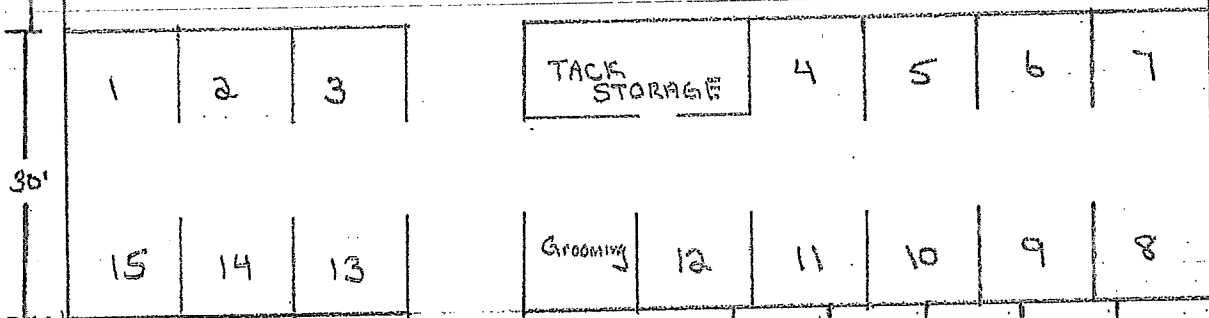
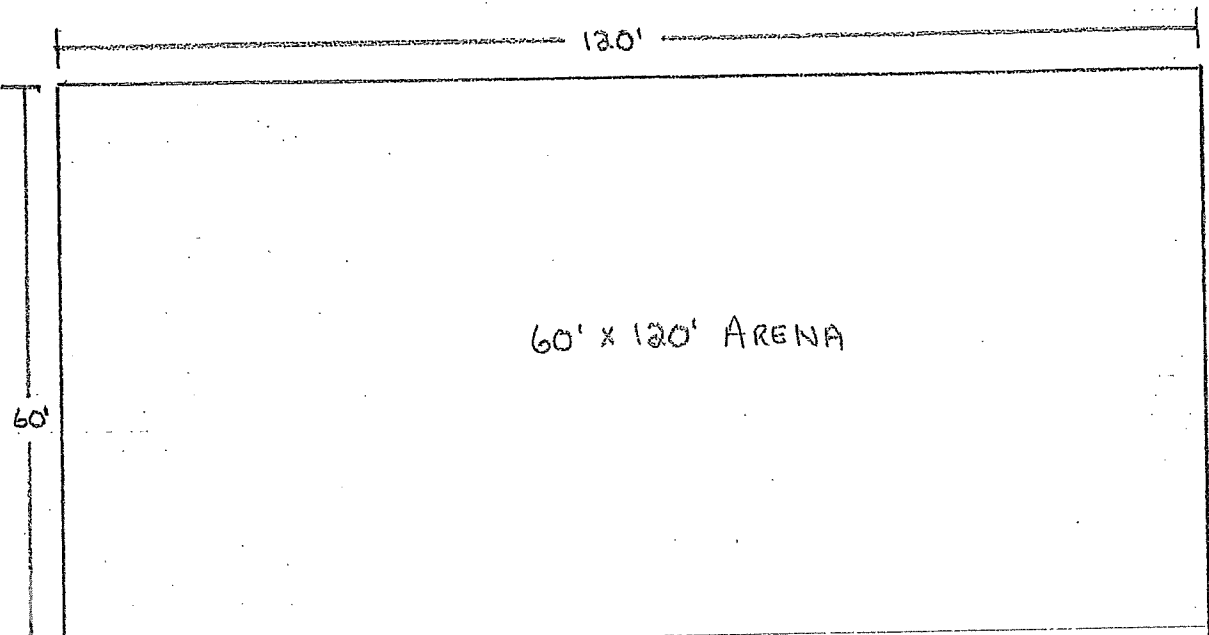
Scale
1" = 200'

- *** FENCE
- High point
- ← slope — down slope

Mr & Mrs. Carstley
 2699 Cedar Lake Rd
 017-545-9559
 4710-17-200-012
 Rural Residential - 18.5 Acres

SEC 17 T2N R4E B1 AT A PT ON E SEC LN $37^{\circ}40'E$
 238.13 FT FROM NE COR, TH $S1^{\circ}37'40"E$ 1084.99 FT,
 TH $N89^{\circ}16'30"W$ 1284.12 FT, TH $N1^{\circ}06'36"W$ 360.60 FT
 ALG C/L CEDAR LAKE RD, TH $N89^{\circ}06'25"E$ 652.69 FT,
 TH $N19^{\circ}44'E$ 605.56 FT, TH $S89^{\circ}27'34"E$ 216.67 FT,
 TH $N2^{\circ}02'55"W$ 129.08 FT, TH $S89^{\circ}27'34"E$ 198.25 FT
 TO POB 18.482 AC SPLIT 4/80 FROM 002 DECS CHANGED
 5/94





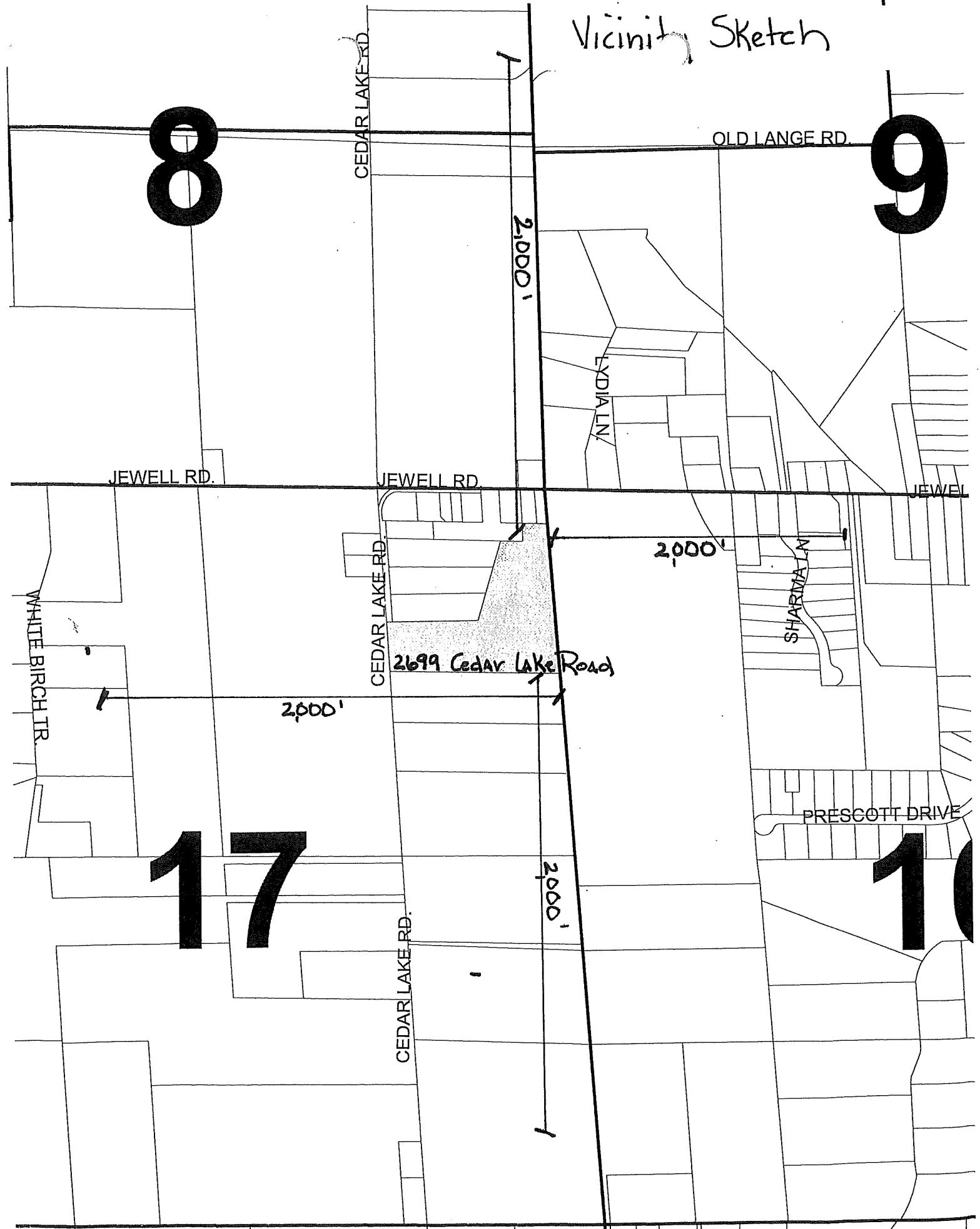
PARKING [10'x20']

REVISED FOR PARKING COMPLIANCE

Mr. & Mrs. CARSLY
2699 CEDAR LAKE RD
517-545-9559

SCALE
1" = 20'

Vicinity Sketch



From Planning Commission August 26, 2003

OLD BUSINESS

Special Use Permit #01-03 Commercial Stable - Mr. & Mrs. Carsley

John Ambrose summarized his July 16, 2003 letter of recommendation. Debra Wiedman-Clawson questioned the Carsleys regarding

the proposed location of the manure pile and whether it will be enclosed and how it will impact drainage into wetlands. The Carsleys

stated they will spread it in their hayfield. Debra Wiedman-Clawson also questioned how close to the property line the red barn is on

the adjacent property. John Lowe commented it is close to the 15' minimum side yard setback. This poses a possible scenario of a

home being built in the future and still maintaining the isolation distance required for a commercial stable. John Ambrose stated that

would not apply. Jean Root questioned the status of the Special Use Permit (SUP) if property sold. Annette McNamara stated that

the Planning Commission can place conditions on the SUP. If the property sells, the new owners are required to come to the Planning

Commission for review and approval. John Ambrose commented if landowners who received SUP altered the site plan, by law they

are required to go before the township before doing so. The Carsleys have concerns regarding future neighbors and complaints.

Ambrose responded that as long as landowner meets all criteria of the ordinance, new neighbors would have no standing with complaints,

and they would have to verify a violation of the ordinance. Otherwise it will be handled administratively.

Jean Root made a motion that the Planning Commission grant conditional approval of the site plan for Majestic Oak Commercial Stable,

Tax Code 4710-17-200-012, and Special Use Permit #01-03 based on following conditions:

1. All issues addressed in July 16, 2003 letter from John Ambrose be addressed with three subheadings:
 - Permit must be administratively recertified every two years
 - If problems arise, applicant must come to Planning Commission for resolution

- The SUP does not transfer upon the sale of the property

The Carsleys want to know what date will administrative review be held? The date of the Township Board of Trustees' approval.

Dave Hamann seconded. **Motion carried 5-0.**

From BOT September 11, 2003

Majestic Oaks Stable

Annette McNamara presented the Board with the information regarding an application from Chuck and Cheryl Carsley

requesting a Special Use Permit for a commercial stable on Cedar Lake Road. In addition to site plan review by the

Planning Commission and a public hearing, a variance was required for the side yard. The Planning Commission

recommended approval contingent on the variance being granted. The variance was granted by the ZBA. They have met

all of the criteria for the commercial stable special use permit. The Zoning Administrator will create a draft of the

Special Use Permit and send to the attorney. The Planning Commission asked for a two-year administrative review.

Any change in ownership would require review by the Planning Commission. Dave Hamann motioned to approve the

Special Use Permit for Majestic Oaks Stable. Myrna Schlittler seconded. **Motion carried 5-0.**

NEW BUSINESS:

1) Rob Stanford, Livingston County Planning Annual Visit

Brian Prokuda, Chairman of Livingston County's Planning Commission, was present in place of Rob Stanford. He thanked Bruce Powelson and Bob Hanvey for their active role by attending county planning commission meetings and their active participation. Mr. Prokuda updated the commissioners on three items: Livingston County's Master Plan; the county's Trail Network Plan; and the Livingston County Planning Commission's County Park program. He said the master plan is in the implementation stage. The county received a \$30,000 SEMCOG grant for the trail network plan; they are working with GIS and other departments to implement. With regard to the county park program, he said Fillmore Park (corner of Kellogg & McClements) will have sports fields and a 5K running trail; the ribbon-cutting ceremony will be held in the spring.

2) Renew SUP #01-03—Majestic Oaks Stable, due to change in ownership

Brian and Angela Jessie were present to discuss this agenda item. Dave Hamann summarized the material he provided for this item. The previous agreement in 2003 stated a new owner must apply. Mr. Jessie said they recently purchased this property and would like to continue operating in the same manner with a new name. Larry Grunn asked if they would be doing shows or training; Mr. Jessie said it's really just boarding and the facilities are only for the boarders. Jim Anderson asked if there would be additional buildings; Mr. Jessie said no. Mr. Anderson also asked about the manure pile; the old site plan shows that it's right off the driveway. Mr. Jessie said it's actually further back. Dave Hamann said most of that is controlled by GAAMPS (Generally Accepted Agricultural Management Practices) and told Mr. Jessie he could get further direction from MDARD for manure management.

Les Andersen, Marion Township trustee, welcomed the new residents and said he appreciates the continuing use of this property for agricultural purposes. Bob Hanvey asked if they have experience with this type of business; Mr. Jessie said his wife has boarded horses for a number of years. Larry Grunn asked about the sign; it's a legally non-conforming sign. Mr. Jessie said they are just going to replace the sign to reflect the new name: Q Card Stables. Mr. Enos said Mr. Jessie shouldn't have to come before the Planning Commission again. The zoning administrator will review the SUP every two years to make sure it's in compliance. Mr. Hanvey questioned why the SUP is signed by board members, and couldn't the PC chairman and secretary sign? Mr. Hamann said a new SUP isn't being given, it's just an amendment to an existing SUP. Mr. Enos said this a simple amendment due to change of ownership as already approved by the township board.

Cheryl Range motioned to recommend approval of SUP #01-03 amendment due to change of ownership for Q Card Stables (formerly Majestic Oak Stables) and send to the Board of Trustees for approval. Bruce Powelson seconded.

MOTION CARRIED.

3) Annual Meeting and Election of Officers

Bruce Powelson nominated Larry Grunn as Planning Commission chairman for 2020. Cheryl Range seconded. **MOTION CARRIED.**

Larry Grunn nominated Cheryl Range as Planning Commission secretary for 2020. Bruce Powelson seconded. **MOTION CARRIED.**

Jim Anderson nominated Bruce Powelson as Planning Commission vice chairman for 2020. Bob Hanvey seconded. **MOTION CARRIED.**

ACKNOWLEDGEMENT AND EXTENSION OF CONDITIONS OF SPECIAL USE PERMIT

THE UNDERSIGNED, Brian K. Jessie and Angela M. Jessie, his wife, hereby acknowledge and agree they are the successors in interest to Cheryl Carsley and Charles Carsley, who were granted a Special Use Permit for the property described on the attached Exhibit A by the Marion Township Board as provided below:

At a meeting of the Marion Township Board of Trustees held on the 11th day of September, 2003, pursuant to the application of Cheryl Carsley and Charles Carsley, and a recommendation from the Marion Township Planning Commission that Section 16.05 A, Basis for Determination items 1 through 11, has been met, the Board of Trustees by motion duly made and passed granted a Special Use Permit to Cheryl Carsley and Charles Carsley to operate a Commercial Stable to be located at 2699 Cedar Lake Road, Howell, MI, Tax I.D. # 4710-17-200-012 subject to the following conditions.

The use of the property and Commercial Stable shall be in accordance with the following terms, and the provisions of the Marion Township Zoning Ordinance that are not in conflict with this Special Use Permit.

1. All fencing to meet all township ordinances/standards.
2. The use of the property shall at all times comply with Article XVII Standards for Specific Land Uses, Section 17.28 Stables (Commercial), with the exception of 17.28.D.7, a variance to relax the 200' setback requirement and allow a 161' setback for the south property line was granted by the Zoning Board of Appeals on September 6, 2003 (ZBA #04-03.)
3. Hours of operation shall be from 9 a.m. to 9 p.m.
4. The required ten (10) off-street parking spaces must meet the requirements for off-street parking site development standards as per Section 14.04 of the Township's Zoning Ordinance.
5. Every two years the Zoning Administrator will administratively recertify the Special Use Permit to insure the conditions of this Special Use are being complied with. The first recertification will be on or about September 11, 2005
6. In the event the property is sold the new owner must apply for an amendment to the Special Use Permit and agree to be bound by the terms.

We, the undersigned, Brian K. Jessie and Angela M. Jessie, his wife, hereby request an amendment to the Special Use Permit to allow us to continue to operate the Special Use and we agree to abide by the terms of the Special Use Permit as above described and the Marion Township Zoning Ordinance. Further, we understand that said permit may be revoked by the Marion Township Board of Trustees if a violation of any of these conditions occurs in accordance with the Marion Township Zoning Ordinance and Michigan law.

Dated: _____

Brian K. Jessie

Dated: _____

Angela M. Jessie, his wife

Dated: _____

Robert W. Hanvey
Marion Township Supervisor

Dated: _____

Tammy M. Beal, CMC
Marion Township Clerk

STATE OF MICHIGAN)
COUNTY OF LIVINGSTON)

The foregoing Acknowledgement and Extension of Conditions of Special Use Permit were subscribed and sworn to before me on this _____ day of _____, 2020 by Brian K. Jessie and Angela M. Jessie, his wife, Robert W. Hanvey, Supervisor and Tammy L. Beal, CMC who declared the same to be their free act and deed.

Notary Public
County, Michigan
My Commission Expires:

Prepared by :

Michael J. Kehoe, attorney
710 E. Grand River Ave.
Howell, MI 48843
(517) 546-4570

When recorded return to:

Marion Township
2877 W. Coon Lake Road
Howell, MI 48843

EXHIBIT A

Legal Description of Property Covered by Special Use Permit:

Land in Marion Township, Livingston County, Michigan, to wit: SEC 17 T2N R4E BEG AT A PT ON E SEC LN S1*37'40"E 238.13 FT FROM NE COR, TH S1*37'40"E 1084.99 FT, TH N89*16'30"W 1284.12 FT, TH N1*06'36"W 360.60 FT ALG C/L CEDAR LAKE RD, TH N89*06'25"E 652.69 FT, TH N19*44'E 605.56 FT, TH S89*27'34"E 216.67 FT, TH N2*02'55"W 129.08 FT, TH S89*27'34"E 198.25 FT TO POB 18.482 AC SPLIT 4/80 FROM 002 DECS CHANGED 5/94

Tax Code No.: 4710-17-200-012

Owner: Brian K. Jessie and Angela M. Jessie, his wife

Property Address: 2699 Cedar Lake Road, Howell, MI 48843

MARION TOWNSHIP
2877 W. COON LAKE ROAD
HOWELL, MI 48843
Phone 517-546-1588
Fax 517-546-6622

TRANSMITTAL

TO: Board of Trustees

DATE

February 13, 2020

PROJECT

FINAL REVIEW

Proposed Text Amendment

TXT# 04-17 Section 8.01.B.3 Nursery Operation

Section 10.01.B.16 Landscape Contractors Yard

VIA

Hand Delivery

WE ARE SENDING: Herewith Under Separate Cover

THE FOLLOWING:

- Proposed text amendment -- TXT# 04-17 Section 8.01.B.3 and 8.02.B.6 Nursery Operation and Section 10.01.B.16 Landscape Contractors Yard.
- Planning Commission minutes from January 28, 2020 meeting
- LCPD review and comments from November 20, 2019 meeting

FOR YOUR:

approval/ denial
 other

as requested
 review & comment

REMARKS:

This information is for a **Final Review and Adoption**. Let me know if you have any questions.

FROM: Dave Hamann, Zoning Administrator

Copy: file

NURSERY OPERATIONS / RIGHT TO FARM IN MARION TOWNSHIP

Step #1

Section 8.01.B.3 Change to 'Nursery Operation of retail sales of nursery stock grown on the site'

Section 8.02.B.6 Add 'Nursery Operation of retail sales of nursery stock grown on the site' as use by right

3.02 Definitions **Add**

Nursery Operations (Right to Farm): A parcel, area, space, building or structure, or combination thereof, used chiefly for the storage of live trees, shrubs, and plants; natural growing in the ground or temporarily balled or potted or packaged for retail sale.

Step #2

Section 10.01.B.16 **Add**

Amend LI Light Industrial District to allow landscape contractors buildings, offices and yards as a use permitted by right.

3.02 Definitions **Add**

Landscape Contractor's Buildings, Offices and Yards: A space, building or structure, or combination thereof, used primarily for the storage of equipment, tools, vehicles, and materials used in or associated with a landscape contracting business.

Landscape Contractor/Contracting. The sale, storage or transportation of fertilizers, mulch, groundcovers, boulders, and similar products used for landscaping or gardening and could include the sale of live trees, shrubs or plants grown or not grown on the property.

**G. Z-55-19: MARION TOWNSHIP, ZONING ORDINANCE AMENDMENTS -
ARTICLE III DEFINITIONS, ARTICLE VIII RESIDENTIAL DISTRICTS: SECTION 8.01 RR
RURAL RESIDENTIAL DISTRICT, AND ARTICLE X INDUSTRIAL DISTRICTS: SECTION
10.01 LI LIGHT INDUSTRIAL DISTRICT.**

The Marion Township Planning Commission proposes to update the following Articles/Sections with a completely new set of definitions and regulations regarding nurseries and landscape contractors.

Township Planning Commission Recommendation: Approval. The Marion Township Planning Commission recommended **Approval** of the text amendments at their October 22, 2019 public hearing and planning commission meeting. There were a few general public comments noted in the meeting minutes regarding these new provisions, mainly about trucking and exhaust fumes and the definition of "nuisance" in relation to these amendments.

Staff Recommendation: Approval. The proposed text amendments are reasonable and appropriate. It appears that these provisions better distinguish differences between landscape contractor businesses and nursery operations and should aid the Township in the future with regards to regulating these two different land use types as so desired.

Commission Discussion: None.

Public Comment: None.

Commission Action:

Commissioner Action: IT WAS MOVED BY COMMISSIONER IKLE TO RECOMMEND APPROVAL. SECONDED BY COMMISSIONER CLUM.

Motion passed: 7-0

8. OLD BUSINESS:

A. Planning Department Visits: ~~Scheduled~~ added visits through December 2019.

9. NEW BUSINESS: None.

10. REPORTS:

A. Staff Reports:

- A series of potential dates for an MSU Extension Planning Commission training were discussed. January 29, 2020 was selected as the date of the training at the Livingston County Public Safety Complex. Local Planning Commissioners will be invited to participate in the training opportunity.
- Upcoming Brown Bag Lunch at Noon on December 4 at Genoa Township Hall. SEMCOG will be leading a public input session for the update of the regional Economic Development Strategy for Southeast Michigan. An event flyer was distributed.
- A new Planning Commission roster from the Board of Commissioners Office was distributed.
- Staff reported that the trail consultant hired for the Livingston County Trail Network Plan inquired as to how involved County Planning Commissioners would like to be in the process. Planning Commissioners indicated that they would like to receive emails about upcoming meetings and they will participate if able.
- Staff are currently applying for national APA division awards for the 2018 Livingston County Master Plan.
- A new rezoning amendment form is being developed and it will be utilized for December 2019 cases. Staff would like feedback from Planning Commissioners on the format.

OLD BUSINESS:

1) TXT #03-18, Section 17.32 back from BOT with minutes

John Enos said it looks like the board recommended a minor change regarding lot size, to change the minimum parcel size in item J from "2 or more acres and less than 6 acres" to "up to 6 acres." Bruce Powelson questioned the reason for only allowing a 6' fence, not 8'. Dave Hamann explained that the state's building code requires permits for fences over 7'. He also said the township could require something over 6' if it was needed for screening. Jim Anderson said there is a comment from Les Andersen regarding the Planning Commission being a recommending body and the township board grants approval. Cheryl Range asked Mr. Hanvey if there is an issue with the interchangeable language throughout the zoning ordinance to specify the pertinent situation or usage when the terms "lots", "plats", "parcels", "net", "gross", and "tracts"; Mr. Hanvey said that still needs to be worked on because they're really not interchangeable.

Cheryl Range motioned to send TXT #03-18, Section 17.32, with the agreed upon changes in section J, to the Board of Trustees for final review and approval. Bob Hanvey seconded. **MOTION CARRIED.**

John Enos said the PC worked really hard on this language; now that it's in place, we will see how this moves to the enforcement process for any new expansions, additions, etc.

2) TXT #04-17 Review Comments from LCPD, then send to BOT

Dave Hamann said this is the one the PC asked to come back; next time, when it's sent to the county, if there aren't any changes or comments, it should go straight to the board.

Cheryl Range motioned to send TXT #04-17 to the township board for review and adoption. Jim Anderson seconded. **MOTION CARRIED.**

3) Discuss Sections 15.05 and 15.06—Signs relating to Home Occupations and Home-based Businesses

Dave Hamann said when the county reviewed 6.14 and 17.32, they had an issue with the sign section of the ordinance not being changed. When Section 6.14 went to the board, the board changed it to allow signs for a home occupation as long as it's discreet on the structure, not out by the road. Something should be in the detail of the sign ordinance regarding home-based businesses. Currently, he's not aware of any free-standing signs for a home-based business. Larry Grunn said the PC talked about equipment trucks and/or trailers with signage. Mr. Hamann said Section 15.04—Signs Allowed without a Permit, item T, says "signs located on motor vehicles or trailers bearing current license plates which are traveling or lawfully parked upon public highways, or parked upon any premises where the sign is not readily and obviously visible from the street;" the ordinance says you don't need a permit for those type of signs. Bob Hanvey said he supports allowing a sign for a home-based business. Les Andersen said there's a large truck on M-59 that's always parked out by the road that has a large sign on it; Mr. Grunn said that's what he would like to prevent. John Enos said he's concerned about crafting language that would not allow a business vehicle, although it's something that could be looked at. Jim Anderson said he doesn't think a home occupation should be allowed to have a freestanding sign out by the road. Mr. Enos said typically home occupations don't have freestanding signs. Mr. Anderson asked if a person with a home occupation could apply for a variance to have a sign at the road; Mr. Enos said he doesn't believe so because that would be a use variance, not dimensional. He said the way to do it would be to allow either/or for a home-based business and either/or for a home occupation depending on the distance from the road. Bruce Powelson asked how 25% of window area could be enforced for a sign in a non-residential district and feels that should be removed from the schedule of sign regulations. Dave Hamann pointed out that there is additional language in Section 15.06 that the PC

MARION TOWNSHIP
2877 W. COON LAKE ROAD
HOWELL, MI 48843
Phone 517-546-1588
Fax 517-546-6622

TRANSMITTAL

TO: Board of Trustees

DATE February 13, 2019
PROJECT **FINAL REVIEW**
Revised Text Amendment
TXT# 03-18 Section 6.14 Home Occupation,
Section 17.32 Home Based Business

VIA Hand Delivery

WE ARE SENDING: Herewith Under Separate Cover

THE FOLLOWING:

- Revised Proposed text amendment -- TXT# 03-18 Section 6.14 Home Occupation and Section 17.32 Home Based Business Special Use.
- Planning Commission minutes from January 28, 2019 meeting

FOR YOUR: approval/ denial as requested
 other review & comment

REMARKS:

This information is for a **Review and Adoption**. Per your request from December 12, 2019 meeting Section 17.32 has changes from the Planning Commission and Section 6.14 needs to be re-adopted with the removal of 2 items. Let me know if you have any questions.

FROM: Dave Hamann, Zoning Administrator

Copy: file

OLD BUSINESS:

1) TXT #03-18, Section 17.32 back from BOT with minutes

John Enos said it looks like the board recommended a minor change regarding lot size, to change the minimum parcel size in item J from "2 or more acres and less than 6 acres" to "up to 6 acres." Bruce Powelson questioned the reason for only allowing a 6' fence, not 8'. Dave Hamann explained that the state's building code requires permits for fences over 7'. He also said the township could require something over 6' if it was needed for screening. Jim Anderson said there is a comment from Les Andersen regarding the Planning Commission being a recommending body and the township board grants approval. Cheryl Range asked Mr. Harvey if there is an issue with the interchangeable language throughout the zoning ordinance to specify the pertinent situation or usage when the terms "lots", "plats", "parcels", "net", "gross", and "tracts"; Mr. Harvey said that still needs to be worked on because they're really not interchangeable.

Cheryl Range motioned to send TXT #03-18, Section 17.32, with the agreed upon changes in section J, to the Board of Trustees for final review and approval. Bob Harvey seconded. **MOTION CARRIED.**

John Enos said the PC worked really hard on this language; now that it's in place, we will see how this moves to the enforcement process for any new expansions, additions, etc.

2) TXT #04-17 Review Comments from LCPD, then send to BOT

Dave Hamann said this is the one the PC asked to come back; next time, when it's sent to the county, if there aren't any changes or comments, it should go straight to the board.

Cheryl Range motioned to send TXT #04-17 to the township board for review and adoption. Jim Anderson seconded. **MOTION CARRIED.**

3) Discuss Sections 15.05 and 15.06—Signs relating to Home Occupations and Home-based Businesses

Dave Hamann said when the county reviewed 6.14 and 17.32, they had an issue with the sign section of the ordinance not being changed. When Section 6.14 went to the board, the board changed it to allow signs for a home occupation as long as it's discreet on the structure, not out by the road. Something should be in the detail of the sign ordinance regarding home-based businesses. Currently, he's not aware of any free-standing signs for a home-based business. Larry Grunn said the PC talked about equipment trucks and/or trailers with signage. Mr. Hamann said Section 15.04—Signs Allowed without a Permit, item T, says "signs located on motor vehicles or trailers bearing current license plates which are traveling or lawfully parked upon public highways, or parked upon any premises where the sign is not readily and obviously visible from the street;" the ordinance says you don't need a permit for those type of signs. Bob Harvey said he supports allowing a sign for a home-based business. Les Andersen said there's a large truck on M-59 that's always parked out by the road that has a large sign on it; Mr. Grunn said that's what he would like to prevent. John Enos said he's concerned about crafting language that would not allow a business vehicle, although it's something that could be looked at. Jim Anderson said he doesn't think a home occupation should be allowed to have a freestanding sign out by the road. Mr. Enos said typically home occupations don't have freestanding signs. Mr. Anderson asked if a person with a home occupation could apply for a variance to have a sign at the road; Mr. Enos said he doesn't believe so because that would be a use variance, not dimensional. He said the way to do it would be to allow either/or for a home-based business and either/or for a home occupation depending on the distance from the road. Bruce Powelson asked how 25% of window area could be enforced for a sign in a non-residential district and feels that should be removed from the schedule of sign regulations. Dave Hamann pointed out that there is additional language in Section 15.06 that the PC

Section 6.14

Home Occupation

The regulation of home occupations as provided herein is intended to secure flexibility in the application of the requirements of this ordinance. Home occupation is permitted as an accessory use to the principal residential use of a parcel; a zoning permit for such an occupation is not required. Such flexibility is not intended to allow the essential residential character of residential districts, in terms of use and appearance, to be changed by the occurrence of non-residential activities. Home occupations shall satisfy the following conditions (these regulations do not apply to farms):

- A. The home occupation shall be clearly secondary and incidental to the use of the dwelling as a place of residence, and shall not result in a change to the essential character of the premises including both the dwelling and yard areas. Home occupations shall be conducted in such a manner that, except as otherwise allowed by the provisions of this section, there is no external evidence of the home occupation operation except for the occasional visits by customers or clients numbering no more than ten (10) visits every seven (7) days.
- B. Accessory structures used for business purposes shall conform to Section 6.07 Accessory Buildings and Structures.
- C. Refuse generated by the home occupation shall be safely and properly disposed of in a manner in full compliance with all federal, state and other governmental requirements of any such materials.
- D. Home occupations shall not result in the creation of conditions that would constitute a nuisance to neighboring property owners and the township as a whole. Any machinery, mechanical devices, or equipment employed in the conduct of a home occupation shall not generate noise, vibration, radiation, odor, glare, smoke, steam, or other conditions not typically associated with the use of the dwelling for residential purposes.
- E. A resident of the dwelling on the parcel shall be actively and personally engaged in and responsible for all home occupation operations. No employees shall be permitted, other than members of the immediate family residing in the dwelling unit.
- F. All of the activities on the property related to the occupation, except horticultural, shall be carried on indoors including the storage of materials, goods, supplies, refuse and waste materials, equipment, vehicles, trailers or products related to the occupation.
- G. Traffic generated by the combined home and home occupation shall be no greater in volume than would normally be expected in a residential district, and such traffic shall be limited to passenger vehicles, delivery vans and similarly-sized vehicles. Any need for parking used by such home occupation shall be met off the street and motor vehicles may be parked in an existing driveway if it is of sufficient size. No additional off-street parking demand shall be created.
- H. The home occupation shall be conducted within the dwelling unit, attached garage, or accessory building.
- I. The home occupation shall not occupy more than twenty-five (25%) percent of the total gross floor area of said residential dwelling including the basement.
- J. Storage of combustible, toxic or hazardous material associated with the home occupation shall be done in a manner in full compliance with all federal, state and other governmental requirements concerning the use, handling, transport, storage and disposal of any such materials.

UNOFFICIAL COPY
FOR INFORMATION ONLY
DATE: 11/11/2014

- K. The home occupation shall comply with all applicable federal, state and local laws, including, but not limited to, laws regarding licensing, occupational health and safety, and the environment.
- L. Home occupation approval is not transferable with the sale, rental or lease of the dwelling unit.
- M. Art and music instruction shall be classified as a permitted home occupation subject to the standards of this ordinance.

SET PUBLIC HEARING FOR PARKER DRIVE MAINTENANCE

An informal meeting was previously held with 10-15 residents in attendance who are interested. There need to be two public hearings: one for creation of the district and one for the roll. The public hearings will be held the same day, each public hearing will have two notices published, and a separate letter for each will be sent to property owners. Les Andersen said he doesn't want the township named in the agreement with regard to the amount of snow at the township hall. Bob Hanvey said that can be modified.

Les Andersen motioned to adopt a resolution to schedule a public hearing on December 12 for creation of a special assessment district for Parker Drive maintenance. Duane Stokes seconded. Roll call vote: Beal, Andersen, Stokes, Durbin, Lowe, Hanvey, Lloyd—all yes. **Resolution passed 7-0.**

Tammy Beal motioned to adopt a resolution to schedule a public hearing on December 12 for the Parker Drive maintenance SAD roll. Greg Durbin seconded. Roll call vote: Hanvey, Lowe, Durbin, Beal, Lloyd, Stokes, Andersen—all yes. **Resolution passed 7-0.**

DARAKJIAN PROPERTY

Two unsolicited offers have been received for this property. Bob Hanvey said the board members need to decide if the township is interested in selling the parcels and, if so, how to handle multiple offers. Les Andersen said he would like to have an appraisal done. Scott Lloyd would like to see the second offer that was received today, and that buyer is represented by Sally Witt. Ms. Witt said it is a cash offer with no contingencies.

Les Andersen motioned to have an appraisal done for the "Darakjian" property not to exceed \$10,000. Scott Lloyd seconded. Discussion: Don Parker said the Howell City Planning Commission will be discussing an industrial shredder proposed for a nearby parcel at the November 20 Planning Commission meeting. Roll call vote: Stokes, Beal, Andersen, Lowe, Hanvey, Lloyd, Durbin—all yes. **Motion carried 7-0.**

AERIAL IMAGERY PROJECT

Duane Stokes motioned to partner with Livingston County governmental agencies to acquire high resolution imagery for 2020, as presented. Les Andersen seconded. **Motion carried 6-1** (Lowe—no.)

Scott Lloyd motioned to select the 6" imagery for the aerial photos. Greg Durbin seconded. Roll call vote: Lowe—yes; Durbin—yes; Lloyd—yes; Stokes—yes; Andersen—yes; Beal—no; Hanvey—yes. **Motion carried 6-1** (Beal—no.)

FINAL REVIEW OF TXT #03-18 SECTION 6.14—HOME OCCUPATIONS AND SECTION 17.32—HOME-BASED BUSINESS SPECIAL USE

Les Andersen said he feels that home businesses either need a special use permit or should be in a commercial zoning district. Greg Durbin questioned the section that requires that all activity should be recorded in Section 17.32. Duane Stokes feels a small sign should be allowed in Section 6.14.

Duane Stokes motioned to approve the proposed text amendment for Section 6.14—Home Occupations as presented. Les Andersen seconded. Roll call vote: Lowe—no; Lloyd—no; Beal—no; Hanvey—no; Durbin—no; Andersen—yes; Stokes—no. **Motion failed 1-6.**

Duane Stokes motioned to approve the proposed text amendment for Section 6.14—Home Occupations with item "M" removed. Tammy Beal seconded. Roll call vote: Stokes—yes; Durbin—yes; Hanvey—no; Lloyd—no; Beal—yes; Andersen—no; Lowe—no. **Motion failed 3-4.**

Scott Lloyd motioned to approve the proposed text amendment for Section 6.14—Home Occupations with items "M" and "O" removed. Dan Lowe seconded. Roll call vote: Beal—no; Andersen—no; Lowe—yes; Durbin—no; Stokes—yes; Hanvey—yes; Lloyd—yes. **Motion carried 4-3.**

Section 6.14

Home Occupation

The regulation of home occupations as provided herein is intended to secure flexibility in the application of the requirements of this ordinance. Home occupation is permitted as an accessory use to the principal residential use of a parcel; a zoning permit for such an occupation is not required. Such flexibility is not intended to allow the essential residential character of residential districts, in terms of use and appearance, to be changed by the occurrence of non-residential activities. Home occupations shall satisfy the following conditions (these regulations do not apply to farms):

- A. The home occupation shall be clearly secondary and incidental to the use of the dwelling as a place of residence, and shall not result in a change to the essential character of the premises including both the dwelling and yard areas. Home occupations shall be conducted in such a manner that, except as otherwise allowed by the provisions of this section, there is no external evidence of the home occupation operation except for the occasional visits by customers or clients numbering no more than ten (10) visits every seven (7) days.
- B. Accessory structures used for business purposes shall conform to Section 6.07 Accessory Buildings and Structures.
- C. Refuse generated by the home occupation shall be safely and properly disposed of in a manner in full compliance with all federal, state and other governmental requirements of any such materials.
- D. Home occupations shall not result in the creation of conditions that would constitute a nuisance to neighboring property owners and the township as a whole. Any machinery, mechanical devices, or equipment employed in the conduct of a home occupation shall not generate noise, vibration, radiation, odor, glare, smoke, steam, or other conditions not typically associated with the use of the dwelling for residential purposes.
- E. A resident of the dwelling on the parcel shall be actively and personally engaged in and responsible for all home occupation operations. No employees shall be permitted, other than members of the immediate family residing in the dwelling unit.
- F. All of the activities on the property related to the occupation, except horticultural, shall be carried on indoors including the storage of materials, goods, supplies, refuse and waste materials, equipment, vehicles, trailers or products related to the occupation.
- G. Traffic generated by the combined home and home occupation shall be no greater in volume than would normally be expected in a residential district, and such traffic shall be limited to passenger vehicles, delivery vans and similarly-sized vehicles. Any need for parking used by such home occupation shall be met off the street and motor vehicles may be parked in an existing driveway if it is of sufficient size. No additional off-street parking demand shall be created.
- H. The home occupation shall be conducted within the dwelling unit, attached garage, or accessory building.
- I. The home occupation shall not occupy more than twenty-five (25%) percent of the total gross floor area of said residential dwelling including the basement.
- J. Storage of combustible, toxic or hazardous material associated with the home occupation shall be done in a manner in full compliance with all federal, state and other governmental requirements concerning the use, handling, transport, storage and disposal of any such materials.

K. The home occupation shall comply with all applicable federal, state and local laws, including, but not limited to, laws regarding licensing, occupational health and safety, and the environment.

L. Home occupation approval is not transferable with the sale, rental or lease of the dwelling unit.

M. ~~Home occupations are not allowed occupation-related signs.~~

N. Art and music instruction shall be classified as a permitted home occupation subject to the standards of this ordinance.

O. ~~Prohibited home occupations include but not limited to: service, repair or painting of any motorized vehicle, motor vehicles, trailers, boats, personal watercraft, recreation vehicles and snowmobiles; small engine repair; lawn equipment repair; and equipment repair.~~

Section 17.32 Home-based Business

Home Occupation regulations are provided in Section 6.14. Home-based businesses are considered special uses and are therefore subject to the provisions of Article XVI, Special Use Permits, and other applicable provisions of the ordinance. A Special Use Permit, and any conditions attached thereto, may be approved by the Township Board if all the criteria listed are met.

A home-based business is an occupation, business, commercial activity, company or profession carried on by family members residing on the premises that is clearly incidental and secondary to the principal single-family residential use and has one or more of the following characteristics and is not a farm operation as defined herein:

1. The business has one or more employees who do not reside on the premises, but who work on the premises or travel to the premises to pick up business vehicles or equipment for use off the premises.
2. The business has outside storage of materials or equipment solely related to the business within a designated and screened area; and/or
3. Has vehicles related solely to the home or business.

Locational Requirements: Home-based businesses are permitted by Special Use Permit in the Rural Residential and Suburban Residential Districts.

Site Requirements:

- A. A home-based business may be permitted in both the dwelling unit and accessory structure. The home-based business shall not occupy more than twenty-five (25%) percent of the total gross floor area of said dwelling including the basement; however, it may encompass the entire accessory structure. Accessory structures used for business purposes shall conform to Section 6.07 Accessory Buildings and Structures.
- B. The residential appearance of the dwelling shall not be altered in order to conduct the home-based business.
- C. The home-based business shall be clearly secondary and incidental to the use of the dwelling as a place of residence, and shall not result in a change to the essential character of the premises including both the dwelling and yard areas.
- D. All of the activities on the property related to equipment and vehicle repair, cleaning, painting and maintenance associated with the home-based business shall be carried on indoors.
- E. Storage and use of combustible, toxic or hazardous material associated with the home-based business shall be done in a manner in full compliance with all federal, state and other governmental requirements concerning the use, handling, transport, storage and disposal of any such materials.
- F. Solid or liquid refuse or waste or hazardous waste generated by the home-based business shall be safely and properly disposed of in a manner in full compliance with all federal, state and other governmental requirements of any such materials.
- G. In no case will radioactive, medical, or biomedical chemicals or materials waste be received, used, processed or stored on the site of the home-based business.

- H. No equipment or process shall be used in such home-based business that creates noise, vibration, glare, fumes, odors or electrical interference detectable to the normal human senses off the subject site. In addition, in regard to electrical interference, no equipment or process shall be used that creates visual, audible, or noticeable interference in any radio or television receivers off the site or that causes fluctuation in line voltage off the site.
- I. The home-based business shall be conducted so it does not constitute a nuisance or annoyance to the residents of adjoining properties due to noise, smoke, odor, electrical disturbance or night lighting, or the creation of unreasonable traffic to the premises.
- J. A resident of the dwelling on the **parcel** shall be actively and personally engaged in and responsible for all home occupation operations. The number of non-resident employees who can be employed by a home-based business shall be regulated by the size of the parcel containing the business as follows:

<u>Minimum Parcel Size</u>	<u>Maximum Number of Non-Resident Employees</u>
Up to 6 acres	1
6 acres and less than 10 acres	2
10 acres and less than 12 acres	3
12 or more acres	4

The Planning Commission may recommend or the Township Board may, in its discretion, allow a greater number of non-resident employees than those shown in the table above, where the operator of the business can provide clear and convincing evidence that doing so will not interfere with the principal single-family residential use of the premises and also the surrounding area, and further, only where the non-resident employees travel to the premises to pick up business vehicles or equipment for use off the premises.

In the event the home-based business premises are split or otherwise reduced in acreage, the operator will immediately be limited to the number of non-resident employees allowed on the remaining home-based business premises as shown in the table above, unless the operator seeks a new Special Use Permit on the remaining premises within 90 days of the split or reduction in acreage. In the new Special Use Permit, the Planning Commission may recommend or the Township Board may in its discretion reduce the number of non-resident employees allowed on the remaining premises.

- K. Outdoor storage of materials and equipment involved in the business is permitted provided it is adequately screened so it is not visible from adjoining roads and properties. Measures to screen such material or equipment are subject to the recommendation of the Planning Commission and approval of the Township Board and shall include, but are not limited to, one or more of the following: a solid fence no more than six feet in height; plantings that are at least five feet in height at planting and will provide an adequate year-round screen; the topography of the site; existing vegetation on the site; or the screening is provided by existing buildings.
- L. The home-based business shall comply with all applicable federal, state and local laws, including, but not limited to, laws regarding licensing, occupational health and safety, and the environment.
- M. Home-based business approval is not transferable with the sale, rental or lease of the dwelling unit.
- N. Home-based businesses are allowed signage. See Article XV Signage.
- O. Visitors, customers and deliveries shall not exceed a total of twelve (12) during a single day, **7am – 7pm**. The Planning Commission may recommend or the Township Board may modify this standard in the case where the Planning Commission or the Township Board determines that the

operation of the home-based business will unreasonably interfere with the use and enjoyment of nearby properties and/or undermine the intended character of the area. No traffic shall be generated by the home-based business in volumes in excess of that which is normally associated with a single-family dwelling, and such traffic shall be limited to passenger vehicles, delivery vans, and similarly-sized vehicles. ***The home based business will record all customer, visitor and delivery activity that occurs during each and every business day.*** The Township Board may relax this requirement upon a finding that the allowance of a specified increase in traffic, including truck traffic, will not undermine the public safety and welfare based on such factors as the size of the **parcel**, the proximity of nearby residences, and road and dust conditions, nor unreasonably interfere with the use and enjoyment of nearby properties and/or undermine the intended character of the area. Nothing in this subsection shall be interpreted to allow outdoor parking in excess of that regulated by subsection below.

- P. In no case shall more than eight (8) motor vehicles be temporarily or permanently parked or located outdoors, including vehicles owned or used by residents of the dwelling and employees of the business. The Township Board may decrease the above standard in the case where the Township Board determines that, without such reduction in the standard, the operation of the home-based business will unreasonably interfere with the use and enjoyment of nearby properties and/or undermine the intended character of the area. The Township Board may require screening of parking areas to minimize negative impacts on neighboring properties.

Performance Standards: Prior to recommending approval, the Planning Commission shall determine that the proposed home-based business is not incompatible with existing land uses in the area and would not be detrimental to the safety or convenience of vehicular or pedestrian traffic.

- A. For a home-based business, an informal site plan (does not need to comply with the requirements found in Article XVIII Site Plan Review) or plot plan must be submitted for review and recommendation by the Marion Township Planning Commission. The site plan shall be to scale and need only illustrate the following:
- 1) Owner's name, parcel identification (tax ID#) and address.
 - 2) An 11 x 17 inch color aerial photograph of the site area and surrounding areas showing overlaying property lines **with contour lines** and the proposed site layout with dimensions. (available at Livingston County GIS).
 - 3) Existing and proposed structures with dimensions indicating the location(s) and square footages to be occupied by the home-based business, ***subject property setbacks as well as distances from the proposed home-based business location on-site to adjacent property lines.***
 - 4) Location of driveways, off-street parking areas & delivery and storage areas.
 - 5) Proposed landscaping/screening in association with any parking to minimize negative impacts on nearby properties,
 - 6) The location, character, and dimensions of any structural additions or modifications to an existing dwelling or accessory structure to accommodate the home-based business.
- B. In addition to the information required in Section 17.32 and the site plan described above, the applicant shall submit a detailed description of the nature of the home-based business, which shall clearly specify the following minimum features:
- 1) A detailed description of the character of the home-based business including but not limited to the service or product offered and the typical daily schedule of activities of such business.
 - 2) The type and frequency of vehicular traffic to be generated by the home-based business. The maximum number of vehicles to be parked or otherwise located outdoors including

vehicles owned or used by residents of the dwelling and employees of the home-based business.

- 3) The number of full-time and part-time employees of the business and the frequency at which such employees will be present at the site.

- C. The Planning Commission may require additional information if it determines the character of the project, site or surrounding conditions necessitates further investigation, allowing it to make a sound decision on the application.
- D. Any approval of a home-based business, and any permit issued for such occupation, shall clearly delineate any conditions upon which such approval is granted including any conditions pertaining to the number of employees, outdoor parking of vehicles, and related operational features.

MARION TOWNSHIP
2877 W. COON LAKE ROAD
HOWELL, MI 48843
Phone 517-546-1588
Fax 517-546-6622

TRANSMITTAL

TO: Board of Trustees

DATE February 13, 2020

PROJECT **FINAL REVIEW**
Annual Report from Secretary of the Planning
Commission

VIA Hand Delivery

WE ARE SENDING: Herewith Under Separate Cover

THE FOLLOWING:

Annual Report from the Secretary of the Planning Commission

FOR YOUR: approval/ denial as requested
 other review & comment

REMARKS:

This information is for your review only. Let me know if you have any questions.

FROM: Dave Hamann, Zoning Administrator

Copy: file

Planning Commission Annual Minutes - 2019

January - Attached to 2018 minutes

- February - Toratola Lane Final Site Plan Review} After some questions from the PC Board & answered by Jim Barnwell regarding maintenance, taxes of common area, & use of common area only to properties bordering it. HOA has binding rules for legal care. Approval granted with comments & conditions met from outside agencies.
- Nuisance & Light Ordinance language again discussed & once again driven to try to incorporate Howell Twp language (supplied by John E.) into our existing attempts & definitions.
 - PC Rules & Procedures agreed upon and signed.
 - Landscape Nursery Operation Language Review} Discussion began regarding 'landscape operation' vs. 'home occupation'. The ZB made this definition we are debating. PC is to accept or change it. Dave H. suggested making it part of 'Special Use' process (John E. agreed thus, having an ability to review it.) Language voted on to send it to B o T for review.
 - TXT#07-17} Proposed Lot Changes - postponed to 3-26-19
 - TXT#03-18} Home Occupation - Jim A. found language that he will send to Dave H. so that the PC may review it. Also contains residential & AG districts. Pick back up on 3-26-19.
 - TXT#01-18 6.20 Private Roads} Same as above.
 - MSU Extension (Local Farm Economies)} a seminar for board members to attend in AA on 3-21-19. PC interested & willing to attend.
 - Latest Master Plan Draft passed out by John E. to review. Special mtg. being coordinated by John E. & Dave H. for board members to discuss together.

March - Dan Brockway explained to PC that his wish for a home to be expanded to his Ever-

green Outdoor Business on 386 Lucy Rd. Utilizing a pole barn etc. on site so to reduce expenses for two separate sites & to stop renting places. He is willing to improve visual buffers etc. It would be a use permitted by right. Steps to move forward approved.

- Wellhead Protection Overlay District language was discussed further, reviewed with possible changes to come (state clarifications said Bob).
- Howell City Waste Water Treatment Plant upgrades discussed with Howell city confirming no impact on our township (after second paragraph line corrected on pg.1)
- Marion Twp Engineering Standards} Part 1 & 2 to help expedite & give more finished review of preliminary to final site plan process by & from applicants to the boards & to more easily modify in the future.
- Postpone discussions on updated Nuisance O language &
- TXT#01-18 6.20 (Private Roads) & Engineering Standards &
- TXT#03-18 Home Occupation until 4-23-19 mtg.
- Master Plan update meeting 4-29-19 7:30 p.m.
- PC was thanked by resident Wendy Busick (Hawthorne Dr) for working on all the language of ordinances to update.

- April
- Call to Public} Concerns brought up regarding runoff drainage onto private property (Tim Ryan) by Rob Rochowski business. Evelyn Markarian (Cedar Lk. Rd.) looking for progress with current language update on shared driveway request on their lot.
 - Pre AP for Howell Landscaping/Nursery} Rob Rochowski is requesting a 60x100 pole barn not a 40x80. Discussion (lengthy) extended into his trucks/hauling/storage vs. landscaping. Rob Rochowski is frustrated with our concerns.
 - Nuisance Ordinance language} discussion 1) how to enforce? 2) too general 3) too detailed 4) and again postponed until 5-28-19
 - TXT#01-18 Private Roads} The Markarians are anxious to have their shared driveway petition handled. Phil W. & John E. Are working on the language. John E. not present

at this mtg so, we postponed until 5-28-19

-TXT#03-18 Home Occupation }

-TXT#07-17 Proposed Lot Changes} ALL postponed until Phil/John are present

-Wellhead Protection Overlay} 5-28-19

-Call to the Public} BoT Les Andersen stated that Howell Landscaping does not qualify for an accessory structure - due to commercial use in R/R area & not AG related. Dave H. said that 'use by right' would allow it but, no personal items - ONLY AG related items can be stored there.

-Special Master Plan mtg} 4-29-19 John E. explained some changes & after the Master Plan is approved by PC the public will have a chance to read & comment concerns for a 63 day period. More discussion & input & John E. said he will make more updates.

-May 22nd Joint Special Mtg with BoT} Master Plan & Ordinances (Growth Development/Enforcement of Rules/complaint driven/addressed immediately by letter giving time for the accused to comply/public hearings/law enforcement/ court dates/ cost (twp lawyer/ court dates.) Conversations/questions answered/ information shared/ public comments made from residents dealing with Home Occupation/ Commercial growing businesses in residential areas were noted & understood.

May -SPR#01-19 MHOG pole barn (storage)} Greg Tatara (MHOG) presented request for 40x60 storage barn for supply materials & equipment relieving the need for their needs/material to be spread out over the county. After minor inquiries being answered, the plan was accepted by PC & sent to BoT for their approval.

-TXT#01-18 6.20 Private Roads} Markarians are back to see if any progress has been made regarding their requested shared driveway. More discussion, more agreement for their situation & more reviews on Putnam's Private Rd. Language for next mtg 6-25.

-Nuisance Ordinance verbiage} again discussed - again postponed along with

-TXT#03-18 Home Occupation &

-TXT#07-17 Proposed Lot Changes &

-Wellhead Protection Overlay next mtg. 6-25-19.

June -Call to the Public} Les Andersen would like residents on the lake to fill out a document regarding the business that is being undertaken there (who/what/when/where/how many etc.) John E. Responded that people will look on line for rules and regulations/ won't notify the Twp/ no enforcement and the Boards need to prioritize current issues & take action ... More discussion on issues but, no results.

-John E. wants to distribute the draft of the Master Plan to BoT for review. PC approves.

-Nuisance GO} Points by PC not approving were removed (bee keeping, livestock, added current plate & registration, changed manager to supervisor, appearance tickets removed, have a nuisance measurement of sorts to compare against) revised & approved to send to BoT to review.

-TXT#03-18 Home Occupations 6.14 & 17.32 Home Based Business to BoT for input/ comments /approval.

-Marion Twp Engineering Standards} set for policy(design standards) to adopt for Future Land Use - easier scale/ easier flow/ easier use by developers while supporting ZO

-TXT#07-17 Proposed Lot Changes} PC approved term 'GROSS' throughout replacing any 'NET' to keep uniformity.

-Lot Changes/Wellhead Protection Overlay postponed until 7-23-19 mtg.

July -Call to the Public} Markarians still hoping something has been agreed upon to help them legally with their requested shared driveway on Cedar Lk. Rd.

-TXT#03-18 Home Occupation 6.14 & 17.32} set a public hearing for 8-27-19 mtg. Some minor changes brought up by Bruce & Bob regarding % dropped & sizes of acres & 'SAFE' before 'manner in full compliance'. Approved by PC to change.

-Marion Twp Engineering Standards} John E. & Phil W. Updated PC on changes that read easier & are more compliant to all parties involved.

-Wellhead Protection Overlay District 6.27 Review & Comments} Trying to clarify &

standardize the section to provide easier usage. Some comments were accepted by Phil & John to change/some to further check into.

-TXT#07-17 Proposed Lot Changes} conversation began with interchanging use of lot lines with plot plans to site plan. The goal - to be consistent & defined with used terms John E. Is checking with co-planner Chris T.

-John E. Informed PC about 9-25-27th } Planning /Zoning Conference to attend by Twp.

-Bob updated PC about AJR Witkowski lawsuit refile date 6-22-20.

August - Public Hearing TXT#03-18 Home Occupation (6.14 & 17.32) } Tim Ryan addressed his issues in his residential area being negatively affected by the trucks and runoff (D-19 Landscaping Co.) Also the # of flag lots in the Twp allowing for much hidden activity/ excessive traffic with home business deliveries, workers, parking & presented a list of questions. Occupation growing into a business ranging from 'clearly incidental' to a major growth with a number of cars to store on premises/to road frontage & then visual impact along with noise, dust, dirt and smoke hue. Wendy Busick stated that homes should be occupied by the resident not just deal out of them for the convenience of running the business there. The vehicle dealer next to them is NOT state nor Twp compliant yet ... They are there doing 'business'. Road maintenance costs to extra traffic destroying private roads --- NOT fair! Jean Roots' letter was read & her points of concern: 1) they are residential 2) road deterioration 3) excess noises 4) excess blowing dirt/dust 5) outdoor visual storage 6) extra visitors, cars, deliveries, workers, customers.

-TXT#03-18 Home Occupation & Home Based Business 17.32} Dave H. said 6.14 replaces Class I Home Occupation. More discussion regarding same intense issues from not only this public hearing but, from past months of ongoing circles of those seeking solutions. More questions/more compilations of issues. Bruce and Jim agree to have an aerial view submitted to the Twp from those residents who come forward to honestly & request a SUP.

-Marion Twp Engineering Standards} Began a lengthy discussion Phil W. explained

more details & stated that LCRC allows some things like two driveways when our Twp doesn't. Dave H. would like to have more consistency with Zoning & General Ordinances in the language. PC voted to send this language to BoT for their input.

-TXT#07-17 Proposed Lot Changes &

-Wellhead Protection Overlay both postponed again until 9-24 mtg.

-Dave H. Announced a Site Plan Class for ALL board members to attend 9-21-19.pm

September - No New Business

-TXT#03-18 (Sect. 6.14 & 17.32 Home Occupation/ Home Based Business} More discussion regarding enforcement, compliance, GO vs ZO & finally PC voted to send it on to LCPC for input & review.

-TXT#04-17 Create Special Use for Nursery & BoT changes. PC comments & questions were shared. John E. & Dave H. added input & answers. Right to Farm was separated from nursery in every respect. Language was approved & PC set a date for a Public Hearing 10-22-19.(Sec.8.01.E.22 Nursery Operations.)

-TXT#07-17 Proposed Changes Lots } Discussion led by Bob to splits regarding a handout he provided. Trying to keep the ordinance language non contradictory. PC approved to have the BoT to consider our recommendation to remove Sec 3 Accessibility #2 Easements.

- Wellhead Protection Overlay District Replacing 6.27} John E. is in conference talks with Tim Schmidt to complete & clarify these issues points of contention. John E. will update. PC voted to postpone.

-BoT did not approve Master Plan for distribution. John E. Plans on having the draft completed by 10-22nd mtg. The BoT also allocated \$50,000 for enforcement of violations in the Twp. John E. suggested to hire, train & help a new individual to work with he & Dave H. with the enforcement.

October -Call to the Public} Resident from Triangle Lk. (Rebecca Mistretta) informed PC of

a rental of a lake home that is not allowed to rent, is noisy, is using private drives extra parking (1697 Triangle Lk) rental address. Another resident (Edward Grima) warns PC & Twp that the use of a washer is not allowed there (septic issues) and the basement is only to be used as storage not a bedroom.

-Public Hearing TXT#04-17 Landscape Contract & Nursery Operation} Jean Root/resident provides information of the trucking company illegally doing business in a residential area starting at 4:30 am and the Master Plan states for the Twp to remain rural in character. Asking for action to be taken to prevent accidents /safety issues to Twp residents. Tim Ryan /resident added information about Drain #3 being used there plus the noise, dust, exhaust fumes, & home shaking. Need Enforcement efforts to begin. Susan Schooley/resident - our language states that

'must not create a nuisance or disrupt rural character'. Who interprets opinions? John E. Replied that the PC has worked on protection language in ordinances & BoT must approve & designate enforcers for the Twp. John E. Also stated that the rental on the lake is NOT permitted in the ERS (existing rural subdivision) district.

-New Business TXT#04-17 Landscape Contractor & Nursery Operations} a change was made to include verbiage to further clarify nursery from Right to Farm & was approved to send to LCPC for review & approval. Sec.8.01. B3, Sec.8.02.B6 & Sec. 10.01B.16.

-Old Business TXT#03-18 Sec.6.14 & 17.32 Home Occupation/Home Based Business} PC approved & in 6.14 Home Occupation to change all 'LOTS' to 'PARCELS' throughout.

-Wellhead Protection Overlay District} postponed to 11-26-19 mtg.

-Correspondence} Mr. McKay is a resident with an unusual home history & recent discovery on his lake property. A drain field shown & thought to be originally there & correct but, was never there, also a new issue with a deck now not in compliance in clearance (now a practical difficulty) & not his fault. John E. will address & help at next mtg 11-26-19.

Meeting extended ...

-Esper/Wolf issue with property lines/variance/flag lot/ claiming not a flag lot due to frontage area.

-Multi poles & flag lots Cedar Lk Rd parcel questioned with 2 poles. No existing language to prohibit this case.

-Call to the Public} Les Andersen wanted clarification to the language definition - 'Nursery/Right to Farm'.

November-Call to the Public} Tim Ryan/ resident clarified last months statement regarding Drain #3 correction saying surface water into Drain #3 ... The state of MI permit covers this & the NPDES (National Pollutant Discharge Elimination System) identified them as a 'Trucking No Outside Storage Business' Susan Schooley / resident is wondering why nothing has been done to change & correct things on the D-19 Business. Jeff Hanson (Lucy Rd resident) wishes to have a green belt (berm) put in to deflect vision of this new topsoil & aggregate business going in with extra traffic & activities.

-SPR#02-19 Evergreen Landscape (Lucy Rd)} Dan Brockway updated PC on his ZB meeting & site plan work. John E. had minor requests along with those publicly sited by the owner Dan B. (parking spots/ rear set backs) PC approved the site plan with outside agencies/recommendations/comments addressed.

-SPR#03-19 LoRea Topsoil & Aggregate (Lucy Rd)} David LeClair representing Matt Peevey (owner) } John E. Had minor thoughts about better lighting & is properly in the H District location for this business. Residential across the street to have considerations & be compliant to those residents & items brought up by PC then approving & sending to BoT for review /comments/approval.

-TXT#01-19 Short Term Rental Special Use} Discussion regarding Twp to allow with restrictions - to be met - or revoke their permit. John E. Explains & further explains Dave H. added that we either restrict or try to control & regulate before big issues

arise. A list of regulations that owners & renters use are to abide by was suggested. Les Andersen said his property up north has been ruined by short term rentals there and shouldn't be allowed to start here. John E. said he will try to gather more information & Mike Kehoe's input would be welcomed by PC in the near future.

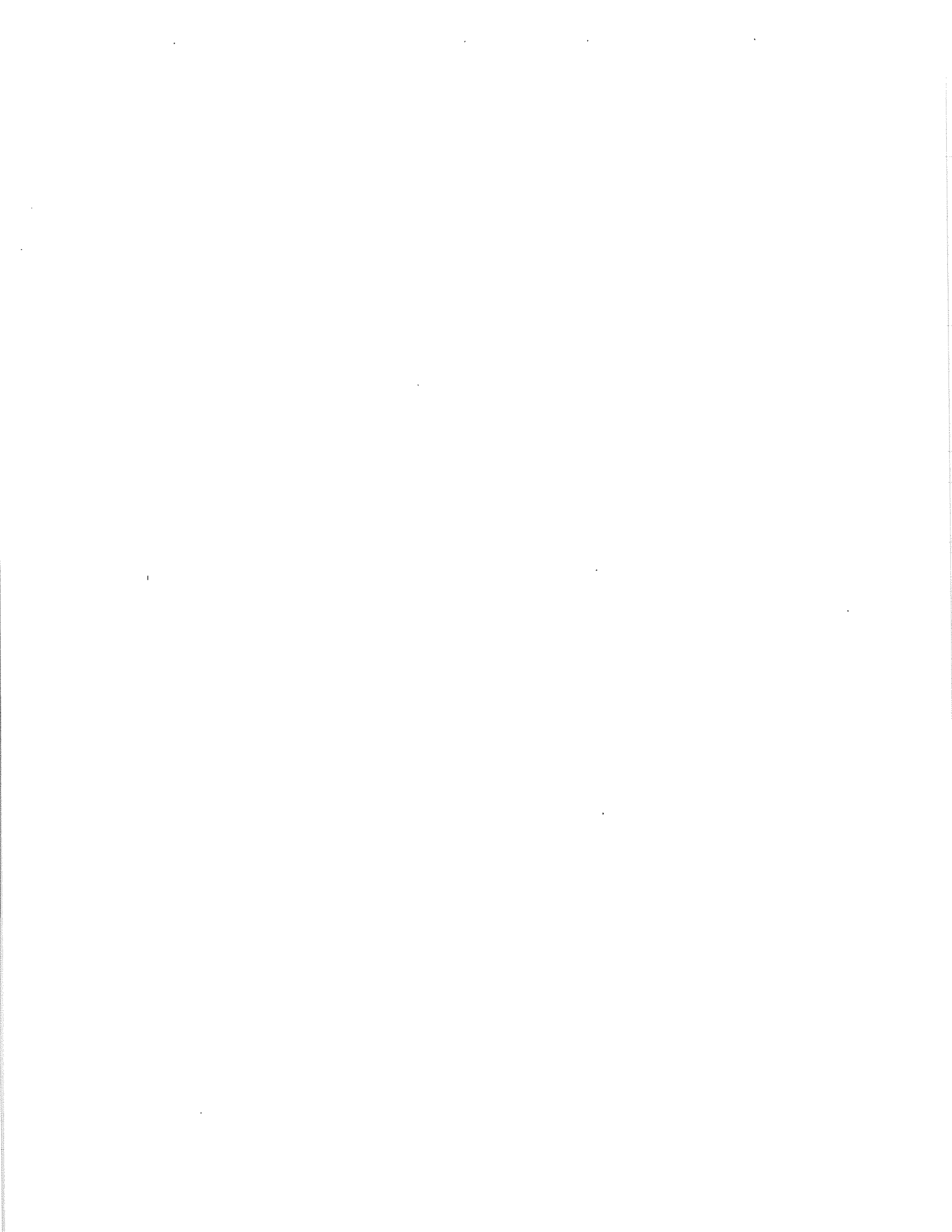
-TXT#04-17 LCPC Review} Still waiting. BoT - No decision on 17.32 (Home Based Business) & removed 6.14 Home Occupation prohibiting signs. We wait!

-TXT#07-17 Proposed Changes Lots} postponed until 1-28-2020

-Call to the Public} Les Andersen wanted to state that Home Occupations should NOT be visible to the public eye. Signs still a question. Interest was raised about the Twp owned property on Lucy Rd. Bob answered that the Twp is getting it appraised.

December-No Meeting

Respectfully Submitted,
Cheryl Range PC Secretary
12-30-2019



RESOLUTION TO CHANGE THE STARTING DATE FOR APPEALS
TO THE BOARD OF REVIEW FOR 2020

RESOLUTION #2020-nn
February 13, 2020

_____ motioned to adopt a resolution to set the following policy for the starting date for Board of Review appeals, Seconded by _____

Due to the Presidential Primary Election being scheduled on Tuesday, March 10, 2020, the Marion Township Board resolves to set the starting date for appeals to be Wednesday, March 11, 2020 at 1:00pm.

Upon roll call vote, the following voted "Aye":

The following voted "Nay":

The following abstained:

Resolution

The supervisor declared the motion

I, the undersigned, the duly qualified and acting Clerk for the Township of Marion, Livingston County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and complete copy of certain proceedings taken by the Board of Trustees at a meeting held on the 13th day of February 2020, and further certify that the above Resolution was adopted at said meeting.

Marion Township Clerk

Date

MEMO

To: Marion Township Board

From: Bob Hanvey

Subject: Moving water and sewer REUs for Mitch Harris Building Co.

Date: February 13, 2020

Attached to this memo is documentation involving a request from Mitch Harris Building Company to move REUs from a parcel that has 98 sewer and 88 water REUs to the property known as Meadows West.

Both properties are owned by Mitch Harris and all the REUs have been paid-in-full. There is no money involved in this transfer.



January 29, 2020


Marion Township
2877 W. Coon Lake Road
Howell, MI 48843

Re: The Meadows West

Dear Dave,

Please accept this letter as your authorization to transfer the rights to the 52 pre-paid REU Sewer and 52 pre-paid REU Water, from 4710-02-400-016 to 10-11-200-017.

If you have any questions, please contact me at (810) 229-7838.

Thank You

Karen Leitch
General Manager
Mitch Harris Building Company, Inc.



January 29, 2020

Marion Township
2877 W. Coon Lake Road
Howell, MI 48843


Re: The Meadows West

Dear Dave,

Please accept this letter as the request for individual tax codes for 52 units in The Meadows West tax code 10-11-200-017 clm.

If you have any questions, please contact me at (810) 229-7838.

Thank You


Karen Leitch

General Manager

Mitch Harris Building Company, Inc.



MARION TOWNSHIP

www.mariontownship.com

2877 W. Coon Lake Rd.
Howell, MI 48843

Phone (517) 546-1588
Fax (517) 546-6622

January 31, 2020

Mitch Harris Building Co., INC
211 N. First ST., STE #100
Brighton, Michigan 48116

RE: LAND DIVISION #20-04

RETIRED PARCEL NUMBER: 4710-11-200-017 – Vacant: Peavy Road

NEW PARCEL NUMBERS: 4710-11-203-001 – Vacant: Myrtle and Camellia Circle
Through 4710-11-203-052 – Vacant: Myrtle and Camellia Circle

Ms. Karen Leitch:

Your request to create the parcels in The Meadows West has been completed. The new parcels will begin receiving individual tax bills, beginning in July, 2020.

The new tax legal description for each parcel is attached (in email to you) for your review.

If you have any questions or concerns, please contact me.

Sincerely,

Lori Judson, M.A.A.O.
Assessor

James Barnwell

From: Kim Hiller <khiller@livingstonroads.org>
Sent: Tuesday, January 23, 2018 8:15 AM
To: Dave Hamann
Cc: James Barnwell
Subject: Meadows West

Dave,

I completed a preliminary review of the Meadows West plans, prepared by Desine, Inc. and dated July 18, 2017 that you sent to our office and offer the following comments.

- The roads within Meadows West are to be private and access is through Yarrow which is also private, therefore an approach permit is not required from this office.
- If any work is proposed within the Peavy Road right-of-way, such as sanitary sewer or watermain, a permit to work within the county road right-of-way will be needed.
- The applicant will need to submit the private road names for approval to our office and to be reserved in the road name inventory book for Livingston County. The road name Myrtle is already in use in Livingston County and cannot be approved for this site.

If you have any questions, please contact me.

Thank you,

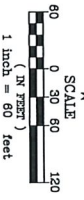
Kim Hiller, P.E.
Utilities and Permits Engineer
Livingston County Road Commission
3535 Grand Oaks Dr.
Howell, MI 48843
Ph. (517) 546-4250

Exhibit "B" to the Master Deed of

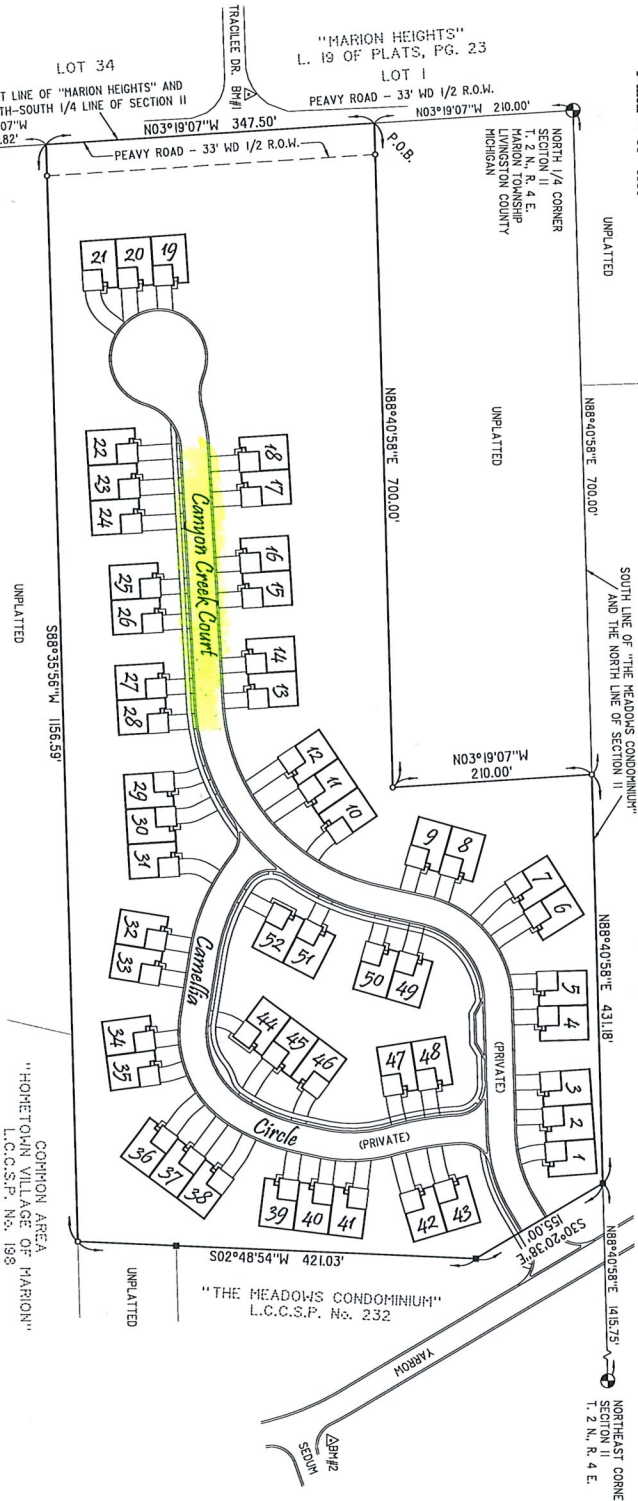
The Meadows West

A Part of the Northeast 1/4 of Section 11
Town 2 North, Range 4 East
Marion Township, Livingston County, Michigan

Survey Plan



Owner / Developer
Mich Harris Building Co.
211 North First Street
Brighton, MI 48116
810-229-7899



Surveyor's Certificate

I, Marusz L. Lukowicz, registered land surveyor of the state of Michigan, being duly sworn, depose and say that the above described plat, being a true and correct copy of the original plat as shown to me by the client, and that the same was prepared by me or under my direct supervision and that I am a duly licensed and qualified surveyor under the laws of the State of Michigan.

as shown on the accompanying drawings, represent a survey on the ground made under my direction (that there are no existing monuments upon the lands and property herein described or described in the accompanying drawings) and that the same was prepared by me or under my direct supervision and that I am a duly licensed and qualified surveyor under the laws of the State of Michigan. That the required monuments and iron markers have been located in the ground as required by rules promulgated under Section 142 of Act No. 59 of the Public Acts of 1978. That the accuracy of this survey is within the limits required by the rules promulgated under Section 142 of Acts of 1978 (as amended). That the bearings, as shown, are read on Survey Plan as shown on the accompanying drawings and that the same were measured and computed under Section 142 of Act No. 59 of the Public Acts of 1978.

Legend

ALL DIMENSIONS ARE IN FEET.
ALL CURVILINEAR DIMENSIONS ARE SHOWN ALONG THE ARC.
THE SYMBOL "o" INDICATES AN 1/2 IN. IRON ROD ENCASED IN A 4 IN. X 3/8 IN. CONCRETE MONUMENT.
THE SYMBOL "m" INDICATES A FOUND CONCRETE MONUMENT.

Notes:

- 1) PROPERTY LIES WITHIN FLOOD ZONE X OF FLOOD HAZARD AREA, AS DEPICTED ON FLOOD INSURANCE RATE MAP ISSUED BY FEDERAL EMERGENCY MANAGEMENT AGENCY, MAP NO. 26093C0304D, EFFECTIVE DATE: SEPTEMBER 17, 2008.
- 2) THE ENTIRE GENERAL COMMON ELEMENT OF THIS CONDOMINIUM IS ENCLUMBERED BY A PRIVATE EASEMENT FOR PUBLIC UTILITIES.
- 3) ALL EASEMENTS OF RECORD LISTED ON COMMITMENT FOR TITLE INSURANCE ISSUED BY METROPOLITAN TITLE COMPANY, COMMITMENT NO. L-24694, DATED SEPTEMBER 16, 1997 AT 8:00 AM ARE SHOWN HEREON.

Benchmarks:

- #1 = SOUTH RIM OF A SANITARY SEWER MANHOLE, LOCATED ON THE WEST SIDE OF PEAVY ROAD IN THE ENTRANCE OF TRADLEE ROAD, 33' WIDE, ELEVATION = 442.97 (NGVD 29)
- #2 = CENTER OF SANITARY SEWER MANHOLE, LOCATED AT THE NORTHEASTERN CORNER OF THE INTERSECTION OF PEAVY ROAD AND YARROW, 198' FEET EAST OF THE MEADOWS WEST, ELEVATION = 591.87 (NSVD 29)

(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

FEBRUARY 4, 2020
MARUSZ L. LUKOWICZ
PROFESSIONAL SURVEYOR NO. 38119
PROPOSED DATED
JOB NO. 1-11-11-152547
SURVEY PLAN SHEET 2

**MARION TOWNSHIP RESOLUTION
TO APPROVE MOVING 52 SEWER REU'S**

**Resolution# 2020-XX
February 13, 2020**

Resolution was adopted to approve the moving of 52 SEWER REU's, special assessment code X2397, Sewer Phase 2, from property owned by Mitch Harris Building Company, tax code number 4710-02-400-016, currently with 98 REUs, to property owned by Mitch Harris Building Company with fifty-two tax code numbers, 4710-11-203-001 through tax code 4710-11-203-052, one REU per parcel number.

These REUs have been paid-in-full.

Resolution offered by Board Member _____ and supported by _____.

Upon roll call vote the following voted

"Aye."

"Nay."

Resolution

The Supervisor declared the Resolution _____,

Robert W. Hanvey

I, Tammy L. Beal, the duly elected and acting Clerk of Marion Township, hereby clarify that the foregoing Resolution was _____ by the Township Board of said Township held on February 13, 2020, at which a quorum was present by a roll call vote of said members as hereinbefore set forth, that said resolution was ordered to take immediate effect.

Marion Township Clerk

**MARION TOWNSHIP RESOLUTION
TO APPROVE MOVING 52 WATER REU'S**

**Resolution# 2020-XX
February 13, 2020**

Resolution was adopted to approve the moving of 52 WATER REU's, special assessment code X2511, Marion Water District, from property owned by Mitch Harris Building Company, tax code number 4710-02-400-016, currently with 88 REUs, to property owned by Mitch Harris Building Company with fifty-two tax code numbers, 4710-11-203-001 through tax code 4710-11-203-052 one REU per parcel number.

These REUs have been paid-in-full.

Resolution offered by Board Member _____ and supported by _____.

Upon roll call vote the following voted

“Aye.”

“Nay.”

Resolution

The Supervisor declared the Resolution _____,

Robert W. Hanvey

I, Tammy L. Beal, the duly elected and acting Clerk of Marion Township, hereby clarify that the foregoing Resolution was _____ by the Township Board of said Township held on February 13, 2020, at which a quorum was present by a roll call vote of said members as hereinbefore set forth, that said resolution was ordered to take immediate effect.

Marion Township Clerk

MEMO

To: Marion Township Board

From: Bob Hanvey

Subject: Engineering hourly rates for inspection services

Date: February 13, 2020

Attached is an email from Allen Edwin requesting a review of the rates they are charged for engineering services.

This email was forwarded to Phil Westmoreland at Spicer. He will be unable to attend the BOT meeting.

Bob Hanvey

From: Dan Larabel <dlarabel@allenedwin.com>
Sent: Wednesday, February 05, 2020 11:54 AM
To: supervisor@mariontownship.com
Subject: Marion Creek 3

Hi Bob,

Construction of Marion Creek phase 3 is soon to be underway, and I wanted to reach out to you regarding municipal engineering. I would like to request for consideration for competitive pricing for construction documentation, field observation, inspections and as-built plan review. I am not requesting that the township change its engineer of record but rather that competitive arrangement be considered for this scope of work on a project by project basis.

It is our observation that rates from the current township engineer are notably higher than similar engineering firms who provide municipal services. I have provided a table below comparing rates from other industry leaders.

Engineering Firm	Spicer	Tetra Tech	Vriesman & Korhorn	Williams & Works	Prein & Newhoff
Field Inspection Rate (Hourly)	\$105-120	\$75	\$69	\$70	\$78

We are requesting that either (1) consideration be given to engineers that provide the same service or (2) that if the township cannot change engineers, consideration be given to reducing field inspection rates to be consistent with an industry standard.

This will help reduce development cost, it will also help us better provide quality housing at an affordable price point for township residents. Please consider this proposition and feel free to give me a call with any questions. I will follow up with you in the near future.

Thanks,

Dan Larabel
Land Manager
Allen Edwin Homes
O: 616-878-1748 x428
M: 616-450-4631
dlarabel@allenedwin.com

**MARION TOWNSHIP
DEVELOPMENT STANDARDS
AUGUST 2019**

DRAFT

Table of Contents

GENERAL PLAN SUBMITTAL REQUIREMENTS AND PROCEDURES	1
I. PURPOSE.....	1
II. SITE PLAN PROCEDURE SUMMARY.....	1
III. CONSTRUCTION PLAN SUBMITTAL PROCEDURES	7
IV. INSURANCE	8
V. CONSTRUCTION OBSERVATION PROCEDURES.....	9
CONSTRUCTION PLAN REQUIREMENTS.....	12
I. PLAN REQUIREMENTS.....	12
II. TOPOGRAPHICAL SURVEY	12
III. UTILITIES (GENERAL)	13
IV. WATER MAIN.....	14
V. SEWERS (SANITARY/STORM).....	14
VI. SANITARY SEWER	15
VII. STORM SEWER	16
VIII. DETENTION/RETENTION	19
IX. FLOOD PLAIN DEVELOPMENT	22
X. SITE GRADING.....	23
XI. RETAINING WALLS.....	23
XII. PAVING AND ROADS	26
XIII. PARKING LOT REQUIREMENTS.....	32
XIV. PATHWAYS AND SIDEWALKS.....	32
XV. SOIL EROSION AND SEDIMENT CONTROL.....	33

GENERAL PLAN SUBMITTAL REQUIREMENTS AND PROCEDURES

I. PURPOSE

- A. It is the purpose of this Section to specify standards and data requirements, which shall be followed in the preparation of the site plans. It is also the purpose of this Section to ensure that:
1. The proposed use will not be injurious to the surrounding neighborhood and protects the general health, safety, welfare, and character of the Township;
 2. Natural resources will be preserved to the maximum extent possible in the site design by developing in a manner which will not detrimentally affect or destroy natural features such as lakes, ponds, streams, wetlands, steep slopes, soils, ground water, and woodlands; and
 3. Landscaping, including grass, trees, shrubs, and other vegetation is provided to maintain and improve the aesthetic quality of the site and area.

II. SITE PLAN PROCEDURE SUMMARY

- A. A site plan shall be reviewed by the Planning Commission, who shall then provide a recommendation of approval, approval with conditions, or denial, to the Township Board of Trustees. The Township Board of Trustees must approve or approve with conditions the final site plan prior to the establishment of any new land use, change of use, addition to an existing use, or the erection of any structure in any zoning district. Individual single-family structures erected within a single lot, parcel or building envelope shall not require site plan review.
1. The Township shall not issue a land balancing permit until the final site plan has been approved by the Township Board of Trustees and is in effect.
 2. No grading, removal of trees or other vegetation, landfilling, land balancing, or construction of improvements shall commence for any development that requires site plan approval until a final site plan is approved and is in effect, except as otherwise provided in these specifications.

B. Preliminary Site Plan

1. **Application.** Any applicant may submit a request for preliminary site plan review by filing with the Zoning Administrator completed forms, payment of the review fee required herein, and three (3) copies of the plans or a PDF file. Upon review and approval by the Zoning Administrator, the Township Planner, the Township Engineer, and any other applicable agencies, nine (9) copies of the administratively approved preliminary site plan drawing(s) shall be submitted for distribution to the Township Planning Commission. Upon Planning Commission approval, an additional eight (8) copies of the plans shall be submitted for distribution to the Township Board of Trustees. Unless specifically directed by the Zoning Administrator, the Board of Trustees submittal shall be the same as the Planning Commission submittal and no changes shall be made to the plans. The Administrator shall transmit only administratively complete submittals of the preliminary site plan to the Planning Commission and Township Board. The purpose of such preliminary review is to confirm general compliance with Township standards as well as to suggest changes, if necessary, for final site plan approval
2. **Combining Preliminary and Final Site Plans.** An applicant may, at the discretion of the Administrator and/or the Planning Commission, request to combine a preliminary and final site plan in one (1) application for approval. In such a situation, the portion of the review process concerning preliminary site plan application and review may be waived by the Planning Commission. The Planning Commission shall have the authority to require

submittal of a preliminary site plan separate from a final site plan where, in its opinion, the complexity and/or scale of the site for the proposed development to warrant.

3. **Pre-application meeting.** The applicant may request a pre-application meeting with the Planning Commission to discuss a proposed project. The item will be placed on an agenda of a regularly scheduled Planning Commission meeting. Site plan approval will not be given during a pre-application meeting discussion.
4. **Information Required.** Site plans shall consist of an overall plan for the entire development. Sheet size shall be at least 24" x 36" with plan view drawn to a scale of no greater than 1" = 50'. A preliminary site plan submitted for review shall contain all of the following information in a clear and legible format:

General Information

- a. Name of the proposed development
- b. Name, address, phone, fax number and/or email address of applicant(s), property owner(s), engineer(s), architect(s), and landscape architect(s). The property owner must provide written approval of all project representatives.
- c. A written narrative of the proposed use(s) of the property. For other than residential uses, including factors that potentially impact the proposed development may have on the surrounding area.
- d. One (1) presentation quality aerial photograph with adjacent property information and features including, though not limited to, the following: land use(s), property owner(s), sidwell number(s), location of adjacent buildings, driveways, streets, existing and proposed lot lines, building lines, structures, and parking areas on the parcel and within one hundred (100) feet of the site.
- e. Date of plan preparation, including revision dates.
- f. Complete legal description of the site.
- g. Professional seal of a registered architect, engineer, surveyor, landscape architect, or a planner.
- h. Vicinity map drawn at a scale of 1" = 2,000'.
- i. Dimensions and gross acreage of the site.
- j. Zoning classification of petitioner's parcel and all abutting parcels and demonstration of compliance with lot area, width, coverage, and setback requirements.
- k. Scale and north arrow on each plan sheet.
- l. Existing natural features and man-made features to be retained or removed.
- m. Adjacent property information and features including, though not limited to, the following: land use(s), property owner(s), sidwell number(s), zoning classification, location of adjacent buildings, driveways, streets.
- n. Existing and proposed lot lines, building lines, structures, parking areas, etc., on the parcel and within one hundred (100) feet of the site.
- o. Proposed construction phasing.
- p. Identification of variances that are be required.

Physical Features

- a. Location, size, and dimension of proposed buildings/structures, including floor area, finished floor elevation, number of floors, height, number and type of dwelling units (where applicable).
- b. Location of existing and proposed private and public roads and access drives, including general alignment, right-of-way or easement, surface type, and width.

- c. Location, size, and dimension of the following existing and proposed site features: water main, wells, detention and forebay basins, private utilities, utility poles, and public and private easements.
- d. Location, size, and dimension of existing and proposed storm sewer, culverts, ditches, and public and private storm sewer easements.
- e. Location, size, and dimension of existing and proposed sanitary sewer, septic fields, reserve septic fields, sewage disposal facilities, and public and private sanitary sewer easements.
- f. Location of all existing and proposed parking, including dimensions of spaces, maneuvering lanes, and surface type, where applicable.

Natural Features

- a. Soil characteristics of the parcel to at least the detail provided by the U.S. Soil Conservation Service, Soil Survey of Livingston County, Michigan.
- b. Existing topography with a maximum contour interval of two (2) feet for the site and beyond the site for a distance of one hundred (100) feet in all directions. Final grading plan, showing finished contours at a maximum interval of two (2) feet, correlated with existing contours so as to clearly indicate required cutting, filling, and grading.
- c. Location of existing wetlands, drainage courses, floodplains, and associated bodies of water, within one hundred (100) feet of the site, and their elevations.
- d. Location of existing woodlands delineated with symbolic lines tracing the spread of the outermost branches and shall be described as to the general sizes and kinds of trees contained.
- e. Location of natural resource features, including, but not limited to, woodlands and areas with slopes greater than eighteen percent (18%) incline.

Additional Requirements for Residential Developments

- a. Density calculation by type of unit.
- b. designation of units by type and number of units in each building.
- c. Amount, type, and location of common open space, including general and limited common elements within a site condominium, and any recreational amenities (i.e., playground equipment).

5. **Planning Commission Action.** The Planning Commission shall recommend to the Township Board of Trustees approval, approval with conditions, or denial of the preliminary site plan. If the preliminary site plan requires extensive revisions to meet Township requirements, the Planning Commission may recommend denial of the preliminary site plan. The Planning Commission shall set forth the reason for its action in the record of the meeting at which action is taken.
- a. The Planning Commission recommendation of the preliminary site plan shall be forwarded to the Township Board of Trustees for its review.
 - b. If the preliminary site plan is recommended for denial, the applicant may address all the conditions and submit the revised preliminary site plan to the Zoning Administrator for further action by the Planning Commission.
 - c. The Township Board of Trustees shall review the preliminary site plan and approve, approve with conditions, or deny the preliminary site plan.
 - d. If the Board of Trustees approves the preliminary site plan, the applicant may

submit a final site plan to the Zoning Administrator in accordance with the provisions herein.

- e. If the preliminary site plan is approved with conditions, the applicant shall address all the conditions during final site plan review.
 - f. If the preliminary site plan is denied by the Township Board, the applicant may submit an alternative preliminary site plan to the Zoning Administrator for review by the Planning Commission in accordance with the provisions herein.
6. **Effect of Approval.** Approval or approval with conditions of a preliminary site plan by the Township Board of Trustees shall indicate general acceptance of the use and the proposed layout of buildings, streets and drives, parking areas, other facilities, and overall character of the proposed development.
7. **Expiration of Approval.** Approval of a preliminary site plan by the Board of Trustees shall be valid for a period of one (1) year from the date of approval and shall expire and be of no effect unless a completed application for a final site plan approval with all necessary supporting information is filed with the Zoning Administrator within that time period.

C. Final Site Plan

1. **Application.** For final site plan, the applicant shall submit to the Zoning Administrator three (3) copies of the plans or a PDF file. Upon review and approval by the Zoning Administrator, the Township Planner, the Township Engineer, and any other applicable agencies, nine (9) copies of the administratively approved preliminary site plan drawing(s) shall be submitted for distribution to the Township Planning Commission. Upon Planning Commission approval, an additional eight (8) copies of the plans shall be submitted for distribution to the Township Board of Trustees. Unless specifically directed by the Zoning Administrator, the Board of Trustees submittal shall be the same as the Planning Commission submittal and no changes shall be made to the plans. The Administrator shall transmit only administratively complete submittals of the preliminary site plan to the Planning Commission and Township Board.
2. **Information Required.** Site plans shall consist of an overall plan for the entire development. Sheet size shall be at least 24" x 36" with plan view drawn to a scale of no greater than 1" = 50'. A final site plan submitted for review and approval shall contain all of the information required for the preliminary site plan in addition to the following data presented in a clear and legible format.

Physical Features

- a. Location of existing and proposed centerline, edge of roadway, approach radii at intersections, and pavement cross-sections for public and/or private roads on site or abutting the site. Acceleration, deceleration, passing lanes, approaches, and curb and gutter shall also be shown.
- b. There is a proper relationship between major thoroughfares and proposed service drives, driveways, and parking areas. Proper access to all portions of the site and all sides of any structure is provided. All structures or groups of structures shall be so arranged as to permit emergency vehicle access by some practical means.
- c. Existing and proposed location, width, and approach radii of access drives, driveways, sidewalks, pathways, and curb and gutter. Pavement cross sections shall be provided for each.
- d. Existing and proposed off-street parking with calculation of the number of parking spaces required and provided.

- e. Location of existing storage tanks. This may include, but not be limited to, information on the following:
 - I. Chemical and fuel storage tanks and containers;
 - II. Water supply facilities;
 - III. Sanitary sewage disposal facilities;
 - IV. Storm water control facilities and structures; and
 - V. Location of all easements.
- f. Sites which include storage of hazardous materials or waste, fuels, salt, or chemicals will be designed to prevent spills and discharges of polluting materials to the surface of the ground, groundwater or nearby water bodies in accordance with County and State standards, where applicable.
- g. Location, size/dimension of existing and proposed fire hydrants, water service and fire suppression leads, and public and private water main easements. (All proposed water mains must meet the standards of the Marion, Howell, Oceola, Genoa (MHOG) Water Authority.)
- h. Grading and overflow route for proposed and existing detention and forebay basins and public and private drainage easements. Calculations shall be included and indicate that the detention and forebay areas meet the Livingston County Drain Commission standards.
- i. A note shall indicate the ultimate outlet for storm water runoff (County Drain, creek, or river).
- j. Location of all building structures with setback and yard dimensions.
- k. Dimensioned floor plans and typical elevation views for all buildings, where applicable.
- l. Proposed exterior lighting locations, typical detail, and illumination pattern.
- m. Location and description of all existing and proposed landscaping, berms, fencing, retaining walls, and quantity and size of all proposed landscaping.
- n. Trash receptacle pad location, area, method of screening, pavement type and cross-section.
- o. Location, area, depth, and method of screening of transformer pads, compressors, air conditioners, generators, refrigeration units, and similar equipment, where applicable.
- p. Entrance detail(s) including traffic control and monument sign locations and size.
- q. Designation of fire lanes.
- r. Proposed grading and how it shall tie into existing grading, and the limits of clearing and grading. Elevations shall be provided at, though not limited to: top of curb and/or edge of pavement, edge of walk/pathway, top and bottom of retaining wall, property corners, finished floor, storm structures, and detention and forebay high water.
- s. Location of existing and proposed ground, wall, or directional signs, and details of all proposed signs.
- t. Any other pertinent physical features.

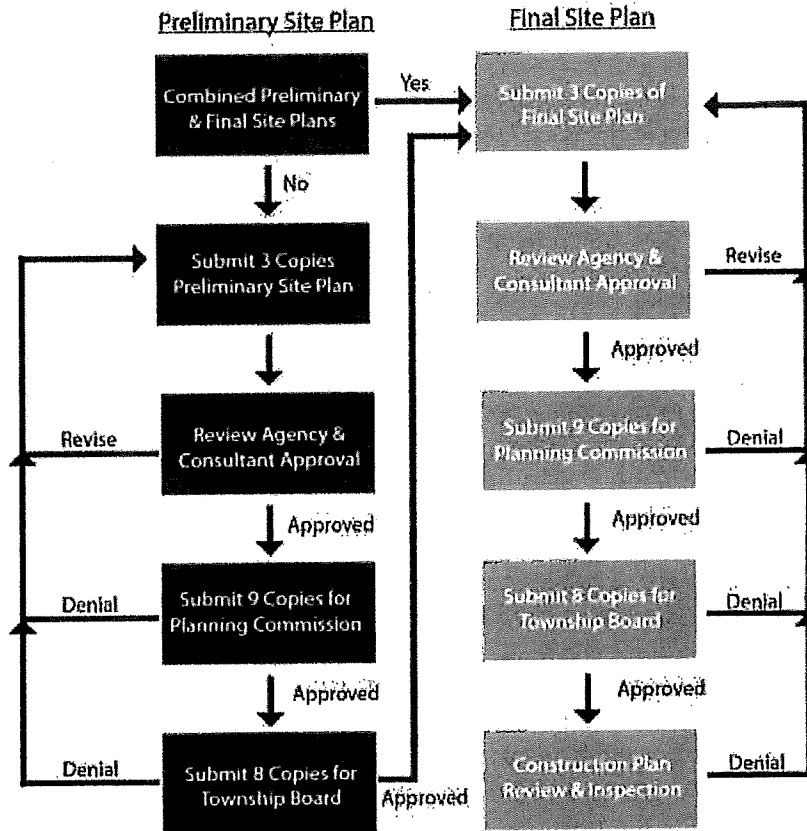
Additional Requirements for Commercial and Industrial Developments

- a. Loading/unloading areas.
- b. Total and useable floor area.
- c. Number of employees in peak usage.

3. **Standards for Review.** In reviewing the final site plan, the Planning Commission and Township Board shall determine whether the plan meets the following specification and standards:
 - a. The plan conforms to the approved preliminary site plan and with all Zoning Ordinance regulations.
 - b. All required information is provided.
 - c. The proposed use is in compliance with all Township Ordinances and any other applicable laws.
4. **Planning Commission Action.** The Planning Commission shall recommend to the Township Board of Trustees approval, approval with conditions, or denial of the final site plan. If the final site plan requires extensive revisions to meet Township requirements, the Planning Commission may recommend denial of the preliminary site plan. The Planning Commission shall set forth the reason for its action in the record of the meeting at which action is taken.
 - a. The Planning Commission recommendation of the final site plan shall be forwarded to the Township Board of Trustees for its review.
 - b. If the final site plan is recommended for denial, the applicant may address all the conditions and submit the revised final site plan to the Zoning Administrator for further action by the Planning Commission.
 - c. The Township Board of Trustees shall review the final site plan and approve, approve with conditions, or deny the final site plan.
 - d. If the preliminary site plan is denied by the Township Board, the applicant may submit an alternative final site plan to the Zoning Administrator for review by the Planning Commission in accordance with the provisions herein.
5. **Effect of Approval.** A recommendation of approval advances the final site plan to the Township Board of Trustees for its review and action. Upon approval of a final site plan by the Township Board of Trustees, the applicant may apply for a land use permit **for land balancing ONLY** in accordance with the terms of the approved final site plan and any other Township requirements. Land use permits for building shall only be issued after construction plan approval.
6. **Expiration of Approval.** Approval of a final site plan shall expire and be of no effect one (1) year following the date of approval unless construction has begun on the property in conformance with the approved final site plan.
7. **Conformity to Approved Site Plans.** Property, which is the subject of an approved final site plan, must be developed in strict compliance with the approved final site plan and any amendments thereto which have been approved by the Township Board of Trustees. If construction does not conform to the approved final site plan, the approval shall be revoked. Upon revocation of such approval, all construction activities shall immediately cease upon the site, other than actions taken to correct the violation. For residential developments, no land use permit for dwellings shall be issued until the first course of blacktop, by development phase if applicable, and landscaping has been installed. The required landscaping shall include, but not be limited to, greenbelts, entrance(s), detention/retention basins, and buffers as shown on the approved final site plan.
8. **Amendment of Approved Site Plan.** The Zoning Administrator shall have the authority to determine if a proposed change requires an amendment to an approved final site plan. The Zoning Administrator may approve minor changes in an approved final site plan, provided that a revised final site plan drawing(s) be submitted showing such minor changes, for purposes of record. An approved final site plan may be amended upon re-

application including any fees required and in accordance with the procedure herein for a final site plan.

- D. **Construction Plan Review** Following approval of the final site plan by the Township Board of Trustees, the applicant shall submit to the Zoning Administrator two (2) copies of construction plans as well as any other data and exhibits hereinafter required. The construction plans shall be consistent with the approved final site plan but shall provide greater detail in accordance with these standards. Approval of the construction plans by appropriate authorities is required prior to beginning construction.
- E. **Construction Observation** Marion Township or its designated representative will provide observation on all proposed public utilities and improvements, as well as limited construction observation of private improvements. The requirements for construction observation and final project closure shall be in accordance with these standards, as amended.



III. CONSTRUCTION PLAN SUBMITTAL PROCEDURES

- A. Following approval of the preliminary and final site plans by the Township, the applicant shall submit to the Zoning Administrator two (2) copies of construction plans as well as any other data and exhibits hereinafter required, the review fee, and a completed application form. After the initial submittal, subsequent revisions can be sent directly to the Township Engineer.
- B. The construction plans shall address the same concerns as the final site plan but shall include much greater detail in accordance with the adopted Marion Township Engineering Standards. Approval of the construction plans is required prior to beginning construction.
- C. As part of the review process, the Township Engineer may contact the Township, the DPW, Fire Department, or other regulatory agencies for comments and feedback. If other agencies (MDOT, MDEQ, LCRC, LCDC, etc.) have not completed their reviews, the Township Engineer may request that their comments be supplied to the Township Engineer prior to final approvals. In general, the following agencies shall have review authority over the type of improvement:
 1. Marion Township
 - a. Sanitary sewer and appurtenances
 - b. Public and Private water distribution system and appurtenances
 - c. Private storm sewer and appurtenances
 - d. Stormwater management (detention, retention, etc.)
 - e. Private roads and paved areas
 - f. Pathways and sidewalks
 - g. Grading and restoration
 - h. Any other improvements not regulated by another agency
 2. Livingston County Road Commission (LCRC)
 - a. Public roads, streets, and right-of-ways
 3. Livingston County Drain Commissioner (LCDC)
 - a. Public storm sewer and appurtenances
 - b. Stormwater management (detention, retention, etc.)
 - c. Soil Erosion Control
 4. Livingston County Department of Public Health
 - a. Private septic fields
 - b. Private water wells
 5. Marion Howell Ocala Genoa Water Authority (MHOG)
 - a. Public water distribution system and appurtenances
- D. When plans are complete and ready for approval the Township Engineer will request additional sets of plans be submitted for distribution to MDEQ for sanitary sewer permitting (see item 7 in this section).
- E. The applicant shall be responsible for submitting directly to the LCRC, LCDC, MHOG, and other separate regulatory agencies (MDOT, MDEQ for wetland permitting, etc.). Any such approvals shall be forwarded to the Township Zoning Administrator and the Township Engineer prior to beginning construction.
- F. All public improvement plans submitted for permits must carry the seal and signature of the Design Engineer. Note that the amount and type of sanitary and/or water main pipe must be summarized on the cover sheet when MDEQ permitting is required.
- G. Sanitary sewer plans along with a completed MDEQ Sanitary Sewer Permit Application Part 41, shall be provided to the Township Engineer. The Township engineer will have the Township execute the permit application and then forward the application and plans to the MDEQ for

permitting.

- H. Modification of Plan During Construction. All improvements shall conform to the final site plan. It shall be the responsibility of the applicant to notify the Zoning Administrator of any such changes prior to such change being made. Any changes which result in a material alteration of the approved final site plan shall require resubmittal of a site plan, which shows the proposed changes, to the Planning Commission including any fees determined by the township Board of Trustees. The Planning commission or Township Board of Trustees may require the applicant to correct the changes so as to conform to the approved final site plan.
- I. Phasing of Development. The applicant may, at their discretion, divide the proposed development into two (2) or more phases. In such case, the preliminary site plan shall cover the entire property involved and shall clearly indicate the location, size, and character of each phase. A site plan for each phase shall be submitted in accordance with the procedure herein for a final site plan including any fees required.
- J. Appeals. No decision or condition related to a construction plan approval shall be taken to the Zoning Board of Appeals
- K. Fees. The Marion Township Board shall establish by resolution a fee schedule to defray costs, which may include but not be limited to inspection, plan review, administration, and enforcement of this section. Before final approval, any costs incurred by the Township shall be paid by the applicant. The applicant may also be required to post a cash Escrow Account according to Section 4.07 of the Marion Township Zoning Ordinance.

IV. INSURANCE

- A. Prior to construction, the Contractor shall procure and maintain, during the term of the project, public liability and property damage insurance with a responsible insurance company which meets the approval of Marion Township, in such amounts as will be adequate to protect the public, Marion Township interests, and shall not be less than the limits set forth herein.

Type of Insurance:

- 1. Workmen's Compensation Insurance and Employer's Liability Limit: As required by laws of State of Michigan

Public Liability & Property Damage:

Bodily Injury: Each Occurrence: \$1,000,000

Aggregate: \$2,000,000

Property Damage: Each Occurrence: \$1,000,000

Aggregate: \$2,000,000

Owner's and Contractor's Protective Liability & Property Damage:

Bodily Injury: Each Occurrence: \$1,000,000

Aggregate: \$2,000,000

Property Damage: Each Occurrence: \$1,000,000

Aggregate: \$2,000,000

Motor Vehicle (including Owner, Hired and Non-Owned Vehicles):

Bodily Injury: Each Occurrence: \$1,000,000

Property Damage: Each Occurrence: \$1,000,000

Combined Single Limit: \$2,000,000

- B. Policies shall be made available to Marion Township and the Township Engineer for examination as to their validity and any undesirable exclusions deemed improper by legal opinion rendered to the Township regarding same. Underground construction, where applicable, shall be specified in

the coverage. Certificates of coverage signed by the insurance carriers shall include a guarantee that 30 days written notice shall be given by the insurance carrier to Marion Township prior to cancellation of, or any change in the respective policies. In the event that the insurance is canceled, operations shall cease prior to the cancellation date and shall not resume until evidence is provided that proper insurance is again in effect. Additional Named Insured under Owners and Contractors Protective Public Liability and Property Damage Insurance shall include Marion Township, the Township Engineer (specifically by name) and members of staff, employees and agents for the Township.

- C. The name of the proposed development must be included on the insurance documents.

V. CONSTRUCTION OBSERVATION PROCEDURES

Marion Township or their designated representative will provide observation on all proposed public utilities and improvements, as well as limited construction observation of private improvements. Any facilities installed without Township provided observation may not be accepted by the Township, and therefore may be required to be re-installed. The requirements and procedures for Construction Observation and final project closure shall be as follows.

A. Pre-Construction Meeting

1. Upon construction plan approval and receipt of all permits, but prior to commencing construction, a Pre-construction meeting shall be held. The Developer or the Developer's Authorized Representative shall contact the Township Engineer to schedule the Pre-construction meeting.
 2. Attendees shall include: Township representatives, Township Engineer, Developer or Developer's Authorized Representative, Design Engineer, Underground and Paving Contractors and any interested regulatory agency.
 3. At the Pre-construction meeting, the following information shall be provided:
 - a. Proof of insurance naming Marion Township and its Engineer as additionally insured.
 - b. All permits from other agencies (MDOT, MDEQ, LCRC, etc.).
 - c. Approximate schedule for construction.
 4. Prior to the Pre-construction meeting, the contractor shall provide the inspection escrow to the Township. Proof of payment should be forwarded to the Township Engineer. The final approval letter from the Township Engineer will detail the amounts and basis of the escrow based upon industry standard production rates.
 - a. Unused observation and administration escrow funds will be eligible for return as described in the final approval letter.
 - b. The Township Engineer shall monitor the observation escrow and may require additional deposits. This shall be dependent on the contractor's rate of progress and the difficulty in completing the project.
 - c. Failure to keep the observation escrow current may result in withholding construction observation, and therefore possibly delaying construction.
- B. Initially and/or after a significant delay in construction, the Township Engineer shall have a minimum 72 hour's notice (not including weekends or holidays) prior to the start of any construction requiring observation.
- C. The Township's Engineer shall observe all public and private improvements according to the following criteria. The criteria may be adjusted for large or phased developments, at the discretion of the Township. The Township's Engineer may inspect all other operations requested by the Township.

1. Tree removal and site clearing – Representatives of the Township, the Township’s Engineer, the Developer or Developer’s Authorized Representative, the Design Engineer, and the Developer’s Contractor will meet prior to beginning any site work. The meeting will take place on site after the removal/clearing limits have been marked or staked, with the purpose being to verify general compliance with the approved plans. The proposed clearing limits must be clearly marked on the site prior to the meeting.
2. Mass grading – The Township or the Township’s Engineer will not review the site grading for compliance with the plans unless specifically directed by the Township. Responsibility for adhering to the approved grading plan shall fall upon the developer or their engineer/surveyor. Any irregularities observed while out performing other inspections will be brought to the Township’s and developer’s attention. A grading certificate as described under project acceptance requirements shall be required.
3. Soil erosion control - All inspections related to soil erosion control will be handled by the permitting agency, LCDC. Any problems observed by the Township’s engineer while on site performing other inspections will be brought to the Township’s, LCDC’s, and the developer’s attention.
4. Water system improvements – Full time inspection will be provided by MHOG or their representatives as outlined in their approvals and permits.
5. Sanitary system improvements – Full time inspection will be provided by the Township’s Engineer.
6. Storm system improvements (private sewers) – The Township’s Engineer will perform a maximum of two (2) inspections during the storm sewer installation to verify general compliance with the plans and specifications. The developer shall be responsible for certifying the storm system prior to project acceptance. Copies of testing reports and all certifications shall be provided to the Township.
7. Storm system improvements (public sewers) – All inspections related to public storm sewers will be handled by the permitting agency, LCDC, or the Township Engineer. Any problems observed by the Township’s Engineer while on site performing other inspections will be brought to the Township’s, LCDC’s, and the developer’s attention.
8. Private road improvements – The Township’s Engineer will perform inspections at critical junctions of the road construction process. Critical junctions will be defined as:
 - a. Witnessing the proof-roll of the sub-grade (Permit to place sub-base)
 - b. Verification of sub-base construction (Permit to place base)
 - c. Verification of base construction (Permit to place pavement material)
 - d. Two (2) inspections during the placing of the asphalt or concrete pavement to verify general compliance with the plans and specifications.
 The developer shall be responsible for certifying the road system prior to project acceptance. Copies of testing reports and all certifications shall be provided to the Township.
9. Public road improvements - All inspections related to public road improvements will be handled by the permitting agency, LCRC. Any problems observed by the Township’s Engineer while on site performing other inspections will be brought to the Township’s, LCRC’s, and the developer’s attention.

D. Acceptance of final project:

1. The Township Engineer will generate a preliminary punch list. Once the items have been addressed, the Township and the Township’s Engineer will conduct a final site inspection.
2. All punch list items must be addressed.
3. All fees and escrows must be paid in full.

4. A Maintenance and Guarantee bond should be provided to the Township. The bond should be 50% of the engineer's estimate for public improvements. The Township will keep the bond for two years from the date of acceptance.
5. Record drawings and related documents must be provided to the Township:
 - a. Upon acceptance of field improvements, the Developer's Engineer will be provided with a copy of the Inspector's Daily Reports (IDR), any applicable lead reports, and a blank "Record Drawing Requirement Checklist" in order to provide record drawings to the Township's Engineer for review and approval.
 - b. A grading certificate will be required at this time. This form (provided by the Township's Engineer with IDR's) will also need to be signed and sealed by the Developer's Engineer and then submitted to the Township's Engineer along with the record drawings.
 - c. Easements for public utilities based on "As-Built" conditions requires a sketch and legal description to be submitted by the Developer's Engineer to the Township's Engineer for review and approval along with the record drawings. Once easements documents are approved, the Township's Engineer will mail the Developer/Township the easements to be recorded with the County Register of Deeds. Once the easements are recorded with liber and page number, recorded copies will need to be forwarded to the Township and the Township's Engineer.
 - d. Once the record drawings are approved by the Township's Engineer, the Developer's Engineer will be instructed as to what is required for final distribution (i.e. blueprints, mylars, CD-ROM or possibly micro-film.)

CONSTRUCTION PLAN REQUIREMENTS

The following is a list of requirements that shall be used to assist in Construction Drawing and Record Drawing preparation. Items or criteria not specifically on this list or contained within the Marion Township Zoning Ordinance shall be subject to Township approval, based solely on the Township's discretion as to appropriate standards, regulations, or local impact.

I. PLAN REQUIREMENTS

A. GENERAL

1. Plan paper shall be 24" x 36"
2. Plan scale shall be a maximum horizontal scale of 1":50' and vertical scale of 1":5'.
3. Plan cover sheet shall include the following; project name, name of Marion Township, Livingston County, Michigan, proprietor's, engineer's, architect's and landscape architect's name, address, phone and fax number, a location map (1" = 2000' scale) with north arrow, property Sidwell number(s), agency approvals required, plan sheet index, and professional architect's or engineer's seal.
4. A title block shall be present on each plan sheet.
5. The legal description for the property shall be included, must also be represented by bearing angles and distances in plan view, and shall have a ratio of closure no greater than 1 part in 5000.
6. Zoning information including zoning designation, land use, minimum lot area, frontage, and setbacks; and maximum lot coverage and building height requirements for the site's zoning designation.
7. A topographic survey plan sheet shall be included; additional requirements are outlined in Section II, Topographical Survey, of this document.
8. A general area plan shall be included at 1"=100' or 1"=200' when size of the site prohibits a single sheet. The general plan shall show existing and proposed roadways, site location and dimensions, utilities, building structures, landscaping, and topography.
9. A landscaping plan with tree survey information shall be included.
10. Location of wetlands, drainage courses, and floodplain areas.
11. On and offsite permanent and temporary easements shall be shown on the plans.
12. Private and public roadways, road right-of-way, and road easements shall be shown on the plans.
13. Dimensions for existing and proposed road right-of-way and/or easements, roadways, parking areas, driveways, sidewalks, and pathways shall be shown on the plans and shall be in accordance with the Marion Township Zoning Ordinance and the requirements outlined herein.

II. TOPOGRAPHICAL SURVEY

A. GENERAL

1. A complete topographical survey is required for all sites. Existing offsite elevations must be given at a minimum of 100' abutting the entire perimeter of the site. Onsite contours are required to establish the existing site drainage. Contours shall be at the following spacing:
 - a. 1-foot contours if scale of plan is less than or equal to 1"=50'
 - b. 2-foot contours if scale of plan is greater than 1"=50'

2. A minimum of two (2) benchmarks based on NAD83 or NGVD88 must be included. The datum shall be clearly referenced.
3. Property lines shall be indicated by bearing and distance.
4. All existing conditions shall be shown, including but not limited to the following items (location and elevation):
 - a. All utilities including sanitary, water main, gas, telephone, cable, and electrical (including rim and invert elevations).
 - b. Along property lines.
 - c. The building finished floor.
 - d. Sidewalks and pathways.
 - e. Retaining walls.
 - f. Finished grades of all adjacent buildings.
 - g. All easements.
 - h. 100-year flood plain.
 - i. Existing drainage courses and wetlands.
 - j. Upstream and downstream culverts.
 - k. Adjoining road right-of-way.
5. Road Topography shall extend across the entire site with grades shown on both sides of the street for:
 - a. Property line.
 - b. Ditch centerline and top of bank.
 - c. Edge of shoulder.
 - d. Edge of pavement or top of curb.
 - e. Crown or centerline.

III. UTILITIES (GENERAL)

A. GENERAL

1. The location, size, and type of pipe of all existing and proposed utilities shall be shown in plan view.
2. Proposed sanitary shall extend across the property frontage(s) or to a property line, as directed by the Township.
3. No new utilities shall be placed below or within a 1:1 influence of a building footprint. The limits of all removals and/or abandonments shall be shown on the plans. The following criteria shall apply for all existing utilities within the influence of a building foundation:
 - a. Utilities within five (5) or less below a footing shall be removed.
 - b. Utilities greater than five (5) feet below a footing shall be grouted full using a standpipe to prevent air voids.
 - c. Utilities that are to be abandoned and are not within the influence of a footing shall be bulkhead unless the utility is determined to be a hazard, nuisance or potential maintenance problem by the Township.
4. A minimum ten (10) feet wide horizontal separation shall be required between water main and sewers.
5. No water main or sanitary sewer shall be within five (5) feet (measured horizontally) from the high-water elevation of a detention, retention, and/or forebay basin.
6. All utility crossings, including sanitary sewer leads, shall specify top and bottom of pipe elevations in both plan and profile view. An 18" minimum vertical clearance between water main and storm or sanitary sewer is required.

7. A casing pipe shall be provided when utilities must cross retaining walls or when a bore is proposed under a roadway. The casing pipe must extend beyond the angle of repose of the retaining wall or roadway. The size, length and invert of the casing pipe shall be indicated. All bores under roadways shall meet the requirements of the Livingston County Road Commission Requirements.

IV. WATER MAIN

A. GENERAL

1. The location, size, length and type of existing and proposed water main, water service leads, and water main appurtenances such as, though not limited to; valves, hydrants, vertical and horizontal bends, and tees shall be shown in plan view. All water main, including appurtenances shall meet the Marion Howell Ocala Gena Sewage and Water Authority standards and the Howell Fire Department standards.

V. SEWERS (SANITARY/STORM)

A. GENERAL

1. The following must be shown in plan view for sanitary and storm sewer:
 - a. Length, size, type, class, and slope of pipe between structures.
 - b. Top of casting elevation at structures.
 - c. Easement width (20' minimum for sanitary sewer, 12' minimum for storm sewer).
 - d. Progressive numbering system for all structures.
2. The following must be shown in profile view for sanitary and storm sewer:
 - a. Length, size, type, class, and slope of pipe between structures.
 - b. Size and type of structure.
 - c. Top of casting and sewer invert elevations at structures.
 - d. Existing and proposed ground elevations.
 - e. Hydraulic grade line (storm sewer only).
 - f. Utility crossings, including top and bottom of pipe elevations.
 - g. Special backfill areas under or within pavement areas.
 - h. Progressive numbering system for all structures.
3. Storm and sanitary sewer size, grade, and structure spacing table

Size	Std Grade (%)	Min Grade (%)	Max Grade (%)	Std Grade (ft)	Max Grade (ft)		
10" *	0.60	0.30	6.2	300	350		
12" **	0.40	0.22	6.0	300	350		
15"	0.24	0.16	3.6	300	350		
18"	0.18	0.12	2.8	300	400		
21" & greater		0.14		0.10	2.2	300	400
*	minimum allowable sanitary sewer size is 10"						
**	minimum allowable storm sewer size is 12"						

4. All pipe connections at structures shall be separated by a minimum of one (1) foot between pipe walls and 40% of the structure circumference must remain intact. The design engineer shall provide details for all structures with multiple pipe connections not meeting the requirements below:

Structure Diameter	Max. Pipe Size for Straight – Through Installation	Max. Pipe Size For Right Angle Installation
48"	24"	18"
60"	36"	24"
72"	42"	36"
96"	60"	42"

5. Where Manning's equation is used to compute flow, a minimum value for "n", roughness coefficient shall be as follows:
 - a. Sewers = 0.013
 - b. Culverts = 0.025
 - c. Open Channel = 0.035

VI. SANITARY SEWER

A. GENERAL

1. A minimum 20' wide easement is required for all public sanitary sewer. Wider easements will be required for deeper sewer to maintain a 1:1 excavated side slope within the easement. The sanitary sewer shall be centered within the public easement.
2. Prior to acceptance of the sewer, the developer or contractor shall provide a videotape or approved digital image file of the sewer (with flows) to the Township. The video shall be taken no less than 30 days after installation.
3. The Township Engineer will inspect all sanitary taps into existing Township structures.
4. Lift stations will not be permitted unless there is no other alternative for sewer service. If a lift station is required, the Design Engineer shall provide the Township with all design details and calculations, which shall be in accordance to all current local, County and State requirements.
5. The testing requirements are as follows:
 - a. The contractor shall conduct a sanitary air test with the Township Engineer witnessing. Air tests shall comply with current testing standards and requirements. Air testing should not be used if the groundwater level is 2 feet or more above the top-of-pipe at the upstream end (reference ASTM F1417) of if the air pressure required is for testing is greater than a psi-gauge.
 - b. A sanitary infiltration test shall comply with current standards and is required when the water table is 7' or higher than the invert elevation.

B. DESIGN CRITERIA

1. A quantity list and design data (on the cover sheet or first sheet of the plans) shall be provided and be in accordance with the current 10 States Standards.
2. The maximum depth to the invert of any sanitary sewer pipe shall not exceed 80% of the manufacturer's recommendation.
3. When there is a change in direction in a sewer at a manhole, an allowance of 0.10 feet in grade shall be made for a loss of head through the manhole.
4. Whenever there is a change in pipe size, the inverts of both sewers shall be set at a grade so that both sewers maintain the same energy gradient.
5. Siphons shall only be allowed when specifically approved by the Township and Township Engineer.
6. A minimum cover of 4' is required over all sanitary sewers, including leads.

7. The building lead location, size, type, and slope (minimum 6" diameter, SDR 23.5, and 1%) shall be provided. In order to verify the slope of the lead, invert elevations shall be provided at the finished grade of the building and at the connection to the mainline sanitary sewer. The 6" lead shall extend all the way to the building.
8. All sewer leads in high groundwater areas to be installed according to the township standard lead detail.
9. In sanitary sewers where construction of building leads to the property line is not required, a wye branch (tees not allowed) shall be installed for each lot or potential building site.
10. Leads shall not be connected to manholes unless specifically approved by the Township for connection to the last manhole or connection to deep sewer. A drop connection will be required at connections to manholes.

C. DROP CONNECTIONS

1. External drop connections are required when there is an 18" vertical difference between inverts on the outlet and inlet pipes and shall be constructed according to the Standard Details.
2. The Township must approve internal drop connections. The connection shall be based on field conditions and in accordance with standard details.

VII. STORM SEWER

A. GENERAL

1. A drainage area map shall be provided. The drainage area map shall show the storm sewer system, sub-area boundaries and acreage contributing to each storm structure, and impervious (C-factor) for each sub area.
2. Storm water shall not be diverted onto adjoining properties nor shall storm water flow be impeded from its existing drainage path due to a proposed development. Detention may be required to meet County discharge rate requirements. See the Detention/Retention section of this document for requirements.
3. Storm water discharge shall be per the Livingston County Drain Commissioner's requirements or the Livingston County Road Commission's requirements if discharging into the road right-of-way. At no time shall storm water discharge exceed a rate of 0.2 cfs/acre.
4. The location, size, type of pipe, and length of all culverts shall be shown on the plans. Culvert requirements are further outlined in the design criteria of this section.
5. The location, length and cross-section of all ditches shall be shown the plans. The cross-sectional ditch requirements are further outlined in the design criteria of this section.
6. Roof drainage and sump pump leads may be directed overland or connected to a storm sewer system. If connecting to a storm sewer system, the connection shall be made at a storm structure unless otherwise approved by the Township Engineer. If approved, a tap to an existing 12" concrete storm sewer may be made with a Fernco EZ Tap and a tap to a larger concrete storm sewer pipe with a KOR-N-TEE. The location, size, type and slope of the leads shall be included on the plans.
7. The owner/developer shall be responsible for cleaning and maintaining all storm sewer, storm structures, sediment forebays, filter berms, detention basins, and detention basin outlets. These storm water management systems shall be cleaned once all buildings within the development are complete. A note indicating this, as well as a description of the mechanism for which the owner/developer plans to establish in order to provide for long term maintenance, should be included on the plans.

B. DESIGN CRITERIA

1. Enclosed storm sewer design calculations shall be submitted using the Rational Method, $Q = CIA$. The following shall be considered:
 - a. 10-year storm, $I = 175/(T+25)$ with initial $T=15$ minutes. Time (T) shall be based on the actual time of flow from the most distant point of flow measurement.
 - b. Typical surface runoff coefficients shall be:

Surface	C
Pavement (Asphalt, Concrete, Brick)	0.90
Roofs	0.90
Open Water	1.00
Aggregate	0.65
Greenbelt (Lawns, Vegetation)	0.20

Note: Surface area of detention, retention, and forebay areas shall be considered open water unless a naturally vegetative basin is provided.

2. Velocity: Minimum = 2.0 ft/s; Maximum = 10.0 ft/s. Velocities exceeding 5.0 ft/s will require erosion protection as directed by the Township Engineer.
3. Manning's formula shall be used to calculate pipes flowing full to verify the capacity of the storm sewer system: $Q = (1.49/n) AR^{2/3}S^{1/2}$
4. The storm sewer system shall be designed, if possible, so that the hydraulic grade line (HGL) is within the pipe. When discharging storm sewer into an existing or proposed detention basin, the 10-year storm elevation or bankfull elevation shall be considered when calculating the HGL of the proposed system. When discharging into an existing storm sewer system, the HGL must be calculated from the outlet of the existing system.
5. Sewer and structure requirements
 - a. All storm sewer shall be in accordance with Section V., Sewers (Sanitary/Storm).
 - b. The minimum size storm sewer shall be 12" diameter.
 - c. The Township Engineer must approve direct taps for storm sewer. Direct taps shall only be permitted if the storm sewer that is to be tapped is significantly larger than the tapping pipe. A KOR-N-Seal boot connection shall be required for allowable taps. A detail shall be included on the plans.
 - d. The sump leads and roof drain leads connecting to a storm sewer system shall be a minimum of 4" diameter and shall be SDR 35, non-perforated, solid wall, PVC pipe.
 - e. Storm sewer, unless otherwise approved by the Township Engineer, shall be reinforced concrete pipe (RCP) and shall meet the following requirements:
 - I. Class IV for a depth up to 14 feet
 - II. Class V for depth 14 feet to 24 feet
 - III. Class III may be allowed in greenbelt areas for a depth up to 14 feet. At no time shall Class III be allowed under or within the influence of pavement areas
All RCP shall meet ASTM C76 requirements
 - f. RCP elliptical storm sewer may be allowed and must be approved by the Township Engineer. Elliptical storm sewer shall meet ASTM C507 requirements.
 - g. Plastic storm sewer pipe may be allowed in greenbelt areas only and must be approved the Township Engineer. The following requirements shall apply:
 - I. Maximum 18" diameter

- II. Smooth interior
 - III. PVC pipe shall meet ASTM F949 requirements
 - IV. HDPE pipe shall meet ASTM M294 requirements
- h. End sections shall be RCP, with a bar grate and 8" to 15" rip rap at the outlet.
 - i. Manholes and catch basins shall be a minimum of 48" diameter. A detail of a typical manhole and catch basin shall be included on the plans. The type of casting for each structure shall be indicated in either plan or profile view and on the detail.
 - j. Inlets shall be a minimum of 24" diameter. Inlets shall only be permitted at a structure that is the first (upstream) structure in a series and 12" diameter pipe serves as the discharge. The next downstream structure must have a sump.
 - k. A minimum cover of 2'-6" is required. MDOT "lowhead" or "flat top" structures are required instead of a cone/corbel section if there is less than 4' of cover over the pipe. Both plan and profile shall specify "low head" where necessary. A detail of the "lowhead" structure should be included on the plans.
 - l. A two (2) foot sump is required for any structure receiving surface runoff, with the exception of inlet structures.
 - m. All storm sewer shall be premium joint (rubber gasket). A note indicating this shall be included on the plans.
 - n. Trench drains shall only be permitted within truck wells. A trench drain detail shall be included in the plans.
 - o. All storm water runoff within a truck well or discharging into a wetland shall be pre-treated with an oil and gas separator. A detail of the treatment structure, including the type and model number, shall be included on the plans.
6. Culvert calculations shall be submitted for inlet headwater control or outlet tailwater control with proper "K" factors used to determine culvert sizes. All culverts shall be sized for a 10-year storm event.
7. Culvert requirements
- a. The minimum size culvert shall be 12" diameter
 - b. Culverts 48" diameter and greater shall require sloped paving at the inlet. Headwalls shall not be permitted.
 - c. Culverts shall be either corrugated metal pipe (CMP) or reinforced concrete pipe (RCP) and shall meet the following requirements:
 - i. 12" – 24" CMP shall be 16 gauge
 - 30" – 36" CMP shall be 14 gauge
 - 42" – 54" CMP shall be 12 gauge
 - 60" – 72" CMP shall be 10 gauge
 - All RCP shall be a minimum of Class IV
8. Open ditch calculations shall be submitted and shall be sized for a 10- year storm event using Manning's formula: $Q = (1.49/n) AR^2/3S^{1/2}$. A one (1) foot freeboard shall be required.
9. Open ditch requirements:
- a. Minimum flat bottom width: 2'
 - b. Minimum flat bottom depth: 2' (measured from shoulder hinge point).
 - c. Transverse slopes: 1.0% - 5.0%; ditch slopes exceeding 3% shall be sodded to a point one (1) foot above the ditch flow line.
 - d. Maximum side slopes 3:1
 - e. Culverts sized for a 10-year storm elevation

- f. Flow through an open ditch system shall not exceed eight (8) cfs
- g. No more than six (6) acres of tributary area may be conveyed through an open ditch system. An enclosed storm sewer system is required for all tributary areas exceeding six (6) acres.
- H. A ditch cross-section, which clearly indicates the dimensions outlined above shall be included on the plans.

VIII. DETENTION/RETENTION

A. GENERAL

- 1. The location of the detention, standpipe riser structure, retention, forebay, forebay filter berms, and rain garden areas shall be shown in plan view. Storm water management systems proposed under the jurisdiction of the Drain Commissioner shall be located on common-owned property, not on privately owned lots.
- 2. Detention must accommodate all onsite drainage and any runoff entering the site from neighboring properties.
- 3. The Livingston County Drainage District for which the site discharges should be indicated on the plans. Discharge rates shall not exceed 0.2 cfs/acre. More restrictive discharge rates may be required based on site conditions and the drainage district for which the site discharges. The Township Engineer and/or the Livingston County Drain Commissioner shall determine if a more restrictive discharge rate is required.
- 4. Detention basins shall be wet basins or storm water marsh systems. Dry basins, providing extended storage, will be accepted when the development site's physical characteristics or other local circumstances make the use of a wet basin infeasible.
- 5. Storm water management system incorporating pumps shall not be permitted in developments with multiple owners. Variances from this requirement will only be considered if a demonstration that no other alternative is feasible is provided on the plans.
- 6. The use of underground detention/retention is not allowed without Township approval.

B. DETENTION/RETENTION/FOREBAY DESIGN

- 1. Calculations for sizing the detention basin shall be submitted and included on the plans. All detention basin sizing shall be per the Drain Commissioner's "Simple Method of Detention Basin Design" for a 100-year storm event and have a minimum freeboard of one (1) foot. Drainage calculations shall include the following:
 - a. Tributary area in acres.
 - b. C-factor
 - c. Discharge rate
 - d. Volume of storage required
 - e. Volume of storage provided
 - f. Volume of the permanent wet area, which shall be based on the following equation:

$$2.5 * 0.5 \text{ inch} * \text{runoff coefficient} * \text{site drainage area (cf)}$$
 - g. Bankfull elevation. This volume shall be based on a 1.5-year, 24-hour storm event and the following equation:

$$5160 * \text{tributary area acreage} * \text{C-factor}$$
 - h. The bankfull volume shall be stored not less than 24-hours and not more than 40 hours.
 - i. First flush elevation. This volume represents the first 0.5 inch of runoff and shall be calculated using the following equation:

1815 * tributary area acreage * C-factor

- j. Standpipe-type riser structures are required for all detention basins. The size of the riser pipe and calculations showing the size and number of infiltration holes within the riser pipe shall be included. Riser pipes shall be a minimum of 36" diameter for a height up to four (4) feet and a minimum of 48" diameter for a height exceeding four (4) feet. Infiltration holes shall be set at the bottom of the riser pipe and at the first flush and bankfull elevations. A standpipe detail shall be included on the plans.
 - k. Hoods or trash racks shall be installed on the riser to prevent clogging. Grate openings shall be a maximum of three inches.
 - l. Orifice plates are discouraged. Where an orifice plate is to be used in the standpipe to control discharge, it will have a minimum diameter of four inches
 - m. The riser shall be placed near the pond embankment to provide for ready maintenance access.
 - n. Riser pipes will be constructed with concrete bottom.
 - o. Outlet pipe size. The outlet pipe shall be sized for a 10-year storm event.
 2. A marsh fringe shall be established near the inlet or forebay and shall surround a minimum of 50% of the basin's perimeter. The location of this area shall be shown on the plans.
 3. If connecting into an existing detention basin, calculations showing the total volume of the existing basin, the C-factor used to size the existing basin, the amount of storage volume dedicated for the site and the amount of storage volume required for the site.
 4. Calculations for sizing a retention basin shall be submitted and included on the plans. Retention basins shall be sized to accommodate two consecutive 100- year storm events and shall be capable of storing two (2) inches of runoff from the entire tributary area. A minimum three (3) foot freeboard shall be required. Calculations shall include all requirements for detention basins shown in sections a-e above.
 5. Calculations for sizing the sediment forebay(s) shall be included on the plans. The capacity of the forebay shall be equivalent to 5% of the 100-year storm volume based on the area tributary to the inlet. Forebays shall be separated from the detention basin using either gabions or compacted earthen filter berms. A detail of the separation method shall be included on the plans. Direct maintenance access to the forebay for heavy equipment will be provided.
 6. Basin side slopes, regardless of the type shall be no flatter than 20:1 and no steeper than 3:1. Slopes steeper than 5:1 must have a four (4) foot high chain link fence with a twelve (12) foot wide access gate. The fence shall completely surround the basin.
 7. Anti-seep collars should be installed on any piping passing through the sides or bottom of the basin to prevent leakage through the embankment.
 8. All basins will have provisions for a defined emergency spillway, routed so that it can be picked up by the main outflow channel while not discharging directly over the outlet pipe. The emergency spillway will be set at an elevation six inches above the design high water elevation.
 9. Adequate maintenance access from public or private right-of-way to the basin will be reserved. The access will be on a slope of 5:1 or less, stabilized to withstand the passage of heavy equipment, and will provide direct access to both the forebay and the riser/outlet.
 10. The placement of retention/detention basins within a floodplain of a stream, creek, or lake is prohibited.

C. PERMANENT RETENTION PONDS

1. Freeboard: Retention Basins shall provide three feet of freeboard.
2. Storage Volume

Retention basins will be capable of storing two inches of runoff from the entire tributary area, contingent upon the following:

- a. An overflow assessment will be required. The assessment should include descriptions of the surrounding areas, including nearby homes, which would be impacted in the event of an overflow.
- b. The proprietor must submit a soil boring log taken within the basin bottom area to a depth of 25 feet below existing ground or 20 feet below proposed basin bottom elevation. The Drain Commissioner reserves the right to require additional storage up to that required by two consecutive 100-year storm events based on the results of soils data or the overflow assessment. If such additional storage is required, freeboard requirements may be reduced at the discretion of the Drain Commissioner.

D. RAIN GARDEN

1. Located a minimum distance of 10' from any building structure or parking area.
2. Maximum contributing acreage shall be five (5) acres. Contributing acreage of one (1) acre or less is preferred.
3. The size of the rain garden shall be indicated on the plans. Sizing shall be based on contributing drainage area, amount of imperviousness, and soil type. The calculations using following formula shall be included on the plans:
$$A = \text{Drainage area} * 5\% * R_v \quad R_v = 0.05 + (\% \text{ impervious})$$
4. A cross-section of the rain garden shall be included on the plans and shall meet the following requirements:
 - a. Soil mixes shall consist of 50%-60% sand, 20%-30% topsoil and 20%-30% compost.
 - b. Water depth shall be based on the ground slope of the surrounding area.
Depth = 4" – 5" for slopes 2%-4%
Depth = 6" – 7" for slopes 5%-7%
Depth = 8" for slopes 8% - 12%
Water depth shall not exceed 8" and ground slopes should not exceed 12% within 30 feet from the rain garden.
 - c. A minimum 4" mulch layer shall be placed between the water storage area and planting soil bed. The mulch specified shall be appropriate for water quality gardens. Coarse, fibrous, shredded wood chip mulch is preferred.
 - d. (If necessary) Type and size of underdrain shall be specified. All underdrain shall be surrounded by pea gravel with 12" minimum layer of class II sand.
 - e. Water depth shall be based on the ground slope of the surrounding area.
5. The number and type of plants should be included. The plants shall be water tolerant and the one (1) plant for every square foot of rain garden area is required.

E. GENERAL REQUIREMENTS

1. All runoff generated by proposed impervious surfaces, unless otherwise permitted by the Drain Commissioner, must be conveyed into a stormwater storage facility for water quality treatment and detention/retention prior to being discharged from the site.
2. Public safety will be a paramount consideration in stormwater system and pond design. Providing safe retention/detention is the proprietor's responsibility. Pond designs will incorporate gradual side slopes, topsoiling, seeding and mulching, plantings per

landscape plan if one is required, and safety shelves. Where further safety measures are required, the proprietor is expected to include them within the proposed development plans.

F. DETENTION REQUIREMENTS

1. The volume and storage provided for controlling the "bankfull" flood will be equal to or in excess of the total rain from a 1.5-year, 24-hour storm. This storage volume is slightly increased from C_{pv} , the channel protection storage volume, as used in Appendix H. This can be determined by:

$$8160 \times \text{acreage} \times \text{the relative imperviousness factor } C = \text{cubic feet}$$

The release rate from the "bankfull" storage volume will be such that this volume will be stored not less than 24 or more than 40 hours.

2. The "first flush" of runoff is defined as the first 0.5 inch of runoff over the entire site. The majority of this volume will be captured in the sediment forebay, with the residual volume detained for a minimum of 24 hours. The volume of the first flush can be determined by:

$$1815 \times \text{acreage} \times \text{the relative imperviousness factor } C = \text{cubic feet}$$

3. Basin Inlet/Outlet Design
 - a. Engineered velocity dissipation measures based on discharge flow rates and velocities will be incorporated into basin designs to minimize erosion at inlets and outlets, to minimize the re-suspension of pollutants, and to create sheet flow conditions where feasible.
 - b. To the extent feasible, the distance between inlets and outlets will be maximized. The length and depth of the flow path across basins and marsh systems can be maximized by:
 - I. increasing the length-to-width ratio of the entire design.
 - II. increasing the dry weather flow path within the system to attain maximum sinuosity. If possible, inlets and outlets should be offset at opposite longitudinal ends of the basin.
 - c. The outlet will be well protected from clogging.
 - d. Riser Design
 - I. The use of a perforated standpipe-type riser structure to assure an appropriate detention time for all storm events is required.
 - II. Orifices used to maintain a permanent pool level should withdraw water at least one foot below the surface of the water.

IX. FLOOD PLAIN DEVELOPMENT

- A. An MDEQ permit is required for work within the floodplain.
- B. An equivalent volume of excavation must compensate for all fill within floodplain in order to maintain water storage volume.
- C. In certain instances, the 100-year flood plain boundary must be shown on the plans.
- D. Where available, the community flood insurance study shall be used.

X. SITE GRADING

A. GENERAL

1. Sufficient proposed grades must be indicated to ensure the following:
 - a. Drainage is adequately discharged offsite with proper detention or retention.
 - b. No upstream drainage is restricted.
 - c. Paving slopes are adequate.

- d. The site generally drains without standing water.
 - e. Site grading merges with grading on neighboring sites.
 - f. Sight lines are not obstructed.
- B. The finished grade elevation for all proposed and existing buildings on site or on neighborhood properties must be provided.
 - C. The maximum slope to an abutting property line is 1:4.
 - D. A slope of 1:3 may be approved based on township review. a slope of 1:3 shall be restored using an approved "erosion blanket". this shall be identified on the plans.
 - E. Grading plans shall take into account the natural features of the land as much as possible.
 - F. A grading easement from an adjacent property owner will be required for any offsite grading and for any retaining wall footing or where it appears that "normal" (1 on 1 side slope) excavation to the bottom of the footing encroaches the adjacent property.
 - G. No filling will be allowed within the flood plain of a river, stream, creek, or lake unless under the terms of a permit granted by the mdeq.

XI. RETAINING WALLS

A. GENERAL

- 1. Walls separating a grade differential of more than 2' are considered a retaining wall and require a structural engineering design and review. The Design Engineer must supply a cross-sectional detail on the plans and computations (sealed by a registered engineer) with the plan submittal. The cost of all retaining walls must be included in the engineering cost estimate.
- B. Top and bottom of wall elevations and dimensions above and below grade and from the property line shall be shown on the plans.
- C. The face of a retaining wall shall be a minimum of 2' from the property line.
- D. Edge drain shall be provided along the base of all retaining walls. edge drain shall be a minimum of 6" diameter. the type of pipe should be included in the cross-sectional detail.
- E. The developer shall provide appropriate material testing at his/her cost during construction.
- F. Protective railing is required for all walls within 2' of parking, driving, pedestrian walkways and/or when the height of the wall is 30" or greater.
- G. The design engineer shall execute and submit a retaining wall certification form. see page 31.
- H. Type of walls allowed, specifications, and inspection items
 - 1. Concrete Walls
 - a. Formwork dimensions for the base (inspection only)
 - b. Steel size, quantity, spacing, overlap (2" minimum clearance for reinforcing steel from any formwork.
 - c. Box-outs, keyways, weep holes, footing drain and any other plan details.
 - d. No vibration of concrete occurs inside the form during placement (inspection only).
 - e. Concrete cylinders, slump, air entrainment tests performed by developer's testing firm are acceptable (inspection only).
 - f. Concrete mix shall not be over watered at the job site (inspection only).
 - g. Copies of the delivery tickets are obtained (inspection only).
 - 2. Pre-cast walls
 - a. Certification shall be obtained from the manufacturer (inspection only).
 - b. Wall base placement, material, size, thickness, and compaction.
 - c. Embedment and batter are per the manufacturer's recommendations.
 - 3. Wood Walls

- a. Certificates of treatment level for wood materials.
 - b. Connection details and fasteners (i.e. nails, bolts, etc.)
 - c. Proper length and embedment of "dead men".
4. Boulder Walls
- a. Maximum height: 4 feet.
 - b. Boulder size shall range from 24" to 30" and embedment shall be a minimum of 8" into the ground.

Date: _____

XXXXX

XXXXX

XXXXX

XXXXX

Regarding: Retaining Wall Review for: _____
S.T.P.C.#: _____
Sidwell#: _____

Design Engineer and Firm Name: _____
Address: _____
Phone: _____ Fax: _____

Owner: _____
Address: _____
Phone: _____ Fax: _____

A retaining wall(s) is proposed for the above referenced site. The wall(s) was designed to applicable standards, and all necessary loads (including vehicular surcharge) have been incorporated into the design. In addition, the wall meets minimum factors of safety against both overturning and sliding.

A retaining wall detail has been incorporated into the drawings and has been submitted for review.

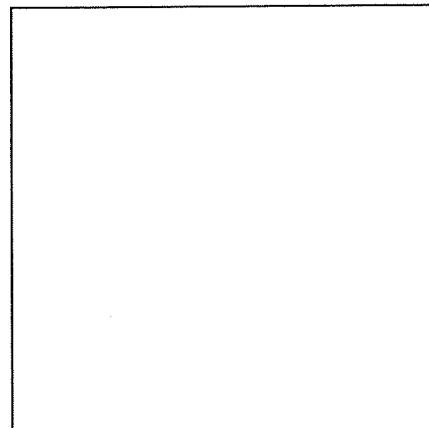
Sincerely,

Seal

Printed Name of Professional Engineer

Signature

cc: Philip Westmoreland, P.E., Spicer Group, Inc.,
125 Helle Blvd., Ste. 2
Dundee, MI 48131



XII. PAVING AND ROADS

- A. All public roads shall meet the requirements of the Livingston County Road Commission and the Marion Township Zoning Ordinance.
- B. All private roads shall meet the requirements of the Marion Township Ordinances and the standards outlined within the private road sections below.
- C. All facets of the intersection of two or more roads, public or private, where at least one (1) of the roads is a public road, shall meet the then current requirements of the Livingston County Road Commission.
- D. The type of surface proposed for roadways, parking areas, driveways, sidewalks, pathways, loading zones, and dumpster pads shall be shown on the plans and shall be in accordance with the requirements outlined herein.
- E. All applicable pavement and/or gravel cross-sections shall be included on the plans for roadways, parking areas, driveways, sidewalks, pathways, and dumpster pads. Curb and gutter cross-sections shall be included on the plans, if applicable.
- F. Private roads shall be limited to serving no more than thirty (30) single-family dwelling units on a single access and seventy-five (75) with more than one point of access. Any dwelling unit whose only means of ingress or egress is via the private road shall be considered in the number of dwelling units allowed. If private roads are an extension of a dead-end public road, the number of dwelling units along the public road shall be considered in the number of dwelling units allowed. This limit shall apply to any type of roadway surface, gravel or pavement.
- G. Private roads with only one connection to a county road, state highway, or another approved private road shall not be longer than two thousand (2000) feet.
- H. Dead end roads shall terminate with a cul-de-sac, unless site conditions necessitate the use of another configuration. The Township must approve any alternate configuration.
- I. All cul-de-sacs or turnarounds shall terminate at the property line except when precluded by a natural barrier or when the cul-de-sac terminates at the last available building envelope, lot, or parcel within the development and that building envelope, lot, or parcel fronts upon the cul-de-sac.
- J. Frontage measurements along a cul-de-sac shall be measured tangent to the front setback line and at right angles to the side lot lines.
- K. Not more than four (4) principal buildings or lots shall have frontage on a cul-de-sac. any lot located on a cul-de-sac shall have its side lot lines designed to be radial to the front property line or right-of-way line on either public or private roads, except where such lot lines would create unusual, inconvenient, or irregular lot shapes.
- L. **PRE-EXISTING OR NEW PRIVATE ROADS SERVING 2-5 DWELLING UNITS**
 - 1. Any road serving between 2 and 5 dwelling units shall be considered a private road and shall be referred to as a Minor Private Road.
 - 2. Minor Private Roads should generally conform to the following criteria. Additional requirements are set forth in Marion Township General Ordinance for Private Roads No. 07-03.
 - 3. Requirements for Minor Private Roads will be on a case-by-case basis. The requirements set forth herein are general guidelines to ensure public health, safety and welfare, and may be adjusted by the township as necessary based on site conditions.
 - 4. Submission requirements shall be sufficient to determine the nature and extent of the existing conditions and any proposed improvements. The extent of the information provided shall be at the discretion of the Township, Township Engineer, and Township Planner.
 - 5. Right-of-way or easements should have sufficient width to encompass the entire cross

- section of the road, including any ditches or drainage systems.
6. Roadway width should be sixteen (16) feet whether paved or gravel. A one (1) foot grass shoulder should be provided on both sides of the road.
 7. Roadway cross section should generally conform to the following:
 - a. Gravel road:
 - i. Six (6) inches MDOT 22A aggregate placed in two (2) courses.
 - b. Paved road:
 - i. Four (4) inches bituminous surface placed in two (2) courses. No course or lift shall exceed 2" in depth.
 - ii. Eight (8) inches of aggregate base, MDOT 21AA Limestone.
 8. All roadways should be sufficiently crowned for drainage.
 9. Vertical alignment should generally conform to the following guidelines:
 - a. Site distances at all intersections (public roads or private roads) should be verified and shall meet the requirements of the Livingston County Road Commission.
 - b. Roadway grades should be minimized and provide safe emergency vehicle access.
 10. A system to adequately collect and discharge tributary roadway runoff is required. Either open ditch or enclosed storm sewer systems are acceptable and shall be sized reasonably for the anticipated run-off. Generally, a 10- year storm event shall be used to determine run-off.

M. PRE-EXISTING, NON-CONFORMING PRIVATE ROADS SERVING MORE THAN 5 DWELLING UNITS

1. Pre-existing, non-conforming private roads should generally conform to the following criteria. Additional requirements are set forth in Marion Township General Ordinance for Private Roads No. 07-03.
2. Requirements for pre-existing, non-conforming private roads will be on a case-by-case basis. The requirements set forth herein are general guidelines to ensure public health, safety and welfare, and may be adjusted by the township as necessary based on site conditions.
3. Submission requirements shall be sufficient to determine the nature and extent of the existing conditions and any proposed improvements. The extent of the information provided shall be at the discretion of the Township, Township Engineer and Township Planner. In general:
 - c. Minor changes in the physical characteristics of the road will require a sketch of the proposed improvements. The sketch shall be legible and clearly identify all improvements. The sketch should utilize current aerial information but do not need to be to scale. Aerial information is available at the Livingston County GIS Management Department, 304 E. Grand River Ave., Suite 101, Howell, MI 48843.
 - d. Major changes in the physical characteristics of the road will require detailed plans. The level of detail shall meet the requirements of a full, complete construction plan submittal.
4. Right-of-way or easements should have sufficient width to encompass the entire cross section of the road, including any ditches or drainage systems. Depending on the location of the private road easement in relation to adjacent parcels, a landscape buffer as provided in the Township Zoning Ordinance may be required by the Township to reduce the impact of the private road upon existing abutting parcels.
5. Roadway width should generally meet the following requirements:
 - a. Gravel road: twenty-two (22) feet edge of gravel to edge of gravel.

- b. Paved road:
 - I. Shoulder (with or without ditch): twenty-two (22) feet edge of pavement to edge of pavement, with a one (1) foot wide gravel shoulder on either side of pavement edge.
 - II. Curb and gutter: a minimum of twenty-five (25) feet back of curb to back of curb, with a minimum lane width of eleven (11) feet. Either a 2-½ foot wide curb and gutter or a 1-½ foot wide curb and gutter are acceptable.
- 6. Roadway cross sections should generally conform to the following:
 - a. Existing or alternate cross sections may be considered if the alternate section has been demonstrated to have equivalency to the required section via the AASHTO Guide for the Design of Pavement Structures. Geotechnical analysis may be required by the Township Engineer.
 - b. Gravel road:
 - II. Six (6) inches MDOT 22A aggregate placed in two (2) courses. Six (6) inch sand sub-base, meeting MDOT Class II requirements.
 - c. Paved road:
 - III. Four (4) inches bituminous surface placed in two (2) courses. No course or lift shall exceed 2" in depth. Eight (8) inches of aggregate base, MDOT 21AA Limestone.
 - d. Shoulder sections shall match the section for the road.
- 7. Vertical alignment should generally conform to the following guidelines:
 - a. Site distances at all intersections (public roads or private roads) should be verified and shall meet the requirements of the Livingston County Road Commission.
 - b. The roadway grade within one hundred (100) feet of an intersection should generally not exceed a slope of three (3) percent regardless of surface type.
 - i. Gravel Surface:
 - 1. Minimum: one (1) percent.
 - 2. Maximum: five (5) percent.
 - ii. Paved surface:
 - 1. Minimum: 0.5 percent.
 - 2. Maximum: six (6) percent.
- 8. All roadways, regardless of surface type, should have a sufficient crown to adequately drain runoff from the roadway.
- 9. Drainage should conform to the following requirements:
 - a. A system to adequately collect and discharge tributary roadway runoff is required. Either open ditch or enclosed storm sewer systems are acceptable and shall be sized reasonably for the anticipated run-off. Generally, a 10- year storm event shall be used to determine run-off.
 - b. All paved roads with curb and gutter shall have an enclosed storm sewer system, unless otherwise approved by the Township.
 - c. Drainage ditches and swales shall meet the following:
 - a. Minimum flat bottom depth of one (1) foot, measured from shoulder hinge point.
 - b. Longitudinal slope shall generally follow the slope of the road. The slope design shall minimize soil erosion. Slopes shall generally be between one (1) percent and five (5) percent. Maximum front slope is 1:3, and the maximum back slope is 1:2.

- d. Culverts should be sized for a 10-year storm elevation and their invert set at the ditch flow-line. Culverts shall be clean and free of debris.
- 10. Roadway signage shall meet the requirements of the Livingston County Road Commission and the Michigan Department of Transportation's Manual of Uniform Traffic Control Devices.
- 11. Any pre-existing, non-conforming road that serves multi-family residential, commercial, or industrial uses shall meet the requirements for a new road according to the Township Engineering Standards. Any changes in the road will require the road be improved to meet the standards for a new road in its entirety.

N. NEW PUBLIC AND PRIVATE ROADS

- 1. New roads, whether public or private, shall meet the following criteria. Additional requirements are set forth in Article VI: General Provisions, Section 6.20 New Private Roads of the Township Zoning ordinance.
- 2. All roadways that are to be public shall meet the requirements of the Livingston County Road Commission. Approval and acceptance of the roads shall be granted by the Livingston County Road Commission.
- 3. All roadways that are to be private shall meet the requirements of the Livingston County Road Commission, the Marion Township Zoning Ordinance and the standards outlined below. If a conflict exists between the Road Commission and Township standards, the stricter requirements shall govern.
- 4. Right-of-way or easements shall have sufficient width to encompass the entire cross section of the road, including any ditches or drainage systems.
 - a. Depending on the location of the private road easement in relation to adjacent parcels, a landscape buffer as provided in the Township Zoning Ordinance may be required by the Township to reduce the impact of the private road upon existing abutting parcels.
 - b. Minimum road right-of-way or easement width shall meet the following:
 - i. All residential (single or multi-family) shall be sixty-six feet (66').
 - ii. Commercial, industrial and all other uses shall be eighty feet (80').
- 5. Roadway width shall meet the following requirements:
- 6. Gravel road:
 - a. Gravel road: thirty (30) feet edge of gravel to edge of gravel.
- 7. Paved road:
 - a. Residential streets without curb shall be a minimum of twenty-two (22) feet edge of pavement to edge of pavement, with a four (4) foot wide paved or gravel shoulder on either side of roadway edge.
 - b. Residential streets with curb and gutter: a minimum of twenty-seven (27) feet back of curb to back of curb, with a minimum lane width of twelve (12) feet. Either a 2-½ foot wide curb and gutter or a 1-½ foot wide curb and gutter are acceptable.
 - c. Commercial streets shall be a minimum of twenty-nine feet (29') back of curb to back of curb. Minimum lane width shall be twelve feet (12'). A 2-½ foot wide curb and gutter is required.
 - d. Industrial roads shall be a minimum of thirty-five feet (35') back of curb to back of curb. Minimum lane width shall be fifteen feet (15'). A 2-½ foot wide curb and gutter is required.

- e. In areas where on-street parking is allowed, the minimum width of the road shall be increased by 8'. Including the gutter pan in the width extension for parking is not permitted.
 - f. Roadway recovery areas, (clear zones) shall be a minimum of 7' for straight-line sections and inside diameter curves. A minimum of 15' is required for outside diameter curves. Recovery areas shall be considered the distance between a permanent structure and edge of gravel shoulder or back of curb.
8. Roadway cross sections shall conform to the following criteria. Alternate cross sections may be considered if the alternate section has been demonstrated to have equivalency to the required section via the AASHTO Guide for the Design of Pavement Structures. Geotechnical analysis may be required by the Township Engineer:
- a. Residential roads or streets shall have a minimum of four (4) inches bituminous surface placed in two (2) courses (no course or lift shall exceed 2" in depth), with eight (8) inches of aggregate base (MDOT 21AA limestone), Gravel roads, if permitted by the Township, shall consist of a minimum of eight (8) inches of aggregate base (MDOT 22A) and six (6) inches of sand sub-base meeting the requirements of MDOT Class II.
 - b. Commercial streets shall have a minimum four (4) inches of bituminous surface placed in two (2) courses (no course or lift shall exceed 2" in depth), with eight (8) inches of aggregate base (MDOT 21AA limestone), and six (6) inches of sand sub-base meeting the requirements of MDOT Class II. An open graded drainage course may be substituted for sand sub-base.
 - c. Industrial streets shall have a minimum of nine (9) inches of non-reinforced concrete pavement, four (4) inches of aggregate base (MDOT 21AA limestone), and four (4) inches of sand sub-base meeting the requirements of MDOT Class II.
 - d. Shoulder pavement sections shall match the section of the road.
 - e. The pavement shall have transverse slope (crown) of 2% each way of the pavement center-line. Superelevated sections are prohibited in any development having a proposed operating speed of less than fifty-five (55) miles per hour. Where the design speed for a proposed street or road is less than fifty-five (55) mph and super elevation would otherwise be required as determined in the latest edition of the AASHTO Policy on Geometric Design for Streets and Highways, the horizontal curve shall be designed with a radius long enough to counter the need for superelevation.
 - f. Edge drain is required on all streets with curb and gutter. The trench must be filled with pea stone to the level of the base material, and the entire trench wrapped with geotextile fabric.
 - g. Proposed sections utilizing an open ditch section shall have a ditch depth of not less than two (2) feet relative to the shoulder hinge point and two (2) feet wide rounded at the bottom. The depth shall be increased if warranted by drainage discharge calculations.
 - h. The maximum slope within the proposed right-of-way shall be 1:4 (rise/distance). The use of slopes steeper than 1:4 outside of the proposed right-of-way draining toward the roadway should be avoided.
 - i. Driveway slopes or lot access areas shall have a slope not greater than 1:10 within the right-of-way. Only one drive approach is allowed per single-family dwelling unit. Driveways beyond the right-of-way shall generally not exceed 12% slope without significant topographical limitations.

- j. Pavement sections for residential driveways shall meet the following:
 - i. Gravel – six (6) inches of MDOT 21AA limestone or MDOT 22A.
 - ii. Asphalt – three (3) inches of bituminous surface over six (6) inches of MDOT 21AA limestone.
 - iii. Concrete – six (6) inches of concrete over four (4) inches of MDOT Class II.
 - k. Pavement sections for commercial or industrial driveways shall meet the following:
 - i. Gravel drives will not be permitted.
 - ii. Asphalt – four (4) inches of bituminous surface over eight (8) inches of MDOT 21AA limestone. For development with significant truck traffic, asphalt approaches will not be permitted.
 - iii. Concrete – eight (8) inches of concrete over four (4) inches of MDOT Class II.
9. Horizontal alignment shall conform to the following guidelines. All horizontal alignment and intersection design shall follow the latest edition of the AASHTO Policy on Geometric Design for Streets and Highways. The design speed shall be thirty-five (35) mph for interior subdivision streets unless otherwise directed by the Township or Road Commission.
- a. Minimum center-line radius for a horizontal curve shall be 230 feet.
 - b. Minimum cul-de-sac radius at the outside edge of the pavement shall be fifty (50) feet, not including any curb.
 - c. The fillet radius from cul-de-sac to tangent sections shall be a minimum of fifty (50) feet.
 - d. Intersection radii shall be a minimum of thirty-five (35) feet for residential streets and a minimum of forty-five (45) feet for commercial and industrial streets.
 - e. Intersection shall be at right angles and shall be designed such that the first sixty-five (65) feet in any direction shall be straight line sections.
 - f. Boulevard intersections or entrances shall have concrete curb and gutter around the island.
 - g. MDOT Detail M openings shall be used for all commercial or industrial drives or approaches. All commercial or industrial approaches shall be curbed regardless of the road cross section.
 - h. Commercial and industrial drive approaches shall have a minimum forty-five (45) foot radius.
 - i. Drive approaches shall be contained within the property lines, including radii and any acceleration/deceleration tapers, if required.
 - j. Drive approaches shall be a minimum of 125' from any intersection, measured from the centerline of the drive approach to centerline of the road.
10. Vertical alignment shall conform to the following guidelines. All vertical alignment design shall follow the latest edition of the AASHTO Policy on Geometric Design for Streets and Highways. The design speed shall be thirty-five (35) mph for interior subdivision streets unless otherwise directed by the Township or Road Commission.
- a. The percent of grade on a road with an open ditch cross section shall be no less than 1.0% or more than 5.0% where ditch grades are centerline dependent.

- b. The percent of grade on a road with a curb and gutter cross section shall be no less than 0.50% or more than 6.0%.
 - c. A vertical curve shall be required where the algebraic difference in slopes of the tangent sections exceeds 1.0%. The minimum length of the vertical curve shall be 100'.
 - d. Road grades within 100' of an intersection shall not exceed a slope of three (3) percent regardless of the surface type.
11. A drainage system to adequately collect and discharge tributary roadway runoff is required. Either an open ditch or enclosed storm sewer system per the Township requirements is acceptable.
- a. All paved roads with curb and gutter shall have an enclosed storm sewer system unless otherwise approved by the Township.
 - b. The maximum allowable storm water runoff tributary area conveyed overland in drainage ditches shall be no more than six (6) acres. When the tributary area is more than six (6) acres or the amount of flow in the ditch exceeds 8.0 cfs, an enclosed storm sewer system and curb and gutter will be required.
 - c. The percent of grade in an open ditch shall not be less than 1.0% or greater than 5.0%
 - d. Any open ditch that exceeds 3.0% shall have a sodded ditch bottom. Sod in these areas shall extend from the ditch bottom up either side of the ditch to a point one foot above the flow line of the ditch.
12. Roadway signage shall meet the requirements of the Livingston County Road Commission and the Michigan Department of Transportation's Manual of Uniform Traffic Control Devices.

XIII. PARKING LOT REQUIREMENTS

- A. A striping and traffic control plan for parking areas shall be included. The location of all traffic control, regulatory, street, and subdivision signs shall be shown on the plans.
- B. Minimum drive widths and parking dimensions shall be in accordance with the Marion Township Zoning Ordinance.
- C. Concrete curb and gutter shall be provided for the perimeter of the parking area and for all island areas within the parking area.
- D. Minimum drive widths and parking dimensions shall be in accordance with the Marion Township Zoning Ordinance.
- E. Private Developments
 - 1. Loading zones and dumpster pads: 8" concrete on 6" 21 AA limestone aggregate.
 - 2. Minimum drive widths and parking dimensions shall be in accordance with the Marion Township Zoning Ordinance.

XIV. PATHWAYS AND SIDEWALKS

- A. Sidewalks shall be located in the right of way and one (1) foot from the ultimate right-of-way line.

- B. The sidewalk will be five (5) feet wide constructed of four (4) inches of concrete on compacted well-draining subgrade. The walk must be continued through driveway sections where it will be increased in thickness to eight (8) inches on major thoroughfares and collector roads and six (6) inches in all other instances. Curbs must be tapered to meet the walk.
- C. Proposed grades must be shown along the property line, driveways, and intermittent locations along the length of the walk.
- D. Any structures, hydrants, poles, etc., which are existing along the alignment of the walk, must be adjusted or relocated at the expense and coordination of the developer.
- E. All sidewalk construction will be according to public Act No. 8, 1973, the new MDOT standards for ADA ramps with detectable warning domes.

XV. SOIL EROSION AND SEDIMENT CONTROL

A. GENERAL

1. All proposed erosion control measures and sequence of soil erosion control measures shall be shown on the plans.
- B. Erosion control shall conform to Livingston County standard details, with a detail of each measure used shown on the plans.
 - C. The smallest practical area of land should be exposed at any one time during development. "Practical area" shall be defined as the area in which temporary or permanent restoration can and will be performed within a reasonable period of time, as defined by the Township. When land is exposed during development, the exposure should be kept to the shortest possible period of time, as deemed by the Township.
 - D. Temporary vegetation or mulching may be required to protect areas exposed during development, particularly if an unexpected erosion problem becomes evident. The developer will be required to assign this activity top priority upon notification by the Township. Failure to act after a second notification will be grounds for the Township to take necessary action to address the problem and charge the owner/developer accordingly.
 - E. Sediment basins or temporary basin outlet standpipe filters shall be maintained during construction to ensure that sediment within runoff is not being discharged onto neighboring properties.
 - F. Sediment basins prior to discharge into any wetland, stream, pond, etc., require 1 x 3 stone outlet filter at all low points/discharge points properly toed into silt fence.
 - G. Permanent vegetation and structures/basins should be installed as soon as practical during development. This should be included in the Soil Erosion Control Sequence noted above.
 - H. Wherever feasible, natural vegetation should be retained and protected.
 - I. The development plan should be best fitted to the topography and soil so as to create the least erosion potential. The best earth balance may not be the best fit with respect to topography and natural vegetation.
 - J. All new or existing (disrupted ditches) shall be sodded.
 - K. Seed and mulch is not permitted on slopes greater than 1:4. "Excelsior" Mulch blanket, sod pegged per Township specifications, or approved equal will be required on such slopes.
 - L. Erosion protection shall be provided in the public roadway for all drainage structures receiving road runoff to the low point.
 - M. The developer shall clean all structures impacted during construction along with any other erosion control items prior to occupancy.
- ### N. SITES REQUIRING PERMITS
1. A permit is required for all earth moving activities as follows:
 - a. All projects that disturb one (1) or more acres.

- b. All projects that occur within 500 feet of surface water and disturb more than 225 square feet.
- c. Construction of new ponds or alterations to existing ponds.
- d. All major projects as defined by Livingston County.

O. INTENT OF PERMIT

- 1. The intent of this requirement is to ensure that no silt or sediment enters the public stream or watercourses. This is accomplished through means of sediment basins, filters, diversions, etc.

P. PLAN REQUIRED

- 1. A soil erosion and sediment control plan is required for all sites that require a permit. This can be made a part of the plan documents. Itemized on this plan shall be step-by-step requirements for controlling erosion (sequence of construction). No work, including site clearing, will be allowed until approved soil erosion and sediment control measures are in place.

Q. Accelerated erosion and sedimentation must be prevented during all phases of construction including:

- 1. Initial site clearing.
- 2. Utility construction.
- 3. Building construction.
- 4. Site paving.
- 5. Final site approval.

R. INSPECTION

- 1. Inspection will be made periodically throughout construction on the maintenance and effectiveness of soil erosion control methods by designated consultants or personnel from Marion Township and Livingston County.

S. If inspection reveals that the controls are not being implemented, a cease and desist order on all site construction may be issued.

Livingston County Road Commission

3535 Grand Oaks Drive • Howell, Michigan 48843-8575
Telephone: (517) 546-4250 • Facsimile: (517) 546-9628
Internet Address: www.livingstonroads.org

January 6, 2020

Dear Livingston County Township Managers and Supervisors,

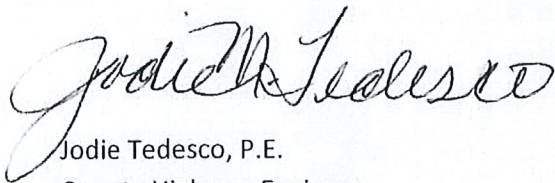
The Livingston County Road Commission has budgeted approximately \$2,500,000 for Primary Road Pavement Preservation. We hope to maximize our program again by asking Townships to submit primary road projects that they would consider partnering on.

Attached is a costing guide for budgeting purposes only. Please forward proposed projects that are of importance to your area. Once we have all the projects identified we will evaluate projects and available dollars to maximize our 2020 pavement program.

Please submit your road candidates by February 28th.

Road Name	Termini	Length	Base Cost (Max)	Total Cost	Twp Match \$

Thank You,



Jodie Tedesco, P.E.
County Highway Engineer

Enclosures

2020 PPP Average Cost / Mile

Treatment	Average Cost / Mile	Recommended Road Candidate Condition
2.0" Hot Mix Asphalt(HMA) Overlay	\$165,000	Paser Rating high 4, Surface raveling or first signs of wheel path cracking. Block cracking over 50%, patches in good condition.
HMA Wedge Course and 2.0" HMA Overlay	\$250,000	Paser Rating 3 or low 4, Moderate Rutting, extensive block cracking, patches in poor condition.
Base Repair/HMA Wedge Course/ 2.0" HMA Overlay	\$300,000	Paser Rating high 2 or 3. Significant road deterioration. Patches 1,000 syds or less per mile. Unbuilt road with poor underlying soils.
2.5" Mill existing pavement/ 3.0" HMA Pavement 2-Lifts	\$350,000	Paser Rating 2 – 4. Roadway with curb and gutter or grade control. Surface raveling, cracking, poor patches.
Crush and grade existing pavement. HMA Pave, 400#/Syd 2-Lifts	\$385,000	Paser Rating 2 or 3. Significant road deterioration. Patches in poor condition greater than 1000 syd per mile. Decent underlying road base.
Chip Seal with a Fog Seal	\$45,000	Low volume rural paved road. Minor surface defects and cracking.
HMA Wedge with a Chip Seal and Fog Seal	\$150,000	Low volume rural paved road. Minor rutting and deformation of pavement.
Reclamite HMA pavement surface rejuvenator	\$15,000	3-5 year old newly paved roadway. Rejuvenates bitumen in the pavement to extend pavement life.
Overband Crack Seal	\$10,000	Cracks 1/4" or larger



Liv.Co UPDATE

Monthly News from the
Livingston County Commissioners



January & February 2020

Livingston County Board of Commissioners



District 1 - Kate Lawrence

District 2 - William Green

District 3 - Wes Nakagiri

District 4 - Douglas G. Helzerman

District 5 - Donald S. Parker
(Board Chairman)

District 6 - Robert J. Bezotte

District 7 - Carol S. Griffith

District 8 - Dennis L. Dolan
(Board Vice-Chairman)

District 9 - Gary Childs

"The mission of Livingston County is to be an effective and efficient steward in delivering quality services within the constraints of sound fiscal policy. Our priority is to provide mandated services which may be enhanced and supplemented to improve the quality of life for all who work, reside, and recreate in Livingston County."

2020 Board Of Commissioner Updates

Elections for Board Chair and Vice Chair were held at the January 2nd Board meeting. Donald Parker has been elected Board Chair and Dennis Dolan has been elected Board Vice Chair for 2020. You will find the 2020 Livingston County Board Meeting Calendar list attached with this newsletter.

Census 2020 Complete Count Committee Updates

Livingston County has established a Census 2020 Complete Count Committee for the purpose of advising and assisting Livingston



**CENSUS
2020**
Livingston Counts

County in obtaining the most accurate and complete population count for the 2020 Census. Did you know that every year the federal government allocates more than \$675 Billion in funding based on Census data? Every Michigander not counted costs the state approximately \$18,250 in funding over 10 years according to historical U.S. Census undercount information. The Committee has created and compiled a wealth of materials to promote the census that are available for any organization to use at www.livgov.com/census2020. Resources include posters, graphics, logos, videos, and language crafted for social media, website, or newsletter use. The Committee is currently working on creating a community wide action plan that will identify specific messages and materials to be communicated to the public in a coordinated effort. The Committee will be reviewing and approving the action plan at their next meeting. All Committee meetings are open to the public, so feel free to attend or encourage those you think may be interested. The next Committee meeting will be held on February 18th from 3 PM to 5 PM at the EMS Building. If you would like more information about the Committee, would like to participate in the Committee's action plan, or have any suggestions or ideas about materials or audiences to reach, please contact Allison Nalepa at analepa@livgov.com.

Monthly Meetings

2/3/2020 - General Government &
Health & Human Services at
7:30 PM

2/10/2020 - Full Board at 7:30 PM

2/18/2020 - Census 2020 Complete
Count Committee at 3 PM at
EMS Building

2/18/2020 - Infrastructure &
Development & Public Safety at
7:30 PM

2/19/2020 - Finance Committee at
7:30 AM, Personnel Committee
after Finance

2/24/2020 - Full Board Meeting at
7:30 PM

Resolutions Passed by the Board of Commissioners & Appointments

Completed in December 2019

- An agreement between the Health Department and the Michigan Department of Environment, Great Lakes, and Energy to conduct environmental health services was approved.
- The Health Department has accepted grant funding for 2020 from the Department of Licensing and Regulatory Affairs, Bureau of Medical Marihuana Regulation, for education, communication and outreach activities.
- The Airport's grant agreement with the Michigan Department of Transportation for the funding of a high speed broom for snow removal was approved.
- The County has approved an intergovernmental agreement with the State of Michigan to participate in the MiSAIL project for 2020 to obtain current digital imagery.
- An additional payment of \$524,663 was made prior to 2019 year end to MERS to contribute to unfunded pension liabilities.
- An agreement with Spectrum Child and Family Services to provide Parent Coach Services on behalf of the Department of Health and Human Services was approved for 3 years.
- Software maintenance renewals for 2020 have been approved to ensure continuity of technical support services and software upgrades.
- Juvenile Court has submitted a grant application to the Michigan Department of Health and Human Services to enhance legal representation in child protective proceedings.
- The 2020 State Grant Agreement, Grant Administrator, GPS Facilitator, and Surveyor contracts for the Remonumentation and State Plan Coordinate Determination of the Public Land Survey Corners in Livingston County has been approved.
- The 2020 Memorandum of Agreement with MSU Extension was authorized.
- A 4th quarter supplemental appropriation to the fiscal year 2019 budget was approved.
- Dianne McCormick was appointed Acting Deputy County Administrator until a new County Administrator is hired and the Acting County Administrator reverts back to the position of Deputy County Administrator / Financial Officer.

Completed in January 2020

- An amendment was made to the resolution approving Livingston County's sharing of Medical Director Services with Washtenaw County Public Health. The amendment specified that future Medical Director expenses will not exceed the amount budgeted and approved by the Board of Commissioners.
- The County approved a 3 year agreement between the Livingston County Sheriff Department, Livingston County Board of Commissioners, and Police Officers Labor Council.
- The Specialty Court Programs have submitted a grant application for the Substance Abuse and Mental Health Services Administration 2020 funding for the Livingston County Adult Drug Court Program.
- The Health Department has entered into an agreement with the National Association of County and City Health Officials to support the Health Department's Medical Reserve Corps in developing an educational outreach support team and the SAY LivReady Initiative.
- A purchase order was approved for the County Clerk to order 2020 election supplies including ballots, precinct supply kits, and other election related materials.
- Juvenile Court has submitted a grant application to the Michigan Department of Health and Human Services, Michigan Committee on Juvenile Justice to complete a data analysis project with the Department of Michigan that will inform the projects and services offered to youth in Livingston County.

JANUARY 2020

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY 2020

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19*	20	21	22
23	24	25	26	27	28	29

MARCH 2020

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18*	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 2020

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY 2020

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20*	21	22	23
24	25	26	27	28	29	30

JUNE 2020

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17*	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY 2020

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST 2020

S	M	T	W	Th	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19*	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER 2020

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER 2020

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21*	22	23	24
25	26	27	28	29	30	31

NOVEMBER 2020

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18*	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER 2020

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	

Statutory Meetings: Equalization - April 14th; Annual Meeting - October 13th
 MAC Conferences: Legislative Conference - April 15th-17th (Lansing); Annual Conference - August 16th-19th (Kalamazoo Radisson)
 *Personnel Immediately follows Finance Committee