



**ACME TOWNSHIP PLANNING COMMISSION MEETING
ACME TOWNSHIP HALL
5320 US-31 N, Williamsburg MI 49690
(Former Acme Laundromat at US-31 & Bunker Hill Rd)
May 13th, 2019 7:00 p.m.**

CALL TO ORDER WITH PLEDGE OF ALLEGIANCE at 7:02 PM

ROLL CALL: Members present: K. Wentzloff (Chair), S. Feringa (Vice Chair), D. Rosa, D. VanHouten, B. Balentine, D. White

Members excused: M. Timmins

Staff present: S. Winter, Planning & Zoning Administrator, V. Donn, Recording Secretary

A. LIMITED PUBLIC COMMENT: None

B. APPROVAL OF AGENDA:

Motion by Feringa to approve the agenda as presented, supported by Rosa. Motion carried unanimously.

C. INQUIRY AS TO CONFLICTS OF INTEREST: None

D. SPECIAL PRESENTATIONS: None

E. CONSENT CALENDAR:

1. RECEIVE AND FILE

- a. Township Board Draft Regular Meeting Minutes 04.02.19
- b. Township Board Draft Special Meeting Minutes 04.11.19
- c. Township Board Draft Special Meeting Minutes 04.29.19

2. ACTION:

- a. Approve Draft Planning Commission Meeting Minutes 04.08.19

Motion by Balentine to approve the Consent Calendar as presented, supported by VanHouten. Motion carried unanimously.

F. ITEMS REMOVED FROM THE CONSENT CALENDAR: None

G. CORRESPONDENCE: None

H. PUBLIC HEARINGS: None

I. OLD BUSINESS:

1. Master Plan Public Comment Update

Winter stated the Township has received two public comments related to the draft Community Master Plan. The first is from Paul Thwing from TCAPS concerning the future status of the former Bertha Vos School facility, currently they don't have a definite plan for its future use.

The second is regarding a parcel east of Bartlett Rd, south of a county-owned recreational parcel at the corner of Bunker Hill Rd and Bartlett Rd, and north of the county-owned parcel where the VASA Trailhead is located. The property is currently zoned R-3 Urban Residential. Given the recreational uses of the lands surrounding the property, the draft Community Master Plan has proposed changing the future land use category on this property from "Residential – Urban" to "Conservation / Recreation". This creates a continuous zone of "Conservation / Recreation"

future land use with the previously existing on the northside of Bunker Hill Rd. The future land use classification does not constitute a zoning change. Winter and the Supervisor met with the property owner to discuss his concerns and it will be talked about at the public hearing next month.

2. Zoning Ordinance Amendment 050 – Planned Development

Winter has asked to change the scheduled May public hearing for the proposed zoning ordinance to the June 10 Planning Commission meeting.

Motion by Feringa to set a public hearing for June 10, 2019 to consider recommending approval of Zoning Ordinance Amendment 050 – Planned Development Transfer of Development Rights, supported by Balentine. Motion carried unanimously.

J. NEW BUSINESS:

1. SPR 2019-04 – Skymint Medical Marihuana Provisioning Center (PZR 2019-07)

Winter informed an application has been received to construct a medical marihuana provisioning center at 6140 N Arnold Rd. This is a use allowed by right in the B-4: Material Processing and Warehousing District. The Applicant does possess a local license for the facility type at this location. Stephanie Space, the architect and Will Mitchell with Bob Mitchell & Associates PC, were in attendance for any questions.

The proposal includes the construction of a 3,456 sq. ft facility on a vacant piece of land located behind the Tractor Supply Company. Most of the zoning ordinance standards have been met, with exceptions related to landscaping, exterior lighting and storm water management. None of the outstanding items are determined by staff to be substantial enough to prevent approval but can be required to be rectified prior to issuing a land use permit.

Motion by Feringa to approve Site Plan Review application SPR 2019-04, submitted by Bob Mitchell and Associates P.C., on behalf of Green Peak Innovations dba Skymint, to construct and operate an approximately 3,456 square foot licensed medical marihuana provisioning center located at 6140 N Arnold Rd, Williamsburg, MI 49690, with the following conditions that must be met prior to issuing a land use permit:

- 1. Revise the landscape plan to meet the native, non-invasive plant species, treed island, and right-of-way screening requirements of the Zoning Ordinance and as outlined in Planning & Zoning Report 2019-07, and to be approved by the Planning & Zoning Administrator and/or Township officials.**
- 2. Submit a completion bond, cash deposit, letter of credit, or certified check in the amount of the approved landscape plan as determined by a professional landscaper.**
- 3. Remove the wall pack lighting on the south and north facades of the building;**
- 4. All exterior lighting shall be shut off outside the hours of operation once the staff is no longer present except for the wall packs on the east façade, and one soffit light above the south entry and one soffit light above the west exit.**
- 5. Pending on the MDOT permit for the storm water discharge within the railroad right-a-way.**
- 6. The final set of site plan drawings be updated to reflect the applicable conditions, stamped by a licensed engineer, architect, or landscape architect, and signed by the Planning Commission Chair and Applicant. Supported by Rosa. Motion carried unanimously.**

K. PUBLIC COMMENT & OTHER PC BUSINESS

Public comment opened at 7:27 pm

Jim Heffner, 4050 Bayberry Lane

Public comment closed at 7:33 pm

1. Planning & Zoning Administrator Report – Shawn Winter

There will be a special Planning Commission meeting held on Tuesday, May 21, 2019 at 7:00 pm for a SUP minor amendment and site plan review for modifications at Flintfields Horse Park. Two other site plan reviews for provisioning centers in the B-4 district are in the works. They intend to be on the June 10, 2019 agenda. There has been no additional movement on the RV Park project to date. Bayside Park Opening Ceremony will be held on Saturday, May 18, 2019 from 12:30 – 1:30 pm. The net climber playground structure has been installed. On June 10 there will be two public hearings one for the rescheduled zoning ordinance amendment and the other for adopting the Master Plan.

2. Township Board Report: White reported the board is doing a budget review.

3. Parks & Trails Committee Report: Winter informed the initial review was received for the DNR Trust Fund Grant for the trail with a few items to be completed by May 15. The MDOT rail is needed by October and is being worked on. A 2% grant for trail amenities will be submitted this month.

ADJOURN: Motion to adjourn by Feringa, supported by Balentine. Meeting adjourned at 7:42 pm



ACME TOWNSHIP PLANNING COMMISSION MEETING
ACME TOWNSHIP HALL
5320 US-31 N, Williamsburg MI 49690
(Former Acme Laundromat at US-31 & Bunker Hill Rd)
May 13th, 2019 7:00 p.m.

CALL TO ORDER
WITH PLEDGE OF ALLEGIANCE

ROLL CALL:

- A. LIMITED PUBLIC COMMENT:** Members of the public may address the Commission regarding any subject of community interest during public comment periods by filling out a Public Comment Card and submitting it to the Secretary. Public comments are limited to three minutes per individual. Comments during other portions of the agenda may or may not be entertained at the moderator's discretion
- B. APPROVAL OF AGENDA:**
- C. INQUIRY AS TO CONFLICTS OF INTEREST:**
- D. SPECIAL PRESENTATIONS:**
- E. CONSENT CALENDAR:** The purpose of the consent calendar is to expedite business by grouping non-controversial items together for one Commission motion without discussion. A request to remove any item for discussion later in the agenda from any member of the Commission, staff or public shall be granted.
 - 1. RECEIVE AND FILE**
 - a. Township Board Draft Regular Meeting Minutes 04.02.19
 - b. Township Board Draft Special Meeting Minutes 04.11.19
 - c. Township Board Draft Special Meeting Minutes 04.29.19
 - 2. ACTION:**
 - a. Approve Draft Planning Commission Meeting Minutes 04.08.19
- F. ITEMS REMOVED FROM THE CONSENT CALENDAR**
 - 1. _____
 - 2. _____
- G. CORRESPONDENCE:**
- H. PUBLIC HEARINGS:**
- I. OLD BUSINESS:**
 - 1. Master Plan Public Comment Update
 - 2. Zoning Ordinance Amendment 050 – Planned Development
- J. NEW BUSINESS:**
 - 1. SPR 2019-04 – Skymint Medical Marihuana Provisioning Center (PZR 2019-07)
- K. PUBLIC COMMENT & OTHER PC BUSINESS**
 - 1. Planning & Zoning Administrator Report – Shawn Winter
 - 2. Township Board Report – Doug White
 - 3. Parks & Trails Committee Report – Marcie Timmins

ADJOURN:



MEMORANDUM

Planning and Zoning

6042 Acme Road | Williamsburg, MI | 49690

Phone: (231) 938-1350 Fax: (231) 938-1510 Web: www.acmetownship.org

To: Acme Township Planning Commission
From: Shawn Winter, Planning & Zoning Administrator
CC: Jeff Jocks, Counsel;
Date: May 8, 2019
Re: May 13, 2019 Planning Commission Packet Summary

**PLEASE NOTE CHANGE OF VENUE: 5320 US-31 N, Williamsburg, MI 49690
(former Acme Laundromat at US-31 & Bunker Hill Rd)**

A. **LIMITED PUBLIC COMMENT:**
Open: _____ Close: _____

B. **APPROVAL OF AGENDA:**
Motion to approve: _____ Support: _____

C. **INQUIRY AS TO CONFLICTS OF INTEREST:**
Name: _____ Item: _____
Name: _____ Item: _____

D. **SPECIAL PRESENTATIONS:** _____

E. **CONSENT CALENDAR:**
1. **RECEIVE AND FILE:**
a. Township Board Draft Regular Meeting Minutes 04.02.19
b. Township Board Draft Special Meeting Minutes 04.11.19
c. Parks & Trails Committee Draft Regular Meeting Minutes 04.29.19
2. **ACTION:**
a. Approve Draft Planning Commission Meeting Minutes 04.08.19

Motion to adopt: _____ Support: _____

F. **ITEMS TO BE REMOVED FROM THE CONSENT CALENDAR:**
1. _____
2. _____

G. **CORRESPONDENCE:** _____

H. **PUBLIC HEARINGS:** _____

I. **OLD BUSINESS:**
1. **Master Plan Public Comment Update**
The Township has received two public comments related to the draft Community Master

Plan. The first is from Paul Thwing from TCAPS concerning the current and future status of the former Bertha Vos School facility.

The second is from David Steffey who owns a 30-acre parcel (28-01-111-012-10) east of Bartlett Rd, south of a county-owned recreational parcel at the corner of Bunker Hill Rd and Bartlett Rd, and north of the county-owned parcel where the VASA Trailhead is located. The property is currently zoned R-3 Urban Residential. Given the recreational uses of the lands surrounding the property, the existence of the VASA 3K Meadows Loop easement, and wetlands on the property associated with the Acme Creek system, the draft Community Master Plan has proposed changing the future land use category on this property from "Residential - Urban" to "Conservation / Recreation". The language describing the category in both the 2014 and 2019 versions are the same. This creates a continuous zone of "Conservation / Recreation" future land use with the previously existing on the northside of Bunker Hill Rd. The future land use classification does not constitute a zoning change. I have spoken with counsel regarding the enclosed letter and agreed that this does not represent an instance of downzoning or a land grab. The Supervisor and I will be meeting with the property owner on May 8, 2019 to discuss his concerns.

2. Zoning Ordinance Amendment 050 - Planned Development

The scheduled public hearing for the proposed zoning ordinance has been cancelled due on my part for failing to get the notice to the Record-Eagle in time to meet the fourteen-day posting requirement. I apologize, and I have provided a suggest motion below to set a new public hearing date for the next meeting. The updated draft, including the new map, has been enclosed for reference.

Suggested Motion for Consideration:

Motion to set a public hearing for June 10, 2019 to consider recommending approval of Zoning Ordinance Amendment 050 - Planned Development Transfer of Development Rights.

J. NEW BUSINESS:

1. SPR 2019-04 - Skymint Medical Marihuana Provisioning Center (PZR 209-07)

An application has been received to construct a medical marihuana provisioning center at 6140 N Arnold Rd. This is a use allowed by right in the B-4: Material Processing and Warehousing District. The Applicant does possess a local license for the facility type at this location.

The proposal includes the construction of a 3,456 sq ft facility on a vacant piece of land located behind the Tractor Supply Company. The majority of the zoning ordinance standards have been met, with exceptions related to landscaping, exterior lighting and storm water management. None of the outstanding items are determined by staff to be substantial enough to prevent approval, but rather can be required to be rectified prior to issuing a land use permit as indicated in the suggested motion below.

Suggested Motion for Consideration:

Motion to approve Site Plan Review application SPR 2019-04, submitted by Bob Mitchell and Associates P.C., on behalf of Green Peak Innovations dba Skymint, to construct and operate an approximately 3,456 square foot licensed medical marihuana provisioning center located at 6140 N Arnold Rd, Williamsburg, MI 49690, with the following conditions that must be met prior to issuing a land use permit:

- 1. Revise the landscape plan to meet the native, non-invasive plant species, treed island, and right-of-way screening requirements of the Zoning Ordinance and as outlined in*

Planning & Zoning Report 2019-07, and to be approved by the Planning & Zoning Administrator;

2. *Submit a completion bond, cash deposit, letter of credit, or certified check in the amount of the approved landscape plan as determined by a professional landscaper;*
3. *Remove the wall pack lighting on the south and north facades of the building;*
4. *All exterior lighting shall be shut off outside the hours of operation once the staff is no longer present except for the wall packs on the east façade, and one soffit light above the south entry and one soffit light above the west exit;*
5. *The storm water management plan be revised as recommended by Gosing-Czubak with all applicable standards of the Acme Township Storm Water Control Ordinance (2007-01) being met. Any changes to the site plan associated with meeting the standards shall be properly approved by the Township.*
6. *The final set of site plan drawings be updated to reflect the applicable conditions, stamped by a licensed engineer, architect, or landscape architect, and signed by the Planning Commission Chair and Applicant.*

2. Zoning Ordinance Amendment 050 – Planned Development Transfer of Development Rights

In light of a recent application before the Planning Commission for a transfer of development rights request, an amendment is being introduced to eliminate the sending zone-to-sending zone density transfer. The referenced application was found not be consistent with the application was found not be consistent with the future land use map in its request, and it was discussed at length whether a sending zone-to-sending zone transfer is consistent with the intent and purpose of the planned development article. Although eliminating the sending zone -to-sending zone transfer option, the draft amendment still maintains the option of a receiving zone-to-receiving zone transfer for consideration.

Since we are beginning the amendment process, I have used this opportunity to make some additional changes. Some are minor in nature: grammatical errors, spelling mistakes, etc. Others provide clarity to the amendment procedures. More discussion will need to take place at the meeting regarding these items.

Suggested Motion for Consideration:

Motion to set a public hearing for May 13, 2019 to consider recommending approval of Zoning Ordinance Amendment 050 – Planned Development Transfer of Development Rights.

K. PUBLIC COMMENT & OTHER PC BUSINESS:

1. Public Comment:
Open:

Close:

2. Planning & Zoning Administrator Report: Shawn Winter

- **Permits** (since April 8, 2019)
 - Land Use Permits – 3
 - LUP 2019-06 Accessory Structure, 7609 Bates Rd
 - LUP 2019-07 Accessory Structure, 4692 Brackett Rd
 - LUP 2019-08 Demolition, 6980 Bates Rd
 - Site Plan Review Permits – 1
 - SPR 2019-01 Acme Greenworks, 6980 Bates Rd
 - SPR 2019-03 Nature’s ReLeaf, 4144 E M-72
 - Sign Permits – 1

- SIGN 2019-01 Home Builder's Association, various locations

Bayside Park Opening Ceremony will be held on Saturday, May 18, 2019 from 12:30 – 1:30 pm. All are invited and welcome to attend. The net climber playground structure has been installed at Bayside Park.

There will be a special Planning Commission meeting held on Tuesday, May 21, 2019 at 7:00 pm at the current meeting location. This will be for a SUP minor amendment and site plan review for some modifications at Flintfields Horse Park.

Two other site plan reviews for provisioning centers in the B-4 district are in the works. They intend to be on the June 10, 2019 agenda. There has been no additional movement on the RV Park project to date.

3. **Township Board Report:** Doug White
4. **Parks & Trails Committee Report:** Marcie Timmins

L. **ADJOURN:** _____
Motion to adjourn: _____ **Support:** _____



**ACME TOWNSHIP REGULAR BOARD MEETING
ACME TOWNSHIP HALL
6042 Acme Road, Williamsburg MI 49690
Tuesday, April 2, 2019 7:00 p.m.**

CALL TO ORDER WITH PLEDGE OF ALLEGIANCE at 7:00 p.m.

ROLL CALL: Members present: J. Zollinger, C. Dye, A. Jenema, D. Nelson, J. Aukerman, D. White
Members excused: P. Scott

Staff present: S. Winter, Planning & Zoning Administrator, V. Donn, Recording Secretary

A. LIMITED PUBLIC COMMENT: Open at 7:01 pm

Rick Saylor, 8265 Saylor Rd.

Brian Kelley (Submitted written comments to be added to packet)

John Pulcipher, 421 Lochenheath Dr.

Limited Public Comment closed at 7:04 pm

B. APPROVAL OF AGENDA:

Zollinger added to the agenda under K. New Business, 7. Replacement of Golf Cart and 8. MTA Resolution Option for Nonpartisan Township Offices

Motion by Aukerman to approve the agenda as presented with the addition to K. New Business, 7. Replacement of Golf Cart and 8. MTA Resolution Option for Nonpartisan Township Offices, supported by Nelson. Motion carried unanimously.

C. APPROVAL OF BOARD MINUTES:

The meeting minutes of 03/05/19 and Special Board Meeting 03/19/19

Dye noted correspondence received from Brian Kelley and one from Mike Stemo regarding the Tart Trail needed to be added to the Special Board Meeting on 03/19/19 under D. Public Hearing - Approval of Application for MDNR Trust Fund Grant, Bunker Hill to M-72 Segment of the TC to Charlevoix Trail segment.

Motion by Nelson to approve the meeting minutes of 03/05/19 and Special Board Meeting 03/19/19 with the correction of adding Brian Kelley's and Mike Stemo correspondences to the Special Board Meeting under D. Public Hearing, supported by Dye. Motion carried unanimously.

D. INQUIRY AS TO CONFLICTS OF INTEREST: None

E. REPORTS

a. Clerk: Dye reported Cristy Danca has earned her Certification for the Michigan Municipal Clerk, which expanded over three years to achieve. Dye researched the bank's service charges for check fraud protection called Positive Pay to see if it was using up the credit interest on the township's account. At the end of December there was a \$856 credit to the account leaving the township at no extra cost for the service fees. She passed out informational brochures from League of Women Voters for Grand Traverse Area that provided contact information for all levels of government representatives.

- b. Parks:** Zollinger reported they are working on getting the playground at Bayside Park in place and there's a meeting on April 9th at 10:30 to look at the grounds.
- c. Legal Counsel - J. Jocks:** No report
- d. Metro:** Chief Pat Parker informed there has been a 3.7% increase of calls in the Acme area. He gave highlights from the Metro annual report. At the end of June there will be new rates for home owner insurance. He said owners can get the rate down if you live within five miles of a fire station or have a fire hydrant within 1000 feet of your home. He encouraged people to call their insurance company to check. Grants were received from the tribe to use for rescue equipment. They received twenty-two ballistic vests for protection in case needed during dangerous incidents that required a firefighter to be at the scene to control bleeding of a victim. Four more full time employees have been added to their staff. 70% of calls they receive are medical with an average of them coming in from 6:00 am to 10:00 pm. 12% of the calls are from Acme Township. Other services Metro provides are child safety seat instruction, training to businesses on the use of fire extinguishers, educating people on home cooking fires and installing updated fire alarms.
Zollinger informed the board that not only does the Metro staff perform their regular jobs they also belong to other organizations and boards to help protect the community.
- e. Sheriff:** Deputy Nate Lentz reported now that the weather is improving, cars are picking up speed causing more accidents. There has also been an increase in car and home break-ins Discussed how dangerous the road is on US-31 in front of 4521 Lochenheath Rd.
- f. County:** G. LaPointe informed they are wrapping up the fiscal year and the focus is on the pension deficit. Looking at the operating costs for the jail, there needs to be a more efficient way to handle those with offenses related to drugs and alcohol. An alternative would be counseling and sobriety reporting instead of jail time. The airport is getting concerns from the public on the tree cuttings. The FAA has sited the airport to get rid of the trees for safety issues with birds and animals. They have no choice, if they don't comply federal funding could be pulled from the airport.
- g. Supervisor:** No report

F. SPECIAL PRESENTATIONS: None

G. CONSENT CALENDAR:

1. RECEIVE AND FILE:

- a. Treasurer's Report**
- b. Clerk's Revenue/Expenditure Report and Balance Sheet**
- c. RecycleSmart March 2019**
- e. Draft Unapproved meeting minutes**
 - 1. Planning Commission 03/11/19**
 - 2. Parks & Trails 3/15/19**

2. APPROVAL:

- 1. Accounts Payable Prepaid of \$453,418.35 and Current to be approved of \$7,382.00 (Recommend approval: Clerk, C. Dye)**

Dye requested to have Current to be approved of \$7,382.00 removed from the Consent Calendar.

Motion by Jenema to approve the Consent Calendar as presented with the removal of 2. Approval, 1. Current to be approved of \$7,382.00, supported by White. Roll Call motion carried unanimously.

H. ITEMS REMOVED FROM THE CONSENT CALENDAR:

Dye explained she requested to have the \$7,382.00 removed because the GL number in the report was incorrect and needed a new one.

Motion by Jenema to approve the correct GL number in current to approve, supported by Nelson. Roll Call motion carried unanimously.

I. CORRESPONDENCE:
Brian Kelley letter received 4/02/2019

J. PUBLIC HEARING: None

K. NEW BUSINESS:

1. Approval of MLCC liquor permits Kroupa Farms Winemakers/Cider Manufacture, and Nomad Cidery LLC Manufacture of Spirits and Beer.

The Board discussed the permits for the premise located at 6578-M-72 in Williamsburg. This is to begin the process to submit for local approval for on-premise tasting room permits for products they produce. There are two applications, one for Kroupa Farms, LLC and the other for Nomad Cidery, LLC.

Motion by Nelson to approve the license application for Kroupa Farms LLC, supported by Jenema. Motion carried unanimously.

Motion by Nelson to approve the license application for Nomad Cidery, LLC, supported by Aukerman. Motion carried unanimously.

2. GTCRC Brining of Acme gravel roads 2019

Zollinger explained this is an agreement between the Grand Traverse County Road Commission and Acme Township to brine the roads as listed for 2019. South Bates and Bennett Road will be brined twice. The brining fees are in the township budget.

Motion by Jenema to approve the list as presented with Bennett Road and South Bates to be brined twice, supported by Nelson. Roll Call motion carried unanimously.

3. Approval of Resolution #R-2019-11 supporting Bayside Park playground additions

Zollinger informed this is to move \$10,000 from the 101 Contingency to 402 Bayside Capital fund and another \$10,000 from the 101 fund balance to 402 Bayside Capital fund for the playground additions.

Motion by Dye to approve Resolution #R-2019-11 of the transaction from various funds for the Bayside Park playground additions, supported by Jenema. Motion carried unanimously.

4. Amend Acme Township FOIA Act Procedures and Guidelines (Public Act 523 of 2018)

Dye informed the Board of amendments to the Acme township Freedom of Information Act Procedures and guidelines due to the new Public Act 523 passed by legislature in December 2018. Jeff Jocks, legal council for the township, made revisions as indicated. Requests must provide their complete name, USPS address, telephone number or electronic mail address.

Motion by Jenema to accept the amendments to the FOIA Act, supported by Nelson. Motion carried unanimously.

5. Acme Township Community Master Plan 2019 Draft Memo/Resolution

Winter explained there is a draft of the Master Plan for the board to approve to have the plan reviewed for a 63-day public comment period and notified organizations and entities involved. Comments would be collected by the Planning Commission on the draft plan, once completed a public hearing would be held and finally a resolution to approve the adopted plan.

Motion by Jenema to adopt Resolution #2019-12 authorizing the distribution of the draft for the 63-day public comment period and notifying those involved, supported by Dye. Roll Call motion carried unanimously.

6. Preliminary 2019-2020 Budget Discussion

DRAFT UNAPPROVED

Zollinger stated he has started the budget. The revenue is lower in the new budget estimated \$5,000 and expenditures are up. The budget revenue that is down is not the money that is from taxes or shared revenue, it is from other things like grants. Taxable income for the township along with Metro in the latest assessment that is sent in to county equalization, has increased as well as revenue share. Funds from liquor license fees have gone up by 10%, this revenue goes to the police fund.

It was discussed to put in the budget \$32,000 for a part-time Zoning position. The census was to add it to the budget since there is a need to have assistance to work on future projects and it will be there if needed. Zollinger will update the budget and give to the board to review once he has completed it.

7. Replacement of Golf Cart

Zollinger informed the old cart used for maintenance in the parks, needs to be replaced. He received three bids and found a 2008 EZ-Go from Classic Power Equipment for \$2,899, the lowest of the bids.

Motion by Jenema to purchase 2008 EZ-Go from Classic Power Equipment, supported by Aukerman. Roll Call motion carried unanimously.

8. MTA Resolution Option for Nonpartisan Township Offices

Dye explained Michigan Township Association sent an email to find out if township boards are in support of making nonpartisan township offices an option to townships. This topic is for future legislature. Zollinger said they are asking the board members to support or oppose this position of having nonpartisan elections of township candidates.

The board felt undecided and did not want to make a motion to vote since it is not mandated.

L. OLD BUSINESS:

1. Status of Metro Fire Negotiations

Zollinger informed there is a study session on April 9th in the afternoon. Most of the discussed items have been resolved. There is a funding issue still to be worked out that is based on the assessor's report to equalization that comes out in April. The other way is after everything is settled for the fiscal year and fund the authority based on the settlement report twelve months later. They are looking at how the taxes go and percentage changes. The affirming voting agreement is near being resolving and issues regarding station leases have been resolved.

PUBLIC COMMENT & OTHER BUSINESS THAT MAY COME BEFORE THE BOARD:

Opened at 9:01 pm

John Pulcipher 421 Lochenheath Dr.

Rick Sayler 8265 Sayler Rd.

Brian Kelley

Shawn Winter stated the traffic problem on US-31 is because of the way the road is designed. It is a state highway and the township doesn't have jurisdiction to make any changes. It needs to go to the state level. He suggested to contact our State Representative. He also mentioned the open ceremony for Bayside Park will be on Saturday, May 18.

Public comment closed 9:07 pm

ADJOURN: Motion by Jenema to adjourn, supported by Nelson. Meeting adjourned at 9:07 pm



DRAFT UNAPPROVED

ACME TOWNSHIP SPECIAL BOARD MEETING
ACME TOWNSHIP HALL
3593 Bunker Hill Rd, Williamsburg, MI 49690
Will be held in the old Acme Laundry
Thursday, April 11, 2019, 3:30 pm

CALL TO ORDER WITH PLEDGE OF ALLEGIANCE at 3:30 p.m.

ROLL CALL: Members present: C. Dye, D. Nelson, J. Zollinger, J. Aukerman, A. Jenema, D. White
Members excused: P. Scott

A. LIMITED PUBLIC COMMENT:

Public Comment periods are provided at the beginning and end of each meeting agenda. Members of the public may address the Board regarding any subject of community interest during these periods. Comment during other portions of the agenda may or may not be entertained at the moderator's discretion.

B. APPROVAL OF AGENDA:

Motion by White to approve the agenda as presented, supported by Aukerman. Motion carried unanimously.

C. INQUIRY AS TO CONFLICTS OF INTEREST: None

D. NEW BUSINESS:

1. Resolution of Approval of Metro Fire Settlement

Board discussed and asked question regarding the Resolution #R-2019-15 on revisions to Metro Emergency Services Authority Articles of Incorporation and open issues.

Motion made by Nelson supported by Jenema to approve Resolution#R-2019-15 to revise Metro Emergency Services Authority Articles of Incorporation. Roll call motion carried unanimously.

E. PUBLIC COMMENT & OTHER BUSINESS THAT MAY COME BEFORE THE BOARD:

Beth Friend, East Bay Township Supervisor

ADJOURN: Meeting adjourned 3:53 p.m.



DRAFT UNAPPROVED

ACME TOWNSHIP SPECIAL BOARD MEETING
ACME TOWNSHIP HALL
3593 Bunker Hill Rd, Williamsburg, MI 49690
Will be held in the old Acme Laundry
Monday, April 29, 2019, 6:00 pm

CALL TO ORDER WITH PLEDGE OF ALLEGIANCE

ROLL CALL: Members present: J. Zollinger, J. Aukerman, A. Jenema, D. White, C. Dye, P. Scott

Members excused: D. Nelson

A. LIMITED PUBLIC COMMENT: None

B. APPROVAL OF AGENDA:

Motion by White to approve agenda as presented, supported by Jenema. Motion carried unanimously.

C. INQUIRY AS TO CONFLICTS OF INTEREST: None

D. NEW BUSINESS:

1. Discussion on Planning/Zoning Position.

Board discussed Shawn Winter's notice of resignation as Planning & Zoning Administrator of Acme Township last day will be May 30, 2019. A possible candidate is currently being considered and has asked for their identity to be kept confidential. Board agreed to have Zollinger and Jenema meet with this candidate and to offer them a starting wage between \$48k and \$62k. Final agreement with candidate will be brought back to the Board on May 14th.

2. 2019-20 budget discussion/workshop.

Zollinger discussed some of the changes in the revenues and expenses for the 2019-2020 draft budget report. Board then engaged by asking questions regarding the budget and line items. Discussed wage increases and agreed to have further discussion on May 14th regarding Supervisor, Treasurer, Clerk and Trustee wages once more information is gathered. A revised draft budget report will be presented at the May 14th Board Meeting.

D. PUBLIC COMMENT & OTHER BUSINESS THAT MAY COME BEFORE THE BOARD:

Dye informed the Board about a payment to Grand Traverse Construction for office remodel is being paid before the May 14th meeting. Board agreed to the payment as long as it is within budgeted amount.

Jenema updated the board on the playground equipment install. Parts required for install did not arrive on the truck so install was postponed. Volunteers will be rescheduled when parts are available to complete playground equipment install.

ADJOURN: Meeting adjourned at 7:10 p.m.



**ACME TOWNSHIP PLANNING COMMISSION MEETING
ACME TOWNSHIP HALL
5320 US-31 N, Williamsburg MI 49690
(Former Acme Laundromat at US-31 & Bunker Hill Rd)
April 8, 2019 7:00 p.m.**

CALL TO ORDER WITH PLEDGE OF ALLEGIANCE at 7:00 PM

ROLL CALL: Members present: K. Wentzloff (Chair), S. Feringa (Vice Chair), M. Timmins (Secretary), D. Rosa, D. VanHouten, B. Balentine, D. White

Members excused: none

Staff present: S. Winter, Planning & Zoning Administrator, V. Donn, Recording Secretary

A. LIMITED PUBLIC COMMENT: Opened at 7:01 pm

Brian Kelley, Acme Township, was wondering if there has been any more consideration of paving Bunker Hill Road and stated his concerns if developed the amount of traffic that would increase by it being used as a bypass.

Dr. Angie Keas has a chiropractic care on 4472 Mt. Hope Rd, and said her office has poor visibility and difficult for people to find. She would like to be able to place a sign on M-72 and asked were she should begin to see if this could be discussed. Winter informed her it would need to go to the Zoning Board of Appeals for an ordinance amendment. He will get back with her after speaking with them.

Limited Public Comment closed at 7:08 pm

B. APPROVAL OF AGENDA:

Motion by Timmins to approve the agenda as presented, supported by White. Motion carried unanimously.

C. INQUIRY AS TO CONFLICTS OF INTEREST: None

D. SPECIAL PRESENTATIONS: None

E. CONSENT CALENDAR:

1. RECEIVE AND FILE

- a. Township Board Draft Regular Meeting Minutes 03.05.19
- b. Township Board Draft Special Meeting Minutes 03.19.19
- c. Parks & Trails Committee Draft Regular Meeting Minutes 03.15.19

2. ACTION:

- a. Approve Draft Planning Commission Meeting Minutes 03.11.19

Motion by Feringa to approve the Consent Calendar as presented, supported by Timmins. Motion carried unanimously.

F. ITEMS REMOVED FROM THE CONSENT CALENDAR: None

G. CORRESPONDENCE:

- 1. Barr Environmental – March 2019 Results: Post-Construction Acme Creek Monitoring, Grand Traverse Town Center, Acme, Michigan**
Winter mentioned the written report is available on request if anyone wants to see it.

H. PUBLIC HEARINGS: None

I. OLD BUSINESS:

1. Master Plan Update

Winter informed the Board passed a resolution at their last meeting to approve sending the draft Acme Township Community Master Plan for the mandatory 63-day public review. Beckett & Raeder has distributed the notice to the required agency and municipalities informing them of the review period and the public hearing date on June 10, 2019. The draft copy is available on the township website for review and a paper copy is available at the town hall as well. Public comments will be compiled along with a staff report and presented for the June 10th public hearing. At the close of the hearing the Planning Commission may choose to adopt the plan.

He asked to have a discussion with the Planning Commission of the possibility of editing the future land use map to change the category from “Agriculture” to “Resort Residential”. He has had numerous conversations with a property owner regarding his farm operation on the west side of US-31. His intent for now is to continue farming the land, however, development pressure along the west side of US-31 is making the use increasingly difficult. In addition, the planned Traverse City to Charlevoix Trail will be running through his property creating another barrier to farming the existing orchard. The property is surrounded on three sides with Resort Residential on the current map, occupied by LochenHeath. Editing the map would make the entirety of the west side of US-31 Resort Residential along this portion of the corridor, providing a consistent set of land development options for the all the property owners. The description of the Resort Residential still prescribes lower density development than would be allowed under “Commercial” and would allow the property owner flexibility as previously approved developments around his property materialize. Under the current zoning the property owner will be allowed to continue farming as he has, while also allowing more flexibility in utilizing development options consistent with its rural setting, such as agritourism.

Census of the Planning Commission was to support the editing on the future land map to change the category from Agriculture to Resort Residential. The change will go to Beckett & Raeder to revise in the Master Plan draft.

J. NEW BUSINESS:

1. SUP 2019-02 – Nature’s ReLeaf Medical Marihuana Provisioning Center (PZR 2019-06)

An application has been submitted by Brian Chouinard with Natures’ Releaf, for a medical marihuana provisioning center at the existing structure at 4144 M-72 E. This is a use allowed by right in the C: Corridor Commercial district with a medical marihuana license. No exterior work is proposed under the application at this time. The applicant has received a medical marihuana license from the Township for a provisioning center. Since the Applicant is currently not proposing any changes or improvements to the site, there is no requirement to bring the outstanding items into compliance. This is simply a change of use that per the Zoning Ordinance is required to come before the Planning Commission for review. They will be adding an enclosure dumpster with all four sides screened to a height of six feet with cedar or pressure-treated lumber and shall include native, non-invasive shrubs every five lineal feet.

Motion by Timmins to approve Site Plan Review application SPR 2019-03, submitted by Nature’s ReLeaf to occupy and operate an approximately 3,600 square foot licensed medical marihuana center in the existing retail establishment located at 4144 E M-72, Williamsburg, MI 49690, with the following conditions of a dumpster enclosure with all four sides screened to a height of six feet with cedar or pressure-treated lumber and shall include native, non-invasive shrubs every five lineal feet, supported by Feringa. Motion carried unanimously.

2. Zoning Ordinance Amendment 050 – Planned Development Transfer of Development Rights

Winter informed the purpose of this amendment is to address the density transfer issue that has been discussed. As an option to eliminate the sending zone-to-sending zone density transfer. The

referenced application was found not be consistent with the application and to not be consistent with the future land use map. It was discussed at length whether a sending zone-to-sending zone transfer is consistent with the intent and purpose of the planned development article. Although eliminating the sending zone-to-sending zone transfer option, the draft amendment still maintains the option of a receiving zone-to-receiving zone transfer for consideration. He began the amendment process with making changes in grammatical errors, spelling mistakes and providing clarity to the amendment procedures. The commissioners discussed the changes and gave their edits.

Motion by Timmins to set a public hearing for May 13, 2019 to consider recommending approval of Zoning Ordinance Amendment 050 – Planned Development Transfer of Development Rights with amended changes recommended by the Planning Commission, supported by Balentine. Motion carried unanimously.

K. PUBLIC COMMENT & OTHER PC BUSINESS

Public Comment opened at 7:44 pm

Ann Rundhaug, 3733 Bunker Hill Road, said they should use microphones at the meetings so people could hear the conversation better.

Brian Kelley said if the meetings were televised it would give people a better opportunity to hear what was said.

Closed at 7:48 pm

1. **Planning & Zoning Administrator:** Winter reported the Township submitted their MDNR Trust Fund Grant for the trail extension from the existing TART Trail to Meijer and M-72/US-31 intersection. The preliminary scoring will be given in October. Construction at the Township Hall is progressing. This means there will no longer be use of a meeting room. Until further notice, all public meetings will be held at the former Acme Laundromat at the corner of US-31 and Bunker Hill Rd. The Bayside Park open ceremony is Saturday, May 18 at 12:30. Winter announced he has submitted his letter of resignation to the board to be in effect May 30. He has accepted a position with Beckett & Raeder.
2. **Township Board Report:** White reported the Board is working on the annual budget.
3. **Parks & Trails Committee Report – Marcie Timmins:** No report

ADJOURN: Motion to adjourn by Timmins, supported by Balentine. Meeting adjourned at 7:54 pm

Shawn Winter

From: Paul Thwing <ThwingPa@tcaps.net>
Sent: Tuesday, April 16, 2019 3:22 PM
To: Shawn Winter
Subject: Re: Township Draft Master Plan

Shawn,
While the school is not being used for classes we do plan to maintain the building and grounds. It has occasional uses but nothing regular or ongoing. TCAPS does not have a definite plan for its future use at this time.

Paul D. Thwing, R.A.
Director of Capital Projects & Planning
thwingpa@tcaps.net
p 231.933.1935 f 231.933.1945
1212 Cass Road, Traverse City, Michigan 49685



On Mon, Apr 15, 2019 at 8:42 AM Shawn Winter <swinter@acmetownship.org> wrote:

Thank you, Paul. I will pass this along to our Planning Commission. At one time I believe I heard the school may be used during the Glenn Loomis construction, but it sounds like the Board's new plan wouldn't require that. To your knowledge, does TCAPS have any plans for the facility that would be worth including in the master plan?

Thanks,

Shawn Winter

Planning & Zoning Administrator

Acme Township

6042 Acme Rd | Williamsburg, MI | 49690

Phone: 231.938.1350 Fax: 231.938.1510

swinter@acmetownship.org

From: Paul Thwing <ThwingPa@tcaps.net>
Sent: Friday, April 12, 2019 10:48 AM
To: Shawn Winter <swinter@acmetownship.org>
Subject: Township Draft Master Plan

Shawn,

In reading through the master plan reference is made to Bertha Vos International School. The International School and Bertha Vos have been closed. We used the school as an interim location while the new Eastern Elementary was being constructed, but that discontinued when the new school was opened. The report also mentions the playground and an ice rink/hut. To my knowledge the ice rink/hut has not been used for years and our playground has been dismantled.

I'm not sure of the importance this detail carries in the report but felt sharing this with you was worthwhile.

Please contact me if you have any questions.

Paul D. Thwing, R.A.
Director of Capital Projects & Planning
thwingpa@tcaps.net
p 231.933.1935 f 231.933.1945
1212 Cass Road, Traverse City, Michigan 49685



May 17,2019
Jay Zollinger
Shawn Winter

Gentlemen, your proposal master plan changing the zoning of a private piece of land, Prop # 2801-111-012-10 Bartlett RD,) from residential to recreational for a park is stripping the private owner, David Steffey DDQ,LLC, of any future residential building and drastically reducing its value. This is being done without informing the land the owner of this proposal early in the process to get my input. This creates a significant dilemma for me that has essentially blindsided me and is forcing me into an adversarial response in order to preserve the value and rights of my property. I have offered the Township, county, and state the opportunity to purchase this piece of property for park use which has been listed for almost a year on the real estate market. Yet none of you "wanted it", or at least wanted to pay for it.

I paid the purchase price based on the zoning and have paid my taxes at a rate based on residential use and zoning and significant insurance costs due to the constant trespassing and public use of this property, through the VASA trail which I support. Now, in effect, you are attempting to convert this property into Parkland without my input by "down-zoning" my property to recreational, stripping it of all building rights, and making it essentially useless to me and anybody but you for YOU as a park. This essentially is a land grab, land taking. Your actions and lack of information and contact with me is requiring immediate action on my part including legal consultation to protect my rights. Two legal opinion support the position that this is essentially a "land grab" and that the courts will uphold this and award me damages for the loss of value, insurance payments, back taxes, and legal fees. I'm a big supporter of parks and recreational facilities to help and benefit the health of our population AND creative development to meet the needs of our population and increase the tax base in Acme Township. But, I am not a proponent of this kind of tactics. I would like to set up a meeting with you, myself and likely my attorney, the first week of May.

David Steffey,



Principle, DDQ, LLC
109 19th street
Traverse City, MI 49684
231-499-0576

Bartlett Rd



2018 Summer Tax Bill
www.acmetownship.org

DD #2737

#3,345.02

886

Message to Taxpayer

This tax is due by 9/14/2018

ACME TOWNSHIP OFFICE HOURS:
MONDAY - THURSDAY 7:30AM-6:00PM.
WE NOW HAVE A SECURE DROP BOX OUTSIDE THE
TOWNSHIP OFFICE FOR CONVENIENT 24 HR
ACCESS. NO CASH PLEASE.

PLEASE CHECK YOUR BANK STATEMENT TO CONFIRM YOUR CHECK HAS
CLEARED. IF YOUR CHECK HAS NOT CLEARED WITHIN 2 WEEKS, PLEASE
CALL 231-938-1350 TO CONFIRM WE HAVE RECEIVED YOUR PAYMENT.

TO PAY YOUR TAXES ONLINE GO TO ACMETOWNSHIP.ORG. UNDER "YOUR
TOWNSHIP" CHOOSE "TAX INFORMATION" AND FOLLOW THE PROMPTS.
THERE IS A \$3.00 FEE PLUS THE VENDOR FEE CHARGED BY YOUR CREDIT
CARD COMPANY (NORMALLY 3%).

PROPERTY INFORMATION

TAX DETAIL

Property Assessed to:
DDQ LLC

109 W 19TH ST
TRAVERSE CITY, MI 49684

Prop # 2801-111-012-10 School 28010
Prop Addr BARTLETT RD

Taxable Value 90,000 RESIDENTIAL - VACAN
State Equalized Value 90,000 Class 402
PRE/MBT % 0.0000

Taxes are based upon Taxable Value.
1 mill equals \$1.00 per \$1000 of Taxable Value.
Amounts with no millage are either Special
Assessments or other charges added to this bill.

Legal Description
SW 1/4 OF NW 1/4 EXC THE SUGAR BUSH SUB & EXC S 220' OF E 440' SEC 11
T27N R10W

DESCRIPTION	MILLAGE	AMOUNT
NMC-OPERATING	1.07200	96.48
NMC-DEBT	0.28500	25.65
TBA/ISD	2.91970	262.77
TCAPS-OPERATING	18.00000	1,620.00
TCAPS-DEBT	3.10000	279.00
STATE ED	6.00000	540.00
COUNTY	4.92460	443.21
BATA	0.49780	44.80

OPERATING FISCAL YEARS

The taxes on bill will be used for governmental operations for the
following fiscal year(s)

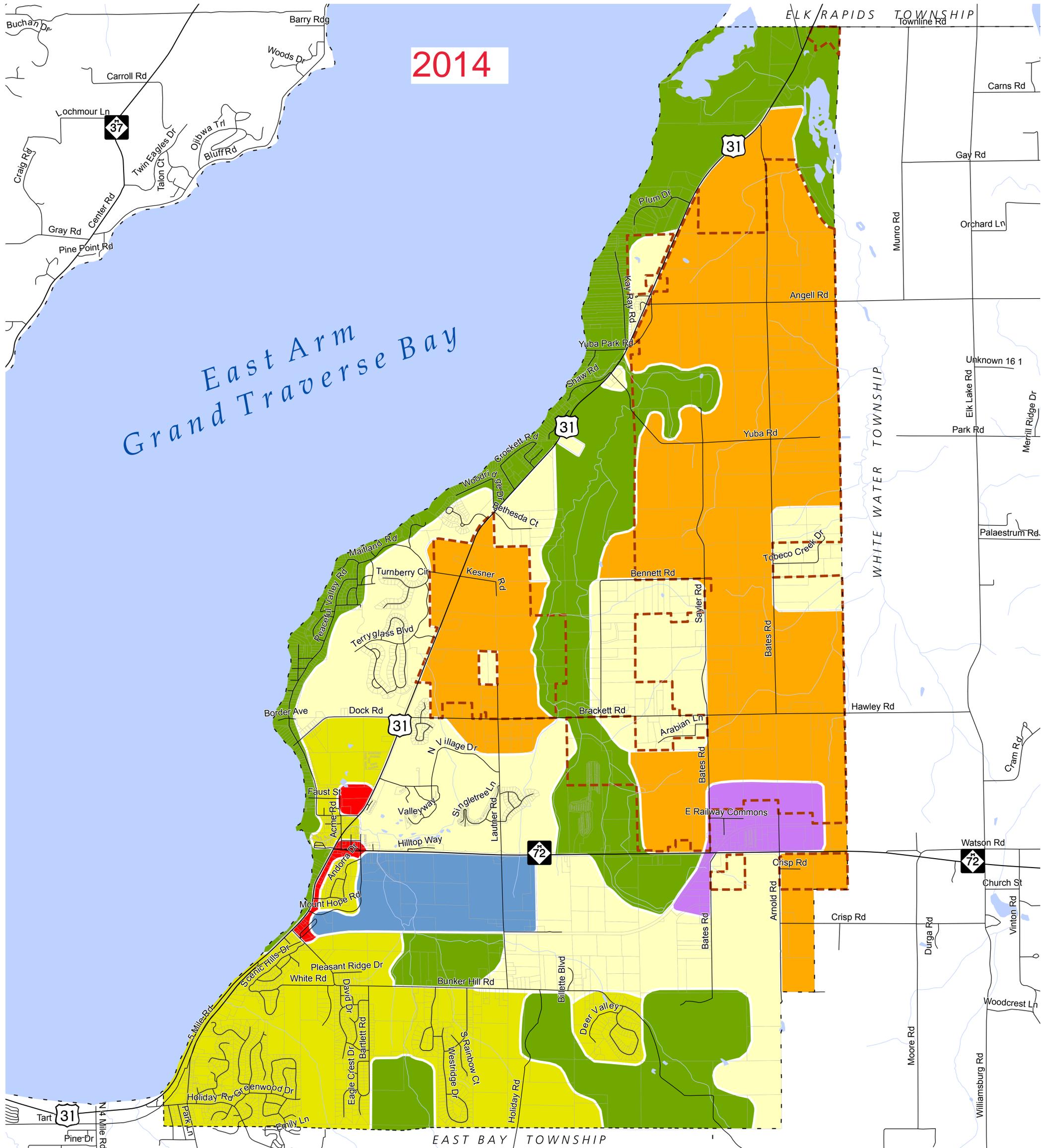
County 01/01/2018 - 12/31/2018
Twn/Cty 07/01/2018 - 06/30/2019
School 07/01/2018 - 06/30/2019
State 10/01/2018 - 09/30/2019

Does NOT affect when the tax is due or its amount

Total Tax 36.79910 3,311.91
Administration Fee 33.11

AMY JENEMA, TREASURER
SARAH LAWRENCE, DEPUTY TREASURER
6042 ACME ROAD
WILLIAMSBURG, MI 49690
231-938-1350

TOTAL AMOUNT DUE 3,345.02



2014

East Arm
Grand Traverse Bay

Acme Township

Future Land Use

Data Sources: Michigan Geographic Data Library, Grand Traverse County Equalization

- Agriculture
- Commercial / Business
- Industrial
- Recreation / Conservation
- Residential - Rural
- Residential - Urban
- Town Center
- PDR Eligible Areas
- Township Boundary
- Road

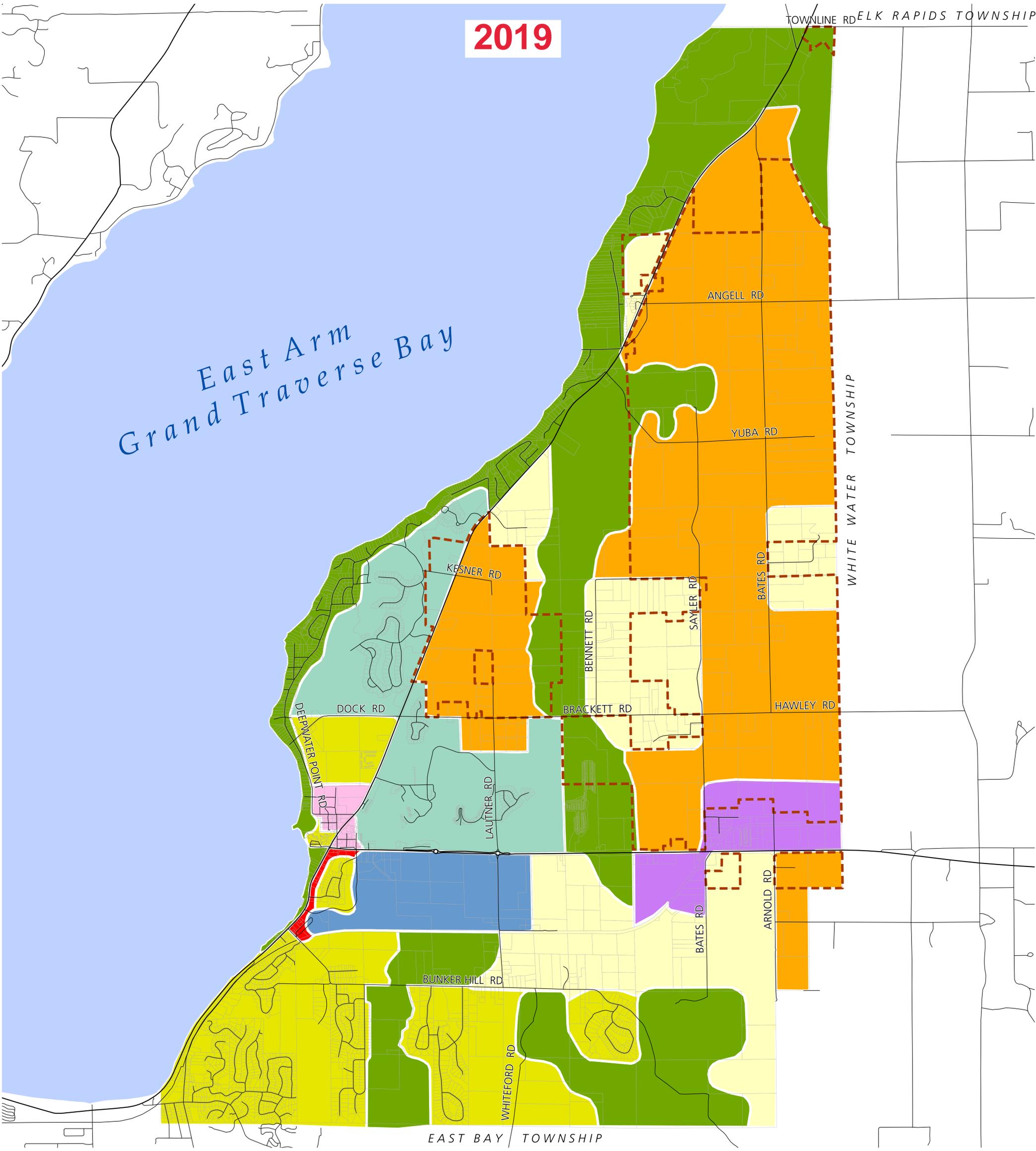


Updated: 11-25-13

2019

TOWNLINE RD ELK RAPIDS TOWNSHIP

East Arm
Grand Traverse Bay



Acme Township



Future Land Use

Data Sources: Michigan Geographic Data Library, Grand Traverse County Equalization

- Agriculture
- Residential - Rural
- Resort Residential
- Commercial / Business
- Residential - Urban
- PDR Eligible Areas
- Light Industrial & Warehousing
- Town Center
- Recreation / Conservation
- Mixed Use Village

Updated: 04-18-19

**ACME TOWNSHIP ZONING ORDINANCE
AMENDMENT 050
ARTICLE XIX – PLANNED DEVELOPMENT**

ARTICLE XIX: PLANNED DEVELOPMENT

19.1 INTENT AND PURPOSE

- a. The Planned Development (PD) option is intended to allow, with Township approval, private or public development which is consistent with the goals and objectives of the Township Master Plan and Future Land Use Map.
- b. The development allowed under this Article shall be considered as an optional means of development only on terms agreeable to the Township.
- c. Use of the PD option will allow flexibility in the control of land development by encouraging innovation through an overall, comprehensive development plan to provide variety in design and layout; to achieve economy and efficiency in the use of land, natural resources, energy and in the provision of public services and utilities; to encourage useful open spaces suited to the needs of the parcel in question; to provide proper housing including workforce housing; or to provide employment, service and shopping opportunities suited to the needs of the residents of the Township.
- d. It is further intended the PD may be used to allow nonresidential uses of residentially zoned areas; to allow residential uses of nonresidential zoned areas; to permit densities or lot sizes which are different from the applicable district and to allow the mixing of land uses that would otherwise not be allowed; provided other community objectives are met and the resulting development would promote the public health, safety and welfare, reduce sprawl, and be consistent with the Acme Township Community Master Plan and Future Land Use Plan Map.
- e. It is further intended the development will be laid out so the various land uses and building bulk will relate to one another and to adjoining existing and planned uses in such a way that they will be compatible, with no material adverse impact of one use on another.
- f. The number of dwelling units for the PD development shall not exceed the number of dwelling units allowed under the underlying Zoning District, unless there is a density transfer approved by the Township.

19.2 DEFINITIONS

Planned Development (PD): means a specific parcel of land or several contiguous parcels of land, for which a comprehensive physical plan meeting the requirements of this Article, establishing functional use areas, density patterns, a fixed network of streets (where necessary) provisions for

public utilities, drainage and other essential services has been approved by the Township Board which has been, is being, or will be developed under the approved plan.

19.3 CRITERIA FOR QUALIFICATIONS

To qualify for the Planned Development option, it must be demonstrated that all of the following criteria will be met:

- a. The properties are zoned R-1, R-2, R-3, A-1, MHN, C, CF, or B-4 Districts.
- b. The use of this option shall not be for the sole purpose of avoiding the applicable zoning requirements. Any permission given for any activity, building, or use not normally allowed shall result in an improvement to the public health, safety and welfare in the area affected.
- c. The PD shall not be used where the same land use objectives can be carried out by the application of conventional zoning provisions or standards. Problems or constraints presented by applicable zoning provisions shall be identified in the PD application.
- d. The PD option may be effectuated only when the proposed land use will not materially add service and facility loads beyond those considered in the Township Master Plan, and other public agency plans, unless the proponent can prove to the sole satisfaction of the Township that such added loads will be accommodated or mitigated by the proponent as part of the PD.
- e. The PD shall not be allowed solely as a means of increasing density or as a substitute for a variance request; such objectives should be pursued through the normal zoning process by seeking a zoning change or variance.
- f. The PD must meet, as a minimum, five (5) of the following nine (9) objectives of the Township. If the PD involves a density transfer it shall include objective f(9) in addition to its five (5) objectives.
 1. To permanently preserve open space or natural features because of their exceptional characteristics, or because they can provide a permanent transition or buffer between land uses.
 2. To permanently establish land use patterns which are compatible, or which will protect existing or planned uses.
 3. To accept dedication or set aside open space areas in perpetuity.
 4. To provide alternative uses for parcels which can provide transition buffers to residential areas.
 5. To promote the goals and objectives of the Township Master Plan.

6. To foster the aesthetic appearance of the Township through quality building design and site development, provide trees and landscaping beyond minimum requirements; the preservation of unique and/or historic sites or structures; and the provision of open space or other desirable features of a site beyond minimum requirements.
7. To bring about redevelopment of sites where an orderly change of use or requirements is determined to be desirable.
8. To promote the goals and objectives of the Acme Township Placemaking Plan and the US-31 and M-72 Business District zoning.
9. To promote sustainable development especially on parcels with active farmland and orchards as defined by MCL 324.36201 (h), or on parcels that contain unique cultural, historical or natural features which should be preserved.

19.4 USES PERMITTED

- a. A land use plan shall be proposed for the area to be included within the PD. The land use plan shall be defined primarily by the Township Zoning Ordinance Districts that are most applicable to the various land use areas of the PD.
- b. Uses permitted and uses permitted subject to Special Use Permit approval in this Ordinance may be allowed within the districts identified on the PD plan, except that some uses may be specifically prohibited from districts designated on the PD plan. Alternatively, the Township may allow uses not permitted in the district if specifically noted on the PD plan. Conditions applicable to uses permitted subject to Special Use Permit approval shall be used as guidelines for design and layout but may be varied by the Planning Commission provided such conditions are indicated on the PD plan.

19.5 HEIGHT, BULK, DENSITY AND AREA STANDARDS

The standards about height, bulk, density, and setbacks of each district shall be applicable within each district area designated on the plan except as specifically modified and noted on the PD plan.

19.6 DENSITY TRANSFER

Acme Township encourages flexibility in the location and layout of development, within the overall density standards of this Ordinance. The Township therefore will permit residential density to be transferred from one parcel (the "sending parcel") to another (the "receiving parcel"), as provided below. For purposes of this Section, all sending parcel(s) and receiving parcel(s) shall be considered together as one PD parcel.

- a. All density transfers require a Special Use Permit approved by the Township Board, upon the recommendation of the Planning Commission, as part of a PD application. A Special Use Permit application for a density transfer shall be submitted and include:
 1. Signatures by the owners (or their authorized representatives) of the sending and receiving parcels.

2. A proposed development plan (subdivision and/or site plan) for the receiving parcel.
 3. Density calculations for both the sending and receiving parcels.
- b.** Upon receipt of a Special Use Permit application for a density transfer the Township shall determine:
1. The number of allowable dwelling units permitted on the receiving parcel(s) based on the current zoning classification.
 2. The number of eligible dwelling units allowed to be transferred to the receiving parcel(s). The transferred dwelling units shall not increase the allowable density by more than 50%.
 3. The number of allowable dwelling units permitted on the sending parcel(s) based on the current zoning classification.
 4. The number of eligible dwelling units allowed to be transferred from the sending parcel(s).
- c.** The Township Board, upon recommendation from the Planning Commission, may grant a Special Use Permit allowing the transfer to the receiving parcel(s) of some or all of the allowable residential dwelling units from the sending parcel(s) only if it finds that all of the following have been satisfied:
1. The sending parcels dwelling unit transfers are actual available dwelling units considering all limitations, including wetlands, and those units are documented.
 2. The addition of the transferred dwelling units to the receiving parcel will not increase the maximum allowable density by more than 50%.
 3. The addition of transferred dwelling units will not adversely affect the area surrounding the receiving parcel.
 4. The density transfer will benefit the Township by protecting developable land with conservation value on the sending parcel(s).
 5. The density transfer will be consistent with the sending and receiving zones designated on the Dwelling Unit Density Transfer Map. Exception may be granted by Township Board, upon the recommendation of the Planning Commission, to allow a density transfer FROM a receiving zone TO a receiving zone if:
 - a) The sending parcel(s) is deemed to contain unique natural, cultural, or historical features which should be preserved

- b) The density transfer to the receiving parcel will not place an undue hardship or strain on the Township infrastructure
 - c) The density transfer is in accordance with the Intent and Purpose of this Article
6. The parcel(s) receiving the density transfer will not exceed the land development build out (buildings, parking, setbacks, open space, etc.) prescribed by the Zoning District of the property unless waived by the Planning Commission and Township Board.
 7. Sending parcel(s) satisfying the requirements this section shall be executed and recorded in the office of the Grand Traverse County Register of Deeds, reducing the number of dwelling units allowed to be constructed on the sending parcel(s) by the number of dwelling units transferred. This reduction in density shall not prevent the owner(s) of the sending parcel(s) from developing the remaining allowable dwelling units under either an open space or conventional development plan, provided that all open space requirements are satisfied. The land area subject to the land transfer will remain perpetually in an undeveloped state by means of a conservation easement, or other legal means that runs with the land, as prescribed by the Township Zoning Ordinance, and approved by the Township.

DRAFT

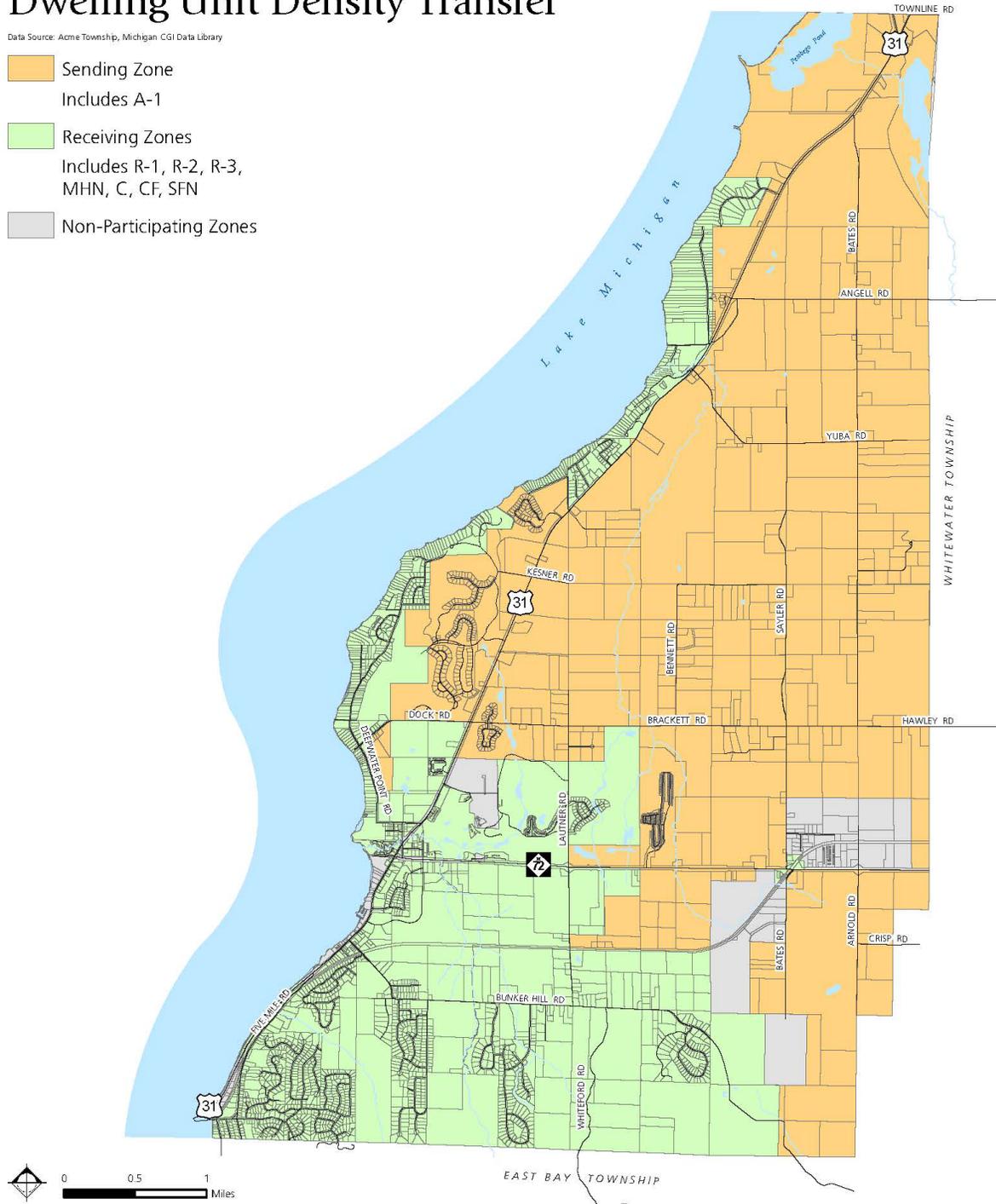
Figure 19.1: Dwelling Unit Density Transfer Map

ACME TOWNSHIP

Dwelling Unit Density Transfer

Data Source: Acme Township, Michigan CGI Data Library

- Sending Zone
Includes A-1
- Receiving Zones
Includes R-1, R-2, R-3, MHN, C, CF, SFN
- Non-Participating Zones

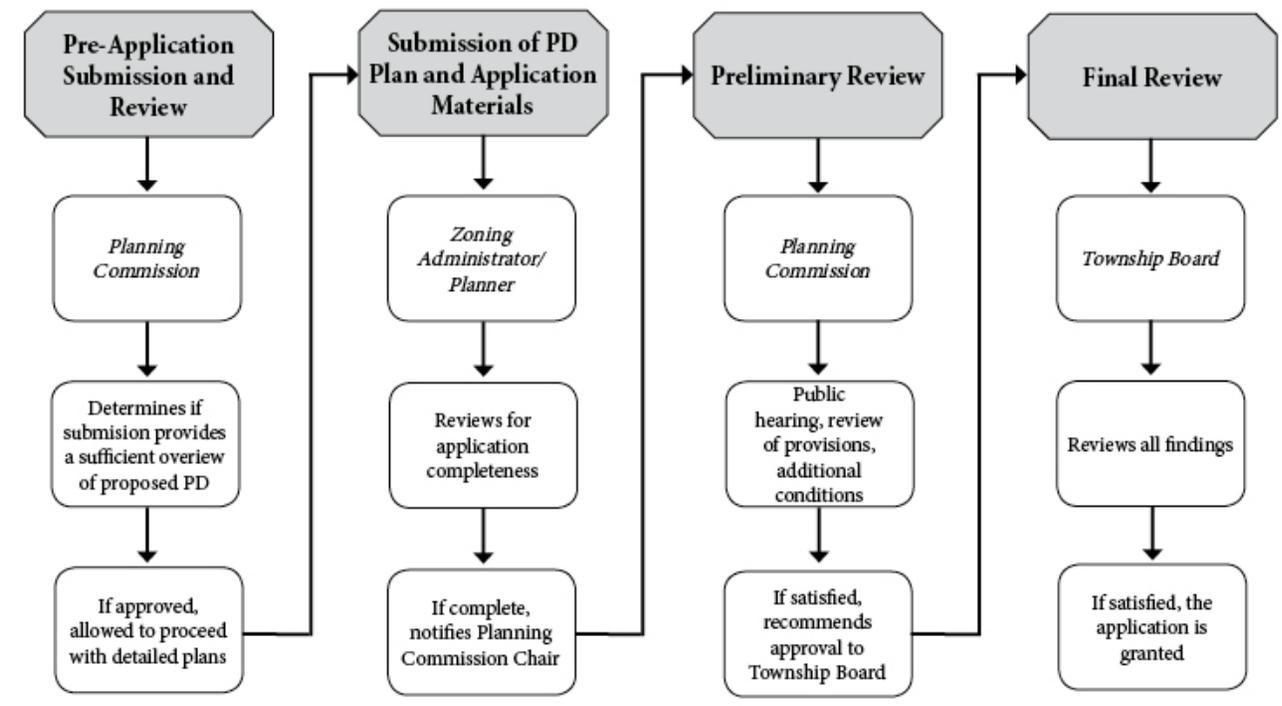


B R i
Beckett&Raeder

19.7 PLANNED DEVELOPMENT APPLICATION SUBMISSION AND REVIEW PROCEDURES

The PD application submission and review procedures follow four (4) primary steps: 1) pre-application submission and review, 2) submission of PD plan and application materials, 3) preliminary review and recommended approval or denial of the PD, and 4) final review and approval or denial of the PD. This procedure is illustrated in the Figure 19.2 and elaborated upon in the following subsections. A PD plan involving a density transfer shall have the transfer approved through a Special Use Permit as outlined in Section 19.6 after the pre-application submission and review step.

Figure 19.2: Planned Development Application Submission and Review Process



19.7.1 PRE-APPLICATION SUBMISSION AND REVIEW

- a. Any person owning or controlling land in the Township may make application for consideration of a PD. Such application shall be made by presenting a request for a preliminary determination to whether a parcel qualifies for the PD option.
- b. The request shall be submitted to the Township and the submission shall include the information required below.
 1. Proof the criteria set forth in the Criteria for Qualification section above, are or will be met.
 2. A schematic land use plan containing enough detail to explain the role of open space; location of land use areas, streets providing access to the site, pedestrian and vehicular circulation within the site; dwelling unit density and types; and buildings or floor areas contemplated, as applicable.

3. A plan to protect natural features or preservation of open space or greenbelts.
 4. A storm water management plan incorporating low impact development (LID) water quality technologies, such as, but not limited to, rain gardens, rooftop gardens, vegetated swales, cisterns, permeable pavers, porous pavement, and filtered storm water structures.
 5. The Planning Commission shall review the applicant's request for qualification. If approved, the applicant may then continue to prepare a PD Plan on which a final determination will be made.
- c. Based on the documentation presented, the Planning Commission shall make a preliminary determination about whether a parcel(s) qualifies for the PD option under the Criteria for Qualification in Section 19.3. If approved, the applicant may then continue to prepare a PD plan on which a final determination will be made. An approved request for qualification is not a guarantee for final PD approval.

19.7.2 SUBMISSION OF PLANNED DEVELOPMENT PLAN AND APPLICATION MATERIALS

The application, reports, and drawings shall be filed in paper and digital format. Printed drawings shall be on 24" x 36" sheets. All drawings shall be provided to the Township in AutoCad™, MicroStation, or similar site civil / architectural drawing format requested by the Planning Commission. Other graphics and exhibits, text and tabular information shall be provided in Adobe Acrobat™ "pdf" format. All drawings shall be created at a scale not smaller than one (1) inch equals one hundred (100) feet, unless otherwise approved by the Township.

- a. A proposed PD plan application shall be submitted to the Township for review that contains the following:
1. A boundary survey of the exact acreage prepared by a registered land surveyor or civil engineer.
 2. A topographic map of the entire area at a contour interval of not more than two feet. This map shall show all major stands of trees, bodies of water, wetlands and unbuildable areas
 3. A proposed development plan showing the following, but not limited to:
 - a) Land use areas represented by the Zoning Districts listed as A-1, R-1, R-2, R-3, MHN, C, CF, or B-4 of this Ordinance.
 - b) A circulation plan including vehicular circulation patterns, major drives and location of vehicular access, parking areas, non-motorized circulation patterns, pedestrian and bicycle facilities, and cross sections of public and private streets.
 - c) Transition treatment, including minimum building setbacks to land adjoining the PD and between different land use areas within the PD.

- d) The general location of nonresidential buildings and parking areas, estimated floor areas, building coverage and number of stories or height.
 - e) The general location of residential unit types and densities and lot sizes by area.
 - f) The general location and type of all Low Impact Development (LID) storm water management technologies.
 - g) Location of all wetlands, water and watercourses, proposed water detention areas and depth to groundwater.
 - h) The boundaries of open space areas that are to be preserved or reserved and an indication of the proposed ownership.
 - i) A schematic landscape treatment plan for open space areas, streets and border/transition areas to adjoining properties.
 - j) A preliminary grading plan, showing the extent of grading and delineating any areas, which are not to be graded or disturbed.
 - k) A public or private water distribution, storm and sanitary sewer plan.
 - l) Elevations of the proposed buildings using traditional building materials shall be used. Materials such as exterior insulation finish system (EIFS), fluted concrete masonry units, concrete panels, panel brick, and scored concrete masonry unit block are not considered traditional building materials.
 - m) A written statement explaining in detail the full intent of the applicant, showing dwelling unit types or uses contemplated and resultant population, floor area, parking and supporting documentation, including the intended schedule of development.
4. A market study, traffic impact study, and /or environmental impact assessment, if requested by the Planning Commission or Board of Trustees.
 5. A pattern book or design guidelines manual if requested by the Planning Commission or Board of Trustees.
- b.** The Township Zoning Administrator and/or Planner will review the PD plan application for completeness. Once deemed complete, the Township Zoning Administrator and/or Planner shall notify the Planning Commission Chair who will place the application on the agenda for a preliminary review by the Planning Commission.

19.7.3 PRELIMINARY REVIEW AND APPROVAL OF PLANNED DEVELOPMENT

Planning Commission Review of Proposed PD Plan:

- a.** Upon notification from the Township Zoning Administrator and/or Planner of a complete PD plan application, the Planning Commission shall review the proposed PD plan and make a determination about the proposal's qualification for the PD option and for adherence to the following objectives and requirements:
 - 1. The proposed PD adheres to the conditions for qualification of the PD option and promotes the land use goals and objectives of the Township.
 - 2. All applicable provisions of this Article shall be met. If any provision of this Article shall be in conflict with the provisions of any other Section of this Article, the provisions of this Section shall apply to the lands embraced within a PD area.
 - 3. There will be at the time of development, an acceptable means of disposing of sanitary sewage and of supplying the development with water and the road network, storm water drainage system, and other public infrastructure and services are satisfactory.
- b.** The Planning Commission shall hold a public hearing on the PD plan and shall give notice as provided in Section 9.1.2(c).
- c.** After the public hearing and review, the Planning Commission shall report its findings and recommendations to the Township Board.

19.7.4 FINAL REVIEW AND APPROVAL OF PLANNED DEVELOPMENT

- a.** On receiving the report and recommendation of the Planning Commission, the Board shall review all findings. If the Board shall decide to grant the application, it shall direct the Township attorney to prepare a PD contract setting forth the conditions on which such approval is based. Once the PD contract is prepared it shall be signed by the Township and the applicant.
- b.** The PD contract shall become effective on execution after its approval. The PD Contract shall be recorded at the Grand Traverse County Register of Deeds' office. Once an area has been included within a plan under a PD contract, no development may take place in such area nor may any use of it be made except under such PD contract, unless under an approved amendment, or the plan under a PD contract is terminated. Amendments to the PD plan and/or PD contract shall follow the processes in Section 19.11.
- c.** An approved plan under a PD contract may be terminated by the applicant or the applicant's successors or assigns, before any development within the area involved, by filing with the Township and recording at the Grand Traverse County Register of Deeds an affidavit so stating. The approval of the plan under the PD contract shall terminate on such recording.
- d.** No approved plan under a PD contract shall be terminated after development begins except with the approval of the Board and of all parties in interest in the land.

- e. Within one year following execution of the PD contract by the Township Board, final site plans for an area embraced within the PD must be filed as provided. If such plans or plats have not been filed within the one-year period, the right to develop the approved plan under the PD contract shall be automatically terminated unless an extension is requested in writing by the applicant and authorized by the Township Board. The Township Board may authorize an extension of up to one (1) year.
- f. The termination of a PD contract involving a density transfer shall nullify the transaction and all transferred densities shall return to the original sending parcel(s). The return of the transferred densities shall be recorded at the Grand Traverse County Register of Deeds' office.

19.8 SUBMISSION OF FINAL SITE PLANS; SCHEDULE FOR COMPLETION OF PLANNED DEVELOPMENT

Before any permits are issued for the PD, final site plans and open space plans for a project area shall be submitted to the Township for review and approval by the Planning Commission, and where applicable the Township Board, of the following:

- a. Review and approval of site plans shall comply with Article VIII: Site Plans, as well as this Section except as otherwise modified in the approved plan and PD contract.
- b. Before approving of any final site plans, the Planning Commission shall decide that:
 1. All portions of the project area shown on the approved plan for the PD for use by the public or the residents of lands within the PD have been committed to such uses under the PD contract;
 2. The final site plans are in conformity with the approved contract and plan for the PD;
 3. Provisions have been made under the PD contract to provide for the financing of any improvements shown on the project area plan for open spaces and common areas which are to be provided by the applicant and that maintenance of such improvements is assured under the PD contract.
 4. If development of approved final site plans is not substantially completed in three years after approval, further final submittals under the PD shall stop until the part in question is completed or cause can be shown for not completing same.
- c. The applicant shall be required, as the PD is built, to provide the Township with "as built" drawings in both paper and digital format following the same provisions outlined in Section 19.7.

19.9 FEES

Fees for review of PD plans under this Section shall be established by resolution of the Township Board.

19.10 INTERPRETATION OF APPROVAL

Approval of a PD under this Section shall be considered an optional method of development and improvement of property subject to the mutual agreement of the Township and the applicant.

19.11 AMENDMENTS TO PLANNED DEVELOPMENT PLAN

Proposed amendments or changes to an approved PD plan and/or PD contract shall be presented to the Planning Commission following the same procedures for amending a Special Use Permit outlined in Section 9.1.4. The Planning Commission shall decide whether the proposed modification is of such minor nature as not to violate the area and density requirements or to affect the overall character of the plan, and in such event may approve or deny the proposed amendment. If the Planning Commission decides the proposed amendment is material in nature and warrants a major amendment, the Planning Commission shall hold a public hearing and make a recommendation to the Board to approve or deny the request.

DRAFT



Acme Township			
Planning & Zoning Report No. 2019-07			
Prepared:	May 7, 2019	Pages:	13
Meeting:	May 13, 2019	Attachments:	Yes
Subject:	SPR 2019-04 Skymint – Green Peak Innovations		

Application No.: SPR 2019-04

Project: Skymint: Green Peak Innovations LLC – Medical Marihuana Growing Facility
6140 N Arnold Rd, Williamsburg, MI 49690

Request: Site Plan Review to construct and operate a licensed medical marijuana provisioning center.

Applicant: D. Harry Luzius Jr. – Bob Mitchell & Associates
P.O. Box 306, Kingsley, MI 49649

Owner: Jeffrey Donahue – Green Peak Innovations LLC
10070 Harvest Park, Dimondale, MI 48821

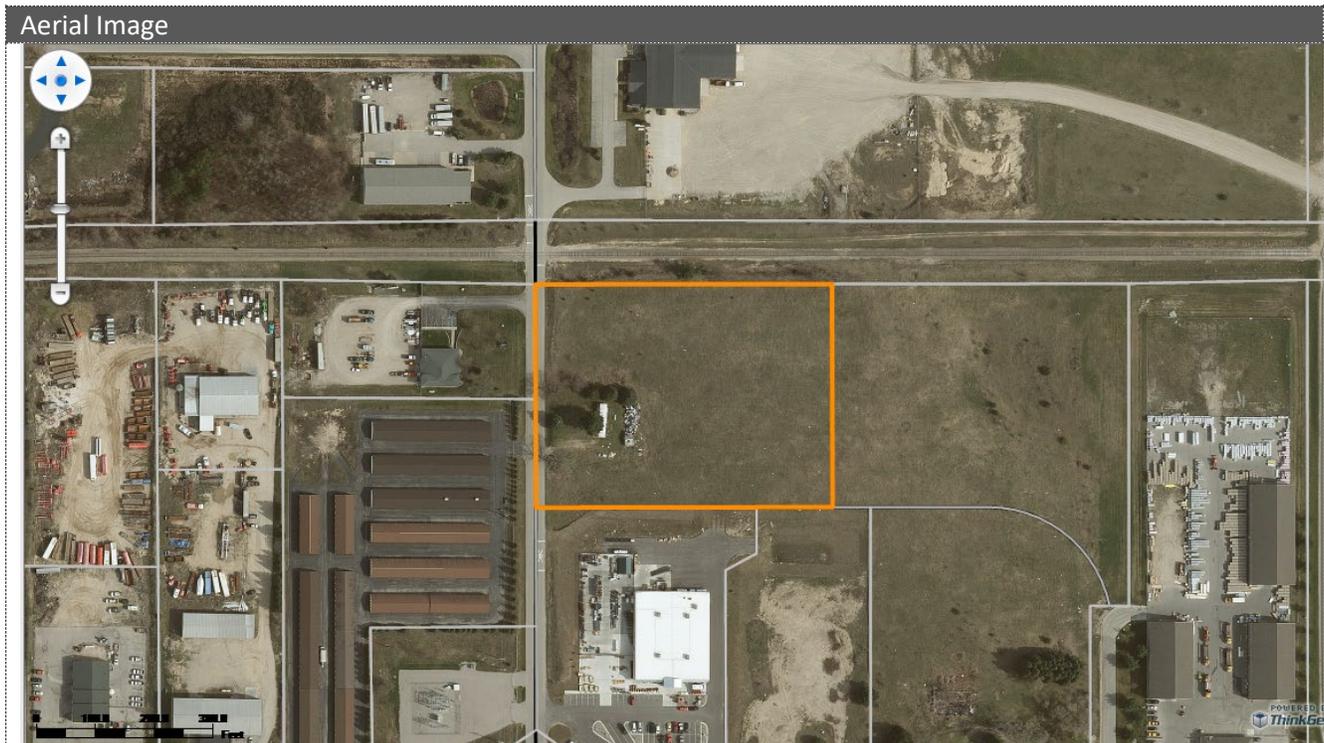
I. OVERVIEW

General Description and Recommendation

The Applicant is proposing to build a 3,456 sq ft medical marihuana provisioning center. The proposed use is allowed by right in the B-4: Material Processing and Warehousing District. The property is located on the east side of N Arnold Rd directly north of the Tractor Supply Company. The site used to have a residential structure that has since been removed. Existing residential electric utilities and abandoned drain field will be removed as part of the project. The site is relatively flat with a slight grade towards N Arnold Rd and is mostly clear of trees. The property owner is a member of Green Peak Innovations LLC and has obtained a local license from the township for the proposed use.

The proposed use is consistent with the intent and purpose of the zoning district as well as the future land use category. Staff recommends approval of the site plan with consideration of the conditions mentioned in the suggested motion at the end of this report.

Subject Property Location	
Address	Parcel Number
6140 N Arnold Rd	28-01-015-005-05
Legal Description	
PART OF SW 1/4 SEC 32 T28N R9W COM AT SW CNR SAID SECTION TH N 00 DEG 55'01" W 583.51' TO POB TH N 89 DEG 10'55" E 504.61' TH N 00 DEG 55'01" W 380' TO SOUTHERN EDGE OF RR R/W TH S 89 DEG 10'55" W 504.62' TH S 00 DEG 55'01" E 380' TO POB SPLIT/COMBINED ON 07/18/2012 FROM 01-015-005-02;	



Existing Conditions of Subject Property	
Zoning	Existing Uses
B-4: Material Processing and Warehousing	Vacant lot
Area	Existing Permits / Prior Approvals
4.4 acres	n/a

Adjacent Zoning and Land Uses		
Location	Zoning	Land Use
North:	B-4	Railroad
East:	B-4	Vacant, Michael Savage
Southeast	B-4	Vacant, Silver Gate Investment LLC
South:	B-4	Tractor Supply Company, Kanaia Investments Inc
Southwest:	B-4	Storage Units, Acme Mini Storage LLC
West:	B-4	Industrial, KFD LLC

Relationship to Master Plan

Future Land Use Category – Industrial

The Industrial category encompasses land use for light industrial, trade related business and warehousing enterprises in the Township. The existing uses currently are located along state highway M72 and Bates Road (an area comprising some existing development of higher density industrial and business uses). This region is seen as appropriate for the location of any future light industrial facilities that should develop with good management of signage, landscaping, utility lines, and related facilities and other possible features such as towers for cellular communication. While special areas in the Township are designated for large-scale light industrial facilities, it is compatible with the Acme Master Plan to also encourage the development of home occupations and concomitant cottage industries in or out of this area.

The main objectives of the Industrial land use category are to provide for non-intrusive industrial operations in high density areas that stimulate the economic vitality of the Township without negatively impacting the surrounding area, and to provide employment opportunities for residents of the Township and surrounding region. Sound access management planning should be included in any new industrial developments.

The intended uses in this category include, but are not limited to: enclosed wholesale facilities, warehouses, high technology industries, light manufacturing, telecommunications industry, and other non-intrusive industrial enterprises. Land uses in the Industrial area should comport with the policies and actions of the Master Plan.

(p. 72, Acme Township Community Master Plan, adopted August 11, 2014)

II. SUBMITTED APPLICATION MATERIALS

The tables below present the items submitted with the application for the proposed project. These items have been reviewed in accordance with the processes set forth in the Zoning Ordinance

Drawings		
Sheet	Title	Date (revised)
1	Cover Sheet	04.15.19
2	Existing Conditions and Demolition	04.15.19
3	Site Plan	04.15.19
4	Soil Erosion and Storm Water Runoff Plan	04.15.19
5	Details Sheet	04.15.19
L101	Landscape Plan	04.15.19
L102	Details, Areas of Snow Storage and Specification	04.15.19
C-101	Graphic Site Plan	04.15.19
C-102	Photometric Plan	04.15.19
A-101	Graphic Floor Plan	04.15.19
A-300	Elevations	04.15.19
n/a	Skymint Rendering	n/a

Agency Reviews		
Agency	Status	Permit No. (Date)
Grand Traverse County Environmental Health Department	Permit Submitted – well and septic	38843 (04.30.19)
Grand Traverse Metro Fire Department	Review Submitted – may proceed	P-1221-M6648 (05.02.19)
Grand Traverse County Soil Erosion & Sedimentation Control	Waiver Submitted – no permit required	(04.28.19)
Grand Traverse County Road Commission	Permit Submitted – driveway location approved	2019-000069 (04.01.19)
Gosling-Czubak Storm Water Plan Review	Pending	

Additional Documentation	
Submitted With Application Packet	
<ul style="list-style-type: none"> - Site Plan Review Application Form - Project Narrative - Escrow Policy Acknowledgement Form 	

- Owner Authorization
- Stormwater Calculations

III. ZONING ORDINANCE REVIEW

Listed below are the applicable sections of the Zoning Ordinance that pertain to the proposed project. Items that do not satisfy the standards required by the Zoning Ordinance have been indicated with **bold, red text**.

Zoning District	
§ 6.11	B-4: Material Processing & Warehousing District
§ 6.11.1	<p>Intent and Purpose</p> <p>This district is intended to accommodate those industrial uses, warehousing and storage, and related activities that generate a minimum of noise, glare, odors, dust, vibration, air and water pollution, fire and safety hazards, or any other potentially harmful or nuisance characteristics. It is designed to accommodate wholesale, warehouse, agricultural sales and service related businesses and light industrial activities whose operational and physical characteristics do not detrimentally affect any of the surrounding district.</p>
§ 6.11.2	<p>Uses Permitted By Right</p> <p>i. Medical Marihuana Facilities</p> <p>iv. Medical Marihuana Provisioning Center. By right, but that no more than three (3) may be licensed and operating at a given time, and no more than three (3) licenses may be issued.</p> <p><i>Note: The proposed use meets the intent and purpose of the district and is use allowed by right. Green Peak Industries currently holds a provisioning center license in the B-4 District (MM-2018-08-B4-PC)</i></p>

§ 6.13.1 Schedule Limiting Height, Bulk, Density and Area by Zoning District		
Standard	Requirement	Site Plan
Minimum Lot Size	n/a	4.40 acres
Minimum Parcel Width	150 ft	380 ft
Maximum Height	3 stories / 40 ft	1 story / 17 ft
Front Setback	20% of lot depth: Min. 40 ft; Max. 60 ft	Lot depth = 504.61 ft; Setback = 60 ft Site Plan = 60 ft
Side Setback	10% of lot width: Min. 10 ft; Max. 50 ft	Lot width = 380 ft; Setback = 38 ft Site Plan = 38 ft (n), 40 ft (s)
Rear Setback	10% of lot depth: Min. 10 ft; Max. 50 ft	Lot depth = 504.61 ft; Setback = 50.5 ft Site Plan = 50 ft (structure = 268 ft)
Maximum Lot Coverage	n/a	27,630 sf

§ 7.1.1 Sanitation Requirements		
Standard	Requirement	Site Plan
Meet GT County Environmental Health Department Ordinance [§7.1.1(a)]	Permit issued for sanitary waste.	Existing well to be abandoned, septic drain field and tank removed. New 1,600-gallon double compartment septic tank with 1,000-gallon housing

		chamber on north side of bldg. Drain field on northwest side of bldg.
--	--	---

§ 7.4 Signs		
Standard	Requirement	Site Plan
Regulations By Zone – Agricultural District [§7.4.6(d)]	Various – will be reviewed and permitted separately	Elevations show a wall sign on the west and south façades. Site plan shows a free-standing sign on the west side.

§ 7.5 Off-Street Parking and Loading Regulations		
Standard	Requirement	Site Plan
Parking Required [§7.5.1(b)]	On the same lot or within 300 ft	Parking provided on site
Parking Space Requirements [§7.5.3(f)(1)]	Min. – 3 spaces Max. – 17 spaces	17 total spaces – 16 regular spaces; 1 ADA space; 2 bike loops
Off-Street Parking Location [§7.5.4(a)]	Located in rear and/or side yard	Parking located in the south side yard adjacent to building
Maneuvering Lane & Space Dimensions [§7.5.4(b)(1)]	Lane Width (min.) – 20 ft Space Width (min.) – 9 ft Space Length (min.) – 20 ft	Lane Width – 24 ft Space Width – 9 ft Space Length – 20 ft
Parking Access Means [§7.5.4(b)(2)]	Maneuvering lanes, no backing up onto streets	Access provided through driveway and maneuvering lanes
Driveways [§7.5.4(b)(3)]	Clearly defined driveways that do not cross residentially zoned land	Driveway permitted by GTCRC, does not cross other zoning districts
Driveway Spacing [§7.5.4(b)(4)]	25 ft from parcel zoned for single-family	Surrounding properties zoned B-4
Surface Material [§7.5.4(b)(5)]	Seal coat, blacktop or equivalent; durable, dustless surface	Asphalt parking lot surface
Lighting [§7.5.4(b)(6)]	Adequate parking lot lighting during operation, down- and shield-lighting	2 single-luminaires and 1 double-luminaire. All 20 ft tall.
Buffering, Landscaping & Screening – buffering strip [§7.5.4(c)(1)]	Parking lots screened by planting strips on all sides visible by neighboring properties	Screening provided by landscaping on all sides
Buffering, Landscaping & Screening - plantings [§7.5.4(c)(2)]	a. 10’ buffer along ROW b. 3 evergreen/canopy trees along parking ROW frontage c. 36” high continuous hedge/berm/wall screen d. Screened refuse receptacle	a. Approx. 25 ft buffer b. See § 7.5.6(f) below c. Screening established through continuous conifer and ornamental trees d. Enclosure meets the required standards; exceeds the number of required shrubs, placed where feasible due to pavement

§ 7.5 Off-Street Parking and Loading Regulations

Standard	Requirement	Site Plan
Buffering, Landscaping & Screening – tree islands, snow storage [§7.5.4(c)(3)]	a. 1 canopy tree per 10 spaces in islands distributed evenly in middle of row b. 2 Canopy trees in islands at end of each row c. n/a d. Designated snow storage	a. 2 treed islands with one canopy tree each satisfied. b. 4 double-tree islands at the end of each row not provided c. n/a d. Dedicated snow storage area provided
Loading Zone [§7.5.5(a)]	10 ft x 55 ft loading zone; 14’ vertical clearance	10’ x 55’ loading zone, ample maneuvering space provided
Loading Approach Surface [§7.5.5(b)]	Asphaltic or cement binder	Asphalt
Loading Access [§7.5.5(c)]	Direct access of public street	Accessed off N Arnold Rd
Loading Location [§7.5.5(d)]	Located in rear yard only	Located in rear yard
Loading Interference [§7.5.5(e)]	Shall not interfere with parking spaces	Loading zone and maneuvering area separate from parking area
Loading Screening [§7.5.5(f)]	Screened from public ROW, adjacent office or residential districts	Located behind building, screening established through proposed landscaping, surrounded by B-4 land

§ 7.5.6 Landscaping

Standard	Requirement	Site Plan
Application [§7.5.6(b)(1-6)]	Landscape plan requirements	All required information provided
Standards & Criteria [§7.5.6(c)]	Planting standards	Applicable standards satisfied
Planting Materials [§7.5.6(d)]	Non-invasive, native species	<p>The following species do not meet the native, non-invasive standard:</p> <ul style="list-style-type: none"> - <i>Gleditsia triacanthos var. inermis</i> ‘Skycole’ – Skyline Thornless Honeylocust - <i>Platanus x acerifolia</i> ‘Morton Circle’ – Exclamation Planetree - <i>Quercus bicolor</i> – Swamp White Oak - <i>Quercus macrocarpa</i> – Bur Oak - <i>Picea glauca</i> – White Spruce - <i>Cercis canadensis</i> – Eastern Redbud - <i>Aronia melanocarpa</i> ‘Low Scape Mound’ – Low Scape Mound Chokeberry - <i>Buxus</i> ‘Green Velvet’ – Green Velvet Boxwood - <i>Buxus</i> ‘Green Mountain’ – Green Mountain Boxwood

§ 7.5.6 Landscaping		
Standard	Requirement	Site Plan
		<ul style="list-style-type: none"> - <i>Rhus aromatica</i> 'Gro-Low' – Gro-Low Sumac - <i>Amsonia</i> 'Blue Ice' – Blue Ice Blue Star - <i>Bouteloua curtipendula</i> – Sideoats Grama - <i>Liatris spicata</i> 'Kobold' – Kobold Liatris - <i>Nepeta x faassenii</i> 'Purrsian Blue' – Purrsian Blue Catmint - <i>Sesleria autumnalis</i> – Autumn Moor Grass
Buffers [§7.5.6(e)]	Required for all uses abutting R-1, R-2, R-3, R-1MH and A-1 Districts	Not required – abuts B-4 Districts on all sides.
ROW Landscaping [§7.5.6(f)]	<ol style="list-style-type: none"> 1. 10' buffer along ROW 2. 14 canopy/evergreen trees and 72 shrubs per 347 lineal ft along ROW; grouping encouraged but space between trees not to exceed 35 ft 3. 3' tall continuous landscape screen, opaque fence, berm, or combination along ROW 	<ol style="list-style-type: none"> 1. Approx. 25 ft buffer along ROW 2. 16 trees and 81 shrubs with appropriate spacing and distribution 3. Continuous 3' tall screen NOT established. No berms or opaque fence, shrubs in clusters
Completion Bond [§7.5.6(j)]	Completion bond, letter of credit, cash deposit, or certified check in the amount of the landscape improvements	No estimates provided

§ 7.8 Exterior Lighting Requirements		
Standard	Requirement	Site Plan
[§7.8.3(a)(1)]	Downlighting, cut-off shielding, efficiency, minimum amount necessary, lighting hours	2 single-luminaire poles, 1 double luminaire pole, all 20 ft tall; 4 wall packs on building (N and E facades), soffit lighting above entrance/exit and along glass entry façade; all downward facing and recessed, zero foot-candles at property line, average 0.2 foot-candles over site, max 4.2 foot-candles. With exception of wallpacks for security purposes, all other lighting will need to be shut off outside hours of operation once staff leaves. RECOMMEND – wall packs on North façade and one indicated on the east side of south façade be removed.

§ 7.11 Medical Marihuana Facilities		
Standard	Requirement	Site Plan
License Requirements [§7.11.2(a)]	Facility must have a valid license by Acme Twp and the State	Applicant has provisioning center license for B-4 district. Will not be able to operate until securing a license from the State
Distance Buffers [§7.11.2(b)(1-4)]	1,000 ft buffer between specific uses	Not within 1,000 ft of any listed uses

IV. SITE PLAN REVIEW

The table below presents the required elements for a site plan review per the Zoning Ordinance, whether included in the site plan drawing, written narrative, or both. A “Yes” indicates item was accounted for, “No” indicates missing item, a blank cell indicates it is not required to be demonstrated in the site plan or narrative.

§ 8.1.4 Application Requirements			
Item	Description	Shown On Site Plan	Written Documentation
1.	A description of the environmental characteristics of the site prior to development, i.e.: topography, soils, vegetative cover, drainage, streams, creeks or ponds, as well as, the delineation of these features on the site plan drawing.	Yes	Yes
2.	Types of uses and other man-made facilities		Yes
3.	The number of: people to be housed, employed, visitors or patrons and vehicular and pedestrian traffic		Yes
4.	Phasing of the project, including ultimate development proposals	Yes	Yes
5.	Natural features which will be retained, removed and/or modified including vegetation, drainage, hillsides, streams, wetlands, woodlands, wildlife and water.	Yes	
6.	The description of the areas to be changed shall include their effect on the site and adjacent properties. An aerial photo may be used to delineate the areas of change.		Yes
7.	The method to be used to serve the development with water and sanitary sewer facilities		Yes
8.	The location, size, and routing of water and sanitary sewer facilities	Yes	
9.	Plans for storm water control and drainage, including measures to be used during construction	Yes	
10.	Storm water calculations; and if requested storm water modeling data.	Yes	Yes
11.	If public sewers are not available to the site the applicant shall submit a current approval from the health department or other responsible public agency indicating approval of plans for sewage treatment.		Yes

§ 8.1.4 Application Requirements			
Item	Description	Shown On Site Plan	Written Documentation
12.	The method to be used to control any increase in effluent discharge to the air or any increase in noise level emanating from the site. Consideration of any nuisance that would be created within the site or external to the site whether by reason of dust, noise, fumes, vibration, smoke or lights.		Yes
13.	An indication of how the proposed use conforms to existing and potential development patterns and any adverse effects		Yes
14.	Location of known Air Sheds and how the proposed use impacts this natural feature.		Yes
15.	Plans to control soil erosion and sedimentation.	Yes	Yes
16.	Incorporation of low impact development storm water technologies and other best management practices such as, but not limited to, rain gardens, rooftop gardens, vegetated swales, cisterns, permeable pavers, porous pavement, and filtered storm water structures.	Yes	Yes
17.	Type, direction, and intensity of outside lighting shown on a photometric plan in compliance with exterior lighting standards.	Yes	Yes
18.	Location of any or required cross access management easements.	Yes	
19.	Location of pedestrian and non-motorized facilities; if required.	Yes	
20.	Landscaping plan	Yes	
21.	General description of deed restrictions and/or cross access management easements, if any or required.		Yes
22.	Name(s) and address(es) of person(s) responsible for preparation of site plan drawings and supporting documentation.	Yes	Yes
23.	Sealed drawings from a licensed architect, engineer, or landscape architect.	Yes	
Notes: No soil erosion permit is required for this project per the Grand Traverse County Environmental Health Department (Item 15).			

§ 8.2 Standards for Site Plan Review	
Standard	Finding
a. That the applicant may legally apply for site plan review.	Satisfied: The Applicant has been authorized by the owner of the property
b. That all required information has been provided.	Satisfied: Per listed Agency Reviews in this report.
c. That the proposed development conforms to all regulations of the zoning district in which it is located and all other applicable standards and requirements of this ordinance, including but not limited to all supplementary regulations.	Satisfied: Landscape plans will need to be modified per conditions in suggested motion for consideration, along with modifications to the external lighting plan.

§ 8.2 Standards for Site Plan Review

Standard	Finding
d. That the plan meets the requirements of Acme Township for fire and police protection, water supply, sewage disposal or treatment, storm, drainage, and other public facilities and services.	Satisfied: Gosling Czubak – Pending GT Metro Fire – Favorable Soil Erosion – No permit needed Health Department – Favorable Grand Traverse County Road Commission – Favorable
e. That the plan meets the standards of other governmental agencies where applicable, and that the approval of these agencies has been obtained or is assured.	Satisfied: No other reviews or permits required. LARA will oversee enforcement of state regulations.
f. That natural resources will be preserved to a maximum feasible extent, and that areas to be left undisturbed during construction shall be so indicated on the site plan and at the site per se.	Satisfied: The site does not indicate sensitive natural features.
g. That the proposed development property respects floodways and flood plains on or in the vicinity of the subject property.	Satisfied: – No floodplains present
h. That the soil conditions are suitable for excavation and site preparation, and that organic, wet, or other soils which are not suitable for development will either be undisturbed, or modified in an acceptable manner.	Satisfied: No concerns regarding the soil type have been presented by Grand Traverse County Environmental Health Department or Gosling-Czubak.
i. That the proposed development will not cause soil erosion or sedimentation problems.	Satisfied: Grand Traverse County Environmental Health Department has determined no SESC permit is required.
j. That the drainage plan for the proposed development is adequate to handle anticipated storm water runoff, and will not cause undue runoff onto neighboring property or overloading of water courses in the area.	Satisfied: A third party review by Gosling Czubak has been conducted with a number of items to be addressed by the Applicant. Final approval will be contingent on meeting all applicable standards.
k. That grading or filling will not destroy the character of the property or the surrounding area, and will not adversely affect the adjacent or neighboring properties.	Satisfied: The site is relatively flat; any necessary grading and infill will be performed to level the site for construction; retention basins excavated; excess spoils stored on site, seeded with appropriate slopes.
l. That structures, landscaping, landfills or other land uses will not disrupt air drainage systems necessary for agricultural uses.	Satisfied: The addition to the existing structure will have no detrimental impact on any existing airsheds.
m. That phases of development are in a logical sequence, so that any one phase will not depend upon a subsequent phase for adequate access, public utility services, drainage, or erosion control.	Satisfied: – Request consists of a single phase.
n. That the plan provides for the proper expansion of existing facilities such as public streets, drainage systems, and water and sewage facilities.	Satisfied: Existing roadways established, curb cut approved, sanitary system and well approved.

§ 8.2 Standards for Site Plan Review	
Standard	Finding
o. That landscaping, fences or walls may be required when appropriate to meet the objectives of this Ordinance.	Satisfied: Landscape plan shall be modified to meet the requirements of the Ordinance as recommended in the suggested motion for consideration.
p. That parking layout will not adversely affect the flow of traffic within the site, or to and from the adjacent streets.	Satisfied: No impact
q. That vehicular and pedestrian traffic within the site, and in relation to streets and sidewalks serving the site, shall be safe and convenient.	Satisfied: Parking and circulation meet the standards of the Ordinance and will not inhibit safety or convenience, sidewalks adjacent to building and bike loops provided.
r. That outdoor storage of garbage and refuse is contained, screened from view, and located so as not be a nuisance to the subject property or neighboring properties.	Satisfied: Dumpster will be appropriately screened.
s. That the proposed site is in accord with the spirit and purpose of this Ordinance, and not inconsistent with, or contrary to, the objectives sought to be accomplished by this Ordinance and the principles of sound planning.	Satisfied: The proposed use and overall plan is consistent with this Ordinance and planning documents with the exceptions included in this report that need to be addressed.

V. REPORT SUMMARY

The Applicant is proposing to construct an approximately 3,456 sf building for operating a licensed medical marijuana provisioning center. The use is allowed by right under Medical Marijuana Facilities in the B-4: Material Processing and Warehousing District and is consistent with the Industrial land use category on the Future Land Use Map. The site is a former residential property and is currently vacant except for some remaining utility elements that will be removed during construction. The site is relatively flat and approximately 98% open meadow. No sensitive landscapes are present on site. Construction is to be completed in a single phase with no additional phases contemplated at this time.

Overall, the plan meets most of the Ordinance requirements, with outstanding issues being easily addressed through modifications to the submitted plans. These items pertain primarily to the landscape, exterior lighting, and storm water management plans.

Landscape Plan

- The Ordinance requires treed islands containing two (2) canopy trees each at the ends of each parking row. These islands are to be a minimum of seven (7) feet wide and extending the entire length of the of the parking stalls. No treed islands are present at the ends of each parking row and will need to be added to the plans. A total of four (4) islands are required for a total of eight (8) canopy trees.
- The Ordinance also requires only native, non-invasive species be used in the landscaping of non-residential properties. The plant list is provided by the Northwest Michigan Invasive Species Network’s “Recommended Planting Guidelines for Municipalities” under Recommended Plants for Ornamental Landscapes. As noted in this report, there are fifteen (15) species included that are not on the list and will need to be changed to satisfy the standard.
- Based on the 347 feet of ROW frontage, seventy two (72) shrubs are required in the ROW buffer, which is to be a minimum of ten (10) feet in width (no maximum width expressed). The landscape plan indicates

eighty one (81) shrubs between the building and the ROW. Clustering of shrubs is encouraged, and the landscape plan tastefully does so. However, the Ordinance requires three (3) foot tall continuous screen along the ROW consisting of landscape screening, berms, and/or opaque fences and is not present in the landscape plan. From past reviews, the Planning Commission has applied this requirement to only the developed portion of the site. The landscape plan will need to be modified to meet this requirement by redistributing and/or adding additional shrubs and/or berms to create the continuous screen between the north edge of the building and the south edge of the parking lot.

- A completion bond, cash deposit, letter of credit, or certified check in the amount of the proposed landscaping, prepared by a professional landscaper, will need to be submitted before issuing a land use permit.

Exterior Lighting Plan

- It is recommended that wall pack lighting only be used above the entrances and exits on the building.
 - The south elevation includes a wall pack on the east side that is not accounted for in the photometric plan and does not illuminate an entrance or exit. Furthermore, there is a double-luminaire near this location. It is recommended that this light be removed.
 - The wall packs on the north elevation do not illuminate any entrances or exists since none exist on that side of the building and therefore recommended to be removed.
- Exterior lighting, including parking lot lights, are to be shut off outside of hours of operation once staff is no longer present. It is recommended that all lights be turned off outside hours of operation when staff is not present except for the wall packs on the east façade over the points of entry and the soffit light closest to the entrance on the south façade and the exit on the west façade.

Storm Water Management Plan

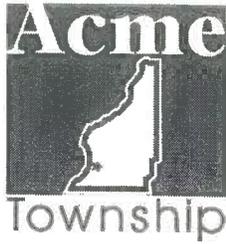
- Gosling-Czubak has performed the initial review of the storm water management plan. There were seven (7) items the Applicant needs to address which can be reviewed in the enclosed email. The first six (6) items can be addressed easily through changes in the calculations used. The last item will require MDOT approval due to the design utilizing the railroad ROW as an outlet. The motion below is contingent on all these items being addressed and receiving a favorable review by Gosling-Czubak.

Suggested Motion for Consideration:

Motion to approve Site Plan Review application SPR 2019-04, submitted by Bob Mitchell and Associates P.C., on behalf of Green Peak Innovations dba Skymint, to construct and operate an approximately 3,456 square foot licensed medical marijuana provisioning center located at 6140 N Arnold Rd, Williamsburg, MI 49690, with the following conditions that must be met prior to issuing a land use permit:

1. Revise the landscape plan to meet the native, non-invasive plant species, treed island, and right-of-way screening requirements of the Zoning Ordinance and as outlined in Planning & Zoning Report 2019-07, and to be approved by the Planning & Zoning Administrator;
2. Submit a completion bond, cash deposit, letter of credit, or certified check in the amount of the approved landscape plan as determined by a professional landscaper;
3. Remove the wall pack lighting on the south and north facades of the building;
4. All exterior lighting shall be shut off outside the hours of operation once the staff is no longer present except for the wall packs on the east façade, and one soffit light above the south entry and one soffit light above the west exit;

5. The storm water management plan be revised as recommended by Gosing-Czubak with all applicable standards of the Acme Township Storm Water Control Ordinance (2007-01) being met. Any changes to the site plan associated with meeting the standards shall be properly approved by the Township.
6. The final set of site plan drawings be updated to reflect the applicable conditions, stamped by a licensed engineer, architect, or landscape architect, and signed by the Planning Commission Chair and Applicant.



Special Use Permit/Site Plan Review Application

Township of Acme, Grand Traverse County, Michigan

6042 Acme Road, Williamsburg, MI 49690

Phone: (231) 938-1350 Fax: (231) 938-1510 Web: www.acmetownship.org
Planning & Zoning Administrator: Shawn Winter Email: swinter@acmetownship.org

Owner Information (please type or print clearly):

Name: Green Peak Industries, LLC (Jeffrey Donahue) Phone: (517)408-0178

Mailing Address: 10070 Harvest Park,

City: Dimondale State: MI Zip: 48821

Email Address: jdonahue@greenpeakinnovations.com

Applicant Information (please type or print clearly):

Cell: (231)645-2567

Name: Bob Mitchell & Associates (D. Harry Luzius Jr.) Phone: (231)263-5463

Mailing Address: P.O. Box 306

City: Kingsley State: MI Zip: 49649

Email Address: hluzius@torchlake.com

A. Property Information:

1. **Address:** 6140 North Arnold Road,

2. **Parcel Number/Property Description:**
28-01-015-005-05

3. **Current Zoning of Property:**

B-4

4. If this project is one phase of a larger development and/or property subject to an existing/previous Site Plan Review, Special Use Permit, or Variance, what is/are the applicable permit number(s)?

N/A

5. **Provide proof of current property ownership.** If applicant is not the current property owner, also provide written permission to act as agent of, and complete contact information for the current property owner.

Attached

DESCRIPTION: A parcel of land situated in the Township of Acme, County of Grand Traverse, State of Michigan and described as follows to-wit:

Part of the Southwest One-Quarter of Section 32, Town 28 North, Range 09 West, more fully described as follows; Commencing at the Southwest corner of said section; thence North 00°55'01" West, along the West line of said section, 583.51 feet, to the Point of Beginning; thence North 89° 10'55" East, 504.61 feet; thence North 00°55'01" West, 380.00 feet, to the Southern edge of C & O Railroad; thence South 89°10'55" West, along said railroad boundary, 504.62 feet, to the West line of said section; thence South 00°55'01" East, along said West line, 380.00 feet, to the Point of Beginning. Contains 4.40 Acres of land.

6. Proposed Use/Change to Property

MARIJUANA PARTITIONING CENTER

7. Estimated Start and Completion Dates:

Start as soon as possible

B. Application Packet Requirements: REFER TO ACME TOWNSHIP ZONING ORDINANCE AND COMPLETE ATTACHED CHECKLIST

C. Fees: Include initial fee as required by the Acme Township Ordinance #2004-01

D. Fee Escrow Policy Acknowledgement: Provide completed and signed form with initial escrow fee deposit.

E. Affidavit: The undersigned affirms that he/she is the _____ (owner, agent, lessee, or other interested party) involved in this petition and that the foregoing answers, statements and information are in all respects true and, to the best of his/her knowledge, correct. By making this application, the undersigned grants all officials, staff and consultants of Acme Township access to the subject property as required and appropriate to assess site conditions in support of a determination as to the suitability of the proposed project and/or current or future Special Use Permit and Zoning Ordinance compliance.

Signed: _____

D. Harry Lewis J

Date: _____

4/17/2019

FOR TOWNSHIP USE ONLY

Application Number: SPR 2019-04

Date Received: 04.17.19

Public Hearing/Meeting: 05.13.19

Date of Advertising: N/A

T&A Account: 099

NOTES:

Memorandum for Record
March 12, 2019

To: Regulatory Agents for:

- Michigan Department of Transportation
- Michigan Department of Environmental Quality
- Grand Traverse County Health Department
- Grand Traverse County Road Commission
- Acme Township

From:

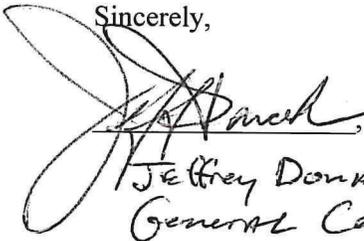
Re: Authorization for D. Harry Luzius, Jr., P.E. to act as Designated Agent

To Whom it may concern:

We, Green Peak Industries, LLC, are owners of a 4.4-Acre parcel located at 6152 Arnold Rd., Grand Traverse County, Acme Township. We intend to develop this property as a retail dispensary for cannabis products.

For all matters pertaining to securing permits from local, county, and state regulators, we hereby authorize D. Harry Luzius, Jr., P.E., to act as our designated agent. Mr. Luzius can be contacted at (231) 645-2567, or via email at hluzius@torchlake.com. If you have any questions, please do not hesitate to contact us via email at jdonahue@greenpeakinnovations.com.

Sincerely,

 Owner
Jeffrey Donahue
General Counsel

**B O B M I T C H E L L &
A S S O C I A T E S
P . C .**



PLANNING – ENGINEERING – SURVEYING - MANAGEMENT

PROJECT NARRATIVE

Project Narrative Based on Zoning Ordinance Items.

Tax ID. 28-01-015-005-05

1. Description of environmental Characteristic of site prior to development.

Site is approximately 98% open field with a few trees around an old residential home site. The home has previously been removed. There are no streams, ponds, lakes, regulated wetlands, or rivers on the site or within 500 feet.

2. Types of uses and other man-made facilities

An existing well, drain field and residential power line exist from the previous house; All are to be removed.

3. Number of People housed, employed, visitors, vehicular traffic, pedestrian traffic

a. Each GPI (Green Peak Innovations) provisioning center will start with a base staff model of fifteen (15), which will include Store Manager, Assistant Store Manager (2), Inventory Controller (1), Patient Clerks (7) and Receptionist (3). The employee count will grow based on the growth of the provisioning center business and if it is required to adequately service registered patients. The employees will work on a rotating shift with the lowest number of employees scheduled during slow hours at ten (10) and the highest number of employees during peak hours scheduled at thirteen (13).

b. GPI anticipates serving between 100-200 patients per day

c. The site is designed with a drive that wraps around to the back of the building, this allows for delivery vehicles to park and unload out of direct view of patients. This area shall also provide room for snow storage and fire truck access.

d. There is a low amount of anticipated pedestrian traffic however, bike racks will be provided to support non- vehicular traffic to and from the site.

4. Phasing of Project

Project is proposed to 1 phase in the summer of 2019, equipment mobilizing as soon as permitted.

5. Natural Features retained, removed, modified
Clearing and grubbing of the few existing trees near the old home site. Vegetation outside the will not be disturbed. (See site plan)
6. Description of areas to be changed including affect on site
There will be relatively small changes to the grading of the site. Drainage will remain the same as the exiting storm water discharge point will remain. (See site plan)
7. Method to serve development with water and sanitary sewers
A new well and drain field will be constructed for water and sanitary. (See site plan)
8. Location, Size and routing of water and sanitary sewers
(See site plan)
9. Plans for Storm water control and drainage
Storm water will be routed to a detention pond with a slow release and emergency overflow. (See site plan)
10. Storm water calculations
(See site plan)
11. If Public sewers not available, submit Health Department approval.
(See site plan) An application has been filed with county health department and site inspections have been done by Brent Wheat (environmental sanitarian with the Grand Traverse County Health Department). Final permits pending.
12. Method to control any increase in effluent discharge to air or increase in noise emanating from site. (Dust, noise, fumes, vibration, smoke or lights.)
Green spaces and landscaping with decrease noise. As the proposed business is located near other commercial businesses traffic flow will have a small impact. The HAVC system and building exhaust will be provided with a charcoal filtration system to remove any odors that may emanate from product.
13. Indication of how the proposed use conforms to existing and potential development patterns and any adverse effects.
The proposed use is a retail store. The business adjacent to the proposed site is a Tractor Supply retail store. This would create a retail section of businesses on the East side of North Arnold Road.
14. Location of air sheds and how the proposed use impacts the natural feature.
This project does not propose any air sheds.

15. Plans for Soil Erosion and sedimentation
(See site plan) Soil erosion permit has been submitted.
16. Incorporation of low impact development storm water technologies, and best management practices,
(See site plan) All disturbed areas are to be reseeded.
17. Type, direction, intensity of lighting shown on photometric plan in compliance with exterior lighting standards
See architectural plans
18. Location of cross access management easements
An easement falls along the Southerly property line. There has been no development of the easement. All proposed features fall outside of the Easement.
19. Location of pedestrian and non-motorized facilities
See plans.
20. Landscaping Plan
See attached.
21. General description of deed restrictions or cross access of management easements
One access easement along the southerly property line, outside of the proposed project work area.
22. Name and addresses of persons responsible for preparation of Site Plan Drawings and supporting documentation.
Attached to the documents provided.
23. Sealed Drawings form a licensed architect or engineer.
Attached. Plans will comply with local building codes and zoning ordinances.

Central Michigan
426 North 1ST • P.O. Box 662
Harrison, MI 48625
(989) 539-6878

Northwestern Michigan
404 West Main Street • P.O. Box 306
Kingsley, MI 49649
(231) 263-5463
FAX (231) 263-7921

COVER PAGE

SKYMINT MEDICAL MARIJUANA PROVISIONING CENTER

RETAIL STORE/PROVISIONING CENTER

6140 N. ARNOLD ROAD, WILLIAMSBURG, MICHIGAN
 PARCEL No. 28-01-015-005-05

CONTACTS

ENGINEER
 H. LUZIUS
 P.O. BOX 306
 Kingsley, MI 49649
 Contact: HARRY LUZIUS, P.E.
 Cell Phone: (231) 645-2567

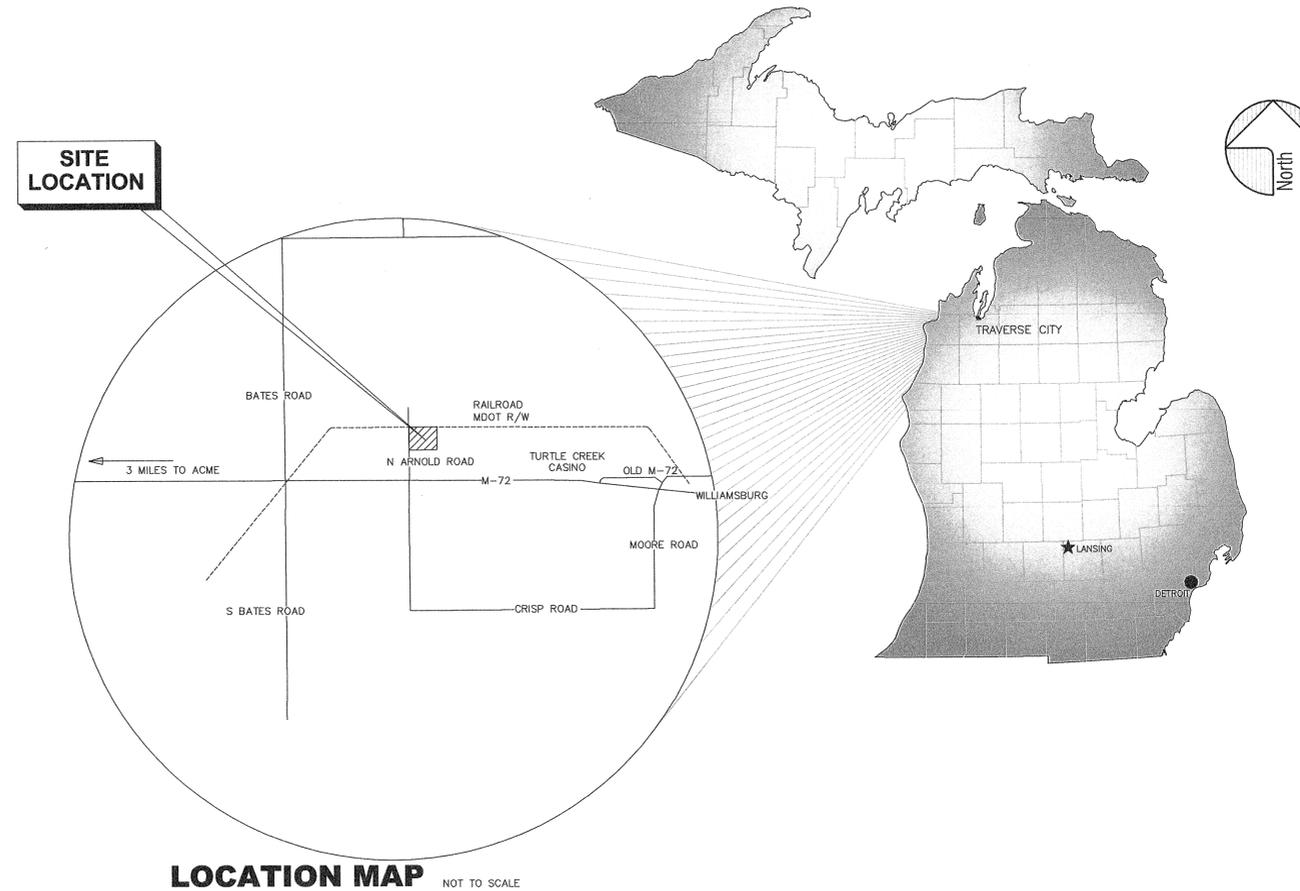
ARCHITECT
 STEPHANIE SPACE
 Studio [Intrigue] Architects
 1114 S. Washington Ave.
 Suite 100
 Lansing, MI 48910

WELL & SEPTIC
 GRAND TRAVERSE COUNTY HEALTH DEPT. (GTCHD)
 2650 LAFRANIER ROAD
 TRAVERSE CITY, MI 49686
 Contact: BRENT WHEAT
 Phone: (231) 995-6018

ROADS AND STREETS
 GRAND TRAVERSE COUNTY ROAD COMMISSION
 1851 LAFRANIER ROAD
 TRAVERSE CITY, MI 49684
 Phone: (231) 922-4848

ACME TOWNSHIP
 ZONING ADMINISTRATOR
 6242 ACME ROAD
 WILLIAMSBURG, MI 49690
 Contact: SHAWN WINTER
 Phone: (231) 938-1350

MDOT (RAILROAD)
 Phone: (517) 335-3577



D. Harry Luzius, Jr.
 5/9/2019



LOCATION OF EXISTING UTILITIES

- EXISTING PUBLIC AND KNOWN UNDERGROUND STRUCTURES ARE SHOWN ON THE PLANS. THE INFORMATION SHOWN IS BELIEVED TO BE REASONABLY CORRECT AND COMPLETE. HOWEVER, NEITHER THE CORRECTNESS OR THE COMPLETENESS OF SUCH INFORMATION IS GUARANTEED. PRIOR TO THE START OF ANY CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY "MISSDIG" AND REQUEST THE UTILITY COMPANIES TO MARK THE UTILITIES IN QUESTION.
- SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL PROVIDE SUPPORT FOR ANY UTILITIES WITHIN THE EXCAVATION, PROVIDE PROPER COMPACTION UNDER ANY UNDERMINED UTILITY STRUCTURE AND IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION. CONTRACTOR SHALL PROTECT AND SAVE HARMLESS FROM DAMAGE ALL UTILITIES, ABOVE OR BELOW THE GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION.

GENERAL NOTES

- SITE CIVIL ENGINEER ASSUMES NO RESPONSIBILITY FOR JOB SITE SAFETY. EACH CONTRACTOR SHALL INDEPENDENTLY ENSURE THE SAFETY OF THEIR WORKERS, UTILIZING APPROPRIATE SAFETY EQUIPMENT AND PERFORMING TIMELY TOO-BOX TALKS AS REQUIRED TO MAINTAIN JOB SITE SAFETY.
- AS FEW SOIL BORINGS WERE PERFORMED IN THE CONCEPTION OF THIS SITE PLAN, CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH SITE CONDITIONS PRIOR TO BID SUBMISSION.
- ALTERATION OF ANY PART OF THIS DOCUMENT WITHOUT THE PERMISSION OF BOB MITCHELL & ASSOCIATES IS PROHIBITED.

SHEET INDEX

SHEET	SHEET TITLE
1	COVER SHEET
2	EXISTING CONDITIONS AND DEMOLITION
3	SITE PLAN
4	SOIL EROSION AND STORM WATER RUNOFF CONTROL PLAN
5	DETAILS SHEET

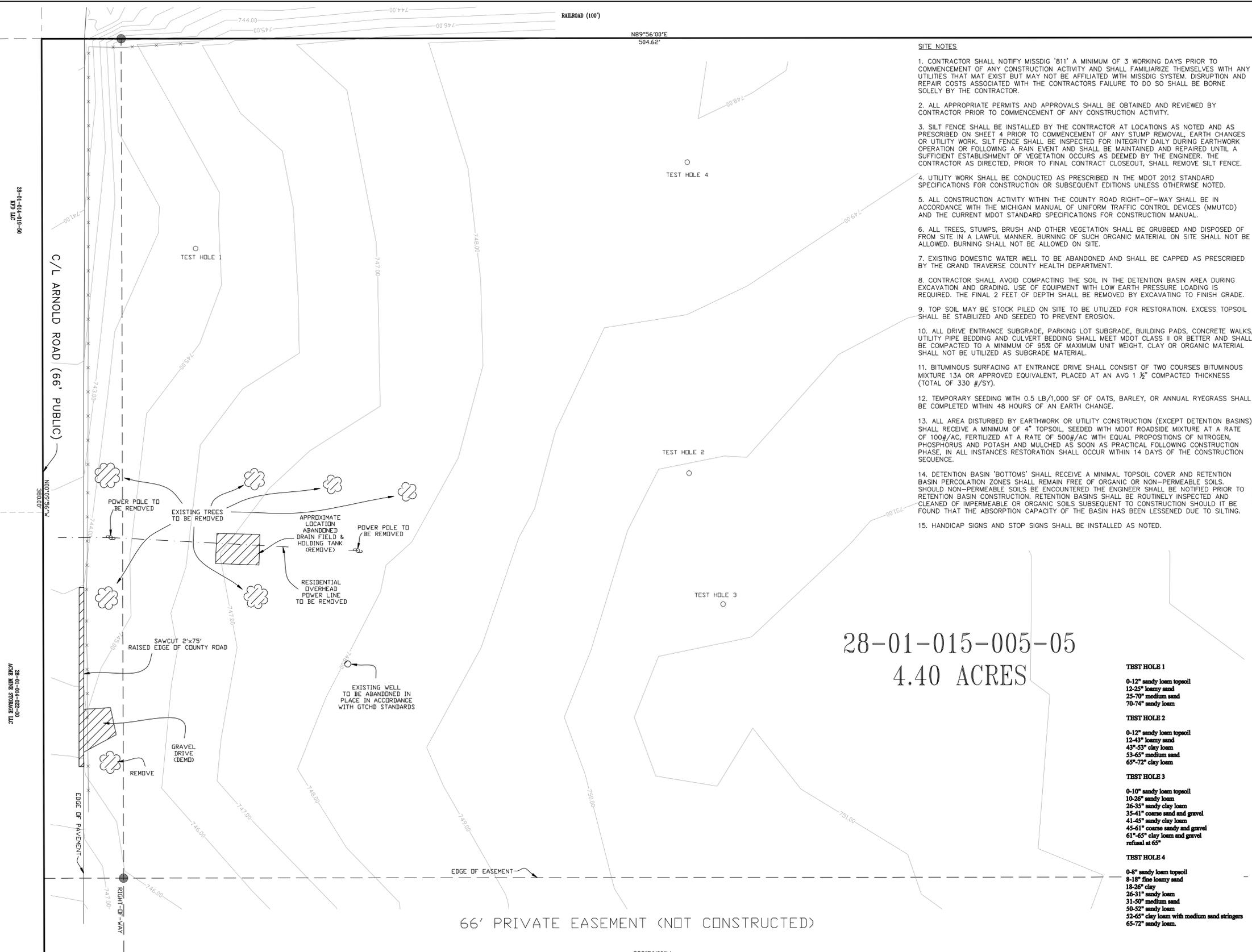
Bob Mitchell & Associates P.C.
 SURVEYING / ENGINEERING

404 West Main Street, P.O. Box 306
 Kingsley, Michigan 49649
 (231) 263-4231, FAX (231) 263-7921
 Toll Free in Michigan 1-800-533-6627
 email: wrt@bmcpcivilsurvey.com
 NORTH 1ST STREET
 Harrison, MI 48625

PROJECT: GREEN PEAK INOVATIONS
 SHEET: COVER SHEET

DESCRIPTION	DATE

FILE NO. 20190048
 DWG. NAME 20190048.dwg
 SCALE: AS NOTED
 DWN. WPM CHK. JEM
 REV. 5-9-19
 DATE 4-15-19
1 OF 5



- SITE NOTES**
- CONTRACTOR SHALL NOTIFY MISSDG '811' A MINIMUM OF 3 WORKING DAYS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY AND SHALL FAMILIARIZE THEMSELVES WITH ANY UTILITIES THAT MAY EXIST BUT MAY NOT BE AFFILIATED WITH MISSDG SYSTEM. DISRUPTION AND REPAIR COSTS ASSOCIATED WITH THE CONTRACTORS FAILURE TO DO SO SHALL BE BORNE SOLELY BY THE CONTRACTOR.
 - ALL APPROPRIATE PERMITS AND APPROVALS SHALL BE OBTAINED AND REVIEWED BY CONTRACTOR PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.
 - SILT FENCE SHALL BE INSTALLED BY THE CONTRACTOR AT LOCATIONS AS NOTED AND AS PRESCRIBED ON SHEET 4 PRIOR TO COMMENCEMENT OF ANY STUMP REMOVAL, EARTH CHANGES OR UTILITY WORK. SILT FENCE SHALL BE INSPECTED FOR INTEGRITY DAILY DURING EARTHWORK OPERATION OR FOLLOWING A RAIN EVENT AND SHALL BE MAINTAINED AND REPAIRED UNTIL A SUFFICIENT ESTABLISHMENT OF VEGETATION OCCURS AS DEEMED BY THE ENGINEER. THE CONTRACTOR AS DIRECTED, PRIOR TO FINAL CONTRACT CLOSEOUT, SHALL REMOVE SILT FENCE.
 - UTILITY WORK SHALL BE CONDUCTED AS PRESCRIBED IN THE MDT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION OR SUBSEQUENT EDITIONS UNLESS OTHERWISE NOTED.
 - ALL CONSTRUCTION ACTIVITY WITHIN THE COUNTY ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CURRENT MDT STANDARD SPECIFICATIONS FOR CONSTRUCTION MANUAL.
 - ALL TREES, STUMPS, BRUSH AND OTHER VEGETATION SHALL BE GRUBBED AND DISPOSED OF FROM SITE IN A LAWFUL MANNER. BURNING OF SUCH ORGANIC MATERIAL ON SITE SHALL NOT BE ALLOWED. BURNING SHALL NOT BE ALLOWED ON SITE.
 - EXISTING DOMESTIC WATER WELL TO BE ABANDONED AND SHALL BE CAPPED AS PRESCRIBED BY THE GRAND TRAVERSE COUNTY HEALTH DEPARTMENT.
 - CONTRACTOR SHALL AVOID COMPACTING THE SOIL IN THE DETENTION BASIN AREA DURING EXCAVATION AND GRADING. USE OF EQUIPMENT WITH LOW EARTH PRESSURE LOADING IS REQUIRED. THE FINAL 2 FEET OF DEPTH SHALL BE REMOVED BY EXCAVATING TO FINISH GRADE.
 - TOP SOIL MAY BE STOCK PILED ON SITE TO BE UTILIZED FOR RESTORATION. EXCESS TOPSOIL SHALL BE STABILIZED AND SEEDED TO PREVENT EROSION.
 - ALL DRIVE ENTRANCE SUBGRADE, PARKING LOT SUBGRADE, BUILDING PADS, CONCRETE WALKS, UTILITY PIPE BEDDING AND CULVERT BEDDING SHALL MEET MDT CLASS II OR BETTER AND SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM UNIT WEIGHT. CLAY OR ORGANIC MATERIAL SHALL NOT BE UTILIZED AS SUBGRADE MATERIAL.
 - BITUMINOUS SURFACING AT ENTRANCE DRIVE SHALL CONSIST OF TWO COURSES BITUMINOUS MIXTURE 13A OR APPROVED EQUIVALENT, PLACED AT AN AVG 1 1/2" COMPACTED THICKNESS (TOTAL OF 330 #/SY).
 - TEMPORARY SEEDING WITH 0.5 LB/1,000 SF OF OATS, BARLEY, OR ANNUAL RYEGRASS SHALL BE COMPLETED WITHIN 48 HOURS OF AN EARTH CHANGE.
 - ALL AREA DISTURBED BY EARTHWORK OR UTILITY CONSTRUCTION (EXCEPT DETENTION BASINS) SHALL RECEIVE A MINIMUM OF 4" TOPSOIL, SEEDED WITH MDT ROADSIDE MIXTURE AT A RATE OF 100#/AC, FERTILIZED AT A RATE OF 500#/AC WITH EQUAL PROPORTIONS OF NITROGEN, PHOSPHORUS AND POTASH AND MULCHED AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION PHASE. IN ALL INSTANCES RESTORATION SHALL OCCUR WITHIN 14 DAYS OF THE CONSTRUCTION SEQUENCE.
 - DETENTION BASIN 'BOTTOMS' SHALL RECEIVE A MINIMAL TOPSOIL COVER AND RETENTION BASIN PERCOLATION ZONES SHALL REMAIN FREE OF ORGANIC OR NON-PERMEABLE SOILS. SHOULD NON-PERMEABLE SOILS BE ENCOUNTERED THE ENGINEER SHALL BE NOTIFIED PRIOR TO RETENTION BASIN CONSTRUCTION. RETENTION BASINS SHALL BE ROUTINELY INSPECTED AND CLEANED OF IMPERMEABLE OR ORGANIC SOILS SUBSEQUENT TO CONSTRUCTION SHOULD IT BE FOUND THAT THE ABSORPTION CAPACITY OF THE BASIN HAS BEEN LESSENERD DUE TO SILTING.
 - HANDICAP SIGNS AND STOP SIGNS SHALL BE INSTALLED AS NOTED.

Legend

- IRON SET
- IRON FOUND
- ⊙ MONUMENT FOUND
- △ NAIL SET
- ▲ NAIL FOUND
- ⊕ GOVERNMENT 1/4 CORNER
- ⊙ SECTION CORNER
- ⊙ CENTER 1/4 CORNER
- (R) RECORD
- (M) MEASURED
- POWER POLE
- POWER POLE W/GUY WIRE
- ⊠ TELEPHONE RISER
- ⊕ STREET LIGHT
- DRAINAGE FLOW DIRECTION
- SECTION LINE
- CENTERLINE
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EXISTING CONTOUR W/ELEV.
- INSTALL SILT FENCING
- ▨ DEMOLITION/REMOVE

GRAPHIC SCALE

(IN FEET)

1 inch = 20 ft

1 FT. INTERVAL CONTOURS

GENERAL NOTES

SITE CIVIL ENGINEER ASSUMES NO RESPONSIBILITY FOR JOB SITE SAFETY. EACH CONTRACTOR SHALL INDEPENDENTLY ENSURE THE SAFETY OF THEIR WORKERS, UTILIZING APPROPRIATE SAFETY EQUIPMENT AND PERFORMING TIMELY TOO-BOX TALKS AS REQUIRED TO MAINTAIN JOB SITE SAFETY.

AS FEW SOIL BORINGS WERE PERFORMED IN THE CONCEPTION OF THIS SITE PLAN, CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH SITE CONDITIONS PRIOR TO BID SUBMISSION.

ALTERATION OF ANY PART OF THIS DOCUMENT WITHOUT THE PERMISSION OF BOB MITCHELL & ASSOCIATES IS PROHIBITED.

SITE DATA

TAX ID 28-01-015-005-00
CURRENT ZONING: B-4

BUILDING SETBACKS
FRONT YARD - 60'
SIDE YARD - 38'
REAR YARD - 50'

SITE AREA: 4.4 ACRES
CURRENT USE - VACANT

PROPOSED BUILDING INFORMATION
TOTAL BUILDING AREA: 3,408 SQUARE FEET

PARKING/PAVING

PARKING SPACES ALLOWED: XX/1,000 S.F. = 17 SPACES TOTAL
PARKING SPACES PROVIDED: 24 SPACES TOTAL

OWNER REQUESTING VARIANCE FOR ADDITIONAL SPACES

TOTAL PARKING/PAVING IMPROVEMENTS: 24,174 SQUARE FEET

- DEMOLITION NOTES:**
- ALL DEMOLITION WORK SHALL CONFORM TO APPLICABLE LOCAL CODES AND ORDINANCES. ALL DEMOLITION OPERATIONS SHALL COMPLY WITH MICHGA REGULATIONS INsofar AS THEY APPLY TO THE REQUIRED WORK. SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO THE DEMOLITION.
 - EXCEPT AS DESIGNATED, DO NOT REMOVE, CUT, DEFACE, INJURE OR DESTROY TREES OR SHRUBS WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER OR ENGINEER. PROVIDE NECESSARY PROTECTION FOR TREES & SHRUBS IN SUCH AREAS AS TO PREVENT INJURY, DEFACING, DESTRUCTION OR OTHER DAMAGE BY CONSTRUCTION OPERATIONS.
 - DO NOT USE TREES OR SHRUBS AS ANCHORAGE POINTS FOR ANY ROPES, CABLES, OR GUY WIRE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER. REPLACE TREES AND OTHER LANDSCAPING FEATURES DAMAGED BY UNAUTHORIZED ACTIVITIES AS DIRECTED BY THE ENGINEER.
 - EXISTING STRUCTURES SHALL BE REMOVED AS INDICATED ON THE PLANS. PROVIDE NEAT SAWCUTS AT THE LIMITS OF PAVEMENT REMOVAL AS INDICATED. ALL BUILDING DRAINS AND UTILITY LEADS SHALL BE LOCATED AND PROPERLY PLUGGED OR CAPPED.
 - UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANIES BY THE CONTRACTOR. WHERE UTILITIES ARE TO BE REINSTALLED OR RELOCATED, COORDINATE THESE ACTIVITIES WITH DEMOLITION WORK.
 - ALL DEMOLITION MATERIAL SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF IN A LEGALLY DESIGNATED DISPOSAL AREA. NO ON-SITE BURNING WILL BE PERMITTED. PERMITS AND FEES FOR DISPOSAL OF DEMOLITION MATERIAL SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - EXCAVATED AREAS, HOLES, OPEN BASEMENTS, AND OTHER HAZARDOUS OPENINGS SHALL BE FILLED WITH CLEAN GRANULAR MATERIAL MEETING MDT CLASS II REQUIREMENTS. BACKFILL SHALL BE PLACED IN 8"-10" LIFTS LOOSE MEASURE AND COMPACTED TO 95% MAX. DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR (ASTM D 1557).
 - AT THE COMPLETION OF THE DEMOLITION OPERATIONS, THE ENTIRE WORK AREA SHALL BE LEFT IN A CLEAN CONDITION WITH ANY PROTECTIVE DEVICES AND BARRIERS REMOVED. ALL EXPOSED AREAS SHALL BE SUITABLY TOPSOILED, SEEDED AND MULCHED.
 - THE EXISTING OVERHEAD ELECTRIC AND UTILITY POLES TO BE REMOVED. CONTRACTOR SHALL COORDINATE POLE AND LINE REMOVAL WITH ELECTRIC UTILITY PROVIDER.
 - REMOVAL OF ABANDONED RESIDENTIAL DRAIN FIELD AND HOLDING TANK SHALL CONFORM TO GRAND TRAVERSE COUNTY HEALTH DEPARTMENT GUIDELINES.

28-01-015-005-05
4.40 ACRES

- TEST HOLE 1**
- 0-12" sandy loam topsoil
 - 12-25" loamy sand
 - 25-70" medium sand
 - 70-74" sandy loam
- TEST HOLE 2**
- 0-12" sandy loam topsoil
 - 12-43" loamy sand
 - 43-53" clay loam
 - 53-65" medium sand
 - 65-72" clay loam
- TEST HOLE 3**
- 0-10" sandy loam topsoil
 - 10-26" sandy loam
 - 26-35" sandy clay loam
 - 35-41" coarse sand and gravel
 - 41-45" sandy clay loam
 - 45-61" coarse sandy and gravel
 - 61-65" clay loam and gravel
 - refusal at 65"
- TEST HOLE 4**
- 0-8" sandy loam topsoil
 - 8-18" fine loamy sand
 - 18-26" clay
 - 26-31" sandy loam
 - 31-50" medium sand
 - 50-52" sandy loam
 - 52-65" clay loam with medium sand stringers
 - 65-72" sandy loam.

66' PRIVATE EASEMENT (NOT CONSTRUCTED)

28-01-015-005-07
KANAKA INVESTMENT INC.
(TRACTOR SUPPLY)

28-01-015-005-08
CHANS PROPERTY LLC

DESCRIPTION: A parcel of land situated in the Township of Acme, County of Grand Traverse, State of Michigan and described as follows to-wit:

Part of the Southwest One-Quarter of Section 32, Town 28 North, Range 09 West, more fully described as follows: Commencing at the Southwest corner of said section; thence North 00°55'01" West, along the West line of said section, 583.51 feet, to the Point of Beginning; thence North 89°10'55" East, 504.61 feet; thence North 00°55'01" West, 380.00 feet, to the Southern edge of C & O Railroad; thence South 89°10'55" West, along said railroad boundary, 504.62 feet, to the West line of said section; thence South 00°55'01" East, along said West line, 380.00 feet, to the Point of Beginning. Contains 4.40 Acres of land.

EXISTING CONDITIONS & DEMOLITION PLAN

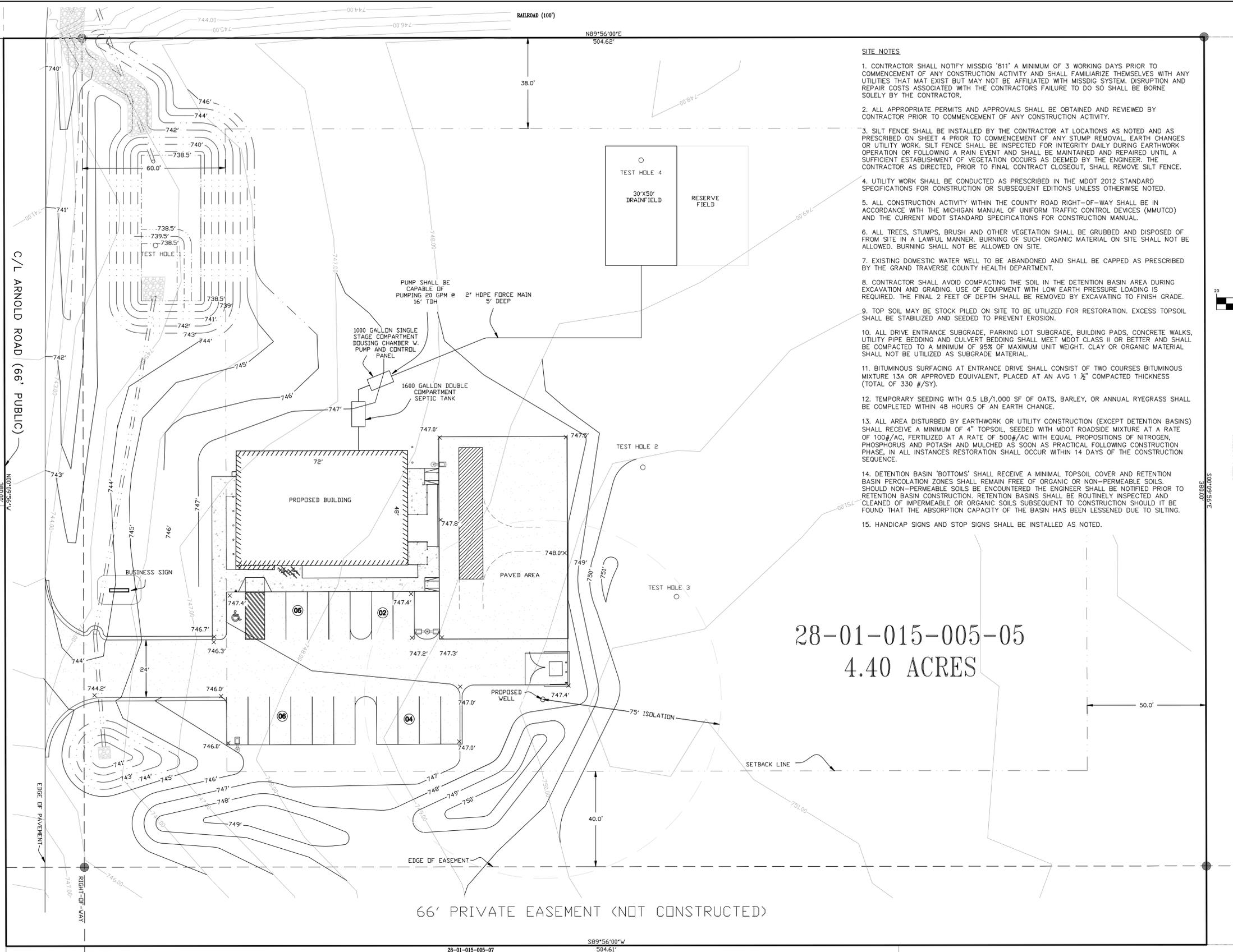
Bob Mitchell & Associates P.C.
SURVEYING / ENGINEERING

404 West Main Street
P.O. Box 306
Kingsley, MI 49649
(231) 263-5463, FAX (231) 263-7921
Toll Free in Michigan 1-800-533-6627
email: bmm@bmmcivilsurvey.com
NORTH 1ST STREET
Harrison, MI 48625

PROJECT: GREEN PEAK INNOVATIONS
SHEET: DEMO PLAN

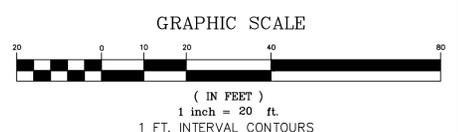
DATE:	FILE NO.
DESCRIPTION:	20190048
	DWG. NAME
	20190048.dwg
	SCALE: AS NOTED
	DWN. WPM CHK. JEM
	REV. 5-9-19
	DATE 4-15-19

2 OF 5



- SITE NOTES**
- CONTRACTOR SHALL NOTIFY MISSDIG 'B11' A MINIMUM OF 3 WORKING DAYS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY AND SHALL FAMILIARIZE THEMSELVES WITH ANY UTILITIES THAT MAY EXIST BUT MAY NOT BE AFFILIATED WITH MISSDIG SYSTEM. DISRUPTION AND REPAIR COSTS ASSOCIATED WITH THE CONTRACTORS FAILURE TO DO SO SHALL BE BORNE SOLELY BY THE CONTRACTOR.
 - ALL APPROPRIATE PERMITS AND APPROVALS SHALL BE OBTAINED AND REVIEWED BY CONTRACTOR PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.
 - SILT FENCE SHALL BE INSTALLED BY THE CONTRACTOR AT LOCATIONS AS NOTED AND AS PRESCRIBED ON SHEET 4 PRIOR TO COMMENCEMENT OF ANY STUMP REMOVAL, EARTH CHANGES OR UTILITY WORK. SILT FENCE SHALL BE INSPECTED FOR INTEGRITY DAILY DURING EARTHWORK OPERATION OR FOLLOWING A RAIN EVENT AND SHALL BE MAINTAINED AND REPAIRED UNTIL A SUFFICIENT ESTABLISHMENT OF VEGETATION OCCURS AS DEEMED BY THE ENGINEER. THE CONTRACTOR AS DIRECTED, PRIOR TO FINAL CONTRACT CLOSEOUT, SHALL REMOVE SILT FENCE.
 - UTILITY WORK SHALL BE CONDUCTED AS PRESCRIBED IN THE MDT 2012 STANDARD SPECIFICATIONS FOR CONSTRUCTION OR SUBSEQUENT EDITIONS UNLESS OTHERWISE NOTED.
 - ALL CONSTRUCTION ACTIVITY WITHIN THE COUNTY ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CURRENT MDT STANDARD SPECIFICATIONS FOR CONSTRUCTION MANUAL.
 - ALL TREES, STUMPS, BRUSH AND OTHER VEGETATION SHALL BE GRUBBED AND DISPOSED OF FROM SITE IN A LAWFUL MANNER. BURNING OF SUCH ORGANIC MATERIAL ON SITE SHALL NOT BE ALLOWED. BURNING SHALL NOT BE ALLOWED ON SITE.
 - EXISTING DOMESTIC WATER WELL TO BE ABANDONED AND SHALL BE CAPPED AS PRESCRIBED BY THE GRAND TRAVERSE COUNTY HEALTH DEPARTMENT.
 - CONTRACTOR SHALL AVOID COMPACTING THE SOIL IN THE DETENTION BASIN AREA DURING EXCAVATION AND GRADING. USE OF EQUIPMENT WITH LOW EARTH PRESSURE LOADING IS REQUIRED. THE FINAL 2 FEET OF DEPTH SHALL BE REMOVED BY EXCAVATING TO FINISH GRADE.
 - TOP SOIL MAY BE STOCK PILED ON SITE TO BE UTILIZED FOR RESTORATION. EXCESS TOPSOIL SHALL BE STABILIZED AND SEEDED TO PREVENT EROSION.
 - ALL DRIVE ENTRANCE SUBGRADE, PARKING LOT SUBGRADE, BUILDING PADS, CONCRETE WALKS, UTILITY PIPE BEDDING AND CULVERT BEDDING SHALL MEET MDT CLASS II OR BETTER AND SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM UNIT WEIGHT. CLAY OR ORGANIC MATERIAL SHALL NOT BE UTILIZED AS SUBGRADE MATERIAL.
 - BITUMINOUS SURFACING AT ENTRANCE DRIVE SHALL CONSIST OF TWO COURSES BITUMINOUS MIXTURE 13A OR APPROVED EQUIVALENT, PLACED AT AN AVG 1 1/2" COMPACTED THICKNESS (TOTAL OF 330 #/SY).
 - TEMPORARY SEEDING WITH 0.5 LB/1,000 SF OF OATS, BARLEY, OR ANNUAL RYEGRASS SHALL BE COMPLETED WITHIN 48 HOURS OF AN EARTH CHANGE.
 - ALL AREA DISTURBED BY EARTHWORK OR UTILITY CONSTRUCTION (EXCEPT DETENTION BASINS) SHALL RECEIVE A MINIMUM OF 4" TOPSOIL, SEEDED WITH MDT ROADSIDE MIXTURE AT A RATE OF 100#/AC, FERTILIZED AT A RATE OF 500#/AC WITH EQUAL PROPORTIONS OF NITROGEN, PHOSPHORUS AND POTASH AND MULCHED AS SOON AS PRACTICAL FOLLOWING CONSTRUCTION PHASE. IN ALL INSTANCES RESTORATION SHALL OCCUR WITHIN 14 DAYS OF THE CONSTRUCTION SEQUENCE.
 - DETENTION BASIN 'BOTTOMS' SHALL RECEIVE A MINIMAL TOPSOIL COVER AND RETENTION BASIN PERCOLATION ZONES SHALL REMAIN FREE OF ORGANIC OR NON-PERMEABLE SOILS. SHOULD NON-PERMEABLE SOILS BE ENCOUNTERED THE ENGINEER SHALL BE NOTIFIED PRIOR TO RETENTION BASIN CONSTRUCTION. RETENTION BASINS SHALL BE ROUTINELY INSPECTED AND CLEANED OF IMPERMEABLE OR ORGANIC SOILS SUBSEQUENT TO CONSTRUCTION SHOULD IT BE FOUND THAT THE ABSORPTION CAPACITY OF THE BASIN HAS BEEN LESSENED DUE TO SILTING.
 - HANDICAP SIGNS AND STOP SIGNS SHALL BE INSTALLED AS NOTED.

- Legend**
- IRON SET
 - IRON FOUND
 - ⊙ MONUMENT FOUND
 - △ NAIL SET
 - ⊕ GOVERNMENT 1/4 CORNER
 - ⊙ SECTION CORNER
 - ⊕ CENTER 1/4 CORNER
 - (R) RECORD
 - (M) MEASURED
 - POWER POLE
 - POWER POLE W/GUY WIRE
 - ⊕ TELEPHONE RISER
 - ⊕ STREET LIGHT
 - DRAINAGE FLOW DIRECTION
 - SECTION LINE
 - CENTERLINE
 - RIGHT-OF-WAY LINE
 - PROPERTY LINE
 - EXISTING CONTOUR W/ELEV.
 - BUILDING LINE
 - STONE RIPRAP
 - PROPOSED PAVEMENT
 - PROPOSED CONCRETE



SITE DATA

TAX ID 28-01-015-005-00
CURRENT ZONING: B-4

BUILDING SETBACKS
FRONT YARD - 60'
SIDE YARD - 30'
REAR YARD - 50'

SITE AREA: 4.4 ACRES

CURRENT USE - VACANT

PROPOSED BUILDING INFORMATION
TOTAL BUILDING AREA: 3,486 SQUARE FEET

PARKING/PAVING

PARKING SPACES ALLOWED: XXV,000 S.F. = 17 SPACES TOTAL
PARKING SPACES PROVIDED: 24 SPACES TOTAL
OWNER REQUESTING VARIANCE FOR ADDITIONAL SPACES

TOTAL PARKING/PAVING IMPROVEMENTS: 24,174 SQUARE FEET

- TEST HOLE 1**
- 0-12" sandy loam topsoil
 - 12-25" loamy sand
 - 25-70" medium sand
 - 70-74" sandy loam
- TEST HOLE 2**
- 0-12" sandy loam topsoil
 - 12-43" loamy sand
 - 43-53" clay loam
 - 53-65" medium sand
 - 65-72" clay loam
- TEST HOLE 3**
- 0-10" sandy loam topsoil
 - 10-26" sandy loam
 - 26-35" sandy clay loam
 - 35-41" coarse sand and gravel
 - 41-45" sandy clay loam
 - 45-61" coarse sandy and gravel
 - 61-65" clay loam and gravel
 - refusal at 65"
- TEST HOLE 4**
- 0-8" sandy loam topsoil
 - 8-18" fine loamy sand
 - 18-26" clay
 - 26-31" sandy loam
 - 31-50" medium sand
 - 50-52" sandy loam
 - 52-65" clay loam with medium sand stringers
 - 65-72" sandy loam.

28-01-015-005-05
4.40 ACRES

66' PRIVATE EASEMENT (NOT CONSTRUCTED)

SITEPLAN

DESCRIPTION: A parcel of land situated in the Township of Acme, County of Grand Traverse, State of Michigan and described as follows to-wit:
Part of the Southwest One-Quarter of Section 32, Town 28 North, Range 09 West, more fully described as follows; Commencing at the Southwest corner of said section; thence North 00°55'01" West, along the West line of said section, 583.51 feet, to the Point of Beginning; thence North 89°10'55" East, 504.61 feet; thence North 00°55'01" West, 380.00 feet, to the Southern edge of C & O Railroad; thence South 89°10'55" West, along said railroad boundary, 504.62 feet, to the West line of said section; thence South 00°55'01" East, along said West line, 380.00 feet, to the Point of Beginning. Contains 4.40 Acres of land.

GENERAL NOTES

SITE CIVIL ENGINEER ASSUMES NO RESPONSIBILITY FOR JOB SITE SAFETY. EACH CONTRACTOR SHALL INDEPENDENTLY ENSURE THE SAFETY OF THEIR WORKERS, UTILIZING APPROPRIATE SAFETY EQUIPMENT AND PERFORMING TIMELY TOO-BOX TALKS AS REQUIRED TO MAINTAIN JOB SITE SAFETY.

AS FEW SOIL BORINGS WERE PERFORMED IN THE CONCEPTION OF THIS SITE PLAN, CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH SITE CONDITIONS PRIOR TO BID SUBMISSION.

ALTERATION OF ANY PART OF THIS DOCUMENT WITHOUT THE PERMISSION OF BOB MITCHELL & ASSOCIATES IS PROHIBITED.

FILE NO.	20190048
DWG. NAME	20190048.dwg
SCALE:	AS NOTED
DWN. WPM	CHK. JEM
REV.	5-9-19
DATE	4-15-19
3 OF 5	

SOIL EROSION AND STORM WATER RUNOFF CONTROL PLAN

Legend

- IRON SET
- IRON FOUND
- ⊙ MONUMENT FOUND
- △ NAIL SET
- ▲ NAIL FOUND
- ⊕ GOVERNMENT 1/4 CORNER
- ⊙ SECTION CORNER
- ⊙ CENTER 1/4 CORNER
- (R) RECORD
- (M) MEASURED
- POWER POLE
- POWER POLE W/GUY WIRE
- ⊠ TELEPHONE RISER
- ⊙ STREET LIGHT
- DRAINAGE FLOW
- SECTION LINE
- CENTERLINE
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EXISTING CONTOUR W/ELEV.
- BUILDING LINE
- STONE RIPRAP
- PROPOSED PAVEMENT
- PROPOSED CONCRETE
- SPOT ELEVATION

GRAPHIC SCALE



GENERAL NOTES

1. THE SOIL EROSION MEASURES SHOWN ARE THE MINIMUM CONTROLS TO BE USED ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES TO PROTECT THE DISTURBED AREAS AND ADJACENT PROPERTIES FROM ACCELERATED EROSION AND SEDIMENTATION RESULTING FROM PROJECT CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
2. ALL DISTURBED AREAS SHALL BE TOPSOILED, SEED, FERTILIZED AND MULCHED OR SODED. MULCH BLANKET SHALL BE INSTALLED IN AREAS AS DESIGNATED AND SHALL BE INCIDENTAL TO OTHER ITEMS.
3. CONTRACTOR SHALL OBTAIN SOIL EROSION PERMIT PRIOR TO ANY CONSTRUCTION.
4. NO SLOPES WITHIN SITE SHALL BE GRADED GREATER THAN 1 ON 3 UNLESS SPECIFICALLY NOTED AND ADDITIONAL STABILIZATION SUCH AS TURF REINFORCEMENT MAT OR MULCH BLANKETS ARE PROVIDED. ALL RETENTION BASIN SLOPES TO BE NO GREATER THAN 1 ON 3.
5. ALL SILT FENCE IS TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS PRIOR TO STARTING CONSTRUCTION. CONTRACTOR TO MAKE ROUTINE INSPECTIONS OF SILT FENCE AND REPAIR AND MAINTAIN AS NECESSARY UNTIL VEGETATIVE COVER IS RESTORED.
6. ALL FLOWS RESULTING FROM DE-WATERING WILL NOT BE ALLOWED DIRECT ENTRY INTO ANY STREAMS, LAKES OR WATERWAYS. DISCHARGE MUST BE DIRECTED OVER GRASSY AREAS.
7. ALL EXISTING VEGETATION AND TREES TO REMAIN UNLESS MARKED FOR REMOVAL AS PER PLAN.
8. SELECTED TREES WITHIN TREE LINES MAY BE SALVAGED AT THE TIME OF CONSTRUCTION (LAND PREPARATION).
9. ALL EXCESS TOPSOIL WILL REMAIN WITHIN THE PROPERTY OWNER'S SITE. IF ADDITIONAL TOPSOIL IS AVAILABLE AFTER TOPSOILING THE CONSTRUCTION AREA, IT WILL BE STOCKPILED WITHIN 1000 FEET OF THE CONSTRUCTION AREA IN A DESIGNATED AREA AS DIRECTED BY THE OWNER.
10. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING GROUND COVER ON AREAS DISTURBED BY CONSTRUCTION AND SHALL REPAIR ALL WASHOUTS AND EROSION DURING THE GUARANTEE PERIOD OF ONE (1) YEAR AFTER GROUND COVER IS ESTABLISHED AT NO ADDITIONAL COST TO THE OWNER.

SITE DATA

TAX ID 28-01-015-005-00
 CURRENT ZONING: B-4
 BUILDING SETBACKS:
 FRONT YARD - 60';
 SIDE YARD - 38';
 REAR YARD - 50'
 SITE AREA: 4.4 ACRES
 CURRENT USE - VACANT

TEST HOLE 1

0-12" sandy loam topsoil
 12-25" loamy sand
 25-70" medium sand
 70-74" sandy loam

TEST HOLE 2

0-12" sandy loam topsoil
 12-43" loamy sand
 43-53" clay loam
 53-65" medium sand
 65-72" clay loam

TEST HOLE 3

0-10" sandy loam topsoil
 10-26" sandy loam
 26-35" sandy clay loam
 35-41" coarse sand and gravel
 41-45" sandy clay loam
 45-61" coarse sandy and gravel
 61-65" clay loam and gravel
 refusal at 65"

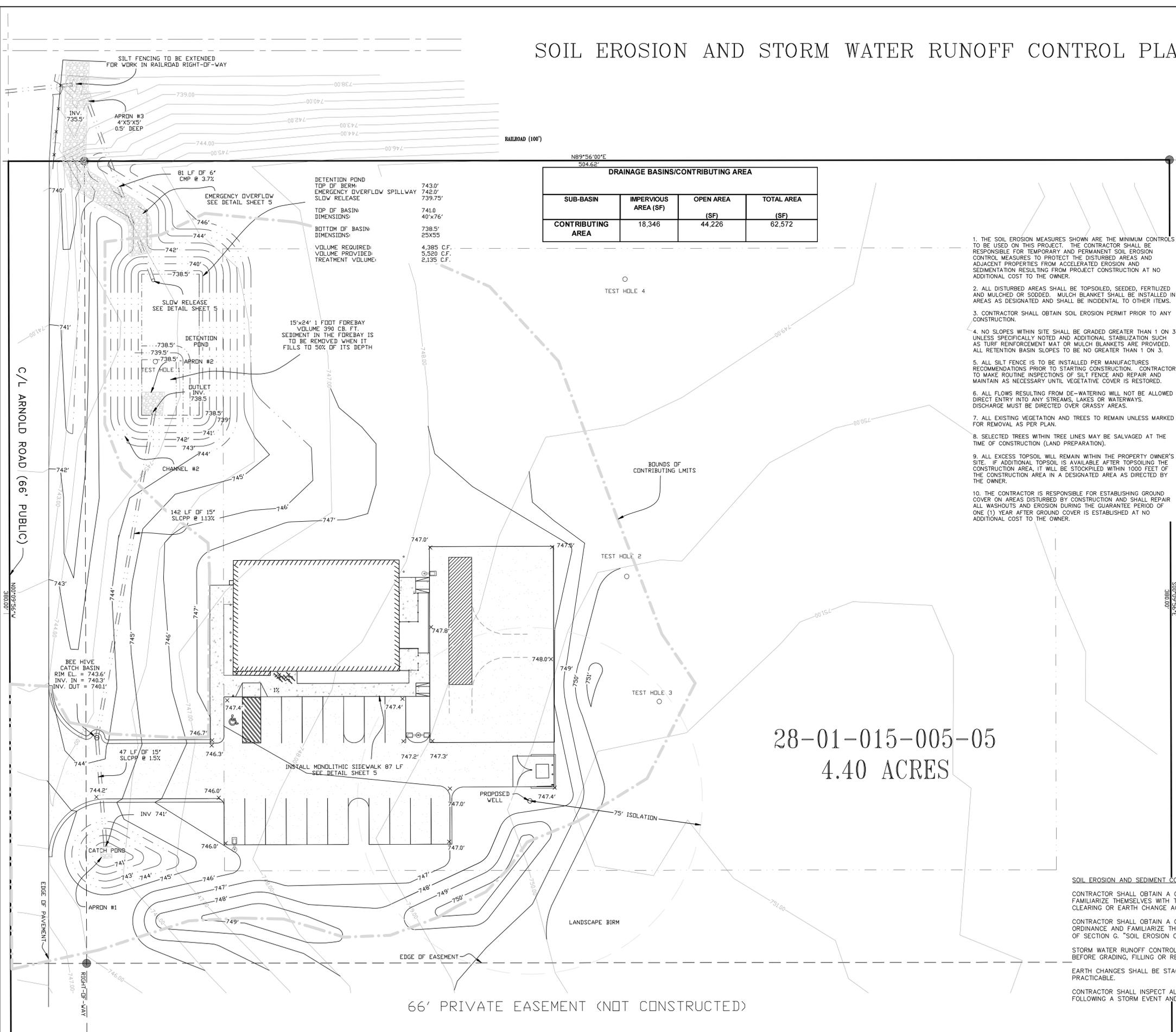
TEST HOLE 4

0-4" sandy loam topsoil
 4-18" fine loamy sand
 18-26" clay
 26-31" sandy loam
 31-50" medium sand
 50-52" sandy loam
 52-65" clay loam with medium sand stringers
 65-72" sandy loam.

SOIL EROSION AND SEDIMENT CONTROL NOTES

CONTRACTOR SHALL OBTAIN A COPY OF THE SOIL EROSION PERMIT FOR THIS PROJECT AND FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS THEREOF PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTH CHANGE ACTIVITIES.
 CONTRACTOR SHALL OBTAIN A COPY OF THE ACME TOWNSHIP STORM WATER CONTROL ORDINANCE AND FAMILIARIZE THEMSELVES WITH THE APPLICABLE PROVISIONS OF SECTION G. "SOIL EROSION CONTROL - TEMPORARY AND PERMANENT".
 STORM WATER RUNOFF CONTROL AND SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED BEFORE GRADING, FILLING OR REMOVAL OF VEGETATIVE COVER IS INITIATED.
 EARTH CHANGES SHALL BE STAGED TO KEEP THE EXPOSED AREAS OF SOIL AS SMALL AS PRACTICABLE.
 CONTRACTOR SHALL INSPECT ALL SOIL EROSION CONTROL MEASURES DAILY AND IMMEDIATELY FOLLOWING A STORM EVENT AND REPLACE OR REPAIR AS NEEDED.

DRAINAGE BASINS/CONTRIBUTING AREA			
SUB-BASIN	IMPERVIOUS AREA (SF)	OPEN AREA (SF)	TOTAL AREA (SF)
CONTRIBUTING AREA	18,346	44,226	62,572

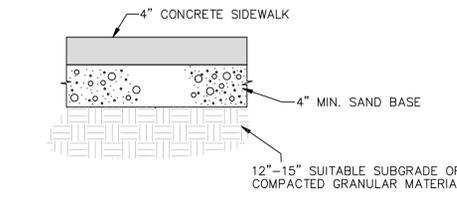


Bob Mitchell & Associates P.C.
 SURVEYING / ENGINEERING
 404 West Main Street, P.O. Box 306
 Kingsley, MI 49649
 (231) 263-5463, FAX (231) 263-7921
 Toll Free in Michigan 1-800-533-6627
 email: bmm@bmmitchell.com
 NORTH 1ST STREET
 HARRISON, MI 48625

28-01-015-005-00
 MICHAEL E. SWANSON
 PROJECT: GREEN PEAK INNOVATIONS
 SHEET: DRAIN PLAN

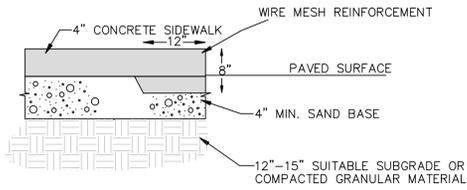
DESCRIPTION:	DATE:
FILE NO. 20190048	
DWG. NAME 20190048.dwg	
SCALE: AS NOTED	
DWN. WPM CHK. JEM	
REV. 5-9-19	
DATE 4-15-19	

DETAILS SHEET

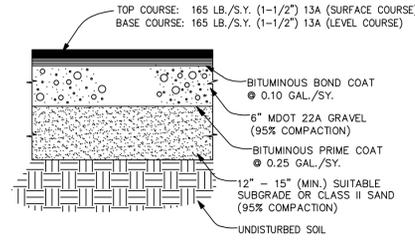


* CONCRETE IN DRIVE AREAS TO BE MIN. 6" THICK WITH WIRE MESH REINFORCEMENT

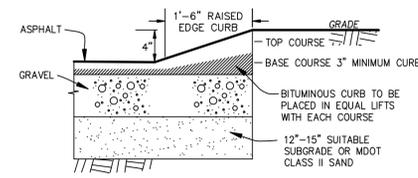
CONCRETE WALK DETAIL
NOT TO SCALE



MONOLITHIC POUR SIDEWALK

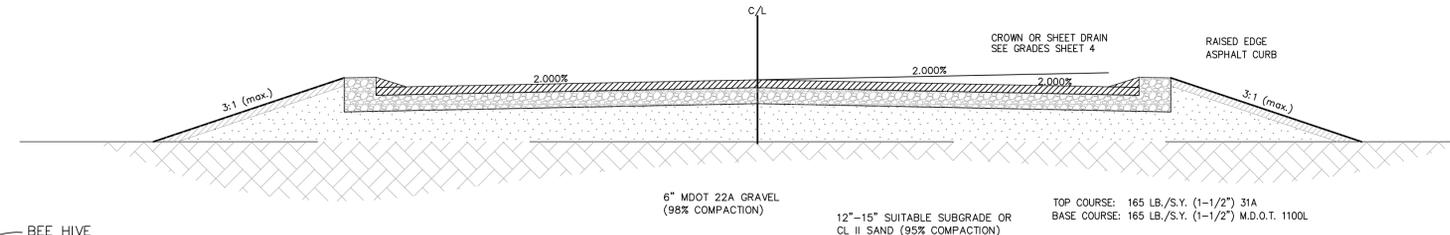


PAVING DETAIL
NOT TO SCALE

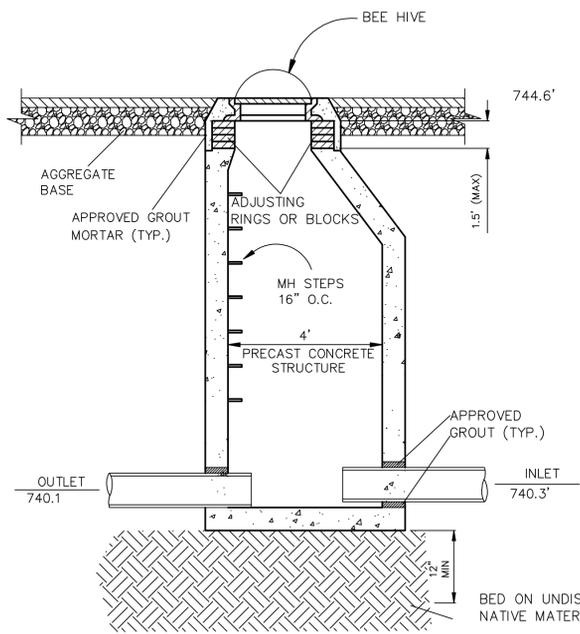
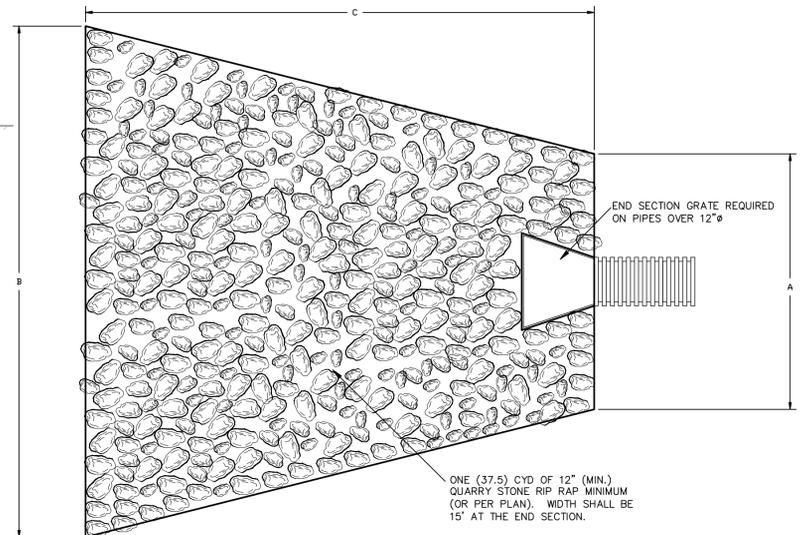


NOTE: SEE PAVING DETAIL FOR ASPHALT & GRAVEL SPECIFICATION.

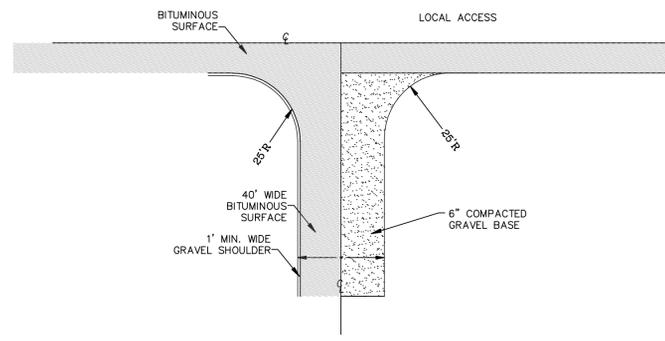
RAISED EDGE ASPHALT CURB
NOT TO SCALE



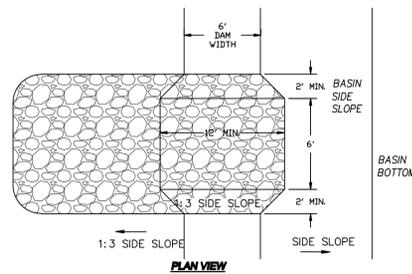
TYP. 24' WIDE PAVED RD. SECTION
NOT TO SCALE



MANHOLE #1
NO SCALE

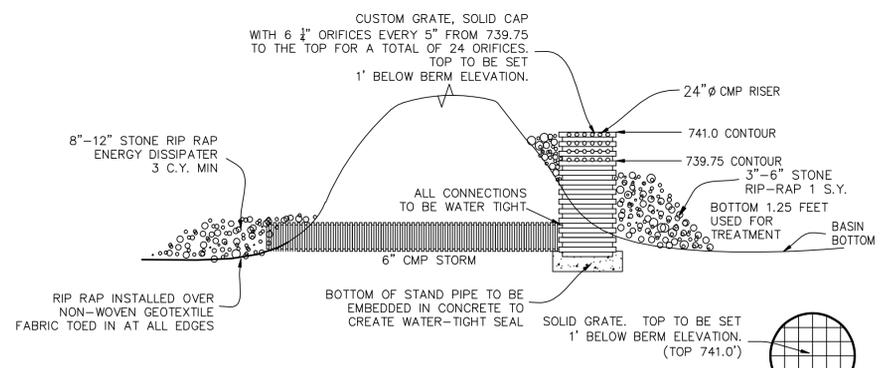


COUNTY PAVED ENTRANCE
NOT TO SCALE

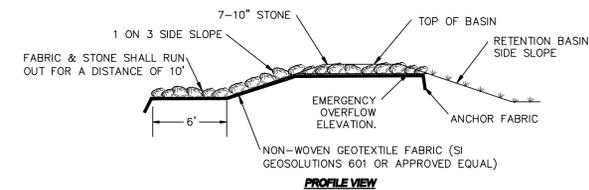


Totals Quantities of Rip Rap (In Terms of Volume) for Configuring flow channels and rip rap aprons:

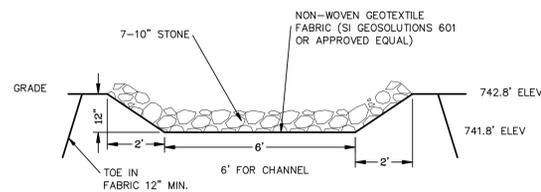
Quantities for Rip Rap Aprons	DIMENSIONS of ENERGY DISSIPATORS				Volume (Cu. Yds.)		
	Width #1 (Dim. A) (Ft.)	Width #2 (Dim. B) (Ft.)	Length (Dim. C) (Ft.)	Depth (Ft.)			
Apron #1 (located at Inlet #1, Elevation= 741.0)	5	8	8	1.25	2.4		
Apron #2 (located at Outlet #2, Elevation = 738.5)	8	10	10	1.25	4.2		
Subtotal Quantities:					6.6		
Quantities for Open Channels:	Bottom Width (ft.)	Top Width (ft.)	Height (ft.)	Depth (ft.)	Side (Either Side at Top of Channel) (ft.)	Channel Length (ft.)	Volume (Cu. Yds.)
Open Channel, Segment #2:	6	10	1	1	1	97.5	
SubTotal Quantities:							42.7



SLOW RELEASE STRUCTURE
NOT TO SCALE



NOTE: GEOTEXTILE FABRIC SHALL BE ANCHORED TO A DEPTH OF 12". STONE SHALL BE FIRMLY PLACED ON TOP OF THE FABRIC. TOP OF BERM IN FILL SECTION SHALL BE A MINIMUM OF 14' IN WIDTH.



EMERGENCY OVERFLOW / OPEN CHANNEL DETAIL
NOT TO SCALE

ACME TOWNSHIP LANDSCAPE REQUIREMENT CHART

REQUIRED PUBLIC RIGHT-OF-WAY LANDSCAPING

	REQUIREMENT	PROVIDED
	1 CANOPY OR EVERGREEN TREE / 24 L.F. FRONTAGE 5 SMALL SHRUBS / 24 L.F. FRONTAGE	
ARNOLD RD. FRONTAGE DISTANCE: 347 L.F.	14.4 CANOPY OR EVERGREEN TREES 72.3 SMALL SHRUBS	12 CANOPY TREES 3 EVERGREEN TREES 75 SMALL SHRUBS

REQUIRED OFF-STREET PARKING BUFFERING, LANDSCAPING & SCREENING

	REQUIREMENT	PROVIDED
	ALL OFF-STREET PARKING AREAS SHALL BE LANDSCAPED WITH PLANTING STRIPS ON ALL SIDES VISIBLE FROM A SURROUNDING PROPERTY.	
SOUTH OF PARKING AREA		BERMS, EVERGREEN TREES, MULTI-STEM TREES
EAST OF PARKING AREA		BERMS, MULTI-STEM TREES

REQUIRED REFUSE RECEPTACLES AREA SCREENING

	REQUIREMENT	PROVIDED
	1 SHRUB OR VINE / 5 L.F. FENCE	
FENCE DISTANCE: 25 L.F.	5 SHRUBS OR VINES	12 SHRUBS

REQUIRED TREE ISLANDS

	REQUIREMENT	PROVIDED
	1 CANOPY TREE / 10 PARKING SPACES 2 CANOPY TREES AT END OF EACH PARKING ROW	
PARKING SPACES: 17	1.7 CANOPY TREES	2 CANOPY TREES
PARKING ROWS: 2	6 CANOPY TREES	6 CANOPY TREES

PLANT SCHEDULE

Shade Trees	Key	Qty.	Botanical Name	Common Name	Size	Remarks	Nursery
	AA	6	Acer rubrum 'Armstrong'	Armstrong Maple	2.5" Cal.	Min. 6' Branch Height	CPC,GEE,GLL,LSI,RWN
	GT	2	Gleditsia triacanthos var. inermis 'Skycole'	Skyline Thornless Honeylocust	2.5" Cal.	Min. 6' Branch Height	CPC,GEE,GLL,LSI,RWN
	PM	4	Platanus x acerifolia 'Morton Circle'	Exclamation Planetree	2.5" Cal.	Min. 6' Branch Height	CPC,GLL,LSI,RWN
	QB	3	Quercus bicolor	Swamp White Oak	2.5" Cal.	Min. 6' Branch Height	CPC,GEE,GLL,LSI,RWN
	QM	5	Quercus macrocarpa	Bur Oak	2.5" Cal.	Min. 6' Branch Height	CPC,GEE,GLL,LSI,RWN
Conifer Trees	Key	Qty.	Botanical Name	Common Name	Size	Remarks	Nursery
	PG	4	Picea glauca	White Spruce	8' Ht.	Non-sheared	CPC,GEE,GLL,LSI
	PS	4	Pinus strobus	White Pine	8' Ht.	Non-sheared	CPC,GEE,GLL,LSI
Ornamental Trees	Key	Qty.	Botanical Name	Common Name	Size	Remarks	Nursery
	AC	3	Amelanchier canadensis	Shadblow Serviceberry	7' Ht.	Multi-stem	CPC,GEE,LSI,RWN
	BN	1	Betula nigra 'Cully'	Heritage River Birch	10'-12' Ht.	Multi-stem	CPC,GEE,GLL,LSI,RWN
	CC	3	Cercis canadensis	Eastern Redbud	7' Ht.	Multi-stem	CPC,GEE,GLL,LSI,RWN
Shrubs	Key	Qty.	Botanical Name	Common Name	Size	Remarks	Nursery
	AM	56	Aronia melanocarpa 'Low Scape Mound'	Low Scape Mound Chokeberry	18" Spread	3' O.C.	LNI,MGC
	BV	8	Buxus 'Green Velvet'	Green Velvet Boxwood	30" Height	3' O.C.	CPC,GEE,LNI,LSI,MGC,RWN
	BM	6	Buxus 'Green Mountain'	Green Mountain Boxwood	30" Height	3' O.C.	CPC,GEE,GLL,LNI,LSI,MGC,RWN
	CA	29	Ceanothus americanus	New Jersey Tea	18" Spread	3' O.C.	GLL,HRT,LSI,MGC
	RA	12	Rhus aromatica 'Gro-Low'	Gro-Low Sumac	18" Spread	4' O.C.	CPC,GEE,GLL,LSI,MGC,RWN
Perennials & Ornamental Grasses	Key	Qty.	Botanical Name	Common Name	Size	Remarks	Nursery
	AB	22	Amsonia 'Blue Ice'	Blue Ice Blue Star	1 Gallon	18" O.C.	GLL,HRT,LNI,MGC,RWN
	BC	62	Bouteloua curtipendula	Sideoats Grama	1 Gallon	2' O.C.	HRT,MGC
	LK	18	Liatris spicata 'Kobold'	Kobold Liatris	1 Gallon	18" O.C.	CPC,GEE,GLL,HRT,LNI,LSI,MGC,RWN
	NP	11	Nepeta x faassenii 'Pursian Blue'	Pursian Blue Catmint	1 Gallon	2' O.C.	GLL,HRT,LNI,RWN
	SA	48	Sesleria autumnalis	Autumn Moor Grass	1 Gallon	18" O.C.	GLL,HRT,LSI,MGC,RWN

Miscellaneous Materials	Quantity	Material Type	Nursery Key	Key	Nursery	Location	Contact
	482 L.F.	Aluminum Edging - See Detail F-L102	CPC		Christensen's Plant Center	Plymouth, MI	(734) 454-1400
	5.25 C.Y.	Finished Compost for Planting Beds (1" Depth)	GEE		Gee Farms	Stockbridge, MI	(517)769-6772
	2 C.Y.	1.5" - 2" Dia. Michigan River Rock (3" Depth)	GLL		Great Lakes Landscape Supply	Cedar Springs, MI	(616) 696-5665
	12 C.Y.	Shredded Hardwood Mulch (2" Depth)	HRT		Hortech	Spring Lake, MI	(616) 842-1392
	1.15 Acres	Lawn Seed w/ Hydromulch	LNI		Lincoln Nurseries, Inc.	Grand Rapids, MI	(616) 453-2351
	23,850 S.F.	Irrigated Area	LSI		Landscape Supply, Inc.	Taylor, MI	(734) 946-7000
			MGC		Midwest Groundcovers	St Charles, IL	(260) 750-2197
			RWN		Ray Wiegand's Nursery	Macomb, MI	(586) 727-3410

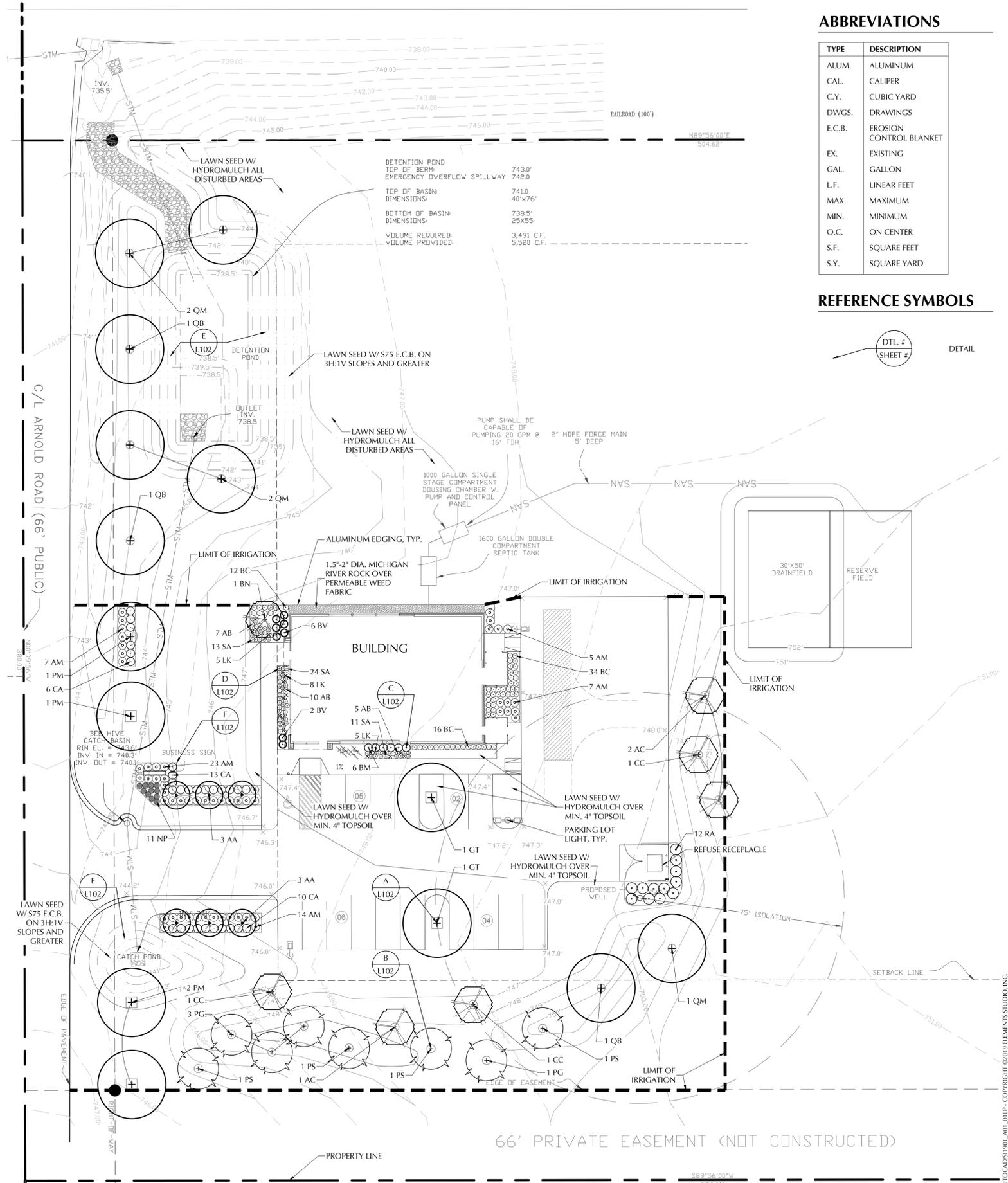
Note: Nurseries listed on plant schedule are for the convenience of the Contractor and indicate typical plants carried. Contact nursery to determine actual plant availability.

GENERAL NOTES

- Quantities shown are for the convenience of the contractor only. Contractor is responsible for verifying quantities, and for providing sufficient materials to complete the job per plan.
- Contractor shall secure and pay for all permits, fees, and inspections necessary for the proper execution of this work and comply with all codes applicable to this work.
- Contractor shall call MISS DIG System, Inc. (800) 482-7171 three full working days before work commences to locate underground utility locations. Contractor shall avoid all existing utilities, underground and overhead where applicable, and is responsible for any damage.
- Contractor shall verify all existing conditions in the field prior to construction and shall notify Landscape Architect of any variance.
- Material quality and measurement shall conform to the most recent edition of the American Standard for Nursery Stock, ANSI Z60.1 by the American Hort.
- All plants shall be installed per the landscape plan. Plantings not found to be in compliance shall be replanted correctly at no additional expense to the owner.
- An approved pre-emergent herbicide shall be applied in all proposed planting beds at a rate specified by manufacturer for each plant variety.
- Where planting area meets turf area, the contractor shall install aluminum edging. **Do not install edging for mulch tree rings in lawn.** Mulch all planting areas to the bedline shown.
- Fine grade, fertilize and seed all disturbed areas resulting from construction. All areas shall drain completely and shall not pond or puddle. Aerate existing turf where it has been compacted by equipment.

TREE REMOVAL NOTE

See Civil Engineering dwgs. by Bob Mitchell & Associates for trees to be removed.



LANDSCAPE PLAN

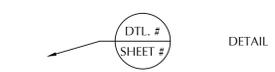
SCALE: 1" = 20'
SCALE IN FEET: 0' 10' 20' 40'

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

ABBREVIATIONS

TYPE	DESCRIPTION
ALUM.	ALUMINUM
CAL.	CALIPER
C.Y.	CUBIC YARD
DWGS.	DRAWINGS
E.C.B.	EROSION CONTROL BLANKET
EX.	EXISTING
GAL.	GALLON
L.F.	LINEAR FEET
MAX.	MAXIMUM
MIN.	MINIMUM
O.C.	ON CENTER
S.F.	SQUARE FEET
S.Y.	SQUARE YARD

REFERENCE SYMBOLS



ELEMENTS STUDIO inc.
LANDSCAPE ARCHITECTURE
907 Britten Ave., Lansing, MI 48910
www.ElementsStudio.net | P: (517) 599-7152

CLIENT:
Studio (intrigue) Architects, LLC
1114 S. Washington Ave.
Suite 100
Lansing, MI 48940-1649
Phone: 517.372.8804

**SKYMINT MEDICAL MARIJUANA
PROVISIONING CENTER**
6140 N. ARNOLD RD., WILLIAMSBURG, MI 49690
LANDSCAPE PLAN



ISSUED:
04/15/19 Site Plan Review

PROJECT NUMBER:
SI1901

DRAWN BY:
KF, JF

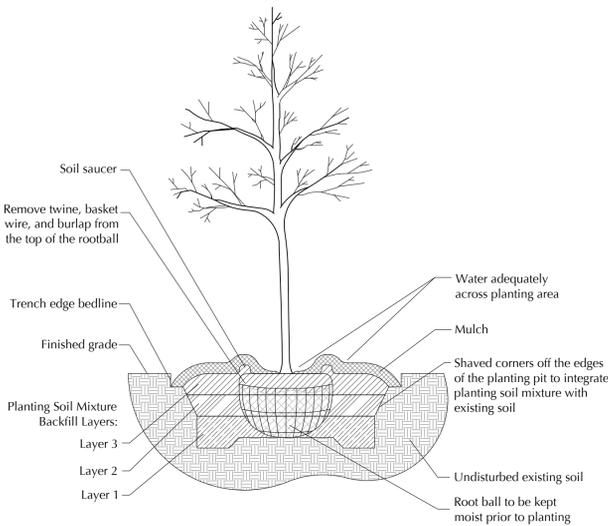
CHECKED BY:
JF

SCALE:
AS INDICATED

SHEET NUMBER:
L101

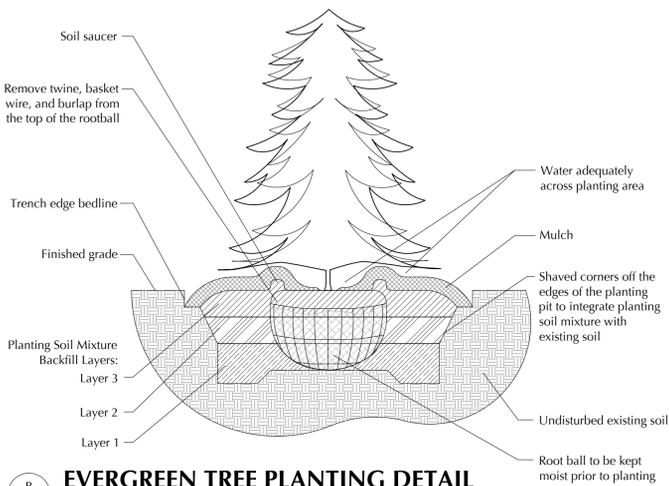
FILE PATH: ES20190101ALTOCADS1901_A01_0101 - COPYRIGHT ©2019 ELEMENTS STUDIO, INC.

PLANTING DETAILS



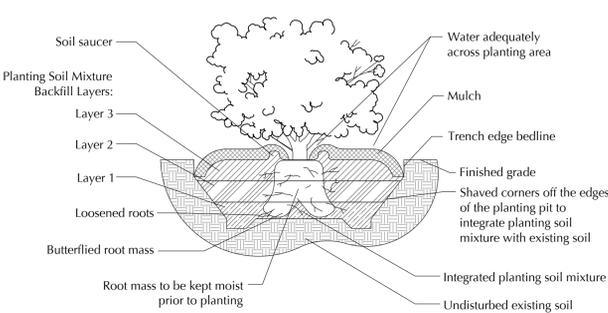
DECIDUOUS TREE PLANTING DETAIL

A L102 NOT TO SCALE



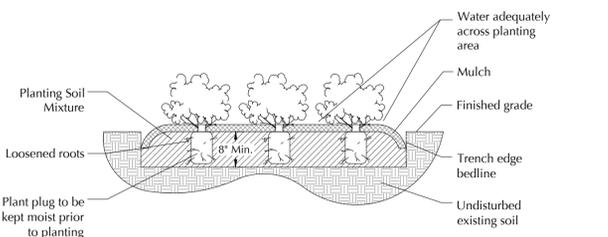
EVERGREEN TREE PLANTING DETAIL

B L102 NOT TO SCALE



SHRUB PLANTING DETAIL

C L102 NOT TO SCALE



PERENNIAL PLANTING DETAIL

D L102 NOT TO SCALE

LANDSCAPE WORK PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The work shall consist of furnishing, transporting and installing all seeds, plants and other materials required for:

1. The establishment of trees, shrubs, groundcovers, perennials, and lawn areas as shown on Landscape Plan;
2. The provision of post-planting management as specified herein;
3. Any remedial operations necessary in conformance with the plans as specified in this document;
4. The design, furnishing and installation of a complete underground irrigation system.

1.2 QUALITY ASSURANCE

A. Quality Control Procedures:

1. Do not make substitutions. If specified landscape material is not obtainable, submit to Landscape Architect proof of non-availability and proposal for use of equivalent material.

1.3 SUBMITTALS

A. Maintenance Instructions

1. Submit two (2) copies of typewritten instructions recommending procedures to be established by the Owner for the maintenance of all landscape work.
2. Maintenance instructions shall include: watering, fertilizing, spraying, mulching, pruning for plant material, and mowing of lawn. Instructions shall be submitted prior to request for inspection for final acceptance.

1.4 JOB CONDITIONS

A. Examine and evaluate grades, soils and water levels. Observe the conditions under which work is to be performed and notify Owner of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

B. Utilities: Review underground utility location maps and plans. Notify local utility location service. Certify acceptance of liability for the protection of utilities during course of work. Contractor shall be responsible for any damage to utilities or property.

C. Excavation: When conditions detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions or obstructions, correct conditions to be suitable for plant growth before planting.

1.5 GUARANTEES

A. Guarantee seeded lawn areas until final acceptance.

B. Guarantee trees, shrubs, groundcovers and perennials for a period of one year after date of final acceptance against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others or unusual phenomena or incidents which are beyond Contractor's control.

LANDSCAPE WORK PART 2 - MATERIALS AND EXECUTION

2.1 LAWN SEED MIXTURE

A. Remove existing grass, vegetation and turf. Dispose of such material legally off-site. Do not turn over into soil being prepared for lawns.

B. Incorporate minimum 4" topsoil (stockpiled at site) into existing on-site soils while preserving existing soil structure as much as possible, so that resulting soil is not pulverized and prone to erosion. Remove high areas and fill in depressions; remove lumps, clods, stones over 1" diameter, roots and other extraneous matter. Dispose of such material legally off-site. Apply soil amendments to existing topsoil (stockpiled at site) based on soil test.

C. Seeded lawn areas shall receive an application of slow-release fertilizer at the rate of 1 pound of actual nitrogen per 1,000 s.f. Apply phosphate and potash at rates per soil test results. Fertilizer shall be uniformly spread.

D. Provide fresh, clean, new crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America. Provide seed of the grass species, proportions and maximum percentage of weed seed, as specified.

1. TLC Turf Type Tall Fescue Blend - 10 lbs./1,000 sq. ft.

E. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage.

F. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds five (5) miles per hour. Distribute seed evenly over entire area by sowing equal quantity in two directions at right angles to each other.

G. Sow not less than specified rate.

H. Rake lawn seed lightly into top 1/8" of soil, roll lightly and water with a fine spray.

I. Apply Geoturf 100% Plain Paper Hydromulch with GeoTack or equivalent over the entire grassed area at the minimum rate of 1,500 pounds per acre. Use a mechanical spray unit to insure uniform coverage. Exercise care to protect buildings, automobiles and people during the application of the hydromulch. Distributor: CSI Geoturf (248) 887-6767.

2.2 EROSION CONTROL BLANKET

A. 3H:1V Slope Detention Basin: North American Green S75 or equivalent. Secure blanket to soil with 6" GeoTurf Surhold Hardwood Stake. Distributor: CSI Geoturf (248) 887-6767.

2.3 PLANTING SOIL MIXTURE

A. Tree and shrub planting pits, groundcover, perennial, and annual areas: Provide planting soil mixture consisting of friable topsoil (stockpiled at site) and 1" finished compost. Finished compost to have a C:N ratio in the range of 15:1 to 20:1.

2.4 PLANT MATERIAL

A. All plants shall be subject to inspection and review at the place of growth or upon delivery for conformity to specification requirements and quality. Rejected plants shall be removed immediately from the site.

B. The Contractor shall be wholly responsible for assuring that all trees are planted in a vertical and plumb position and remain so throughout the life of this contract and guarantee period. Trees may or may not be staked and guyed depending upon the individual preference of the Contractor; however, any bracing procedure(s) must be approved by the Owner prior to its installation. If Contractor chooses to stake and guy the trees, stakes and guy wires are to be removed one year (1) after planting.

2.5 PLANTING BED MULCH

A. Provide mulch consisting of shredded hardwood. Do not use color enriched mulch.

2.6 CLEAN UP AND PROTECTION

A. During landscape work, store materials and equipment where directed. Keep pavements clean and work areas and adjoining areas in an orderly condition.

B. Protect landscape work and materials from damage due to landscape operations, operations by other trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed by Owner.

2.7 INSPECTION AND ACCEPTANCE

A. Supply written affidavit to Owner certifying composition of seed mixture and integrity of plant materials with respect to species, variety and source.

B. Landscape Architect or Owner will make a final inspection to determine acceptability of all seeded lawn areas, trees, shrubs, groundcovers, and perennials.

LANDSCAPE WORK PART 3 - MAINTENANCE

3.1 INITIAL MAINTENANCE

A. Begin maintenance of seeded lawn areas, trees, shrubs, groundcovers, and perennials immediately after planting, continuing until final acceptance. A minimum of thirty (30) days.

LANDSCAPE WORK PART 4 - UNDERGROUND IRRIGATION SYSTEM

4.1 DESCRIPTION OF WORK

A. This subcontractor shall design, furnish and install a complete underground lawn and planted area irrigation system as shown by the "Limit of Irrigation" line on the plans including all necessary underground sleeves, fully automatic weather-based control systems, water pump, water meter, backflow preventer if required per code, and electrical wiring for system. Design shall be in accordance with good engineering practice.

B. Provide separate irrigation zones for lawn and planting beds with minimal overspray onto hard surfaces.

C. Provide quick coupler valves as directed by Owner.

4.2 QUALITY ASSURANCE

A. All materials shall be new, first class, especially designed for intended use.

B. All work shall be installed with best workmanship in accordance with best practice of the trade, in accordance with all local codes, ordinances, rules and regulations, in accordance with approved design shop drawings and in accordance with the system manufacturer's recommendations.

C. Special provisions shall be made to adequately and properly protect the system from damage due to weather and frost conditions.

4.3 DESIGN

A. Desigarea of each head, length, location and size of pipe runs, depth of pipe installation, underground sleeves under sidewalks and paved areas, controls, timers, water meter, complete wiring diagram, etc.

B. Electrical power wiring to location of controller will be by electrical contractor. Connection of system to power supply is by irrigation system contractor.

4.4 SUBMITTALS

A. Irrigation system contractor shall submit the following:

1. One (1) digital file of all required design and layout shop drawings and detailed specification sheets of all proposed material to Landscape Architect for design conformance review.

- 1.1. Review of the shop drawings will be for general conformance with the design concept and shall in no way remove the responsibility for the design, detailing, and fabrication from this subcontractor.

2. "As-built" drawings at completion of project to Owner.

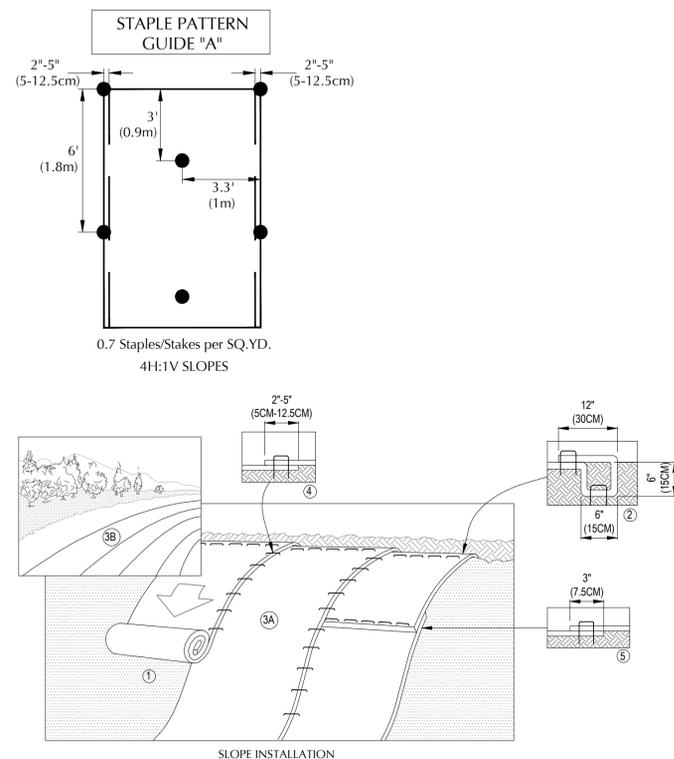
3. Operation and maintenance manuals - two (2) sets to Owner.

4.5 BID

A. Subcontractors shall include with their bid quotation information identifying the manufacturer of the proposed irrigation equipment.

4.6 GUARANTEE

A. Furnish written manufacturer's and subcontractor's one (1) year unconditional guarantee against defects in material and workmanship from date of final acceptance of project by the Owner.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.

2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15CM) DEEP X 6" (15CM) WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING/STAKING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30CM) APART ACROSS THE WIDTH OF THE BLANKET.

3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED/STAKED WITH APPROXIMATELY 2'-5" (5CM-12.5CM) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.

5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5CM) OVERLAP. STAPLE/STAKE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30CM) APART ACROSS ENTIRE BLANKET WIDTH.

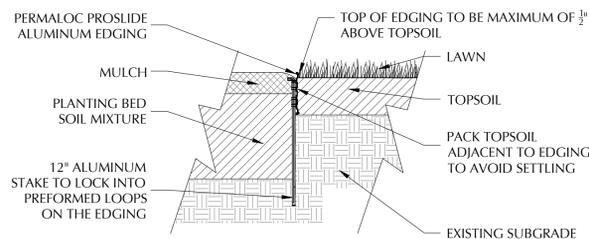
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. IN LOOSE SOIL CONDITIONS THE USE OF STAPLE/STAKE LENGTHS GREATER THAN 6" (15CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

MANUFACTURER: NORTH AMERICAN GREEN, POSEVILLE, IN
(800) 522-5011
www.nagreen.com

S75 EROSION CONTROL BLANKET DETAIL

E L102 NOT TO SCALE



NOTES:

1. INSTALL PER MANUFACTURER'S "INSTALLATION GUIDELINES."
2. 8'-0" SECTIONS TO INCLUDE (3) 12" ALUMINUM STAKES.
3. 16'-0" SECTIONS TO INCLUDE (5) 12" ALUMINUM STAKES.
4. CORNERS - CUT BASE OF EDGING UP HALFWAY AND FORM A CONTINUOUS CORNER.

MANUFACTURER: PERMALOC CORPORATION, HOLLAND, MI
(800) 356-9660
WWW.PERMALOC.COM

PROSLIDE ALUMINUM EDGING - 1/8" THICK x 4" TALL,
COLOR - MILL FINISH

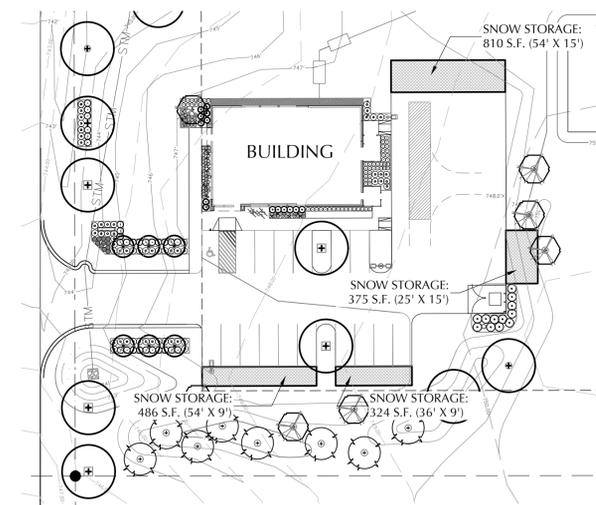
ALUMINUM EDGING DETAIL

F L102 NOT TO SCALE

ACME TWP. SNOW STORAGE REQUIREMENT CHART

REQUIRED AREA FOR SNOW STORAGE

	REQUIREMENT 15 S.F. / 100 S.F. OF OFF-STREET PARKING AREA	PROVIDED
OFF-STREET PARKING AREA: 13,025 S.F.	1,955 S.F. SNOW STORAGE AREA	1,995 S.F. SNOW STORAGE AREA



AREAS TO STORE SNOW

SCALE: 1" = 40'
SCALE IN FEET: 0' 20' 40' 80'

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171



skymint

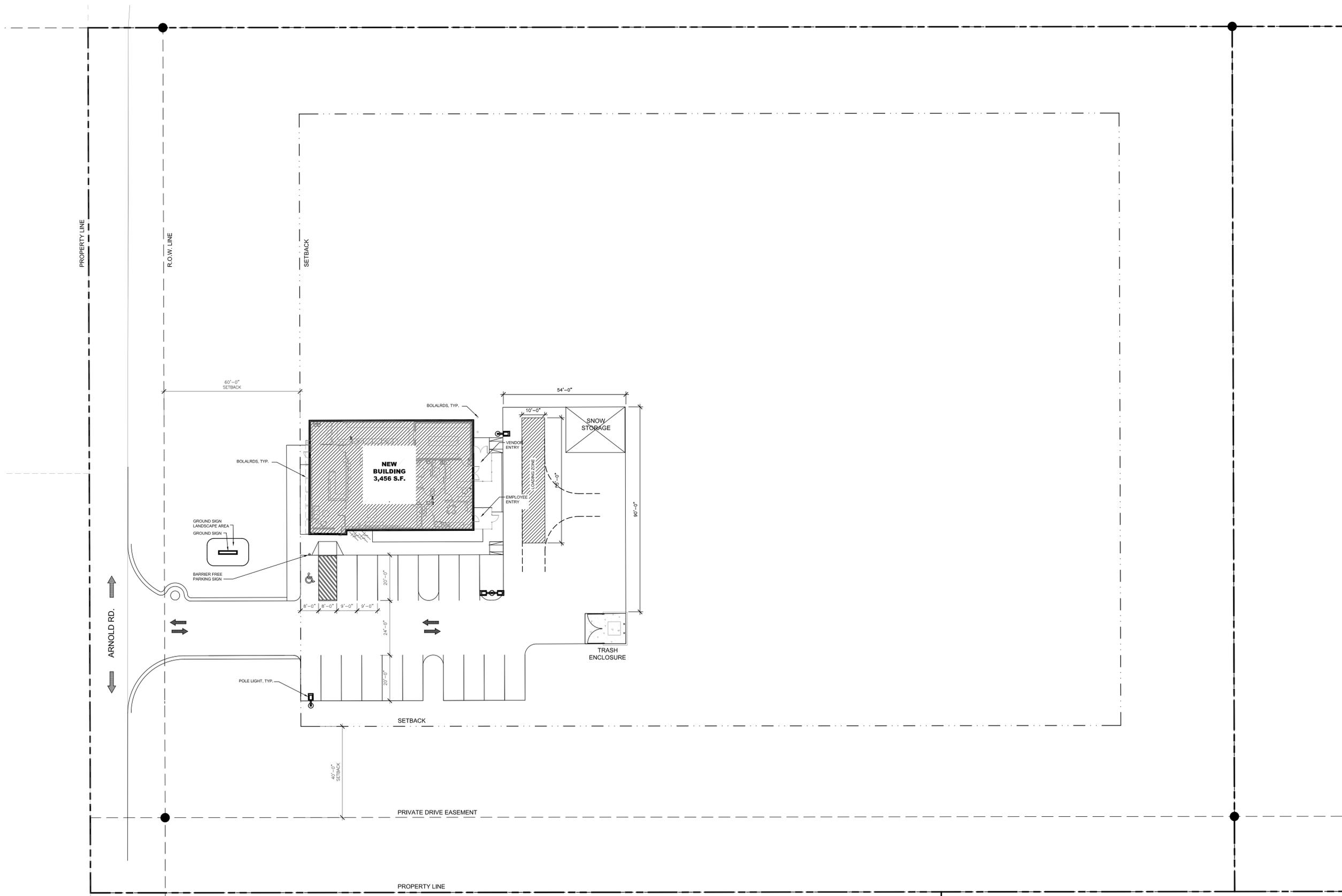
skymint

TNI

skymint

COPYRIGHT © 2019 STUDIO [INTRIGUE] ARCHITECTS, LLC





6140 ARNOLD ST.
 GRAPHIC SITE PLAN
 1"=20'-0"

SITE PLAN REVIEW

04/15/19

Copyright 2019 Studio [intrigue] Architects, LLC

studio [intrigue] ARCHITECTS

 104 S. WASHINGTON AVE. • SUITE 100 • LANSING • MICHIGAN • 48202

 517.377.8804 PHONE • 517.377.8805 FAX • WWW.STUDIOINTRIGUE.COM

Project Type
NEW CONSTRUCTION

Project
SKYMINT
 MEDICAL MARIJUANA
 PROVISIONING CENTER
 6140 N. ARNOLD RD.
 WILLIAMSBURG, MI

Client
GREEN PEAK INNOV.
 10070 HARVEST PARK
 DIMONDALE, MI 48821

Copyright 2019 Studio [intrigue] Architects, LLC

Project Number
19.013

Sheet
C-101

Z:\Projects\2019\19.013\Drawings\Preliminary\SUP DOCS\19013 Graphic Site Plan 19.04.10.dwg, 4/16/2019 10:55:51 AM, Stephanie

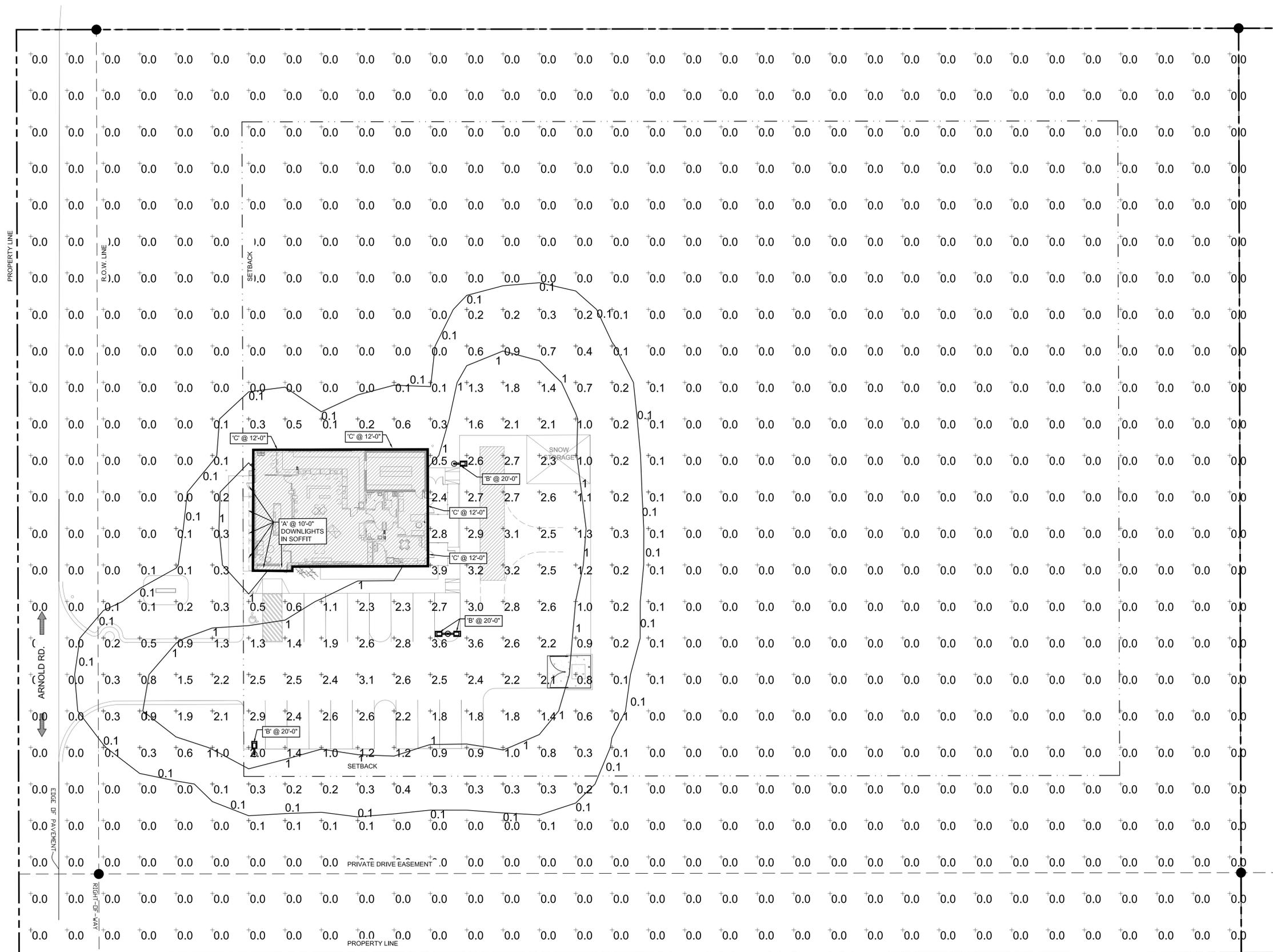


PHOTO METRIC DATA	
SITE FOOT CANDLES	
AVERAGE FOOTCANDLES: 0.2FC	
MAXIMUM: 4.2FC	
MINIMUM: 0 FC.	

SITE LIGHT FIXTURE SCHEDULE				
MARK	MANUFACTURER	MODEL NUMBER	LAMPING	REMARKS
A	PHILLIPS	SBR 240K 650L	15W 4000K LED	MOUNTING HEIGHTS - SEE PLAN
B	LITHONIA	CSXI LED 600 700 40K T5M HS	134W 4000K LED	MOUNT WITH 20'-0" SQUARE POLE
C	LITHONIA	L1L LED 30K MVOLT DBBTXD	8W 4000K LED	MOUNTING HEIGHTS - SEE PLAN

6140 ARNOLD ST.
PHOTOMETRIC PLAN
 1"=20'-0"

SITE PLAN REVIEW

04/15/19

Copyright 2019 Studio [intrigue] Architects, LLC

studio
intrigue
ARCHITECTS

104 S. WASHINGTON AVE. • SUITE 100 • LANSING • MICHIGAN • 48202
 517.372.8804 PHONE • 517.372.8805 FAX • WWW.STUDIOINTRIGUE.COM

Project Type
NEW CONSTRUCTION

Project
SKYMINT
 MEDICAL MARIJUANA
 PROVISIONING CENTER

6140 N. ARNOLD RD.
 WILLIAMSBURG, MI

Client
GREEN PEAK INNOV.

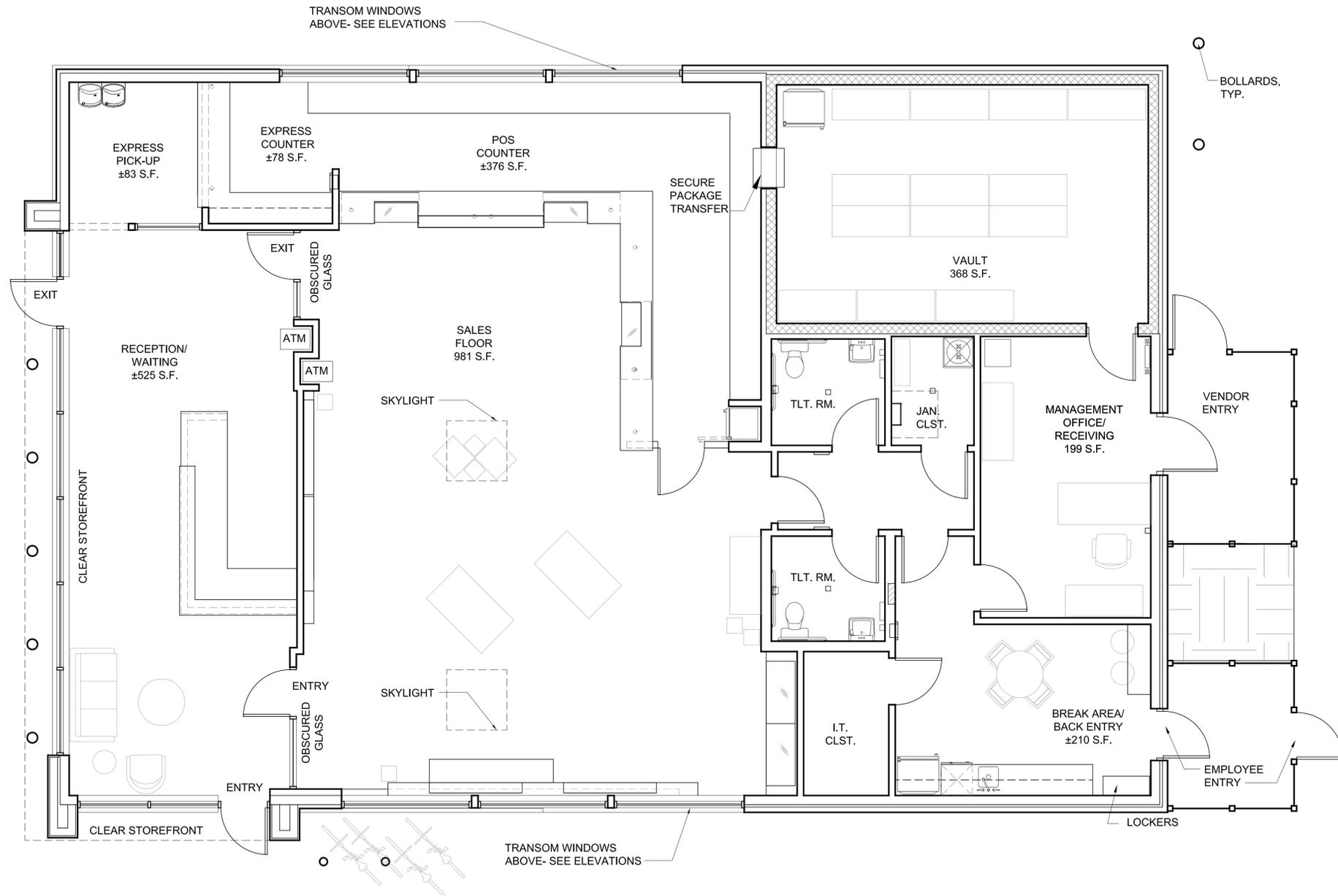
10070 HARVEST PARK
 DIMONDALE, MI 48821

Copyright 2019 Studio [intrigue] Architects, LLC

Project Number
19.013

Sheet
C-102

Z:\Projects\2019\19.013\Drawings\Preliminary\SUP DOCS\19013 Graphic Site Plan 19.04.10.dwg, 4/16/2019 10:16:29 AM, Stephanie



GRAPHIC FLOOR PLAN

1/4"=1'-0"



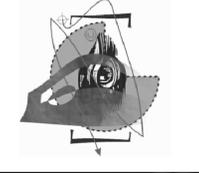
SITE PLAN REVIEW

04/15/19

Copyright 2019 Studio [Intrigue] Architects, LLC

studio
intrigue
ARCHITECTS

104 S. WASHINGTON AVE. • SUITE 100 • LANSING • MICHIGAN • 48202
507.377.8804 PHONE • 507.377.8805 FAX • WWW.STUDIOINTRIGUE.COM



Project Type
NEW CONSTRUCTION

Project
SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER

6140 N. ARNOLD RD.
WILLIAMSBURG, MI

Client
GREEN PEAK INNOV.

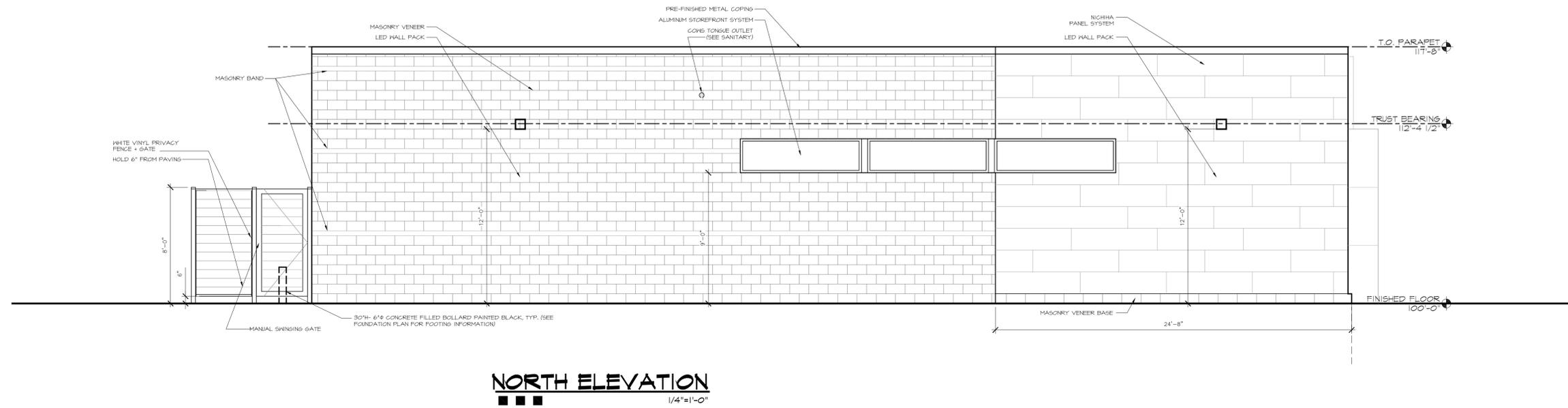
10070 HARVEST PARK
DIMONDALE, MI 48821

Copyright 2019 Studio [Intrigue] Architects, LLC

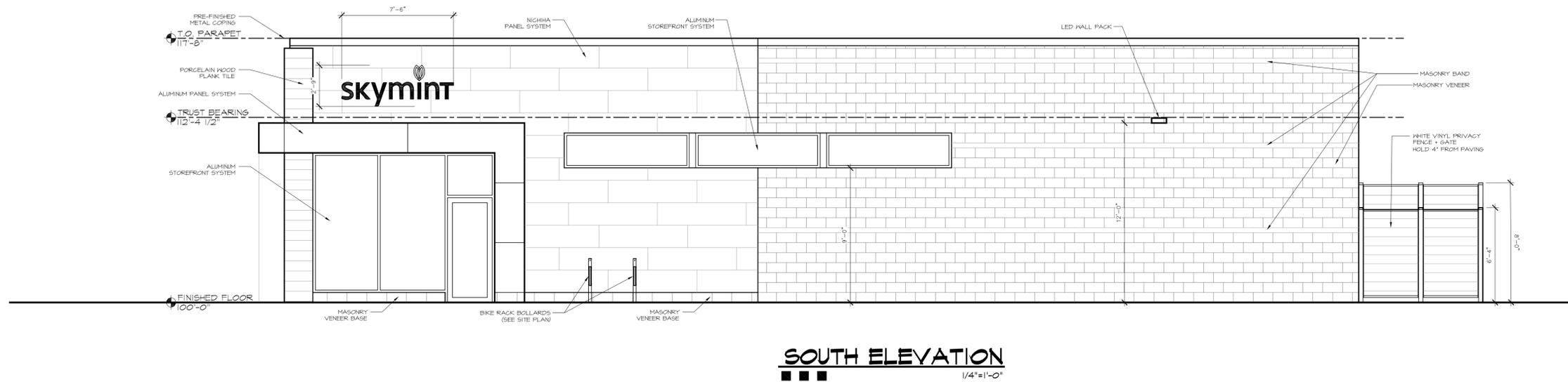
Project Number
19.013

Sheet
A-101

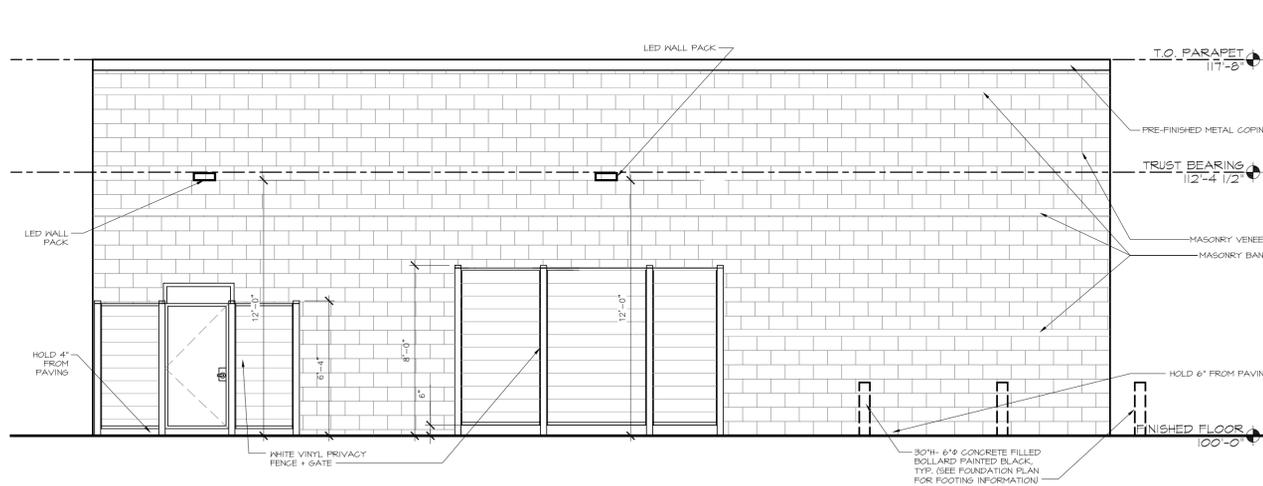
Z:\Projects\2019\19.013\Drawings\Preliminary\SUP DOCS\19.013 PL.dwg, 4/16/2019 10:17:22 AM, Stephanie5



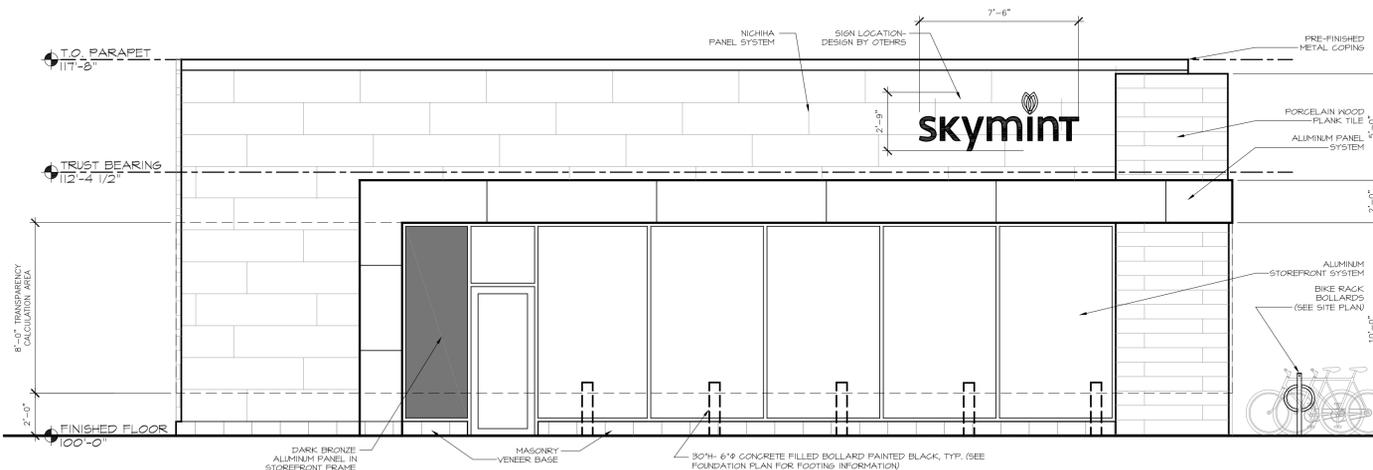
NORTH ELEVATION
1/4"=1'-0"



SOUTH ELEVATION
1/4"=1'-0"



EAST ELEVATION
1/4"=1'-0"



WEST ELEVATION
1/4"=1'-0"

SITE PLAN REVIEW

04/15/19

Copyright 2019 Studio [Intrigue] Architects, LLC

studio
intrigue
ARCHITECTS

104 S. WASHINGTON AVE. • SUITE 100 • LANSING • MICHIGAN • 48202
507.372.8804 PHONE • 507.372.8805 FAX • WWW.STUDIOINTRIGUE.COM

Project Type
NEW CONSTRUCTION

Project
SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER

Client
GREEN PEAK INNOV.

10070 HARVEST PARK
DIMONDALE, MI 48821

6140 N. ARNOLD RD.
WILLIAMSBURG, MI

Client
GREEN PEAK INNOV.

10070 HARVEST PARK
DIMONDALE, MI 48821

Copyright 2019 Studio [Intrigue] Architects, LLC

Project Number
19.013

Sheet
A-300

Z:\Projects\2019\19.013\Drawings\Preliminary\SUP DOCS\19.013 EV.dwg, 4/16/2019 10:18:14 AM, Stephanie



GRAND TRAVERSE METRO FIRE DEPARTMENT

FIRE PREVENTION BUREAU

2 22 20 2 22 4

4 6 6

SITE PLAN REVIEW RECORD

ID # P-1221-M6648

DATE: 5/2/19

PROJECT NAME: Skymint Medical Marijuana Provisioning Center Site Plan

PROJECT ADDRESS: 6140 Arnold Rd.

TOWNSHIP: Acme

APPLICANT NAME: William Mitchell

APPLICANT COMPANY: Bob Mitchell and Associates

APPLICANT ADDRESS: P.O. box 306

APPLICANT CITY: Kingsley

STATE: MI ZIP: 49649

APPLICANT PHONE 231-263-5463

FAX #

REVIEW FEE: \$75.00

Reviewed By: Kathy Fordyce, Plan Reviewer

This review is based solely on the materials submitted for review and does not encompass any outstanding information. Compliance with all applicable code provisions is required and is the responsibility of the permit holder. Items not listed on the review do not negate any requirements of the code nor the compliance with same. Inspection requests must be made a minimum of 48 hours prior to needed inspection. This plan review is based on the 2015 International Fire Code, as adopted.



SITE PLAN REVIEW

ID # P-1221

DATE: 5/2/19

1. 505.1 Address identification.

New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

- Provide address on the property and then on the building according to the above criteria.

2. 507.1 Required water supply.

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

Required water flow is 1750 gallons per minute for 2 hours.

NOTE: There is no water supply infrastructure in place that services this property therefore there is no water available for fire-fighting operations that meet fire flow requirements.

Project may proceed with township approval process.

GRAND TRAVERSE COUNTY
HEALTH DEPARTMENT
231-995-6051

Permit # 38843 Township ACME

Name GREEN PARK INDUSTRIES, LLC

Address 6140 ARNOLD RD

SEWAGE DISPOSAL

WELL

Tank Size 2000g DBL + 1000g PUMP CHAMBER

Field Size 500 lineal ft. 35 GPM
1500 sq. ft. WSSN 20496-28

Issued By Bmt Whit Date 4/30/19

POST IN CONSPICUOUS PLACE

**GRAND TRAVERSE COUNTY ENVIRONMENTAL HEALTH
SOIL EROSION AND SEDIMENTATION CONTROL
SITE DETERMINATION FORM**

PART 91, SOIL EROSION & SEDIMENTATION CONTROL, ACT 451 OF 1994,
AS AMENDED & GTCHD SOIL EROSION SEDIIMENTATION CONTROL ORDINANCE

RECEIVED

APR 16 2019

Office Use Only	Amount: \$ 25.00
	Receipt #:

Environmental Health

Project Type: Residential Multi-Family Commercial

Project Address: 6140 Arnold Rd. City, Zip: Williamsburg 49690

Tax #: 28-01-015-005-05 Twp: Acme Section: 32 Town: T28N Range: R9W

Subdivision: — Lot: _____

Size of Earth Change: ~ 21,000 s.f. Start Date: May 1, 2019 Completion Date: Oct. 31, 2019

Name and Distance to Nearest Lake, Stream, Drain: ~1,000 feet Northeast of Yuba Creek

Describe Project: Site development for commercial building.

Owner's Name: Jeffrey Donahue

Owner's Mailing Address: 10070 Harvest Park City, State, Zip: Diamondale, MI 48821

Owner's Phone: (617) 408-0178 Owner's email: jdonahue@greenpeakinnovations.com

Applicant (if other than owner): D. Harry Luzius Jr.

Address: 3920 Rustic Manor Ct. City, State, Zip: Traverse City MI 49885

Phone: (231) 645-2567 Email: hluzius@torchlake.com

**Signature: D. Harry Luzius Jr. Date: April 16, 2019

-----DEPARTMENT USE ONLY: COMPLETED BY SANITARIAN-----

THE FOLLOWING CRITERIA DO NOT APPLY:

SOM PA 451, PART 91 REQUIREMENTS

- Within 500' of Lake or Stream
- Disturb 1 acre or more

GTCHD SESC REQUIREMENTS

- Within 500' of Regulated Wetland
- Within 500' of a County Drain
- Slopes of 20% or greater
- Group D Hydrologic Soils

Comments:

BASED ON REVIEW (OFFICE & FIELD) OF THE SOILS, SLOPES, DISTANCES TO
WETLANDS AND SURFACE WATER A SOIL EROSION PERMIT IS

NOT REQUIRED FOR THIS PROJECT

OFFICE REVIEW FIELD REVIEW

Based on information provided by the Land Owner, the requirement for a Soil Erosion/Sedimentation Control (SESC) Permit has been reviewed in accordance with Part 91, Act 451 of 1994 and the Grand Traverse County Soil Erosion and Sedimentation Control Ordinance, as amended. Grand Traverse County Health Department, County Enforcing Agency, has determined that a SESC Permit is:

NOT REQUIRED

REQUIRED

Sanitarian Reviewer: B. A. Whit

Date: 4/29/19

Grand Traverse County Road Commission

1881 LaFranier Road
 Traverse City, MI 49696-0000
 Phone: 231-922-4848
 Fax: 231-929-1836

Application No. 11979
 Permit No. 2019-000069
 Issue Date 04/01/2019

**APPLICATION AND PERMIT TO CONSTRUCT, OPERATE, USE AND/OR MAINTAIN
 WITHIN THE RIGHT-OF-WAY OF; OR TO CLOSE, A COUNTY ROAD
 APPLICATION**

An applicant is defined as an owner of property adjacent to the right-of-way, the property owner's authorized representative; or an authorized representative of a private or public utility who applies for a permit to construct, operate, use, and/or maintain a facility within the right-of-way for the purpose outlined within the application. A contractor who makes application on behalf of a property owner or utility must provide documentation of authority to apply for a permit.

APPLICANT	Jeffery Donahue 10070 Harvest Park Dimondale, MI 48821-0000 Phone(s): 517-408-0178 - - - EMail: jdonahue@greenpeakinnovations.com	CONTRACTOR	Bob Mitchell and Associates PO Box 306 Kingsley, MI 49649-0000 Phone(s): 231-883-4967 - - - EMail: hluzius@torchlake.com
------------------	---	-------------------	--

Applicant/Contractor request a permit for the following work within the right of way of a county road:
 Commercial - Commercial Drive

LOCATION: County Road 6140 Arnold Between M-72 And _____
 Township Acme Section _____ Side of Road East Property ID 01-015-005-05

DATE: Work to begin on 04/01/2019 Work to be completed by 04/01/2020

I certify and acknowledge that (1) the information contained in this application is true and correct, (2) the commencement of the work described in this application shall constitute acceptance of the permit as issued, including all terms and conditions thereof and, (3) if this permit is for commercial or residential driveway work, I am the legal owner of the property that this driveway will serve, or I am the authorized representative.

Applicant's Signature: _____ On File	Contractor's Signature: _____ On File
Title: _____ Date: _____	Title: _____ Date: _____

PERMIT

The term "Permit Holder" in the terms and conditions set forth on the reverse side hereof, refers to the applicant and the contractor, where applicable. By performing work under this permit, the Permit Holder acknowledges and agrees that this permit is subject to all the rules, regulations, terms and conditions set forth herein, including on the reverse side hereof. Failure to comply with any of said rules, regulations, terms and conditions shall render this permit NULL AND VOID.

REQUIREMENTS	FEE TYPE	AMOUNT	RECEIPT NO	DATE	
	Commercial RC	150.00			Letter of Credit _____ <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Surety Bond _____ <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Retainer Letter _____ <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Approved Plans on File _____ <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Certificate of Insurance _____ <input type="checkbox"/> Y <input checked="" type="checkbox"/> N Attachments/Supplemental Specifications _____ <input type="checkbox"/> Y <input checked="" type="checkbox"/> N

OTHER REQUIREMENTS:

Drive Located 670' north of M-72 on the east side.

One 24' Commercial Asphalt driveway approach with 36' of 15" culvert. The finished surface on a driveway approach shall slope down from the pavement edge at a rate of 1/2" - 3/4" per foot back to the ditch centerline. This distance shall not be less than 8'. WHEN FINISH GRADE IS PREPARED CONTACT THE ROAD COMMISSION FOR INSPECTION 24 HRS PRIOR TO PAVING. COPY SENT TO THE TOWNSHIP AND TO THE CONSTRUCTION CODE OFFICE. The terms of this permit represent only the Road Commission requirements. Other agencies may have additional requirements. Applicant/Contractor is approved for construction/resurfacing of the driveway. Applicant/Contractor shall provide notification to the Road Commission upon completion of construction for Final Inspection and approval.

CRA 100 (03/2005)

Grand Traverse County Road Commission

1881 LaFranier Road
Traverse City, MI 49696-0000
Phone: 231-922-4848
Fax: 231-929-1836

Application No. 11979
Permit No. 2019-000069
Issue Date 04/01/2019

Recommended for Issuance By:

Approved By:

Todd Bentley

Title: Permit Agent Date: 04/01/2019

Title: _____ Date: _____

TERMS AND CONDITIONS

1. Specifications. All work performed under this permit must be done in accordance with the application, plans, specifications, maps and statements filed with the County Road Commission ("Road Commission") and must comply with the Road Commission's current procedures and regulations on file at its offices and the current MDOT Standard Specifications for Construction, if applicable.
2. Fees and Costs. The Permit Holder shall be responsible for all costs incurred by the Road Commission in connection with this permit and shall deposit estimated fees and costs as determined by the Road Commission, at the time the permit is issued.
3. Bond. The Permit Holder shall provide a cash deposit, irrevocable letter of credit or bond in a form and amount acceptable to the Road Commission at the time permit is issued.
4. Insurance. The Permit Holder shall furnish proof of general liability insurance in amounts not less than \$1,000,000 each occurrence and general aggregate, proof of automobile liability in amounts not less than \$1,000,000 combined single limit for each accident, bodily injury per accident, and property damage per accident, and in an amount not less than \$500,000 for bodily injury per person. Such proof of insurance shall include a valid certificate of insurance demonstrating that the Road Commission is an additional insured party on the policy. Such insurance shall cover a period not less than the term of this permit and shall provide that it cannot be cancelled without 30 days advance written notice to the Road Commission, by certified mail, first-class, return receipt requested. This permit is invalid if insurance expires during the authorized period of work described herein.
5. Indemnification. In addition to any liability or obligation of the Permit Holder that may otherwise exist, Permit Holder shall, to the fullest extent permitted by law, indemnify and hold harmless the Road Commission and its commissioners, officers, agents, and employees from and against any and all claims, actions, proceedings, liabilities, losses, and damages thereof, and any and all costs and expenses, including legal fees, associated therewith which the Road Commission may sustain by reason of claims for or allegations of the negligence or violation of the terms and conditions of this permit by the Permit Holder, its officers, agents, or employees, arising out of the work which is the subject of this permit, or arising out of work not authorized by this permit, or arising out of the continued existence of the operation or facility, which is the subject of this permit.
6. Miss Dig. The Permit Holder must comply with the requirements of Act 53 of Public Acts of 1974, as amended. CALL MISS DIG AT (800) 482-7171 or www.missdig.org AT LEAST THREE (3) FULL WORKING DAYS, BUT NOT MORE THAN FOURTEEN (14) CALENDAR DAYS, BEFORE YOU START WORK. The Permit Holder assumes all responsibility for damage to or interruption of underground utilities.
7. Notification of Start and Completion of Work. The Permit Holder must notify the Road Commission at least 48 hours before starting work, when work is completed, and additionally as directed by the Road Commission.
8. Time Restrictions. All work shall be performed Mondays through Fridays between and unless written approval is obtained from the Road Commission, and work shall be performed only during the period set forth in this permit. Perform no work except emergency work, unless authorized by the Road Commission on Saturdays, Sundays, or from on the day proceeding until the normal starting time the day after the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.
9. Safety. Furnish, install and maintain all necessary traffic controls and protection during Permit Holder's operations in accordance with the Manual of Uniform Traffic Control Devices, Part 6 and any supplemental specifications set forth herein.
10. Restoration and Repair of Road. The construction, operation and maintenance of the activity covered by this permit shall be performed by the Permit Holder without cost to the Road Commission unless specified herein. The Permit Holder shall also be responsible for the cost of restoration and repair of the right-of-way determined by the Road Commission to be damaged as a result of the activity which is the subject of this permit. Restoration shall meet or exceed conditions when work is commenced and be in accordance with specifications. The Permit Holder shall be responsible for costs incurred by the Road Commission for emergency repairs performed by or on behalf of the Road Commission for the safety of the motoring public. Said repairs shall be performed with or without notice to the Permit Holder if immediate action is required. This determination shall be in the sole and reasonable opinion of the Road Commission.
11. Limitation of Permit. Issuance of this permit does not relieve Permit Holder from meeting any and all requirements of law, or of other public bodies or agencies. The Permit Holder shall be responsible for securing and shall secure any other permits or permission necessary or required by law from cities, villages, townships, corporations, property owners, or individuals for the activities hereby permitted. Any work not described by the application, including the time and place thereof, is strictly prohibited in the absence of the application for and issuance of an additional permit or amendment to this permit.
12. Revocation of Permit. This permit may be suspended or revoked at will, and the Permit Holder shall surrender this permit and alter, relocate or remove its facilities at its expense at the request of the Road Commission. It is understood that the rights granted herein are revocable at the will of the Road Commission and that the Permit Holder acquires no rights in the right-of-way and expressly waives any right to claim damages or compensation in case this permit is revoked.
13. Assignability. This permit is not assignable and not transferable unless specifically agreed to by the Road Commission.
14. Authority. The statutory authority of the Road Commission to require compliance with permit requirements is predicated upon its jurisdictional authority and is set forth in various statutes including, without limitation and in no particular order, MCL §247.321 et seq; MCL §224.19b; MCL §560.101 et seq; and MCL §247.171 et seq.

Shawn Winter

From: Will Mitchell <wm@mapcivilsurvey.com>
Sent: Sunday, May 12, 2019 7:12 PM
To: Harry Luzius; 'Bob Verschaeve, P.E.'; Shawn Winter
Subject: RE: Skymint Storm Water Review
Attachments: sheet 5 REVISED .pdf

Left out a 7 in the note on the detail, changed it to 739.75.

Thank you,
Will Mitchell
Cell (231) 883-4967

From: Harry Luzius [mailto:hluzius@torchlake.com]
Sent: Friday, May 10, 2019 12:09 PM
To: 'Bob Verschaeve, P.E.'; Will Mitchell; 'Shawn Winter'
Subject: RE: Skymint Storm Water Review

Thank you Mr. Verschaeve. I discussed those comments with Will Mitchell. As soon as he has the opportunity, he will make the appropriate changes on the plans. They should be sent to you late today or Monday morning.

Sincerely,

Harry Luzius, P.E.

From: Bob Verschaeve, P.E. <rmverschaeve@goslingczubak.com>
Sent: Friday, May 10, 2019 11:52 AM
To: Will Mitchell <wm@mapcivilsurvey.com>; Shawn Winter <swinter@acmetownship.org>
Cc: Harry Luzius <hluzius@torchlake.com>
Subject: RE: Skymint Storm Water Review

I am good with the responses, but have two minor comments about the slow release structure that need to be addressed.

1. The riser is noted as 18" CMP. 24" is the minimum diameter allowed. Please revise.
2. The riser shows the orifices between 739.75 and 741. The note says spaced evenly between the basin bottom and elevation 741. Please adjust the note if the intent is to have the orifices between 739.75 and 741.

Robert Verschaeve, P.E. | Project Manager
Gosling Czubak Engineering Sciences, Inc.

231.946.9191 office | 231.933.5102 direct
rmverschaeve@goslingczubak.com | www.goslingczubak.com

[Connect with us on LinkedIn!](#)

From: Will Mitchell <wm@mapcivilsurvey.com>
Sent: Thursday, May 9, 2019 5:38 PM
To: Shawn Winter <swinter@acmetownship.org>

Cc: Harry Luzius <hluzius@torchlake.com>; Bob Verschaeve, P.E. <rmverschaeve@goslingczubak.com>

Subject: FW: Skymint Storm Water Review

Gentlemen;

Please see my responses to Mr. Verschaeve's comments in red font below. The plans and/or calculations have been revised. Thank you.

Sincerely,

Harry Luzius, P.E.

From: Will Mitchell <wm@mapcivilsurvey.com>

Sent: Tuesday, May 07, 2019 6:52 PM

To: hluzius@torchlake.com

Subject: Fwd: Skymint Storm Water Review

Sent from my iPhone

Begin forwarded message:

From: Shawn Winter <swinter@acmetownship.org>

Date: May 7, 2019 at 4:49:31 PM EDT

To: "Bob Verschaeve, P.E." <rmverschaeve@goslingczubak.com>

Cc: Will Mitchell <wm@mapcivilsurvey.com>

Subject: RE: Skymint Storm Water Review

Thanks Bob. I've cc'ed Will Mitchell on this response for his review.

Shawn Winter

Planning & Zoning Administrator

Acme Township

6042 Acme Rd | Williamsburg, MI | 49690

Phone: 231.938.1350 Fax: 231.938.1510

swinter@acmetownship.org

From: Bob Verschaeve, P.E. <rmverschaeve@goslingczubak.com>

Sent: Tuesday, May 07, 2019 4:40 PM

To: Shawn Winter <swinter@acmetownship.org>

Subject: Skymint Storm Water Review

Shawn,

I have reviewed the plans and calculations for Skymint and have a few comments that should be addressed. Please pass this along to the applicant.

1. Identify the limits of the contributing area. The plans lack any callouts or differentiating features to know for sure the pavement, sidewalk, and even the building areas. From what I scaled, I came up with a weighted "C" of .42 compared to the .43 in the calcs. Overall the areas are

pretty close, but I have about 3,000 sft more of open space and total contributing area. The total contributing area and weighted C play into the flood volume (next item).

We identified the impervious areas so that they can be viewed more easily. Plus, we identified the limits of the contributing area. Our contributing area reflects a total of 62,572 s.f., which is close to your calculations. Plus, our revised calculations agree with you in that we came up with a weighted “c” of 0.42.

2. The design is noted as a detention system. Referencing that section of the Ordinance, there are criteria for treatment volume and flood control volume. The engineer’s calculations use the 25 year rainfall event to calculate the flood control volume. This is fine, but the ordinance also notes a minimum storage required per acre given by Table 6 (actually labeled Table 5 in the ordinance). Based on the weighted “C” value of .42, the flood control storage volume would be 4,540 cft. The plans should identify this volume. The treatment volume should also be identified in the plans and calculations.

We revised the plans to show the minimum required volume to be 4,385 c.f. (Note: This is slightly different than the reviewing engineer. It may be appropriate for me to compare notes at some time with the reviewing engineer to determine the differences in our approach. But as the difference is small and the provided volume is 5,519 c.f., the difference is academic at this point.)

3. No release rate for a treatment volume is noted or provided. It’s ok for this to be 0 and just have this volume infiltrate. The orifices for the flood control release rate would need to be at or above the water level for this volume.

We mistakenly omitted calculations for treatment control volume. According to the ordinance the treatment control volume is calculated as follows:

***Minimum control volume = 5,000cf/impervious area, therefore,
Volume = 5,000cf/Acre * 0.42 Acres of impervious = 2,106 c.f.***

The detention pond has a volume of 2,135 c.f. at an elevation of 739.75 (1.25 feet above the bottom of basin). Therefore the plans have been revised to show the orifices at or above the elevation of 739.75. (See detail, sheet C5).

4. I agree with the maximum release rate of .177 cfs for the flood control volume. Twenty four .25 inch orifices are proposed on the outlet pipe. My calculations show this would result in a release rate less than the maximum which is good. The locations/elevations of these orifices should be more well defined such that they are at or above the treatment volume level. Or identify orifices within the treatment level and calculations that their flows don’t exceed that rate.

See response to #3 above.

5. HDPE riser pipes are not allowed. Only reinforced concrete or corrugated metal is. The detail for the overflow structure needs to be adjusted.

The detail has been revised to reflect a corrugated metal riser pipe (Sheet5).

6. A maintenance note needs to be added noting that the sediment in the forebay will be removed when it reaches 50% of the depth.

A maintenance note to this effect has been added to sheet 4 on the plans.

7. MODT's review allowing the outlet to their rail road ROW needs to be provided. Also, the drainage pipe extends from the parcel into MDOT's ROW should be contained in an easement to protect it from future removal.

We submitted plans to MDOT for their review. The permit application control number assigned by MDOT is #19-37. I discussed the status of the application with the administrative assistant in Lansing. She indicated that it is a two phase review process, first to Real Estate Division, and then to engineering. It is currently still under review at the Real Estate Division. She expects everything to be completed in two weeks.

Regarding the acquisition of an easement, it is our opinion that an easement is not required, the main reason being this is a public right-of-way, and just like a county road right-of-way, the public entity grants a permit to locate a utility within the R/W. Once we have received a permit from MDOT, no easement will be required.

Let me know if there are any other questions.

Thanks,
Bob

Robert Verschaeve, P.E. | Project Manager
Gosling Czubak Engineering Sciences, Inc.

231.946.9191 office | 231.933.5102 direct
rmverschaeve@goslingczubak.com | www.goslingczubak.com

[Connect with us on LinkedIn!](#)

6140 Arnold Rd. Storm Water Control Design

Revised May 9, 2019 as per review comments from Acme Twp Engr.

The owner intends to develop a 4.40 Acre Site located at 6140 Arnold Rd., Williamsburg, MI 49690. The tax ID Number is 28-01-015-005-05. It is bounded by Arnold Rd. to the west, an MDOT Railroad Right-of-Way to the North, Tractor Supply Company to the south, and an unnamed parcel to the east.

The site is gently sloped with grades of slightly than 2%---from 751 in the center of the property to 745 up to the right of way. The only exception is the northwest corner where a cut slope of 4-5 feet ties in to the east edge of Arnold Rd. There is virtually no drainage ditch along this eastern edge of Arnold Rd. (This situation is rectified in the proposed grading plan.)

According to the Soil Conservation Survey, the soils are sandy loam and are moderately well drained to well drained soils ranging from moderatly fine texture to moderately coarse texture. The hand augur borings conducted by the Grand Traverse County Health Department tend to confirm this assessment. However, the boring which was conducted at the proposed detention pond location indicates that the soils are more coarse in texture. Visual observations of the neighboring Tractor Supply site to the south suggest, in the opinion of the author, that the soils are well drained. This is based on the fact that the outlet of the neighboring detention pond is routed to Arnold Rd. which, as mentioned earlier, does not contain a road side ditch to convey any run off. Notwithstanding, there were no signs of road damage due to ponding flood waters on or in the vicinity of the road. In all probability, this is explained by rainfall run off infiltrating into porous soils.

A drainage ditch parallels the rail road tracks to the north. There is enough fall to route a slow release outlet from the detention pond to this drainage ditch. MDOT has indicated that they are willing to permit these kinds of outlets, subject to a staff review.

We propose to design a detention pond sized to detain the 25-year rainfall event from the entire contributing area, in accordance with the ACME TOWNSHIP STORMWATER CONTROL ORDINANCE. The calculations in the subsequent pages will justify the required volume for the detention pond and its appurtenances.

D. Harry Luzius, Jr.
5/9/2019



A circular professional engineer seal for the State of Michigan. The seal contains the text: "STATE OF MICHIGAN", "D. HARRY LUZIUS, JR.", "ENGINEER", "No. 39295", and "LICENSED PROFESSIONAL ENGINEER".

**Revised Calculations in
Response to Reviewing Engineer Comments
May 9, 2019**

1. The total contributing area has been revised to 62,572 s.f. Consequently, the weighted "c" has changed to 0.42.
2. Sheet 4 of the plans have been revised to show the minimum required volume of the detention pond is 4,540 c.f.
3. The treatment control volume calculations are as follows:

Minimum control volume = 5,000cf/impervious area.

Therefore,

Volume = 5,000cf/Acre * 0.42 Acres of impervious = 2,106 c.f.

The detention pond has a volume of 2,135 c.f. at an elevation of 739.75 (1.25 feet above the bottom of basin). Therefore the plans have been revised to show the orifices at or above the elevation of 739.75. (See detail, sheet C5).

4. The detail on sheet 5 has been revised to reflect a Corrugated Metal Riser Pipe.
5. A maintenance note has been added to Sheet 4, stating that the sediment in the forebay will be removed when it reaches 50% of the depth.

DETENTION BASIN DESIGN to Determine REQUIRED FLOOD CONTROL VOLUME

Modified Rational Method, 25-year Developed vs. 2-year Undeveloped

Project: Retail Store, Arnold Rd.
Project #: 20190048

25-year Developed Condition

Sub-District	"C" Factor	Area		Weighted Area (CxA)	Weighted "C"
		(s.f.)	(acres)		
Pavement (existing + proposed)	0.95	14,880	0.342	0.325	
Building(s) roof (proposed)	0.95	3,466	0.080	0.076	
Concrete	0.95	0	0.000	0.000	
Other impervious	0.95	0	0.000	0.000	
Open	0.20	44,226	1.015	0.203	
Total Contributing Area:		62,572	1.436	0.603	0.420

Slow Release Rate (0.05 cfs/Impervious Area (in Acres) as per Acme Twp Stormwater Control Ordinance	
Maximum Release Rate Allowable: (0.13cfs/Acre from Entire Contributing Area):	0.177 cfs

25-year storm IDF table with "CA" and Slow Release Rate applied					
Duration (min.)	Intensity (in/hr)	Weighted Area (acres)	Peak Runoff (cfs)	Infiltration Rate (cfs)	Required Storage (c.f.)
10	4.82	0.603	2.91	0.177	1,638
15	4.20	0.603	2.53	0.177	2,121
20	3.58	0.603	2.16	0.177	2,379
30	2.88	0.603	1.74	0.177	2,808
40	2.34	0.603	1.41	0.177	2,963
45	2.18	0.603	1.31	0.177	3,072
50	2.05	0.603	1.24	0.177	3,179
60	1.83	0.603	1.10	0.177	3,337
75	1.55	0.603	0.93	0.177	3,411
90	1.36	0.603	0.82	0.177	3,474
105	1.23	0.603	0.74	0.177	3,559
120	1.13	0.603	0.68	0.177	3,633
180	0.83	0.603	0.50	0.177	3,495
240	0.66	0.603	0.40	0.177	3,184
300	0.56	0.603	0.34	0.177	2,894
360	0.49	0.603	0.30	0.177	2,561
420	0.43	0.603	0.26	0.177	2,076
480	0.39	0.603	0.24	0.177	1,678
540	0.35	0.603	0.21	0.177	1,106
600	0.33	0.603	0.20	0.177	795
720	0.28	0.603	0.17	0.177	-349
1080	0.20	0.603	0.12	0.177	-3,651
1440	0.16	0.603	0.10	0.177	-6,848

← PEAK

Required Storage Volume: **3,633** c.f.

**DETENTION BASIN
Sizing of Basin**

April 2, 2019

			Area (Square Feet)	Square Root of A1*A2 (Square Feet)	Height Differential	Basin Volume (Cubic Feet)
MAIN BASIN:		Length	Width	Area (s.f.)		
Top of Basin (A1):	741.00	72.00	42.00	3024.00		
Bottom of Basin (A2):	738.50	57.00	26.00	1482.00	2116.97	2.50

Total Volume Provided from Both Basins:

5519.14

DETENTION BASIN

Sizing of Basin to determine height required to achieve required treatment volume

May 9, 2019

			Area (Square Feet)	Area (s.f.)	Square Root of A1*A2 (Square Feet)	Height Differential	Basin Volume (Cubic Feet)
MAIN BASIN:	Length	Width					
Top of Basin (A1):	741.00	72.00	42.00	3024.00			
Midpoint of Basin	739.75	64.50	33.50	2160.75	1789.477997	1.25	2135.31
Bottom of Basin (A2):	738.50	57.00	26.00	1482.00	2116.97	2.50	5519.14

SLOW RELEASE RATE DESIGN for DETENTION BASIN

Modified Rational Method, 100-year Developed

Project: 6140 Arnold Rd.

Project #:

Q Required: 100-Year Developed Storm

Rational Formula: $Q_{100} = CIA$

Tc = 10 minutes
 C = 0.41
 I = 6.29 in/hr
 A = 1.361 acres

Q 100-Peak = 3.47 cfs

Q Required = 3.47 cfs

100-yr Storm Event	
Tc (min.)	Intensity (in/hr)
10	6.29
15	5.48
20	4.67
30	3.76
40	3.06
45	2.85
50	2.67
60	2.39
75	2.02
90	1.78
105	1.61
120	1.48
180	1.08

Q Provided Outlet Structure - Orifice design for Slow Release for Detention Pond

Maximum allowable Slow Release is 0.13cfs/Acre X 1.361 Acres of Contributing Area which equals 0.1769 cfs

Weir Equation: $Q = 2.6 \times L \times H^{3/2}$ (for water depth less than 4" over top of grate)

Orifice Equation: $Q = C \times A \times (2gH)^{1/2}$

H = 1 ft (Use Orifice Equation)
 C = 0.67
 A = 4.74 in²
 A = 0.03292 ft²
 g = 32.2 ft/s

Q Provided = 0.1770 cfs

Q Provided = 0.1770 cfs < 3.47 cfs (Q required)

Therefore, drill 24 orifices on the riser pipe, 0.25-inches in diameter. Orifices to be located on the standpipe, from near the bottom to just below Elevation = 741.

EMERGENCY OVERFLOW DESIGN for DETENTION BASIN

Modified Rational Method, 100-year Developed

Project: 6140 Arnold Rd.

Project #:

Q Required: 100-Year Developed Storm

Rational Formula: $Q_{100} = CIA$

Tc = 10 minutes
 C = 0.41
 I = 6.29 in/hr
 A = 1.361 acres

Q 100-Peak = 3.47 cfs

Q Required = 3.47 cfs

100-yr Storm Event	
Tc (min.)	Intensity (in/hr)
10	6.29
15	5.48
20	4.67
30	3.76
40	3.06
45	2.85
50	2.67
60	2.39
75	2.02
90	1.78
105	1.61
120	1.48
180	1.08

Q Provided: Spillway - Broad Crested Weir Condition

Weir Equation: $Q_{weir} = 2.6 \times L \times H^{3/2}$

L = 6 ft (measured at 1/2 height)
 weir H = 1 ft (equals freeboard height)
 calculated H = 0.6 ft (wier H x 0.60 to account for stone rip-rap)

Qweir = 7.25 cfs

*Note: Actual height of weir is 1.0'. 'H' of 0.6 used to account for flow loss from rip-rap.

Q Provided = 7.25 cfs > 3.47 cfs (Q required)

6140 Arnold Rd.
CALCULATIONS TO DESIGN CONVEYANCE SYSTEMS
TO PREVENT FUTURE EROSION
2-Apr-19

Methodology:

To design the size and slope of the culvert, I used the technical design guidelines from a county ordinance entitled "GRAND TRAVERSE COUNTY SOIL EROSION, SEDIMENTATION, AND STORM WATER RUNOFF CONTROL ORDINANCE DESIGN GUIDELINES", dated April 2007. The technical data in this manual provide sound engineering approaches to the design of conveyance systems. These guidelines have been used in other counties of the State of Michigan, as well as other states throughout the country. The main criterion that I adopted in calculating the conveyance systems is explained in this manual as follows: The "rational method" of design is used for Drainage basins less than 120 Acres in size. For this site, the drainage basin contributing storm water run off to the site has been measured to be approximately 0.45 Acres. Additionally, this manual provides recommendations for coefficients in the rational method that can be applied to the physical characteristics of the site. To be conservative, I assumed a "c" factor of 0.95.

Design Approach for Determining Drainage Area Entering Storm Water Run Off inlet #1 at the southwest property corner:

Assumptions:

- 1) Utilizing the "rational method" for calculating the expected run off, we need to assign a value for the following three factors:
 - a) Coefficient of runoff: From the Design Guidelines for Pavement, $c = 0.95$
 - b) Rainfall Intensity: From Appendix 8 of the Design Guidelines, for a 25-Year Storm, for a duration of 5 Minutes, rainfall is 0.47 inches. Extrapolating this intensity to a full hour equates to 5.64 Inches/hour.
 - c) Area: The measured area of the drainage basin entering into inlet #1 is approximately 0.45 Acres.

Based on these assumptions, the conveyance systems need to accommodate the following rate of storm water runoff:

$Q = cIA$, where $Q =$ run off in cfs (cubic feet per second)	
$c =$ coefficient of run off = 0.95	0.95
$I =$ rainfall intensity = 5.64 inches/hour	5.64
$A =$ Area of Drainage Basin = 0.45 Acres	0.45
 $Q = 0.95 * 5.64 * 0.45 =$	 <u>2.4111 CFS</u>

In layman's terms, the two storm water pipe from Inlet #1 should be designed to accommodate 2.41 cfs, which equates to 1,100 gallons per minute. This seems like a massive amount, but it is important to realize that when utilizing this design approach, we are ensuring that a conveyance system can handle the worst case flow rate that can be expected in an instantaneous moment during a storm. Most of the time the behavior of a storm is such that there is light and moderate rainfall for the vast majority of its duration. But there are periods of intense rainfall that may last anywhere from 5 to 60 minutes. This calculation predicts that during those intense moments, there may be as much as 1,100 gpm flowing through that conveyance system. If that conveyance system is not able to handle the massive amount of runoff during those moments of high intensity, even for a short duration of 5 minutes, the system will be overwhelmed, and it will more than likely experience severe erosion.

This design is conservative in that we are assuming that the storm pipes need to convey runoff from the entire contributing area. Since the sub-basins are less than the total contributing area, it follows that the storm pipes will be capable of conveying the smaller runoff flow rates

To handle a flow of 2.41 cfs, the culvert should have the following characteristics:

Assume a 15" Smooth Lined Corrugated Plastic Pipe with a slope of 1.0%:

Diameter: 1.25 feet

Slope: 0.0113 feet/ft. (Slope from Bee Hive CB to Detention Basin)

Using Manning's Equation:

$$Q = (1.49/n)AR^{0.67}s^{0.5}$$

$$n = 0.013$$

$$A = 1.22719$$

$$R = 0.4605$$

$$s = 0.0113$$

Therefore Q = 6.8854 CFS, which is greater than the required 2.41 CFS

Totals Quantities of Rip Rap (In Terms of Volume) for Configuring flow channels and rip rap aprons:

DIMENSIONS of ENERGY DISSIPATORS							Volume (Cu. Yds.)
	Width #1 (Dim. A) (Ft.)	Width #2 (Dim. B) (Ft.)	Length (Dim. C) (Ft.)	Depth (Ft.)			
Quantities for Rip Rap Aprons							
Apron #1 (located at Inlet #1, Elevation= 741.0)	5	8	8	1.25			2.4
Apron #2 (located at Outlet #2, Elevation = 738.5)	8	10	10	1.25			4.2
Subtotal Quantities:							6.6
Quantities for Open Channels:							
Open Channel, Segment #2:	Bottom Width (ft.)	Top Width (ft.)	Height (ft.)	Depth (ft.)	Side (Either Side at Top of Channel) (ft.)	Channel Length (ft.)	
	6	10	1	1	1	62	23.0
Sub Total Quantities:							29.5

0