

**AGENDA**  
**CASCADE CHARTER TOWNSHIP**  
**REGULAR BOARD MEETING**

Wednesday, October 11, 2017

7:00 P.M.

Cascade Branch of the Kent District Library, Wisner Center  
2870 Jacksmith, S.E.

**Expected Meeting Procedures**

1. During public comments you may speak on any item not noted on the agenda for a public hearing.
2. Please limit comments to 3 minutes per person and the Board may or may not choose to respond.
3. Please limit your comments to a specific issue.
4. Please turn OFF cellular phones.

- Article 1. Call to Order, Roll Call**
- Article 2. Pledge of Allegiance to the Flag**
- Article 3. Approval of Agenda**
- Article 4. Presentations**
- Article 5. Public Comments-Anything on the Agenda not scheduled for a public hearing. (limit comments to 3 minutes)**
- Article 6. Approval of Consent Agenda**
- a. Receive and File Various Meeting Minutes**
    1. Regular Township Board Minutes for 9/27/17.
  - b. Receive and File Communications**
    1. Letter from Charter Communications – re: Channel Lineup
  - c. Education Requests**
    1. Ben Swayze – ICMA Annual Conference – October 22-25, 2017 – San Antonio, TX.
  - d. Receive and File Reports**
    1. Building Department Monthly Report for September, 2017.
- Article 7. Financial Actions**
- a. Consider Approval of Pay Application from Katerberg Verhage for the Pathway Repairs.**
  - b. Consider Approval of Pay Application For Township Hall Renovations.**
- Article 8. Unfinished Business**
- Article 9. New Business**
- 065-2017**
- a. Public Hearing – Establish IFT District for a new facility for Classic Transportation Services at 5357 52<sup>nd</sup> St. S.E.**
  - b. Consider Resolution to Approve IFT District for a New Facility for Classic Transportation Services at 5357 52<sup>nd</sup> St. S.E. (roll call)**

- 066-2017**      **a. Public Hearing – Issuance of IFT Certificate for Classic Transportation Services at 5357 52<sup>nd</sup> St., S.E.**
- b. Consider Resolution to Approve the Issuance of IFT Certificate for Classic Transportation Services at 5357 52<sup>nd</sup> St., S.E. (roll call)**
- 067-2017**      **a. Public Hearing – Final P.U.D. Review to Amend the Riebel P.U.D. Development to Allow 61-unit Apartment Complex at 6370 28<sup>th</sup> St. (south side of 28<sup>th</sup> St. just west of Thornhills)**
- b. Consider Ordinance to Amend Ordinance #2 of 2005, the Riebel Development Planned Unit Development Project at 6370 28<sup>th</sup> St. (roll call)**
- 068-2017**      **Consider Approval of Type II Special Use Permit for Residential Development up to 9 Units per acre at 2771 Orange Avenue, S.E.**
- 069-2017**      **a. Public Hearing – Rezone Approximately 40 Acres to P.U.D. to allow for 31 Site Condominium Units at property located on the north side of 48<sup>th</sup> St. between Little Harbor and Buttrick Ave.**
- b. Consider Ordinance to Amend the Cascade Charter Township Zoning Ordinance and Zoning Map to Establish the Oak Harbor Preserve Planned Unit Development located on the north side of 48<sup>th</sup> St. between Little Harbor and Buttrick Ave. (roll call)**
- 070-2017**      **a. Public Hearing – Expand P.U.D. 67 (East Imports) for a new parking lot at 6120 Charlevoix Woods Ct.**
- b. Consider Ordinance to Amend Ordinance #1 of 2004, the East Imports Planned Unit Development at 6120 Charlevoix Woods Ct. (roll call)**
- 071-2017**      **Consider Approval of Eagle Creek Renewable Energy – Landlord Consent (Cascade Dam).**

**Article 10.      Public Comments – Any comments...whether it is on the Agenda or not. (limit comments to 3 minutes)**

**Article 11.      Manager Comments**

**Article 12.      Board Member Comments**

**Article 13.      Adjournment**

**MINUTES OF THE  
CASCADE CHARTER TOWNSHIP  
REGULAR BOARD MEETING  
Wednesday, September 27, 2017  
7:00 P.M.**

- Article 1.** Supervisor Beahan called the meeting to order.  
Present: Supervisor Beahan, Treasurer Peirce, Clerk Slater, Trustee Lewis, Koessel, McDonald and Shipley.  
Absent: None  
Also Present: Manager Swayze and those listed on Supplement #1.
- Article 2.** Supervisor Beahan led the Pledge of Allegiance to the Flag
- Article 3.** Motion was made by Trustee Koessel and supported by Trustee Shipley to approve the Agenda as presented. Motion carried unanimously.
- Article 4.** Presentations
- Article 5.** Public Comments-Anything on the Agenda not scheduled for a public hearing. (limit comments to 3 minutes)
- Article 6.** Approval of Consent Agenda
- a. Receive and File Various Meeting Minutes**
    - 1. Regular Township Board Minutes for 9/13/17.
    - 2. Planning Commission Meeting Minutes for 8/21/17 & 9/11/17.
    - 3. Zoning Board of Appeals Meeting Minutes for 6/13/17.
  - b. Receive and File Communications**
    - 1. Letter from Charter Communications – re. Change in Line-up.
  - c. Education Requests**
    - 1. Brett Boonenberg, EMT Matriculation Course, Great Lakes EMS Academy.
    - 2. Michael Kadish, EMT Matriculation Course, Great Lakes EMS Academy.
    - 3. James Walker – EMS Instructors Conference, Lansing, MI, October 6-7, 2017.
- Motion was made by Trustee Lewis and supported by Trustee Koessel to approve the Consent Agenda as presented. Motion carried unanimously.
- Article 7.** Financial Actions
- a. Consider Approval of General/Special Funds for August, 2017.**

Motion was made by Trustee Koessel and supported by Treasurer Peirce to approve the General/Special Funds for August, 2017. Motion carried unanimously.
  - b. Consider Approval of Payables, Payroll and Transfers for August, 2017.**

Motion was made by Trustee Lewis and supported by Trustee McDonald to approve the Payables, Payroll and Transfers for August, 2017. Motion carried unanimously.
  - c. Consider Approval of Release of Final Project Payment for Thornapple Hills Drain Project.**

Motion was made by Clerk Slater and supported by Trustee McDonald to approve the release of the Final Project Payment for Thornapple Hills Drain Project in the amount of \$2,370.30. Motion carried unanimously.

**Article 8. Unfinished Business**

**Article 9. New Business**

**064-2017**

**Consider Approval of Interurban Transit Partnership Transportation Services Contract.**

Manager Swayze reviewed the contract with the Board. Motion was made by Trustee Koessel and supported by Trustee McDonald to approve the Interurban Transit Partnership Transportation Services Contract. Discussion followed. Motion carried unanimously.

**Article 10. Public Comments – Any comments...whether it is on the Agenda or not. (limit comments to 3 minutes)**

Greg Glasco, Barracks 616, 5740 Foremost was broken into this week. Mr. Glasco is present to ask for a variance on the Building Code regarding the pull down safety doors.

Ryan Roe, Kent County Sheriff's Department, was present to give an update to the Board.

**Article 11. Manager Comments**

Manager Swayze offered the following comments:

- Interviews for the new Fire Chief will be "kicking into high gear."

**Article 12. Board Member Comments**

Trustee Shipley offered the following comments:

- Thank you for coming to the meeting.

Trustee Koessel offered the following comments:

- Any updates from the Kent County Road Commission on our concerns on the no turn on red at Cascade Rd. and Thornapple River Dr.?

Treasurer Peirce offered the following comments:

- Tuesday we collected 97.52% of the summer taxes compared to 97.05%, 94.92% the previous two years.

Clerk Slater offered the following comments:

- Attended the walk-thru Cemetery Tour on Sunday. It was very interesting.

Trustee McDonald offered the following comments:

- I am glad we approved the Bus Service.

Supervisor Beahan offered the following comments:

- Attended the dedication of the new gateway transformation at the Gerald R. Ford International Airport. Very impressive.

**Article 13. Adjournment**

Motion was made by Treasurer Peirce and supported by Trustee McDonald to adjourn. Motion carried unanimously.

Meeting adjourned at 7:33 p.m.

Respectfully submitted,

Denise M. Biegalle  
Deputy Clerk

Approved by:

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Susan B. Slater, Clerk

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Robert S. Beahan, Supervisor

Draft



September 29, 2017



T4 P1 565 \*\*\*\*\*AUTO\*\*ALL FOR AADC 493  
Cascade Township  
2865 Thornhills Ave. SE  
Grand Rapids, MI 49546-7195

Dear Franchise Official:

Charter Communications ("Charter") is making changes to our channel lineup for customers in Cascade Township.

Effective on or after October 30, 2017 the Sportsman Channel on Spectrum Sports View/Tier 2 channels 217 & 768 (HD) will no longer be available.

As always, please feel free to contact me by phone at (616) 607-2377 if you have any questions on this matter.

Sincerely,

Marilyn Passmore  
Director, State Government Affairs, Michigan  
Charter Communications



**Cascade Charter Township  
Seminar/Conference Attendance Request Form**

This form must be filled out if the employee is requesting Township payment or reimbursement for the employee's attendance to a seminar or conference.

Conditions:

1. Cascade Charter Township will reimburse employees for approved registration for work related seminars and conferences. Individual seminars and conferences must be related to the employee's current job duties or a foreseeable-future position in the organization in order to be eligible for educational assistance.
2. Some seminars/conferences that an employee may attend may be unrelated to their particular job or government in general, and are therefore not covered by this assistance policy.
3. Any request that requires an overnight stay or expenditure over \$200 requires Township Board approval before the seminar/conference is attended.
4. Under extenuating circumstances, the Township Manager may approve an overnight stay or expenditure over \$200 for a conference or seminar prior to Township Board approval. The request must be made before attendance to a seminar/conference. The Township Board will be informed of request at their next scheduled meeting.

*This form must be completed by the employee and approved by the Township Manager and/or Township Board before the seminar/conference is attended.*

Name: BENJAMIN SWATZ

Application Date: OCTOBER 6, 2017

Location of Seminar/Conference SAN ANTONIO, TEXAS

Name of Proposed Seminar/Conference: ICMA ANNUAL CONFERENCE  
OCTOBER 22<sup>ND</sup> - 25<sup>TH</sup>

Description of Seminar/Conference: (may also be attached) SEE ATTACHED

(over)

How will the Seminar/Conference benefit the employee and the township? \_\_\_\_\_

CONTINUING EDUCATION ON THE EMERGING BEST PRACTICES IN  
MUNICIPAL MANAGEMENT INCLUDING EMERGING TECHNOLOGIES.

Cost of the Seminar/Conference: (Registration) \$ 785

(Lodging) \$ 558 (Room SPLIT WITH ANOTHER MANAGER) (Travel) \$ 500

Account #: \_\_\_\_\_

Your Signature: Ben S.

Approvals:

Department Head: \_\_\_\_\_ Date: \_\_\_\_\_

Township Manager: Ben S. Date: 10.6.17

Clerk's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

(Showing Township Board approval)

Original to personnel file

1 copy to applicant

1 copy to Accounting

THE WORLD'S FOREMOST PROFESSIONAL DEVELOPMENT OPPORTUNITY  
FOR LOCAL GOVERNMENT LEADERS

OCTOBER 22-25  
ICMA 2017  
**SAN ANTONIO**

103RD ANNUAL CONFERENCE • BEXAR COUNTY

**BUILDING BRIDGES**  
*Serving Our Whole Community*

**Registration opens June 28**  
at [icma.org/conference](http://icma.org/conference)

**SAVE THE MOST** – Register by August 10

October 22-25, 2017 | Henry B. González Convention Center | San Antonio, Texas

# AN INVITATION FROM ICMA's President



I am excited to invite you and your family to join me and your colleagues in San Antonio, Texas, for this year's 103rd ICMA Annual Conference. The work undertaken by the Conference Planning and Host Committees has set the stage for a program that will motivate and nurture everyone who attends.

Coming up on its Tricentennial, San Antonio provides an excellent backdrop for our Annual Conference. While world renowned for its vibrant River Walk, San Antonio also features a diverse sense of history and tradition in one of the fastest-growing areas of our nation. And we cannot forget to "Remember the Alamo!"

The Annual Conference remains a forum where we can interact as professionals, along with our Strategic Partners, to celebrate our passion for service and our individual and collective successes. This year's theme, *Building Bridges: Serving Our Whole Community*, along with the cadre of excellent keynote speakers and featured speakers, will provide a tremendous opportunity for ICMA members and colleagues from communities around to world to engage and learn together. The educational program developed by the Conference Planning Committee will focus on the core issues facing all communities, large and small, today: trust, infrastructure, leadership, and engagement. There will be learning opportunities for everyone, from first-time managers to seasoned and credentialed members. Equally as important as the educational program are the post-session opportunities to network and learn from each other; these will occur in the excellent venues chosen by the Host Committee.

Reflecting back on my first ICMA Annual Conference in 1985, I know that I have left each conference excited, recharged, and full of new ideas for my community. This year will be no exception. Come join me in San Antonio!

A handwritten signature in black ink, appearing to read "Lee R. Feldman". The signature is stylized and fluid.

Lee R. Feldman  
ICMA President  
City Manager, Fort Lauderdale, Florida



# CONFERENCE PLANNING Committee Welcome



If you attended ICMA's 92nd Annual Conference in San Antonio in 2006, hold on to your hat because you'll be astounded at the transformation the city has undergone in the last 11 years. And if you haven't been to Alamo City before, you are sure to have an amazing time! This October you'll meet your colleagues and revitalize your leadership skills in a conference center that has seen \$325 million in renovations since your last visit. Built before Texas was a state and before the United States were united, San Antonio, which celebrates its 300th birthday next year, is a cultural mecca with a rich history. Recently named a UNESCO world heritage site, the city is home to 18th-century Spanish missions and the newly revitalized and vibrant Pearl District, as well as to eclectic and trendy neighborhoods and 15 miles of famous River Walk—the nation's largest urban ecosystem, complete with global dining experiences and fantastic shopping. There is truly something for everyone in unforgettable San Antonio.

Combined with everything the destination has to offer a visitor, ICMA's 2017 Annual Conference in San Antonio provides you with the opportunity to interact with colleagues, attend premier educational sessions, and hone your leadership and other professional skills. Providing real-world insight from across the United States and around the globe, the conference program will resonate for members at any stage of their career, working in any size or type of community. The Conference Planning Committee, a diverse group of ICMA members, has worked hard to make sure that the programs, keynotes, and educational sessions are diverse, engaging, timely, fresh, and valuable. You will also be impressed with the tours, social activities, and entertainment that the Host Committee has prepared, including a visit to the beautiful gardens and recently modernized and expanded exhibits of the Witte Museum and the chance to participate in the festivities of a night out in Old San Antonio's historic plaza—complete with the musical stylings of The Spazmatics. With all that it has to offer, you will love your entire conference experience.

We hope you take full advantage of the value of your membership by joining your colleagues at the 2017 ICMA Annual Conference, October 22–25. I look forward to seeing you there!



Alison Zelms  
Conference Planning Committee Chair  
Deputy City Manager, Mankato, Minnesota



# Program Overview

Conference attendees will pick up innovative ideas and practical strategies for managing local governments in challenging environments while enjoying opportunities for professional and personal renewal and networking. With an overall theme of **"Building Bridges: Serving Our Whole Community,"** this year's event features a program developed by the 2017 Conference Planning Committee that supports the abundance of educational, information-sharing, and networking offerings you have come to expect.

To help you fulfill your commitment to career-long learning and lead your community in today's complex environment, this year's conference again offers a variety of opportunities, including stimulating daily keynote presentations, informative concurrent educational and Solutions Track sessions, interactive roundtable discussions, films related to local government issues, skill-building ICMA University workshops and forums, and assorted field demonstrations. Engaging session formats, room sets, and presentation styles, combined with the use of social media and other technologies, will maximize your opportunities to network and exchange ideas with your colleagues.

## Concurrent Educational Sessions



In addition to sessions offered by ICMA's programs, affiliates, and partners, this year's conference will feature educational sessions addressing the challenges facing local government managers in six **theme tracks** developed by the 2017 Conference Planning Committee:

- Contemporary Law Enforcement
- Diversity, Inclusivity, and Social Justice
- Emerging Technology
- Preparing for and Managing 21st-Century Threats
- The Intersection of Personal and Professional
- The National Divide

The conference program also includes **career tracks** of educational sessions designed specifically for

- Assistant and Deputy Managers
- County Managers


- Senior Managers/ICMA Credentialed Managers
- Small-Community Managers

## ARE YOU UNABLE TO ATTEND THE CONFERENCE IN PERSON?

If you cannot attend the conference in person, this is your opportunity to continue your learning and networking on your own time. The



2017 Virtual ICMA Annual Conference will take place during the on-site event, October 22–25. ICMA will broadcast over the Internet live, streaming video of all four keynote sessions as well as video and synced PowerPoint presentations of 18 educational sessions.

Although the Virtual Conference is not a substitute for the "on-the-ground" skill-building, networking, and social opportunities that ICMA's Annual Conference offers, it will enable you to access the same quality content and experience the conference highlights. Look for the  icon throughout this program to identify sessions that will be part of the Virtual Conference.

### A Learning Tool for Your Staff

To get the most out of this benefit, for just one fee you can use the live-streaming 2017 Virtual Conference to share professional development with your staff. This cost-effective method of providing interactive and ongoing education to your staff is a win-win for everybody!

Register online at [icma.org/conference](http://icma.org/conference).

## Learning Lab



Stop by the conference's Learning Lab sessions (each set up in its own room this year to enhance acoustics) and join an audience at your choice of short, interactive presentations on focused topics (listed on page 13) that will arouse your curiosity. The lab will also host an **Experts**

**Exchange**, where you can get one-on-one advice from in-the-know colleagues on a variety of topics.

## Afternoon Featured Speakers



After lunch on Monday and Tuesday, enjoy an inspirational presentation from the afternoon's featured speakers, experts in their fields who are noted for their presentation skills and will speak on topics related to the conference's themes. See page 9 for the list of this year's featured speakers.

## Roundtable Discussions



The conference's popular series of roundtable discussions offers attendees an opportunity to meet face-to-face and share ideas, opinions, and solutions on a variety of issues important to professional managers. Each discussion will be facilitated by an ICMA member or

other expert with a strong interest or expertise in these nuts-and-bolts issues.

## ICMA University Forums



ICMA University forums are a hybrid of the traditional concurrent educational sessions and the ICMA University workshops. Similar to a workshop, each forum is designed to be highly interactive and skill building in nature. This year, seven forums will be offered—four on

Sunday afternoon and three on Wednesday morning. Enrollment in each forum is limited to 250 participants and requires preregistration, although the cost is included in the main conference registration fee. (See pages 14–15 for detailed descriptions of the forums.)

## Greening the ICMA Annual Conference

In support of ICMA's commitment to environmental sustainability, abridged information about the conference is included in this issue of *PM*. Complete details are posted at [icma.org/conference](http://icma.org/conference), where online registration and the housing bureau open June 28.



## ICMA University Workshops



Attendees seeking an in-depth, skill-building experience can preregister for one or more of the half-day ICMA University workshops that will be offered in conjunction with the conference (see pages 26–27). The workshops are limited in enrollment to ensure a highly

interactive experience related directly to the ICMA University practice groups considered essential to effective local government management. Payment of a separate workshop registration fee at the time of preregistration covers materials and instructor expenses.

## Field Demonstrations



The opportunities for professional growth and networking will extend beyond the meeting rooms of the Henry B. González Convention Center to include a series of educational field demonstrations and site visits highlighting the most innovative projects in area local governments (see pages 24–25).

## Exhibit Hall



At the exhibits in the ICMA Exhibit Hall—many directly related to the educational sessions—you can examine products and learn about services that will help you serve your constituents more effectively and cost-efficiently. The exhibit hall hosts the popular **Solutions Track** sessions,

which present case studies of local governments that have overcome challenges through innovative public-private partnerships. Read more about this year's exhibit hall on pages 17–19.



## AICP CM Credits

ICMA has registered with the American Planning Association's professional institute, the American Institute of Certified Planners (AICP), to provide Certification Maintenance (CM) credits for approved programs at ICMA's 2017 Annual Conference.

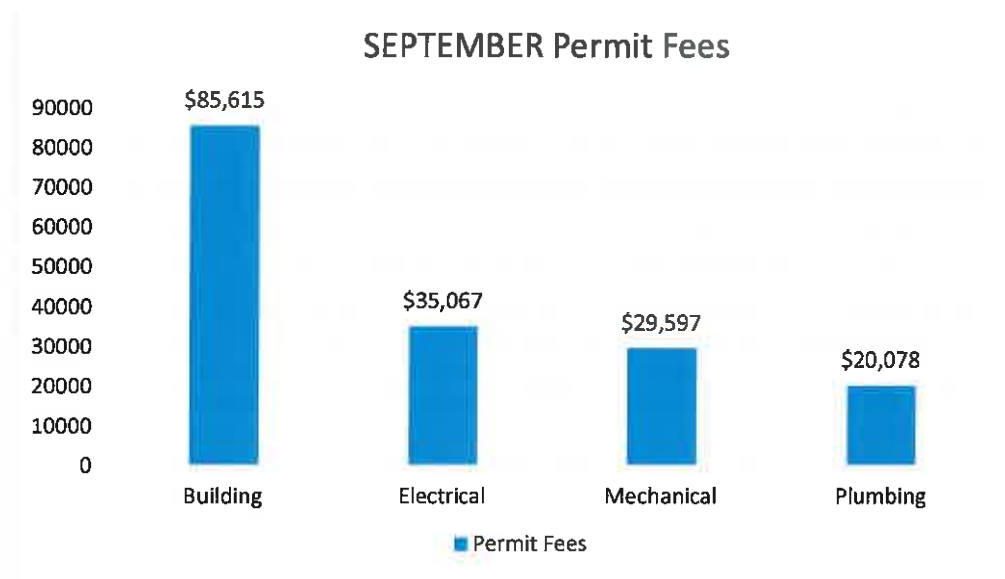
Certification  
Maintenance

Visit [icma.org/conference](http://icma.org/conference) to learn which specific workshops, sessions, and other activities have been approved through AICP's review process.

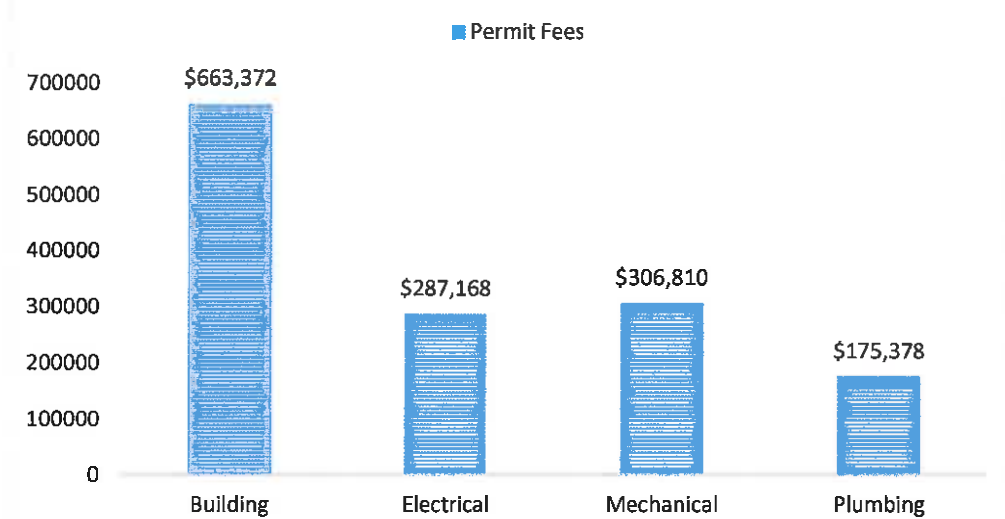
# Cascade Inspection Services

SEPTEMBER 2017

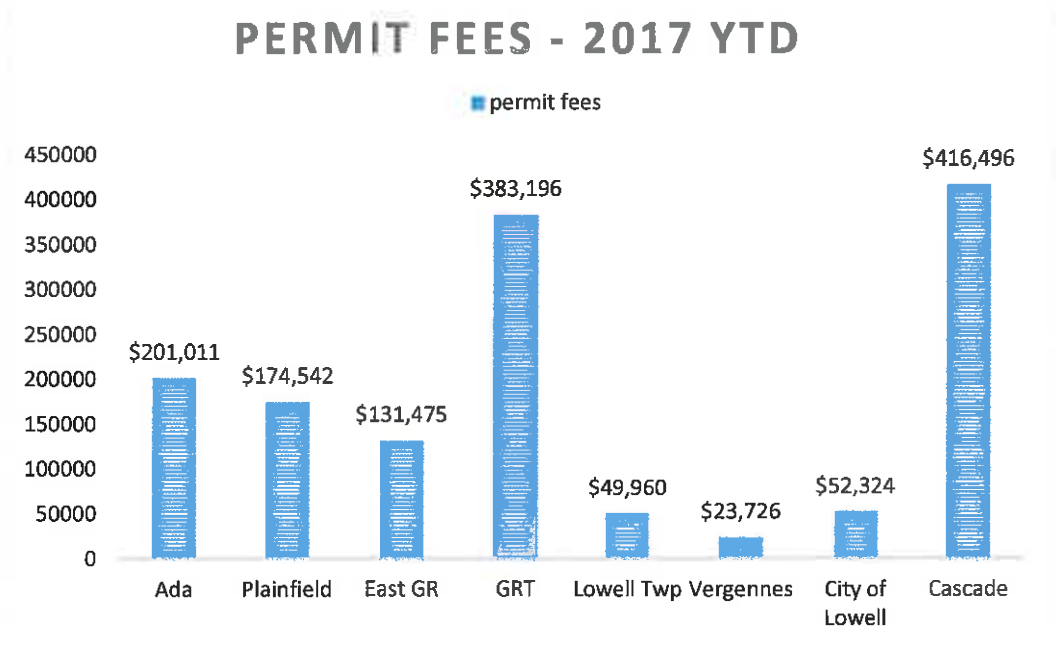
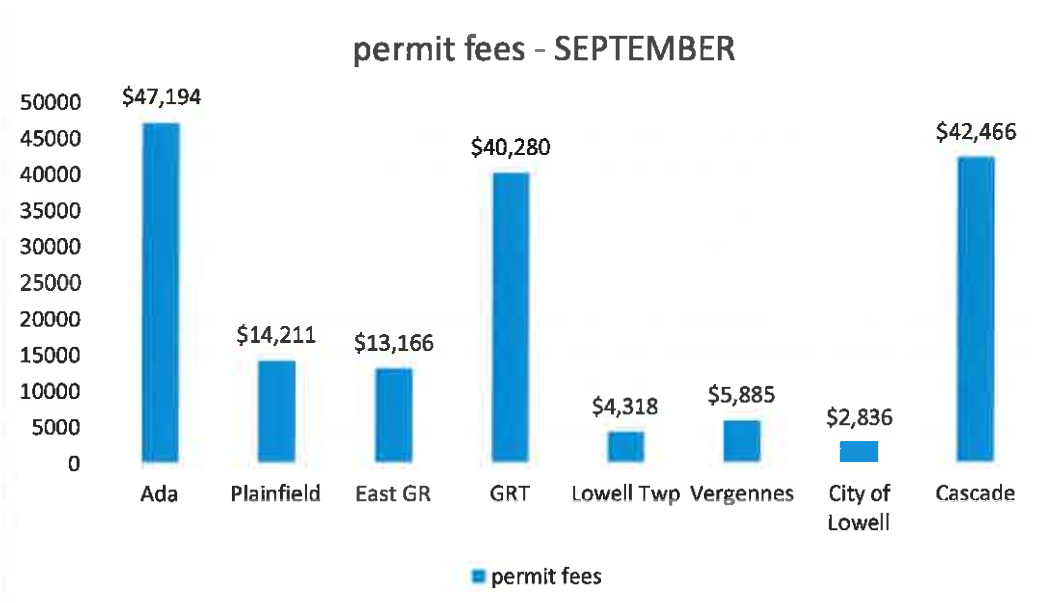
## Permit Fees by Type



## PERMIT FEES - 2017 YTD



# Permit Fees by Municipality



Township	#of Per Building	#of Per Electrical	# of Per Mechanical	# of Per Plumbing	Total Permits	Total Fees				
PREV YTD TOTAL	1227	\$577,757.00	1381	\$252,101.00	2172	\$277,213.10	1029	\$155,300.00	5809	\$1,262,371.10
SEPTEMBER										
Cascade	63	\$16,695.00	44	\$13,168.00	53	\$8,490.25	31	\$4,113.00	191	\$42,466.25
Lowell Twp	7	\$2,073.00	9	\$1,577.00	2	\$205.00	2	\$463.00	20	\$4,318.00
Ada	39	\$32,815.00	24	\$7,192.00	43	\$4,790.00	16	\$2,397.00	122	\$47,194.00
Vergennes			12	\$1,942.00	20	\$2,500.00	8	\$1,443.00	40	\$5,885.00
GR Twp	33	\$27,584.00	20	\$3,070.00	27	\$2,956.25	22	\$6,670.00	102	\$40,280.25
EGR	31	\$5,868.00	20	\$2,362.00	29	\$2,865.00	21	\$2,071.00	101	\$13,166.00
Plainfield			32	\$4,797.00	61	\$7,365.15	16	\$2,049.00	109	\$14,211.15
City of Lowell	6	\$580.00	5	\$959.00	2	\$425.00	3	\$872.00	16	\$2,836.00
MONTH TOTAL	179	\$85,615.00	166	\$35,067.00	237	\$29,596.65	119	\$20,078.00	701	\$170,356.65

YTD 2017	1406	\$663,372.00	1547	\$287,168.00	2409	\$306,809.75	1148	\$175,378.00	6510	\$1,432,727.75
TOTAL-2016	1475	\$529,552.24	1992	\$310,463.00	3217	\$383,718.00	1404	\$190,762.00	8088	\$1,414,495.24
TOTAL-2015	1510	\$665,025.51	1948	\$327,865.00	3070	\$385,822.30	1361	\$216,089.00	7889	\$1,594,801.81
TOTAL-2014	1354	\$615,191.80	1780	\$297,971.00	2860	\$359,989.90	1257	\$196,553.00	7251	\$1,469,705.70
TOTAL-2013	1241	\$644,712.00	1667	\$288,442.06	2583	\$334,045.70	969	\$142,474.00	6460	\$1,409,673.76
TOTAL-2012	1,122	\$511,272.00	1,349	\$188,766.99	2,134	\$247,625.30	835	\$118,335.00	5,440	\$1,065,999.29
TOTAL-2011	949	\$410,550.75	990	\$148,549.50	1585	\$189,180.10	753	\$111,023.00	4277	\$859,303.35
TOTAL-2010	850	\$309,779.00	1330	\$162,994.00	1644	\$188,927.25	625	\$94,790.00	4449	\$756,490.25
TOTAL-2009	712	\$222,039.00	875	\$125,848.00	1313	\$149,101.75	554	\$74,397.00	3463	\$571,382.75
TOTAL-2008	848	\$582,100.75	1043	\$147,674.00	1348	\$164,271.30	697	\$91,695.00	3933	\$951,266.55
TOTAL-2007	1032	\$336,749.55	1069	\$137,857.00	1447	\$151,002.60	778	\$98,270.00	4326	\$723,879.15
TOTAL-2006	1181	\$481,673.30	1547	\$215,121.00	2147	\$243,076.90	1243	\$162,020.00	5173	\$940,523.41
TOTAL-2005	1032	\$419,355.30	1369	\$191,694.00	1874	\$211,234.15	1111	\$144,926.00	5386	\$967,209.45



**CASCADE CONSOLIDATED FEES**

**YEAR**

**2017**

<b>MONTH</b>	<b>Building Comm.</b>	<b>Building Residential</b>	<b>Electrical</b>	<b>Mechanical</b>	<b>Plumbing</b>	<b>TOTAL</b>
<b>JANUARY</b>	\$20,215.00	\$7,445.00	\$5,437.00	\$5,210.00	\$2,160.00	\$40,467.00
<b>FEBRUARY</b>	\$27,256.00	\$5,206.00	\$4,738.00	\$4,965.00	\$2,559.00	\$44,724.00
<b>MARCH</b>	\$24,077.00	\$7,913.00	\$6,126.00	\$8,929.75	\$5,132.00	\$52,177.75
<b>APRIL</b>	\$23,693.00	\$12,560.00	\$6,416.00	\$8,040.00	\$4,618.00	\$55,327.00
<b>MAY</b>	\$21,860.00	\$5,709.00	\$11,151.00	\$9,673.25	\$3,879.00	\$52,272.25
<b>JUNE</b>	\$7,686.00	\$9,586.00	\$6,329.00	\$7,846.25	\$6,014.00	\$37,461.25
<b>JULY</b>	\$37,685.00	\$9,714.00	\$4,145.00	\$6,907.50	\$4,204.00	\$62,655.50
<b>AUGUST</b>	\$3,351.00	\$8,418.00	\$6,359.00	\$6,070.75	\$3,946.00	\$28,944.75
<b>SEPTEMBER</b>	\$7,900.00	\$8,795.00	\$13,168.00	\$8,490.25	\$4,113.00	\$42,466.25
<b>OCTOBER</b>						
<b>NOVEMBER</b>						
<b>DECEMBER</b>						
<b>YEAR END TOTAL</b>	<b>\$173,723.00</b>	<b>\$75,346.00</b>	<b>\$63,869.00</b>	<b>\$66,932.75</b>	<b>\$36,625.00</b>	<b>\$416,495.75</b>
<b>PERMIT # FOR MONTH</b>	20	43	44	53	31	191
<b>PREV PERMIT TOTAL</b>	87	265	315	501	221	1389
<b>PERMIT TOTAL FOR YR</b>	107	308	359	554	252	1580
<b>YEAR TO DATE</b>	2017	\$416,495.75				
<b>YEAR TO DATE</b>	2016	\$340,275.74				
<b>OVER</b>	\$76,220.01					

**CASCADE SINGLE FAMILY HOMES**

Number of Permits	SEPTEMBER	YTD 2017	2016	2015	2014	2013
New Residential Homes	5	43	56	62	154	74
VALUE - RESIDENTIAL	\$ 3,352,000.00	\$ 26,095,040.00	\$ 24,019,640.00	\$ 26,706,215.00	\$ 39,466,458.00	\$ 30,714,184.00

# Cascade Twp -Permit Report by Category/ Fee

9/1/2017 12:00:0 to 9/30/2017 12:00:

Permit	Applicant	Address	Issue Date	Project Value	Permit Fee	Work Description
<b>Res. Single Family</b>						
PB17001262	REDSTONE HOMES	2467 HIGHRIDGE HILLS LN SE	09/11/2017	315,000	571.00	DUPLEX W/DECK
PB17001263	REDSTONE HOMES	2473 HIGHRIDGE HILLS LN SE	09/11/2017	315,000	571.00	DUPLEX W/DECK
PB17001353	RAYMAR HOMES INC	6545 TAMMARRON CT SE	09/12/2017	960,000	993.00	RESIDENCE W/FINISHED BASEMI
PB17001250	J PETERSON HOMES	1371 NOTTING HILL CT SE	09/21/2017	987,000	1,519.00	RESIDENCE W/FINISHED BASEMI
PB17001452	CELEBRITY BUILDER	1390 BRIARCLIFF DR SE	09/26/2017	775,000	1,294.00	RESIDENCE W/FINISHED BASEMI
				<b>3,352,000</b>	<b>4,948.00</b>	

**5** Permits Value Total **3,352,000** Fee Total **4,948.00**

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## MEMORANDUM

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**To:** Cascade Charter Township Board  
**From:** Steve Peterson, Community Development Director  
**Subject:** Consider Pay Application from Katerberg Verhage re:  
Pathway repairs  
**Meeting Date:** **October 11, 2017**

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Attached you will find the Pay Application from Katerberg Verhage for the construction of the pathway repairs. The Township engineer has inspected all the work and is recommending the payment of \$65,208.58. This does leave a small amount in retainage (\$3,423.03) to ensure restoration and grass growth occurs.

**Attachments:**  
Pay Application



3717 MICHIGAN ST NE  
GRAND RAPIDS, MI 49525  
PHONE: 616.949.3030  
FAX: 616.949.3326

**CASCADE CHARTER TOWNSHIP**  
**2865 THORNHILLS AVE SE**  
**GRAND RAPIDS, MI 49546-7192**  
**ATTN: STEVE PETERSON**

**INVOICE: 41481**

**DATE: 10/04/2017**

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**PROJECT: 2017 PATHWAY REPAIR**

PAY APPLICATION ONE (PLEASE SEE ATTACHED SCHEDULE)	\$	68,640.61
LESS 5% RETAINAGE	\$	(3,423.03)
<b>TOTAL DUE</b>	<b>\$</b>	<b>65,208.58</b>

*THANK YOU FOR YOUR BUSINESS!!*

**ALL ACCOUNTS DUE IN 30 DAYS UNLESS OTHER TERMS. GUARANTEE VOID WITH FAILURE OF PAYMENT.  
2% PER MONTH SERVICE CHARGE WILL BE APPLIED TO ALL ACCOUNTS AFTER 30 DAYS.**

**Pay Application No. 1**

Project Name: 2017 Pathway Repairs  
 Work Complete through October 1, 2017

Item No.	Item Description	Unit	Amount	Katerberg VerHage Bid Amount		Work Completed	
				Unit Price	Amount	Placed Quantity	Amount
<b>Section 1 - 30th Street Cemetery Drives</b>							
1	Mobilization (10% Maximum of Section Bid)	LS	1	\$632.50	\$632.50	1	\$632.50
2	Remove HMA Surface	SYD	145	\$10.00	\$1,450.00	148	\$1,480.00
3	Pathway Grading	LF	110	\$10.00	\$1,100.00	109	\$1,090.00
3A*	Valve Box, Adjust	EA		\$150.00		1	\$150.00
4	Aggregate Base, 6-inch	SYD	15	\$25.00	\$375.00	16	\$400.00
5	HMA, 13A	Ton	20	\$150.00	\$3,000.00	21	\$3,150.00
6	Lawn Restoration	LS	1	\$400.00	\$400.00	1	\$400.00
<b>Subtotal Section 1:</b>					<b>\$6,957.50</b>		<b>\$7,302.50</b>
<b>Section 2 - 30th Street from 7292 to 7326</b>							
7	Mobilization (10% Maximum of Section Bid)	LS	1	\$1,675.00	\$1,675.00	1	\$1,675.00
8	Remove HMA Surface	SYD	450	\$7.00	\$3,150.00	452	\$3,164.00
9	Pathway Grading	LF	400	\$5.00	\$2,000.00	406.5	\$2,032.50
10	Valve Box, Adjust	EA	4	\$150.00	\$600.00	4	\$600.00
10A*	Valve Box, Replace and Adjust	EA		\$350.00		2	\$700.00
11	HMA, 13A	Ton	55	\$150.00	\$8,250.00	60	\$9,000.00
12	Lawn Restoration	LS	1	\$2,750.00	\$2,750.00	1	\$2,750.00
<b>Subtotal Section 2:</b>					<b>\$18,425.00</b>		<b>\$19,921.50</b>
<b>Section 3 - 30TH Street from 7442 to 7490</b>							
13	Mobilization (10% Maximum of Section Bid)	LS	1	\$1,440.00	\$1,440.00	1	\$1,440.00
14	Remove HMA Surface	SYD	370	\$7.50	\$2,775.00	361	\$2,707.50
15	Pathway Grading	LF	325	\$5.00	\$1,625.00	325	\$1,625.00
15A*	Valve Box, Replace and Adjust	EA		\$350.00		1	\$350.00
16	HMA, 13A	Ton	50	\$150.00	\$7,500.00	55	\$8,250.00
17	Lawn Restoration	LS	1	\$2,500.00	\$2,500.00	1	\$2,500.00
<b>Subtotal Section 3:</b>					<b>\$15,840.00</b>		<b>\$16,872.50</b>
<b>Section 4 - 30th Street from 7566 to 7594</b>							
18	Mobilization (10% Maximum of Section Bid)	LS	1	\$1,626.00	\$1,626.00	1	\$1,626.00
19*	Remove HMA Surface	SYD	235	\$9.25	\$2,173.75	382	\$3,533.50
20	Pathway Grading	LF	210	\$5.00	\$1,050.00	208	\$1,040.00
21	Remove Aggregate Base	SYD	235	\$12.00	\$2,820.00	231	\$2,772.00
22	Aggregate Base, 6-inch	SYD	235	\$15.00	\$3,525.00	231	\$3,465.00
23	HMA, 13A	Ton	30	\$150.00	\$4,500.00	33	\$4,950.00
24	Lawn Restoration	LS	1	\$2,200.00	\$2,200.00	1	\$2,200.00
<b>Subtotal Section 4:</b>					<b>\$17,894.75</b>		<b>\$19,586.50</b>
<b>Section 5 - 30th Street, East of Ashton Ridge</b>							
25	Mobilization (10% Maximum of Section Bid)	LS	1	\$220.00	\$220.00	1	\$220.00
26	Remove HMA Surface	SYD	60	\$10.25	\$615.00	56	\$574.00
27	Pathway Grading	LF	50	\$5.00	\$250.00	50	\$250.00
28	HMA, 13A	Ton	6	\$150.00	\$900.00	7.72	\$1,158.00
29	Lawn Restoration	LS	1	\$450.00	\$450.00	1	\$450.00
<b>Subtotal Section 5:</b>					<b>\$2,435.00</b>		<b>\$2,652.00</b>
30	Cash Allowance - Testing	Dollars	5000	\$1.00	\$5,000.00	405.61	\$405.61
<b>Original Contract Total</b>					<b>\$66,552.25</b>		<b>\$66,740.61</b>
<b>Additional Requested Work</b>							
31*	Path Repair at Camelback Bridge	LS		\$1,900.00		1	\$1,900.00

**Amount Due \$68,640.61**

**Notes:**

Item 3A, 10A and 15A were added due to finding buried water and gas valve boxes in the pathway requiring adjustment or replacement due to being broken.  
 Item 19 was over plan quantity as there was an existing pathway under the gravel and surface pathway in this location.  
 Item 31 was additional work that was not part of the original bid.

**TO OWNER/CLIENT:**  
 Cascade Township  
 2865 Thornhills Avenue SE  
 Grand Rapids, Michigan 49546

**PROJECT:**  
 Cascade/Hall Renovations  
 2865 Thornhills Avenue SE  
 Grand Rapids, Michigan 49546

**APPLICATION NO:** 1  
**INVOICE NO:** Application 1  
**PERIOD:** 08/01/17 - 09/20/17  
**PROJECT NO:** 171103  
**CONTRACT DATE:** 06/20/2017

**DISTRIBUTION TO:**

**FROM CONTRACTOR:**  
 Fishbeck Thompson Carr & Huber, Inc  
 1515 Arboretum Drive, SE  
 Grand Rapids, Michigan 49546

**VIA ARCHITECT/ENGINEER:**

**CONTRACT FOR: Cascade/Hall Renovations Prime Contract**  
**CONTRACTOR'S APPLICATION FOR PAYMENT**

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet is attached.

1. Original Contract Sum	<u>\$ 272,794.30</u>
2. Net change by change orders	<u>\$ 0.00</u>
3. Contract sum to date (line 1 ± 2)	<u>\$ 272,794.30</u>
4. Total completed and stored to date (Column G on detail sheet)	<u>\$ 72,054.92</u>
5. Retainage:	
a. 9.63% of completed work:	<u>\$ 6,938.49</u>
b. 0.00% of stored material:	<u>\$ 0.00</u>
Total retainage (Line 5a + 5b or total in column I of detail sheet)	<u>\$ 6,938.49</u>
6. Total earned less retainage (Line 4 less Line 5 Total)	<u>\$ 65,116.43</u>
7. Less previous certificates for payment (Line 6 from prior certificate)	<u>\$ 0.00</u>
8. Current payment due:	<u>\$ 65,116.43</u>
9. Balance to finish, including retainage (Line 3 less Line 6)	<u>\$ 207,677.87</u>

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner/Client:	\$ 0.00	\$ 0.00
Total approved this Month:	\$ 0.00	\$ 0.00
Totals:	\$ 0.00	\$ 0.00
Net change by change orders:	\$ 0.00	

The undersigned certifies that to the best of the Contractor's knowledge, information and belief, the Work covered by this Application for Payment has been completed in accordance with the Contract documents, that all amounts have been paid by the Contractor for Work which previous Certificates for payment were issued and payments received from the Owner/Client, and that current payments shown herein is now due.

CONTRACTOR: Fishbeck Thompson Carr & Huber, Inc

By: \_\_\_\_\_ Date: \_\_\_\_\_

State of: Michigan

County of: Kent

Subscribed and sworn to before

me this 3rd day of October, 2017

Notary Public:

My commission expires:

**ARCHITECT'S/ENGINEER'S CERTIFICATE FOR PAYMENT**

In accordance with the Contract Documents, based on the on-site observations and the data comprising this application, the Architect/Engineer certifies to the Owner/Client that to the best of the Architect's/Engineer's knowledge, information and belief that Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED: \$ 65,116.43

*(Attach explanation if amount certified differs from the amount applied for. Initial all figures on this Application and on the Continuation Sheet that are changed to confirm to the amount certified)*

ARCHITECT/ENGINEER:

By: \_\_\_\_\_ Date: \_\_\_\_\_

This certificate is not negotiable. The amount certified is payable only to the contract named herein. Issuance, payment and acceptance of payment are without prejudice to the rights of the Owner/Client or Contractor under this Contract.

Document SUMMARY SHEET, APPLICATION AND CERTIFICATE FOR PAYMENT, containing  
 Contractor's signed Certification is attached.  
 Use Column I on Contracts where variable retainage for line items apply.

APPLICATION NUMBER: 1  
 APPLICATION DATE: 09/30/2017  
 PERIOD: 08/01/17 - 09/20/17  
 ARCHITECTS/ENGINEERS PROJECT NO:

Contract Lines

ITEM NO.	COST CODE	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G / C)	BALANCE TO FINISH (C - G)	RETAINAGE
				FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
1	6-100 - General Trades	6-1 - General Trades	\$ 18,945.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00%	\$ 18,945.00	\$ 0.00
2	7-100 - Roofing	7-1 - Roofing	\$ 48,500.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00%	\$ 48,500.00	\$ 0.00
3	23-100 - HVAC	23-1 - Heating, Ventilating and Air Conditioning	\$ 17,812.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00%	\$ 17,812.00	\$ 0.00
4	26-100 - Electrical	26-1 - Electrical	\$ 35,420.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00%	\$ 35,420.00	\$ 0.00
5	32-200 - Asphalt Pavement	32-2 - Asphalt Paving	\$ 107,777.00	\$ 0.00	\$ 60,770.00	\$ 0.00	\$ 60,770.00	56.38%	\$ 47,007.00	\$ 6,077.00
6	48-100 - Construction Fee	CM Fee	\$ 17,190.30	\$ 0.00	\$ 7,114.92	\$ 0.00	\$ 7,114.92	41.39%	\$ 10,075.38	\$ 711.40
7	48-200 - Architectural	48-200 - Architect C/A Services	\$ 17,800.00	\$ 0.00	\$ 2,670.00	\$ 0.00	\$ 2,670.00	15.00%	\$ 15,130.00	\$ 0.00
8	1-100 - General Conditions	1-1 - General Conditions	\$ 9,350.00	\$ 0.00	\$ 1,500.00	\$ 0.00	\$ 1,500.00	16.04%	\$ 7,850.00	\$ 150.00
<b>TOTALS:</b>			<b>\$ 272,794.30</b>	<b>\$ 0.00</b>	<b>\$ 72,054.92</b>	<b>\$ 0.00</b>	<b>\$ 72,054.92</b>	<b>26.41%</b>	<b>\$ 200,739.38</b>	<b>\$ 6,938.40</b>

Grand Totals

ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G / C)	BALANCE TO FINISH (C - G)	RETAINAGE
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
<b>GRAND TOTALS:</b>		<b>\$ 272,794.30</b>	<b>\$ 0.00</b>	<b>\$ 72,054.92</b>	<b>\$ 0.00</b>	<b>\$ 72,054.92</b>	<b>26.41%</b>	<b>\$ 200,739.38</b>	<b>\$ 6,938.40</b>

# Memo

**To:** Cascade Township Board  
**From:** Roger Mc Carty, Assessor  
**CC:**  
**Date:** 10/2/2017  
**Re:** Request for approval of IFT District and Exemption Certificate for new facility for Classic Transportation Services

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**We will be first establishing the Industrial Development District and following that, approving the issuance of the IFT certificate. Separate public hearings are held for the district and certificate.**

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Classic Transportation Services has applied for abatement for a NEW FACILITY to be located at 5357 52<sup>nd</sup> St SE. The project is for 73,125 sq. ft. of a new 333,950 square foot manufacturing / warehousing building. Current understanding is the equipment covered by this abatement will be exempt from Property Tax but will be subject to ESA. Presently they have 0 employees in Cascade and with this project 10 - 12 jobs will be at the new Cascade facility.

The amount of the exemption request is \$2,052,574 which is all real property.

It is recommended that the certificate be granted for a period of 3 years which is the length of the lease and the project which makes the property eligible for the abatement.

Attached are the application and exhibits submitted by Classic Transportation Services, which explain the project. If you have any questions prior to the meeting on October 11, 2017 please feel free to contact me.

The Industrial Facilities Certificate must be issued during the early stages of construction and will entitle the firm to certain tax savings during the term of the exemption certificate. The following computation reflects the tax savings the company will realize for the first year after completion of the project. The Tax Rate for the building portion (real property) is ½ of the Ad Valorem rate with the State Education Tax not reduced. Equipment (personal property) is it is exempt from property tax but subject to ESA. The tax impact for each is calculated individually. The 1% administration fee is included in the calculations.

**REAL**

Ad Valorem Millage Rate	IFT Millage Rate	SEV of Project [Est.]	Ad Valorem Taxes [Est.]	IFT Taxes [Est.]	Estimated Tax Savings	Township Tax Loss
49.3044	27.6522	\$1,026,287	\$51,106.47	\$28,662.88	\$22,443.59	\$1,826.61

**PERSONAL**

Exempt. The local taxing units would collect no taxes from this project.

RESOLUTION # /2017

TOWNSHIP OF CASCADE  
RESOLUTION OF TOWNSHIP BOARD  
ESTABLISHING INDUSTRIAL DEVELOPMENT DISTRICT

At a regular meeting of the Township Board of the Township of Cascade, County of Kent, State of Michigan, held in the Cascade Library in said Township on the 11th day of October, 2017, at 7:00 p.m.

MEMBERS PRESENT:

MEMBERS ABSENT:

The following preamble and resolution was offered by Member        and supported by Member        .

WHEREAS, pursuant to Act No. 198 of the Public Acts of 1974, as amended, Cascade Township has the authority to establish "Industrial Development Districts" within the boundaries of the Township of Cascade; and

WHEREAS, Classic Transportation Services has petitioned the Cascade Township Board to establish an Industrial Development District in the area more particularly described as:

That part of the Southeast one-quarter of Section 30, Town 6 North, Range 10 West, Cascade Township, Kent County, Michigan, described as: COMMENCING at the South one-quarter corner of said Section 30; thence North 01'21'21" West 1328.14 feet along the North-South one-quarter line of said section; thence North 88'30'37" East 73.00 feet along the North line of the Southwest one-quarter of the Southeast one-quarter of said section; thence North 01'21'21" West 146.28 feet parallel with said North-South one-quarter line to the PLACE OF BEGINNING; thence North 01'21'21" West 539.44 feet parallel with said North-South one-quarter line; thence North 81'17'20" East 1265.38 feet along the South line of G.R. Ford Airport property, thence South 01'19'13" East 539.48 feet along the East line of the Southwest one-quarter of the Southeast one-quarter of said section; thence South 81'17'20" West 1265.05 feet parallel with said Airport property line to the place of beginning. 15.5393 acres

; and

WHEREAS, construction, acquisitions, alterations, or installation of a proposed facility has not commenced at the time of filing the request to establish this district; and

WHEREAS, written notice has been given by certified mail to all owners of real property located within the district, and to the public by newspaper advertisement in the Grand Rapids Press of the hearing on the establishment of the proposed district; and

WHEREAS, on October 11, 2017, a public hearing was held at which all of the owners of real property within the proposed Industrial Development District and all residents and taxpayers of Cascade Township were afforded and opportunity to be heard thereon; and

WHEREAS, the Cascade Township Board deems it to be in the public interest of Cascade Township to establish the Industrial Development District as proposed;

NOW THEREFORE, BE IT RESOLVED:

by the Cascade Township Board that the legally described parcel of land described as:

That part of the Southeast one-quarter of Section 30, Town 6 North, Range 10 West, Cascade Township, Kent County, Michigan, described as: COMMENCING at the South one-quarter corner of said Section 30; thence North 01°21'21" West 1328.14 feet along the North-South one-quarter line of said section; thence North 88°30'37" East 73.00 feet along the North line of the Southwest one-quarter of the Southeast one-quarter of said section; thence North 01°21'21" West 146.28 feet parallel with said North-South one-quarter line to the PLACE OF BEGINNING; thence North 01°21'21" West 539.44 feet parallel with said North-South one-quarter line; thence North 81°17'20" East 1265.38 feet along the South line of G.R. Ford Airport property, thence South 01°19'13" East 539.48 feet along the East line of the Southwest one-quarter of the Southeast one-quarter of said section; thence South 81°17'20" West 1265.05 feet parallel with said Airport property line to the place of beginning. 15.5393 acres

situated in the Cascade Township, Kent County, Michigan, be and hereby is established as an Industrial Development District pursuant to the provision of Act No. 198 of the public act of 1974, as amended, to be known as the Classic Transportation Services Industrial Development District.

YEAS:

NAYS:

RESOLUTION DECLARED ADOPTED.

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Susan Slater  
Cascade Township Clerk

CERTIFICATION

I certify that the foregoing constitutes a true and complete copy of a resolution adopted by the Cascade Township Board of the Township of Cascade, County of Kent, Michigan, at a regular meeting held on October 11, 2017.

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Susan Slater  
Cascade Township Clerk

RESOLUTION # /2017

TOWNSHIP OF CASCADE  
RESOLUTION TO APPROVE APPLICATION  
FOR INDUSTRIAL FACILITIES EXEMPTION CERTIFICATE

At a regular meeting of the Township Board of the Township of Cascade, County of Kent, State of Michigan, held in the Cascade Library, 2870 Jacksmith Drive, S.E., in said Township on the 11<sup>th</sup> day of October, 2017, at 7:00 p.m.

MEMBERS PRESENT:

MEMBERS ABSENT:

The following preamble and resolution was offered by Member and supported by Member

*RESOLUTION TO APPROVE APPLICATION*  
FOR INDUSTRIAL FACILITIES EXEMPTION CERTIFICATE  
FOR CLASSIC TRANSPORTATION SERVICES

- WHEREAS, pursuant to Act No. 198 of the Public Acts of 1974, as amended (“Act 198”), and after a duly noticed public hearing held at 7:00 p.m. on October 11, 2017 this Board, by resolution, established Classic Transportation Services Industrial Development District as requested by Classic Transportation Services, and
- WHEREAS, Classic Transportation Services, has filed an Application for an Industrial Facilities Exemption Certificate with respect to installation of Real Property within said Industrial Development District; and
- WHEREAS, before acting on said Application, a public hearing was held before this Board on October 11, 2017, at the Cascade Library, 2870 Jacksmith Drive, S.E., Grand Rapids, Michigan, at 7:00 p.m.; and
- WHEREAS, written notification of said hearing was given to the Township Assessor and to the legislative body of each taxing unit which levies ad valorem property taxes within Cascade Township; and
- WHEREAS, the Township Assessor and representatives of the affected taxing units have been given an opportunity to be heard, and the Township Board has considered any objections with regard to the approval of an Industrial Facilities Exemption Certificate for Classic Transportation Services.

NOW THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. That the Township Board finds as follows:
  - a. That the application relates to a “new facility” within the meaning of Act 198 and which are situated within Classic Transportation Services Industrial Development District.
  - b. That the commencement of the construction and acquisition of the new facilities described in the application occurred not earlier than six (6) months before the filing of the application.
  - c. That new facility described in the application is calculated to have the reasonable likelihood to create employment, retain employment or prevent a loss of employment in Cascade Township.
  - d. That the aggregate State Equalized Valuation (“SEV”) of real and personal property exempt from ad valorem taxes within Cascade Township, after granting this Certificate, will not exceed five percent (5%) of an amount equal to the sum of the SEV of Cascade Township, plus the SEV of personal and real property thus exempted.
  - e. That the granting of the Industrial Facilities Exemption Certificate for Classic Transportation Services, considering together with the aggregate amount of certificates previously granted and currently in force under Act 198, and Act 255 of the Public Acts of 1978, shall not have the effect of substantially impeding the operation of Cascade Township or impairing the financial soundness of any taxing unit which levies ad valorem property taxes in Cascade Township.
2. That the Application of Classic Transportation Services for an Industrial Facilities Exemption Certificate be and is hereby approved.
3. That the Industrial Facilities Exemption Certificate, when issued, shall be and remain in force and effect for a period of THREE (3) years.

4. That all resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution be and the same are hereby rescinded.

YEAS:

NAYS:

MEMBERS ABSENT:

RESOLUTION DECLARED ADOPTED.

---

Susan Slater  
Cascade Township Clerk

#### CERTIFICATION

I certify that the foregoing constitutes a true and complete copy of a resolution adopted by the Cascade Township Board of the Township of Cascade, County of Kent, Michigan, at a regular meeting held on October 11, 2017.

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Clem Bell  
Cascade Township Clerk

# Application for Industrial Facilities Tax Exemption Certificate

Issued under authority of Public Act 198 of 1974, as amended. Filing is mandatory.

**INSTRUCTIONS:** File the original and two copies of this form and the required attachments (three complete sets) with the clerk of the local government unit. The State Tax Commission (STC) requires two complete sets (one original and one copy). One copy is retained by the clerk. If you have any questions regarding the completion of this form, call (517) 373-3302.

<b>To be completed by Clerk of Local Government Unit</b>	
Signature of Clerk	Date Received by Local Unit <b>9.15.17.</b>
<b>STC Use Only</b>	
Application Number	Date Received by STC

**APPLICANT INFORMATION**  
All boxes must be completed.

1a. Company Name (Applicant must be the occupant/operator of the facility) <b>Classic Transportation Services Inc.</b>		1b. Standard Industrial Classification (SIC) Code - Sec. 2(10) (4 or 6 Digit Code) <b>4225</b>	
1c. Facility Address (City, State, ZIP Code) (real and/or personal property location) <b>5357 - 52nd St. SE, G.R. MI 49512</b>		1d. City/Township/Village (indicate which) <b>Cascade Twp</b>	1e. County <b>Kent</b>
2. Type of Approval Requested <input checked="" type="checkbox"/> New (Sec. 2(5)) <input type="checkbox"/> Transfer <input type="checkbox"/> Speculative Building (Sec. 3(8)) <input type="checkbox"/> Rehabilitation (Sec. 3(6)) <input type="checkbox"/> Research and Development (Sec. 2(10)) <input type="checkbox"/> Increase/Amendment		3a. School District where facility is located <b>Caledonia</b>	3b. School Code <b>41050</b>
4. Amount of years requested for exemption (1-12 Years) <b>3</b>			

5. Per section 5, the application shall contain or be accompanied by a general description of the facility and a general description of the proposed use of the facility, the general nature and extent of the restoration, replacement, or construction to be undertaken, a descriptive list of the equipment that will be part of the facility. Attach additional page(s) if more room is needed.  
**New facility is 333,950 SF. The applicant will occupy 73,125 SF. Parcel # 41-19-300-400-020. Please See the attached description.**

6a. Cost of land and building improvements (excluding cost of land) * Attach list of improvements and associated costs. * Also attach a copy of building permit if project has already begun.	<b>\$2,052,574</b> - Applicants portion Real Property Costs
6b. Cost of machinery, equipment, furniture and fixtures. <b>Apx 175,000 should qualify for tax exempt</b> * Attach itemized listing with month, day and year of beginning of installation, plus total	Personal Property Costs
6c. Total Project Costs * Round Costs to Nearest Dollar	<b>\$2,052,574</b> Total of Real & Personal Costs

7. Indicate the time schedule for start and finish of construction and equipment installation. Projects must be completed within a two year period of the effective date of the certificate unless otherwise approved by the STC.

	Begin Date (M/D/Y)	End Date (M/D/Y)	
Real Property Improvements	<b>3/17/17</b>	<b>10/16/17</b>	<input type="checkbox"/> Owned <input checked="" type="checkbox"/> Leased
Personal Property Improvements			<input type="checkbox"/> Owned <input type="checkbox"/> Leased

8. Are State Education Taxes reduced or abated by the Michigan Economic Development Corporation (MEDC)? If yes, applicant must attach a signed MEDC Letter of Commitment to receive this exemption.  Yes  No

9. No. of existing jobs at this facility that will be retained as a result of this project. <b>0</b>	10. No. of new jobs at this facility expected to create within 2 years of completion. <b>10-12</b>
---	---

11. Rehabilitation applications only: Complete a, b and c of this section. You must attach the assessor's statement of SEV for the entire plant rehabilitation district and obsolescence statement for property. The Taxable Value (TV) data below must be as of December 31 of the year prior to the rehabilitation.

a. TV of Real Property (excluding land) \_\_\_\_\_

b. TV of Personal Property (excluding inventory) \_\_\_\_\_

c. Total TV \_\_\_\_\_

12a. Check the type of District the facility is located in:

Industrial Development District       Plant Rehabilitation District

12b. Date district was established by local government unit (contact local unit)	12c. Is this application for a speculative building (Sec. 3(8))? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---

**APPLICANT CERTIFICATION - complete all boxes.**

The undersigned, authorized officer of the company making this application certifies that, to the best of his/her knowledge, no information contained herein or in the attachments hereto is false in any way and that all are truly descriptive of the industrial property for which this application is being submitted.

It is further certified that the undersigned is familiar with the provisions of P.A. 198 of 1974, as amended, being Sections 207.551 to 207.572, inclusive, of the Michigan Compiled Laws; and to the best of his/her knowledge and belief, (s)he has complied or will be able to comply with all of the requirements thereof which are prerequisite to the approval of the application by the local unit of government and the issuance of an Industrial Facilities Exemption Certificate by the State Tax Commission.

13a. Preparer Name <b>Rod Cooper</b>	13b. Telephone Number <b>616-877-0003 x102</b>	13c. Fax Number <b>616-877-0424</b>	13d. E-mail Address <b>rodcooper@classictransportation.com</b>
14a. Name of Contact Person <b>Rod Cooper</b>	14b. Telephone Number <b>616-877-0003 x102</b>	14c. Fax Number <b>616-877-0424</b>	14d. E-mail Address <b>rodcooper@classictransportation.com</b>
15a. Name of Company Officer (No Authorized Agents) <b>Rod Cooper</b>			
15b. Signature of Company Officer (No Authorized Agents) <i>[Signature]</i>		15c. Fax Number <b>616-877-0424</b>	15d. Date <b>9-14-17</b>
15e. Mailing Address (Street, City, State, ZIP Code) <b>4729 Division, Wayland, MI 49348</b>		15f. Telephone Number <b>616-877-0003</b>	15g. E-mail Address <b>rodcooper@classictransportation.com</b>

**LOCAL GOVERNMENT ACTION & CERTIFICATION - complete all boxes.**

This section must be completed by the clerk of the local governing unit before submitting application to the State Tax Commission. Check items on file at the Local Unit and those included with the submittal.

16a. Documents Required to be on file with the Local Unit <b>Check or Indicate N/A if Not Applicable</b> <input type="checkbox"/> 1. Notice to the public prior to hearing establishing a district. <input type="checkbox"/> 2. Notice to taxing authorities of opportunity for a hearing. <input type="checkbox"/> 3. List of taxing authorities notified for district and application action. <input type="checkbox"/> 4. Lease Agreement showing applicants tax liability.	16b. The State Tax Commission Requires the following documents be filed for an administratively complete application: <b>Check or Indicate N/A if Not Applicable</b> <input type="checkbox"/> 1. Original Application plus attachments, and one complete copy <input type="checkbox"/> 2. Resolution establishing district <input type="checkbox"/> 3. Resolution approving/denying application. <input type="checkbox"/> 4. Letter of Agreement (Signed by local unit and applicant) <input type="checkbox"/> 5. Affidavit of Fees (Signed by local unit and applicant) <input type="checkbox"/> 6. Building Permit for real improvements if project has already begun <input type="checkbox"/> 7. Equipment List with dates of beginning of installation <input type="checkbox"/> 8. Form 3222 (if applicable) <input type="checkbox"/> 9. Speculative building resolution and affidavits (if applicable)
16c. LUCI Code  17. Name of Local Government Body	16d. School Code  18. Date of Resolution Approving/Denying this Application

Attached hereto is an original application and all documents listed in 16b. I also certify that all documents listed in 16a are on file at the local unit for inspection at any time, and that any leases show sufficient tax liability.

19a. Signature of Clerk	19b. Name of Clerk	19c. E-mail Address
19d. Clerk's Mailing Address (Street, City, State, ZIP Code)		
19e. Telephone Number	19f. Fax Number	

State Tax Commission Rule Number 57: Complete applications approved by the local unit and received by the State Tax Commission by October 31 each year will be acted upon by December 31. Applications received after October 31 may be acted upon in the following year.

Local Unit: Mail one original and one copy of the completed application and all required attachments to:

**Michigan Department of Treasury  
State Tax Commission  
PO Box 30471  
Lansing, MI 48909**

(For guaranteed receipt by the STC, it is recommended that applications are sent by certified mail.)

STC USE ONLY				
▶ LUCI Code	▶ Begin Date Real	▶ Begin Date Personal	▶ End Date Real	▶ End Date Personal



9/15/2017

To Whom it May Concern:

Classic Transportation Services, Inc. was founded in 1988 as a four-person operation. Today Classic has 55 employees, as well as 74 owner operators. We have seven locations throughout West Michigan. Our corporate office is located in Wayland, Michigan, and we are a 100% employee-owned business.

Classic offers a variety of services, and has become one of West Michigan's largest service providers in our industry. Classic offers intermodal and full truck load services. Our facilities perform incoming quality inspections for a variety of customers. We receive raw materials for local manufacturers, and use their bill of materials to select and combine products that will deliver just in time to their production lines. Other services include assembly, kitting, pick/pack, and global distribution.

Classic is applying for the 198-tax abatement for 73,125 sf located at 5357 - 52<sup>nd</sup> Street in Cascade Township. Classic will provide services for Sassy Products, including completing quality inspections on all inbound product received from Asia. We will also perform light assembly, assemble displays, kitting, selection, and distribution. Another of Classic's customers is CF components. For this client Classic will receive product from Asia/Europe, perform quality inspections, sort/segregate, and then deliver just in time to automotive supplier Skilled Manufacturing located in Traverse City, Michigan. Quality inspections for CF Components require calipers, grinding, hole punching, weighing, and cosmetic review.

Kindest Regards,

A handwritten signature in black ink, appearing to read "Rod Cooper".

Rod Cooper, President



**CLASSIC**  
**TRANSPORTATION**  
**& WAREHOUSING**

[www.classictransportation.com](http://www.classictransportation.com)

# Classic Customers



# Warehousing



- ❖ Over 600,000 square feet of warehouse space
- ❖ Temperature and climate control
- ❖ Food grade sanitation
- ❖ Pick and pack, order fulfillment, cross docking, consolidation
- ❖ Domestic and international distribution
- ❖ Stand-alone and on-site operations
- ❖ 99.9% inventory accuracy
- ❖ Kitting, quality inspections & value added services

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**& WAREHOUSING**

# 3PL Customer Portal

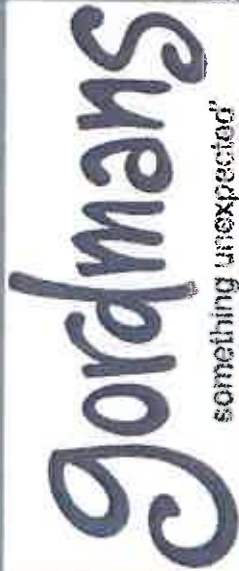
- ❖ Web Based Access 24/7  
(Phone, PC, Tablet, etc)
- ❖ Real Time Data
- ❖ Inventory Status
- ❖ Transactional Status
- ❖ Documentation Access  
(pdf)
- ❖ Historical Informatory
- ❖ Exportable Inventory  
reporting (Excel, pdf)
- ❖ EDI



## WORK WITH ITEM HISTORY

Transaction	Document	EO #	Start of Records	Date	Quantity	Balance
RC Received: Test Receipt	0011044	123456		03/06/14	Beginning Balance	610
AO Adjust: Quantity	0002213			12/26/13	(100)	610
SC Shipped: Candyland	0200009	HV13042		04/26/13	(200)	100
RC Received: Candy is U.S.	0003016	TC130420	End of Records	04/26/13	300	300

Consignee's



# Inventory Accuracy

Inventory Accuracy: 99.97% Adjustment Document: 0021764 Move Document: 0021764 Net Adjustment: -5

Count Statistics Counted		Counter Statistics	
Units Found	1,067	Total Counters Participating	4
Locations	0	Average Units Per Counter	267
Items	231	Count 1	2h 28m
Moved	79	Count 2	2h 28m
Hold	39	Compare to Book	0s
Damaged	0	All Counting	2m
Adjusted	0	Overall Complete	2h 39m
Moved	2		2h 40m
Hold	0		
Damaged	0		

LPN's

Pieces

Inventory Accuracy: 99.97% Adjustment Document: 0013345 Move Document: 0013345 Net Adjustment: -4

Count Statistics Counted		Counter Statistics	
Units Found	2,362	Total Counters Participating	5
Locations	0	Average Units Per Counter	472
Items	1,070	Count 1	20h 24m
Moved	383	Count 2	20h 24m
Hold	42	Compare to Book	0s
Damaged	1	All Counting	5m
Adjusted	0	Overall Complete	21h 8m
	3		21h 12m

Inventory Accuracy: N/A Adjustment Document: N/A Move Document: 0015377 Net Adjustment: 0

Count Statistics Counted		Counter Statistics	
Units Found	857	Total Counters Participating	5
Locations	0	Average Units Per Counter	171
Items	153	Count 1	2h 31m
Moved	97	Count 2	2h 31m
Hold	31	Compare to Book	0s
Damaged	0	All Counting	2m
Adjusted	0	Overall Complete	2h 44m
Moved	0		2h 50m
Hold	0		
Damaged	0		

# Logimax EDI Menu

## EDI MENU

### Receipts (943)

- By Ship Date
- By Customer Order Number
- By Create Date
- By Equipment ID
- By Appointment Date
- By Shipment ID

### Receipts (944)

- By Receipt #
- By Customer Order Number
- By Status
- By Purchase Order Number
- By Receive Date
- By Carrier Code

### ASN Shipments (936)

- By Status
- By Delivery
- By Customer Order Number
- By Ship Date
- By Purchase Order
- By Consignee

### Shipments (940)

- By Ship Date
- By Customer Order Number
- By Customer Purchase Order
- By Consignee Purchase Order

### Shipments (945)

- By Delivery #
- By Customer Order Number
- By Purchase Order
- By Ship Date
- By Carrier Code
- By Status
- By Ship To Name

### Load Tender (204)

- By Delivery #
- By Scac Code

### Inventory (846)

- By Status
- By Storer / Inventory Date

### Inventory Adjustments (947)

- By Status
- By Warehouse Adjustment Number
- By Adjustment Date

### Back Office

- Dashboard
- Work with EDI Control File
- Work with EDI Command File
- Work with EDI User Defined Codes
- Work with EDI N9 Turnaround File
- Work with EDI N1 Control File
- Work with EDI Segment File
- Work with EDI Security File

### Electronic BOL (211)

- By Carrier
- By Delivery
- By Trip
- By Date

### Invoices (810)

- By Invoice #
- By Customer Order Number
- By Status
- By Purchase Order Number
- By Invoice Date

# Global Logistics Services

- ❖ Import / Export documentation
- ❖ US Customs bonded
- ❖ C-TPAT best practices
- ❖ Shipment preparation
- ❖ Carton markings and custom labeling
- ❖ HTS / Schedule B/NMFC classifications



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**& WAREHOUSING**

# Transportation

- ❖ Intermodal secured equipment depot for multiple steamship lines
- ❖ Full Service drayage carrier
- ❖ Regional LTL/FTL carrier
- ❖ C-TPAT best practices
- ❖ Food Grade Equipment Available
- ❖ Hazardous material certified
- ❖ Professionally trained team of drivers serving you, your customers and vendors



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**TRANSPORTATION**  
**& WAREHOUSING**

# Container Depot

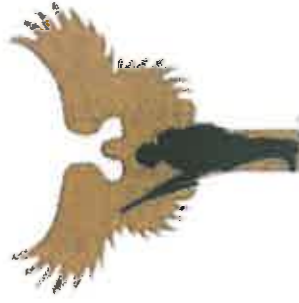
- ❖ Intermodal secured equipment depot for steamship lines
- ❖ Classic works with multiple IMC's to increase street turns for imports/exports



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**TRANSPORTATION**  
**& WAREHOUSING**



# Community and Industry Involvement

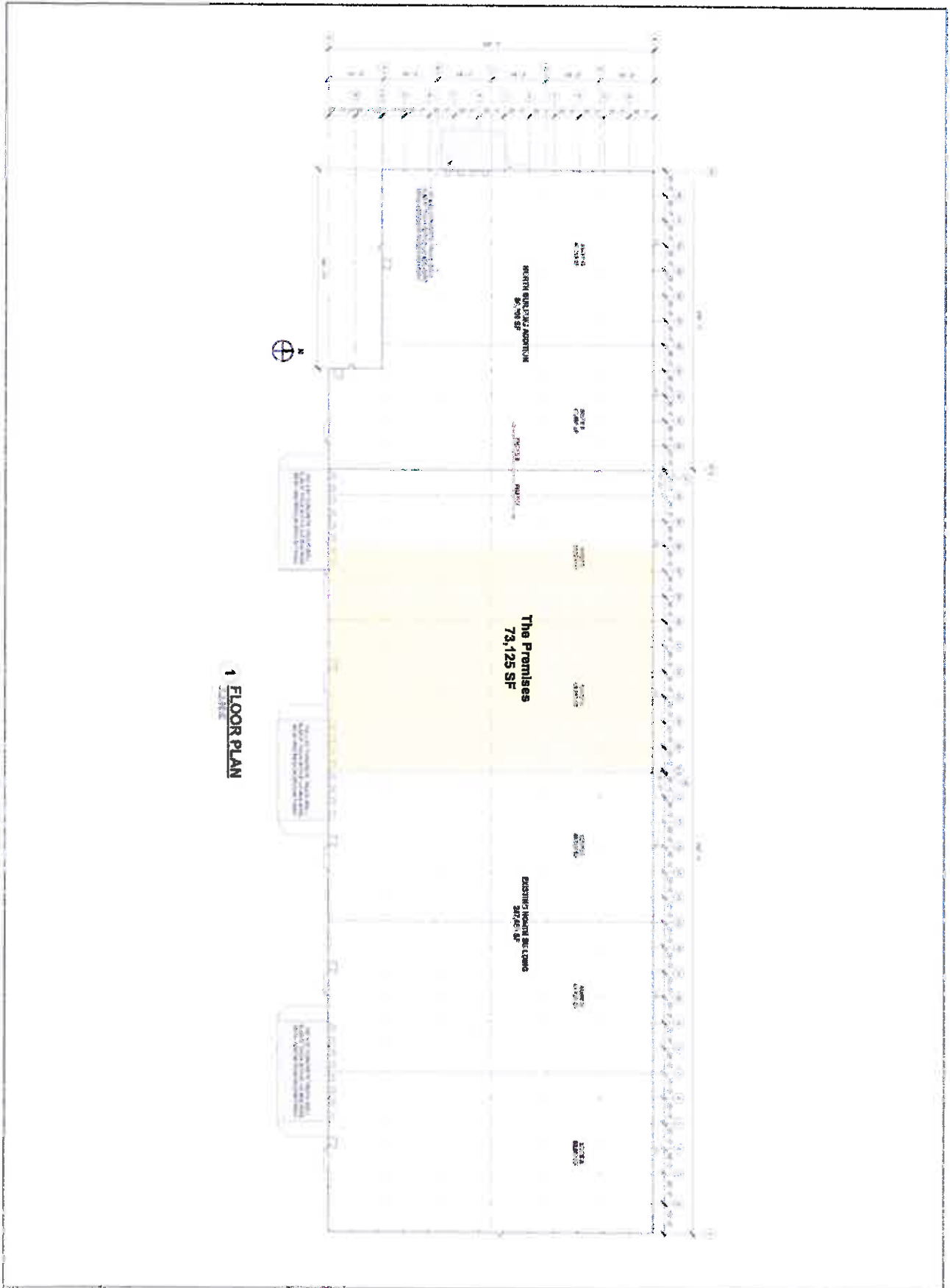




Thank you!!!!



**Exhibit A  
Classic Transportation  
Lease**



**1 FLOOR PLAN**

Scale: 1" = 30'-0"	<p><b>A-1</b></p>
<p>DATE: 7/14/11</p> <p>BY: [Signature]</p> <p>CHECKED: [Signature]</p>	

**5357 52ND STREET  
NORTH BUILDING  
ADDITION**

**WOLVERINE  
BUILDING GROUP**

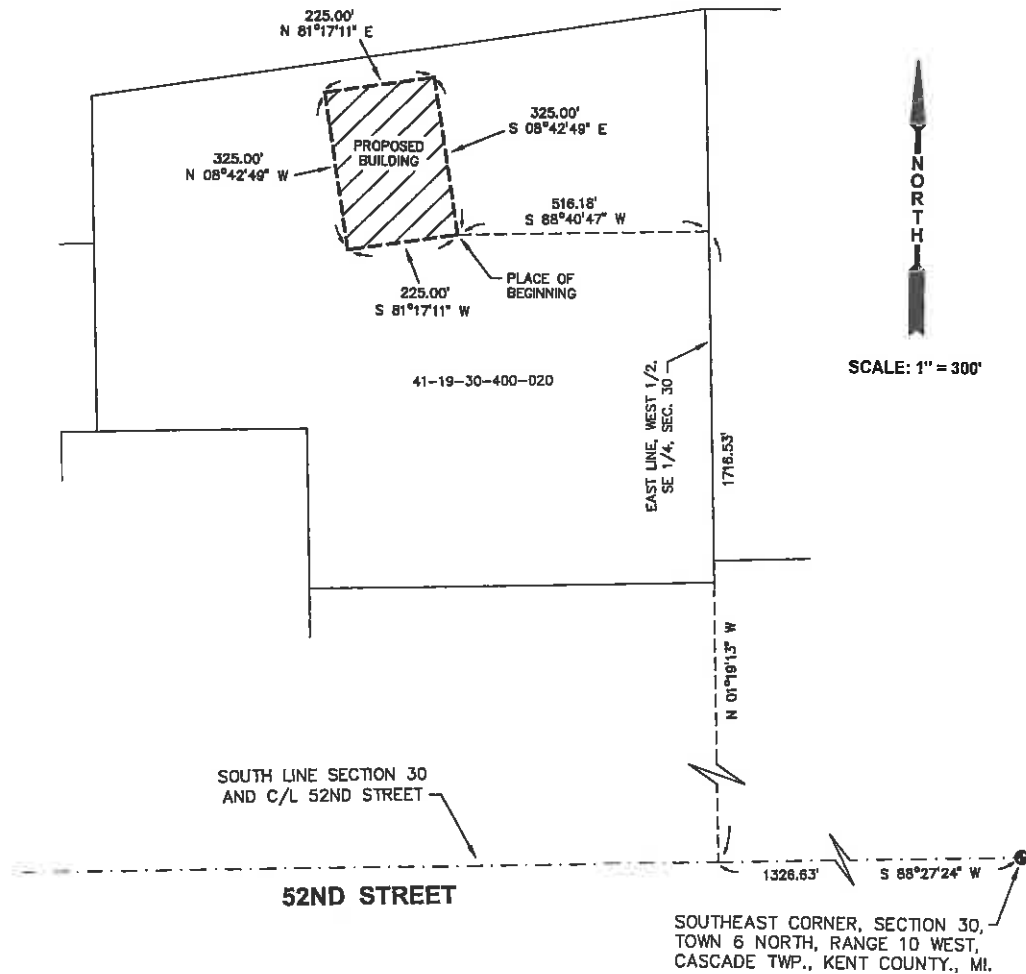
4075 Duxbury Rd.  
Plymouth, Michigan 48170  
Phone: 313.484.3300  
Fax: 313.484.3300

# PA 198 TAX ABATEMENT MAP

## PROPERTY DESCRIPTION

That part of the Southeast one-quarter of Section 30, Town 6 North, Range 10 West, Cascade Township, Kent County, Michigan, described as: **COMMENCING** at the Southeast corner of said Section 30; thence South  $88^{\circ}27'24''$  West 1326.63 feet along the South line of said section; thence North  $01^{\circ}19'13''$  West 1716.53 feet along the East line of the West one-half of the Southeast one-quarter of said section; thence South  $88^{\circ}40'47''$  West 516.18 feet to the **PLACE OF BEGINNING**; thence South  $81^{\circ}17'11''$  West 225.00 feet; thence North  $08^{\circ}42'49''$  West 325.00 feet; thence North  $81^{\circ}17'11''$  East 225.00 feet; thence South  $08^{\circ}42'49''$  East 325.00 feet to the place of beginning.

73,125 square feet



M:\130224-5337-52nd Street\DWG\130224-5337-52nd Street PA 198 (2017).dwg, Survey Map, 9/13/2017 1:25:59 PM, MDJ, CIVIL 3D 2017

FIELD SURVEY BY: M&B OFFICE	SUPERVISION BY: S JG
DRAWN BY: MDJ	CHECKED BY: S JG
DATE: SEPTEMBER 13, 2017	PROJECT NO.: 130224.2

Prepared By:  
**MOORE & BRUGGINK, INC.**  
 Consulting Engineers  
 2020 Monroe Avenue N.W.  
 Grand Rapids, Michigan 49505-6298  
 Phone: (616) 363-9801 Web: www.mbbe.com

**STAFF REPORT**

TO: Cascade Charter Township Board  
FROM: Steve Peterson, Community Development Director  
REPORT DATE: October 4, 2017  
MEETING DATE: October 11, 2017  
CASE: #16-3309/Riebel PUD-Redwood

**GENERAL INFORMATION**

- A. **Applicant:** Redwood USA LLC
- B. **Status of Applicant:** Developer
- C. **General Location:** South side of 28<sup>th</sup> St just west of Thornhills.
- D. **Requested Action:** Final P.U.D. Review to amend the Riebel P.U.D. development to allow 61-unit apartment complex.
- E. **Existing Zoning on Subject Parcels:** Riebel development P.U.D.
- F. **Zoning on Adjoining Parcels:**
  - N – B2
  - S – PUD 39
  - E – B2
  - W – PUD 39
- G. **Parcel Size:** Approximately 10.2 acres
- H. **Existing Land Use on Subject Parcel:** Vacant/office
- I. **Adjacent Area Land Uses:**
  - North - Commercial
  - East - Office
  - South - Multi-family residential
  - West - Commercial

**STAFF ANALYSIS**

- A. The applicant is requesting Final approval in order to construct a 61- unit apartment complex and one manager unit.
- B. The original project allowed for the area behind Pizza Hut, Macatawa bank and Culvers to be developed into a mix of office, restaurant and retail. That portion of the project has never been done. They are now asking to modify the PUD to allow the multifamily development.
- C. This is the same developer who put the project in on the north of WalMart. They would essentially like to copy that project in this new location. That project was not only successful for the applicant but the township has not received any complaints regarding the project.
- D. The original office mix use project allowed for up to approximately 120,000 sq ft.
- E. One of the design elements of the Riebel Development PUD was to increase pedestrian non-motorized connections into and throughout the development. They have provided access throughout the site for pedestrian including access to the east and north to 28<sup>th</sup> St.
- F. As with all of our residential projects they will have to provide a written discloser about being near the airport
- G. The current Master Plan designation for this property is Mixed Use. This designation is a reflection of the uses that are already there and suggests that residential uses would be in the range of 6-8 units per acre. This project would be consistent with the master plan. The development is proposed at 6 units per acre.
- H. The current traffic count in the area is about 19,000. Generally a 5 lane road has capacity for about 35,000. The development already has access to the east to get to Thornhills and access is also planned to the west but that will only be developed when the adjoining property owner to the west is required to provide access.
- I. The project is has been reviewed and approved by the Township Engineer.

**Standards**

Section 16.03 of the Zoning Ordinance requires that a Planned Unit Development must demonstrate that:

Standard	Staff Comment
Granting of the Planned Unit Development rezoning will result in a recognizable and substantial benefit to the ultimate users of the project and to the community, where such benefit would otherwise be unfeasible or unlikely to be achieved.	The property is already zoned PUD. The changes they are asking for are consistent with the master plan but require the amendment to the PUD since no residential use was originally permitted.
In relation to underlying zoning, the	The type of use and density is consistent

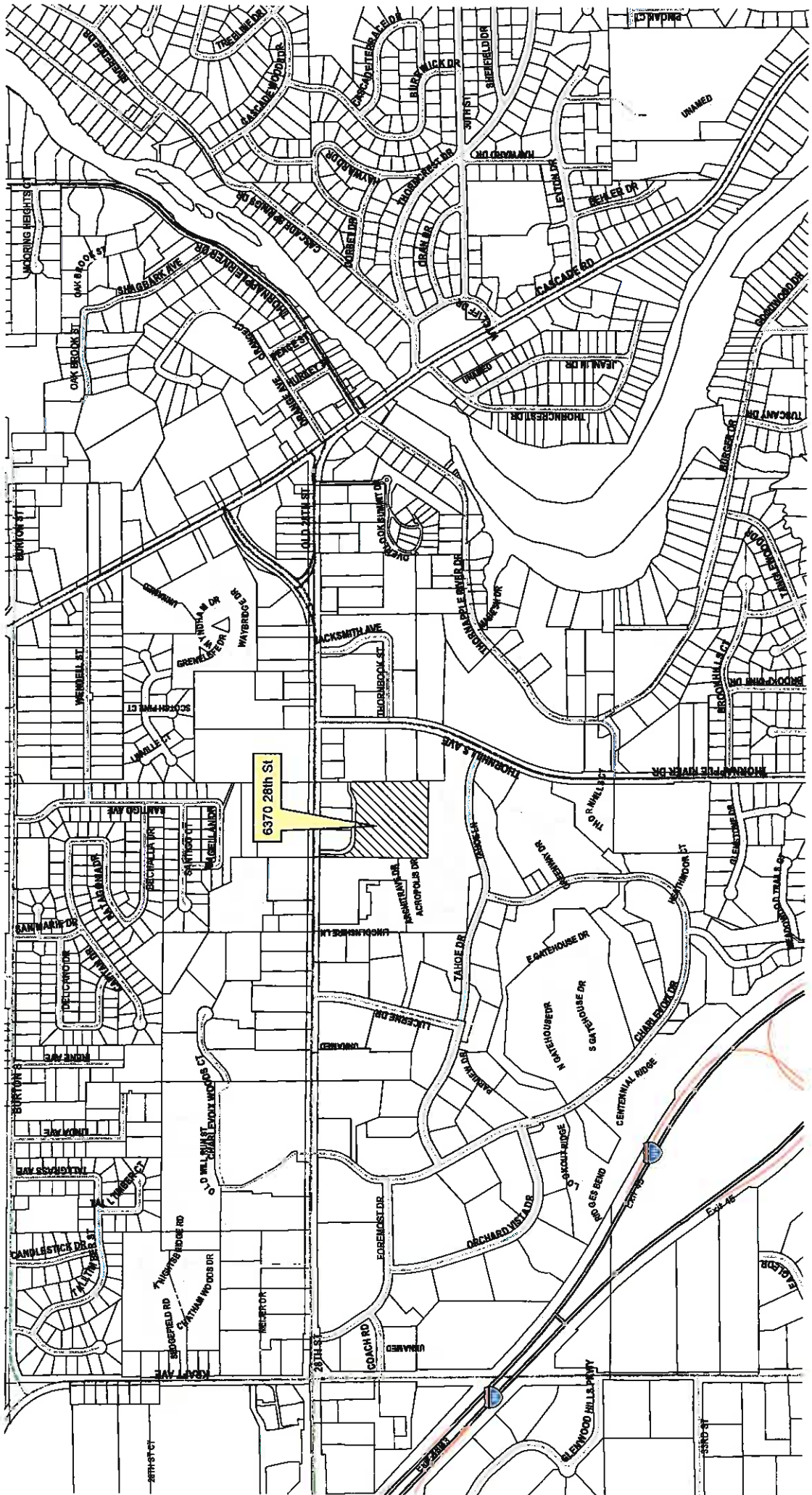
proposed type and density of use shall not result in a material increase in the need for public services, facilities and utilities, and shall not place a material burden upon the subject or surrounding land or property owners and occupants or the natural environment	with the master plan would not result in a material increase in the need for public services.
The proposed development shall be compatible with the General Development Plan of the Township, and shall be consistent with the intent and spirit of this Chapter	The project is consistent with the master plan
In relation to underlying zoning, the proposed development shall not result in an unreasonable negative economic impact upon surrounding properties	The underlying zoning/use of the area is commercial and the amendment to allow the residential use would not result in an unreasonable negative economic impact
The proposed development shall contain at least as much green area and usable open space as would otherwise be required by this Ordinance with respect to the most dominant use in the development	Although we don't require landscape buffers of residential projects. This plan is very similar to the commercial plan in terms of buffers. The development contains landscaping along the edges and has a large buffer the in the rear of the lot.
The proposed development shall be under single ownership or control such that there is a single person or entity having responsibility for completing the project in conformity with this Ordinance. This provision shall not prohibit a transfer of ownership or control, upon due notice to the Planning Director of the Township	Although there are other owners in the PUD, this project only involves one property in the PUD.

**Staff Recommendation**

Staff recommends approving the P.U.D. amendments for the 61 unit apartment project.

ATTACHMENTS:

- APPLICATION
- SITE PLAN
- MASTER PLAN
- P.U.D. ORDINANCE AMENDMENT



6370 28th St

CASCADE CHARTER TOWNSHIP  
**Ordinance #\_ of 2017**  
AN ORDINANCE TO AMEND ORDINANCE #2 OF 2005, THE  
**RIEBEL DEVELOPMENT**  
PLANNED UNIT DEVELOPMENT PROJECT

CASCADE CHARTER TOWNSHIP ORDAINS:

Section 1. Amendment to the Riebel Development PUD Ordinance

**Section IV. Purpose:**

This first paragraph of the section shall be deleted and replaced with:

The Project occupies approximately 14.5 acres of land, that formally was is the site of a legal non-conforming industrial operation as well as an existing Pizza Hut restaurant. These existing uses currently occupy a total of 4 buildings on the 14.5 acres. The Project is comprised of two separate areas: "Area A" and "Area B" which may be developed by separate Developers. Area A is located upon land currently comprised of Units 2, 3 and 4 in the Cascade Market Place Condominium (the "Condominium") identified in the Master Deed of Cascade Market Place recorded June 14, 2005 as Instrument No. 20050614-0069327 and amended by Amendment No. 1 to Master Deed of Cascade Market Place recorded January 2, 2007 as Instrument No. 20070102-0000046 (together, the "Master Deed"), and is proposed to be developed into a mix of different uses involving general retail, restaurant, offices, and a bank. Area B is approximately 9.968 acres in size, located upon land currently comprised of Unit 1 of the Condominium identified in the Master Deed, and is proposed to be developed into a single story 61 unit multi-family residential apartment development. Due to its size, magnitude, mixture of land uses and the timing of development over a period of years, in which market conditions may change, special land use regulations are deemed necessary by Cascade Township to establish this Planned Unit Development (PUD) District for the Project.

**Section VI. Permitted Uses**

This section shall be deleted and replaced with:

For land and buildings, the permitted uses for the Riebel PUD within Area A are as follows:

- A. Retail Uses;
- B. Offices/Fitness
- C. One stand alone bank identified as building F.
- D. Restaurants, not to include fast food<sup>1</sup>. The non fast food restaurant use is limited to a total of 19,588 sq.ft. This includes the stand-alone restaurants identified as buildings E and G on the approved PUD site plan as well as 11,168 sq.ft of non fast food restaurant within the rest of the development. The 11,168 sq ft should be based on seating capacity of the restaurant.
- E. Drive up window service for the restaurants shall be limited to Buildings E and

G. A drive up window may also be included as a part of Building 1D. This use will be reviewed through the Special Land Use procedures of the Township. The use will only be permitted provided that the applicant can demonstrate, to the Township's satisfaction, that the user of the drive up window will be low impact user that will not result in creating any traffic problems with the rest of the development. The Drive up window and any of its infrastructure shall only be constructed after the approval of the Special Use.

For land and buildings, the permitted uses for the Riebel PUD within Area B are as follows:

F. 61 unit apartment complex with one manager residence

**Section VII. Master Development Plan.**

This first paragraph of this section shall be deleted and replaced with:

The Project shall conform in as much as reasonably possible to the master development plan approved by the Township Board and signed by the Township on November 7, 2007. The intent of the Developers is to develop the Project as 3 buildings within Area A and a 61 unit apartment project within Area B. Each building and its associated parking, landscaping, etc., will be required to submit site plans prior to any site work for each building, or site improvement, provided, however, that the Developer of Area B may submit one site plan for all buildings within Area B. This will allow the Township to ensure that all required infrastructure is constructed with the appropriate phase and that only those areas needed to be disturbed for each phase, are the areas planned to be disturbed. The Planning Commission shall review and approve all building or site improvement plans prior to the construction of each building or site improvement.

**Section VIII. Specific Development Regulations.**

Paragraphs C., D., E., and F. shall be deleted and replaced with:

- C. Elevation Plan – The elevations for the commercial buildings shall be consistent with the elevation plan dated 10/14/07 within Area A and with the elevation plan dated \_\_/\_\_/17 within Area B. This will be ensured at the time of site plan approval for each building.
  
- D. Minimum Parking Requirements – Parking for each of the individual uses shall comply with the requirements of the Cascade Charter Township Zoning Ordinance Shared parking shall be allowed between all portions of the Project within Area A. Shared parking shall be allowed between all portions of the Project within Area B. There shall be no shared parking permitted between Area A and Area B of the Project.

E. Cross Access

- i. The Developer of Area A shall be responsible to provide and record irrevocable cross access easements for this Project within Area A. Cross access shall be provided in two locations on the Project within and adjacent to Area A, including common area of the Condominium Project, sufficient to allow the Project within Area B to obtain access to 28<sup>th</sup> Street. These cross access easement areas must be constructed so they can easily be connected to the adjoining properties (i.e. grade and location). They must also be constructed and must be open and ready for any possible connection before a building permit is issued for the third building in the Project within Area A.
- ii. On the west side of the Project within Area A, the Riebel PUD Project shall allow for an irrevocable cross access to the Cascade Centre parcel (PPN 41-19-8-17-226- 002, 6250 - 28<sup>th</sup> Street) as shown on the approved site plan.
- iii. On the east side of the Project within Area A, the Riebel PUD Project shall allow for an irrevocable cross access to (PPN 41-19-8-16-101-014, 2845 Thornhills) as shown on the approved site plan.
- iv. Once the irrevocable access drives are constructed they shall remain open at all times, including the winter months and shall be free of snow and ice for clear passage. These cross access agreements shall be recorded prior to the occupancy of any portion of the Riebel PUD Project. This PUD Ordinance will provide the legal means to allow cross-access with these other parcels if and when the adjoining parcels are ever required to obtain Township approval.

F. Sidewalks

The Developer of Area A shall be responsible to design and construct a 7-foot wide, concrete sidewalk along the entire 28<sup>th</sup> Street frontage of the PUD property. The plans shall be reviewed and approved by the Township engineer prior to commencing any construction. The sidewalk along 28th St. shall be constructed prior to the issuance of the third building permit in the Project within Area A. The location of the sidewalk along 28<sup>th</sup> St. must be placed so it can easily be extended both east and west of Area A. The sidewalks within Area B shall be as shown on the approved site plan dated \_\_/\_\_/17.

The interior network of sidewalks will be constructed along with each building. The sidewalks serving an apartment building within Area B must be completed before such apartment building is issued an occupancy permit. The entire interior network of sidewalks within Area B must be completed before the last apartment building within Area B is issued an occupancy permit.

**Section IX. Design Guidelines, Requirements and Limitations.**

Paragraph 1 (Building A, B, C and D) shall be deleted and replaced with the following:

**1. Buildings within Area B (Proposed 61 unit Multi-Family)**

This portion of the project shall be developed as follows:

- a. Maximum Building Height – 18.5 feet.
- b. Setbacks – No part of the buildings may extend closer to any lot line than shown on the approved and signed site plan dated \_\_/\_\_/17.
- c. Parking – Each dwelling unit may have a 2-car enclosed garage. There may be a total of 10 guest parking spaces and 2 ADA parking spaces for the leasing office.
- d. Maximum number of dwelling units – 61; Leasing office -1.

**Section X.4 Signs.**

Paragraph number 4 shall be deleted.

**Section 2. Effective Date**

This PUD Ordinance amendment shall become effective upon publication in the Grand Rapids Press, a newspaper of general circulation within Cascade Charter Township.

**Section 3. Effect**

The Cascade Charter Township Zoning Ordinance, as amended, and the remainder of Ordinance #11 of 2002, as amended, except as otherwise expressly amended herein, shall remain in full force and effect.

The foregoing Ordinance amendment was offered by Board Member \_\_\_\_\_ supported by Board Member \_\_\_\_\_. The roll call vote being as follows:

YEAS:

NAYS:

ABSENT:

ABSTAIN:

ORDINANCE DECLARED ADOPTED.

\_\_\_\_\_  
Sue Slater  
Cascade Charter Township Clerk

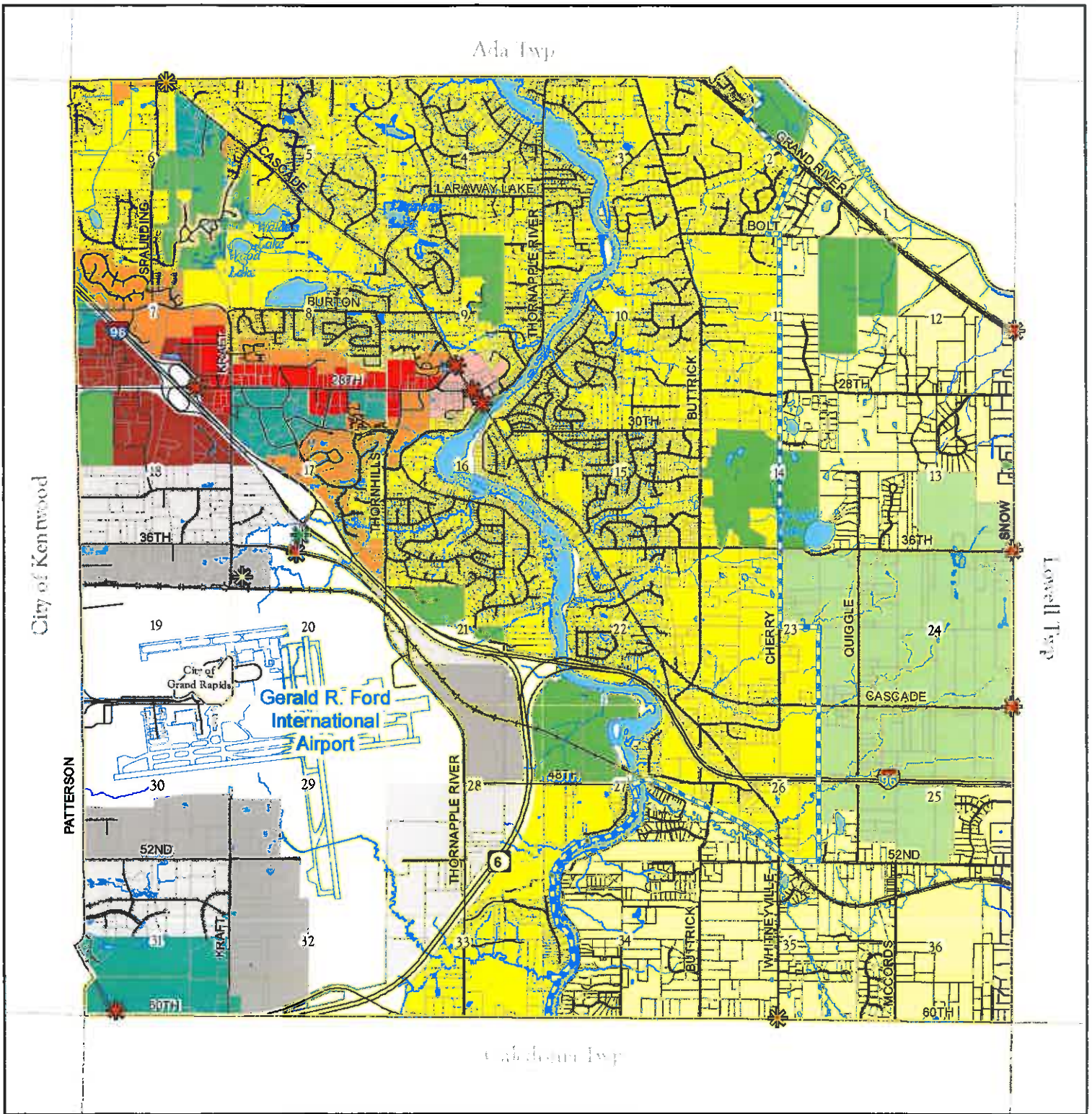
**CERTIFICATION**

I hereby certify the foregoing to be a true copy of an Ordinance adopted at a Regular Meeting of the Cascade Charter Township Board on the \_\_\_<sup>th</sup> day of \_\_\_\_\_ 2017.

---

Sue Slater  
Cascade Charter Township Clerk

Ada Twp



Cascade Charter  
Township  
Kent County, Michigan

Map 15  
Future Land Use

Legend

- Gateway Feature
- Park 'n' Ride
- Rail Station
- Utility Service Area
- Farmland Preservation
- Rural Residential
- Suburban Residential
- Community Residential
- Village Commercial
- General Commercial
- Highway Commercial
- Mixed Use
- Heavy Industrial
- Light Industrial
- Community Facility / Golf Course



**PROSIS**  
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information shown on this map is not  
guaranteed to be accurate.

**Williams & Works**  
416254288 phone • 4162761861 fax  
2850 Centre Avenue SW • Grand Rapids, MI 49503

April 22, 2009

category. The Township hopes that the highway commercial area is served by mass transit in the future.

#### **MIXED USE**

**Description and Desired Uses:** The mixed use land use is intended to provide for offices, light industrial, townhome and other types of attached residential development, and retail/commercial uses. The intent is to allow for uses in a master-planned project, giving a greater potential for walkable neighborhoods. Mixed use residential areas are especially desirable where future mass transportation can serve the area.

**Location:** The mixed use land use category is planned for the northern portion of Centennial Park, the southern portion of Meadowbrooke and along the already developed office park on Cascade Road.

**Densities:** Within the mixed use category, residential densities would be 6-8 dwelling units to the acre. Density bonuses may be available for development that incorporates certain green/eco-friendly building technologies at the time of site plan review and approval. Building heights would be the lesser of 40' or 3 stories where surrounding uses and buildings are of comparable heights; however, along Cascade Road where the mixed use area is already developed, existing building heights would remain unchanged.

#### **HEAVY INDUSTRIAL**

**Description and Desired Uses:** This land use designation is intended to provide employment for area residents, manufacture goods and provide services to meet the needs of the larger West Michigan Region. Facilities will be developed with appropriate utility and transportation connections and in harmony with the area's natural features. Industrial uses may include warehousing, manufacturing and assembly, mini-storage, contractor's offices and yards, and shipping facilities. In the vicinity of the airport, industrial land uses should be compatible with the airport and aviation requirements. The Township supports industrial uses near the airport having direct access to the airport property to facilitate greater interconnectedness, growth of transportation-related industry, and limit off-site vehicular movement/trips. Truck traffic leaving industrial land uses will be directed efficiently to regional arterials without traversing residential areas. Landscape credits, credits for energy efficient design, or other types of credits may be offered that may reduce the current front yard setback requirements, landscaping requirements, and/or lot area requirements.



July 24, 2017  
Project No. 080322

Mr. Steve Peterson  
Cascade Charter Township  
2865 Thornhills Avenue, SE  
Grand Rapids, MI 49546-7192

Re: Bayberry Chase Apartments  
Site Plan Review

Dear Steve:

We have reviewed the site plan for Bayberry Chase Apartments, dated May 1, 2017, prepared by CESO. The proposed project is a 10-acre 61-unit multi-family residential development located at 6370 - 28th Street. The project includes the construction of new public water and sanitary sewer utilities, storm sewer improvements, private roads, and associated site improvements. The site is located in the Thornapple River watershed, sub-drainage district Sentinel Pointe.

## Stormwater and Drainage

### Flood Control

The proposed project is a new development, so all improvements shall comply with the requirements of the Cascade Charter Township (Township) Stormwater Ordinance (SWO). The site is located in Stormwater Management Zone A, which requires retention of the 100-year storm event and infiltration where possible. Where soil conditions or other factors do not allow for adequate infiltration, the SWO requires detention of the 25-year storm event with a controlled release and a direct connection for stormwater runoff for the 100-year storm event. The SWO also requires the first 0.5-inch of stormwater runoff be detained and released over a 24 hour period.

The proposed stormwater management design includes an underground retention and infiltration system consisting of 84-inch perforated corrugated metal pipe. The infiltration system is sized for the 100-year storm event. All stormwater runoff from the impervious areas of the site will be captured and conveyed to the underground infiltration system.

The applicant provided six soil borings at the location of the underground infiltration system. The soil conditions encountered generally consisted of natural sands with an occasional silt seam. Groundwater was not encountered.

The applicant also provided two infiltration tests at the location of the underground system. The test results were 57.6 and 9.4 inches/hour. The SWO requires the infiltration rate used in design to be one-half the average of the test results, or 33.5 inches/hour in this case. However, this is greater than the lowest test result. FTCH recommended an infiltration rate of 6 inches/hour be used for design, to which the applicant agreed.

### Water Quality Control

The SWO requires the first 0.5 inch of stormwater runoff be detained and infiltrated where conditions permit, or released over a 24-hour period. The proposed design will infiltrate all stormwater runoff up to the 100-year event. The proposed design is in accordance with the SWO.

Z:\2008\080322\WORK\CORR\LT\_PETERSON\_BAYBERRYCHASE\_2017\_0724.DOCX



## Stormwater Runoff

The applicant provided stormwater calculations to size the underground infiltration system. All stormwater runoff from the impervious areas of the site will discharge to the underground system. Therefore, the site will not see an increase in rate of stormwater leaving the site.

## Drainage Plan

The applicant has submitted drawings, calculations, and additional documentation as required in the SWO Section 2.03, Drainage Plan. Please refer to the included checklist for items and comments on each item. Please note a maintenance agreement is required before construction begins. The agreement should be submitted to the Township for review. The maintenance agreement and plan should include at a minimum sediment and debris removal from the underground infiltration system and cleaning of catch basin sumps.

## Utilities

New public water and sanitary sewer is proposed for the site. The applicant coordinated the design with the City of Grand Rapids (City). New 8-inch water main will connect to the existing water main in 28th Street, extend south through site, exit the property at the southwest corner of the site and connect to an existing water main in the Forest Hills Condominium property. The applicant provided an executed utility easement agreement between Bayberry Chase and Forest Hills Condominium for the length of water main outside of the Bayberry Chase property. New 8-inch sanitary sewer main will also connect to an existing main on the Forest Hills Condominium property and utilize the same utility easement.

## Soil Erosion and Sedimentation Control

Soil Erosion and Sedimentation Control (SESC) measures are provided on the plan drawings. The applicant has included silt fence along the limits of clearing and grading, silt sacks in catch basins, and seeding with mulch at all disturbed areas of the site. SESC falls under the review and approval of the Kent County Road Commission and a permit is required before construction can begin. The SESC measures indicated on the drawings appear appropriate given the expected work.

## Summary

The proposed stormwater design meets the Township SWO requirements for new developments. The applicant will need to apply for and obtain a number of permits (SESC, water and sanitary sewer from the City) prior to beginning construction. We recommend approval of the site plan from an engineering standpoint.

If you have any questions, please contact me at 616.464.3786 or [nrtorrey@ftch.com](mailto:nrtorrey@ftch.com).

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, appearing to read 'N. Torrey', is positioned above the printed name.

Nathan R. Torrey, PE

jc2

Attachment

By email

cc: Michael L. Berrevoets, PE – FTCH



**Cascade Charter Township**

Storm Water Ordinance, Ordinance 7 of 2002, as amended by Ordinance No. 2 of 2008, 5/14/2008

*Reviewing Engineer Comments are Italicized*

*OK – Received and Acceptable*

*NA – Not Applicable*

*NR – Not Received, Needs Follow-up, See Comments*

**Bayberry Chase Apartments**

**Drainage Plan Checklist**

- OK (1) Location of the development site and water bodies that will receive storm water runoff  
*All stormwater runoff from the site is collected and infiltrated underground.*
- OK (2) Existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map  
*Existing and proposed contours have been provided.*
- OK (3) Development tributary area to each point of discharge from the development  
*Stormwater calculations and tributary areas were provided by the applicant.*
- OK (4) Calculations for the final peak discharge rates  
*Applicant provided calculations in design of the onsite storm sewer system and underground infiltration system.*
- OK (5) Calculations for any facility or structure size and configuration  
*Stormwater runoff calculations were provided by the applicant.*
- OK (6) Drawing showing all proposed storm water runoff facilities with existing and final grades  
*The applicant provided a utility plan showing all proposed stormwater runoff facilities.*
- OK (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map  
*The drainage map did not indicate any major offsite drainage routes flowing into the site.*
- OK (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan  
*A construction schedule was included on the plans.*
- OK (9) Plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways  
*The SESC measures shown on the plan appear appropriate given the expected work. SESC falls under the review and approval of the KCRC and a permit is needed before construction can begin.*



- OK (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance  
*The applicant provided calculations and design details for construction of the onsite storm sewer system.*
- NR (11) Maintenance agreement, in form and substance acceptable to the Township, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the Township to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense  
*Maintenance agreement was not provided and is required.*
- OK (12) Name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities
- NA (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS)  
*This is a privately owned system and will not be uploaded to REGIS.*
- OK (14) Other information necessary for the Township to verify that the drainage plan complies with the Township's design and performance standards for drains and storm water management systems

# Redwood

---

ACQUISITION

Bayberry Chase  
Preliminary Development Plan Review  
Statement of Intent  
July 13, 2016

Redwood USA, LLC proposes construction of a distinctive multi-family community targeted to empty nesters. The community will not be age restricted, and will comply with Fair Housing practices.

The community, Bayberry Chase, will be situated at 28<sup>th</sup> Street (west of Thornhills), Cascade Township. The site plan shows 61 apartment homes. Each apartment will contain two bedrooms, two bathrooms, and a two-car attached garage. Bayberry Chase will be built in one phase.

Bayberry Chase will be substantially similar in appearance and character to Whitewater, Redwood's existing community on 28<sup>th</sup> Street. The project will include stone upgrades on the front elevations. About half of the Bayberry units will have decks off the rear elevations, which will allow the community to retain its dramatic natural topography.

Water and sewer will be public.



23775 Commerce Park • Beachwood, OH 44122  
P: 216.360.9441 • F: 216.342.5433



GENERAL NOTES

DEMOLITION NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES AS SHOWN ON THE PLANS AND SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES AS SHOWN ON THE PLANS AND SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES AS SHOWN ON THE PLANS AND SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.

SITE NOTES

- 1. ALL UTILITIES AND MATERIALS SHALL REMAIN WITHIN CITY UTILITY FEES, ALL REGULATIONS AND ORDINANCES.
- 2. ALL MATERIALS, FILING, AND RECORDS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITIES TO BE DEMOLISHED AND SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.
- 4. ALL UTILITIES AND MATERIALS SHALL REMAIN WITHIN CITY UTILITY FEES, ALL REGULATIONS AND ORDINANCES.

NO.	DATE	REVISION

GENERAL NOTES

BAYBERRY CHASE APARTMENTS

RAYBERRY TOWNSHIP

RAYBERRY COUNTY, MISSISSIPPI

CESO

WWW.CESO.COM

125 NORTH GORRE AVENUE - TUNICA, MISSISSIPPI 38927

PH: 662-227-8831 FAX: 662-227-9948

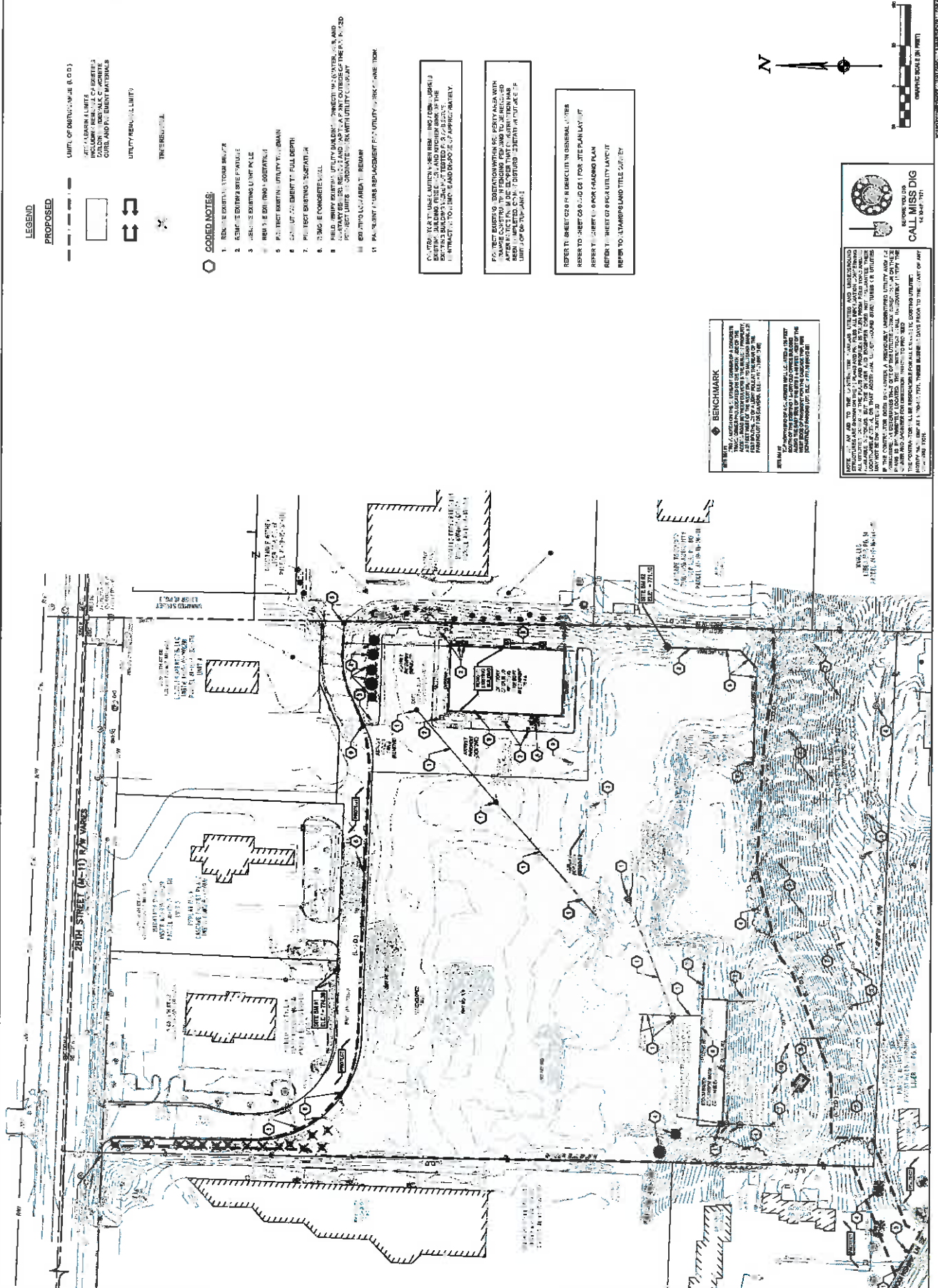
ISSUE DATE:	07/11/17
DATE:	
DESIGNED BY:	
CHECKED BY:	
SCALE:	C&G

- 1. CONTRACTOR SHALL FIELD VERIFY FIELD LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.
- 2. CONTRACTOR SHALL FIELD VERIFY FIELD LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.
- 3. CONTRACTOR SHALL FIELD VERIFY FIELD LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.

MISSISSIPPI SAFETY REQUIREMENTS

THE CITY ENGINEER SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES AS SHOWN ON THE PLANS AND SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITIES CONCERNED WITH THE DEMOLITION AND DESTRUCTION OF EXISTING UTILITIES.

<b>DESCRIPTION</b>	<b>DATE</b> 7/27/2017	<b>SCALE</b> AS SHOWN		<b>EXISTING CONDITIONS AND DEMOLITION PLAN</b>	<b>BAYBERRY CHASE APARTMENTS</b>	<b>CADD TOWNSHIP</b> HENT COUNTY, MICHIGAN		www.cesopro.com 2750 S. STATE STREET ANN ARBOR, MICHIGAN 48106	ISSUE: FINAL PLAN DRAWN BY: JTB DATE: 07/27/2017 CHECKED: JTB DESIGNED: JTB SHEET NO: <b>C3.0</b>
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**LEGEND**  
**PROPOSED**

- UNIT OF DEMOLITION (E.O.D.)
- UNIT TO REMAIN
- UTILITY (WATER, SEWER, GAS, AND ELECTRICITY)
- UTILITY (WATER, SEWER, GAS, AND ELECTRICITY)
- TRAVELWAY

**CODED NOTES:**

1. DEMOLITION FROM SHEET
2. DEMOLITION FROM SHEET
3. DEMOLITION FROM SHEET
4. DEMOLITION FROM SHEET
5. DEMOLITION FROM SHEET
6. DEMOLITION FROM SHEET
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8. DEMOLITION FROM SHEET
9. DEMOLITION FROM SHEET
10. DEMOLITION FROM SHEET
11. DEMOLITION FROM SHEET

EXISTING BUILDING FOOTPRINTS AND EXTERIOR FINISHES ARE SHOWN. DEMOLITION SHALL BE AS NOTED. ALL DEMOLITION SHALL BE COMPLETED BY THE DATE NOTED. CONTACT THE DESIGNER FOR ANY QUESTIONS.

FOR EACH EXISTING DEMOLITION, THE OWNER SHALL VERIFY WITH THE ADJACENT PROPERTY OWNERS THAT THE DEMOLITION WILL NOT AFFECT THEIR PROPERTY OR UTILITIES. CONTACT THE DESIGNER FOR ANY QUESTIONS.

REFER TO SHEET C3.1 FOR DEMOLITION GENERAL NOTES  
 REFER TO SHEET C3.2 FOR SITE PLAN PLAN  
 REFER TO SHEET C3.3 FOR GRADING PLAN  
 REFER TO SHEET C3.4 FOR UTILITY PLAN  
 REFER TO STAMPS AND TITLE SHEET

**CALL MISS DIG**  
 48 HOURS BEFORE YOU DIG  
 1-800-487-4773

**BENCHMARK**  
 THIS IS AN INDICATOR OF A BENCHMARK LOCATION. THE BENCHMARK IS A CONCRETE PIPER (CPI) THAT IS 4 INCHES IN DIAMETER AND 18 INCHES HIGH. IT IS SET INTO A CONCRETE PAD THAT IS 18 INCHES SQUARE AND 4 INCHES THICK. THE BENCHMARK IS SET INTO THE PAD AT THE CENTER POINT. THE BENCHMARK IS SET INTO THE PAD AT THE CENTER POINT. THE BENCHMARK IS SET INTO THE PAD AT THE CENTER POINT.

SOIL EROSION AND SEDIMENT CONTROL (SESC) PLAN NOTES

- 1. ALL SESC MEASURES STATED IN THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED. THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED. THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED.

SESC SITE DATA: THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED. THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED.

SESC MAINTENANCE NOTES

- 1. ALL SESC MEASURES STATED IN THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED. THE SESC SHALL BE MAINTAINED IN FULLY OPERATIONAL CONDITION UNTIL THE SESC IS NO LONGER REQUIRED.

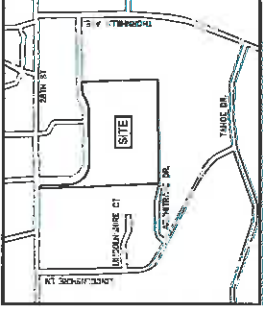


Table with 3 columns: Station, Description, and Remarks. Includes details for various erosion control structures.

SOILS MAP

Table showing soil types, erosion potential, and sedimentation potential. Columns include Soil Type, Erosion Potential, and Sedimentation Potential.

PERMITS BY EXPIRATION DATE

Table with 3 columns: Permit Number, Issue Date, and Expiration Date. Lists various permits and their validity periods.



SOIL EROSION & SEDIMENT CONTROL GENERAL NOTES
BAYBERRY CHASE APARTMENTS
KOSCIUSKO TOWNSHIP



WWW.CESO.COM
2800 WASHINGTON DRIVE, SUITE 100
CHICAGO, ILL. 60601
(773) 554-5555

Table with 4 columns: Issue Date, Final Scale, Job No., and Date. Contains project identification information.

DATE: 08/27/2013 10:53:11 AM

NO.	DATE	DESCRIPTION



**SOIL EROSION & SEDIMENT CONTROL PLAN**  
**BAVBERRY CHASE APARTMENTS**  
 KENT COUNTY, MICHIGAN  
 CADIZE TOWNSHIP



ISSUE NO.	1
DATE	07/17/2017
DRAWN	JDH
CHECKED	JDH
DATE	07/17/2017
SHEET NO.	1
TOTAL SHEETS	1

**MADCOC KEY LEGEND**  
**SOIL EROSION AND SEDIMENT CONTROL (SECC) MEASURES**

KEY	SECC MEASURE	SYMBOL	WHERE USED
1	RETAIN WALL		Retain walls shall be constructed in accordance with the Michigan Building Code, Part 709.1200, and shall be designed to resist the full design load.
2	MULCH		Mulch shall be applied to all exposed soil surfaces to prevent erosion and sedimentation.
3	VEGETATION		Vegetation shall be planted in accordance with the Michigan Building Code, Part 709.1200, and shall be maintained throughout the project.
4	CONCRETE		Concrete shall be poured in accordance with the Michigan Building Code, Part 709.1200, and shall be finished in accordance with the project specifications.
5	SEDIMENTATION		Sedimentation control measures shall be installed at all construction sites to prevent sediment from leaving the site.
6	STABILIZATION		Stabilization measures shall be installed on all exposed soil surfaces to prevent erosion and sedimentation.
7	TEMPORARY FENCING		Temporary fencing shall be installed around all construction sites to prevent unauthorized access.
8	CONSTRUCTION		Construction activities shall be limited to the designated areas and shall be completed in accordance with the project schedule.
9	LANDSCAPING		Landscaping shall be completed in accordance with the Michigan Building Code, Part 709.1200, and shall be maintained throughout the project.
10	CONCRETE		Concrete shall be poured in accordance with the Michigan Building Code, Part 709.1200, and shall be finished in accordance with the project specifications.
11	STABILIZATION		Stabilization measures shall be installed on all exposed soil surfaces to prevent erosion and sedimentation.
12	VEGETATION		Vegetation shall be planted in accordance with the Michigan Building Code, Part 709.1200, and shall be maintained throughout the project.
13	SEDIMENTATION		Sedimentation control measures shall be installed at all construction sites to prevent sediment from leaving the site.
14	TEMPORARY FENCING		Temporary fencing shall be installed around all construction sites to prevent unauthorized access.
15	CONSTRUCTION		Construction activities shall be limited to the designated areas and shall be completed in accordance with the project schedule.
16	LANDSCAPING		Landscaping shall be completed in accordance with the Michigan Building Code, Part 709.1200, and shall be maintained throughout the project.

**NOTE:**  
 PLACE KEY SYMBOL AT LIMIT OF DISTURBANCE (LOD)

ADDITIONAL NOTES:  
 1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.  
 2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.  
 3. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION.

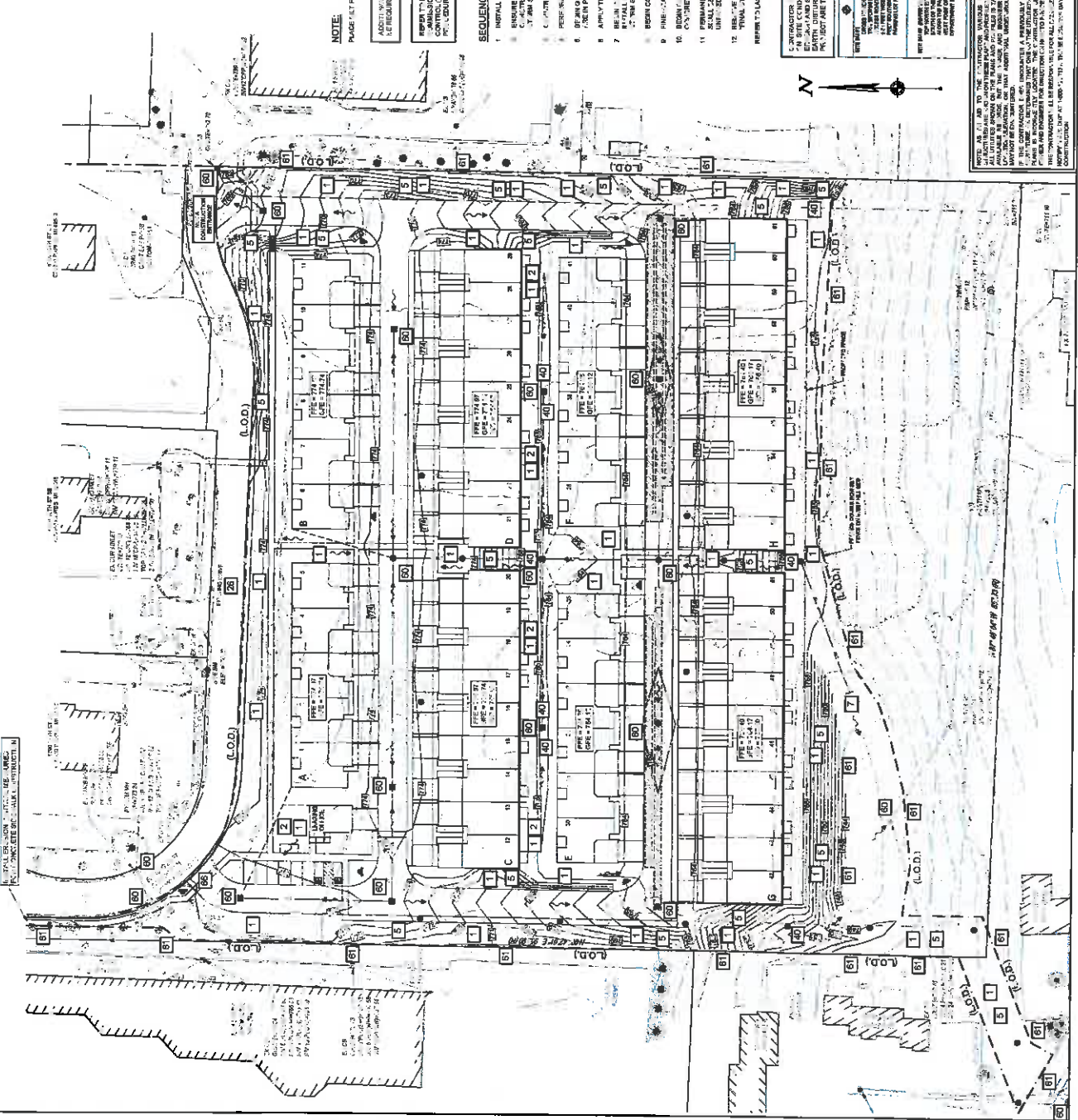
**SEQUENCE OF CONSTRUCTION**

- INSTALL ALL TEMPORARY FENCING AND STABILIZATION MEASURES.
- INSTALL EROSION AND SEDIMENT CONTROL MEASURES AT ALL EXPOSED SOIL SURFACES.
- CONSTRUCT FOUNDATION AND STRUCTURE.
- CONSTRUCT ROOFING AND EXTERIOR WALLS.
- CONSTRUCT INTERIOR WALLS AND PARTITIONS.
- CONSTRUCT FLOORS AND CEILING.
- CONSTRUCT MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS.
- CONSTRUCT EXTERIOR FINISHES AND LANDSCAPING.
- CONSTRUCT CURB AND GUTTERS.
- CONSTRUCT DRIVEWAYS AND PAVEMENT.
- CONSTRUCT UTILITY LINES AND SERVICE CONNECTIONS.
- CONSTRUCT FINAL EROSION AND SEDIMENT CONTROL MEASURES.
- REMOVE ALL TEMPORARY FENCING AND STABILIZATION MEASURES.
- REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES.
- REMOVE ALL EXCESS SOIL AND DEBRIS.
- FINAL INSPECTION AND APPROVAL.

**CONTRACTOR RESPONSIBILITIES:**  
 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES.  
 2. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.  
 3. THE CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES UPON COMPLETION OF CONSTRUCTION.  
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS.  
 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE ADJUTANT GENERAL OF ANY VIOLATIONS OF THE MICHIGAN BUILDING CODE.

**CALL MISS DIG**  
 811

BEFORE YOU DIG  
 CALL 811  
 TO FIND OUT WHERE  
 UTILITIES ARE LOCATED  
 AND TO AVOID DAMAGE TO  
 THEM. IT'S THE RESPONSIBILITY  
 OF THE CONTRACTOR TO  
 CALL 811 PRIOR TO ANY  
 EXCAVATION OR DRILLING.



NO.	DATE	DESCRIPTION



**SOIL EROSION & SEDIMENT CONTROL DETAILS**

**BAYBERRY CHASE APARTMENTS**

CASCADE TOWNSHIP  
KENT COUNTY, MICHIGAN



**ceso**  
www.cesoinc.com

388 SPRINGBORO DRIVE, SUITE 202  
5250 W. FAYETTE  
P.O. BOX 210222, CINCINNATI, OHIO 45221-0222

ISSUE:  
PUBLIC REVIEW  
DATE:  
07/17/2017

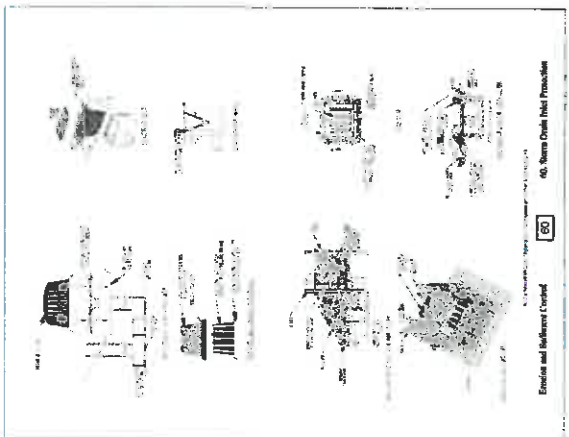
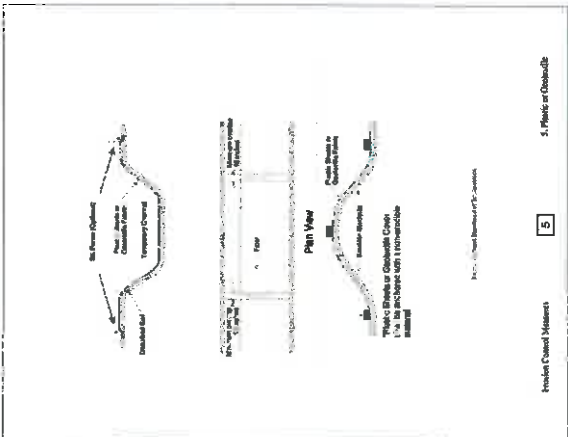
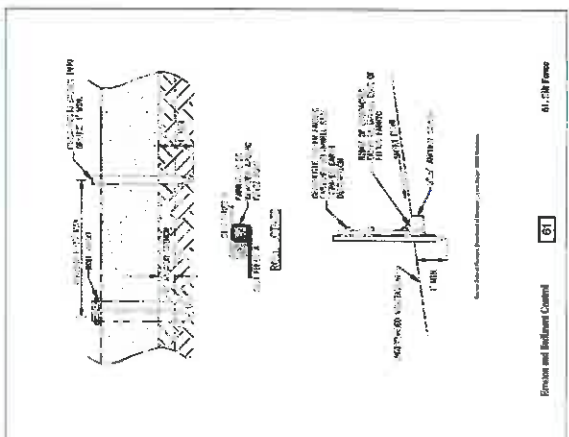
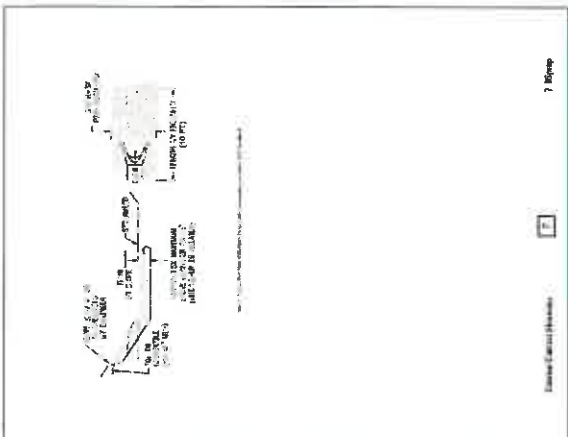
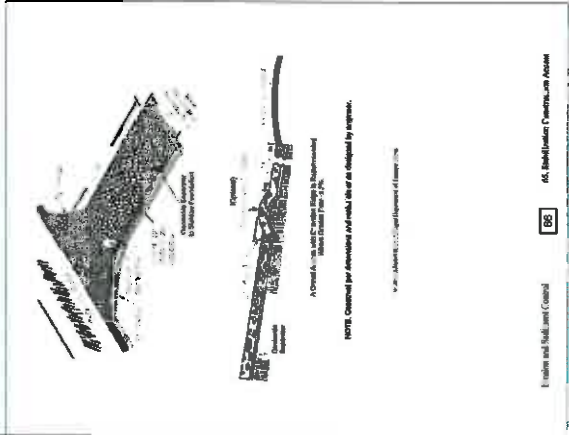
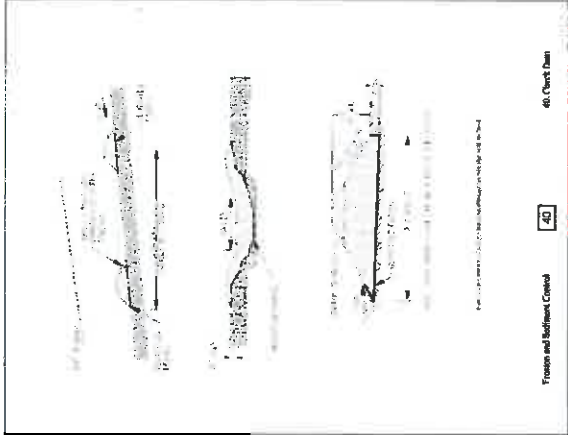
DWG. NO.: 757187

DATE: 06/16/17

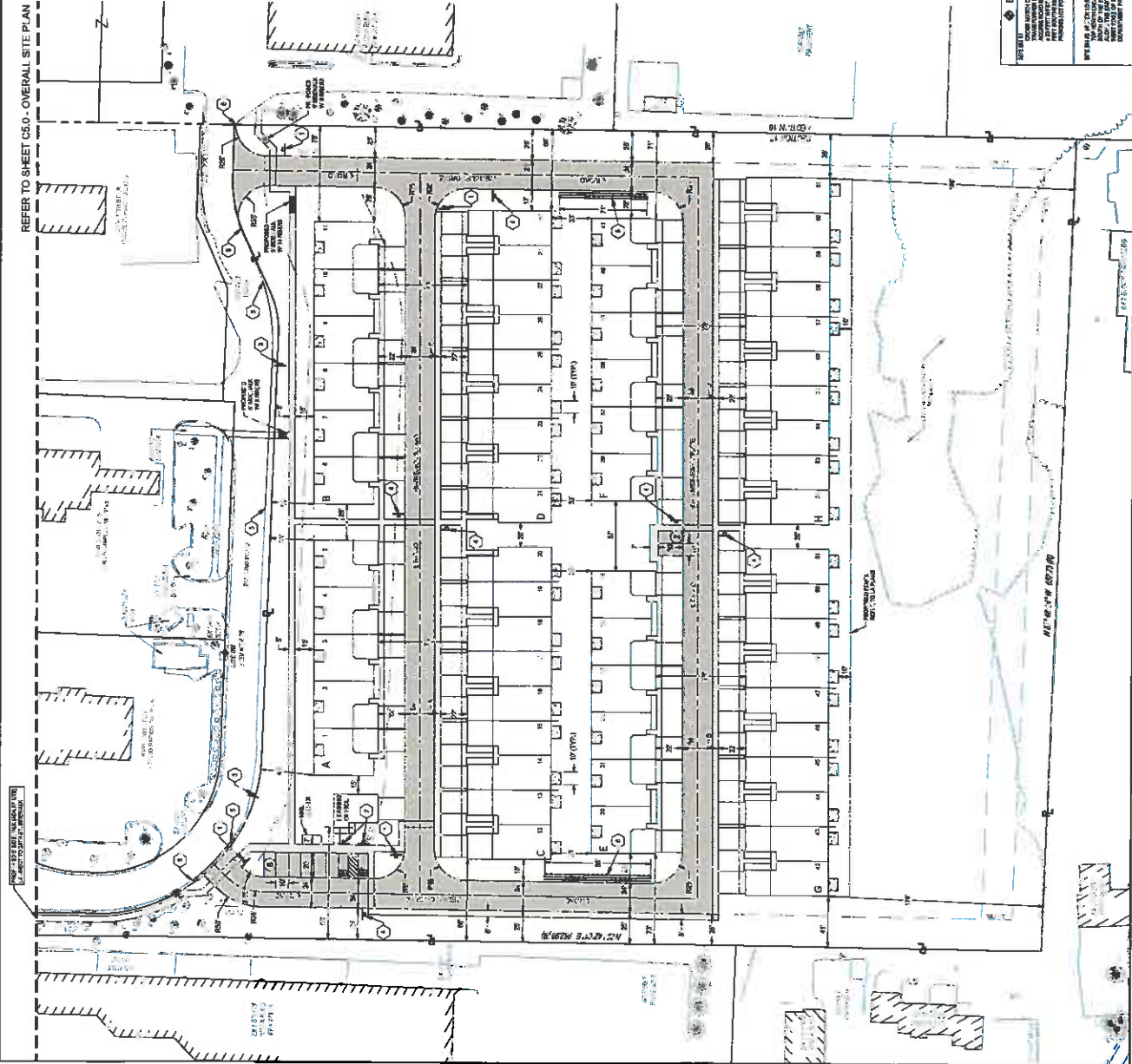
DESIGNED: BR

CHECKED: MR

SHEET NO.  
**C4.2**







REFER TO SHEET CS-0 - OVERALL SITE PLAN

**GENERAL NOTES:**

- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSURANCE PRIOR TO COMMENCEMENT OF WORK.
- ALL DIMENSIONS REFER TO EXTERIOR FINISH UNLESS OTHERWISE NOTED.
- ALL SLOPES SHALL BE MINIMUM 2% UNLESS OTHERWISE NOTED.
- STANDARD PARKING SPACES SHALL BE 18 FEET WIDE BY 24 FEET IN SIZE.
- REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
- EXTERIOR LIGHTING SHALL BE PROVIDED BY VENDOR UNLESS OTHERWISE NOTED.
- ALL CURBS, SLOPES AND FINISHES SHALL BE AS SHOWN ON THE PLAN UNLESS OTHERWISE NOTED.
- PROTECT ALL EXISTING UTILITIES AND STRUCTURES PRIOR TO CONSTRUCTION.
- TRAFFIC SIGNALS SHALL BE INSTALLED BY CITY OF BAYBERRY CHASE.

**CODED NOTES:**

- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.
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- SEE PLAN FOR LOCATION.
- SEE PLAN FOR LOCATION.

**LEGEND:**

PROPOSED

- CONCRETE DRIVEWAYS
- CONCRETE DRIVEWAYS
- CONCRETE DRIVEWAYS
- CONCRETE DRIVEWAYS
- PARKING SPACES

REFER TO SHEET CS-1 FOR TYPICAL DETAILS

**WOOD GUARDRAIL DETAIL**

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- USE 4x4 POSTS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.

**TYP. RAIL SECTION**

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
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- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.

**FRONT ELEVATION**

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.

**POST CONNECTION**

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.

**TYP. GUARDRAIL CROSS SECTION**

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.
- USE 2x4 POSTS AT 10' ON CENTER.

**WOOD GUARDRAIL DETAIL**

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

- USE 4x4 POSTS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.



CAHON COUNTY, MISSISSIPPI  
BAYBERRY CHASE APARTMENTS  
SITE PLAN

ISSUE: FINAL PLAN  
DATE: 07/11/2017  
JOB NO.: 150167  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
SHEET NO.: CS-1



**BENCHMARK**

THESE BENCHMARKS HAVE BEEN VERIFIED BY THE MISSISSIPPI SURVEYING BOARD AND ARE TO BE USED AS A REFERENCE FOR ALL SURVEYING WORK. THE BENCHMARKS ARE TO BE PROTECTED AND NOT TO BE MOVED OR DAMAGED.

**NOTES:**

- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- USE 4x4 POSTS AT 10' ON CENTER.
- USE 2x4 RAILS AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.
- USE 2x4 BRACE AT 10' ON CENTER.

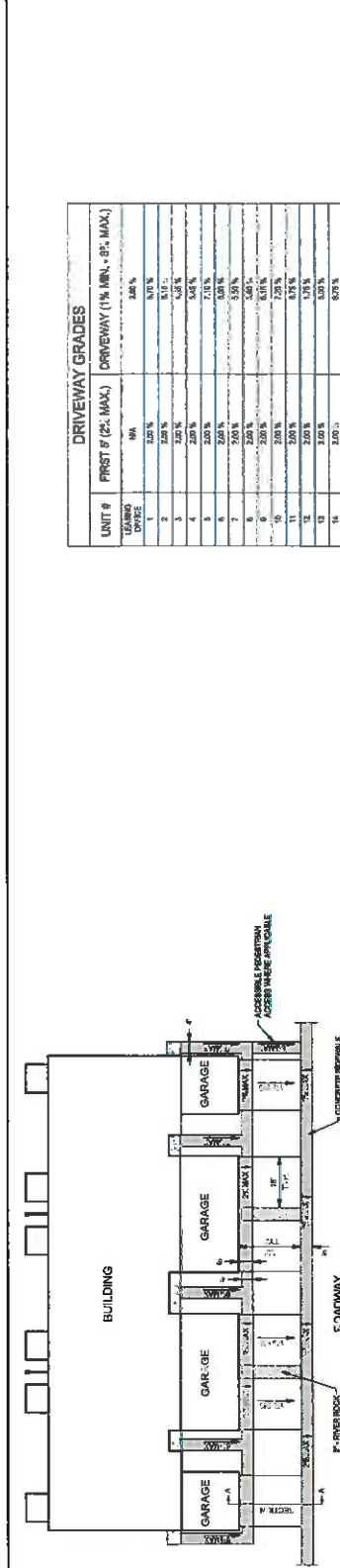
NO. 1	DATE	BY
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ADA GRADING AND BUILDING  
 BAYBERRY CHASE APARTMENTS  
 CASCADE TOWNSHIP  
 WENT COUNTY, MISSOURI



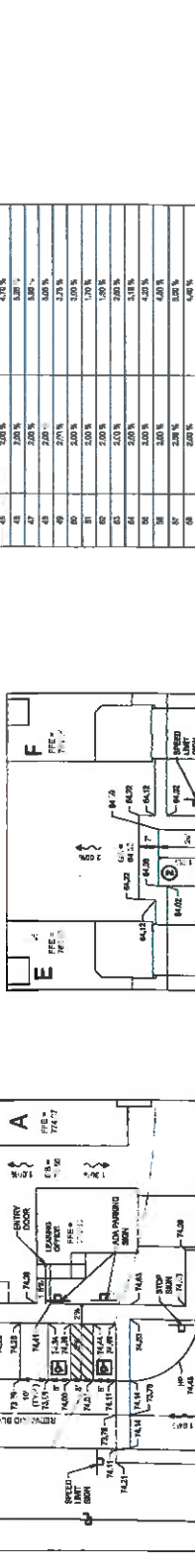
SHEET NO.	CS-2
DATE	11/11/2011
PROJECT	BAYBERRY CHASE APARTMENTS
OWNER	...
DESIGNER	...
DATE	...
PROJECT NO.	...



**TYPICAL BUILDING GRADING DETAIL**

NOTES:

1. REFER TO DRIVEWAY GRADE TABLE
2. REPORT TO ALL CITY ENGINEERS FOR REVIEW AND APPROVAL



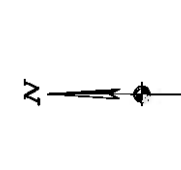
**ADA PARKING DETAIL**

NOTES:

1. REPORT TO ALL CITY ENGINEERS FOR REVIEW AND APPROVAL
2. REPORT TO ALL CITY ENGINEERS FOR REVIEW AND APPROVAL
3. REPORT TO ALL CITY ENGINEERS FOR REVIEW AND APPROVAL
4. REPORT TO ALL CITY ENGINEERS FOR REVIEW AND APPROVAL

**DRIVEWAY GRADES**

UNIT #	FIRST 9' (25' MAX.)	DRIVEWAY (1% MIN. - 8% MAX.)	MIN.	MAX.
1	2.00%	2.00%	2.00%	2.00%
2	2.00%	2.00%	2.00%	2.00%
3	2.00%	2.00%	2.00%	2.00%
4	2.00%	2.00%	2.00%	2.00%
5	2.00%	2.00%	2.00%	2.00%
6	2.00%	2.00%	2.00%	2.00%
7	2.00%	2.00%	2.00%	2.00%
8	2.00%	2.00%	2.00%	2.00%
9	2.00%	2.00%	2.00%	2.00%
10	2.00%	2.00%	2.00%	2.00%
11	2.00%	2.00%	2.00%	2.00%
12	2.00%	2.00%	2.00%	2.00%
13	2.00%	2.00%	2.00%	2.00%
14	2.00%	2.00%	2.00%	2.00%
15	2.00%	2.00%	2.00%	2.00%
16	2.00%	2.00%	2.00%	2.00%
17	2.00%	2.00%	2.00%	2.00%
18	2.00%	2.00%	2.00%	2.00%
19	2.00%	2.00%	2.00%	2.00%
20	2.00%	2.00%	2.00%	2.00%
21	2.00%	2.00%	2.00%	2.00%
22	2.00%	2.00%	2.00%	2.00%
23	2.00%	2.00%	2.00%	2.00%
24	2.00%	2.00%	2.00%	2.00%
25	2.00%	2.00%	2.00%	2.00%
26	2.00%	2.00%	2.00%	2.00%
27	2.00%	2.00%	2.00%	2.00%
28	2.00%	2.00%	2.00%	2.00%
29	2.00%	2.00%	2.00%	2.00%
30	2.00%	2.00%	2.00%	2.00%
31	2.00%	2.00%	2.00%	2.00%
32	2.00%	2.00%	2.00%	2.00%
33	2.00%	2.00%	2.00%	2.00%
34	2.00%	2.00%	2.00%	2.00%
35	2.00%	2.00%	2.00%	2.00%
36	2.00%	2.00%	2.00%	2.00%
37	2.00%	2.00%	2.00%	2.00%
38	2.00%	2.00%	2.00%	2.00%
39	2.00%	2.00%	2.00%	2.00%
40	2.00%	2.00%	2.00%	2.00%
41	2.00%	2.00%	2.00%	2.00%
42	2.00%	2.00%	2.00%	2.00%
43	2.00%	2.00%	2.00%	2.00%
44	2.00%	2.00%	2.00%	2.00%
45	2.00%	2.00%	2.00%	2.00%
46	2.00%	2.00%	2.00%	2.00%
47	2.00%	2.00%	2.00%	2.00%
48	2.00%	2.00%	2.00%	2.00%
49	2.00%	2.00%	2.00%	2.00%
50	2.00%	2.00%	2.00%	2.00%
51	2.00%	2.00%	2.00%	2.00%
52	2.00%	2.00%	2.00%	2.00%
53	2.00%	2.00%	2.00%	2.00%
54	2.00%	2.00%	2.00%	2.00%
55	2.00%	2.00%	2.00%	2.00%
56	2.00%	2.00%	2.00%	2.00%
57	2.00%	2.00%	2.00%	2.00%
58	2.00%	2.00%	2.00%	2.00%
59	2.00%	2.00%	2.00%	2.00%
60	2.00%	2.00%	2.00%	2.00%
61	2.00%	2.00%	2.00%	2.00%
62	2.00%	2.00%	2.00%	2.00%
63	2.00%	2.00%	2.00%	2.00%
64	2.00%	2.00%	2.00%	2.00%
65	2.00%	2.00%	2.00%	2.00%
66	2.00%	2.00%	2.00%	2.00%
67	2.00%	2.00%	2.00%	2.00%
68	2.00%	2.00%	2.00%	2.00%
69	2.00%	2.00%	2.00%	2.00%
70	2.00%	2.00%	2.00%	2.00%
71	2.00%	2.00%	2.00%	2.00%
72	2.00%	2.00%	2.00%	2.00%
73	2.00%	2.00%	2.00%	2.00%
74	2.00%	2.00%	2.00%	2.00%
75	2.00%	2.00%	2.00%	2.00%
76	2.00%	2.00%	2.00%	2.00%
77	2.00%	2.00%	2.00%	2.00%
78	2.00%	2.00%	2.00%	2.00%
79	2.00%	2.00%	2.00%	2.00%
80	2.00%	2.00%	2.00%	2.00%
81	2.00%	2.00%	2.00%	2.00%
82	2.00%	2.00%	2.00%	2.00%
83	2.00%	2.00%	2.00%	2.00%
84	2.00%	2.00%	2.00%	2.00%
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87	2.00%	2.00%	2.00%	2.00%
88	2.00%	2.00%	2.00%	2.00%
89	2.00%	2.00%	2.00%	2.00%
90	2.00%	2.00%	2.00%	2.00%
91	2.00%	2.00%	2.00%	2.00%
92	2.00%	2.00%	2.00%	2.00%
93	2.00%	2.00%	2.00%	2.00%
94	2.00%	2.00%	2.00%	2.00%
95	2.00%	2.00%	2.00%	2.00%
96	2.00%	2.00%	2.00%	2.00%
97	2.00%	2.00%	2.00%	2.00%
98	2.00%	2.00%	2.00%	2.00%
99	2.00%	2.00%	2.00%	2.00%
100	2.00%	2.00%	2.00%	2.00%



GRAPHIC SCALE IN FEET

**LEGEND**

**PROPOSED**

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**CODED NOTES:**

1. TO BE FROM BACK OF BUILDING (10 FEET ±) (SEE 1.001)
2. SEE 1.100 FOR REMAINING ELEVATION AT THE 1.001
3. MODULAR BLOCK REMAINING SHALL BE CLEAN BY 1.002
4. SEE 1.001 FOR REMAINING ELEVATION
5. SETTING OF JAM STRUCTURE TO BE CLEAN
6. CHECK BUILDING FOR SETTING OF JAM STRUCTURE SYSTEM
7. REMOVE FROM AT 1.001

**GENERAL NOTES:**

1. ALL GRADING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MICHIGAN CONSTRUCTION CODE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL JURISDICTIONS.
3. ALL ELECTRICAL, TELECOMMUNICATION AND GAS SHALL BE INSTALLED BY OTHERS.
4. REFER TO SHEET 1.002 FOR SITE SPECIFIC INFORMATION.
5. REFER TO SHEET 1.003 FOR SITE SPECIFIC INFORMATION.
6. REFER TO SHEET 1.004 FOR SITE SPECIFIC INFORMATION.
7. REFER TO SHEET 1.005 FOR SITE SPECIFIC INFORMATION.

**BENCHMARK**

SEE SHEET 1.001 FOR BENCHMARK INFORMATION.

**STORM SEWER NOTE**

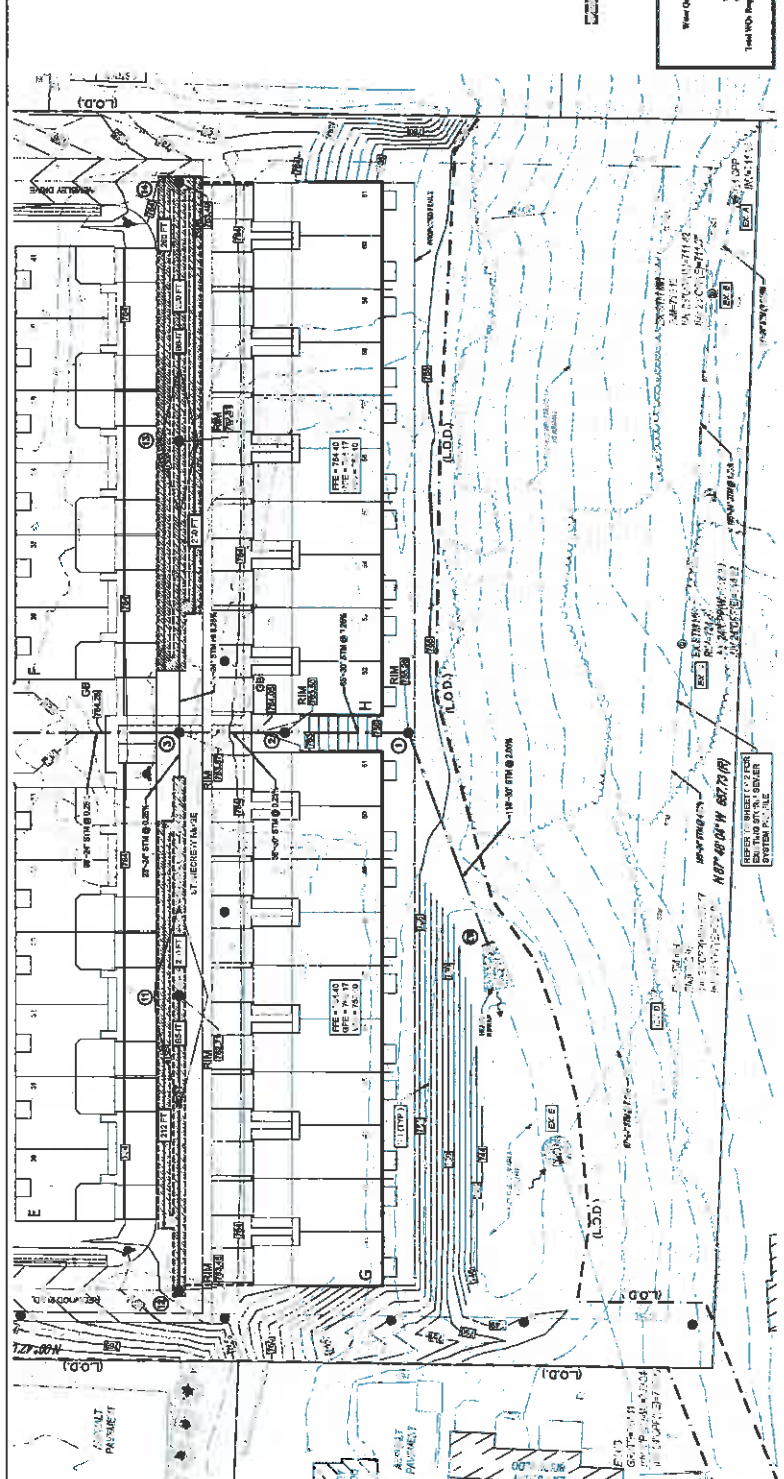
IF CONCRETE PAVEMENT IS TO BE CONSTRUCTED USING A CONCRETE PAVEMENT WITH A STORM SEWER UNDER THE PAVEMENT, THE STORM SEWER SHALL BE CONSTRUCTED WITH A 12\"/>

**CALL MISS DIG**

SEE SHEET 1.001 FOR CALL MISS DIG INFORMATION.

**STORM WATER NOISE**  
 THE SYSTEM IS TO BE DESIGNED TO ACCOMMODATE THE DESIGN FLOOD FLOW RATE AND TO BE PROTECTED AGAINST BACKFLOW AND SURGE. THE SYSTEM SHALL BE DESIGNED TO ACCOMMODATE THE DESIGN FLOOD FLOW RATE AND TO BE PROTECTED AGAINST BACKFLOW AND SURGE. THE SYSTEM SHALL BE DESIGNED TO ACCOMMODATE THE DESIGN FLOOD FLOW RATE AND TO BE PROTECTED AGAINST BACKFLOW AND SURGE.

**WATER QUALITY VOLUME**  
 Water Quality Volume = 11,111 cu ft  
 100% = 11,111 cu ft  
 90% = 10,000 cu ft  
 80% = 8,889 cu ft



**WATER QUALITY VOLUME**

Area	Volume (cu ft)	Area (sq ft)	Depth (ft)
1	11,111	11,111	1.00
2	10,000	10,000	1.00
3	8,889	8,889	1.00
4	7,778	7,778	1.00
5	6,667	6,667	1.00
6	5,556	5,556	1.00
7	4,445	4,445	1.00
8	3,334	3,334	1.00
9	2,223	2,223	1.00
10	1,112	1,112	1.00
11	1,111	1,111	1.00
12	1,110	1,110	1.00
13	1,109	1,109	1.00
14	1,108	1,108	1.00
15	1,107	1,107	1.00
16	1,106	1,106	1.00
17	1,105	1,105	1.00
18	1,104	1,104	1.00
19	1,103	1,103	1.00
20	1,102	1,102	1.00
21	1,101	1,101	1.00
22	1,100	1,100	1.00
23	1,099	1,099	1.00
24	1,098	1,098	1.00
25	1,097	1,097	1.00
26	1,096	1,096	1.00
27	1,095	1,095	1.00
28	1,094	1,094	1.00
29	1,093	1,093	1.00
30	1,092	1,092	1.00
31	1,091	1,091	1.00
32	1,090	1,090	1.00
33	1,089	1,089	1.00
34	1,088	1,088	1.00
35	1,087	1,087	1.00
36	1,086	1,086	1.00
37	1,085	1,085	1.00
38	1,084	1,084	1.00
39	1,083	1,083	1.00
40	1,082	1,082	1.00
41	1,081	1,081	1.00
42	1,080	1,080	1.00
43	1,079	1,079	1.00
44	1,078	1,078	1.00
45	1,077	1,077	1.00
46	1,076	1,076	1.00
47	1,075	1,075	1.00
48	1,074	1,074	1.00
49	1,073	1,073	1.00
50	1,072	1,072	1.00
51	1,071	1,071	1.00
52	1,070	1,070	1.00
53	1,069	1,069	1.00
54	1,068	1,068	1.00
55	1,067	1,067	1.00
56	1,066	1,066	1.00
57	1,065	1,065	1.00
58	1,064	1,064	1.00
59	1,063	1,063	1.00
60	1,062	1,062	1.00
61	1,061	1,061	1.00
62	1,060	1,060	1.00
63	1,059	1,059	1.00
64	1,058	1,058	1.00
65	1,057	1,057	1.00
66	1,056	1,056	1.00
67	1,055	1,055	1.00
68	1,054	1,054	1.00
69	1,053	1,053	1.00
70	1,052	1,052	1.00
71	1,051	1,051	1.00
72	1,050	1,050	1.00
73	1,049	1,049	1.00
74	1,048	1,048	1.00
75	1,047	1,047	1.00
76	1,046	1,046	1.00
77	1,045	1,045	1.00
78	1,044	1,044	1.00
79	1,043	1,043	1.00
80	1,042	1,042	1.00
81	1,041	1,041	1.00
82	1,040	1,040	1.00
83	1,039	1,039	1.00
84	1,038	1,038	1.00
85	1,037	1,037	1.00
86	1,036	1,036	1.00
87	1,035	1,035	1.00
88	1,034	1,034	1.00
89	1,033	1,033	1.00
90	1,032	1,032	1.00
91	1,031	1,031	1.00
92	1,030	1,030	1.00
93	1,029	1,029	1.00
94	1,028	1,028	1.00
95	1,027	1,027	1.00
96	1,026	1,026	1.00
97	1,025	1,025	1.00
98	1,024	1,024	1.00
99	1,023	1,023	1.00
100	1,022	1,022	1.00

**AGGREGATE TRENCH STORAGE VOLUME**

**84" CMP DETENTION/INFILTRATION SYSTEM**

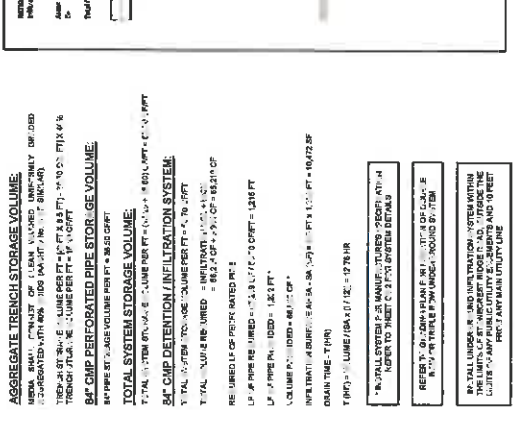
**84" CMP PERFORATED PIPE STORAGE VOLUME**

**TOTAL SYSTEM STORAGE VOLUME**

**84" CMP DETENTION/INFILTRATION SYSTEM**

**84" CMP PERFORATED PIPE STORAGE VOLUME**

**TOTAL SYSTEM STORAGE VOLUME**



**AGGREGATE TRENCH STORAGE VOLUME**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT

**84" CMP DETENTION/INFILTRATION SYSTEM**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT

**84" CMP PERFORATED PIPE STORAGE VOLUME**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT

**TOTAL SYSTEM STORAGE VOLUME**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
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**84" CMP DETENTION/INFILTRATION SYSTEM**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT

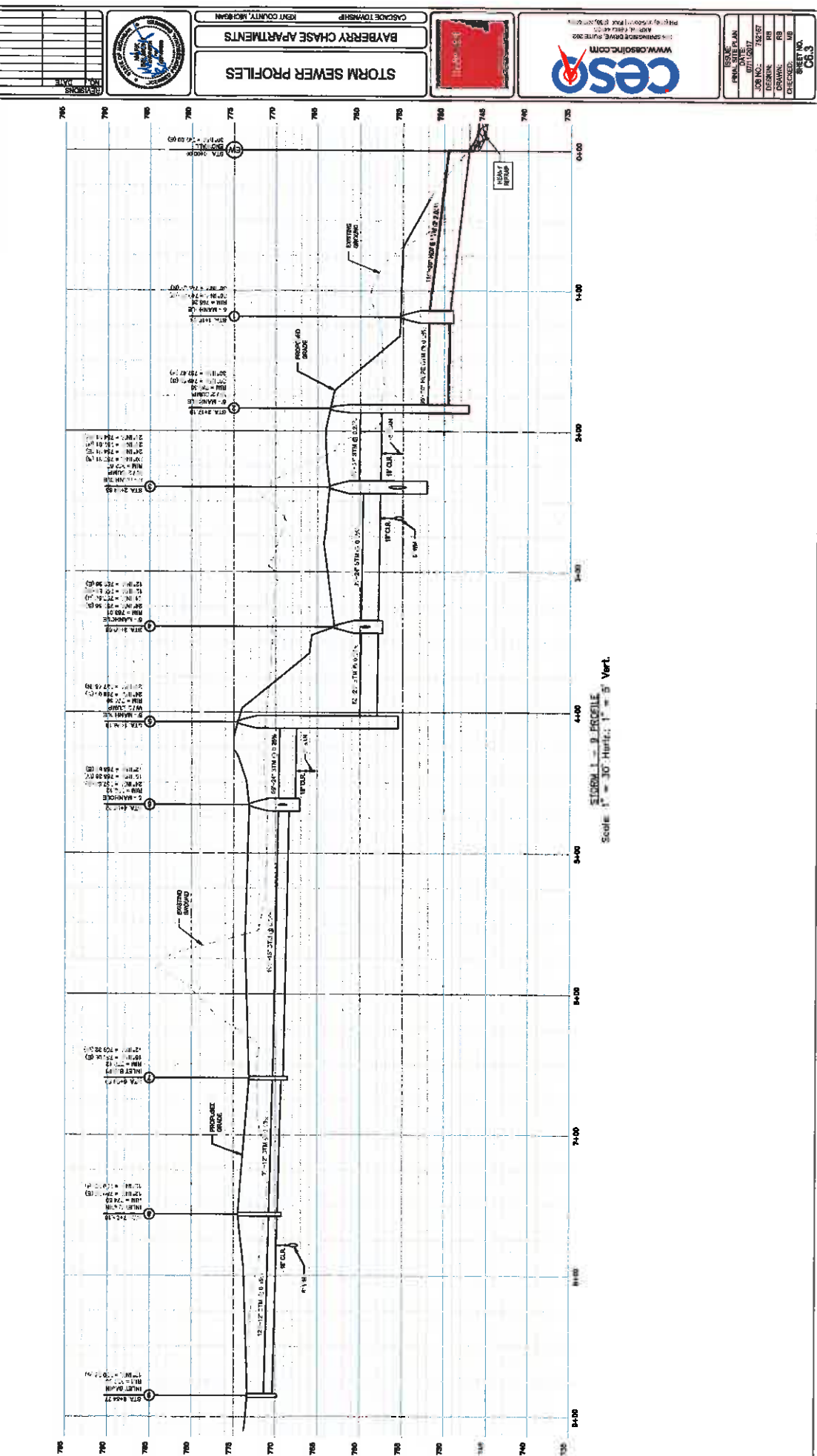
**84" CMP PERFORATED PIPE STORAGE VOLUME**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT

**TOTAL SYSTEM STORAGE VOLUME**  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT  
 TRENCH STORAGE VOLUME = 11,111 CU FT  
 84" CMP PERFORATED PIPE STORAGE VOLUME = 11,111 CU FT  
 TOTAL SYSTEM STORAGE VOLUME = 11,111 CU FT

**CALL MISS DIG**  
 1-800-4-A-DIG  
 1-800-426-3447



**STORM SEWER NOTE:**  
 THE PROPOSED STORM SEWER SYSTEM HAS BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) DESIGN STANDARDS, SECTION 107.00, "STORM SEWER SYSTEMS".  
 ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) DESIGN STANDARDS, SECTION 107.00, "STORM SEWER SYSTEMS".  
 ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) DESIGN STANDARDS, SECTION 107.00, "STORM SEWER SYSTEMS".  
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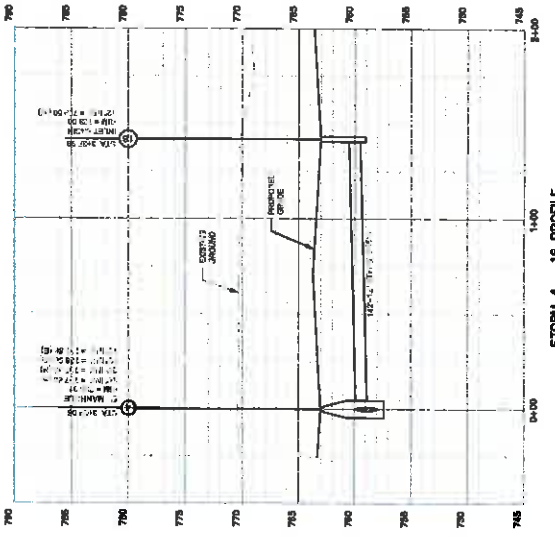
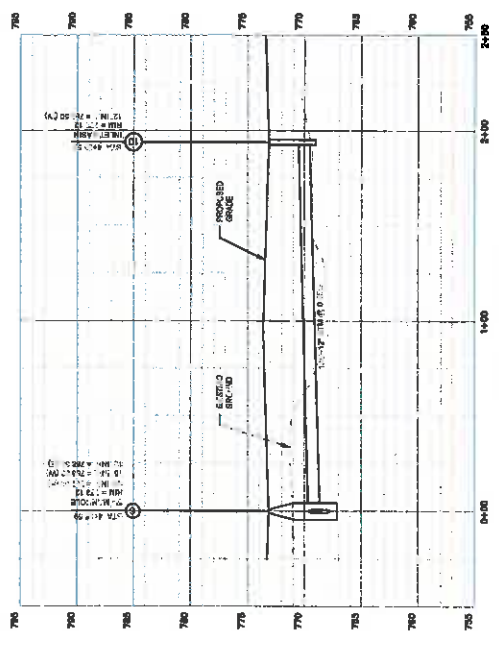
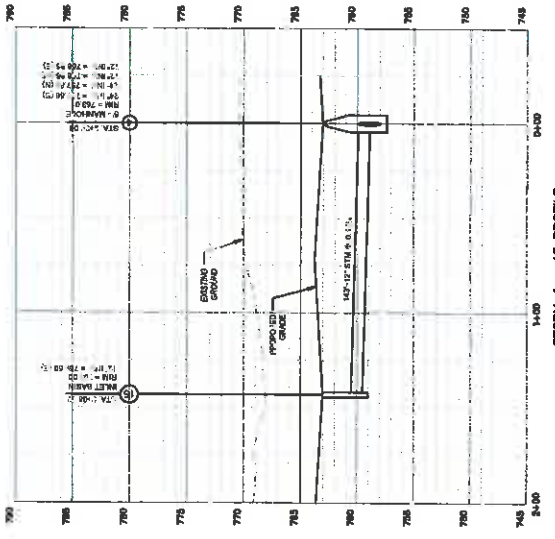
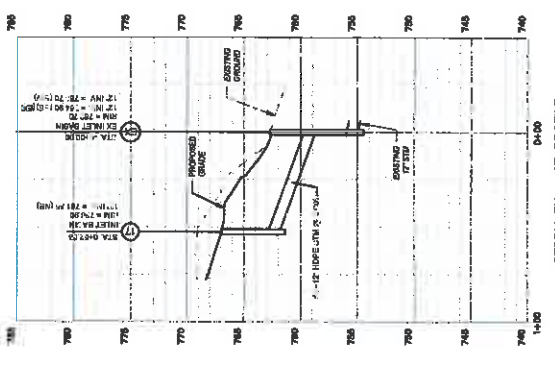


	<b>STORM SEWER PROFILES</b> BAYBERRY CHASE APARTMENTS	CASCADIA TOWNSHIP KENT COUNTY, WASHINGTON	WWW.CESONC.COM PHONE: (360) 885-3200 FAX: (360) 885-3202	ISSUE: 2/20/10 DATE: 2/20/10
				DRAWN: JSD CHECKED: JSD
	SHEET NO. <b>CS-4</b>			PROJECT NO. 09-0007

**STORM SEWER NOTE:**  
 THE PROPOSED STORM SEWER SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE CITY OF KENT DESIGN STANDARD (SECTION 15.01), THE WASHINGTON STATE STANDARD SPECIFICATIONS FOR CONCRETE AND STEEL PIPE AND APPROPRIATE ADOPTED ORDINANCES.

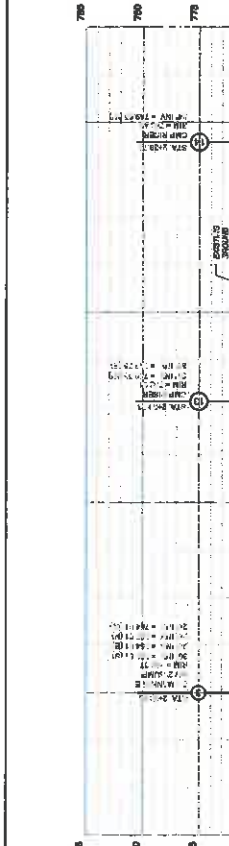
PERSON AT WORK PREPARED BY: JSD  
 DRAWN BY: JSD  
 CHECKED BY: JSD  
 DATE: 2/20/10

RAINFALL DATA:  
 DESIGN RAINFALL INTENSITY: 3.0 IN/HR  
 TIME OF CONCENTRATION: 10 MIN  
 PEAK FLOW: 1.0 CFS  
 PEAK FLOW PER ACRE: 0.00014 CFS/ACRE  
 PEAK FLOW PER INCH: 1.4 CFS/INCH

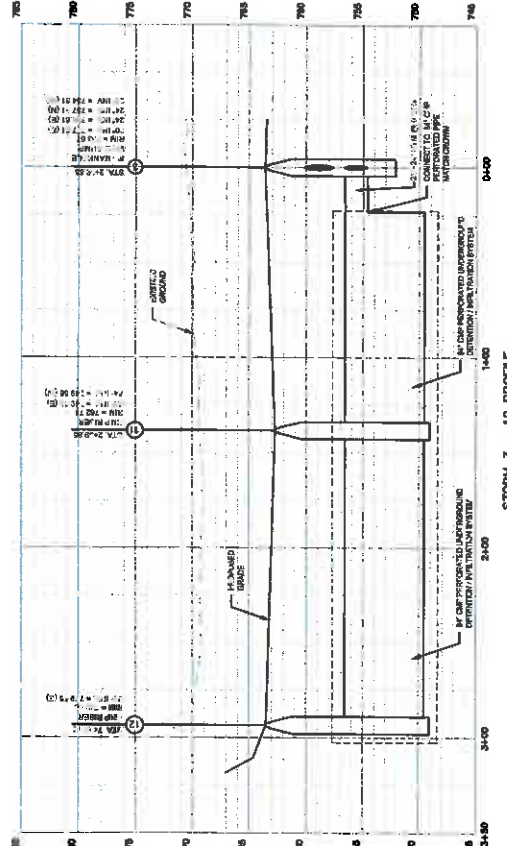


**STORM SEWER NOTE:**  
 THE PROPOSED STORM SEWER SYSTEM HAS BEEN DESIGNED TO SERVE THE PROPOSED DEVELOPMENT ACCORDING TO THE CITY OF DEARBORN STANDARD SPECIFICATIONS TO THE DRAINAGE DEPARTMENT. THE DESIGN FLOW FREQUENCY IS 0.50YR.  
 RAINFALL DATA:  
 2.5 INCHES PER HOUR  
 3.0 INCHES PER HOUR  
 4.0 INCHES PER HOUR  
 5.0 INCHES PER HOUR  
 6.0 INCHES PER HOUR  
 7.0 INCHES PER HOUR  
 8.0 INCHES PER HOUR  
 9.0 INCHES PER HOUR  
 10.0 INCHES PER HOUR  
 12.0 INCHES PER HOUR  
 15.0 INCHES PER HOUR  
 20.0 INCHES PER HOUR  
 25.0 INCHES PER HOUR  
 30.0 INCHES PER HOUR  
 40.0 INCHES PER HOUR  
 50.0 INCHES PER HOUR  
 75.0 INCHES PER HOUR  
 100.0 INCHES PER HOUR  
 150.0 INCHES PER HOUR  
 200.0 INCHES PER HOUR  
 300.0 INCHES PER HOUR  
 400.0 INCHES PER HOUR  
 500.0 INCHES PER HOUR  
 750.0 INCHES PER HOUR  
 1000.0 INCHES PER HOUR  
 1500.0 INCHES PER HOUR  
 2000.0 INCHES PER HOUR  
 3000.0 INCHES PER HOUR  
 4000.0 INCHES PER HOUR  
 5000.0 INCHES PER HOUR  
 7500.0 INCHES PER HOUR  
 10000.0 INCHES PER HOUR

INSTALL SYSTEM PER MANUFACTURER SPECIFICATIONS FOR EACH PIPE AND JOINT. SEE DETAILS FOR SYSTEM DETAILS.  
 REINFORCEMENT SHALL BE PROVIDED FOR ALL CONCRETE STRUCTURES.  
 ALL STRUCTURES SHALL BE CONSTRUCTED TO THE CITY OF DEARBORN STANDARD SPECIFICATIONS TO THE DRAINAGE DEPARTMENT.  
 ALL STRUCTURES SHALL BE CONSTRUCTED TO THE CITY OF DEARBORN STANDARD SPECIFICATIONS TO THE DRAINAGE DEPARTMENT.  
 ALL STRUCTURES SHALL BE CONSTRUCTED TO THE CITY OF DEARBORN STANDARD SPECIFICATIONS TO THE DRAINAGE DEPARTMENT.



**STORM 3 - 14, PROFILE**  
 Scale: 1" = 30' Horiz.; 1" = 5' Vert.



**STORM 3 - 12, PROFILE**  
 Scale: 1" = 30' Horiz.; 1" = 5' Vert.

**STORM SEWER STRUCTURE SCHEDULE**

NO.	STRUCTURE	RIIM	INVERT
1	6" MANHOLE	755.1	748.7 (0.7) F
2	6" MANHOLE	755.1	748.7 (0.7) F
3	6" MANHOLE	755.1	748.7 (0.7) F
4	6" MANHOLE	755.1	748.7 (0.7) F
5	6" MANHOLE	755.1	748.7 (0.7) F
6	6" MANHOLE	755.1	748.7 (0.7) F
7	6" MANHOLE	755.1	748.7 (0.7) F
8	6" MANHOLE	755.1	748.7 (0.7) F
9	6" MANHOLE	755.1	748.7 (0.7) F
10	6" MANHOLE	755.1	748.7 (0.7) F
11	6" MANHOLE	755.1	748.7 (0.7) F
12	6" MANHOLE	755.1	748.7 (0.7) F
13	6" MANHOLE	755.1	748.7 (0.7) F
14	6" MANHOLE	755.1	748.7 (0.7) F
15	6" MANHOLE	755.1	748.7 (0.7) F
16	6" MANHOLE	755.1	748.7 (0.7) F
17	6" MANHOLE	755.1	748.7 (0.7) F
18	6" MANHOLE	755.1	748.7 (0.7) F
19	6" MANHOLE	755.1	748.7 (0.7) F
20	6" MANHOLE	755.1	748.7 (0.7) F
21	6" MANHOLE	755.1	748.7 (0.7) F
22	6" MANHOLE	755.1	748.7 (0.7) F
23	6" MANHOLE	755.1	748.7 (0.7) F
24	6" MANHOLE	755.1	748.7 (0.7) F
25	6" MANHOLE	755.1	748.7 (0.7) F
26	6" MANHOLE	755.1	748.7 (0.7) F
27	6" MANHOLE	755.1	748.7 (0.7) F
28	6" MANHOLE	755.1	748.7 (0.7) F
29	6" MANHOLE	755.1	748.7 (0.7) F
30	6" MANHOLE	755.1	748.7 (0.7) F
31	6" MANHOLE	755.1	748.7 (0.7) F
32	6" MANHOLE	755.1	748.7 (0.7) F
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39	6" MANHOLE	755.1	748.7 (0.7) F
40	6" MANHOLE	755.1	748.7 (0.7) F
41	6" MANHOLE	755.1	748.7 (0.7) F
42	6" MANHOLE	755.1	748.7 (0.7) F
43	6" MANHOLE	755.1	748.7 (0.7) F
44	6" MANHOLE	755.1	748.7 (0.7) F
45	6" MANHOLE	755.1	748.7 (0.7) F
46	6" MANHOLE	755.1	748.7 (0.7) F
47	6" MANHOLE	755.1	748.7 (0.7) F
48	6" MANHOLE	755.1	748.7 (0.7) F
49	6" MANHOLE	755.1	748.7 (0.7) F
50	6" MANHOLE	755.1	748.7 (0.7) F

**STORM SEWER SCHEDULE**

NO.	STRUCTURE	RIIM	INVERT
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**STORM SEWER SCHEDULE**  
**BAYBERRY CHASE APARTMENTS**  
**AND STRUCTURE SCHEDULE**

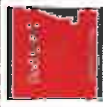
**CITY OF DEARBORN**  
**ENGINEERING DEPARTMENT**

SHEET NO. **08.5**

DATE: 08/15/2019  
 DRAWN: J. B. [unreadable]  
 CHECKED: M. [unreadable]  
 IN CHARGE: [unreadable]  
 PROJECT: BAYBERRY CHASE APARTMENTS AND STRUCTURE SCHEDULE



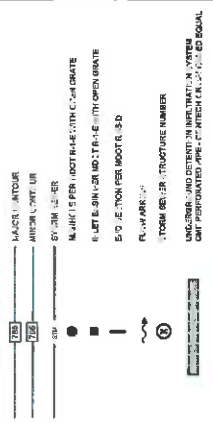
**DRAINAGE CALCULATION PLAN**  
 BAYBERRY CHASE APARTMENTS  
 WEST COUNTY, MASSACHUSETTS  
 CAROLINE TOWNSHIP



**CESSO**  
 www.cecso.com  
 978-263-7100  
 100 W. CHASE DRIVE  
 CENTRAL ESSEX COUNTY MASSACHUSETTS 01826

DATE: 11/25/2010  
 DRAWN BY: JMT/BLM  
 CHECKED BY: JMT  
 PROJECT NO.: 10-010  
 SHEET NO.: 018

**LEGEND**  
**PROPOSED**

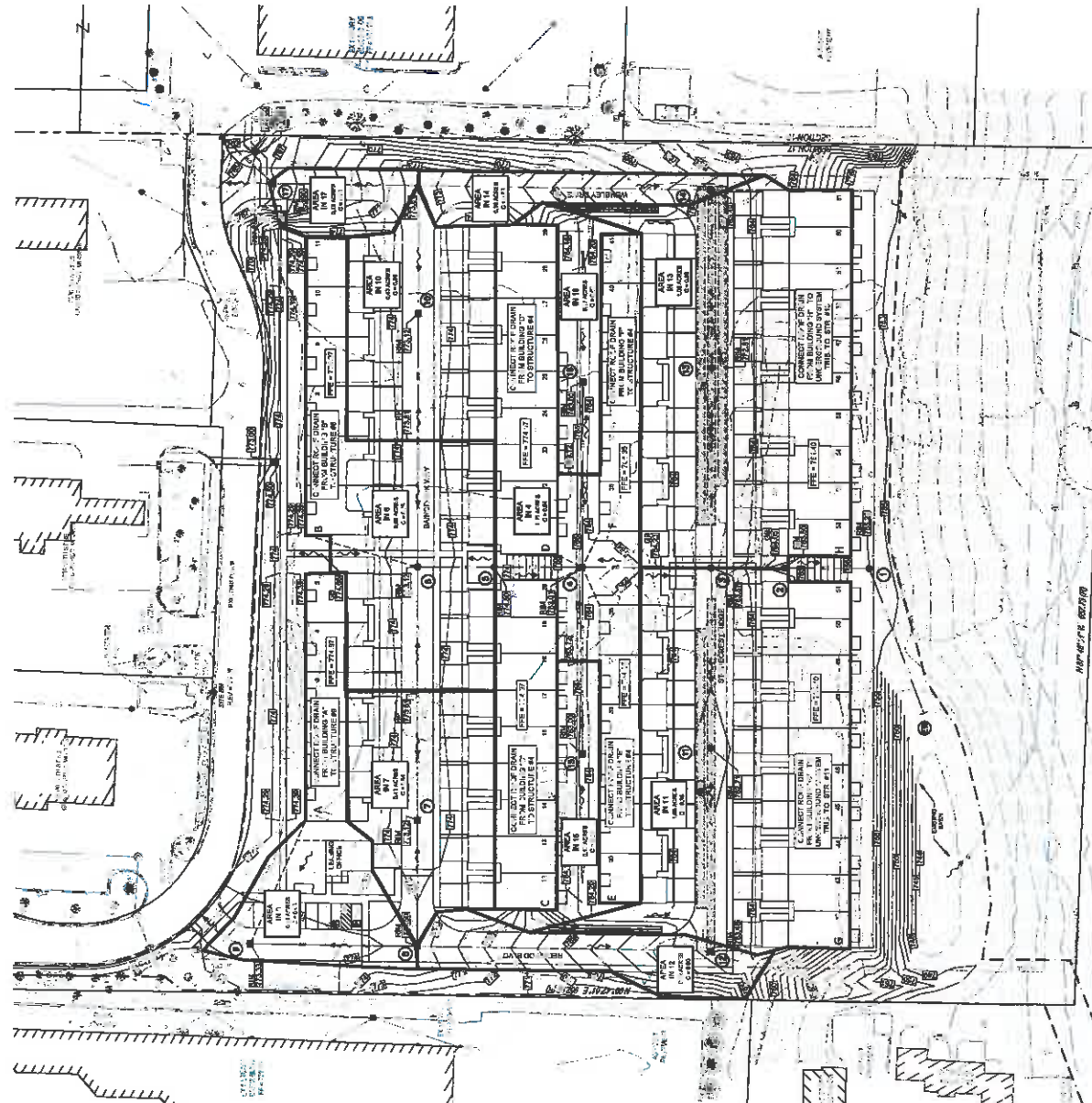


**STORM SEWER NOTE:**  
 THE PROPOSED STORM SEWER SYSTEM IS TO BE INSTALLED IN CONFORMANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL AFFAIRS (DEA) REGULATIONS, CHAPTER 91A, SECTION 1.03. THE PROPOSED SYSTEM SHALL BE DESIGNED TO DRAIN ALL ROOFTOP DRAINAGE, DRIVEWAY DRAINAGE, AND PAVED AREAS TO THE STREET OR TO AN APPROPRIATE STORM SEWER STRUCTURE. THE PROPOSED SYSTEM SHALL BE DESIGNED TO DRAIN ALL ROOFTOP DRAINAGE, DRIVEWAY DRAINAGE, AND PAVED AREAS TO THE STREET OR TO AN APPROPRIATE STORM SEWER STRUCTURE. THE PROPOSED SYSTEM SHALL BE DESIGNED TO DRAIN ALL ROOFTOP DRAINAGE, DRIVEWAY DRAINAGE, AND PAVED AREAS TO THE STREET OR TO AN APPROPRIATE STORM SEWER STRUCTURE.

AREA VALUES FOR THE PROPOSED SYSTEM ARE LISTED IN THE TABLE BELOW. THESE VALUES ARE BASED ON THE ASSUMPTIONS LISTED IN THE NOTE ABOVE AND SHOULD BE USED AS A GUIDE ONLY. THEY DO NOT CONSTITUTE A GUARANTEE OF ACCURACY. REFER TO THE STORM SEWER CALCULATION SHEET FOR FURTHER DETAILS.

**CV VALUE CALCULATIONS**

No.	Description	Area (sq. ft.)	Cv	Volume (cu ft.)	Flow (cfs)	Velocity (ft/min)	Pressure (psi)
1	Roofs	10,000	0.40	4,000	0.20	1,200	2.0
2	Driveways	5,000	0.40	2,000	0.10	1,200	2.0
3	Paved Areas	15,000	0.40	6,000	0.30	1,200	2.0
4	Other	2,000	0.40	800	0.04	1,200	2.0
5	Roofs	8,000	0.40	3,200	0.16	1,200	2.0
6	Driveways	3,000	0.40	1,200	0.06	1,200	2.0
7	Paved Areas	10,000	0.40	4,000	0.20	1,200	2.0
8	Other	1,000	0.40	400	0.02	1,200	2.0
9	Roofs	6,000	0.40	2,400	0.12	1,200	2.0
10	Driveways	2,000	0.40	800	0.04	1,200	2.0
11	Paved Areas	7,000	0.40	2,800	0.14	1,200	2.0
12	Other	500	0.40	200	0.01	1,200	2.0
13	Roofs	4,000	0.40	1,600	0.08	1,200	2.0
14	Driveways	1,500	0.40	600	0.03	1,200	2.0
15	Paved Areas	6,000	0.40	2,400	0.12	1,200	2.0
16	Other	800	0.40	320	0.02	1,200	2.0
17	Roofs	3,000	0.40	1,200	0.06	1,200	2.0
18	Driveways	1,000	0.40	400	0.02	1,200	2.0
19	Paved Areas	5,000	0.40	2,000	0.10	1,200	2.0
20	Other	1,500	0.40	600	0.03	1,200	2.0
21	Roofs	2,000	0.40	800	0.04	1,200	2.0
22	Driveways	800	0.40	320	0.02	1,200	2.0
23	Paved Areas	4,000	0.40	1,600	0.08	1,200	2.0
24	Other	1,000	0.40	400	0.02	1,200	2.0
25	Roofs	1,000	0.40	400	0.02	1,200	2.0
26	Driveways	500	0.40	200	0.01	1,200	2.0
27	Paved Areas	3,000	0.40	1,200	0.06	1,200	2.0
28	Other	500	0.40	200	0.01	1,200	2.0
29	Roofs	1,500	0.40	600	0.03	1,200	2.0
30	Driveways	500	0.40	200	0.01	1,200	2.0
31	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
32	Other	500	0.40	200	0.01	1,200	2.0
33	Roofs	1,500	0.40	600	0.03	1,200	2.0
34	Driveways	500	0.40	200	0.01	1,200	2.0
35	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
36	Other	500	0.40	200	0.01	1,200	2.0
37	Roofs	1,500	0.40	600	0.03	1,200	2.0
38	Driveways	500	0.40	200	0.01	1,200	2.0
39	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
40	Other	500	0.40	200	0.01	1,200	2.0
41	Roofs	1,500	0.40	600	0.03	1,200	2.0
42	Driveways	500	0.40	200	0.01	1,200	2.0
43	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
44	Other	500	0.40	200	0.01	1,200	2.0
45	Roofs	1,500	0.40	600	0.03	1,200	2.0
46	Driveways	500	0.40	200	0.01	1,200	2.0
47	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
48	Other	500	0.40	200	0.01	1,200	2.0
49	Roofs	1,500	0.40	600	0.03	1,200	2.0
50	Driveways	500	0.40	200	0.01	1,200	2.0
51	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
52	Other	500	0.40	200	0.01	1,200	2.0
53	Roofs	1,500	0.40	600	0.03	1,200	2.0
54	Driveways	500	0.40	200	0.01	1,200	2.0
55	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
56	Other	500	0.40	200	0.01	1,200	2.0
57	Roofs	1,500	0.40	600	0.03	1,200	2.0
58	Driveways	500	0.40	200	0.01	1,200	2.0
59	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
60	Other	500	0.40	200	0.01	1,200	2.0
61	Roofs	1,500	0.40	600	0.03	1,200	2.0
62	Driveways	500	0.40	200	0.01	1,200	2.0
63	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
64	Other	500	0.40	200	0.01	1,200	2.0
65	Roofs	1,500	0.40	600	0.03	1,200	2.0
66	Driveways	500	0.40	200	0.01	1,200	2.0
67	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
68	Other	500	0.40	200	0.01	1,200	2.0
69	Roofs	1,500	0.40	600	0.03	1,200	2.0
70	Driveways	500	0.40	200	0.01	1,200	2.0
71	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
72	Other	500	0.40	200	0.01	1,200	2.0
73	Roofs	1,500	0.40	600	0.03	1,200	2.0
74	Driveways	500	0.40	200	0.01	1,200	2.0
75	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
76	Other	500	0.40	200	0.01	1,200	2.0
77	Roofs	1,500	0.40	600	0.03	1,200	2.0
78	Driveways	500	0.40	200	0.01	1,200	2.0
79	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
80	Other	500	0.40	200	0.01	1,200	2.0
81	Roofs	1,500	0.40	600	0.03	1,200	2.0
82	Driveways	500	0.40	200	0.01	1,200	2.0
83	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
84	Other	500	0.40	200	0.01	1,200	2.0
85	Roofs	1,500	0.40	600	0.03	1,200	2.0
86	Driveways	500	0.40	200	0.01	1,200	2.0
87	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
88	Other	500	0.40	200	0.01	1,200	2.0
89	Roofs	1,500	0.40	600	0.03	1,200	2.0
90	Driveways	500	0.40	200	0.01	1,200	2.0
91	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
92	Other	500	0.40	200	0.01	1,200	2.0
93	Roofs	1,500	0.40	600	0.03	1,200	2.0
94	Driveways	500	0.40	200	0.01	1,200	2.0
95	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
96	Other	500	0.40	200	0.01	1,200	2.0
97	Roofs	1,500	0.40	600	0.03	1,200	2.0
98	Driveways	500	0.40	200	0.01	1,200	2.0
99	Paved Areas	2,500	0.40	1,000	0.05	1,200	2.0
100	Other	500	0.40	200	0.01	1,200	2.0



NO. DATE DESCRIPTION


DATE: 11/25/2010  
 DRAWN BY: JMT/BLM  
 CHECKED BY: JMT  
 PROJECT NO.: 10-010  
 SHEET NO.: 018

APP'D BY: J. McDonald, P.E., License No. 83086

www.cebsoinc.com  
305-485-1000  
205-485-1001  
205-485-1002  
205-485-1003  
205-485-1004  
205-485-1005



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PLEASE PRINT CLEARLY

**STORM SEWER CALCULATIONS**

BAYBERRY CHASE APARTMENTS

CASCOE TOWNSHIP

KENT COUNTY, MICHIGAN



ISSUE:	FINAL SITE PLAN
JOB NO.:	752167
DATE:	07/11/2017
DESIGNER:	ROB
DRAWN:	ROB
CHECKED:	SCS
DATE:	06/06/17
SHEET NO.:	105
TOTAL SHEETS:	105

NO.	DESCRIPTION	DATE

**STORM SEWER NOTE:**  
 DESIGN: 30% YEAR FREQUENCY 74.08 IN.  
 MANHOLE DIA.  
 RAINFALL DATA  
 1.18 IN. PER YEAR (1.18 IN. PER YEAR)  
 1.18 IN. PER YEAR (1.18 IN. PER YEAR)  
 1.18 IN. PER YEAR (1.18 IN. PER YEAR)  
 1.18 IN. PER YEAR (1.18 IN. PER YEAR)

**STORM SEWER COMPUTATION SHEET**

Station	Length	Flow	Velocity	Time	Loss	Head	Flow	Velocity	Time	Loss	Head
1+00.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+12.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+24.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+36.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+48.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+60.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10

Station	Length	Flow	Velocity	Time	Loss	Head	Flow	Velocity	Time	Loss	Head
1+60.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+72.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+84.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
1+96.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
2+08.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10
2+20.00	12.00	1.00	4.00	0.10	0.10	0.10	1.00	4.00	0.10	0.10	0.10

**LEGEND**

**PROPOSED**

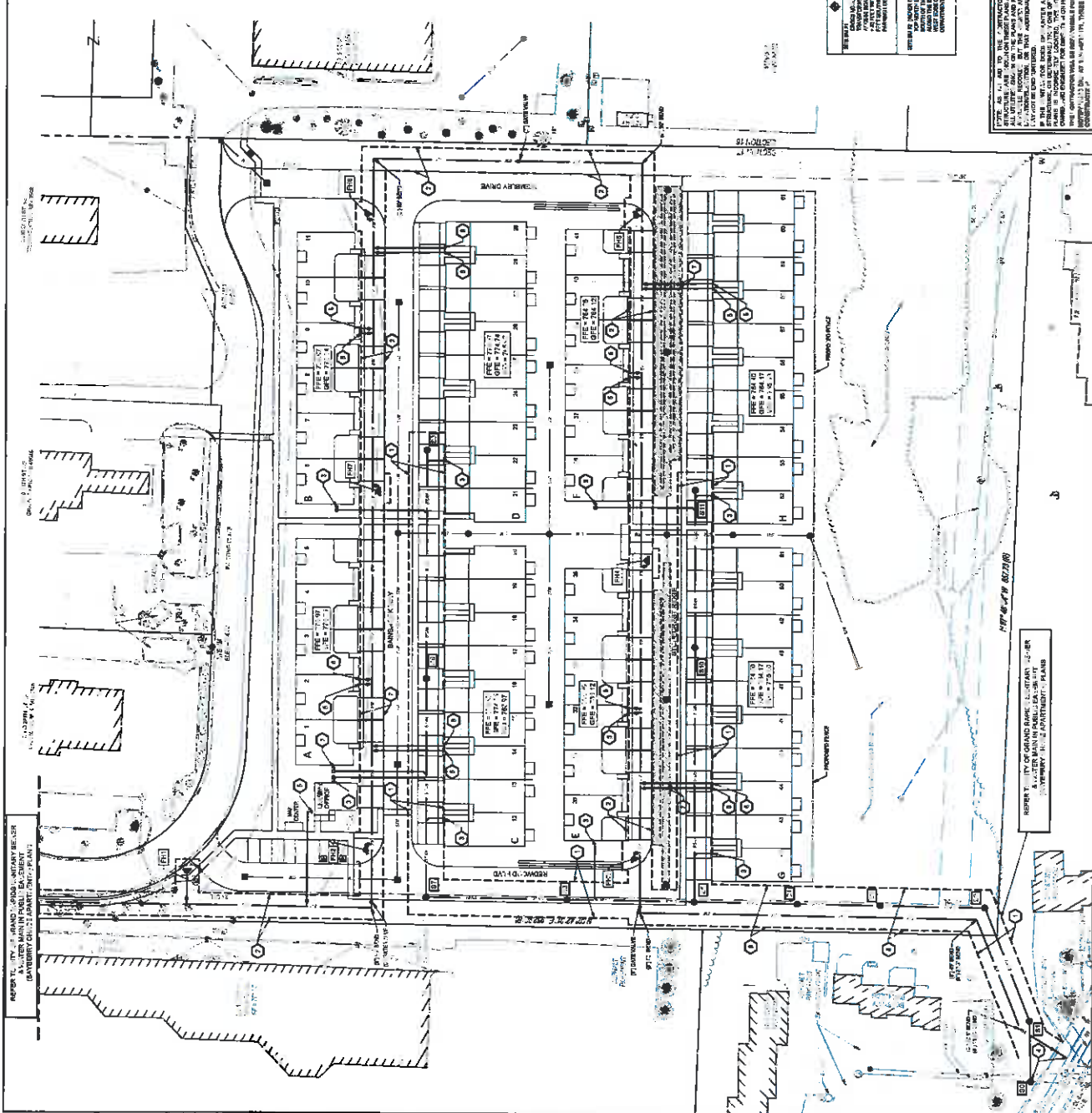
- SANITARY COVER
- WATER LINE
- SEWER MAIN
- SEWER LATERAL
- WATER MAIN
- WATER LATERAL
- WATER SERVICE LINE
- WATER METER
- WATER METER VALVE
- WATER METER BOX
- WATER METER ENCLOSURE
- WATER METER ENCLOSURE COVER
- WATER METER ENCLOSURE WALL
- WATER METER ENCLOSURE FLOOR
- WATER METER ENCLOSURE ROOF
- WATER METER ENCLOSURE FOUNDATION
- WATER METER ENCLOSURE FINISH
- WATER METER ENCLOSURE PAINT
- WATER METER ENCLOSURE GLASS
- WATER METER ENCLOSURE DOOR
- WATER METER ENCLOSURE HANDLE
- WATER METER ENCLOSURE LOCK
- WATER METER ENCLOSURE KEYS
- WATER METER ENCLOSURE SIGN
- WATER METER ENCLOSURE ADDRESS
- WATER METER ENCLOSURE PHONE
- WATER METER ENCLOSURE FAX
- WATER METER ENCLOSURE E-MAIL
- WATER METER ENCLOSURE WEBSITE
- WATER METER ENCLOSURE SOCIAL MEDIA
- WATER METER ENCLOSURE OTHER

**CODED NOTES**

1. ALL SANITARY SEWER LATERALS SHALL BE 4" DIA. (MINIMUM) AND SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE SANITARY SEWER SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE SANITARY SEWER SYSTEM.
2. ALL WATER MAINS SHALL BE 8" DIA. (MINIMUM) AND SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
3. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
4. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
5. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
6. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
7. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
8. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
9. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
10. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.

**GENERAL NOTES**

1. ALL SANITARY SEWER LATERALS SHALL BE 4" DIA. (MINIMUM) AND SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE SANITARY SEWER SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE SANITARY SEWER SYSTEM.
2. ALL WATER MAINS SHALL BE 8" DIA. (MINIMUM) AND SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
3. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
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9. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.
10. ALL WATER MAINS SHALL BE INSTALLED IN PROTECTED AND APPROVED MANNER TO PROTECT THE WATER MAIN SYSTEM FROM DAMAGE AND TO MAINTAIN THE QUALITY OF THE WATER MAIN SYSTEM.



REVISION	DATE	DESCRIPTION



**CONSTRUCTION DETAILS**

**BAYBERRY CHASE APARTMENTS**

CHENDEE TOWNSHIP  
KENT COUNTY, INDIANA

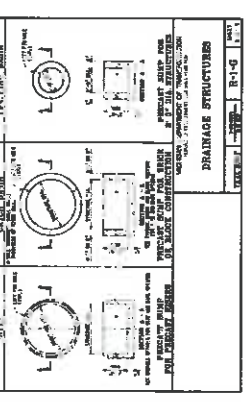
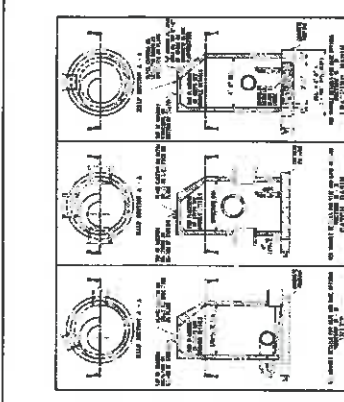


**CESO**

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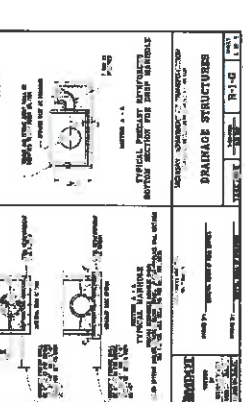
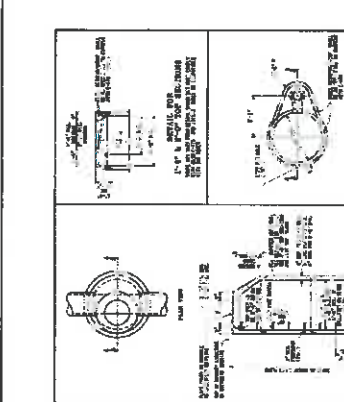
285 SPRINGCREAK DRIVE, SUITE 200  
EVANSVILLE, INDIANA 47712-1000  
PH: (317) 432-2000 FAX: (317) 432-2001

ISSUE	DATE	BY
FINAL	07/11/2017	
JOB NO.	15017	
DRAWN		
CHECKED		
SHEET NO.	C8.0	



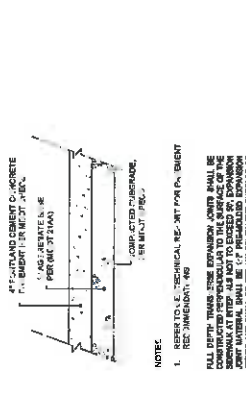
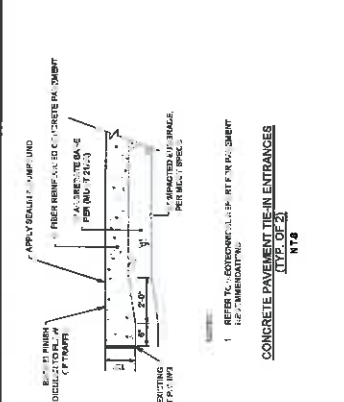
**CONCRETE SIDEWALK**  
N.T.S.

NOTE:  
1. REINFORCEMENT SHALL BE PLACED AS SHOWN.  
2. USE 1/2" DIA. REBAR.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND FORMS.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND STRUCTURE.  
8. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND CURB.  
9. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND UTILITY LINES.  
10. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND STRUCTURE.



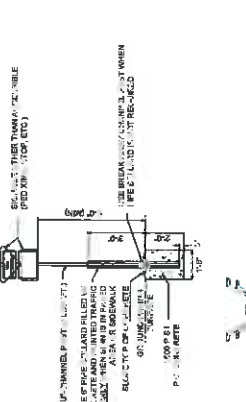
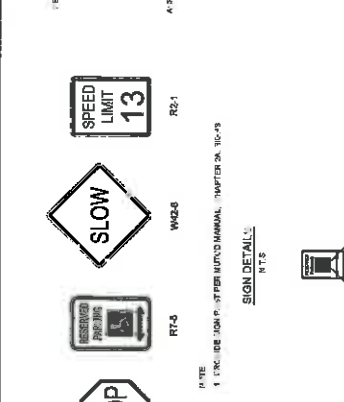
**TRENCH DRAIN**  
N.T.S.

NOTE:  
1. TRENCH DRAIN SHALL BE INSTALLED AS SHOWN.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND STRUCTURE.



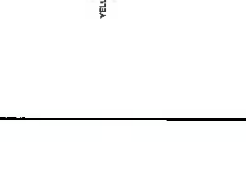
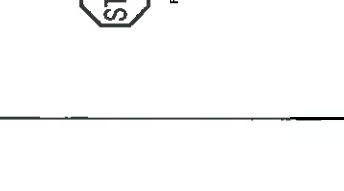
**CONCRETE PAVEMENT TIE-IN ENTRANCES**  
N.T.S.

NOTE:  
1. REFER TO CONCRETE TIE-IN DETAIL FOR TYPICAL DETAILS.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN TIE-IN AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN TIE-IN AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN TIE-IN AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN TIE-IN AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN TIE-IN AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN TIE-IN AND STRUCTURE.



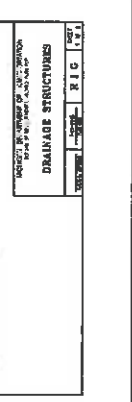
**STEEL SIGN BASE DETAILS**  
N.T.S.

NOTE:  
1. PROVIDE 1" MIN. CLEARANCE BETWEEN SIGN BASE AND CURB.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN SIGN BASE AND UTILITY LINES.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN SIGN BASE AND STRUCTURE.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN SIGN BASE AND CURB.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN SIGN BASE AND UTILITY LINES.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN SIGN BASE AND STRUCTURE.



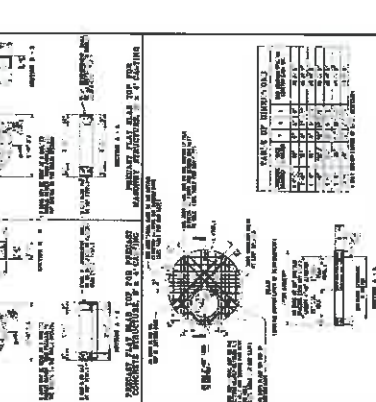
**FINGER DRAIN**  
N.T.S.

NOTE:  
1. FINGER DRAIN SHALL BE INSTALLED AS SHOWN.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN FINGER DRAIN AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN FINGER DRAIN AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN FINGER DRAIN AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN FINGER DRAIN AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN FINGER DRAIN AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN FINGER DRAIN AND STRUCTURE.



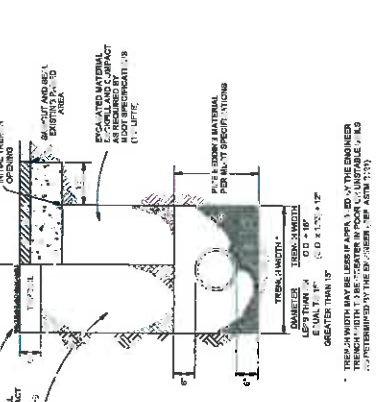
**DRAINAGE STRUCTURES**  
N.T.S.

NOTE:  
1. DRAINAGE STRUCTURE SHALL BE INSTALLED AS SHOWN.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND STRUCTURE.



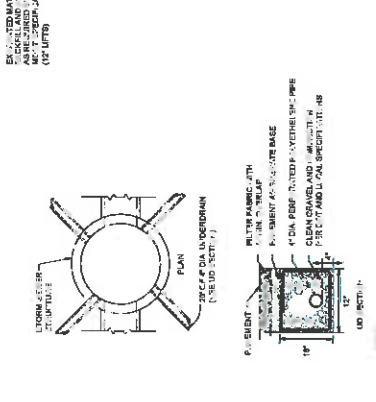
**DRAINAGE STRUCTURES**  
N.T.S.

NOTE:  
1. DRAINAGE STRUCTURE SHALL BE INSTALLED AS SHOWN.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN DRAINAGE STRUCTURE AND UTILITY LINES.  
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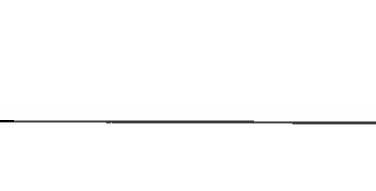
**TRENCH BACKFILL**  
N.T.S.

NOTE:  
1. TRENCH BACKFILL SHALL BE INSTALLED AS SHOWN.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH BACKFILL AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH BACKFILL AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH BACKFILL AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH BACKFILL AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH BACKFILL AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH BACKFILL AND STRUCTURE.



**CONCRETE SIDEWALK**  
N.T.S.

NOTE:  
1. REINFORCEMENT SHALL BE PLACED AS SHOWN.  
2. USE 1/2" DIA. REBAR.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND FORMS.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN REBAR AND STRUCTURE.



**TRENCH DRAIN**  
N.T.S.

NOTE:  
1. TRENCH DRAIN SHALL BE INSTALLED AS SHOWN.  
2. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND CURB.  
3. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND UTILITY LINES.  
4. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND STRUCTURE.  
5. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND CURB.  
6. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND UTILITY LINES.  
7. PROVIDE 1" MIN. CLEARANCE BETWEEN TRENCH DRAIN AND STRUCTURE.

REVISION	
NO.	DATE

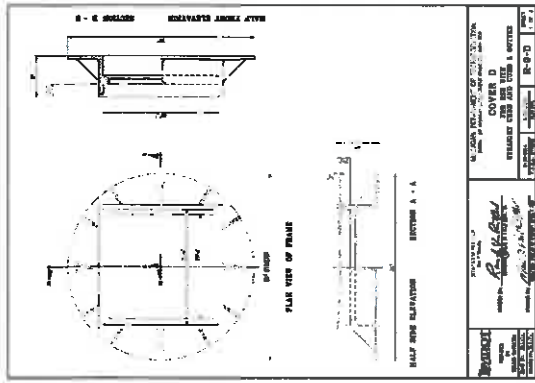


**CONSTRUCTION DETAILS**  
**BAVBERRY CHASE APARTMENTS**  
 CASCADE TOWNSHIP  
 NORT COUNTY, MICHIGAN



PROJECT NO.	
DATE	
SCALE	
DESIGNED BY	
CHECKED BY	
DATE	

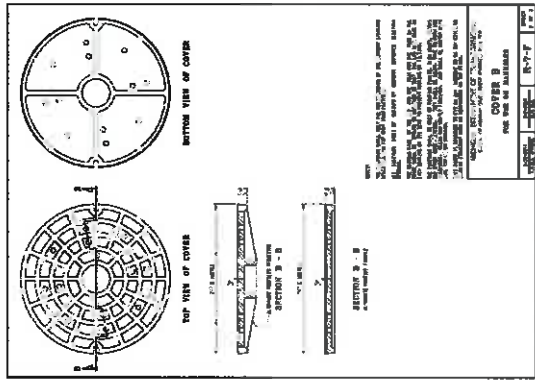
SHEET NO.  
**CB-1**



**REVISIONS:**  
 1. REVISED PER COMMENTS  
 2. REVISED PER COMMENTS

**COVER D**  
 PRECAST CONCRETE END SECTION  
 FOR PIPE CULVERT

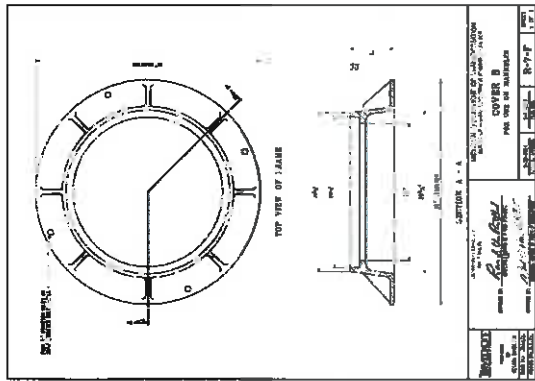
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 CHECKED BY: J. RUPPEL  
 SCALE: 1/4" = 1'-0"



**REVISIONS:**  
 1. REVISED PER COMMENTS  
 2. REVISED PER COMMENTS

**COVER B**  
 FOR USE OF MANHOLES

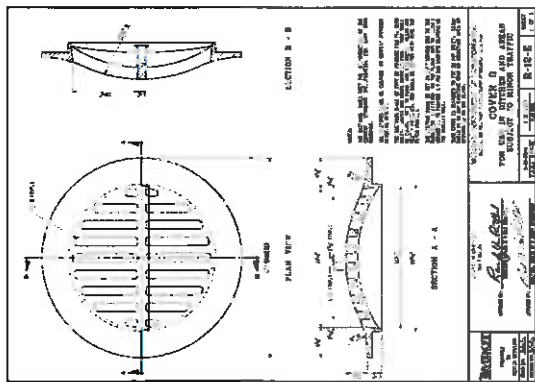
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 CHECKED BY: J. RUPPEL  
 SCALE: 1/4" = 1'-0"



**REVISIONS:**  
 1. REVISED PER COMMENTS  
 2. REVISED PER COMMENTS

**COVER B**  
 FOR USE OF MANHOLES

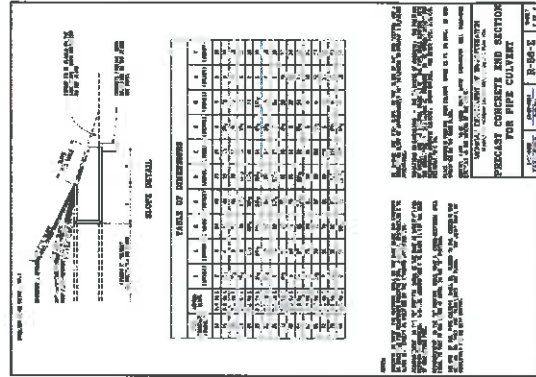
DATE: 08/20/14  
 DRAWN BY: J. RUPPEL  
 CHECKED BY: J. RUPPEL  
 SCALE: 1/4" = 1'-0"



**REVISIONS:**  
 1. REVISED PER COMMENTS  
 2. REVISED PER COMMENTS

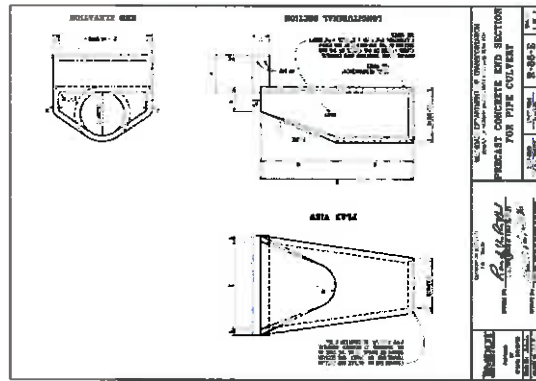
**COVER D**  
 PRECAST CONCRETE END SECTION  
 FOR PIPE CULVERT

DATE: 08/20/14  
 DRAWN BY: J. RUPPEL  
 CHECKED BY: J. RUPPEL  
 SCALE: 1/4" = 1'-0"



**TABLE OF DIMENSIONS**

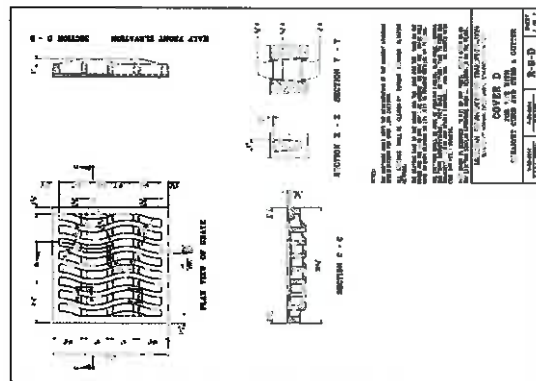
NO.	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
1	GRADE												
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													



**REVISIONS:**  
 1. REVISED PER COMMENTS  
 2. REVISED PER COMMENTS

**COVER D**  
 PRECAST CONCRETE END SECTION  
 FOR PIPE CULVERT

DATE: 08/20/14  
 DRAWN BY: J. RUPPEL  
 CHECKED BY: J. RUPPEL  
 SCALE: 1/4" = 1'-0"



**REVISIONS:**  
 1. REVISED PER COMMENTS  
 2. REVISED PER COMMENTS

**COVER D**  
 PRECAST CONCRETE END SECTION  
 FOR PIPE CULVERT

DATE: 08/20/14  
 DRAWN BY: J. RUPPEL  
 CHECKED BY: J. RUPPEL  
 SCALE: 1/4" = 1'-0"



**CAWRSE & ASSOCIATES, INC.**  
 Landscape Architecture • Land Planning  
 447 N. Washington Street • Chicago, Ill., OH 44022  
 440-247-7000 / Fax 440-247-7143

REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT  
 STATE OF OHIO  
 LICENSE NUMBER 35358

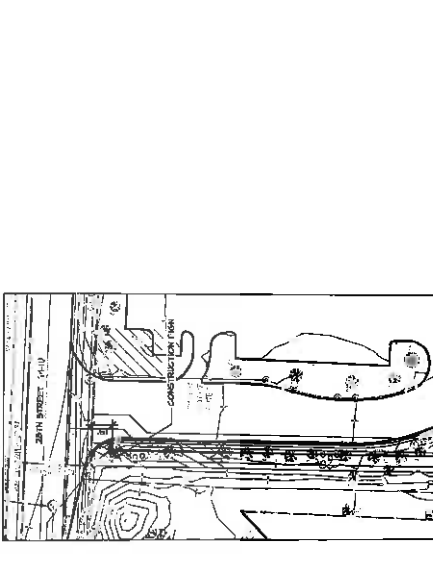
25775 CASCADER PARK ROAD, SUITE 7, BRACHWOOD, OHIO 44123  
 CASCADES TOWNSHIP, MICHIGAN  
 R.D. GOOD ACQUISITIONS, LLC

**BAYBERRY CHASE**  
 LANDSCAPE PLAN

Date: \_\_\_\_\_  
 Notes: \_\_\_\_\_  
 02-20-06 DRAWN: LCB  
 07-04-06 REVISED: LCB  
 07-05-06 REVISED: LCB  
 07-11-06 REVISED: LCB  
 08-15-06 REVISED: LCB  
 08-24-07 REVISED: LCB

Job No: 1007  
 File: 1007.landscape.dwg

Sheet 1 of 3  
 DATE PLOTTED: 08/08/07 08:21:27



**3-RAIL PVC FENCE**  
 NOT TO SCALE

- PLANTING LEGEND**
- SHADY TREES - 2-1/2' dia.
  - 02-20-06 DRAWN: LCB
  - 07-04-06 REVISED: LCB
  - 07-05-06 REVISED: LCB
  - 07-11-06 REVISED: LCB
  - 08-15-06 REVISED: LCB
  - 08-24-07 REVISED: LCB
  - 08-20-06 DRAWN: LCB
  - 07-04-06 REVISED: LCB
  - 07-05-06 REVISED: LCB
  - 07-11-06 REVISED: LCB
  - 08-15-06 REVISED: LCB
  - 08-24-07 REVISED: LCB
  - 08-20-06 DRAWN: LCB
  - 07-04-06 REVISED: LCB
  - 07-05-06 REVISED: LCB
  - 07-11-06 REVISED: LCB
  - 08-15-06 REVISED: LCB
  - 08-24-07 REVISED: LCB

**SITE LANDSCAPE PLAN**  
 SCALE: 1"=10'



**CAVARS & ASSOCIATES, INC.**  
 Landscape Architects - Land Planning  
 447 E. Washington Street - Columbus, OH 43222  
 614-267-7003 / Fax 614-267-7143



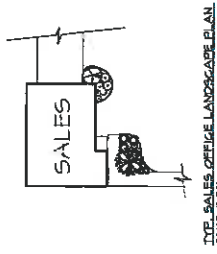
**LANDSCAPE PLANS & DETAILS**  
**BAYBERRY CHASE**  
 CASCADE TOWNSHIP, MICHIGAN  
 R.D. GOOD ACQUISITIONS, LLC  
 2775 COMMONS PARK ROAD, SUITE 17, BRANCH CREEK, OHIO 43122

Date: 10/11/11  
 08-20-11: DRN TO S  
 07-24-11: REV D  
 07-08-11: REV D  
 06-21-11: REV D

Job No: 1025  
 File: bayberry.dwg

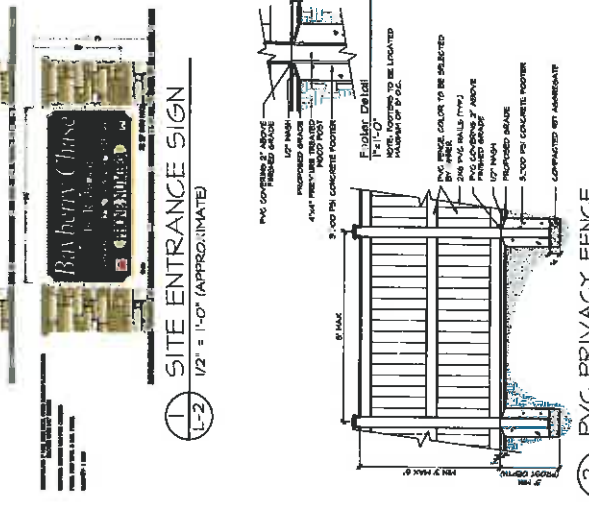
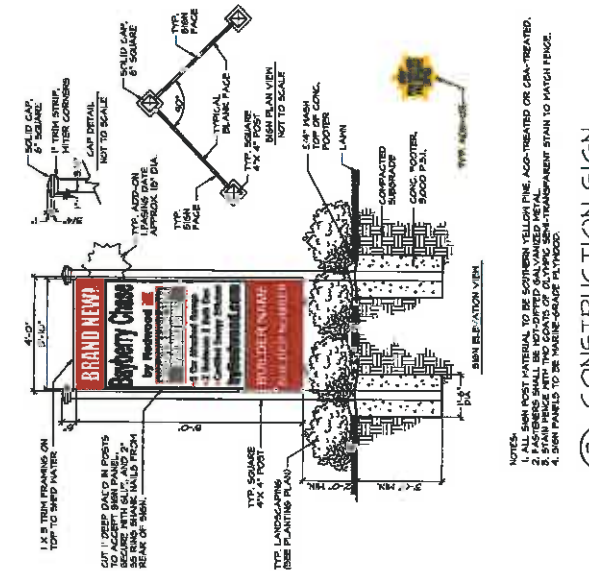
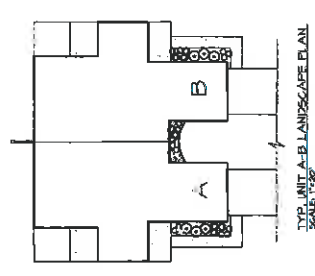
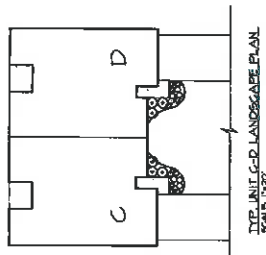
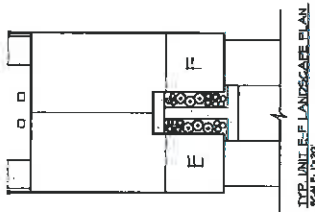
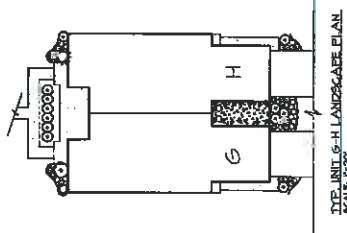
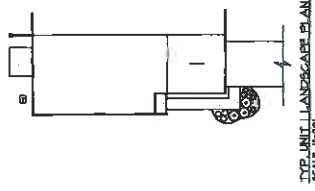
**L-2**

Sheet 2 of 3  
 William G. Cavanaugh



**PLANTING LEGEND**

- 1" DIA. TREES - 2-1/2' GAL
- 2" DIA. TREES - 5' GAL
- 3" DIA. TREES - 7-1/2' GAL
- 4" DIA. TREES - 10' GAL
- 5" DIA. TREES - 13' GAL
- 6" DIA. TREES - 17' GAL
- 7" DIA. TREES - 21' GAL
- 8" DIA. TREES - 26' GAL
- 9" DIA. TREES - 32' GAL
- 10" DIA. TREES - 39' GAL
- 12" DIA. TREES - 48' GAL
- 14" DIA. TREES - 58' GAL
- 16" DIA. TREES - 69' GAL
- 18" DIA. TREES - 81' GAL
- 20" DIA. TREES - 94' GAL
- 24" DIA. TREES - 114' GAL
- 28" DIA. TREES - 136' GAL
- 32" DIA. TREES - 158' GAL
- 36" DIA. TREES - 181' GAL
- 40" DIA. TREES - 204' GAL
- 44" DIA. TREES - 228' GAL
- 48" DIA. TREES - 252' GAL
- 52" DIA. TREES - 276' GAL
- 56" DIA. TREES - 300' GAL
- 60" DIA. TREES - 324' GAL
- 64" DIA. TREES - 348' GAL
- 68" DIA. TREES - 372' GAL
- 72" DIA. TREES - 396' GAL
- 76" DIA. TREES - 420' GAL
- 80" DIA. TREES - 444' GAL
- 84" DIA. TREES - 468' GAL
- 88" DIA. TREES - 492' GAL
- 92" DIA. TREES - 516' GAL
- 96" DIA. TREES - 540' GAL
- 100" DIA. TREES - 564' GAL
- 104" DIA. TREES - 588' GAL
- 108" DIA. TREES - 612' GAL
- 112" DIA. TREES - 636' GAL
- 116" DIA. TREES - 660' GAL
- 120" DIA. TREES - 684' GAL
- 124" DIA. TREES - 708' GAL
- 128" DIA. TREES - 732' GAL
- 132" DIA. TREES - 756' GAL
- 136" DIA. TREES - 780' GAL
- 140" DIA. TREES - 804' GAL
- 144" DIA. TREES - 828' GAL
- 148" DIA. TREES - 852' GAL
- 152" DIA. TREES - 876' GAL
- 156" DIA. TREES - 900' GAL
- 160" DIA. TREES - 924' GAL
- 164" DIA. TREES - 948' GAL
- 168" DIA. TREES - 972' GAL
- 172" DIA. TREES - 996' GAL
- 176" DIA. TREES - 1020' GAL
- 180" DIA. TREES - 1044' GAL
- 184" DIA. TREES - 1068' GAL
- 188" DIA. TREES - 1092' GAL
- 192" DIA. TREES - 1116' GAL
- 196" DIA. TREES - 1140' GAL
- 200" DIA. TREES - 1164' GAL
- 204" DIA. TREES - 1188' GAL
- 208" DIA. TREES - 1212' GAL
- 212" DIA. TREES - 1236' GAL
- 216" DIA. TREES - 1260' GAL
- 220" DIA. TREES - 1284' GAL
- 224" DIA. TREES - 1308' GAL
- 228" DIA. TREES - 1332' GAL
- 232" DIA. TREES - 1356' GAL
- 236" DIA. TREES - 1380' GAL
- 240" DIA. TREES - 1404' GAL
- 244" DIA. TREES - 1428' GAL
- 248" DIA. TREES - 1452' GAL
- 252" DIA. TREES - 1476' GAL
- 256" DIA. TREES - 1500' GAL
- 260" DIA. TREES - 1524' GAL
- 264" DIA. TREES - 1548' GAL
- 268" DIA. TREES - 1572' GAL
- 272" DIA. TREES - 1596' GAL
- 276" DIA. TREES - 1620' GAL
- 280" DIA. TREES - 1644' GAL
- 284" DIA. TREES - 1668' GAL
- 288" DIA. TREES - 1692' GAL
- 292" DIA. TREES - 1716' GAL
- 296" DIA. TREES - 1740' GAL
- 300" DIA. TREES - 1764' GAL
- 304" DIA. TREES - 1788' GAL
- 308" DIA. TREES - 1812' GAL
- 312" DIA. TREES - 1836' GAL
- 316" DIA. TREES - 1860' GAL
- 320" DIA. TREES - 1884' GAL
- 324" DIA. TREES - 1908' GAL
- 328" DIA. TREES - 1932' GAL
- 332" DIA. TREES - 1956' GAL
- 336" DIA. TREES - 1980' GAL
- 340" DIA. TREES - 2004' GAL
- 344" DIA. TREES - 2028' GAL
- 348" DIA. TREES - 2052' GAL
- 352" DIA. TREES - 2076' GAL
- 356" DIA. TREES - 2100' GAL
- 360" DIA. TREES - 2124' GAL
- 364" DIA. TREES - 2148' GAL
- 368" DIA. TREES - 2172' GAL
- 372" DIA. TREES - 2196' GAL
- 376" DIA. TREES - 2220' GAL
- 380" DIA. TREES - 2244' GAL
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- 396" DIA. TREES - 2340' GAL
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- 520" DIA. TREES - 3084' GAL
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- 532" DIA. TREES - 3156' GAL
- 536" DIA. TREES - 3180' GAL
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- 992" DIA. TREES - 5916' GAL
- 996" DIA. TREES - 5940' GAL
- 1000" DIA. TREES - 5964' GAL



**LEASING OFFICE**

**CONSTRUCTION SIGN**  
 1/2" = 1'-0"

**PVC PRIVACY FENCE**  
 1/2" = 1'-0"

**NOTES:**  
 1. SIGN PANEL MATERIAL TO BE BROWN YELLOW PINE AGG-TREATED OR GRN-TREATED.  
 2. ALL SIGNS SHALL BE 6" HIGH.  
 3. STAIN FENCE WITH TWO COATS OF 0.75 TYP. SEMI-TRANSPARENT STAIN TO MATCH FENCE.  
 4. SIGN PANELS TO BE 1/2" THICK GAUGE 18" PLYWOOD.

**NOTES:**  
 1. ALL SIGNS SHALL BE 6" HIGH.  
 2. ALL SIGNS SHALL BE 6" HIGH.  
 3. STAIN FENCE WITH TWO COATS OF 0.75 TYP. SEMI-TRANSPARENT STAIN TO MATCH FENCE.  
 4. SIGN PANELS TO BE 1/2" THICK GAUGE 18" PLYWOOD.

SECTION 02100 - LANDSCAPING

1. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

- 1. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

1. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

2. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

3. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

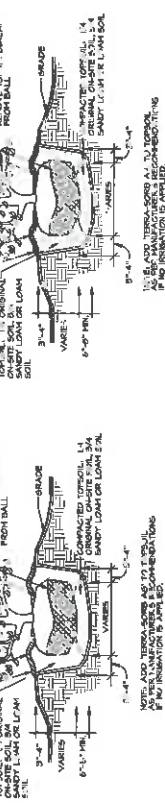
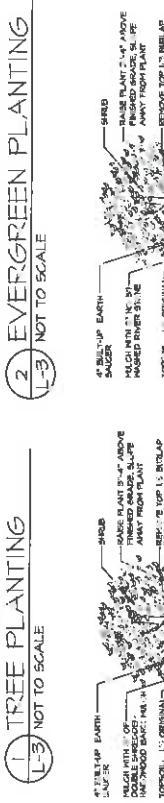
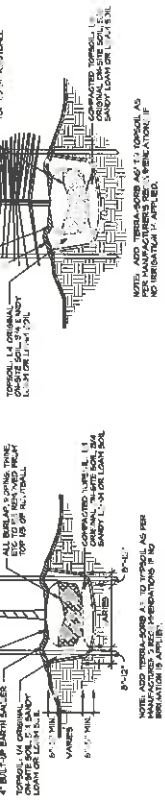
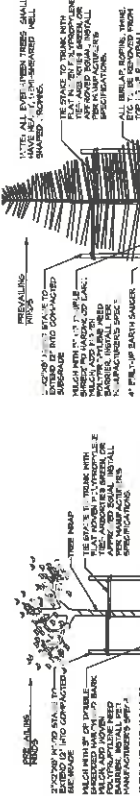
4. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

5. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

6. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

7. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System

8. Section Includes:
A. Evergreen Planting
B. Tree Planting
C. Shrub Planting
D. Mulch
E. Watering System



CAVARS & ASSOCIATES, INC.
Landscape Architecture • Land Planning, Inc.
597 E. Washington Street • Ann Arbor, MI 48106
482-247-7003/482-947-7145



LANDSCAPE SPECIFICATIONS
BAYBERRY CHASE
CASCADE TOWNSHIP, MICHIGAN
PLC FOOD ACQUISITIONS, LLC
21775 COMMERCE PARK, SUITE 7, BIRCHWOOD, OH 41228

Date:
Notes:
1. 100% PRELIMINARY
2. 100% PRELIMINARY
3. 100% PRELIMINARY

Job No:
File:
L-3
Sheet 3 of 3



**UTILITIES AND CONTACTS**

ALL UTILITIES SHOWN ARE BASED ON THE CURRENT YEAR OF RECORD FOR THE PROJECT AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. CONTACT THE APPROPRIATE AGENCIES FOR THE MOST CURRENT INFORMATION.

**UTILITY CONTACTS:**

- AMERICAN WATER WORKS ASSOCIATION (AWWA)
- INDIANAPOLIS WATER & SEWER DEPARTMENT
- INDIANAPOLIS GAS & ELECTRIC DEPARTMENT
- INDIANAPOLIS LIGHT RAIL TRANSIT
- INDIANAPOLIS POLICE DEPARTMENT
- INDIANAPOLIS FIRE DEPARTMENT
- INDIANAPOLIS PUBLIC WORKS DEPARTMENT
- INDIANAPOLIS SANITATION DEPARTMENT
- INDIANAPOLIS STREET LIGHTS DEPARTMENT
- INDIANAPOLIS TELEPHONE DEPARTMENT
- INDIANAPOLIS WATER & SEWER DEPARTMENT
- INDIANAPOLIS GAS & ELECTRIC DEPARTMENT
- INDIANAPOLIS LIGHT RAIL TRANSIT
- INDIANAPOLIS POLICE DEPARTMENT
- INDIANAPOLIS FIRE DEPARTMENT
- INDIANAPOLIS PUBLIC WORKS DEPARTMENT
- INDIANAPOLIS SANITATION DEPARTMENT
- INDIANAPOLIS STREET LIGHTS DEPARTMENT
- INDIANAPOLIS TELEPHONE DEPARTMENT

**VESTING DEED**

THIS DEED IS A LIMITED POWER OF ATTORNEY DEED. THE GRANTEE SHALL HAVE THE SAME RIGHTS AND POWERS AS IF THE GRANTEE WERE THE GRANTOR. THIS DEED IS SUBJECT TO THE TERMS AND CONDITIONS SET FORTH HEREIN.

**SCHEDULE B-II EXCEPTIONS**

THE GRANTEE SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE GRANTOR. THE GRANTEE SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY ANY OTHER PARTY.

**SCHEDULE C LEGAL DESCRIPTION**

THE GRANTEE SHALL HAVE THE SAME RIGHTS AND POWERS AS IF THE GRANTEE WERE THE GRANTOR. THIS DEED IS SUBJECT TO THE TERMS AND CONDITIONS SET FORTH HEREIN.

**CLIENT**

GRAND BERRY CHASE APARTMENTS  
11111 GRAND BERRY DRIVE  
INDIANAPOLIS, IN 46228

**OWNER**

GRAND BERRY CHASE APARTMENTS  
11111 GRAND BERRY DRIVE  
INDIANAPOLIS, IN 46228

**SURVEYOR**

ALTA SURVEYING & CONSULTING, INC.  
11111 GRAND BERRY DRIVE  
INDIANAPOLIS, IN 46228

**REVISIONS**

NO.	DATE	DESCRIPTION
1	12/11/18	INITIAL SURVEY
2	12/11/18	REVISIONS
3	12/11/18	REVISIONS
4	12/11/18	REVISIONS
5	12/11/18	REVISIONS
6	12/11/18	REVISIONS
7	12/11/18	REVISIONS
8	12/11/18	REVISIONS
9	12/11/18	REVISIONS
10	12/11/18	REVISIONS

**GRAPHIC SCALE**

1" = 100'

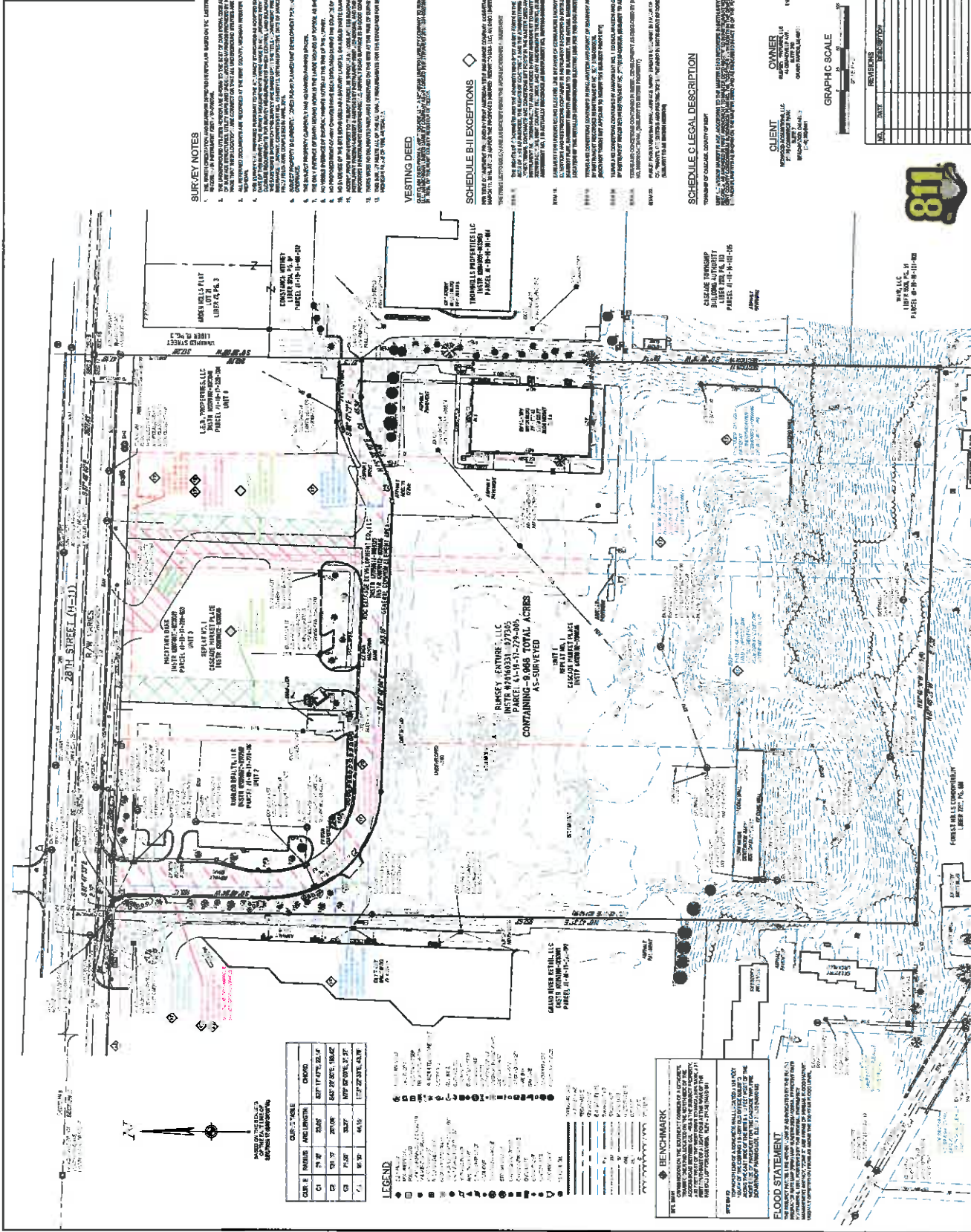
**811**

CALL BEFORE YOU DIG

**ALTA SURVEYING & CONSULTING, INC.**

11111 GRAND BERRY DRIVE  
INDIANAPOLIS, IN 46228

DATE: 12/11/18  
PROJECT: GRAND BERRY CHASE APARTMENTS  
SHEET NO.: 1 OF 1



**PRELIMINARY**  
 NOT FOR  
 THIS DRAWING IS NOT  
 FOR CONSTRUCTION

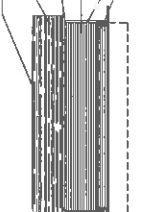
REVISIONS



**BUILDING PLANS AND ELEVATIONS**  
 PROJECT # 10516  
 DATE: JULY 19, 2017  
**BAYBERRY CHASE**  
 2878 STREET  
 GRAND RAPIDS, MI

**A4.1**  
 1 OF 8

ITEM	DESCRIPTION	QTY
1	CONCRETE	
2	BRICK	
3	GLASS	
4	ALUMINUM	
5	STEEL	
6	WOOD	
7	PAINT	
8	ROOFING	
9	MECHANICAL	
10	ELECTRICAL	
11	PLUMBING	
12	LANDSCAPE	
13	INTERIOR FINISH	
14	EXTERIOR FINISH	
15	FOUNDATION	
16	STRUCTURE	
17	MECHANICAL	
18	ELECTRICAL	
19	PLUMBING	
20	LANDSCAPE	
21	INTERIOR FINISH	
22	EXTERIOR FINISH	
23	FOUNDATION	
24	STRUCTURE	
25	MECHANICAL	
26	ELECTRICAL	
27	PLUMBING	
28	LANDSCAPE	
29	INTERIOR FINISH	
30	EXTERIOR FINISH	
31	FOUNDATION	
32	STRUCTURE	
33	MECHANICAL	
34	ELECTRICAL	
35	PLUMBING	
36	LANDSCAPE	
37	INTERIOR FINISH	
38	EXTERIOR FINISH	
39	FOUNDATION	
40	STRUCTURE	
41	MECHANICAL	
42	ELECTRICAL	
43	PLUMBING	
44	LANDSCAPE	
45	INTERIOR FINISH	
46	EXTERIOR FINISH	
47	FOUNDATION	
48	STRUCTURE	
49	MECHANICAL	
50	ELECTRICAL	
51	PLUMBING	
52	LANDSCAPE	
53	INTERIOR FINISH	
54	EXTERIOR FINISH	
55	FOUNDATION	
56	STRUCTURE	
57	MECHANICAL	
58	ELECTRICAL	
59	PLUMBING	
60	LANDSCAPE	
61	INTERIOR FINISH	
62	EXTERIOR FINISH	
63	FOUNDATION	
64	STRUCTURE	
65	MECHANICAL	
66	ELECTRICAL	
67	PLUMBING	
68	LANDSCAPE	
69	INTERIOR FINISH	
70	EXTERIOR FINISH	
71	FOUNDATION	
72	STRUCTURE	
73	MECHANICAL	
74	ELECTRICAL	
75	PLUMBING	
76	LANDSCAPE	
77	INTERIOR FINISH	
78	EXTERIOR FINISH	
79	FOUNDATION	
80	STRUCTURE	
81	MECHANICAL	
82	ELECTRICAL	
83	PLUMBING	
84	LANDSCAPE	
85	INTERIOR FINISH	
86	EXTERIOR FINISH	
87	FOUNDATION	
88	STRUCTURE	
89	MECHANICAL	
90	ELECTRICAL	
91	PLUMBING	
92	LANDSCAPE	
93	INTERIOR FINISH	
94	EXTERIOR FINISH	
95	FOUNDATION	
96	STRUCTURE	
97	MECHANICAL	
98	ELECTRICAL	
99	PLUMBING	
100	LANDSCAPE	



1. OVERALL FLOOR PLAN  
 A4.1 SCALE: 3/32" = 1'-0"

**EXTERIOR FINISH MATERIAL SELECTIONS**

ITEM	DESCRIPTION	QTY
1	CONCRETE	
2	BRICK	
3	GLASS	
4	ALUMINUM	
5	STEEL	
6	WOOD	
7	PAINT	
8	ROOFING	
9	MECHANICAL	
10	ELECTRICAL	
11	PLUMBING	
12	LANDSCAPE	
13	INTERIOR FINISH	
14	EXTERIOR FINISH	
15	FOUNDATION	
16	STRUCTURE	
17	MECHANICAL	
18	ELECTRICAL	
19	PLUMBING	
20	LANDSCAPE	
21	INTERIOR FINISH	
22	EXTERIOR FINISH	
23	FOUNDATION	
24	STRUCTURE	
25	MECHANICAL	
26	ELECTRICAL	
27	PLUMBING	
28	LANDSCAPE	
29	INTERIOR FINISH	
30	EXTERIOR FINISH	
31	FOUNDATION	
32	STRUCTURE	
33	MECHANICAL	
34	ELECTRICAL	
35	PLUMBING	
36	LANDSCAPE	
37	INTERIOR FINISH	
38	EXTERIOR FINISH	
39	FOUNDATION	
40	STRUCTURE	
41	MECHANICAL	
42	ELECTRICAL	
43	PLUMBING	
44	LANDSCAPE	
45	INTERIOR FINISH	
46	EXTERIOR FINISH	
47	FOUNDATION	
48	STRUCTURE	
49	MECHANICAL	
50	ELECTRICAL	
51	PLUMBING	
52	LANDSCAPE	
53	INTERIOR FINISH	
54	EXTERIOR FINISH	
55	FOUNDATION	
56	STRUCTURE	
57	MECHANICAL	
58	ELECTRICAL	
59	PLUMBING	
60	LANDSCAPE	
61	INTERIOR FINISH	
62	EXTERIOR FINISH	
63	FOUNDATION	
64	STRUCTURE	
65	MECHANICAL	
66	ELECTRICAL	
67	PLUMBING	
68	LANDSCAPE	
69	INTERIOR FINISH	
70	EXTERIOR FINISH	
71	FOUNDATION	
72	STRUCTURE	
73	MECHANICAL	
74	ELECTRICAL	
75	PLUMBING	
76	LANDSCAPE	
77	INTERIOR FINISH	
78	EXTERIOR FINISH	
79	FOUNDATION	
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83	PLUMBING	
84	LANDSCAPE	
85	INTERIOR FINISH	
86	EXTERIOR FINISH	
87	FOUNDATION	
88	STRUCTURE	
89	MECHANICAL	
90	ELECTRICAL	
91	PLUMBING	
92	LANDSCAPE	
93	INTERIOR FINISH	
94	EXTERIOR FINISH	
95	FOUNDATION	
96	STRUCTURE	
97	MECHANICAL	
98	ELECTRICAL	
99	PLUMBING	
100	LANDSCAPE	

**PRELIMINARY**  
**NOTE!!!**  
**THIS DRAWING IS NOT**  
**FOR CONSTRUCTION**

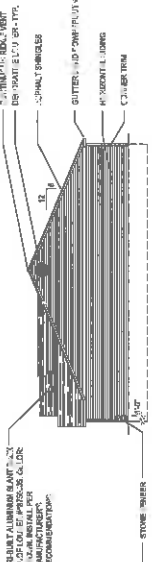
REVISIONS



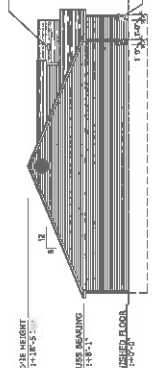
DATE: JULY 19, 2017

BUILDING PLANS AND ELEVATIONS  
 PROJECT #: 10516  
 BAYBERRY CHASE  
 28TH STREET  
 GRAND RAPIDS, MI

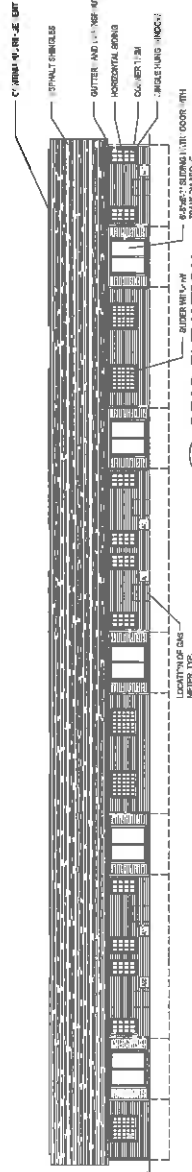
A4.2  
 2 OF 8



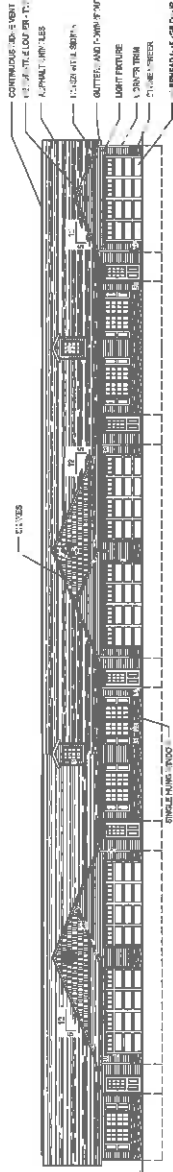
5 STANDARD SIDE ELEVATION  
 A4.2 SCALE: 3/8" = 1'-0"



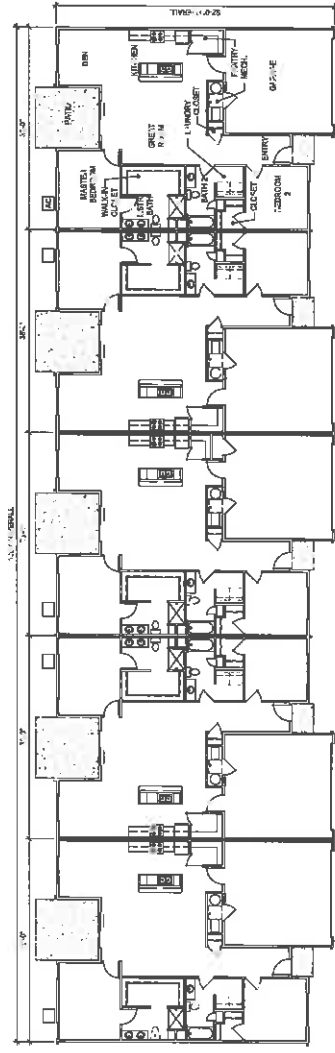
4 STANDARD SIDE ELEVATION  
 A4.2 SCALE: 3/8" = 1'-0"



3 REAR ELEVATION  
 A4.2 SCALE: 3/8" = 1'-0"



2 FRONT ELEVATION  
 A4.2 SCALE: 3/8" = 1'-0"



1 OVERALL FLOOR PLAN  
 A4.2 SCALE: 3/8" = 1'-0"

**EXTERIOR FINISH MATERIAL SELECTIONS**

ITEM	DESCRIPTION	COLOR
1.00	WATER RESISTANT BOARD	WHITE
1.01	CEILING	WHITE
1.02	WALLS	WHITE
1.03	FLOORING	WHITE
1.04	TRUSS MARKING	WHITE
1.05	ROOF WEIGHT	WHITE
1.06	TRUSS MARKING	WHITE
1.07	ROOF WEIGHT	WHITE
1.08	TRUSS MARKING	WHITE
1.09	ROOF WEIGHT	WHITE
1.10	TRUSS MARKING	WHITE
1.11	ROOF WEIGHT	WHITE
1.12	TRUSS MARKING	WHITE
1.13	ROOF WEIGHT	WHITE
1.14	TRUSS MARKING	WHITE
1.15	ROOF WEIGHT	WHITE
1.16	TRUSS MARKING	WHITE
1.17	ROOF WEIGHT	WHITE
1.18	TRUSS MARKING	WHITE
1.19	ROOF WEIGHT	WHITE
1.20	TRUSS MARKING	WHITE
1.21	ROOF WEIGHT	WHITE
1.22	TRUSS MARKING	WHITE
1.23	ROOF WEIGHT	WHITE
1.24	TRUSS MARKING	WHITE
1.25	ROOF WEIGHT	WHITE
1.26	TRUSS MARKING	WHITE
1.27	ROOF WEIGHT	WHITE
1.28	TRUSS MARKING	WHITE
1.29	ROOF WEIGHT	WHITE
1.30	TRUSS MARKING	WHITE
1.31	ROOF WEIGHT	WHITE
1.32	TRUSS MARKING	WHITE
1.33	ROOF WEIGHT	WHITE
1.34	TRUSS MARKING	WHITE
1.35	ROOF WEIGHT	WHITE
1.36	TRUSS MARKING	WHITE
1.37	ROOF WEIGHT	WHITE
1.38	TRUSS MARKING	WHITE
1.39	ROOF WEIGHT	WHITE
1.40	TRUSS MARKING	WHITE
1.41	ROOF WEIGHT	WHITE
1.42	TRUSS MARKING	WHITE
1.43	ROOF WEIGHT	WHITE
1.44	TRUSS MARKING	WHITE
1.45	ROOF WEIGHT	WHITE
1.46	TRUSS MARKING	WHITE
1.47	ROOF WEIGHT	WHITE
1.48	TRUSS MARKING	WHITE
1.49	ROOF WEIGHT	WHITE
1.50	TRUSS MARKING	WHITE

**PRELIMINARY**  
 NOTE!!!  
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 FOR CONSTRUCTION

REVISIONS



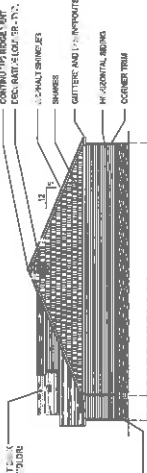
**MPG ARCHITECTS**  
 MANN • PARSONS • GRAY

**BUILDING PLANS AND ELEVATIONS**  
 PROJECT # 10616  
 DATE: JULY 18, 2017  
 BAYBERRY CHASE  
 2871 STREET  
 GRAND RAPIDS, MI

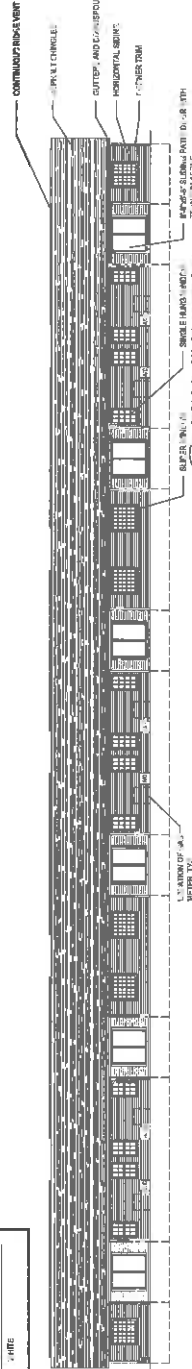
**A4.3**  
 3 OF 8



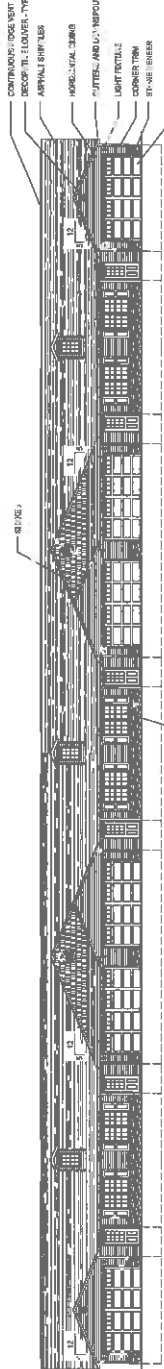
**5 STANDARD SIDE ELEVATION**  
 A4.3 SCALE: 3/32" = 1'-0"  
 BLDG. B



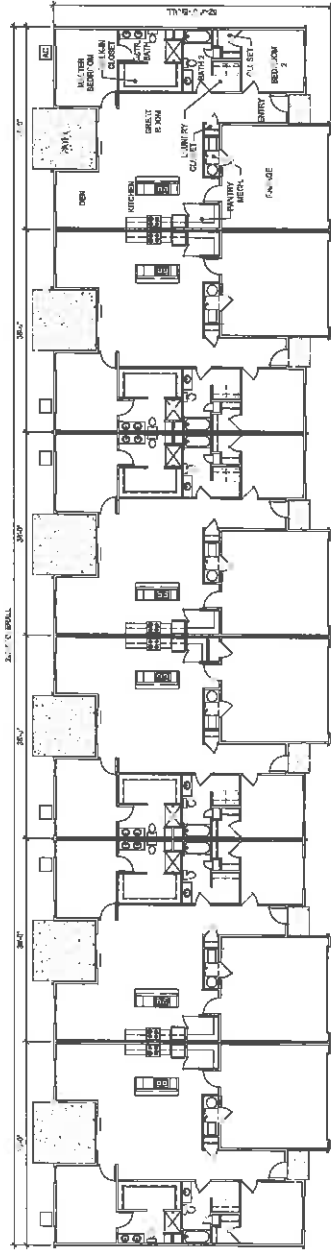
**4 HIGH PROFILE SIDE ELEVATION**  
 A4.3 SCALE: 3/32" = 1'-0"  
 BLDG. B



**3 REAR ELEVATION**  
 A4.3 SCALE: 3/32" = 1'-0"  
 BLDG. B



**2 FRONT ELEVATION**  
 A4.3 SCALE: 3/32" = 1'-0"  
 BLDG. B



**1 OVERALL FLOOR PLAN**  
 A4.3 SCALE: 3/32" = 1'-0"  
 BLDG. B

**EXTERIOR FINISH MATERIAL SELECTIONS**

ITEM	MATERIAL CODE	NAME
PERIMETER TRIM	TRIM	TRIM
SHUTTERS	SHUTTERS	SHUTTERS
ROOFING	ROOFING	ROOFING
ROOFING UNDERLAYMENT	UNDERLAYMENT	UNDERLAYMENT
ROOFING FLASHING	FLASHING	FLASHING
ROOFING GUTTER	GUTTER	GUTTER
ROOFING DOWNSPOUT	DOWNSPOUT	DOWNSPOUT
ROOFING CORNER TRIM	CORNER TRIM	CORNER TRIM
ROOFING SPRINKLER CHIMNEY	CHIMNEY	CHIMNEY
ROOFING GUTTER AND DOWNSPOUT	GUTTER AND DOWNSPOUT	GUTTER AND DOWNSPOUT
ROOFING APRIL SHUTTERS	SHUTTERS	SHUTTERS
ROOFING MOISTURE BARRIER	MOISTURE BARRIER	MOISTURE BARRIER
ROOFING INSULATION	INSULATION	INSULATION
ROOFING VENT	VENT	VENT

**PRELIMINARY**  
NOTE: THIS DRAWING IS NOT FOR CONSTRUCTION

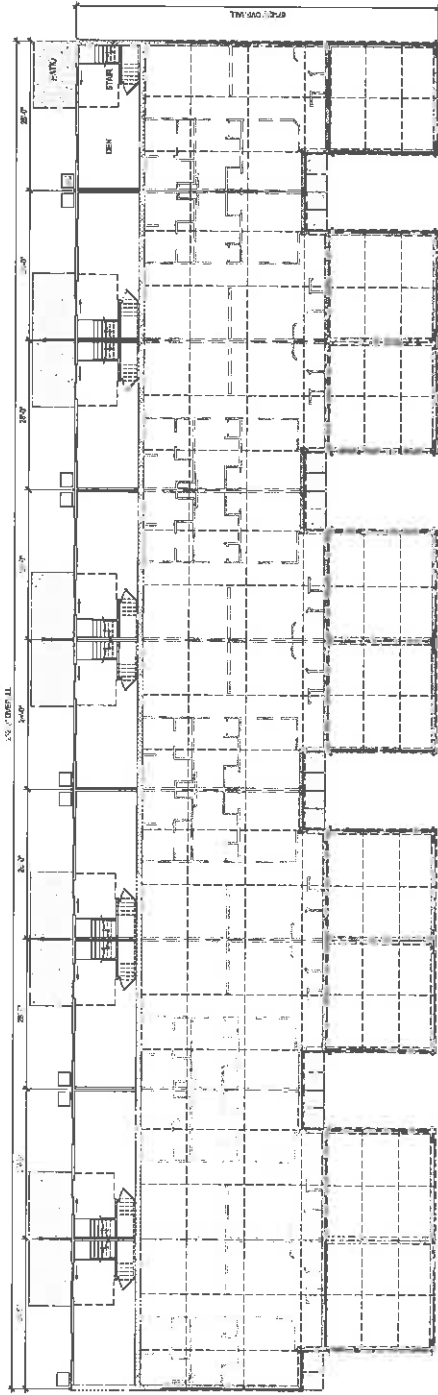
REVISIONS



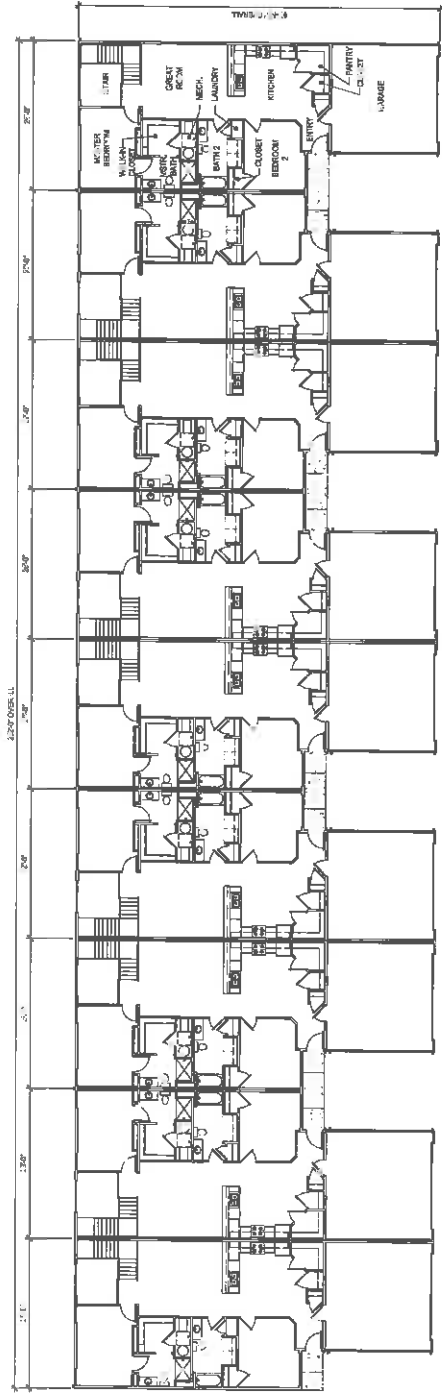
**MPG ARCHITECTS**  
MANN • PARSONS • GRAY

**BUILDING PLANS AND ELEVATIONS**  
PROJECT #: 10518  
DATE: JULY 19, 2017  
**BAYBERRY CHASE**  
28TH STREET  
GRAND RAPIDS, MI

**A4.4**  
4 OF 8



**2 OVERALL FLOOR PLAN - LOWER LEVEL**  
SCALE: 1/8" = 1'-0"  
SHEET: A4.4



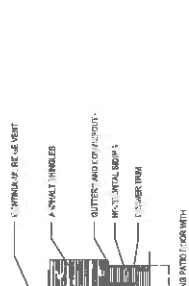
**1 OVERALL FLOOR PLAN - FIRST FLOOR**  
SCALE: 1/8" = 1'-0"  
SHEET: A4.4



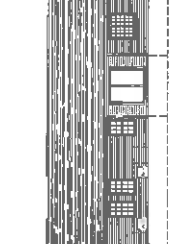
**EXTERIOR FINISH MATERIAL SELECTIONS**

ITEM	MATERIAL/TYPE	LOOK
EXTERIOR DOOR	UPVC	WHITE
EXTERIOR WINDOW	PREFINISHED ALUMINUM	WHITE
INTERIOR DOOR	UPVC	WHITE
INTERIOR WINDOW	PREFINISHED ALUMINUM	WHITE
CEILING	POP	WHITE
FLOOR	UPVC	WHITE
WALL	POP	WHITE
SKYLINE SIGNAGE	ALUMINUM	WHITE
SKYLINE LIGHTING	UPVC	WHITE
SKYLINE POWER	UPVC	WHITE
SKYLINE TELEPHONE	UPVC	WHITE
SKYLINE SECURITY	UPVC	WHITE
SKYLINE WATER	UPVC	WHITE
SKYLINE WASTE	UPVC	WHITE
SKYLINE OTHER	UPVC	WHITE

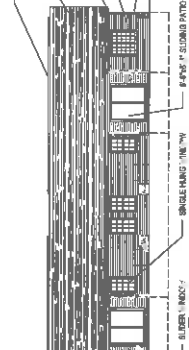
NOTE:  
HIGH PROFILE SIGNAGE  
DO NOT EXCEED 10 FT. HGT.



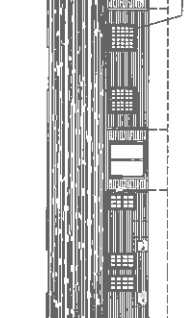
5. HIGH PROFILE SIDE ELEVATION  
SCALE: 1/2" = 1'-0"  
BLDG. ELEV



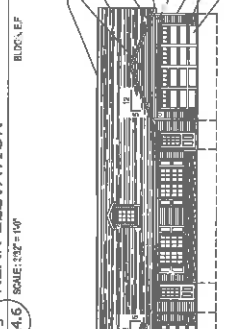
4. STANDARD SIDE ELEVATION  
SCALE: 1/2" = 1'-0"  
BLDG. ELEV



3. REAR ELEVATION  
SCALE: 1/2" = 1'-0"  
BLDG. ELEV



2. FRONT ELEVATION  
SCALE: 1/2" = 1'-0"  
BLDG. ELEV



1. OVERALL FLOOR PLAN  
SCALE: 1/4" = 1'-0"  
BLDG. ELEV

**PRELIMINARY**  
NOTE:  
THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTION



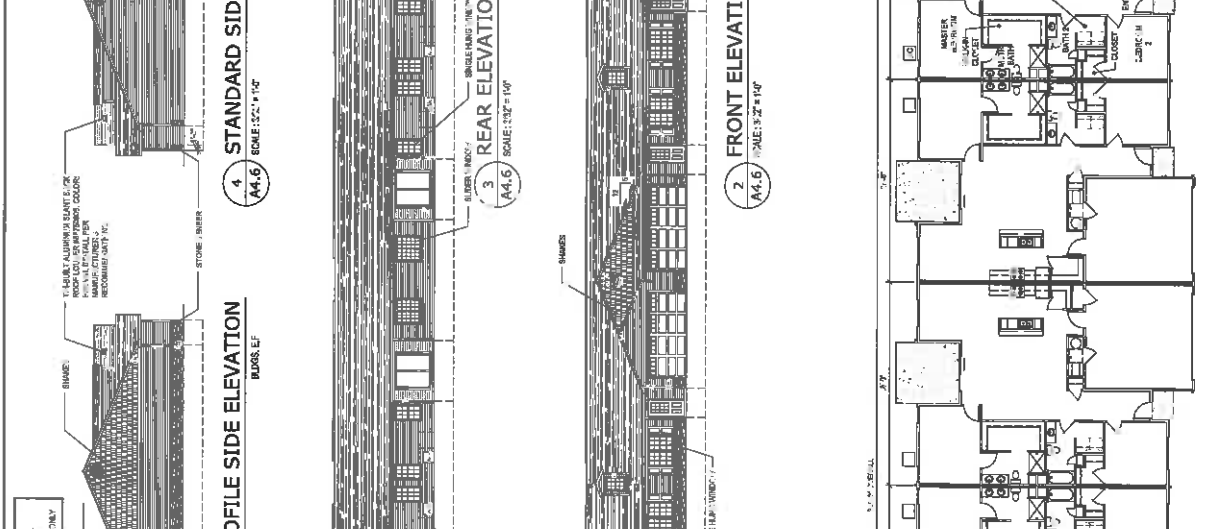
MANN - PARSONS - GRAY ARCHITECTS

BAYBERRY CHASE  
PROJECT # 10916  
DATE: JULY 19, 2017

BUILDING PLANS AND ELEVATIONS

28TH STREET  
GRAND RAPIDS, MI

A4.6  
8 OF 8



**PRELIMINARY**  
 NOTE!!!  
 THIS DRAWING IS NOT  
 FOR CONSTRUCTION

REVISIONS



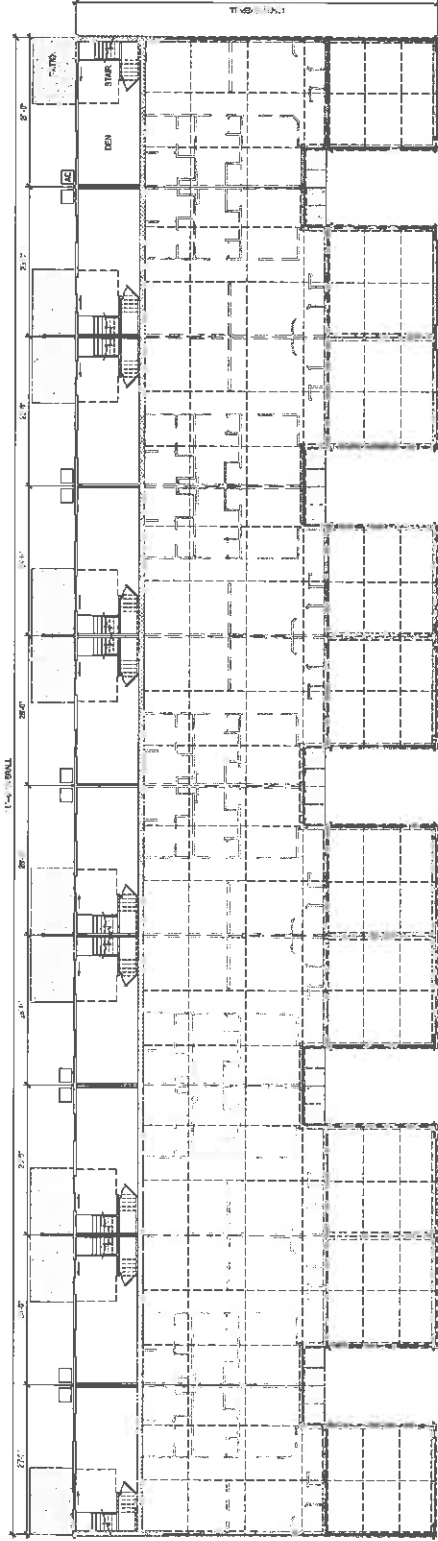
**MPG**  
 ARCHITECTS  
 MANN • PARSONS • GRAY

**BUILDING PLANS AND ELEVATIONS**  
 PROJECT #: 10616  
 DATE: JULY 19, 2017

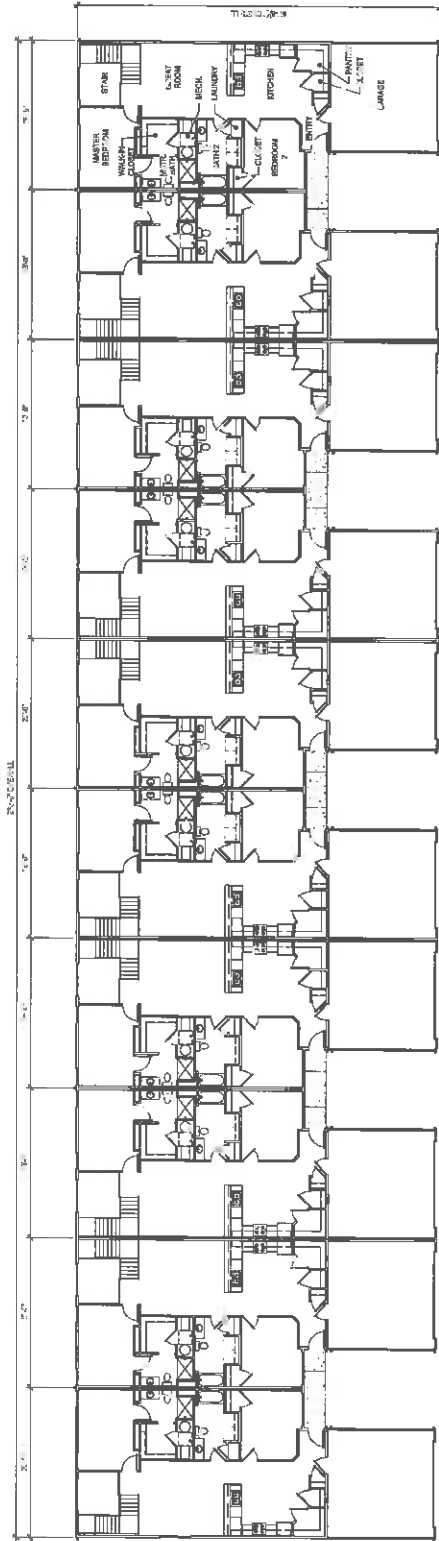
**BAYBERRY CHASE**

28TH STREET  
 GRAND RAPIDS, MI

**A4.7**  
 7 OF 8



**2 OVERALL FLOOR PLAN - LOWER LEVEL**  
 SCALE: 1/8" = 1'-0"  
 BLDG. G.H.



**1 OVERALL FLOOR PLAN - FIRST FLOOR**  
 SCALE: 1/8" = 1'-0"  
 BLDG. G.H.

**PRELIMINARY**  
NOTE!!!  
THIS DRAWING IS NOT  
FOR CONSTRUCTION

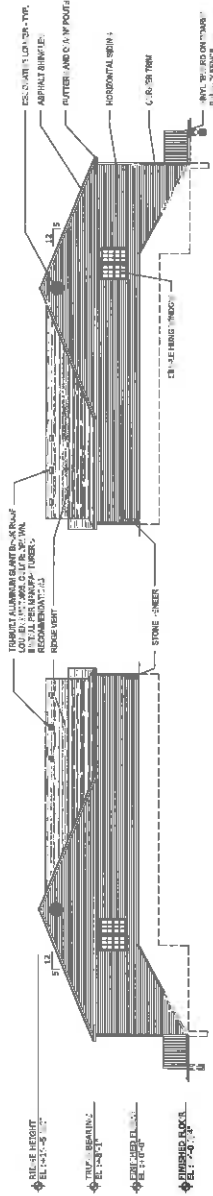
REVISIONS



**BUILDING PLANS AND ELEVATIONS**  
PROJECT #: 10516  
DATE: JULY 19, 2017  
BAYBERRY CHASE  
28TH STREET  
GRAND RAPIDS, MI

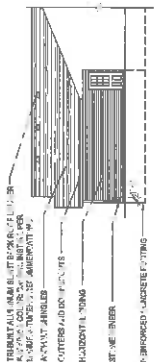
**A4.8**  
8 OF 8

EXTERIOR FINISH MATERIAL SELECTIONS		
ITEM	MATERIAL/NOTE	COLOR
EXPOSURE BOARD	INTL	WHITE
APPLY TO BRICKS	QUERCUS L VENEER LAMINATED	1/8" THICK RED PINE
EXTERIOR TRIM	PREPARED ALUMINUM	WHITE
FRONTAL SING	INTL	1.0002
DOOR TRIM	INTL	WHITE
DOOR CASE	PREPARED	ONE COAT SEMI
INTERIOR DOOR	PAINT	ONE COAT SEMI
INTERIOR TRIM	INTL	WHITE
INTERIOR WALL	INTL	WHITE
INTERIOR CEILING	INTL	WHITE
INTERIOR FLOOR	INTL	WHITE
INTERIOR STAIR	INTL	WHITE
INTERIOR RISER	INTL	WHITE
INTERIOR TREAD	INTL	WHITE
INTERIOR ROOF	INTL	WHITE
INTERIOR FINISH	INTL	WHITE
INTERIOR TRIM	INTL	WHITE
INTERIOR CASE	INTL	WHITE
INTERIOR DOOR	INTL	WHITE
INTERIOR WINDOW	INTL	WHITE
INTERIOR GLASS	INTL	WHITE
INTERIOR METAL	INTL	WHITE
INTERIOR FABRIC	INTL	WHITE
INTERIOR PAINT	INTL	WHITE
INTERIOR WALL	INTL	WHITE

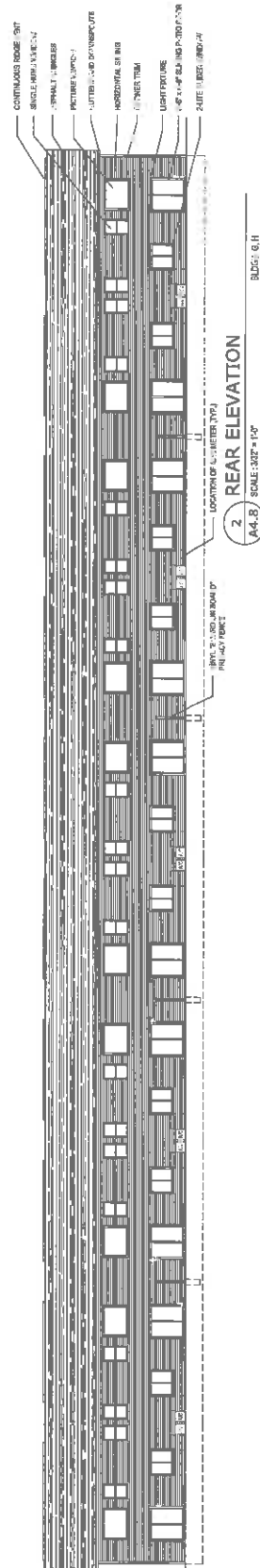


**3 STANDARD SIDE ELEVATION**  
A4.8 / SCALE: 3/32" = 1'-0"  
BUDG: 6.11

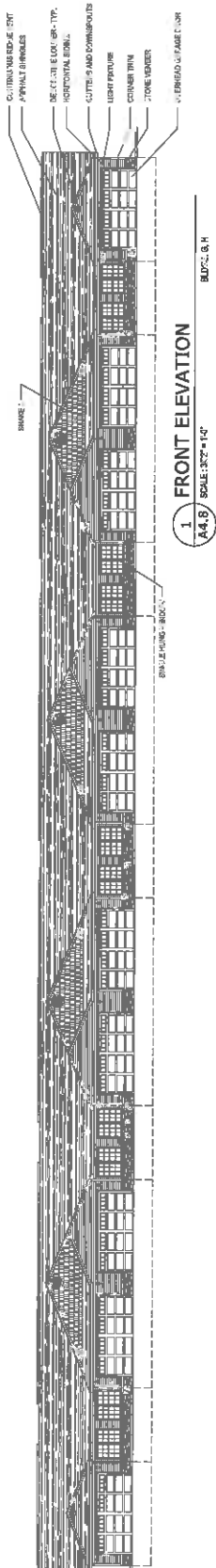
**4 STANDARD SIDE ELEVATION**  
A4.8 / SCALE: 3/32" = 1'-0"  
BUDG: 6.11



**5 PARTIAL SIDE ELEVATION**  
A4.8 / SCALE: 3/32" = 1'-0"  
BUDG: 6.11



**2 REAR ELEVATION**  
A4.8 / SCALE: 3/32" = 1'-0"  
BUDG: 6.11



**1 FRONT ELEVATION**  
A4.8 / SCALE: 3/32" = 1'-0"  
BUDG: 6.11









STAFF REPORT: Case # 17-3401  
REPORT DATE: October 4, 2017  
PREPARED FOR: Cascade Charter Township Board  
MEETING DATE: October 11, 2017  
PREPARED BY: Steve Peterson, Community Development Director

APPLICANT:  
2771 Orange Ave LLC  
102 S Main Street  
Mt Pleasant MI 48858

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STATUS

OF APPLICANT: Owner.

REQUESTED ACTION: Type II Special Use Permit for residential development up to 9 units per acre.

EXISTING ZONING OF SUBJECT PARCEL: B1

GENERAL LOCATION: north side of Orange Ave just east pf Cascade Rd.

PARCEL SIZE: Approximately 2.02\_ Acres

EXISTING LAND USE ON THE PARCEL: vacant

ADJACENT AREA LAND USES:  
N – Commercial  
S – Multifamily Residential  
E – Single Family Residential  
W – Commercial

ZONING ON ADJOINING PARCELS:  
N – PUD 19 – Thornapple Center  
S – PUD 20 – Cascade Christian Church  
E – PUD 19  
W – PUD 19

STAFF COMMENTS:

1. The applicant is requesting a Type II Special Use Permit to construct 18 new apartments. A Type II Special Use Permit requires a public hearing at the Planning Commission but not at the Township Board.
2. The property is zoned B1 and we allow residential densities up to 9 d.u per acre as a SUP.
3. This development is at 9 d.u. per acre.
4. A review of the zoning map shows the property included in PUD 19. However after reviewing the legal description for the PUD we found that it was never part of that development and therefore should be shown as B1.
5. The B1 zone allows residential uses and we have tried to encourage that use in and around the village. We have also developed some design standards for development in that area which they are meeting. Most notably is the inclusion of a sidewalk though the project to connect to the sidewalks on Orange Ave.
6. The development also includes a vehicle connection from Orange Ave through to the commercial property in the Thornapple center. This will allow for multiple points of access to the site as well as assist with emergency vehicle access.
7. Access into the site is through the Gaylord house property. There is an existing recorded easement that allows for the access. I have been informed by the KCRC that they are OK with the access to Orange Ave, they are requiring the new driveway to be named for addressing purposes.
8. This property is zoned residential but is identified as mixed use PUD in the Master Plan. This designation is mainly a recognition of the Watermark mixed use PUD that surrounds this area.
9. An Airport noise disclosure statement will be required to be recorded as we have done with all residential projects in Cascade.
10. The Township fire dept has reviewed and approved the plan.
11. The Township engineer has also reviewed the plan and provided comments. The plan has already been revised to address some of their comments.
12. At the Planning Commission meeting a couple of neighbors were present and expressed

some concern about screening of the new apartments. The developer has revised the plans to include some trees on the neighboring property, which the owner has signed off on. Other concerns were about density and how the site would be managed.

13. Section 17.06 as well as 17.07 of the zoning ordinance requires the Planning Commission to review several factors before making a recommendation to the Township Board. I have listed those items for your consideration followed by my comments for each. I have also followed that with the recommendations from the Cascade Rd Corridor study.

<i>Factors</i>	<i>Comments</i>
Be designed, constructed, operated and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the area in which the use is proposed.	Residential use is a permitted use in the village area. It's being developed between single family, commercial and multi-family residential. I would consider this to be harmonious with the area.
Be adequately served by essential facilities and services such as highways, streets, police and fire protection, drainage, refuse disposal, water and sewer facilities and schools.	This development would be connected to public sewer and water. Providing the through vehicular connection is the best access we could get.
Not create excessive additional requirements at public cost for public facilities and services.	This site would not cause excessive additional requirements at the expense of the public.
Not cause traffic congestion, conflict or movement in greater proportion to that normally prevailing for the use in the particular zoning district.	As a permitted use with the allowed density I would not consider traffic generated from this site to be of greater proportion than normal.
Not involve uses, activities, processes, materials, equipment or conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of noxious or offensive production of noise, smoke, fumes, glare, vibration, odor or traffic.	This is an accepted residential use.

**STAFF RECOMMENDATION**

Staff recommends that this project be approved under the following conditions.

1. Compliance with the comments from the Township Engineer.
2. Recording of an airport recognition statement
3. Naming of the access drive to satisfy the KCRC.

Attachments:            Application  
                                   Site Plan  
                                   Twp Engineer letter





# CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan  
49546-7140

## PLANNING & ZONING APPLICATION

**APPLICANT:** Name: 2771 Orange Street, LLC - Phil Seybert  
 Address: 102 South Main Street  
 City & Zip Code Mt. Pleasant, MI 48858  
 Telephone: (989) 772-3261  
 Email Address: pseybert@psequities.com

**OWNER: \* (If different from Applicant)**  
 Name: Cascade Christian Church  
 Address: 2829 Thornapple River Drive SE  
 City & Zip Code: Grand Rapids, MI 49546  
 Telephone: (616) 949-1360  
 Email Address: \_\_\_\_\_

NATURE OF THE REQUEST: (Please check the appropriate box or boxes)	
<input type="checkbox"/> Administrative Appeal	<input type="checkbox"/> Administrative Site Plan Review
<input type="checkbox"/> Deferred Parking	<input type="checkbox"/> P.U.D. – Rezoning *
<input type="checkbox"/> P.U.D. – Site Condominium *	<input type="checkbox"/> Rezoning
<input type="checkbox"/> Site Plan Review *	<input type="checkbox"/> Sign Variance
<input checked="" type="checkbox"/> Special Use Permit	<input type="checkbox"/> Subdivision Plat Review *
<input type="checkbox"/> Zoning Variance	<input type="checkbox"/> Other: _____ *

**\* Requires an initial submission of 5 copies of the completed site plan**

BRIEFLY DESCRIBE YOUR REQUEST:\*\*

B-1 Special Land Use - 18 Unit Apartment Complex

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(\*\*Use Attachments if Necessary)  
-SEE OTHER SIDE-

LEGAL DESCRIPTION OF PROPERTY\*\*:

See attached.

(\*\*Use Attachments if Necessary)

PERMANENT PARCEL (TAX) NUMBER: 41-19-09-451-053

ADDRESS OF PROPERTY: 2771 Orange Avenue SE, Grand Rapids 49546

PRESENT USE OF THE PROPERTY: Vacant

NAME(S) & ADDRESS(ES) OF ALL OTHER PERSONS, CORPORATIONS, OR FIRMS HAVING A LEGAL OR EQUITABLE INTEREST IN THE PROPERTY:

Name(s)

Address(es)

SIGNATURES

I (we) the undersigned certify that the information contained on this application form and the required documents attached hereto are to the best of my (our) knowledge true and accurate. I (we) also agree to reimburse the Cascade Charter Township for all costs, including consultant costs, to review this request in a timely manner. I (we) understand that these costs may also include administrative reviews which may occur after the Township has taken action on my (our) request.

I (we) the undersigned also acknowledge that the proposed project does not violate any known property restrictions (i.e. plat restrictions, deed restrictions, covenants, etc.)

2771 ORANGE Avenue LLC

Owner - Print or Type Name  
(\*If different from Applicant)

*[Signature]* 7/21-17  
Owner's Signature & Date  
(\*If different from Applicant)

2771 ORANGE Avenue L.L.C.

Applicant - Print or Type Name

*[Signature]* - Member  
Applicant's Signature & Date

PLEASE ATTACH ALL REQUIRED DOCUMENTS NOTED IN THE PROCESS REVIEW SHEET - THANK YOU



September 14, 2017  
Project No. G080322

Mr. Steve Peterson  
Cascade Charter Township  
2865 Thornhills Avenue, SE  
Grand Rapids, MI 49546-7192

Re: 2771 Orange Avenue  
Site Plan Review

Dear Steve:

We have reviewed the site plan for 2771 Orange Avenue, prepared by Nederveld. The current site plan and basis of this review are dated September 6, 2017. The proposed project is an 18-unit multi-family residential development with associated site improvements. The site is located in the Thornapple River watershed, sub-drainage district Middle Thornapple.

## Stormwater and Drainage

### Flood Control

The Cascade Charter Township Storm Water Ordinance (SWO), Section 1.04, states the ordinance shall apply to all development that requires any permit for work which will alter the stormwater drainage characteristics of the development site. The site is located in Stormwater Management Zone A, which requires retention of the 100-year storm event and infiltration to the greatest extent possible. Where soil conditions or other factors do not allow for adequate infiltration, the SWO requires detention of the 25-year storm event with a controlled release and a direct connection for stormwater runoff for the 100-year storm event, or detention of the 100-year storm event. The SWO also requires the first 0.5-inch of stormwater runoff be detained and released over a 24 hour period (Water Quality Control) and the 2-year storm event release rate be limited to 0.05 cfs/acre (Bank Erosion Control).

The proposed stormwater management design is to collect and discharge stormwater runoff to an existing detention basin located just to the southwest of the site. Information researched and provided by the applicant indicates the existing detention basin and surrounding drainage infrastructure was developed in phases as part of the D&W Planned Unit Development (PUD). The existing detention basin currently collects stormwater runoff from the surrounding area, a total tributary area of 7.27 acres as calculated by the applicant. The detention basin outlet pipe connects directly to the storm sewer in Cascade Road. The Township and FTCH are unaware of any issues or problems with the existing detention basin and it appears to drain dry following rain events.

The proposed stormwater management design is to convert the existing detention basin into a 100-year infiltration basin for the surrounding area. The proposed design includes an outlet control structure placed on the existing outlet pipe designed to retain and infiltrate the 100-year storm event runoff from the 7.27 acre drainage area, including the proposed development at 2771 Orange Avenue. The applicant is also proposing to restore the existing detention basin by removing sediment, debris, trees, and brush from the basin. The basin bottom will be excavated and left bare to promote stormwater infiltration.

The applicant provided two hand auger samples and infiltration tests in the bottom of the detention basin to determine the suitability of the existing soils for infiltration. The soils were found to be mostly silty sand over coarse gravel with infiltration rates exceeding 50 inches/hour, suitable for stormwater infiltration.



Further research by the applicant revealed the detention basin outlet pipe has a sag, or low area, in it which could reduce the conveyance capacity of the pipe. The sag occurs at a drainage structure buried 6 feet below existing grade. The proposed project will raise the buried drainage structure and repair the pipe joint.

The applicant provided stormwater calculations demonstrating the proposed infiltration basin has the capacity to retain and infiltrate the 100-year runoff volume from the 7.27 acre drainage area. The proposed project benefits the surrounding area and will reduce stormwater flows to Cascade Road. The proposed design is in accordance with the SWO.

### **Water Quality Control and Bank Erosion Control**

The SWO requires the first 0.5 inch of stormwater runoff be detained and infiltrated where conditions permit, or released over a 24-hour period, and the 2-year storm event release rate be limited to 0.05 cfs/acre. The proposed stormwater management design will infiltrate all stormwater runoff up to the 100-year storm event. The proposed design is in accordance with the SWO.

### **Stormwater Runoff**

The applicant provided stormwater calculations to demonstrate the infiltration basin has the capacity to retain and infiltrate the 100-year storm event runoff for the drainage area. Therefore, the site will not see an increase in rate of stormwater leaving the site.

### **Drainage Plan**

The applicant has submitted drawings, calculations, and additional documentation as required in the SWO Section 2.03, Drainage Plan. Please refer to the included checklist for items and comments on each item. Please note a maintenance agreement is required before construction begins. The agreement should be submitted to the Township for review. The maintenance agreement and plan should include at a minimum sediment and debris removal from the retention basin and landscape maintenance of the basin to maintain the design volume and ensure it operates as it was designed.

### **Utilities**

New public water and sanitary sewer utilities are not proposed for the site. The development will connect to existing water and sanitary sewer mains located adjacent to the site. City of Grand Rapids permits will be required for the water and sanitary sewer connections prior to construction taking place.

### **Soil Erosion and Sedimentation Control**

Soil Erosion and Sedimentation Control (SESC) measures are provided on the plan drawings. The applicant has included silt fence along the limits of disturbance and mulch blanket on steeper slopes. SESC falls under the review and approval of the Kent County Road Commission and a permit is required before construction can begin. The SESC measures indicated on the drawings appear appropriate given the expected work.

Mr. Steve Peterson  
Page 3  
September 14, 2017



## Summary

The proposed stormwater design meets the Township SWO requirements for new developments. The applicant will need to apply for and obtain a number of permits (SESC, water and sanitary sewer from the City) prior to beginning construction. We recommend approval of the site plan from an engineering standpoint.

If you have any questions or require additional information, please contact me at 616.464.3786 or [nrtorrey@ftch.com](mailto:nrtorrey@ftch.com).

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, appearing to read 'N. Torrey', written over a light blue horizontal line.

Nathan R. Torrey, PE

jlk  
Attachment  
By email



**Cascade Charter Township**

Storm Water Ordinance, Ordinance 7 of 2002, as amended by Ordinance No. 2 of 2008, 5/14/2008

*Reviewing Engineer Comments are Italicized*

*OK – Received and Acceptable*

*NA – Not Applicable*

*NR – Not Received, Needs Follow-up, See Comments*

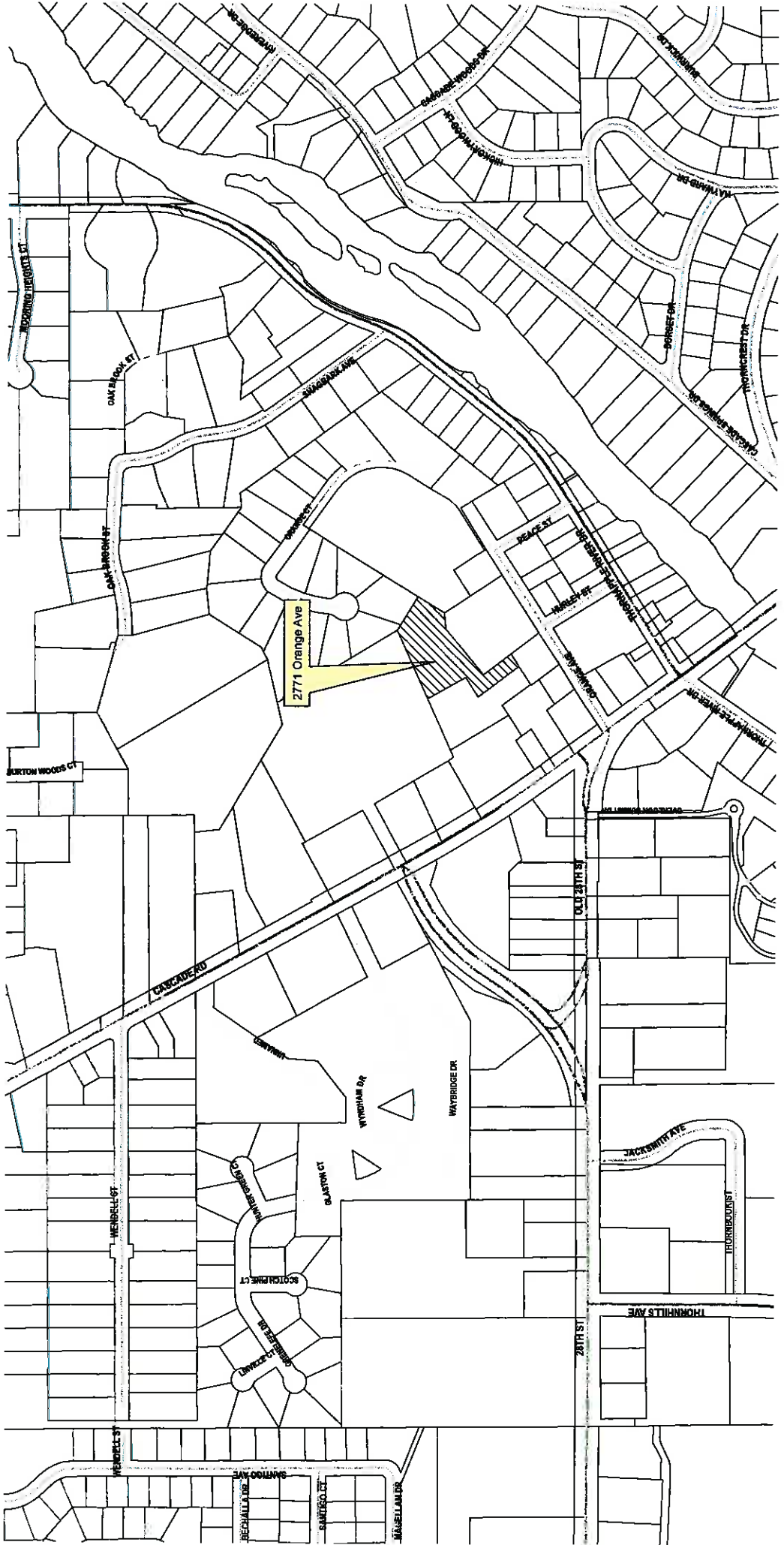
**2771 Orange Avenue**

**Drainage Plan Checklist**

- OK (1) Location of the development site and water bodies that will receive storm water runoff  
*All stormwater runoff from the site is discharged to a retention basin and infiltrated onsite.*
- OK (2) Existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map  
*Existing and proposed contours have been provided.*
- OK (3) Development tributary area to each point of discharge from the development  
*Stormwater calculations and tributary areas were provided by the applicant.*
- OK (4) Calculations for the final peak discharge rates  
*Applicant provided calculations in design of the onsite storm sewer system and retention basin.*
- OK (5) Calculations for any facility or structure size and configuration  
*Stormwater runoff calculations were provided by the applicant.*
- OK (6) Drawing showing all proposed storm water runoff facilities with existing and final grades  
*The applicant provided a utility plan showing all proposed stormwater runoff facilities.*
- OK (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map  
*The drainage map did not indicate any major offsite drainage routes flowing into the site.*
- OK (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan  
*A construction schedule was included on the plans.*
- OK (9) Plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways  
*The SESC measures shown on the plan appear appropriate given the expected work. SESC falls under the review and approval of the KCRC and a permit is needed before construction can begin.*



- OK (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance  
*The applicant provided calculations and design details for construction of the onsite storm sewer system.*
- NR (11) Maintenance agreement, in form and substance acceptable to the Township, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the Township to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense  
*Maintenance agreement was not provided and is required.*
- OK (12) Name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities
- NA (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS)  
*This is a privately owned system and will not be uploaded to REGIS.*
- OK (14) Other information necessary for the Township to verify that the drainage plan complies with the Township's design and performance standards for drains and storm water management systems



2771 Orange Ave



2771 Orange Ave

**LANDSCAPE CALCULATIONS**

DATE: 9/29/17

PROJECT: 2771 ORANGE AVENUE SE

PREPARED FOR: [Client Name]

PREPARED BY: [Designer Name]

SCALE: 1/8" = 1'-0"

PROJECT NO: 1700103

SHEET NO: L-201

SHEET: 1 OF 1

**LANDSCAPE LEGEND / SCHEDULE**

**TREES**

SYMBOL	DESCRIPTION	QUANTITY
[Symbol]	Small Tree	10
[Symbol]	Medium Tree	5
[Symbol]	Large Tree	2

**SHRUBS**

SYMBOL	DESCRIPTION	QUANTITY
[Symbol]	Small Shrub	20
[Symbol]	Medium Shrub	10

**GROUND COVER**

SYMBOL	DESCRIPTION	QUANTITY
[Symbol]	Grass	1000
[Symbol]	Flowering Groundcover	500

**LANDSCAPE NOTES**

- ALL PLANTING SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF ATLANTA PLANTING SPECIFICATIONS.
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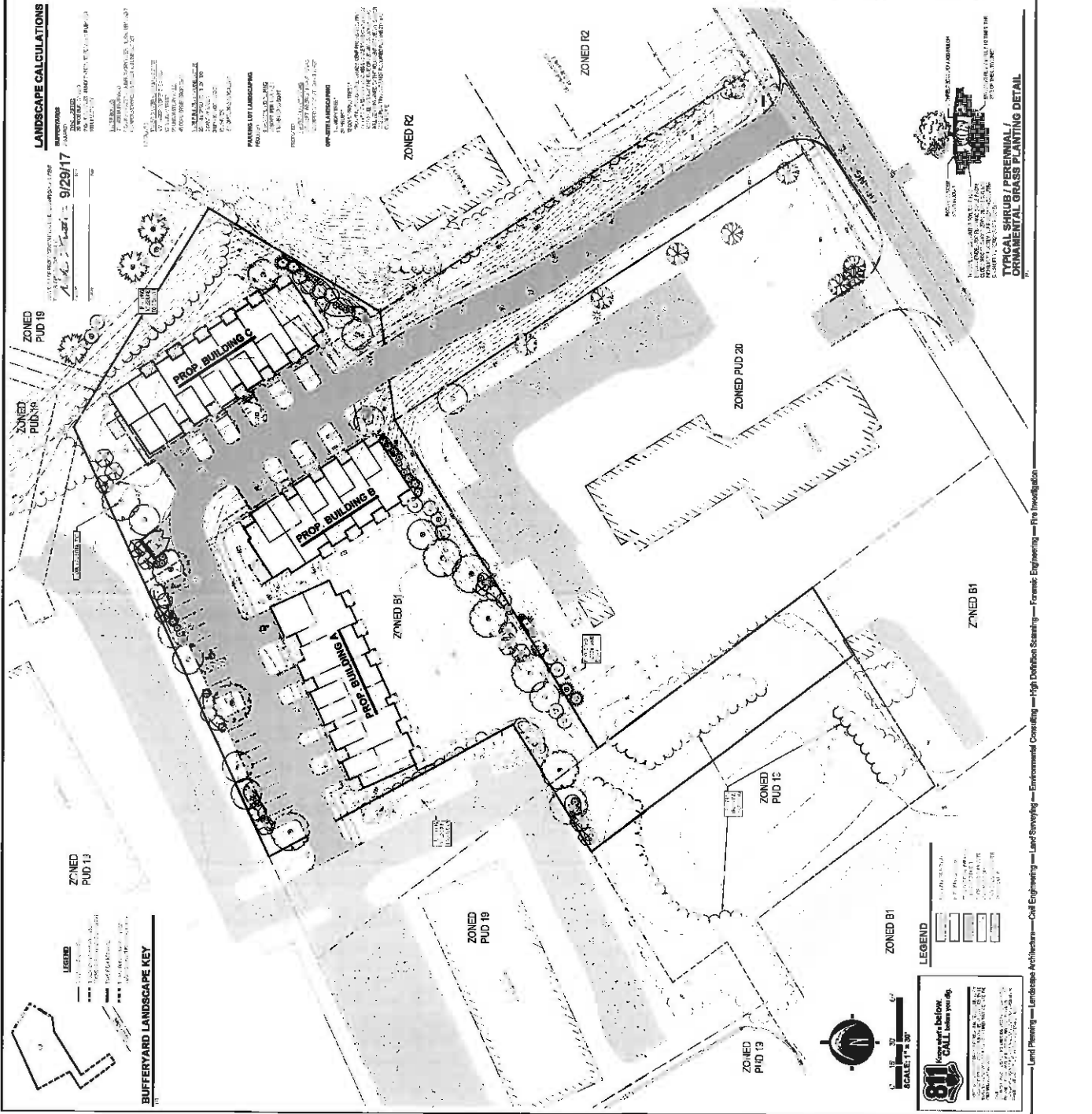
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**LANDSCAPE NOTES**

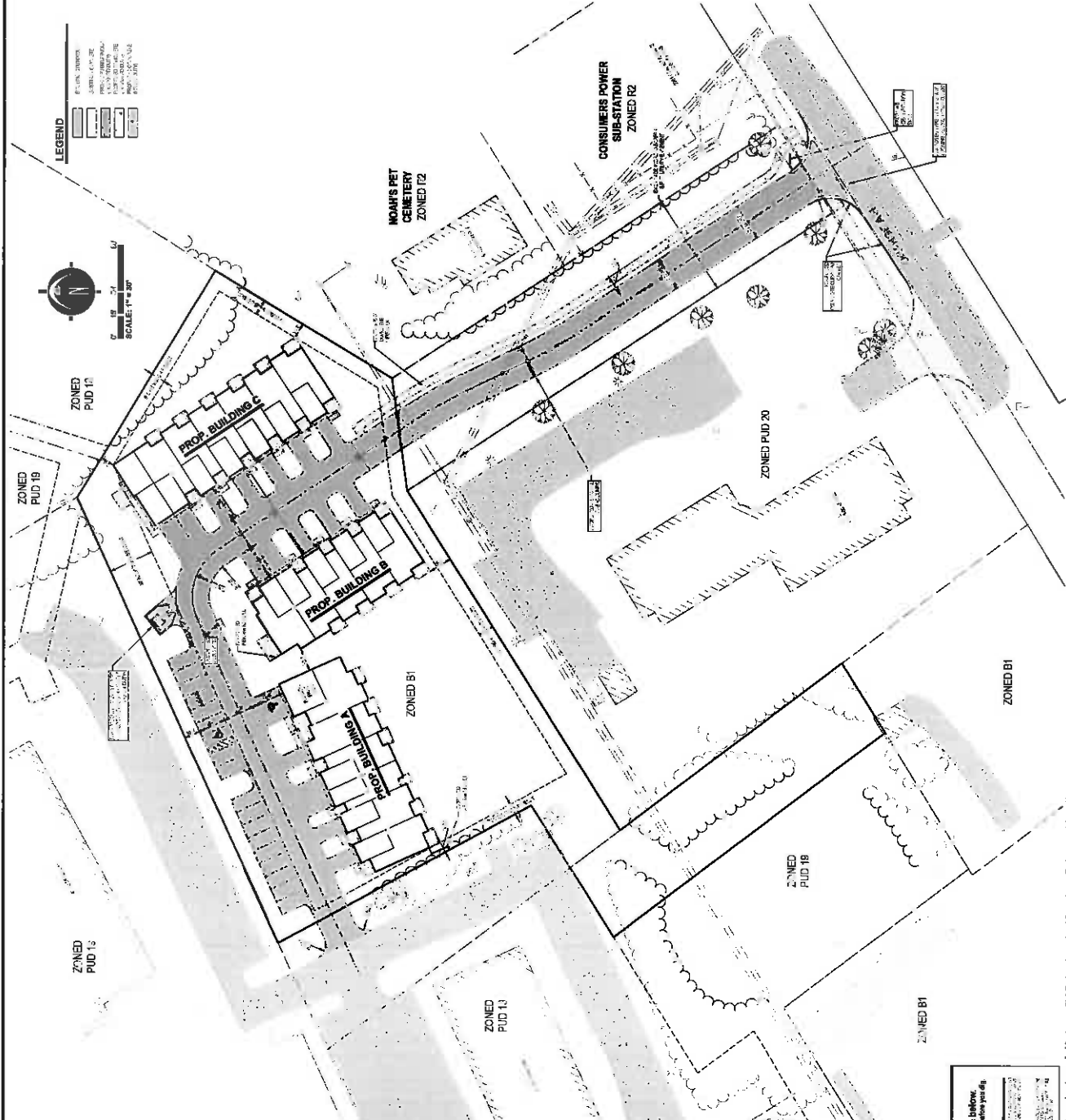
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GENERAL NOTES

1. REFER TO THE SAVED PLAN FOR THE ALTERNATE.
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NEDEVERVELD logo and company information: www.nedeverveld.com, 7000 WEST 22ND AVENUE, GRAND RAPIDS, MI 49508-2503, PHONE: (616) 961-7777, FAX: (616) 961-7778, WEBSITE: www.nedeverveld.com

PREPARED FOR: ZACHRY GROUP, LLC, 440 S. BURNHAM, S.W., SUITE 100, OAKLAND, MI 48860-3903, 508.238.5500, 508.238.5501

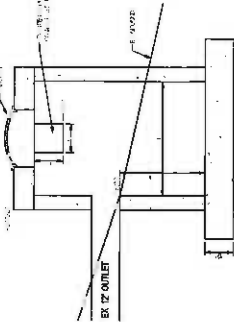
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PROJECT NO: 17400105, SHEET NO: C-205

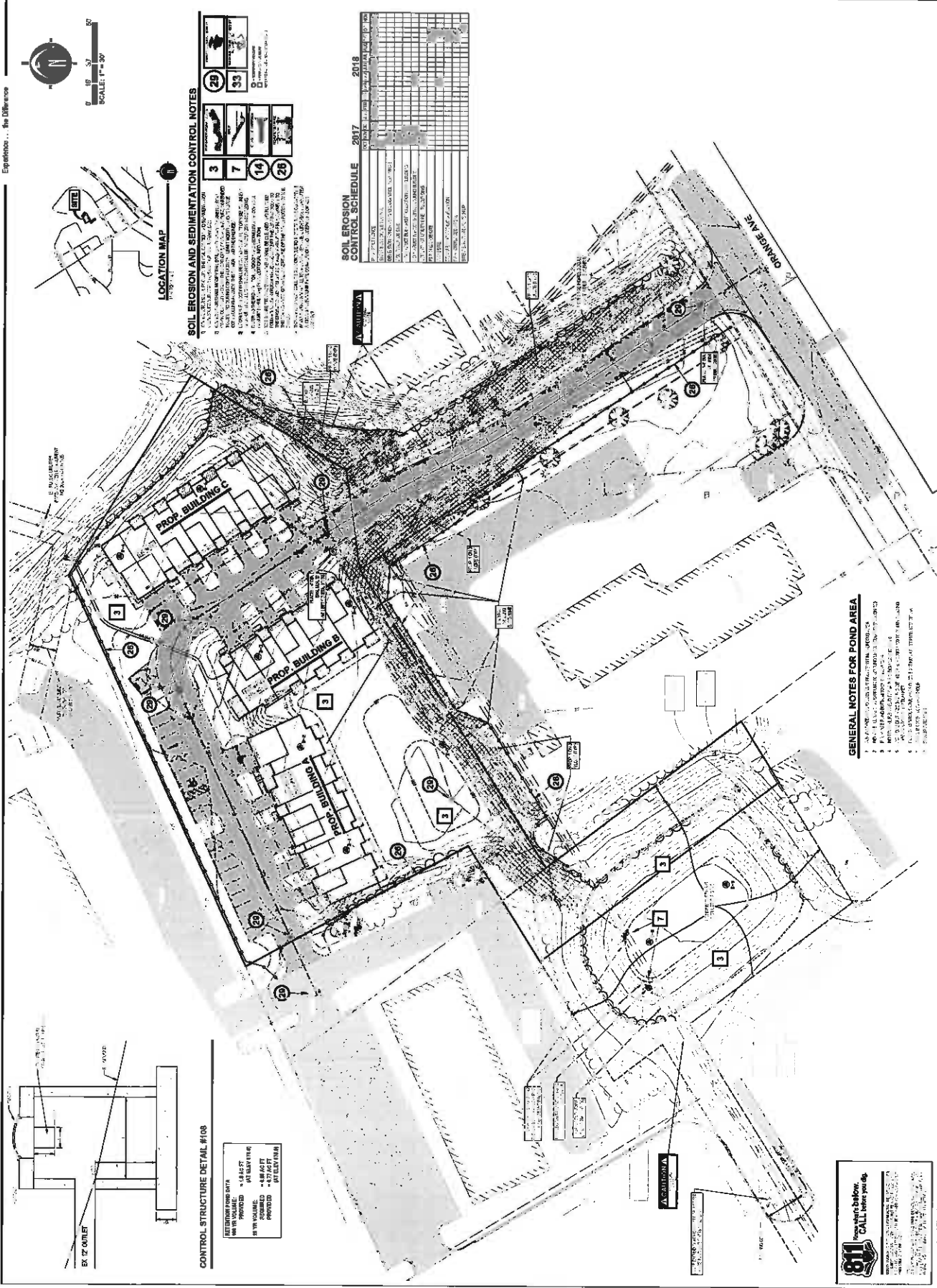
Site Layout Plan for 2771 Orange Avenue SE, GRAND RAPIDS, MI 49508-2503, prepared for ZACHRY GROUP, LLC.

611 logo and contact information: New ideas, better. CALL before you dig. 1-800-525-6111



CONTROL STRUCTURE DETAIL #108

EXISTING FOUNDATION: 4' x 4' FT  
NEW FOUNDATION: 4' x 4' FT  
INLET VALVE: 4' x 4' FT  
OUTLET VALVE: 4' x 4' FT  
PROVIDED: 4' x 4' FT  
PROVIDED: 4' x 4' FT



**SOIL EROSION AND SEDIMENTATION CONTROL NOTES**

1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED PRIOR TO ANY EXCAVATION OR EARTHWORK.
2. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.
3. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED PRIOR TO ANY EXCAVATION OR EARTHWORK.
5. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.
6. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.

**SOIL EROSION CONTROL SCHEDULE**

DATE	DESCRIPTION	STATUS
2017	INSTALL SILT FENCES	COMPLETE
2017	INSTALL SEDIMENT BASINS	COMPLETE
2018	INSTALL EROSION CONTROL MATS	IN PROGRESS
2018	INSTALL SLOPE PROTECTION	IN PROGRESS

- GENERAL NOTES FOR POND AREA**
1. ALL POND AREAS SHALL BE INSTALLED AND MAINTAINED AT ALL TIMES.
  2. ALL POND AREAS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
  3. ALL POND AREAS SHALL BE INSTALLED AND MAINTAINED AT ALL TIMES.
  4. ALL POND AREAS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.

**NEDERVELD**  
www.nederveld.com  
GRAND RAPIDS  
1000 1ST AVE SE  
GRAND RAPIDS, MI 49507  
(269) 953-1111

**PREPARED FOR:**  
S.E.C. & Grading, Inc.  
1500 1ST AVE SE  
GRAND RAPIDS, MI 49507  
(269) 953-1111

**REVISIONS:**  
NO. DESCRIPTION  
1. 11/1/17

**2771 Orange Avenue SE**  
S.E.C. & Grading Plan



**PROJECT NO:**  
17000103  
**SHEET NO:**  
C-300



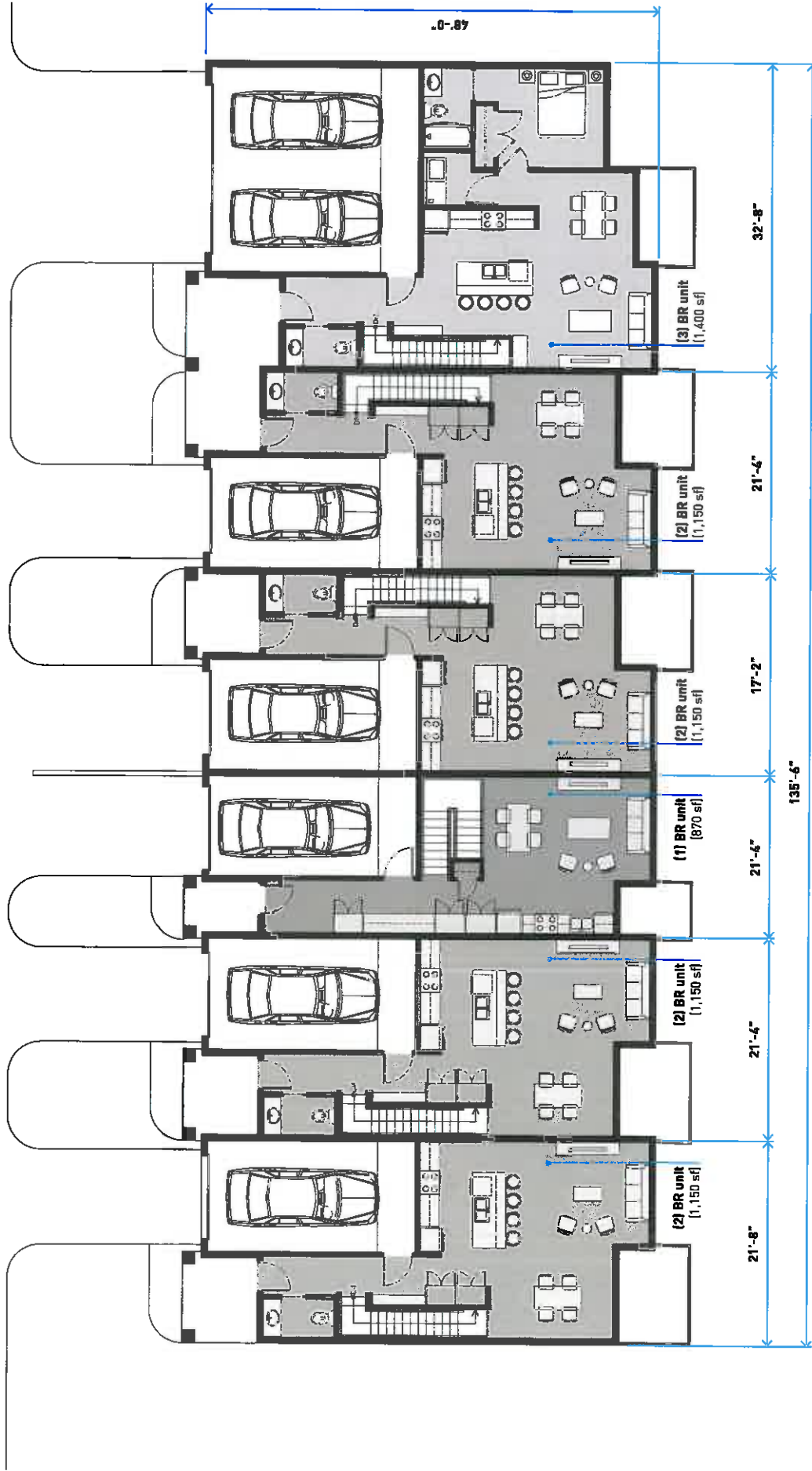
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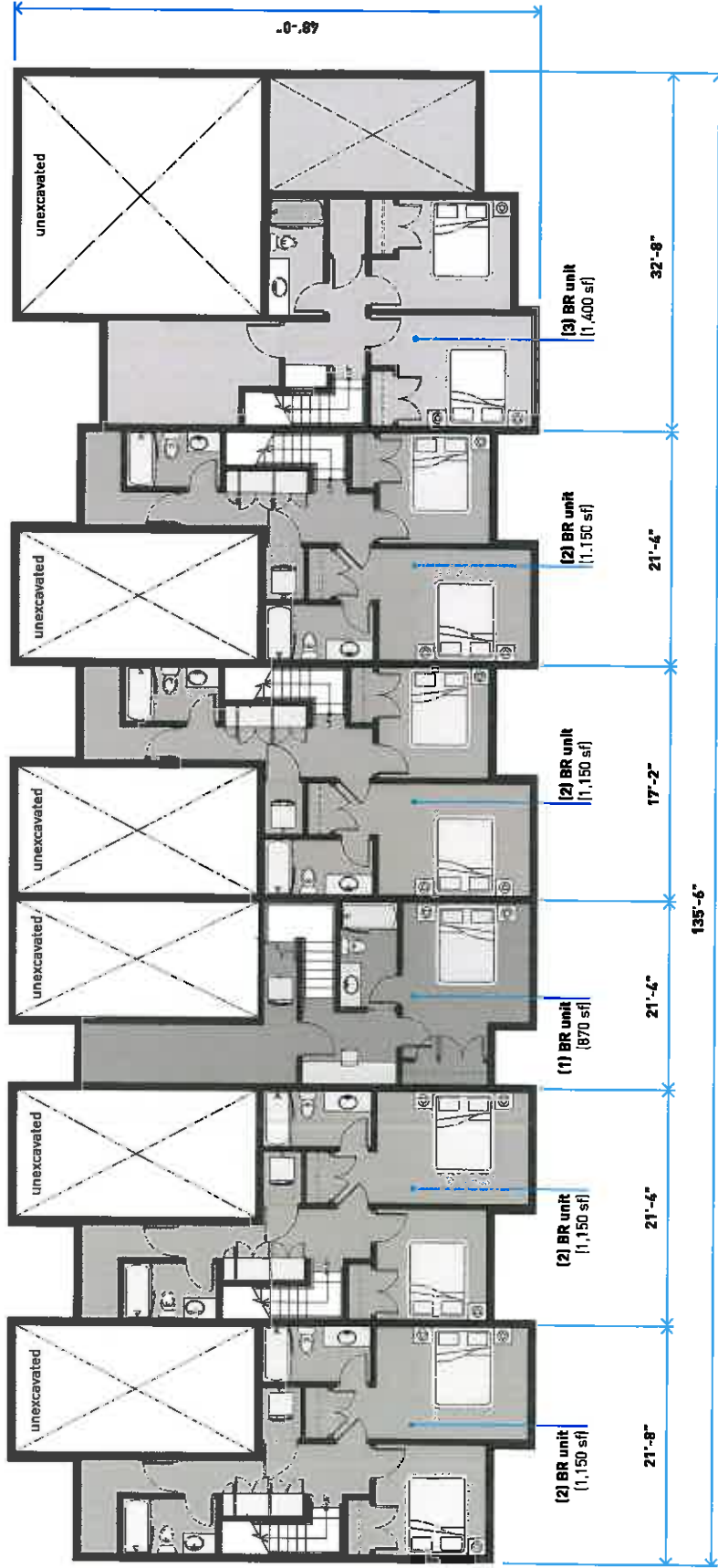
2771 Orange Ave

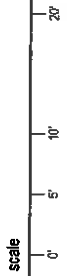
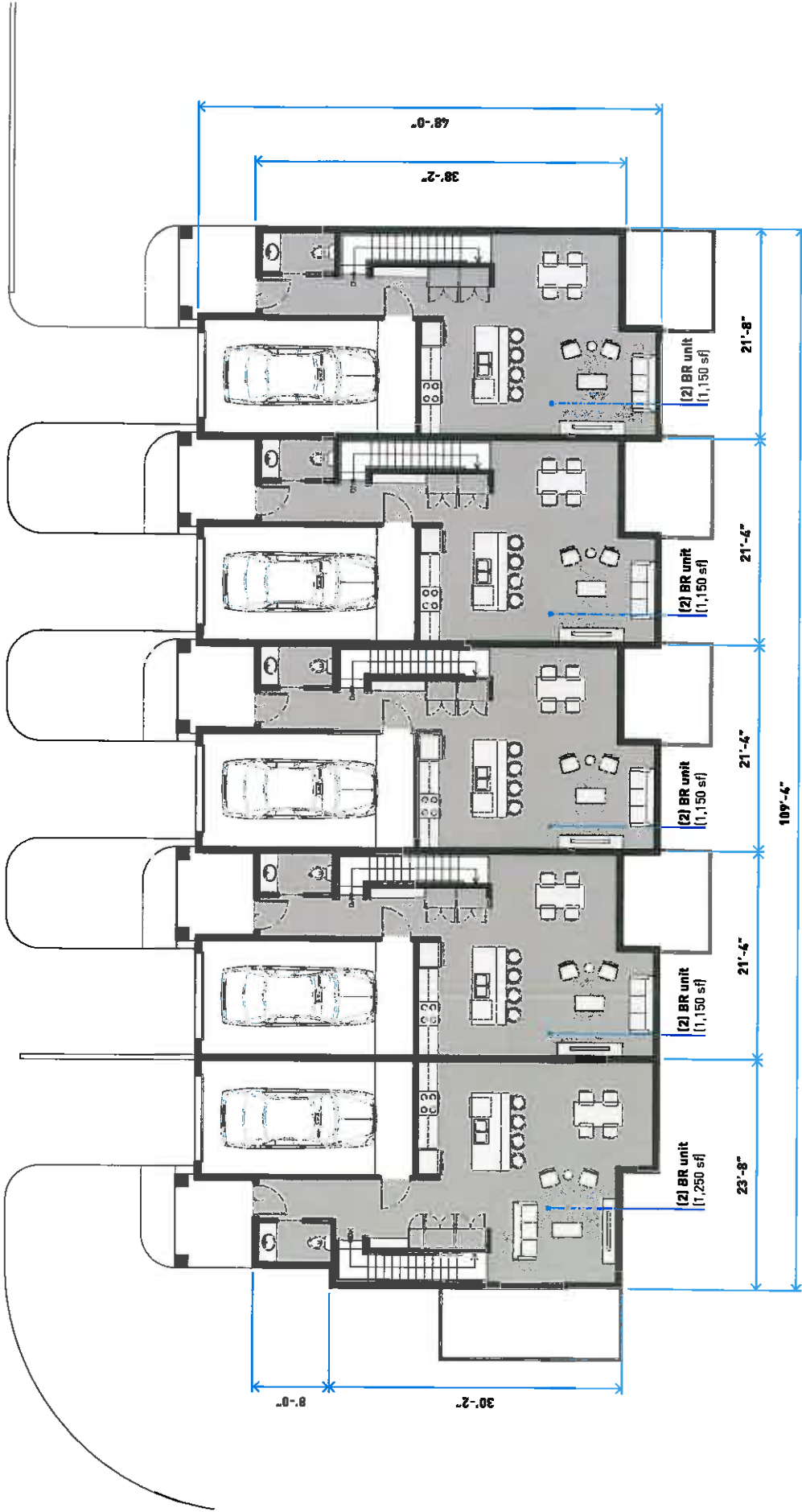


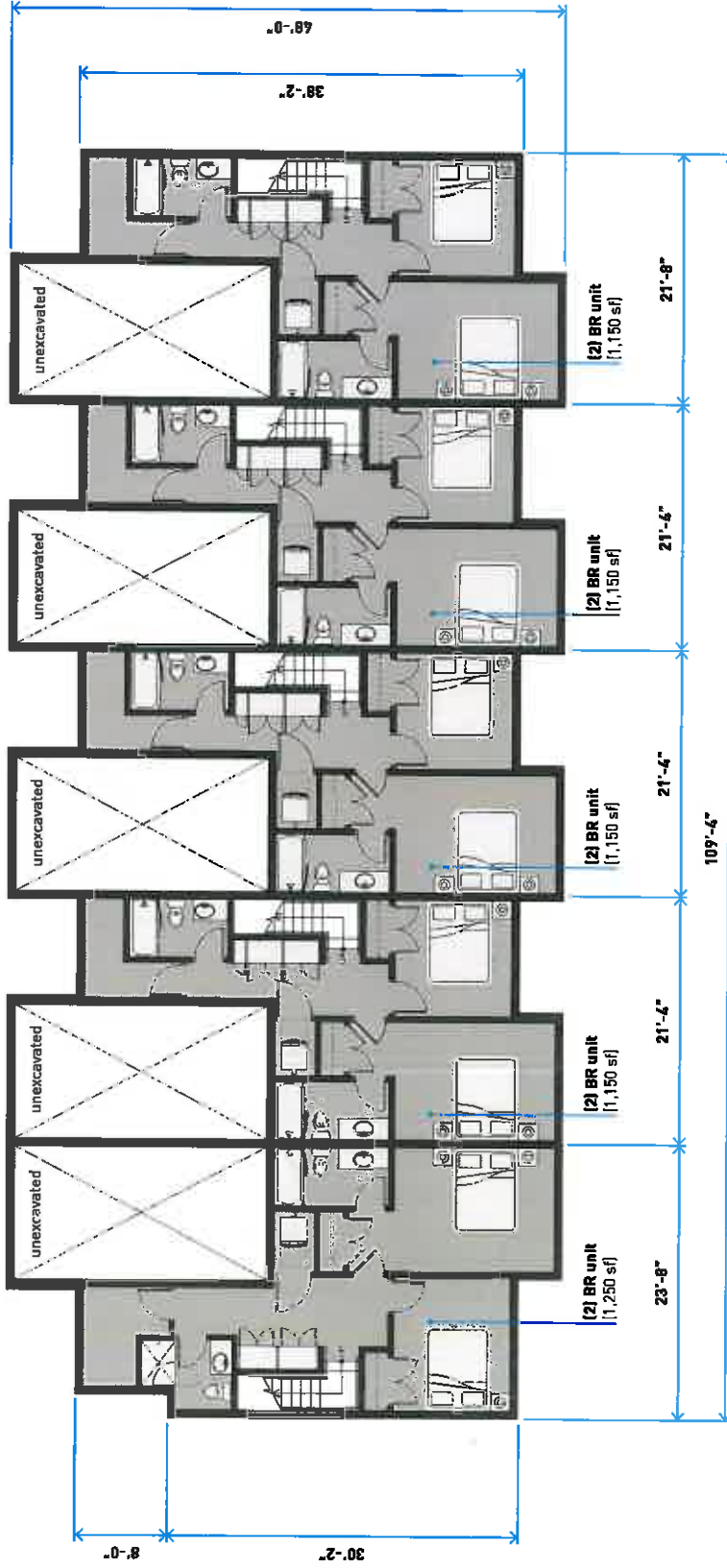
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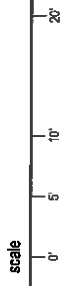
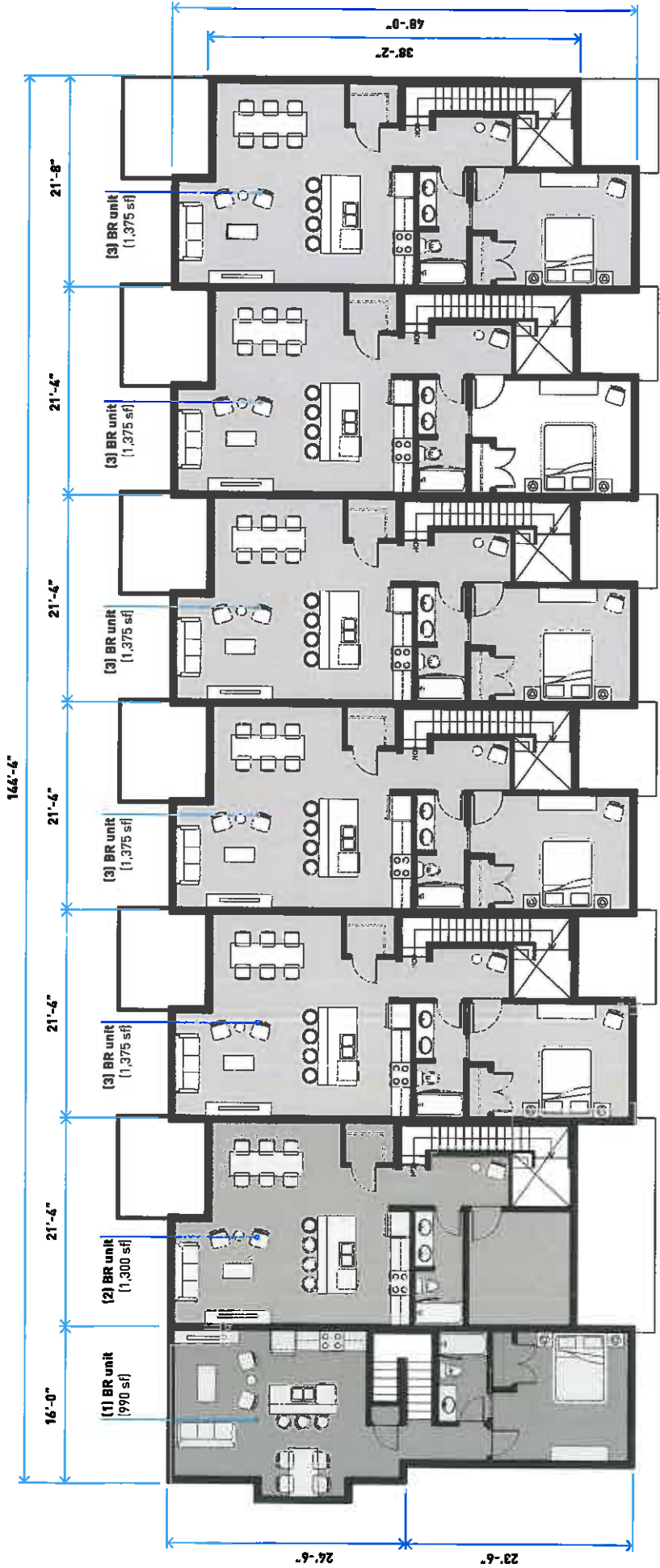


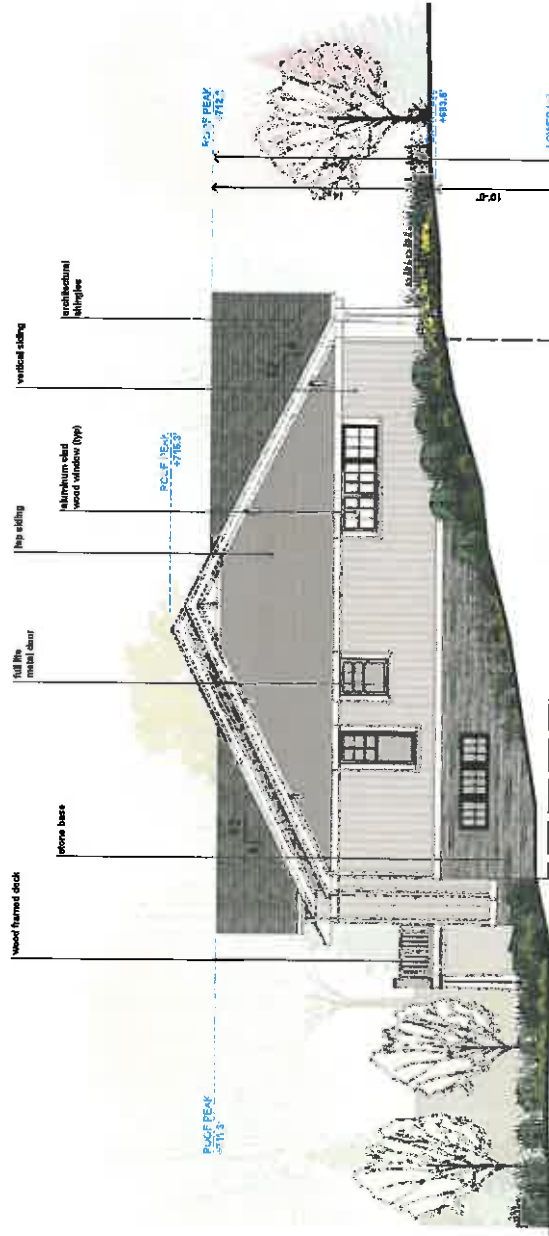
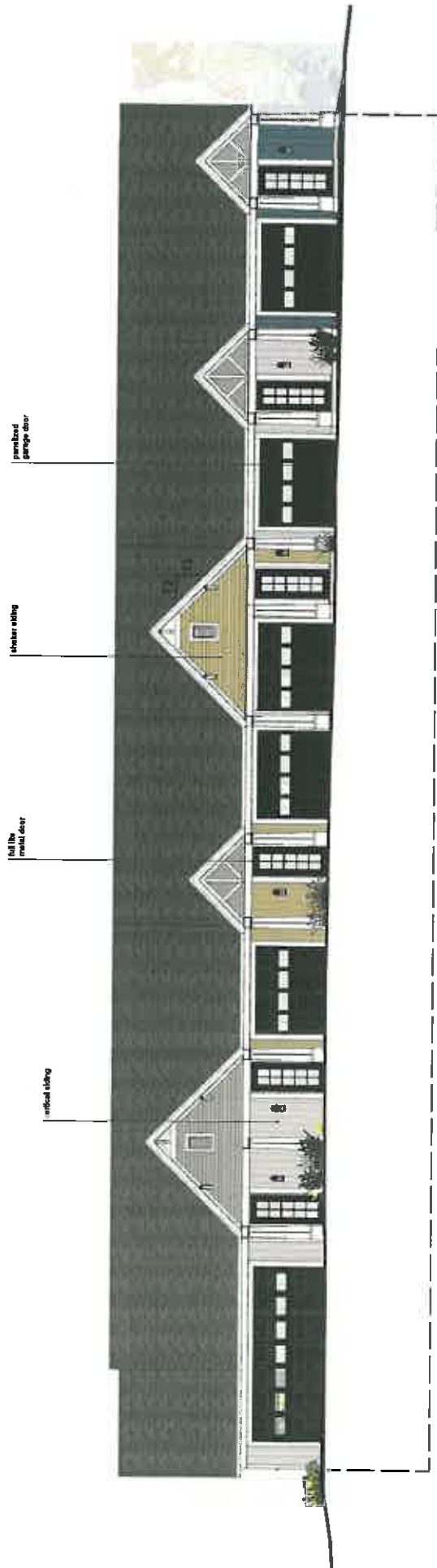


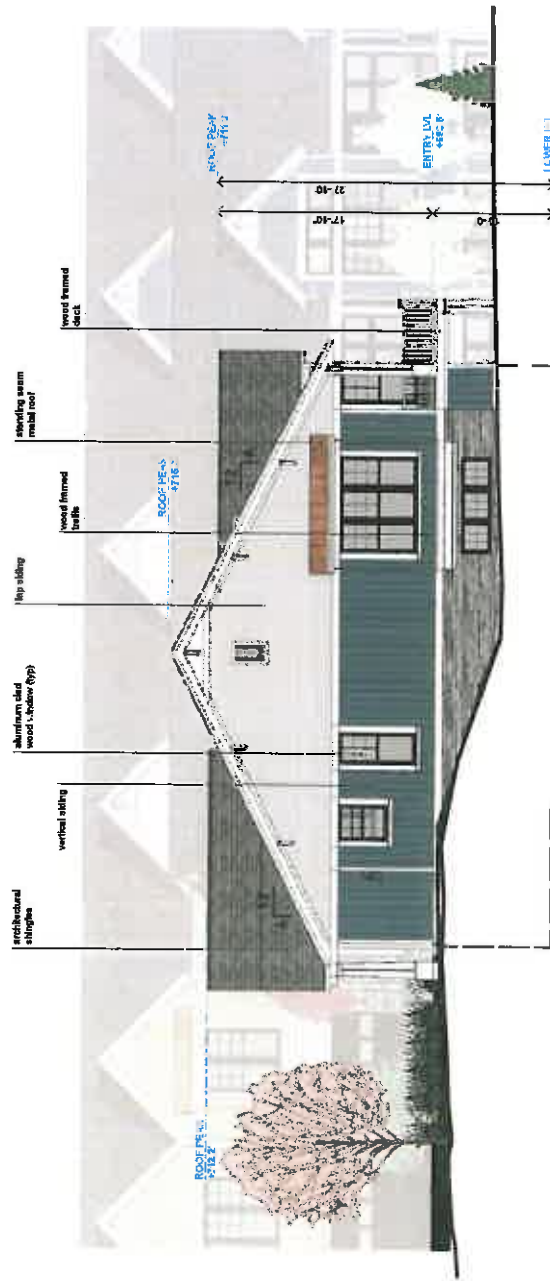
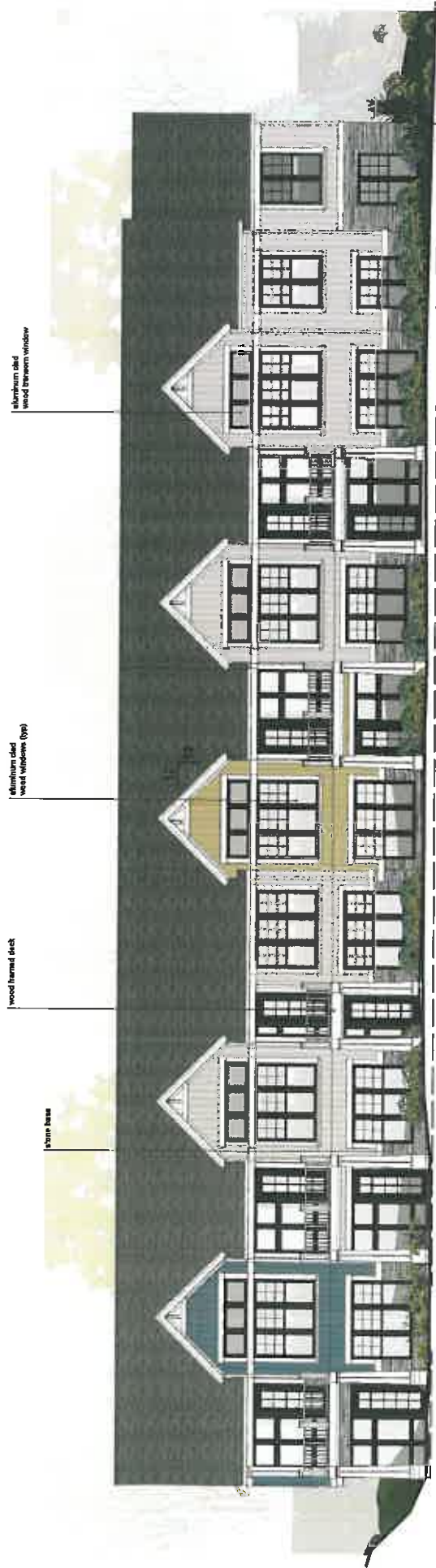


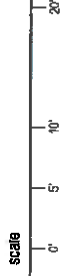
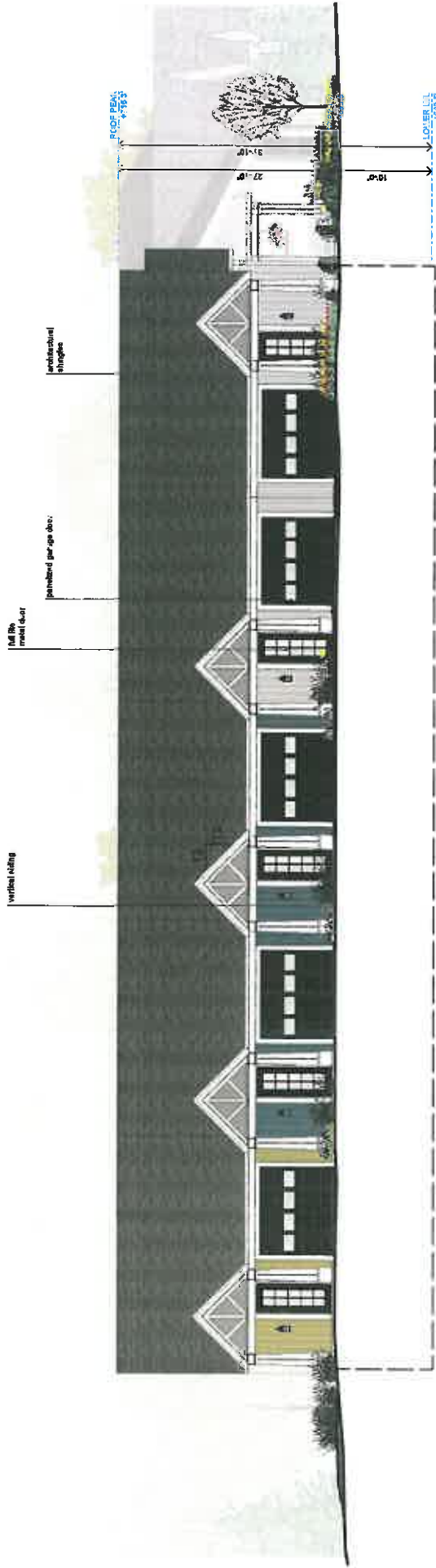




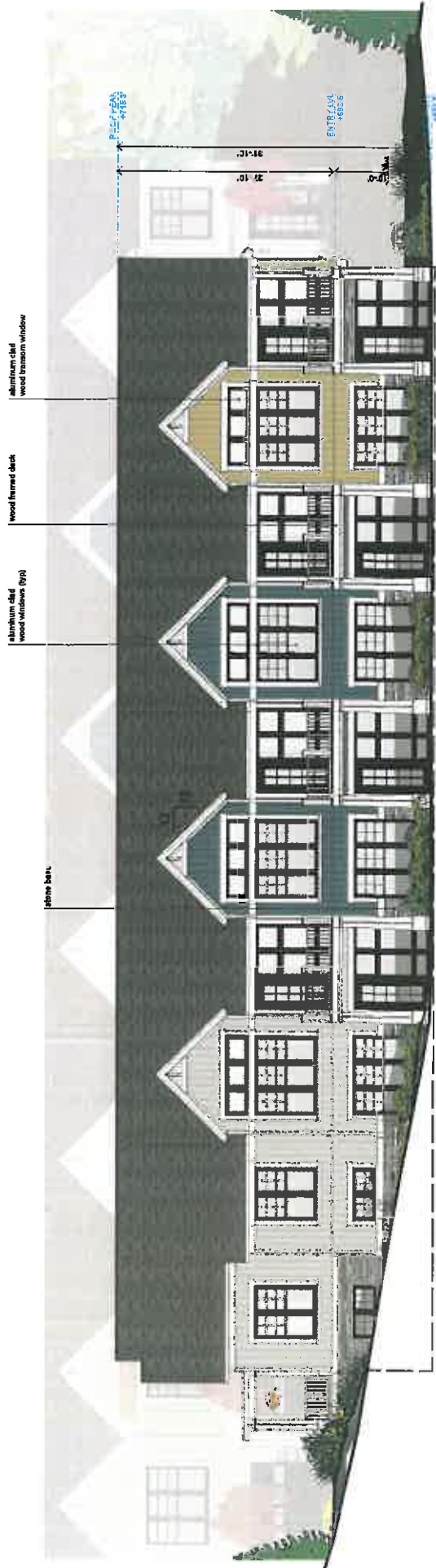






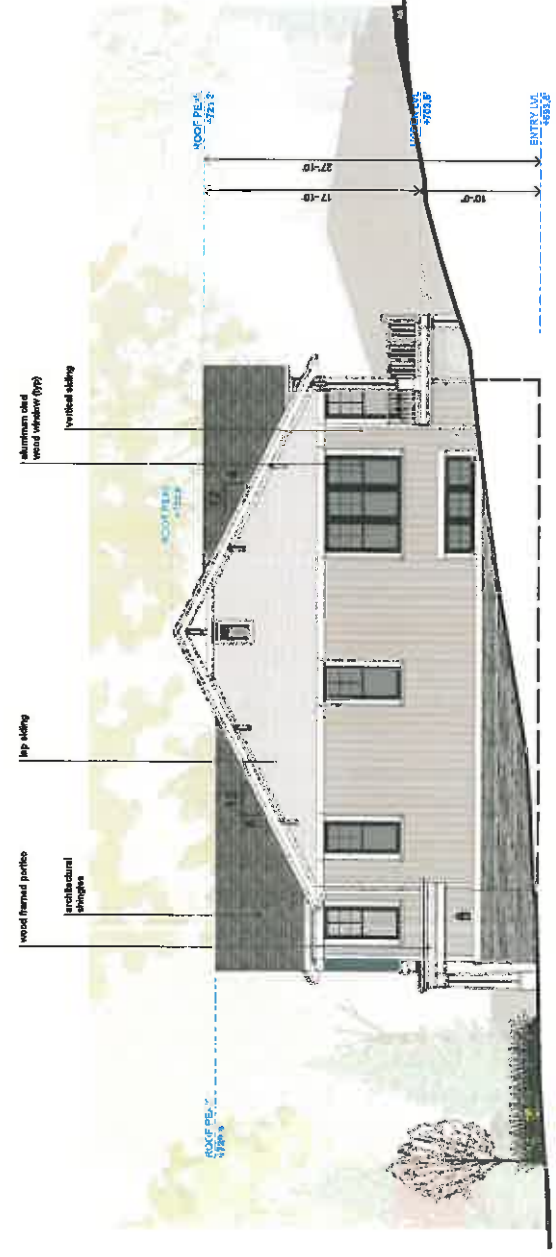


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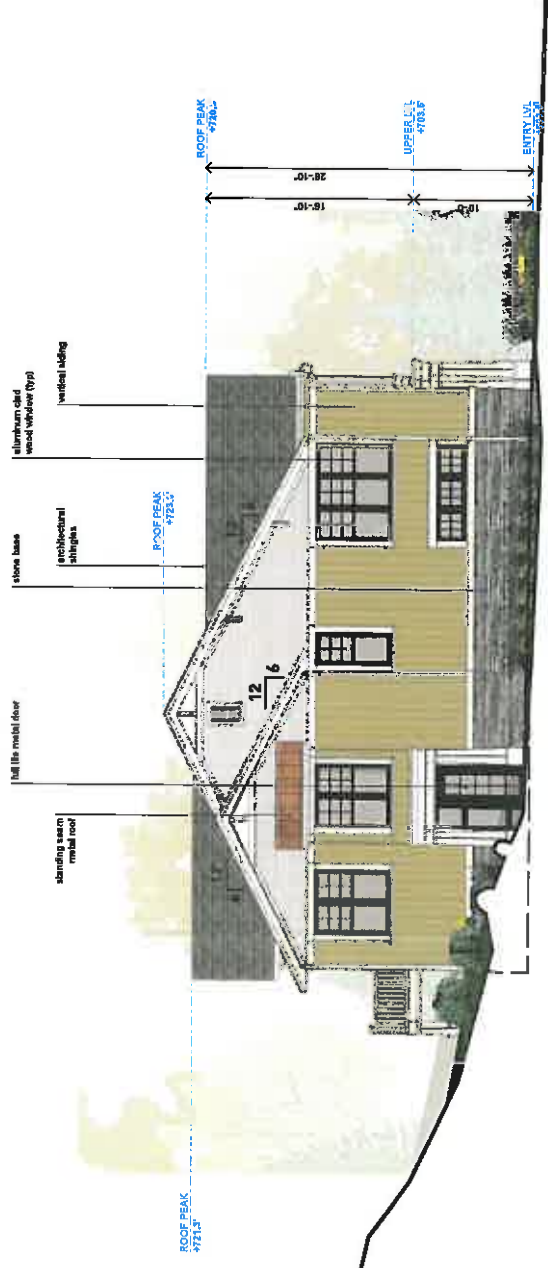
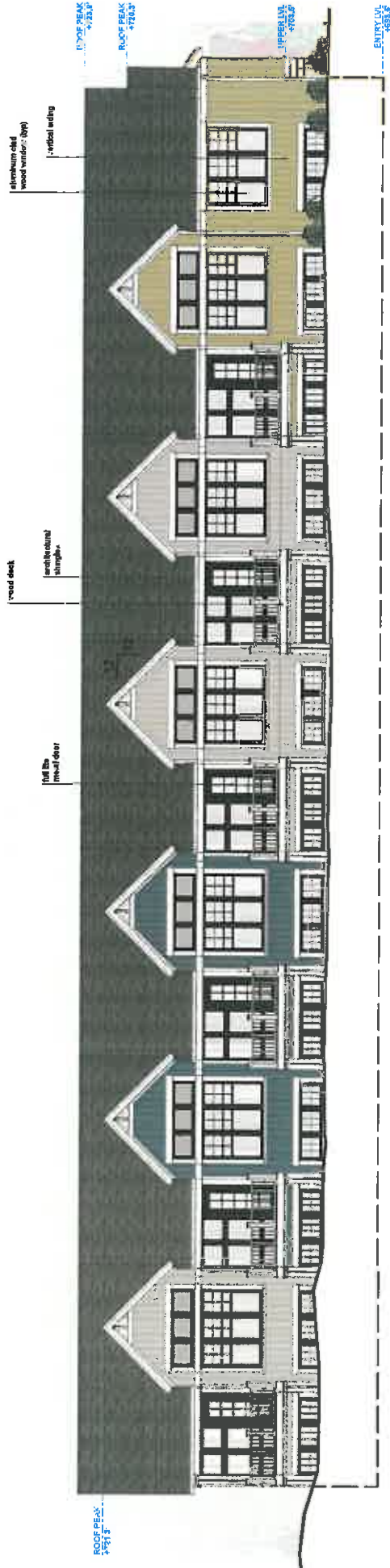


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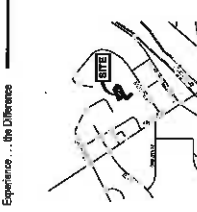
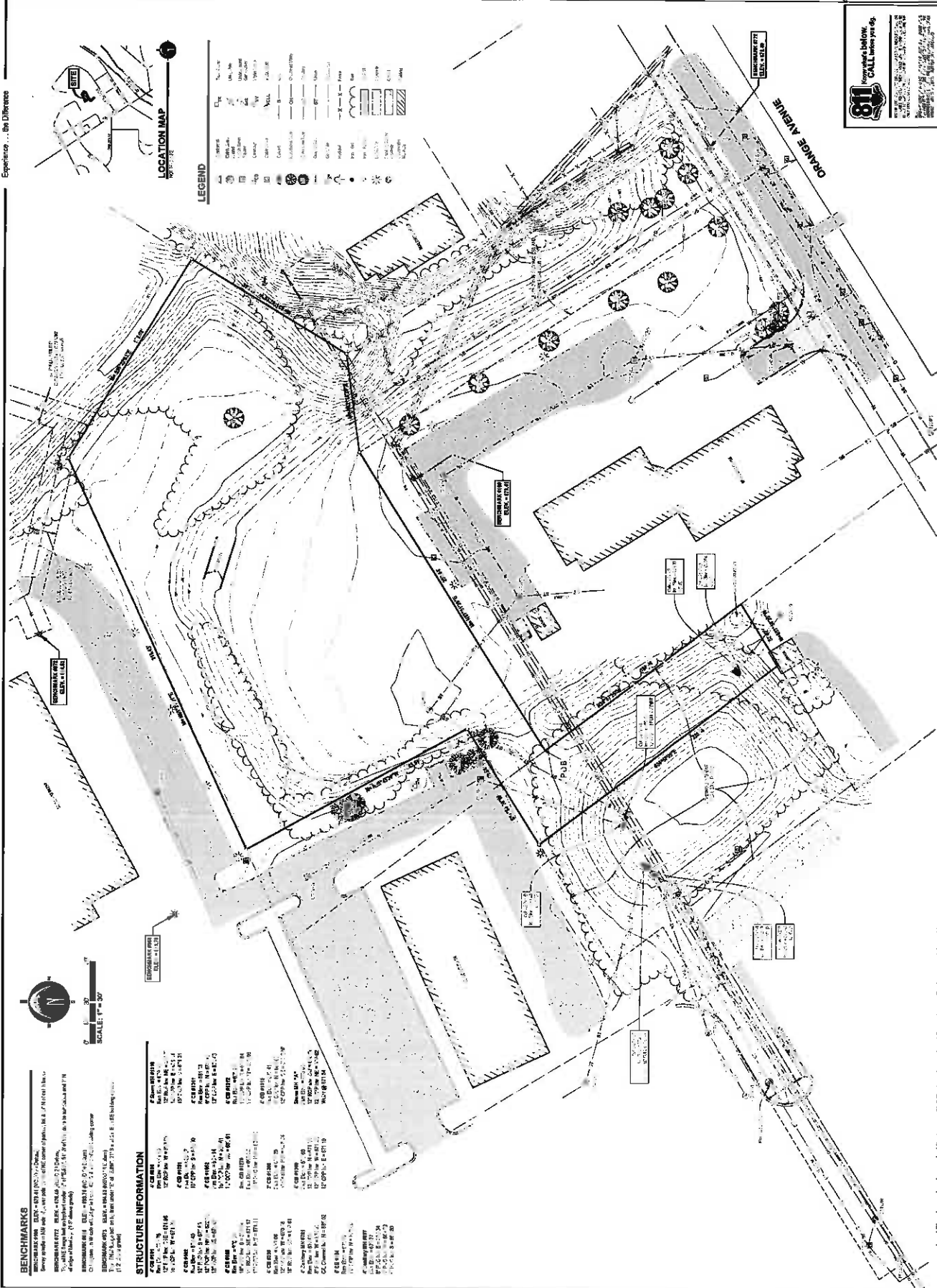












**LEGEND**

Symbol	Notes
Circle with 'E' inside	Existing Spot Elevation
Circle with 'P' inside	Proposed Spot Elevation
Circle with 'A' inside	Assumed Spot Elevation
Circle with 'L' inside	Low Point
Circle with 'H' inside	High Point
Circle with 'T' inside	Top of Road
Circle with 'B' inside	Bottom of Road
Circle with 'C' inside	Center of Road
Circle with 'S' inside	Side of Road
Circle with 'R' inside	Road Right of Way
Circle with 'D' inside	Driveway
Circle with 'W' inside	Walkway
Circle with 'Y' inside	Yard
Circle with 'F' inside	Fence
Circle with 'G' inside	Grass
Circle with 'S' inside	Shrubbery
Circle with 'T' inside	Tree
Circle with 'W' inside	Water
Circle with 'S' inside	Soil
Circle with 'R' inside	Rock
Circle with 'C' inside	Concrete
Circle with 'A' inside	Asphalt
Circle with 'G' inside	Gravel
Circle with 'S' inside	Sand
Circle with 'C' inside	Clay
Circle with 'S' inside	Sludge
Circle with 'W' inside	Water
Circle with 'S' inside	Soil
Circle with 'R' inside	Rock
Circle with 'C' inside	Concrete
Circle with 'A' inside	Asphalt
Circle with 'G' inside	Gravel
Circle with 'S' inside	Sand
Circle with 'C' inside	Clay
Circle with 'S' inside	Sludge
Circle with 'W' inside	Water

**BENCHMARKS**

BENCH MARK #1: 4476852.33 NORTHING, 659651.25 WESTING, 4476852.33 ELEVATION, 10.00' FROM CORNER OF 2771 ORANGE AVENUE SE AND N 27TH STREET.

BENCH MARK #2: 4476852.33 NORTHING, 659651.25 WESTING, 4476852.33 ELEVATION, 10.00' FROM CORNER OF 2771 ORANGE AVENUE SE AND N 28TH STREET.

BENCH MARK #3: 4476852.33 NORTHING, 659651.25 WESTING, 4476852.33 ELEVATION, 10.00' FROM CORNER OF 2771 ORANGE AVENUE SE AND N 29TH STREET.

BENCH MARK #4: 4476852.33 NORTHING, 659651.25 WESTING, 4476852.33 ELEVATION, 10.00' FROM CORNER OF 2771 ORANGE AVENUE SE AND N 30TH STREET.

BENCH MARK #5: 4476852.33 NORTHING, 659651.25 WESTING, 4476852.33 ELEVATION, 10.00' FROM CORNER OF 2771 ORANGE AVENUE SE AND N 31ST STREET.

**STRUCTURE INFORMATION**

Structure No.	Structure Name	Area (sq. ft.)	Volume (cu. ft.)	Notes
1	Building A	12,500	1,250,000	Existing Structure
2	Building B	15,000	1,500,000	Existing Structure
3	Building C	18,000	1,800,000	Existing Structure
4	Building D	20,000	2,000,000	Existing Structure
5	Building E	25,000	2,500,000	Existing Structure
6	Building F	30,000	3,000,000	Existing Structure
7	Building G	35,000	3,500,000	Existing Structure
8	Building H	40,000	4,000,000	Existing Structure
9	Building I	45,000	4,500,000	Existing Structure
10	Building J	50,000	5,000,000	Existing Structure

Experience... the Difference

**PREPARED FOR:**  
Pines De-Stroop Company  
1325 Broadway Dr., SE  
Grand Rapids, MI 49508

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	10/20/11	ISSUED FOR PERMITS
2	11/15/11	REVISIONS PER PERMITS
3	12/15/11	REVISIONS PER PERMITS
4	01/15/12	REVISIONS PER PERMITS
5	02/15/12	REVISIONS PER PERMITS
6	03/15/12	REVISIONS PER PERMITS
7	04/15/12	REVISIONS PER PERMITS
8	05/15/12	REVISIONS PER PERMITS
9	06/15/12	REVISIONS PER PERMITS
10	07/15/12	REVISIONS PER PERMITS
11	08/15/12	REVISIONS PER PERMITS
12	09/15/12	REVISIONS PER PERMITS
13	10/15/12	REVISIONS PER PERMITS
14	11/15/12	REVISIONS PER PERMITS
15	12/15/12	REVISIONS PER PERMITS
16	01/15/13	REVISIONS PER PERMITS
17	02/15/13	REVISIONS PER PERMITS
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20	05/15/13	REVISIONS PER PERMITS
21	06/15/13	REVISIONS PER PERMITS
22	07/15/13	REVISIONS PER PERMITS
23	08/15/13	REVISIONS PER PERMITS
24	09/15/13	REVISIONS PER PERMITS
25	10/15/13	REVISIONS PER PERMITS
26	11/15/13	REVISIONS PER PERMITS
27	12/15/13	REVISIONS PER PERMITS
28	01/15/14	REVISIONS PER PERMITS
29	02/15/14	REVISIONS PER PERMITS
30	03/15/14	REVISIONS PER PERMITS

**2771 Orange Avenue SE  
Demolition Plan**



**PROJECT NO:** 17400183  
**SHEET NO:** C-203

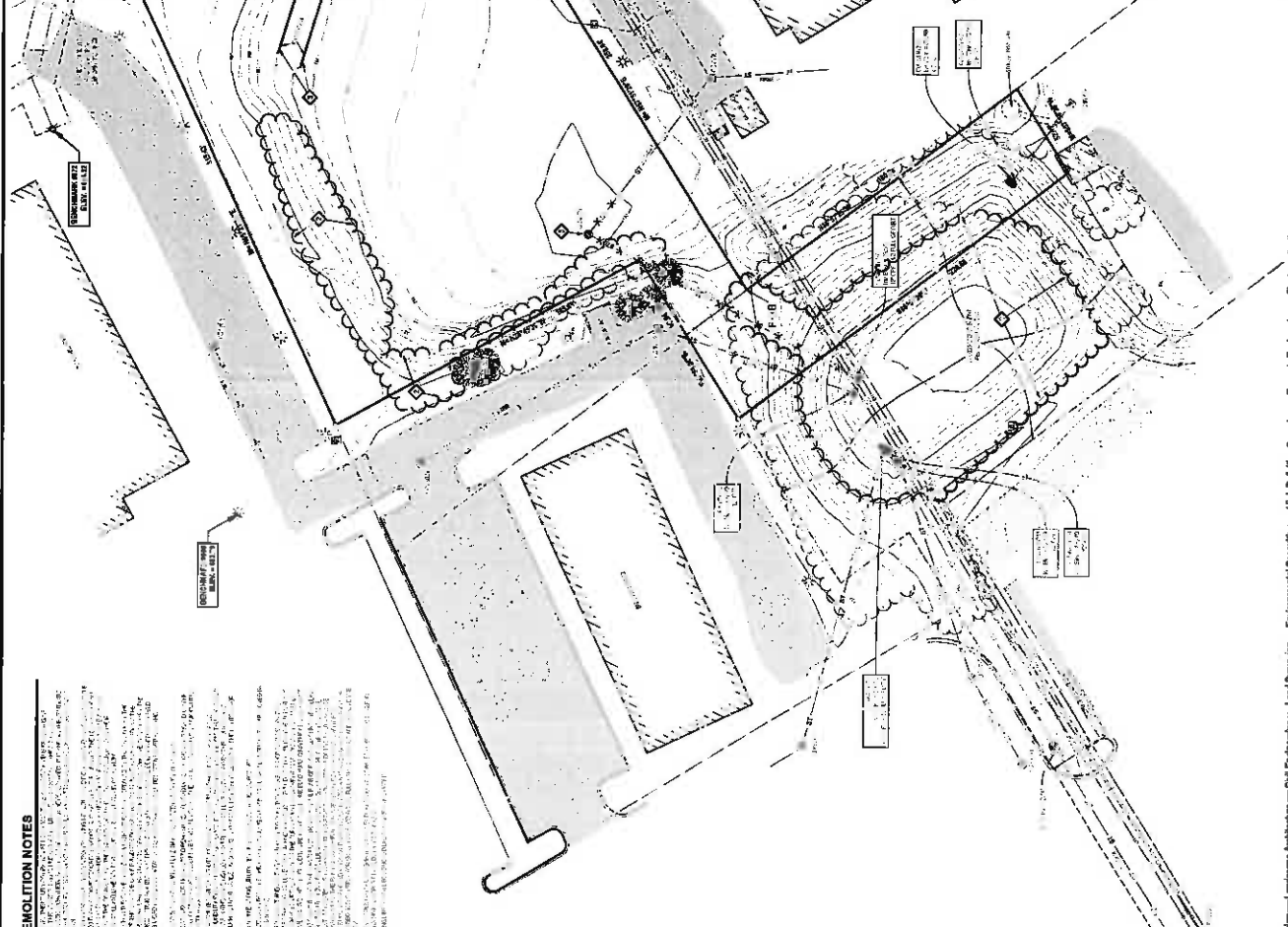
**LOCATION MAP**

**LEGEND**

- EXISTING UTILITIES
- EXISTING CONCRETE
- EXISTING ASPHALT
- EXISTING GRAVEL
- EXISTING EROSION CONTROL
- EXISTING SITE ELEVATION

**REMOVAL / DEMOLITION NOTES**

1. DEMOLITION OF EXISTING BUILDING.
2. DEMOLITION OF EXISTING ROOF.
3. DEMOLITION OF EXISTING FLOOR.
4. DEMOLITION OF EXISTING WALLS.
5. DEMOLITION OF EXISTING FOUNDATION.
6. DEMOLITION OF EXISTING DRIVEWAYS.
7. DEMOLITION OF EXISTING PATIOS.
8. DEMOLITION OF EXISTING TERRACES.
9. DEMOLITION OF EXISTING DECKS.
10. DEMOLITION OF EXISTING STAIRS.
11. DEMOLITION OF EXISTING PORCHES.
12. DEMOLITION OF EXISTING RAMPWAYS.
13. DEMOLITION OF EXISTING ELEVATORS.
14. DEMOLITION OF EXISTING ESCALATORS.
15. DEMOLITION OF EXISTING MECHANICAL ROOMS.
16. DEMOLITION OF EXISTING ELECTRICAL ROOMS.
17. DEMOLITION OF EXISTING PLUMBING ROOMS.
18. DEMOLITION OF EXISTING HVAC ROOMS.
19. DEMOLITION OF EXISTING STORAGE ROOMS.
20. DEMOLITION OF EXISTING OFFICES.
21. DEMOLITION OF EXISTING RESTROOMS.
22. DEMOLITION OF EXISTING KITCHENS.
23. DEMOLITION OF EXISTING BREAK ROOMS.
24. DEMOLITION OF EXISTING CONFERENCE ROOMS.
25. DEMOLITION OF EXISTING TRADING FLOORS.
26. DEMOLITION OF EXISTING LOBBIES.
27. DEMOLITION OF EXISTING RECEPTION AREAS.
28. DEMOLITION OF EXISTING CORRIDORS.
29. DEMOLITION OF EXISTING STAIRWELLS.
30. DEMOLITION OF EXISTING ELEVATOR SHAFTS.



**REMOVAL / DEMOLITION NOTES**

1. DEMOLITION OF EXISTING BUILDING.

2. DEMOLITION OF EXISTING ROOF.

3. DEMOLITION OF EXISTING FLOOR.

4. DEMOLITION OF EXISTING WALLS.

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6. DEMOLITION OF EXISTING DRIVEWAYS.

7. DEMOLITION OF EXISTING PATIOS.

8. DEMOLITION OF EXISTING TERRACES.

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10. DEMOLITION OF EXISTING STAIRS.

11. DEMOLITION OF EXISTING PORCHES.

12. DEMOLITION OF EXISTING RAMPWAYS.

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15. DEMOLITION OF EXISTING MECHANICAL ROOMS.

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17. DEMOLITION OF EXISTING PLUMBING ROOMS.

18. DEMOLITION OF EXISTING HVAC ROOMS.

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20. DEMOLITION OF EXISTING OFFICES.

21. DEMOLITION OF EXISTING RESTROOMS.

22. DEMOLITION OF EXISTING KITCHENS.

23. DEMOLITION OF EXISTING BREAK ROOMS.

24. DEMOLITION OF EXISTING CONFERENCE ROOMS.

25. DEMOLITION OF EXISTING TRADING FLOORS.

26. DEMOLITION OF EXISTING LOBBIES.

27. DEMOLITION OF EXISTING RECEPTION AREAS.

28. DEMOLITION OF EXISTING CORRIDORS.

29. DEMOLITION OF EXISTING STAIRWELLS.

30. DEMOLITION OF EXISTING ELEVATOR SHAFTS.

## STAFF REPORT

TO: Cascade Charter Township Board  
FROM: Steve Peterson, Planning Director  
REPORT DATE: October 4, 2017  
MEETING DATE: October 11, 2017  
CASE: #16-3341/ Oak Harbor Preserve

### GENERAL INFORMATION

- A. Applicant: Koetje Builders and Developers  
547 Baldwin  
Jenison MI 49428  
Telephone: 457-3450  
Fax: 457-7566
- B. Status of Applicant: Owner
- C. General Location: The property is located on the north side of 48<sup>th</sup> St between Little Harbor and Buttrick Ave.
- D. Requested Action: Rezone approximately 40 Acres to PUD to allow for 31 Site Condominium units.
- E. Existing Zoning on Subject Parcels: R1, Residential
- F. Zoning on Adjoining Parcels: R1, Residential
- G. Parcel Size: Approximately 40 acres
- H. Existing Land Use on Subject Parcel: Vacant
- I. Adjacent Area Land Uses:
- |       |   |             |
|-------|---|-------------|
| North | - | I-96        |
| East  | - | Residential |
| South | - | Residential |
| West  | - | Residential |

## STAFF ANALYSIS

- A. The applicant is requesting Final Approval in order to rezone approximately 40 acres for a Site Condominium Planned Unit Development called Oak Harbor Preserve. This rezoning request is for 31 single-family site condo units.
- B. The applicant introduced this project to the Planning Commission in November of 2016. At that meeting we gave the applicant the following items to complete before the Planning Commission public hearing could be scheduled.
  - 1. Review and approval by KCRC for street names and drive locations.
  - 2. Provide some analysis/evaluation of the impact on neighboring wells and possible protected plant species on the property.
  - 3. Plans indicating the private roads meet our design standards.
  - 4. Approval from the Township Engineer.
  - 5. Provide a detailed plan that is acceptable to the KCHD to address the concerns from the August 31, 2016 review.
  - 6. Stake the rear property line behind the homes on Little Harbor Dr.
- C. The property is zoned R1, single-family, and is Master Planned the same.
- D. The applicant has drawn a plan showing how the property could be developed with 31 lots using 50% open space with a minimum of 21,000 sq ft per lot. This plan meets our subdivision ordinance for density.
- E. The applicant is seeking PUD rezoning in order to increase the minimum lot size to achieve a better design for the subdivision. The proposed plan provides for 29% of the developable acreage to be left as open space and a minimum lot size of 25,000 sq.ft with an average lot size of 27,085. Basically they are asking to reduce the amount of open space from 50% to 29% in exchange for increasing the minimum lot size to 25,200 sq ft. without increasing the number of lots allowed.
- F. The development will be served by wells and septic. The applicant has a report from the KCHD date August 31, 2016. In it they found some levels of arsenic in the ground water. As such the KCHD is requiring certain provisions to deal with the arsenic.
- G. The open space that is being provided is mainly located along the perimeter of the project.
- H. The development will be utilizing private streets. The location of the curb cuts off from 48<sup>th</sup> and Buttrick will have been approved by the KCRC.
- I. They will be paving the short section of Buttrick Ave north of 48<sup>th</sup> St. This is a public road and will need to meet KCRC standards.
- J. We had previously approved this project in 2006 and awarded several extensions. However, the applicant never initiated the project so it has expires. They essentially would like to have the same project approved once again. Because it has expired they need to go through the entire approval process again.

- K. This project includes some of the property that was considered for the 48<sup>th</sup> St sand mine in 1998. Some neighbors expressed concern for their wells and possible protected plant species on the property. The applicant has provided some documentation that these issues have been evaluated and taken into account for their project.
- L. A neighbor at 4445 Whitneyville Ave has worked out a private easement to his property across the project. That easement is shown on the plans.
- M. The Township Engineer has approved the storm water plan prior to the public hearing.
- N. No sidewalks are planned for the project, and would not connect to any planned or future pathways.
- O. At the Planning Commission public hearing on most comments were regarding issues on 48<sup>th</sup> St, such as speed and traffic backups at Whitneyville and Thornapple River Dr. The Planning Commission has recommended approval of the rezoning to P.U.D. along with the attached Ordinance.

**Standards**

Section 16.03 of the Zoning Ordinance requires that a Planned Unit Development must demonstrate that:

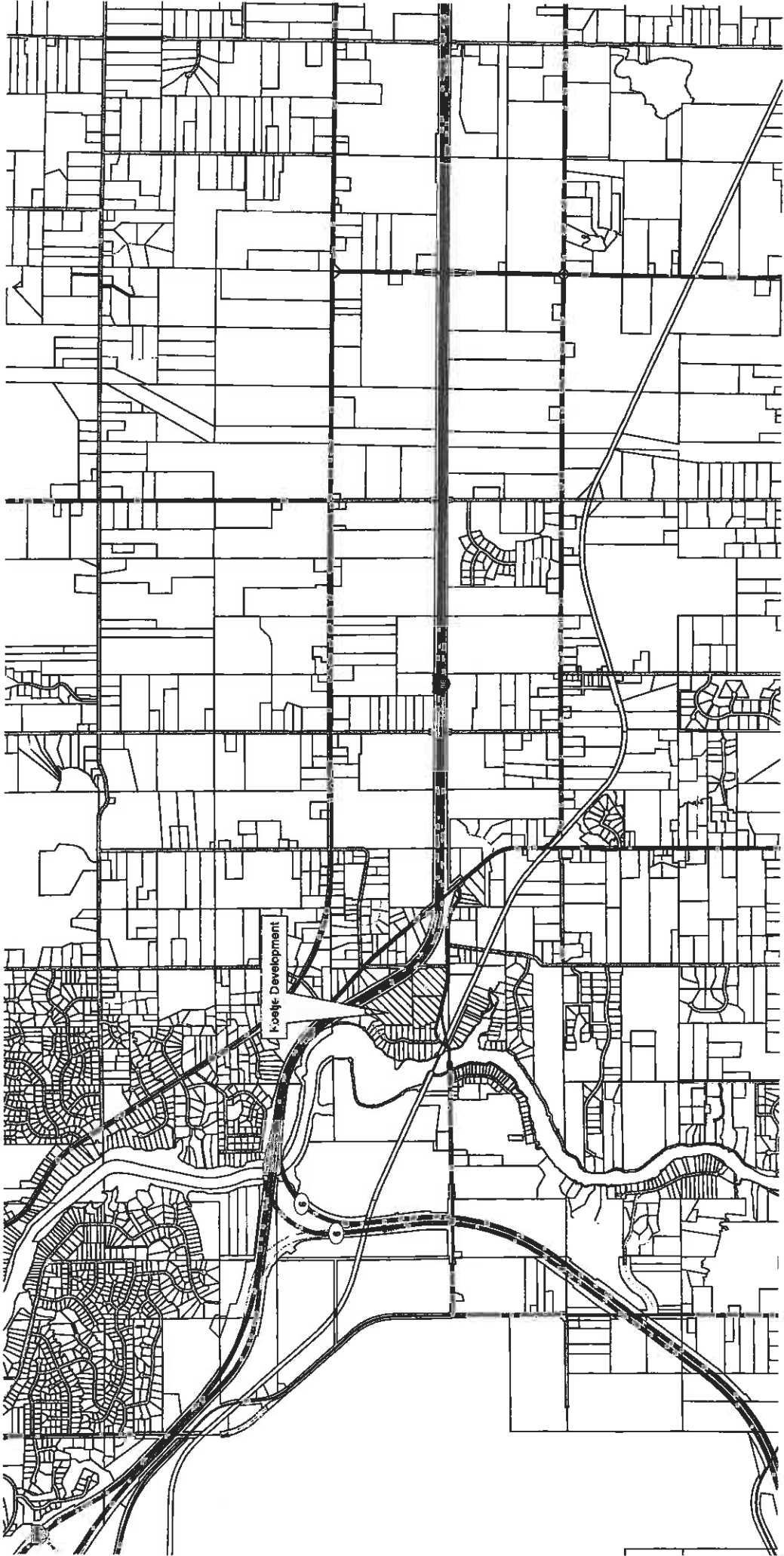
Standard	Staff Comment
Granting of the Planned Unit Development rezoning will result in a recognizable and substantial benefit to the ultimate users of the project and to the community, where such benefit would otherwise be unfeasible or unlikely to be achieved.	Property has already been rezoned before for the same project. The residential use is being developed at the allowed density.
In relation to underlying zoning, the proposed type and density of use shall not result in a material increase in the need for public services, facilities and utilities, and shall not place a material burden upon the subject or surrounding land or property owners and occupants or the natural environment	The density of the use is consistent with zoning and the master plan.
The proposed development shall be compatible with the General Development Plan of the Township, and shall be consistent with the intent and spirit of this Chapter	The overall use is compatible.
In relation to underlying zoning, the	Being that the plan is consistent with the

proposed development shall not result in an unreasonable negative economic impact upon surrounding properties	master plan I would not find any negative economic impacts associated to the surrounding properties.
The proposed development shall contain at least as much green area and usable open space as would otherwise be required by this Ordinance with respect to the most dominant use in the development	met
The proposed development shall be under single ownership or control such that there is a single person or entity having responsibility for completing the project in conformity with this Ordinance. This provision shall not prohibit a transfer of ownership or control, upon due notice to the Planning Director of the Township	met

**Staff Recommendation**

Staff recommends approval of the P.U.D. rezoning

- Attachments: Site Plan  
Application  
Location Map  
Test Plan  
Master Plan Excerpts  
P.U.D. Ordinance





July 21, 2017  
Project No. 080322

Mr. Steve Peterson  
Cascade Charter Township  
2865 Thornhills Avenue, SE  
Grand Rapids, MI 49546-7192

Re: Oak Harbor Preserve  
Site Plan Review

Dear Steve:

We have reviewed the site plan for Oak Harbor Preserve, dated July 10, 2017, prepared by Feenstra & Associates. The proposed project is a 31-lot residential development with associated road and utility improvements. The 38-acre site is located in the Thornapple River watershed, sub-drainage district Maracaibo Shores, and is bounded by 48th Street to the south and I-96 to the east.

## Stormwater and Drainage

### Flood Control

The proposed project is a new development, so all improvements shall comply with the requirements of the Cascade Charter Township (Township) Stormwater Ordinance (SWO). The site is located in Stormwater Management Zone B, which requires detention of the 25-year storm event and a direct connection (overland or underground) of the 100-year storm event, or detention of the 100-year storm event. The SWO also requires the first 0.5-inch of stormwater runoff be detained and released over a 24-hour period.

The proposed stormwater management design includes two detention basins sized for the 25-year storm event and two infiltration basins sized for the 100-year storm event. The detention basin located at the southwest corner of the site discharges to an existing 24-inch culvert and storm sewer in 48th Street that drains to the Thornapple River. The 100-year overflow would be conveyed down 48th Street to the river. The detention basin located at the north end of the site discharges to an existing drainage easement and runs overland to the Thornapple River. The 100-year overflow would be conveyed through the drainage easement to the river. The stormwater detention basins are designed with an outlet control structure to restrict the release in accordance with the SWO.

The two infiltration basins are located along the eastern property line, adjacent to I-96, sized for the 100-year storm event. Thirty soil borings/test pits were performed throughout the site, all of which revealed coarse brown sand. Two double-ring infiltrometer tests were taken at the locations of the proposed infiltration basins. The lowest measured infiltration rate was 19.5 inches/hour. The SWO requires the infiltration rate used in design to be one-half the average of the test results. The applicant used a design infiltration rate of 3 inches/hour to size the infiltration basins, more conservative than the requirements of the SWO.

At the entrance drive, it was not practical to capture and convey stormwater runoff to the detention basin. Therefore, a series of leaching catch basins are proposed to intercept and infiltrate stormwater onsite.



## **Water Quality Control**

The SWO requires the first 0.5-inch of stormwater runoff be detained and released over a 24-hour period. The stormwater detention basin outlet structures are designed to meet this requirement. Calculations and design details were provided by the applicant. The two infiltration basins will infiltrate the first 0.5-inch of runoff. The proposed design is in accordance with the SWO.

## **Stormwater Runoff**

The applicant provided stormwater calculations to size the onsite detention and infiltration basins. All stormwater runoff from the impervious areas of the site will discharge to these basins. Therefore, the site will not see an increase in rate of stormwater leaving the site.

## **Drainage Plan**

The applicant has submitted drawings, calculations, and additional documentation as required in the SWO Section 2.03, Drainage Plan. Please refer to the included checklist for items and comments on each item. Please note a maintenance agreement is required before construction begins. The agreement should be submitted to the Township for review. The maintenance agreement and plan should include at a minimum, cleaning of catch basin sumps, sediment and debris removal from the detention and infiltration basins, and landscape maintenance of the detention basins to maintain the design volume and ensure the system is operating as it was designed.

## **Utilities**

The development will have onsite water wells and septic systems for each individual lot. The applicant is coordinating this design and permit with the Kent County Health Department. A permit from the health department will be required prior to construction taking place.

## **Soil Erosion and Sedimentation Control**

Soil Erosion and Sedimentation Control (SESC) measures are provided on the drawings for the initial road and storm sewer construction. The applicant has included silt fence along the limits of clearing and grading, silt sacks in catch basins, placement of mulch blanket on steeper slopes, and seeding with mulch at all disturbed areas of the site. SESC falls under the review and approval of the Kent County Road Commission and a permit is required before construction can begin. The SESC measures indicated on the drawings appear appropriate given the expected work. The lots will be developed individually at a later date, at which time they will require another SESC permit specific to that lot.

## **Summary**

The proposed stormwater design meets the Township SWO requirements for new developments. The applicant will need to apply for and obtain a number of permits (SESC, water and septic from the health department, Kent County Road Commission for the new driveway) prior to beginning construction. We recommend approval of the site plan from an engineering standpoint.

Mr. Steve Peterson  
Page 3  
July 21, 2017



If you have any questions or require additional information, please contact me at 616.464.3786 or [nrtorrey@ftch.com](mailto:nrtorrey@ftch.com).

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, appearing to read "N. Torrey", is positioned above the name of the sender.

Nathan R. Torrey, PE

jc2

Attachment

By email

cc: Michael L. Berrevoets, PE – FTCH



**Cascade Charter Township**

Storm Water Ordinance, Ordinance 7 of 2002, as amended by Ordinance No. 2 of 2008, 5/14/2008

*Reviewing Engineer Comments are Italicized*

*OK – Received and Acceptable*

*NA – Not Applicable*

*NR – Not Received, Needs Follow-up, See Comments*

**Oak Harbor Preserve**

**Drainage Plan Checklist**

- OK (1) Location of the development site and water bodies that will receive storm water runoff  
*All stormwater runoff from the site is collected in four onsite detention and infiltration basins. The detention basins discharge to an existing storm sewer system, drainage easement, and the Thornapple River.*
- OK (2) Existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map  
*Existing and proposed contours have been provided.*
- OK (3) Development tributary area to each point of discharge from the development  
*Stormwater calculations and tributary areas were provided by the applicant.*
- OK (4) Calculations for the final peak discharge rates  
*Applicant provided calculations in design of the onsite storm sewer system, detention/infiltration basins and outlet control structures.*
- OK (5) Calculations for any facility or structure size and configuration  
*Stormwater runoff calculations were provided by the applicant.*
- OK (6) Drawing showing all proposed storm water runoff facilities with existing and final grades  
*The applicant provided a utility plan showing all proposed stormwater runoff facilities.*
- OK (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map  
*The drainage map did not indicate any major offsite drainage routes flowing into the site. An existing drainage easement is located at the north end of the site to convey surface runoff to the Thornapple River.*
- OK (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan  
*A construction schedule was included on the plans.*



- OK (9) Plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways  
*SESC falls under the review and approval of the KCRC and a permit is needed before construction can begin. SESC measures were provided on the drawings for the initial road and storm sewer construction. The lots will be developed individually at a later date, at which time they will require another SESC permit specific to that lot. The SESC measures indicated on the drawings appear appropriate given the expected work.*
- OK (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance  
*The applicant provided calculations and design details for construction of the onsite storm sewer system.*
- NR (11) Maintenance agreement, in form and substance acceptable to the Township, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the Township to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense  
*Maintenance agreement was not provided and is required.*
- OK (12) Name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities
- NA (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS)  
*This is a privately owned system and will not be uploaded to REGIS.*
- OK (14) Other information necessary for the Township to verify that the drainage plan complies with the Township's design and performance standards for drains and storm water management systems

# KENT COUNTY HEALTH DEPARTMENT

## ENVIRONMENTAL HEALTH

700 Fuller Avenue N.E.

Grand Rapids, Michigan 49503-1918

Phone: 616-632-6900

Fax: 616-632-6892

Email: [KCEHmail@kentcountymi.gov](mailto:KCEHmail@kentcountymi.gov)

Website: [www.accesskent.com](http://www.accesskent.com)



Adam London, RS, MPA  
Administrative Health Officer

December 28, 2016

Randy Koetjie  
Koetjie Builders & Developers, LLC  
547 Baldwin St.  
Jenison, MI 49428

RE: PROPOSED OAK HARBOR PRESERVE SITE CONDOMINIUM, UNITS 1-31  
SINGLE FAMILY RESIDENTIAL  
CASCADE TOWNSHIP

Dear Mr. Koetjie:

The Environmental Health Division of the Kent County Health Department has reviewed the proposed development in accordance with Michigan Condominium Act (PA 59 of 1978) and the Michigan Land Division Act (PA 288 of 1967 Section 560.105).

The following advisories must be incorporated into the Master Deed and By-Laws prior to final Health Department approval:

### WATER SYSTEMS / SEWAGE DISPOSAL SYSTEMS FOR CONDOMINIUM

#### WATER SYSTEMS

- A test well in the Development found arsenic above the Environmental Protection Agency (EPA) maximum contamination level (MCL) of 0.01 mg/L. See additional Arsenic Advisory.
- Iron levels in test wells were detected between .512 mg/L and 1.25 mg/L. The EPA considers iron a secondary contaminate that does not impact human health but may impart noticeable aesthetic impairment. Iron levels above 0.3 mg/L may adversely affect water quality including, rusty color, metallic taste, odor, and staining of fixtures. Individual owners may wish to install a water treatment systems to remove or reduce iron in the water supply.
- Individual water supply systems will be permitted on a unit solely to provide water for domestic uses on the unit.
- A permit from KCHD is required prior to the installation or major repair of any on-site water supply. As part of the application, KCHD may require a site plan of the property upon which the water supply is or will be located. Required features may include property boundaries, elevations, buildings, sewage disposal system, surface water bodies, wells, underground fuel storage tanks, chemical storage areas, driveways, and other significant details.
- All wells installed for private water supply must penetrate an adequate protective continuous clay overburden of at least 10 feet. This overburden is to be located greater than 25 feet below the ground surface. Test wells within the development drilled to a depth of 111 and 116 feet found suitable clay barrier from 44 feet to 105 feet.

PROPOSED OAK HARBOR PRESERVE, UNITS 1-31

- All wells are to be grouted in accordance with the Michigan Department of Environmental Quality water well grouting requirements.
- Except as otherwise approved by KCHD, all wells must be located on the unit being served and must be 10 feet from property boundaries.
- It will be the responsibility of the co-owner to install and maintain the water supply and treatment system in good order and working condition and comply with all applicable governmental regulations and neither the developer nor the association will have any responsibility with respect to the same.

**ARSENIC ADVISORY**

A test well in the Oak Harbor Preserve Site Condominium found Arsenic levels between .005 and 0.011 mg/L. The current Environmental Protection Agency maximum contaminant level (MCL) for arsenic in public water supplies is 0.01 mg/L. The current Michigan Department of Environmental Quality Rule 560.414, Onsite Water Supply and Sewage Disposal for Land Divisions and Subdivisions, which applies to private water wells located in proposed site condominiums and subdivisions, establishes a MCL for arsenic at 0.05 mg/L through reference to EPA's 1996 publication entitled "Drinking Water Regulations and Health Advisories."

Arsenic can naturally occur in soil and groundwater or it may be caused by agricultural or industrial practices. It is odorless and colorless. Arsenic is a recognized carcinogen and has been linked to several types of cancer. Prolonged exposure to low levels may cause skin damage, gastrointestinal, nervous system, and circulatory problems. Long-term exposure to levels above .005 mg/L may result in lower IQ scores in children.

Each individual well completed on any unit shall be sampled for arsenic prior to connection or use. Samples shall be collected by the well driller following well development and disinfection and a 24-hour waiting period. Immediately prior to sampling, the well casing must be flushed by removing the equivalent of three casing volumes of water. Any well that is found to have arsenic levels at or above the EPA MCL of 0.01 mg/L shall be either:

1. Be properly abandoned and replaced with a new well that has an arsenic level below 0.01 mg/L while meeting applicable well construction and isolation requirements.
- or
2. Owner will install point of use treatment devices. The device at a minimum meet NSF / ANSI Standard 61. At a minimum, the treatment systems must be installed at the point of use (each fixture where drinking water may be obtained).

Prior to installing a water treatment system, the owner must provide KCHD with the name and model number of the proposed treatment device, specification sheet detailing the type of system, and appropriate approvals for the removal of arsenic.

An additional water sample analyzed for arsenic downstream from treatment device(s) will be required prior to occupancy. The co-owner will be responsible for arranging the collection of water samples and payment of applicable laboratory fees. Results shall not exceed the MCL as defined by EPA for final approval. This Department will not approve the water supply well until a copy of the Arsenic Affidavit is notarized and recorded with the Kent

County Register of Deeds. Occupancy permits will not be issued by the Township Building Authority until this Department has approved the water supply.

Owners should consult with a qualified water treatment distributor to analyze the type of arsenic in the supply and the most appropriate technology for arsenic removal/reduction. Dissolved arsenic may be more difficult to remove in the presence of high iron or chlorides. Some forms of arsenic in the presence of high iron levels may require pretreatment systems ahead of the arsenic treatment device. The owner is encouraged to perform annual arsenic sampling and maintain a contract with the water treatment provider.

### **SEWAGE DISPOSAL SYSTEMS**

- A site evaluation may be required on any unit where the developer or unit owner has proposed placement of the initial and replacement wastewater disposal system outside of those areas already approved and on file with KCHD.
- Due to lot sizes less than one acre, this Department will require detailed site plans with application to obtain a permit from KCHD for a septic tank and disposal areas, the co-owner will submit to KCHD a lot development plan drawn to scale that will locate the unit, private drives and right-of-ways, utilities, unit lines, building site and proposed well and septic location. As part of the application, KCHD may require a topographical map showing existing and proposed contours. Contour intervals shall not exceed two (2) feet. Due to small lot sizes, KCHD cannot guarantee that each individual site development plans will be approved.
- Utilities, buildings, drives, or other structures that may interfere with the installation and operation of the on-site sewage disposal system shall not be permitted within the designated initial and replacement sewage disposal areas as indicated on the permit issued by KCHD.
- Due to elevated levels of hardness, iron, and arsenic; water treatment systems may be necessary. Discharge of said water treatment system backwash cannot be directed into the building sewer, septic tanks, or disposal areas. The owner of each unit shall make provisions for a separate drainage system to properly dispose of water treatment system backwash. Units that have elevated arsenic shall not discharge treatment system backwash within 50 feet of any water well.
- Designated initial and replacement sewage disposal areas shall be isolated a minimum of 100 feet from the high water level in any surface water or stormwater infiltration basin, 25 feet from any 24-hour stormwater detention basin with a controlled outlet, 25 feet from foundation walls containing footing drains, 25 feet from storm sewer catch basins, 25 feet from slopes of 45 degrees or greater, 10 feet from drainage easements consisting of open swales, 10 feet from solid storm sewers, and 10 feet from the unit boundary line.
- It will be the responsibility of the co-owner to install and maintain the septic system in good working order and comply with all applicable government regulations. Neither the developer nor the association will have any responsibility with respect to the same.

KCHD requires that this portion (well/septic language and advisory) of the document not be recorded until approved and stamped by this office. Upon receipt of the approved, recorded document, final Health Department approval can be granted. If you have any questions, please contact me at 616-204-2375.

Sincerely,

Jason Buck, REHS

**AFFIDAVIT**

The undersigned \_\_\_\_\_ Owner(s), of the property commonly known as \_\_\_\_\_, located in Cascade Charter Township, Kent County, Michigan being first duly sworn say as follows:

1. Owner(s) has executed this Affidavit in order to obtain final approval for the private onsite water supply well located on the Property.
2. Owner(s) understands that the water supply well has an arsenic level which exceeds the maximum contaminant level of .01 milligrams per liter (mg/L) set forth in the Michigan Safe Drinking Water Act, Act 399 of 1979.
3. Owner(s) understands that a treatment device has been installed to reduce the level of arsenic to .01 mg/L or less and that this device requires regular maintenance in order to maintain safe drinking water levels. Failure to maintain the device may result in an increase concentration of arsenic in the water supply.
4. Owner(s) confirms that the sample(s) submitted to the Kent County Health Department for purposes of receiving final approval of the water supply well were collected from a treated water tap at the above listed address.
5. Owner(s) agrees to notify any potential buyers of the subject property that a treatment device is being utilized to reduce the level arsenic and maintain safe drinking water conditions prior to any transfer or conveyance of the property.
6. The undersigned has read this entire Affidavit and agrees to the truth of the statements contained herein.

\_\_\_\_\_  
Name  
Owner of property

\_\_\_\_\_  
Date

STATE OF MICHIGAN        )  
  ) ss.  
COUNTY OF KENT         )

**Drafted By & Return To:**  
Kent County Health Department  
Environmental Health Division  
700 Fuller Avenue NE  
Grand Rapids, MI 49503  
(616) 632-6900

\_\_\_\_\_  
Notary Public  
State of Michigan, County of \_\_\_\_\_  
My commission expires \_\_\_\_\_  
Acting in the County of \_\_\_\_\_



July 21, 2017  
Project No. 080322

Mr. Steve Peterson  
Cascade Charter Township  
2865 Thornhills Avenue, SE  
Grand Rapids, MI 49546-7192

Re: Oak Harbor Preserve  
Site Plan Review

Dear Steve:

We have reviewed the site plan for Oak Harbor Preserve, dated July 10, 2017, prepared by Feenstra & Associates. The proposed project is a 31-lot residential development with associated road and utility improvements. The 38-acre site is located in the Thornapple River watershed, sub-drainage district Maracaibo Shores, and is bounded by 48th Street to the south and I-96 to the east.

## Stormwater and Drainage

### Flood Control

The proposed project is a new development, so all improvements shall comply with the requirements of the Cascade Charter Township (Township) Stormwater Ordinance (SWO). The site is located in Stormwater Management Zone B, which requires detention of the 25-year storm event and a direct connection (overland or underground) of the 100-year storm event, or detention of the 100-year storm event. The SWO also requires the first 0.5-inch of stormwater runoff be detained and released over a 24-hour period.

The proposed stormwater management design includes two detention basins sized for the 25-year storm event and two infiltration basins sized for the 100-year storm event. The detention basin located at the southwest corner of the site discharges to an existing 24-inch culvert and storm sewer in 48th Street that drains to the Thornapple River. The 100-year overflow would be conveyed down 48th Street to the river. The detention basin located at the north end of the site discharges to an existing drainage easement and runs overland to the Thornapple River. The 100-year overflow would be conveyed through the drainage easement to the river. The stormwater detention basins are designed with an outlet control structure to restrict the release in accordance with the SWO.

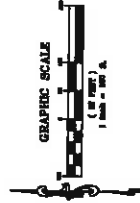
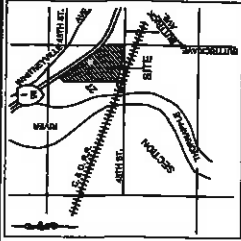
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At the entrance drive, it was not practical to capture and convey stormwater runoff to the detention basin. Therefore, a series of leaching catch basins are proposed to intercept and infiltrate stormwater onsite.

CASCADE TWP

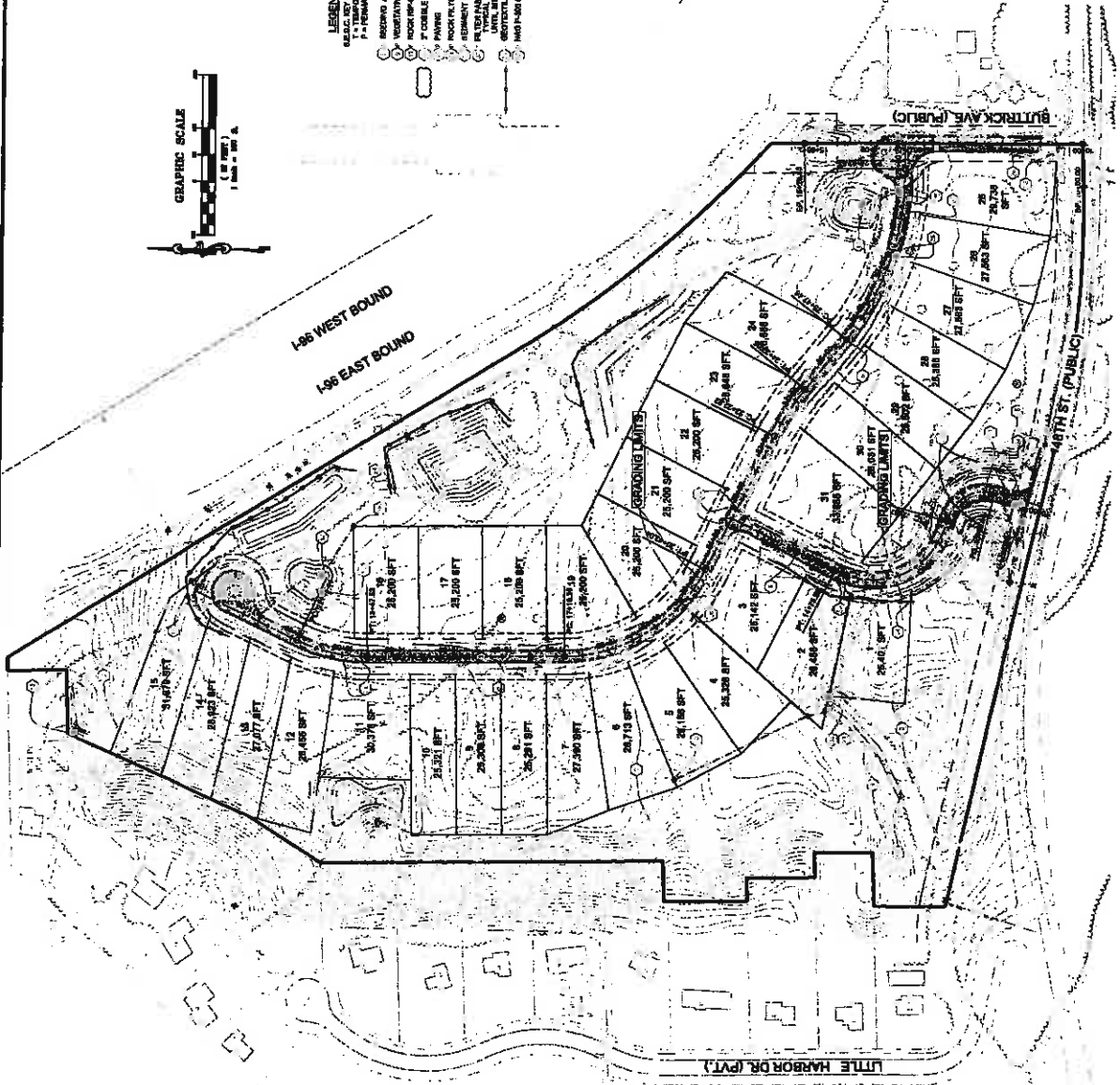
REVISONS

NO.	DATE	DESCRIPTION
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- LEGEND**
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  - 2" DIA. SIGN
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  - 42" DIA. SIGN
  - 48" DIA. SIGN
  - 54" DIA. SIGN
  - 60" DIA. SIGN

1-86 WEST BOUND  
1-86 EAST BOUND



**ABRAMS ENGINEERING CONSULTANTS**  
1000 PLYMOUTH AVENUE, SUITE 100  
MINNEAPOLIS, MN 55405  
TEL: 612.339.0000  
FAX: 612.339.0001  
WWW.ABRAMS-ENGINEERING.COM

**BEFORE YOU DIG  
CALL 811**

**3 MILLIEMER BAWMS**

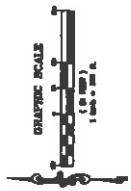
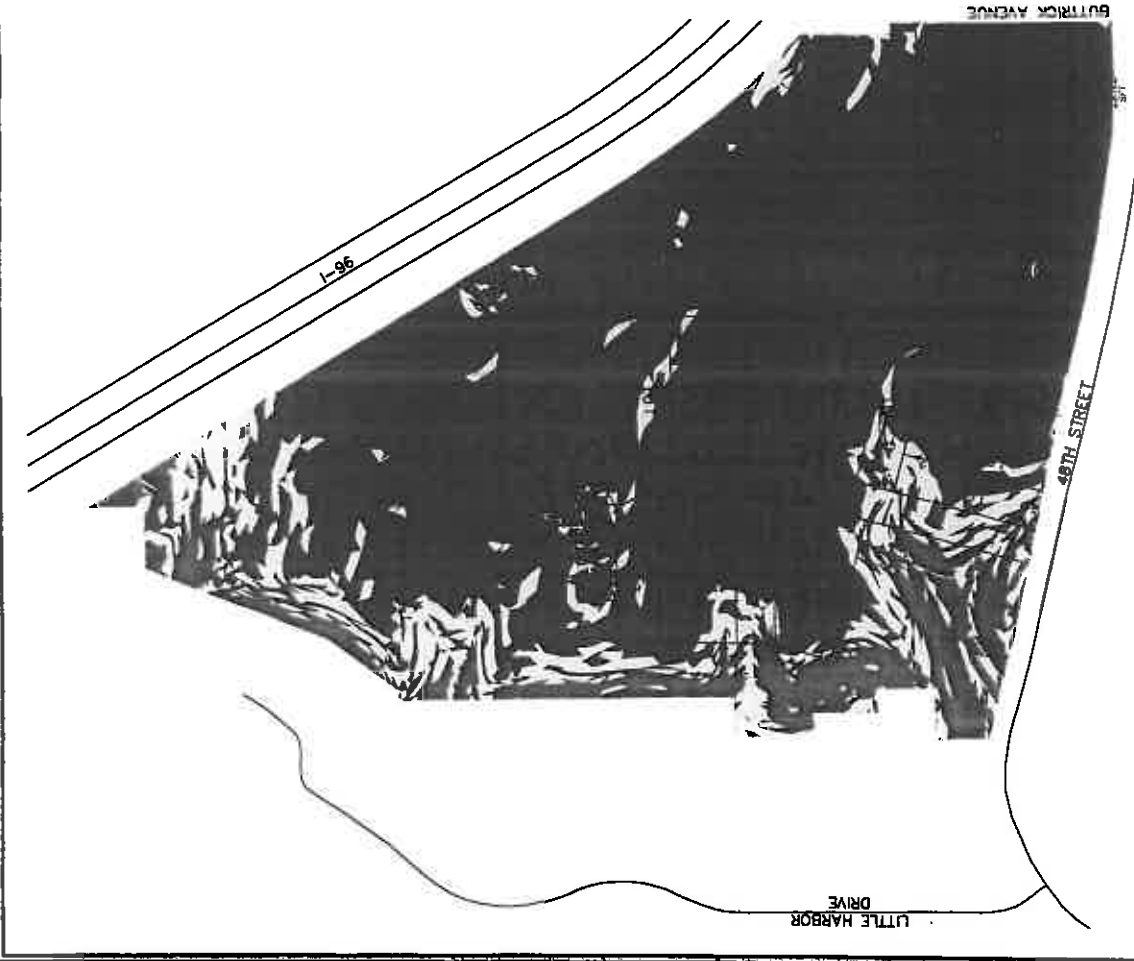
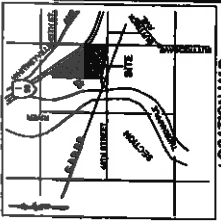
REVISIONS

NO.	DATE	DESCRIPTION



OAK HARBOR PRESERVE  
DASCASE TWP  
MICHIGAN

PARALLEL PLAN



NUMBER	MINIMUM SLOPE	MAXIMUM SLOPE	COLOR	AREA
1	0.000%	12.000%	(Light Gray)	19.29 AC
2	12.000%	25.000%	(Medium Gray)	3.15 AC
3	25.000%	216.889%	(Dark Gray)	3.43 AC

NOTE: OPEN SPACE AREA DOES NOT INCLUDE LOTS OR ROAD

DEVELOPABLE AREA: 16.61 AC

OPEN SPACE AREA: 16.84 AC\*

\* 15.26 AC + (3.15 AC x 0.5) = 16.84 AC



July 13, 2017

Mr. Steve Peterson  
Cascade Township  
2865 Thornhills SE  
Grand Rapids, MI 49546

RE: Oak Harbor Preserve PUD  
Case #16-3341

Dear Mr. Peterson,

Please schedule a public hearing for Oak Harbor Preserve. We have addressed the items found in your November 15, 2016 letter as follows:

1. KCRC has approved the street names and drive locations. A letter from John Strunk dated May 18, 2017 is attached.
2. Cardno has updated threatened and endangered species survey and "no threatened or endangered plant species were observed on site." (Letter dated July 6, 2017).
3. We have reviewed Calvin Becksvoort's analysis of the aquifer, comparing the pump test data with recent pump records of adjoining parcels, and concur with his analysis that the completed supply wells for the development will not have a detrimental effect on the adjoining individual water supply wells. Attached are water tests, water well and pump records.
4. Enclosed are design plans and drainage calculations that have been approved by the Township Engineer.
5. The KCHD has given approval for individual wells and septic systems with the development as outlined in their letter dated December 28, 2016.
6. The rear property line behind the homes on Little Harbor Drive have been staked.

If you have any questions or need additional information, do not hesitate to contact me.

Respectfully,

**Feenstra & Associates, Inc.**

*David A. Hanko*  
David A. Hanko, PE

Cc: Randy Koetje  
Nathan Torrey, FTC&H



**Kent County  
Road Commission**

**May 18, 2017**

**Mr. Dave Henko PE  
Feenstra & Associates  
7482 Main St.  
Jenison, MI 49428**

**Dear Mr. Henko;**

**The Kent County Road Commission has reviewed the location of the proposed private streets for the Oak Harbor Preserve Development. The locations shown on 48<sup>th</sup> Street and Buttrick Avenue are acceptable. In addition, the private street names of Harbor View Drive (Pvt) and Oak Harbor Drive (Pvt) are acceptable.**

**If you have any questions, you may contact me at (616) 242-6901 Ext. 6913, Monday – Friday, 7:30 am to 4:00 pm.**

**Sincerely yours,**

A handwritten signature in black ink that reads "John Strunk".

**John Strunk  
Certification Engineer  
Kent County Road Commission  
(616)-242-6901 Ext. 6913  
jstrunk@kentcountyroads.net**



**AQUIFER ANALYSIS  
OAK HARBOR PRESERVE TEST WELLS  
Section 27, Cascade Township**

Two test wells have been constructed within the property limits of the proposed Oak Harbor Preserve Site Condominium which is to be developed in the Northwest quadrant of the 48<sup>th</sup> Street and Buttrick Avenue intersection. The test wells were constructed to aid in determining the availability and suitability of the water aquifer intended to supply the development's individual lot water supply wells. In addition to the two wells constructed within the property limits of the development, MDEQ Water Well and Pump Records for adjoining water supply wells were analyzed to determine the potential impact of the development's wells on the aquifer(s) supplying the surrounding private wells.

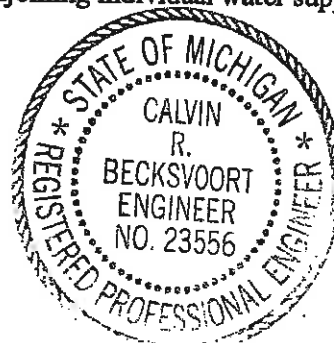
A test well was constructed on the proposed Unit #18 and a test well was constructed in a common area open space adjacent to the rear of Unit #28. Pump tests were conducted for a four hour duration at a pump rate of fifteen gallons per minute. This is the standard pump test length as established by the Kent County Health Department. The exact test well locations along with the individual parcels having recorded private wells that adjoin the site are mapped on the provided site plan.

The two test wells were drilled to a depth of 115' and 116' below the ground surface of the respective well locations. The static water level in the test well on Unit #18 was 75' below the surface and the static water level in the test well on the common open space was approximately 49' below the surface. The respective pump test resulted in a minimal drawdown of the static water level in the two test wells. The recovery rate for both test wells was of a very short duration. The combination of the minor drawdown and the fairly rapid recovery time indicates the presence of a strong water supply aquifer.

The existing recorded wells of the adjoining parcels indicate that the individual wells are constructed to a depth of equal to or greater than the two test wells. Based upon hydrological engineering standards and acknowledged "Cone of Influence Principles" the two test wells have a very minimal influence on the water supply aquifer.

Analysis of the above information and data along with the supplemental data from the adjoining recorded well logs indicates that the water supply wells for each of the proposed units within the Oak Harbor Preserve Site Condominium will be adequate to meet the standards and requirements of the Kent County Health Department and the MDEQ. The completed supply wells for the development will not have a detrimental effect on the adjoining individual water supply wells.

  
Calvin R. Becksvoort, P.E.



[www.latitude-inc.com](http://www.latitude-inc.com)

**Byron Center - Main Office**

7885 Byron Center Ave. SW, Suite D  
Byron Center, MI 49315  
616.583.1601  
Fax: 616.583.1605

**Zeeland Office**

9 East Main St.  
Zeeland, MI 49464  
616.748.9551  
Fax: 616.748.9557



July 6, 2017

Mr. Randy Koetje  
Koetje Builders  
547 Baldwin St.  
Jenison, MI 49428

Cardno

11181 Marwill Avenue  
West Olive, Michigan 49460  
USA

Phone 616 847 1680  
Fax 616 847 9970  
www.cardno.com

Re: Plant Survey at Oak Harbor

This letter is intended to provide an update regarding the status of the threatened and endangered species concerns for the property located in section 27, T06 N, R 10 W which is named Oak Harbor. Specifically, the site is located to the west of I-96, to the north of 48<sup>th</sup> St. and at the end of Buttrick Ave. In August 2005, a survey was completed by JFNew staff to ascertain the existence of threatened or endangered species on the site, including kitten-tails (*Besseyia bullii*) and prairie golden-Alexander (*Zizia aptera*). While sufficient evidence suggested the site did not contain most of the listed species, the Michigan Department of Natural Resources (MDNR) indicated an early summer survey would be necessary to rule out the presence of prairie golden-Alexander, due to the phenology of the species.

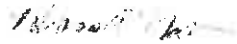
In June 2017, Cardno was contracted by Koetje Builders to conduct a threatened and endangered species survey of the Oak Harbor property. Cardno scientists requested a Michigan Natural Features Inventory (MNFI) database search of any known occurrences of protected species near the project area. The MNFI report (copy attached) indicated the potential for eight species on site: kitten-tails, hairy-fruited sedge (*Carex trichocarpa*), creeping whitlow grass (*Draba reptans*), flattened spike rush (*Eleocharis compressa*), prairie smoke (*Geum triflorum*), Virginia bluebells (*Mertensia virginica*), red mulberry (*Morus rubra*), and prairie golden-Alexander. All of these species, with the exception of Kitten-tails and prairie golden-Alexanders, were last observed in the late 1800's. While marginal suitable habitat exists for a few of these other species (creeping whitlow grass and prairie smoke), the potential for them to be on site is limited, given the degraded nature of the habitat and their last observed date.

On June 20, 2017, a Cardno botanist familiar with the species of concern performed a meander survey through the entire site, noting appropriate habitat for each species and searching these habitats thoroughly. The site consists mainly of three types of forest: oak dominant, mixed hardwood, and red maple dominant systems. There were also a number of openings creating oak savannah type habitat, which can be suitable for both kitten-tails and prairie golden-Alexander. These openings were degraded and contained mainly wild raspberry, oak saplings, and various grass species. While sub-optimal habitat exists for kitten-tails and prairie golden-Alexanders, the existing areas are not in high quality condition, and the species listed above were not observed on site. Additionally, the other species with suitable habitat (prairie smoke and creeping whitlow grass) were also searched for. Prairie smoke is flowering in June, and

was not observed on site. Creeping whitlow grass is just past its flowering stage in late June. It was searched for and was also not found.

In summary, the survey was conducted during a time when the species of concern (kitten-tails and prairie golden-Alexander) would be flowering and visible. Despite the presence of only marginal habitat, no threatened or endangered plant species were observed on site.

Sincerely,



**Rebecca A. Norris**  
**Staff Scientist**  
**Cardno, Inc.**



**CASCADE CHARTER TOWNSHIP**  
**Ordinance # \_\_ of 2017**  
**AN ORDINANCE TO AMEND THE CASCADE CHARTER TOWNSHIP**  
**ZONING ORDINANCE AND ZONING MAP TO ESTABLISH THE**  
**OAK HARBOR PRESERVE**  
**PLANNED UNIT DEVELOPMENT PROJECT.**

**Cascade Charter Township (the "Township") Ordains:**

**Section I. An Amendment to the Cascade Charter Township Zoning Ordinance.**

The application received from Randy Koetje of Koetje Builders and Developers (hereinafter referred to as the "Developer") for Planned Unit Development designation for the proposed Oak Harbor Preserve Planned Unit Development Project (hereinafter referred to as the "Project") was recommended by the Cascade Charter Township Planning Commission for approval at the \_\_\_\_\_ Planning Commission meeting. The Project is recommended for rezoning from R1, Single Family Residential to PUD, Planned Unit Development, thus permitting a site condominium development. This action requires an amendment to the Cascade Charter Township Zoning Ordinance and Zoning Map to incorporate the Planning Commission's recommendations and the Cascade Charter Township Board of Trustees' action on the \_\_\_\_\_, 2017.

**Section II. Legal Description.**

The legal description of the Project is made up of the following:

A PARCEL OF LAND BEING PART OF THE NORTHEAST 1/4 OF SECTION 27, TOWN 6 NORTH, RANGE 10 WEST, CASCADE TOWNSHIP, KENT COUNTY, MICHIGAN, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE EAST 1/4 CORNER OF SAID SECTION 27; THENCE ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 OF SECTION 27, SOUTH 88°10'32" WEST, A DISTANCE OF 79.86 FEET; THENCE ALONG THE CENTERLINE OF 48TH STREET AS RECORDED IN LIBER 60, PAGE 476, MISCELLANEOUS RECORDS OF KENT COUNTY, MICHIGAN, FOR THE FOLLOWING THREE COURSES; THENCE 496.79 FEET ALONG THE ARC OF A CURVE TO THE RIGHT BEING NON-TANGENT WITH THE LAST DESCRIBED LINE, SAID CURVE HAVING A RADIUS OF 1910.00 FEET, A CENTRAL ANGLE OF 14°54'09", AND A CHORD WHICH BEARS NORTH 84°23'40" WEST, A DISTANCE OF 495.39 FEET; THENCE ALONG A LINE BEING NON-TANGENT WITH THE LAST DESCRIBED CURVE, NORTH 76°56'12" WEST, A DISTANCE OF 859.55 FEET; THENCE 15.11 FEET ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 301.60 FEET, A CENTRAL ANGLE OF 2°52'13", AND A CHORD WHICH BEARS NORTH 78°22'18" WEST, A DISTANCE OF 15.11 FEET; THENCE NORTH 01°07'20" WEST, A DISTANCE OF 138.56 FEET; THENCE NORTH 88°10'32" EAST, A DISTANCE OF 99.00 FEET; THENCE NORTH 01°07'20" WEST, A DISTANCE OF 110.00 FEET; THENCE SOUTH 88°10'32" WEST, A DISTANCE OF 46.00 FEET; THENCE NORTH 01°07'20" WEST, A DISTANCE OF 126.00 FEET; THENCE SOUTH 88°10'32" WEST, A DISTANCE OF 43.00 FEET TO THE EAST LINE OF LITTLE HARBOR ON THE HILLSBORO AS RECORDED IN LIBER 83 OF PLATS, PAGES

37-38, PUBLIC RECORDS OF KENT COUNTY, MICHIGAN; THENCE ALONG THE EAST LINE OF LITTLE HARBOR ON THE HILLSBORO FOR THE FOLLOWING THREE COURSES; THENCE NORTH 01°07'20" WEST, A DISTANCE OF 154.00 FEET TO THE SOUTH LINE OF LOT 3, LITTLE HARBOR ON THE HILLSBORO, THENCE ALONG THE SOUTH LINE OF SAID LOT 3, NORTH 88°10'32" EAST, A DISTANCE OF 75.00 FEET TO THE SOUTHEAST CORNER OF LOT 3, LITTLE HARBOR ON THE HILLSBORO; THENCE NORTH 01°07'20" WEST, A DISTANCE OF 642.00 FEET TO THE NORTHEAST CORNER OF LOT 7, LITTLE HARBOR ON THE HILLSBORO; THENCE NORTH 31°38'08" EAST, A DISTANCE OF 158.10 FEET; THENCE NORTH 23°42'04" EAST, A DISTANCE OF 373.15 FEET; THENCE NORTH 88°14'20" EAST, A DISTANCE OF 119.09 FEET; THENCE NORTH 01°45'40" WEST, A DISTANCE OF 110.00 FEET; THENCE ALONG THE SOUTH LINE OF THE NORTH 621.0 FEET OF THE NORTHEAST 1/4 OF SAID SECTION 27, NORTH 88°14'20" EAST, A DISTANCE OF 24.98 FEET TO THE SOUTHWESTLY RIGHT-OF-WAY LINE OF I-96 (300 FEET WIDE); THENCE ALONG THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF I-96 FOR THE FOLLOWING TWO COURSES; THENCE SOUTH 31°34'20" EAST, A DISTANCE OF 1124.21 FEET; THENCE 607.55 FEET ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 2060.08 FEET, A CENTRAL ANGLE OF 16°53'51" AND A CHORD WHICH BEARS SOUTH 40°01'16" EAST, A DISTANCE OF 605.36 FEET TO THE EAST LINE OF THE NORTHEAST 1/4 OF SAID SECTION 27; THENCE ALONG THE EAST LINE OF THE NORTHEAST 1/4 OF SECTION 27, SOUTH 01°07'20" EAST, A DISTANCE OF 585.60 FEET TO THE POINT OF BEGINNING. CONTAINING 40.43 ACRES OF LAND, MORE OR LESS.

### **Section III. General Provisions.**

The following provisions shall hereby apply to the Project, in addition to those provisions outlined in Chapter 16 of the Cascade Charter Township Zoning Ordinance (Ordinance No. 11 of 1988, as amended).

### **Section IV. Purpose.**

The Project occupies approximately 40 acres of land in the Township. The Project will be a site condominium development containing 31 single-family site condominium units. Approximately 29% of the property is to be preserved as open space. This technique has been chosen by the Developer to give it and the eventual owners of each unit more control over the Project's aesthetics and appearance. This development technique provides the Developer with the ability to develop the Project in a manner to meet market expectations where more traditional mechanisms such as creating subdivision plats do not.

The regulations contained herein are established to define the procedures necessary to ensure high quality development in the Project. Additionally, they are designed to achieve integration of this development with adjacent land uses.

### **Section V. Approval Limitations.**

- A. The provisions of this Ordinance/Ordinance amendment ("this Ordinance") are not intended as a substitute for the Cascade Charter Township Zoning Ordinance and the General Development Plan, nor do they in any way relieve the Developer from obtaining all approvals and permits required by the Township, except as

otherwise expressly provided herein. In the event that a development issue or site plan element is not expressly addressed by this Ordinance, the specifications and requirements of the Cascade Charter Township Zoning Ordinance shall apply. Furthermore, all other applicable Cascade Charter Township ordinances shall still govern the Project where applicable.

- B. Except as expressly otherwise provided herein, the Developer and his assigns must meet all applicable provisions, ordinance requirements, and regulations of Cascade Charter Township, as well as federal and state law, and must obtain all necessary approvals from state and county governmental agencies that are required for construction, operation, or use.
- C. This PUD approval is expressly contingent upon all conditions of approval herein remaining fully effective and valid. If any condition imposed herein is determined to be illegal or contrary to law as a result of a successful legal challenge by the Developer or its assigns, or any other party, the Township reserves the right to review the entire Project under the PUD provisions of the Cascade Charter Township Zoning Ordinance, and further, to withdraw its approval of this PUD if the Township finds that, absent the effect of any condition imposed herein, the PUD no longer meets the standards for PUD approval contained in the Zoning Ordinance.
- D. All conditions contained herein and in the final approved site plan shall be binding upon the Developer, as well as its successors, tenants and assigns. The conditions may be modified or amended only pursuant to a formal amendment of the PUD approval, approved site plan, and ordinance amendment. The Project must be constructed and operated, and all properties therein used, in strict compliance with the PUD approval (including this Ordinance and the final approved site plan), and no deviations can occur without prior formal written approval by the Township. So-called minor deviations shall not occur unilaterally by the Developer or its successors, tenants, or assigns. Any deviation without prior formal written approval by the Township will constitute a violation of this Ordinance and the Cascade Charter Township Zoning Ordinance.
- E. **This approval document shall be recorded with the Kent County Register of Deeds by the Developer prior to construction occurring on site and shall run with and bind the lands involved. Copies of this recorded document shall be supplied by the Developer to the Cascade Charter Township Clerk.**
- F. Failure to comply with the site plan or any condition of approval herein shall be deemed to be both a nuisance per se and a violation of the Cascade Charter Township Zoning Ordinance.
- G. **Prior to recording a copy of this document as specified in Section V(E) hereof, the Developer shall type the following statement onto the end of this document (or add an additional page to the document) as follows, and shall sign and date the same:**

**“I, Randy Koetje, have fully read the above PUD ordinance amendment, understand its provisions and fully agree with all requirements and conditions contained in the same, on behalf of myself and my assigns, successors and transferees in and to the property involved.”**

**Section VI. Site Condominium Documents and Plans.**

- A. Specific controls relating to architectural elements, common elements of the site condominium project, construction materials, size and space requirements, improvements and out buildings, specific prohibitions and rules of conduct shall be governed by site condominium bylaws and master deed. These restrictions shall become part of this Ordinance by reference.
- B. The Project shall be developed exactly in accordance with the site plan approved and signed by the Township. The site plan shall indicate where each building envelope will be located and shall provide appropriate measurements demonstrating compliance with Section 16.11(2) of the Zoning Ordinance. Engineering plans and documents relating to utilities, topography, drainage, and the survey of the Project shall be reviewed and approved by the Township Engineer. Approval of these documents shall be based upon their meeting the requirements of Section 16.11(4) of the Zoning Ordinance and also meeting recognized, acceptable engineering standards and practices. Once it has been determined that the plans have met Township requirements, the Township Engineer shall sign and mark these plan documents as “Approved,” and forward them to the Developer. Only approved plan documents shall be recorded with the appropriate county and state agencies.
- C. The number of building sites may be reduced or consolidated within the Project only after the review by and written approval of the Township Planning Department. The proposed changes to the site/survey plan to reduce or consolidate building sites shall be reviewed by the Planning Department to ensure compliance with the Cascade Charter Township Zoning Ordinance, this PUD Ordinance, and any other requirements. Once approved by the Planning Department, the amended site/survey shall then be recorded with the Kent County Register of Deeds Office and the appropriate state agencies by the Developer at his cost. A copy of the recorded site/survey plan shall be forwarded to the Planning Department, so that accurate files regarding the development can be maintained.

**Section VII. Permitted Uses.**

The permitted uses for the Oak Harbor Preserve PUD are as follows:

- A. Single Family Residences.

- B. Accessory buildings customarily incidental to a single family residence, subject to the provisions of Section 4.08 and 4.09 of the Cascade Charter Township Zoning Ordinance, as it may be amended.
- C. Signs. All signs for the Project shall conform with Section 6.02 of the Cascade Charter Township Sign Ordinance (Ordinance 14 of 1997, as amended).

**Section VIII. Design Guidelines, Requirements and Limitations.**

The Project shall be developed in exact accordance with the site plan approved by the Township. No alterations, expansions or additions may occur as to the Project without a formal amendment to this Ordinance, unless expressly otherwise authorized herein.

- A. Maximum Number of Residential Units - The maximum number of single-family detached site condominium units within the Project shall be limited to thirty-one (31) units.
- B. Maximum Building or Structure Height - 35 feet or 2½ stories whichever is the less.
- C. Setback Requirements

All site condominium buildings and structures shall meet the following minimum setback requirements:

- 1. Front Yard Setback: 35 feet
- 2. Side Yard Setback: minimum of 10 feet with both sides totaling at least 20 feet
- 3. Rear Yard Setback: 25 feet. With the exception of lots 7-10 and lots 12-15 which have a minimum 40 foot rear yard setback

- D. Minimum Floor Area

Each dwelling on a site condominium unit shall contain a minimum of:

- 1. One Story & Bi-Level – 1,600 square feet on the main floor, top floor of a bi-level, finished livable area above grade level, exclusive of garages, decks, porches and breezeways.
- 2. Two Story – 2,000 square feet, with a minimum of 800 square feet on the first floor, finished livable area above grade level, exclusive of garages, decks, porches and breezeways

**Section IX. Private Street Development.**

- A. The Developer shall submit a street construction, maintenance, and pavement plan consistent with Section 16.11(4)(f) of the Zoning Ordinance. The Developer may establish private streets to serve the Project provided the roads are constructed in

accordance with the "Cascade Charter Township Engineering Design Requirements and Standards for Private Streets" and the following specifications:

1. The road grades shall not exceed a six percent (6%) grade. All grades shall be sufficient to allow safe ingress/egress of emergency vehicles.
  2. The private streets shall be posted with signs stating the street names. These signs shall be consistent with Kent County Road Commission standards and requirements and shall be installed at the Developer's cost.
  3. Any private street shall intersect any public road at a 90 degree angle.
  4. Copies of any permits required by the Kent County Road Commission to connect the private street to any public road shall be provided to the Township Planning Department by the Developer.
- B. In accordance with Section G of the "Cascade Charter Township Engineering Design Requirements and Standards for Private Streets," the Developer of the Project shall provide a disclosure statement on all property deeds to all owners of the private street, all those who utilize the private street and all persons securing a building permit to construct a building or structure served by the private street, by applying for and securing a building permit for construction of a building or structure that utilizes the private street, all such persons shall use the private street at their own risk and the Township (and its employees, officials, and agents) shall not be responsible for any aspect of the private street.
- C. In accordance with Section I of the "Cascade Charter Township Engineering Design Requirements and Standards for Private Streets," it shall be the responsibility of the Developer and its successors or the individual property owners to fully maintain and keep the private access street in good repair at all times and to ensure that snow and ice is removed in a timely fashion during the winter.
- D. No combustible building materials may be erected on the Project until a temporary access road is constructed to within 100 feet of the furthest point of a structure. Such road shall be a minimum 18 feet wide and be able to support 20 tons on a single axle with dual wheels and standard road tires.

#### **Section X. Temporary Buildings.**

No structure of a temporary nature; trailer, tent or construction shack shall be constructed, placed or maintained within the Project except accessory to and during construction of any building or infrastructure improvement.

## **Section XI. Utilities.**

- A. Water and Septic – The individual units in the Project will be served by individual private wells and individual private septic systems. Such systems shall be designed, installed, and maintained pursuant to all applicable requirements of the Kent County Health Department and the state of Michigan.
- B. Stormwater Drainage - All proposed stormwater drainage facilities shall be reviewed and approved by the Township Engineer, and the Kent County Drain Commissioner's office, and the Michigan Department of Environmental Quality (if it has jurisdiction) prior to the development of the Project. The Developer shall provide the Township Planning Department with copies of all correspondence and permits received from the Kent County Drain Commissioner and the Michigan Department of Environmental Quality regarding stormwater disposal.
- C. The Developer shall provide all necessary easements within the Project for telephone, electricity, gas and cable television to the appropriate utility provider without cost. Said easements shall be recorded with the Kent County Register of Deeds and be provided to each utility provider for their records.
- D. Exterior Lighting. All street lighting shall either be installed prior to the issuance of any certificate of occupancy for the first building in the Project or paid for prior to the issuance of any certificate of occupancy for the project.

## **Section XII. Soil Erosion Control Requirements.**

The Developer shall submit a soil erosion control plan showing all temporary and permanent soil erosion control measures to be taken before, during, and after construction on the Project. This plan shall be reviewed and approved by the Township Engineer prior to commencing any excavation on the site.

## **Section XIII. Performance Guarantee.**

To ensure compliance with this Ordinance and any conditions herein, the Township may require reasonable performance guarantees to ensure completion of improvements such as, but not limited to, landscaping, drainage, lighting, roads, and utilities. The Township Board, Engineer, or Planning Department may require such guarantees at any time they deem reasonably necessary to ensure completion of the improvements. The form (including the bank or surety involved), duration, and amount of the performance guarantee as shall be approved by the Township.

## **Section XIV. Permanent Common Open Space.**

The permanent common open space area is to remain in its present undeveloped state in perpetuity. To ensure this occurs, the following regulations shall apply to the permanent common open space area:

- A. No buildings, structures, fences, or driveways shall be erected, constructed or placed within the common open space area. All improvements shown on the approved site plan dated \_\_\_\_ , may encroach into this area provided they are consistent with the development plan for this Project.

**Section XV. The Gerald R. Ford International Airport.**

Within the recorded Master Deed, the Developer shall expressly disclose in writing that the Project is located in the vicinity of the Gerald R. Ford International Airport and that there may be noise, vibration, and property valuation impacts associated with such location.

**Section XVI. Consistency of the Master Deed and/or Deed Restrictions/Covenants with the PUD Approval.**

If the Project will be a condominium project (in whole or in part), the master deed (and attachments) shall be reviewed and approved by the Township Attorney prior to final recording to ensure consistency with this Ordinance. If some or all of the Project will be governed by deed restrictions/restrictive covenants apart from a condominium master deed, such deed restrictions/restrictive covenants shall be reviewed and approved by the Township Attorney before recording to ensure consistency with this Ordinance.

**Section XVII. Consistency With Planned Unit Development (PUD) Standards.**

The rezoning to Planned Unit Development will result in a recognizable benefit to the ultimate users of the Project and to the community. Current and future residents will recognize the benefits of a residential development that offers a low-density land use.

In relation to the underlying zoning (R1) the Township finds the Project will not result in a material increase in the need for public services, facilities and utilities and will not place a material burden upon the subject property and the surrounding properties. The Project is not anticipated to cause undo impact to the stormwater drainage of the surrounding area. All stormwater and soil erosion control plans have been approved by the Township Engineer and the appropriate County and State agencies.

The Project has been determined by the Township to be compatible with the 1999 Comprehensive Plan of the Township and with the spirit and intent of the Planned Unit Development Chapter of the Zoning Ordinance. The Project has been determined to be a "Residential" use, which is consistent with the Cascade Township Comprehensive Plan.

The Township finds the Project will not result in an unreasonable negative economic impact upon surrounding properties.

The Township finds the Project to have at least the same amount of green areas and usable open space than would typically be required by the Township Zoning Ordinance.

Finally, the Township recognizes the Project will be under single ownership or control. The Township recognizes that the Developer or its assigns will retain ownership and control of the

Premises until a majority of the site condominium units are purchased for single family residential purposes.

**Section XVIII. Effective Date.**

This Ordinance shall become effective seven (7) days after publication of the ordinance, or a summary thereof, in *The Grand Rapids Press*, a newspaper of general circulation within Cascade Charter Township.

The foregoing Ordinance was offered for adoption by Board Member \_\_\_\_\_, supported by Board Member \_\_\_\_\_. The roll call vote being as follows:

YEAS:

NAYS:

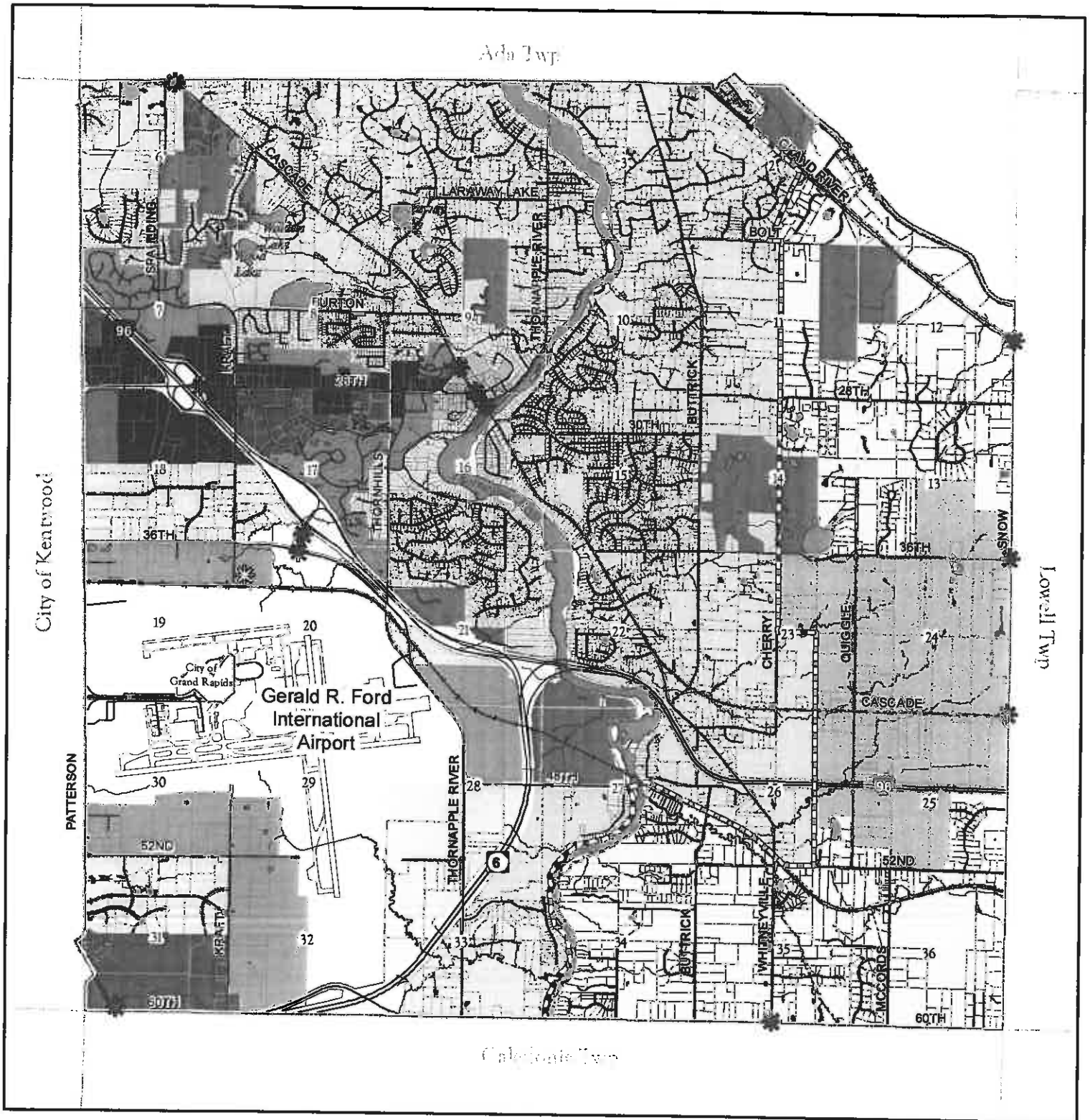
ABSENT:

\_\_\_\_\_  
Sue Slater  
Cascade Charter Township Clerk

**CERTIFICATION**

I hereby certify the foregoing to be a true copy of an Ordinance adopted at a Regular Meeting of the Cascade Charter Township Board on the \_\_\_\_ day of \_\_\_\_\_ 2017.

\_\_\_\_\_  
Sue Slater  
Cascade Charter Township Clerk



**Cascade Charter  
Township**  
Kent County, Michigan

**Map 15  
Future Land Use**

**Legend**

- Gateway Feature
- Park 'n' Ride
- Rail Station
- Utility Service Area
- Farmland Preservation
- Rural Residential
- Suburban Residential
- Community Residential
- Village Commercial
- General Commercial
- Highway Commercial
- Mixed Use
- Heavy Industrial
- Light Industrial
- Community Facility / Golf Course



**Williams & Works**  
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 it is intended to serve as a guide to general  
 representation only. It is based on the  
 map is not warranted for accuracy and should  
 be verified through other means. Any depiction  
 is intended under copyright laws and the  
 Extended Access to Public Records Act  
 PA 412 of 1996, as amended.

**Williams & Works**  
 21453 Algonquin Avenue • Grand Rapids, MI 49501  
 596 Ottawa Avenue NW • Grand Rapids, MI 49503

April 22, 2009

have been identified in the Natural Features Inventory. Subdivisions and site condominiums should be allowed as a special land use, with standards in place to ensure adequate buffering, preservation of open space, deep setbacks from roadways, and preservation of natural features as identified in the Natural Features Inventory.

#### **SUBURBAN RESIDENTIAL**

**Description:** A significant portion of the Township has been developed as suburban style single family residential neighborhoods as a result of historic planning efforts by the Township. These communities are relatively homogeneous in form and land uses, scaled primarily for passenger car travel and developed primarily for families with small and school-age children. New suburban residential areas should incorporate pedestrian access connecting cul-de-sac subdivisions to the Township's non-motorized trail system, when available or planned. New development within the suburban residential areas should also provide an internal trail or sidewalk system to encourage walking, biking, and healthy neighborhoods.

**Location:** The suburban residential land use category is located in the central portion of the Township and within the utility service boundary.

**Desired Uses and Densities:** The primary land use within this area will be single family homes developed in subdivisions or site condominiums on lots ranging from 1/3 acre to 1 acre (i.e. 1 to 3 dwelling units per acre) or in conservation clusters that result in the preservation of significant open lands and overall densities of 3 or more dwelling units per acre. The Township should explore different tools that will provide for the extension of utilities as the result of new development. Such tools may include requiring utility extensions when existing utilities are close by, allowing options for developers to choose from in those areas that are further out but still inside the utility boundary, and other tools with the goal of increasing the number of homes connected to municipal water and sewer helping to maintain quality ground water supplies and encourage sequential development within the utility boundary. Traffic patterns will be established to safely move vehicles through local streets to connectors and to arterials while minimizing vehicle/pedestrian conflicts. A network of pedestrian and bike trails, sidewalks, clear pedestrian crossings and traffic calming techniques will be utilized to promote safe non-motorized and motorized transportation. The neighborhood character will also be enhanced with sidewalks, street trees and street lights. In addition to single family homes, suburban residential neighborhoods may include schools, neighborhood parks, churches and similar uses that support quality residential neighborhoods. Police and fire service to these

neighborhoods is a primary concern and measures should be taken periodically to assure proper coverage of these services. Private roads should be considered under certain circumstances, such as for the preservation of large stands of trees, or to preserve steep slopes, where drainage and run-off is a concern, or where important natural features have been identified in the Natural Feature Inventory.

#### **COMMUNITY RESIDENTIAL**

**Description:** The community residential land use designation is intended for attached or detached single family and multi-family housing. A project should be designed and developed to provide attractive, up-scale master planned living environments with amenities such as open spaces, walking paths, street trees, street lighting and attractive architectural style. Buildings and structures should be designed to minimize bulk and massing of attached living units.

**Location:** The community residential land use area primarily serves as a transition from commercial/mixed use and suburban residential uses along 28<sup>th</sup> Street. However, there are two areas where this use is proposed along the south side of Cascade Road north of Burton.

**Desired Uses and Densities:** Uses may include attached and detached residential dwellings, including projects that incorporate a variety of housing options, as well as assisted living and retirement communities. Master-planned retirement communities may also incorporate low-impact commercial uses internal and integrated within the development such as personal service establishments (barber shop or hair salon), post office, financial institution and other necessary uses for the convenience of the residents but not available for use by the general public. Development within the community residential area should include a walking system that connects to any existing or planned non-motorized pathway. The Township desires for the community residential areas to be served by mass transit in the future. Water and sewer must be available for new development or redevelopment in this land use category. Additionally, any natural features should be preserved and protected in projects located in the community residential land use area. Only public roads would be permitted in the community residential land use category. Allowable densities would range between 4-6 dwelling units to the acre.

#### **VILLAGE COMMERCIAL**

**Description:** This land use designation is intended to foster a pedestrian-scale, local shopping district confined to the parcels currently zoned for commercial use. It is not the intent of this land use plan to expand commercial uses either north or south along Cascade Road.

## STAFF REPORT

- A. Applicant: Green Castle Properties  
200 Ottawa Ave Suite 800  
Grand Rapids MI 49503
- B. Status of Applicant: Owner/Purchaser
- C. General Location: The property is located east of on 28<sup>th</sup> St.
- D. Requested Action: Expand PUD 67 (East Imports) for a new parking lot at 6120 Charlevoix Woods Ct.
- E. Existing Zoning on Subject Parcels: PUD 67 (east Imports), B2 and PUD 58 (Thornapple Manor)
- F. Zoning on Adjoining Parcels:  
N- PUD 58  
S- PUD 39 (Centennial PARK)  
E- B2 and PUD 58  
W- B2
- G. Parcel Size: Approximately 9.6 acres (expansion area)
- H. Existing Land Use on Subject Parcel: Vacant, commercial
- I. Adjacent Area Land Uses:  
N- Vacant portion of PUD 58 (assisted living uses)  
S- Office  
E - Office  
W- WalMart

## STAFF ANALYSIS

1. The expansion would accommodate a new parking lot for the automotive dealer. They have purchased the three buildings to the east as well as the vacant property where they want to place the new parking lot.

2. This amendment would only add the now vacant lot at 6120 Charlevoix Woods Ct and allow them to add it to their existing PUD. The other buildings along 28th st are not part of the plan.
3. The project does maintain the emergency vehicle connection from Charlevoix Woods Ct to 28<sup>th</sup> st.
4. The township engineer has reviewed and approved the storm water plan for the new parking lot.
5. The new parking lot has provided some new landscaping along the west property line.
6. Extra effort was put into the plan to try and ensure the integrity of the master plan by not using any of the property north of the "old" B2 zoning line for anything other than storm water/landscaping and parking, since these activities could occur with other permitted uses in PUD 58.
7. If rezoned to allow for the expansion, the reaming portion of PUD 58 will still provide the transition that the community residential designation calls for and would not cause a conflict with the residential uses to the north.
8. The Fire Dept has reviewed and approved the site plan.
9. The DDA director has reviewed the plans and approved.
10. The planning commission has recommended approval of the project along with the amended P.U.D. Ordinance.

**A. Standards**

Section 16.03 of the Zoning Ordinance requires that a Planned Unit Development must demonstrate that:

Standard	Staff Comment
Granting of the Planned Unit Development rezoning will result in a recognizable and substantial benefit to the ultimate users of the project and to the community, where such benefit would otherwise be unfeasible or unlikely to be achieved.	The property is already zoned PUD. The changes they are asking for are consistent with the master plan.
In relation to underlying zoning, the	The type of use and density is consistent

proposed type and density of use shall not result in a material increase in the need for public services, facilities and utilities, and shall not place a material burden upon the subject or surrounding land or property owners and occupants or the natural environment	with the master plan would not result in a material increase in the need for public services.
The proposed development shall be compatible with the General Development Plan of the Township, and shall be consistent with the intent and spirit of this Chapter	The project is consistent with the master plan
In relation to underlying zoning, the proposed development shall not result in an unreasonable negative economic impact upon surrounding properties	The underlying zoning/use of the area is commercial and the amendment to allow the parking lot for car storage would not result in an unreasonable negative economic impact
The proposed development shall contain at least as much green area and usable open space as would otherwise be required by this Ordinance with respect to the most dominant use in the development	Although we did not apply the interior parking lot landscaping requirements they have provided significant landscaping around the perimeter of the site.
The proposed development shall be under single ownership or control such that there is a single person or entity having responsibility for completing the project in conformity with this Ordinance. This provision shall not prohibit a transfer of ownership or control, upon due notice to the Planning Director of the Township	met

**Staff Recommendation**

Staff recommends approval of the plan along with the P.U.D. amendment.

- Attachments:    Application  
                           Site plan  
                           Master plan excerpts  
                           P.U.D. Ordinance amendment



# CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan  
49546-7140

## PLANNING & ZONING APPLICATION

**APPLICANT:** Name: Green Castle Properties, LLC  
Address: 6095, 6115, 6143 28th Street SE & 6120 Charlevoix Woods Court SE  
City & Zip Code: Grand Rapids, MI 49546  
Telephone: (616) 774-4015  
Email Address: trothwell@dpfox.com

**OWNER: \* (If different from Applicant)**  
Name: Cascade Stewardship Prop LLC attn: Jeffrey Shull (6120 Charlevoix)  
Cascade Business Center LLC attn: Rachael (6095, 6115, 6143 28th Street)  
Address: 4519 Cascade Road SE, Suite 2B | 6143 28th Street SE  
City & Zip Code: Grand Rapids, MI 49546  
Telephone: NA | (616) 949-1536  
Email Address: NA | rachael@cascadebusinesscenter.com

### NATURE OF THE REQUEST: (Please check the appropriate box or boxes)

- |  |  |
|--|--|
| <input type="checkbox"/> Administrative Appeal         | <input type="checkbox"/> Administrative Site Plan Review |
| <input type="checkbox"/> Deferred Parking              | <input checked="" type="checkbox"/> P.U.D. - Rezoning *  |
| <input type="checkbox"/> P.U.D. - Site Condominium *   | <input type="checkbox"/> Rezoning                        |
| <input checked="" type="checkbox"/> Site Plan Review * | <input type="checkbox"/> Sign Variance                   |
| <input type="checkbox"/> Special Use Permit            | <input type="checkbox"/> Subdivision Plat Review *       |
| <input type="checkbox"/> Zoning Variance               | <input type="checkbox"/> Other: _____                    |

*\* Requires an initial submission of 5 copies of the completed site plan*

### BRIEFLY DESCRIBE YOUR REQUEST:\*\*

PUD amendment and site plan review to include additional parking at 6120 Charlevoix Woods Court SE.

(\*\*Use Attachments if Necessary)

-SEE OTHER SIDE-

**LEGAL DESCRIPTION OF PROPERTY\*\*:**

See Attachment

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(\*\*Use Attachments if Necessary)

**PERMANENT PARCEL (TAX) NUMBER:** 41-19 -08-451-054, -031, 032, 052

**ADDRESS OF PROPERTY:** 6095, 6115, 6143 28th Street SE & 6120 Charlevoix Woods Court SE

**PRESENT USE OF THE PROPERTY:** Miscellaneous Retail and Business

**NAME(S) & ADDRESS(ES) OF ALL OTHER PERSONS, CORPORATIONS, OR FIRMS HAVING A LEGAL OR EQUITABLE INTEREST IN THE PROPERTY:**

**Name(s)**

**Address(es)**

Cascade Stewardship Prop LLC attn: Jeffrey Shull

4519 Cascade Road SE, Suite 2B, Grand Rapids, MI 49546

Cascade Business Center LLC attn: Rachael

6143 28th Street SE, Grand Rapids, MI 49546

**SIGNATURES**

*I (we) the undersigned certify that the information contained on this application form and the required documents attached hereto are to the best of my (our) knowledge true and accurate. I (we) also agree to reimburse the Cascade Charter Township for all costs, including consultant costs, to review this request in a timely manner. I (we) understand that these costs may also include administrative reviews which may occur after the Township has taken action on my (our) request.*

*I (we) the undersigned also acknowledge that the proposed project does not violate any known property restrictions (i.e. plat restrictions, deed restrictions, covenants, etc.)*

Cascade Stewardship Prop LLC attn: Jeffrey Shull

Cascade Business Center LLC attn: Rachael

Green Castle Properties, LLC

Applicant – Print or Type Name

Please see attached purchase agreement

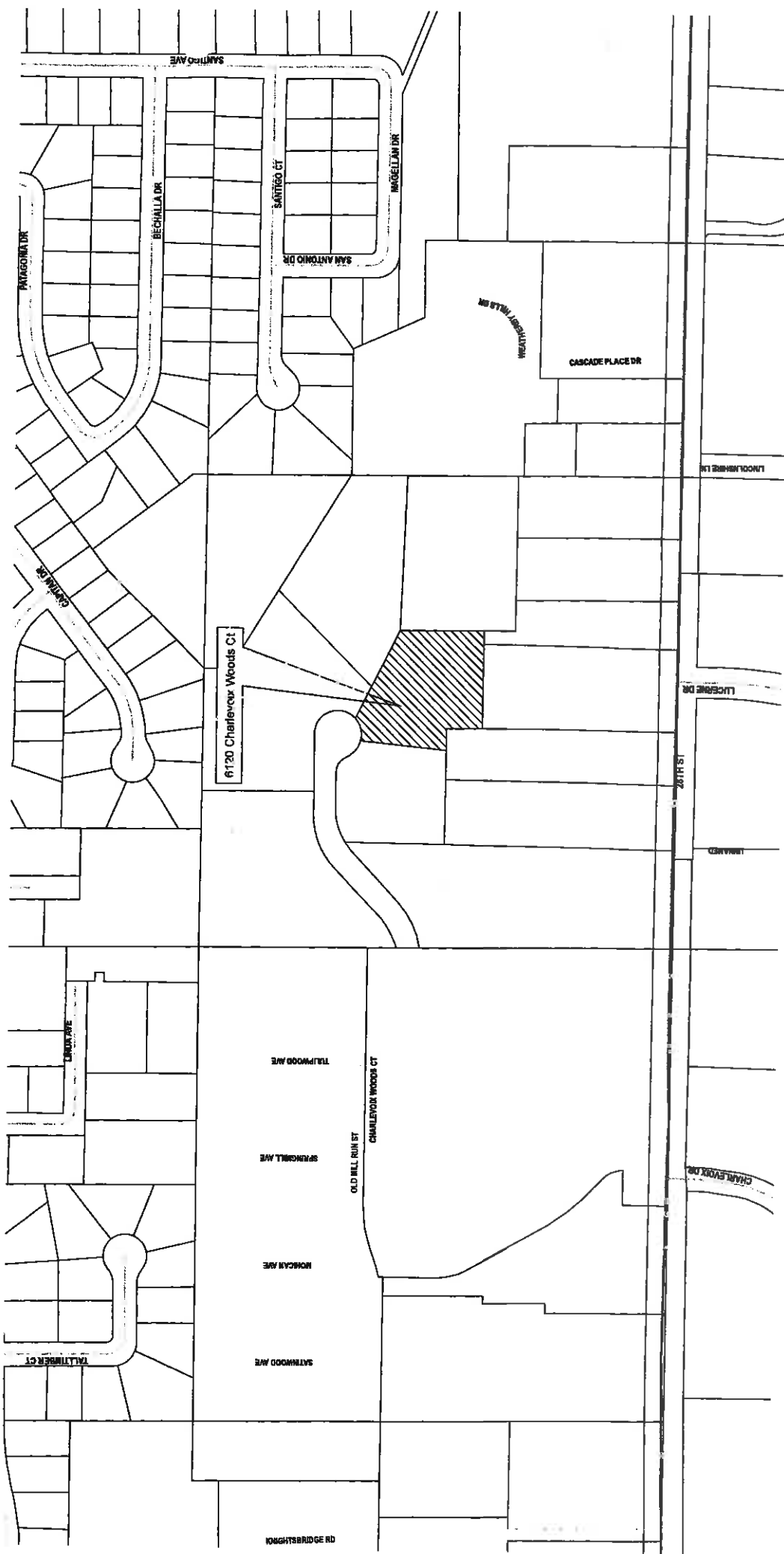
Owner – Print or Type Name  
(\*If different from Applicant)

\*  
Owner's Signature & Date  
(\*If different from Applicant)

By: Monica R. Serwinski  
Applicant's Signature & Date  
MONICA R. SERWINSKI, SVP & EC

PLEASE ATTACH ALL REQUIRED DOCUMENTS NOTED IN THE PROCESS REVIEW SHEET – THANK YOU

Rev. 7/24/14



CASCADE CHARTER TOWNSHIP  
**Ordinance #\_ of 2017**  
AN ORDINANCE TO AMEND ORDINANCE #1 OF 2004, THE  
**EAST IMPORTS**  
PLANNED UNIT DEVELOPMENT PROJECT

CASCADE CHARTER TOWNSHIP ORDAINS:

Section 1. Amendment to the East Imports PUD Ordinance

**Section Legal Description**

The section shall be amended to add the following property:

Part of the Southeast 1/4 of Section 8, Town 6 North, Range 10 West, Cascade Township, Kent County, Michigan, described as: Commencing at the South 1/4 corner of said Section 8; thence S89°32'03"E 273.75 feet along the South line of said Section 8 to the Point of Beginning; thence N00°29'57"E 918.76 feet to the South right-of-way line of Charlevoix Woods Court; thence Northeasterly 95.90 feet along a 167.00 foot radius curve to the right, said curve having a central angle of 32°54'11", and a chord bearing N73°32'50"E 94.59 feet; thence N90°00'00"E 101.02 feet; thence Southeasterly 57.59 feet along a 50.00 foot radius curve to the right, said curve having a central angle of 65°59'41", and a chord bearing S57°00'05"E 54.46 feet; thence Southeasterly 128.03 feet along a 68.00 foot radius curve to the left, said curve having a central angle of 107°52'49", and a chord bearing S77°56'42"E 109.94 feet; (last 4 courses being along said South right-of-way line); thence S60°43'50"E 275.14 feet; thence S00°38'51"E 232.94 feet; thence N89°32'03"W 273.01 feet along the North line of the South 530.38 feet of said Southeast 1/4; thence N00°43'11"W 111.61 feet; thence N89°32'03"W 135.09 feet; thence S00°29'57"W 641.86 feet; thence N89°32'03"W 180.50 feet along the South line of said Section 8 to the Point of Beginning. Contains 6.64 acres. Subject to easements, restrictions and rights-of-way of record.

**Section IV. Purpose:**

This section shall be amended to read as follows:

The Project occupies approximately 11.8 acres of land. The Project is proposed to be expanded to allow for a new (Subaru) new and used automobile sales and related uses. The Planned Unit Development technique has been chosen by the Developer to provide more control over the Project's aesthetics and appearance. This development technique provides the Developer with the ability to develop the Project in a manner to meet market expectations and develop the project in a unified manner with the existing East Imports PUD (Porsche and Audi) new and used automobile dealership.

The regulations contained herein are established to define the procedures necessary to insure high quality development in the Project. Additionally, they are designed to achieve integration of this development with adjacent land uses.

**Section VII. Design Guidelines, Requirements and Limitations.**

This section shall be amended to read as follows:

**B. Parking**

1. A total of 578 parking spaces are provided. With at least an additional 60 spaces being deferred until needed for a total of 638 if all parking is constructed. A minimum of 50 spaces must be reserved for customer parking with the rest of the parking allowed to be used for display of vehicles for sale. No vehicles are allowed to be displayed anywhere on the site except for an approved parking space as shown on the approved site plan.

**Section VIII. Landscaping**

This section shall be amended to read as follows:

The project shall provide landscaping according to the approved landscape plans as drawn by Concept Design Group dated 1/02/14 and the parking expansion plans drawn by Nederveld dated 7/25/17. The developer shall be required to deposit a Performance guarantee for landscaping prior to obtaining a building permit.

**Section XIV Lighting**

This section shall be amended to read as follows:

The required lighting section of the Zoning Ordinance as amended shall regulate lighting for the project. The lighting at this project is limited to only those lights and those types of lights as indicated on the approved photometric lighting plan as drawn by Concept Design Group dated 11/10/03 and the updated lighting plan dated 12/30/13 for the Subaru site and the parking expansion plan dated 7/25/17. Furthermore, the total height of individual light poles is limited to the height indicated on the plan as well. All lights on the site are to be downcast or "shielded" type lights. If the developer chooses to utilize LED lights the new plan will be reviewed administratively by the Planning Department for compliance with our lighting regulations

**Section 2. Effective Date**

This PUD Ordinance amendment shall become effective upon publication in the Grand Rapids Press, a newspaper of general circulation within Cascade Charter Township.

**Section 3. Effect**

The Cascade Charter Township Zoning Ordinance, as amended, and the remainder of Ordinance #11 of 2002, as amended, except as otherwise expressly amended herein, shall remain in full force and effect.

The foregoing Ordinance amendment was offered by Board Member \_\_\_\_\_ supported by Board Member \_\_\_\_\_. The roll call vote being as follows:

YEAS:  
NAYS:  
ABSENT:  
ABSTAIN:  
ORDINANCE DECLARED ADOPTED.

---

Sue Slater  
Cascade Charter Township Clerk

**CERTIFICATION**

I hereby certify the foregoing to be a true copy of an Ordinance adopted at a Regular Meeting of the Cascade Charter Township Board on the \_\_\_<sup>th</sup> day of \_\_\_\_\_ 2017.

---

Sue Slater  
Cascade Charter Township Clerk



August 1, 2017  
Project No. G080322

Mr. Steve Peterson  
Cascade Charter Township  
2865 Thornhills Avenue, SE  
Grand Rapids, MI 49546-7192

Re: Fox Subaru  
Site Plan Review

Dear Steve:

We have reviewed the site plan for Fox Subaru, located at 6115 28th Street, prepared by Nederveld. The current site plan and basis of this review are dated July, 21, 2017. The proposed project is a parking lot expansion at the existing car dealership. The site is located in the Thornapple River watershed, sub-drainage district Schoolhouse Creek.

## Stormwater and Drainage

### Flood Control

The Cascade Charter Township Storm Water Ordinance (SWO), Section 1.04, states the ordinance shall apply to all development that requires any permit for work which will alter the stormwater drainage characteristics of the development site. The site is located in Stormwater Management Zone A, which requires retention of the 100-year storm event and infiltration to the greatest extent possible. Where soil conditions or other factors do not allow for adequate infiltration, the SWO requires detention of the 25-year storm event with a controlled release and a direct connection for stormwater runoff for the 100-year storm event, or detention of the 100-year storm event. The SWO also requires the first 0.5-inch of stormwater runoff be detained and released over a 24 hour period (Water Quality Control) and the 2-year storm event release rate be limited to 0.05 cfs/acre (Bank Erosion Control).

The applicant provided two soil borings and two double ring infiltrometer tests to verify the infiltration capacity of the existing soils. The soil conditions encountered generally consisted of brown lean clay and brown clayey sand extending to a depth of 17 to 20 feet below existing grade, 12 to 13 feet below bottom of the proposed detention basin. Groundwater was not encountered. The infiltration test results at both locations were 0.0 inches/hour. The existing soils are not suitable for stormwater infiltration.

Stormwater infiltration at this location was found to be not feasible, therefore the proposed stormwater management design includes a detention basin with a controlled release sized for the 100-year storm event. All stormwater runoff from the impervious areas of the new parking lot will be captured and conveyed to the new detention basin. The detention basin will tie-in to an existing county drain storm sewer that discharges to a regional detention basin located north and east of the site. A permit from the Kent County Drain Commissioner (KCDC) will be required for discharge to the county drain.

The existing site drains to a stormwater detention basin located adjacent to the proposed detention basin. The existing detention basin was also designed with a controlled release, not infiltration, and connects to the same county drain storm sewer.

### Water Quality Control and Bank Erosion Control

The SWO requires the first 0.5 inch of stormwater runoff be detained and infiltrated where conditions permit, or released over a 24-hour period, and the 2-year storm event release rate be limited to 0.05 cfs/acre. The proposed detention basins includes an outlet control structure with three separate orifice openings, one each for the water



quality control, bank erosion control, and flood control discharges. The applicant provided design details and stormwater calculations indicating this SWO requirement has been met.

### **Stormwater Runoff**

The applicant provided stormwater calculations to size the proposed detention basin. All stormwater runoff from the new parking lot will discharge to the detention basin. Therefore, the site will not see an increase in rate of stormwater leaving the site.

### **Drainage Plan**

The applicant has submitted drawings, calculations, and additional documentation as required in the SWO Section 2.03, Drainage Plan. Please refer to the included checklist for items and comments on each item. Please note a maintenance agreement is required before construction begins. The agreement should be submitted to the Township for review. The maintenance agreement and plan should include at a minimum cleaning of catch basin sumps and the mechanical vortex separator unit.

### **Utilities**

Water and/or sanitary sewer services are not required for the parking lot expansion.

### **Soil Erosion and Sedimentation Control**

Soil Erosion and Sedimentation Control (SESC) measures are provided on the plan drawings. The applicant has included silt fence along the limits of disturbance and silt sacks in new catch basins. SESC falls under the review and approval of the Kent County Road Commission and a permit is required before construction can begin. The SESC measures indicated on the drawings appear appropriate given the expected work.

### **Summary**

The proposed stormwater design meets the Township SWO requirements for new developments. The applicant will need to apply for and obtain a number of permits (SESC and KCDC) prior to beginning construction. We recommend approval of the site plan from an engineering standpoint.

If you have any questions or require additional information, please contact me at 616.464.3786 or [nrtorrey@ftch.com](mailto:nrtorrey@ftch.com).

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, appearing to read "N. Torrey", is positioned above the name of the signatory.

Nathan R. Torrey, PE

jlk  
Attachment  
By email

## Drainage Plan Checklist

Page 1

August 1, 2017



### Cascade Charter Township

Storm Water Ordinance, Ordinance 7 of 2002, as amended by Ordinance No. 2 of 2008, 5/14/2008

*Reviewing Engineer Comments are Italicized*

*OK – Received and Acceptable*

*NA – Not Applicable*

*NR – Not Received, Needs Follow-up, See Comments*

### Fox Subaru

#### Drainage Plan Checklist

- OK (1) Location of the development site and water bodies that will receive storm water runoff  
*All stormwater runoff from the new parking lot is collected by a new detention basin that discharges to a Kent County drain.*
- OK (2) Existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map  
*Existing and proposed contours have been provided.*
- OK (3) Development tributary area to each point of discharge from the development  
*Stormwater calculations and tributary areas were provided by the applicant.*
- OK (4) Calculations for the final peak discharge rates  
*The applicant provided calculations in design of the onsite storm sewer system and detention basin.*
- OK (5) Calculations for any facility or structure size and configuration  
*Stormwater runoff calculations were provided by the applicant.*
- OK (6) Drawing showing all proposed storm water runoff facilities with existing and final grades  
*The applicant provided a utility plan showing all proposed stormwater runoff facilities.*
- OK (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map  
*The site plan did not indicate any major offsite drainage routes flowing into the site.*
- OK (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan  
*A construction schedule was included on the plans.*
- OK (9) Plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways  
*The SESC measures shown on the plan appear appropriate given the expected work. SESC falls under the review and approval of the KCRC and a permit is needed before construction can begin.*



OK (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance

*The applicant provided calculations and design details for construction of the onsite storm sewer system.*

NR (11) Maintenance agreement, in form and substance acceptable to the Township, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the Township to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense

*Maintenance agreement was not provided and is required.*

OK (12) Name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities

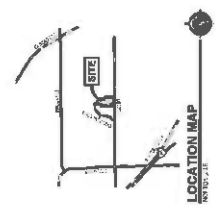
NA (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS)

*This is a privately owned system and will not be uploaded to REGIS.*

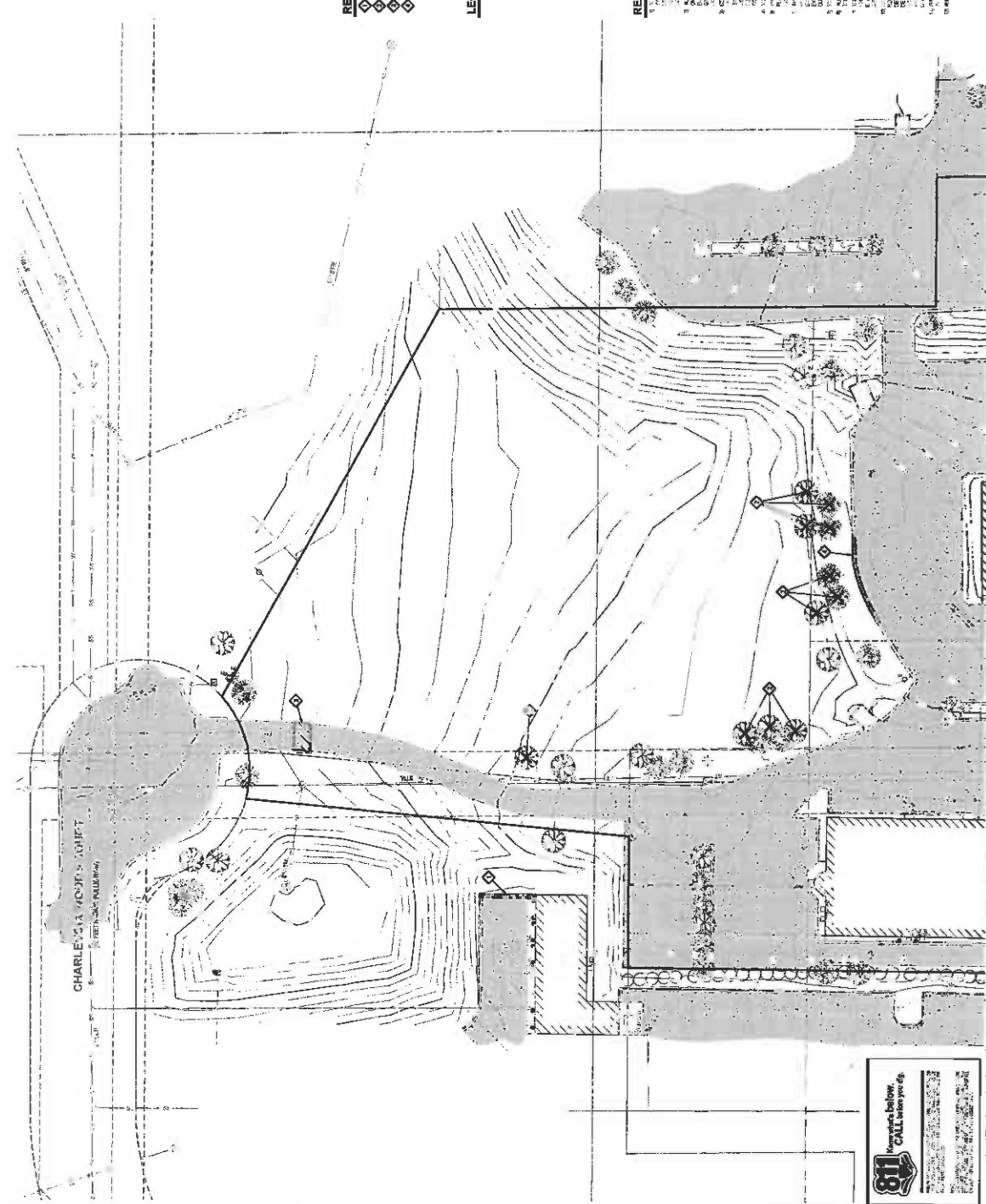
OK (14) Other information necessary for the Township to verify that the drainage plan complies with the Township's design and performance standards for drains and storm water management systems



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SITE (REVISION)



**REMOVAL / DEMOLITION NOTES**

- ◆ STRUCTURE TO BE DEMOLISHED
- ◆ FIELD SERVICE SIGN
- ◆ FENCE TO BE DEMOLISHED
- ◆ SEE SEE-1, DRAWING SET

**LEGEND**



**REMOVAL / DEMOLITION NOTES**

1. ALL STRUCTURES TO BE DEMOLISHED SHALL BE DEMOLISHED TO GRADE. ALL FOUNDATION FOOTINGS SHALL BE REMOVED TO A MINIMUM OF 12" BELOW GRADE. ALL REMAINING FOUNDATION FOOTINGS SHALL BE FENCED OFF AND MARKED AS DANGER. ALL REMAINING FOUNDATION FOOTINGS SHALL BE FENCED OFF AND MARKED AS DANGER.

2. ALL EXISTING UTILITIES SHALL BE LOCATED AND MARKED PRIOR TO DEMOLITION. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER.

3. ALL EXISTING UTILITIES SHALL BE LOCATED AND MARKED PRIOR TO DEMOLITION. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER.

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9. ALL EXISTING UTILITIES SHALL BE LOCATED AND MARKED PRIOR TO DEMOLITION. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER.

10. ALL EXISTING UTILITIES SHALL BE LOCATED AND MARKED PRIOR TO DEMOLITION. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER. ALL UTILITIES SHALL BE DELETED AND MARKED AS DANGER.

**NEDERVELD**  
www.nederveld.com  
1715 GRAND AVENUE  
GRAND HAVEN, MI 49424  
PHONE: 616.845.1234  
FAX: 616.845.1235

**PREPARED FOR:**  
Greenfield Farms, LLC  
2150 Greenfield Road  
Grand Haven, MI 49424  
Phone: 616.845.1234

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	11/11/11	ISSUED FOR PERMIT
2	11/11/11	ISSUED FOR PERMIT
3	11/11/11	ISSUED FOR PERMIT
4	11/11/11	ISSUED FOR PERMIT
5	11/11/11	ISSUED FOR PERMIT
6	11/11/11	ISSUED FOR PERMIT
7	11/11/11	ISSUED FOR PERMIT
8	11/11/11	ISSUED FOR PERMIT
9	11/11/11	ISSUED FOR PERMIT
10	11/11/11	ISSUED FOR PERMIT

**FOX SUBARU PARKING  
PUD AMENDMENT**  
Demolition Plan

3715 SOUTHFIELD ROAD AND 6750 WESTWOOD COURT  
PART OF THE CITIES OF GRAND HAVEN AND GRAND RAPIDS  
GRAND TOWNHIP, KENT COUNTY, MICHIGAN

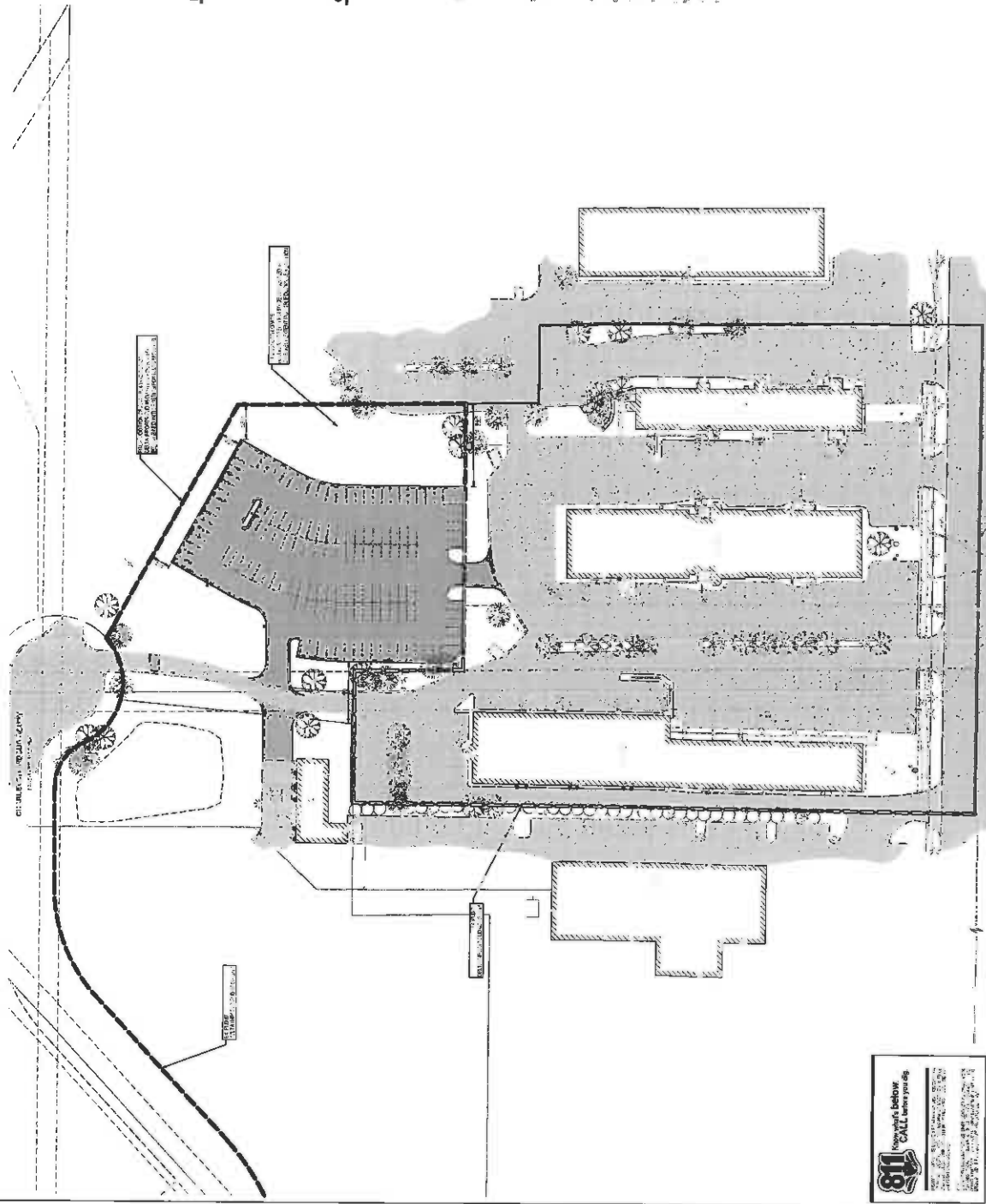


**PROJECT NO:**  
1744332

**SHEET NO:**  
C-203

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 1400 LINDSEY DR  
 GRAND RAPIDS MI 49508  
 TEL: 616.221.1138  
 FAX: 616.221.1139  
 www.nederveld.com

**PREPARED FOR:**  
 Street: Fox Subaru, LLC  
 Land: R. Smith

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	10/18/11	ISSUED FOR PERMITS
2	10/20/11	REVISED PER COMMENTS
3	10/25/11	REVISED PER COMMENTS
4	10/28/11	REVISED PER COMMENTS
5	11/01/11	REVISED PER COMMENTS
6	11/05/11	REVISED PER COMMENTS
7	11/08/11	REVISED PER COMMENTS
8	11/12/11	REVISED PER COMMENTS
9	11/15/11	REVISED PER COMMENTS
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83	6/24/12	REVISED PER COMMENTS
84	6/27/12	REVISED PER COMMENTS
85	6/30/12	REVISED PER COMMENTS
86	7/03/12	REVISED PER COMMENTS
87	7/06/12	REVISED PER COMMENTS
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95	7/30/12	REVISED PER COMMENTS
96	8/02/12	REVISED PER COMMENTS
97	8/05/12	REVISED PER COMMENTS
98	8/08/12	REVISED PER COMMENTS
99	8/11/12	REVISED PER COMMENTS
100	8/14/12	REVISED PER COMMENTS

**LEGEND:**

	12\"/>
	6\"/>
	4\"/>
	2\"/>

**GENERAL NOTES:**

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**FOX SUBARU PARKING**  
**PUD AMENDMENT**  
 Site Layout Plan

**STAMP:**

Professional Engineer  
 License No. 10000  
 State of Michigan

**PROJECT NO.:** 1740032  
**SHEET NO.:** C-204

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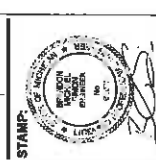
**NEDERVELD**  
 www.nederveld.com  
 200 Grand Rapids  
 Grand Rapids, MI 49503  
 Phone: 616.221.1100  
 Fax: 616.221.1101

**PREPARED FOR:**  
 Green Capital Projects, LLC  
 Tom Holland  
 200 Grand Ave SE  
 Grand Rapids, MI 49503  
 Phone: 616.221.1100

**REVISIONS:**

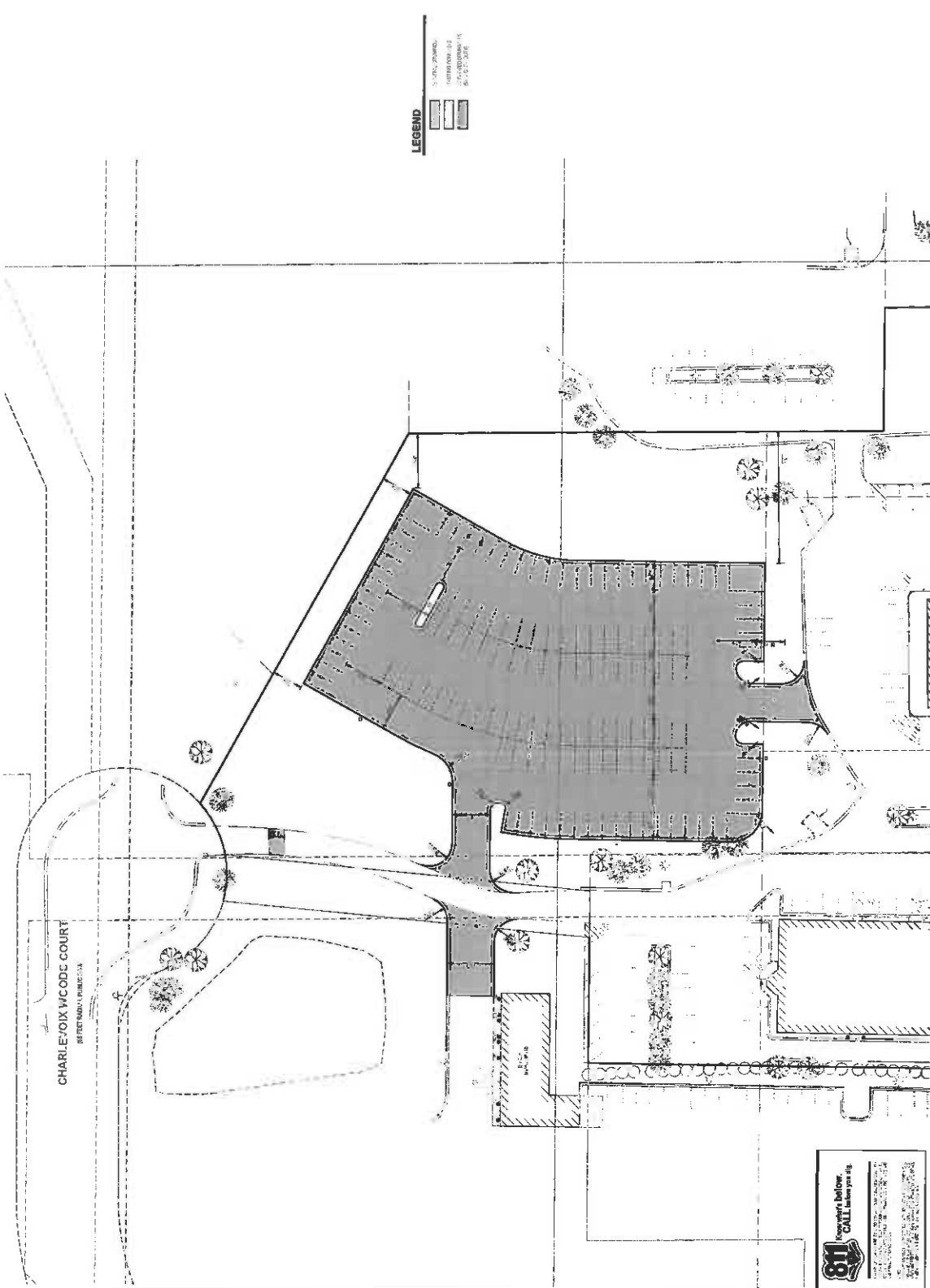
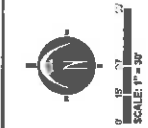
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19	08/14/13	REVISIONS TO PERMIT
20	08/14/13	REVISIONS TO PERMIT

**FOX SUBARU PARKING  
 PUD AMENDMENT  
 Site Layout Plan**



**PROJECT NO:**  
17400392

**SHEET NO:**  
**C-205**

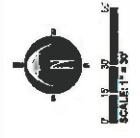


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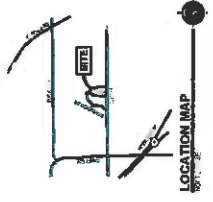
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[Symbol]	EXISTING CURB

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Green Oaks, P.C., No. 1, LLC  
17100 W. 12th St., SE  
Grand Rapids, MI 49508  
Phone 616-448-0101

REVISIONS:

NO.	DATE	DESCRIPTION
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33	08/11/17	ISSUED FOR PERMITS

SOIL EROSION CONTROL SCHEDULE

NO.	DATE	DESCRIPTION
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2	08/11/17	ISSUED FOR PERMITS
3	08/11/17	ISSUED FOR PERMITS
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32	08/11/17	ISSUED FOR PERMITS
33	08/11/17	ISSUED FOR PERMITS

SOIL EROSION AND SEDIMENTATION CONTROL NOTES

1. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE EROSION CONTROL PLAN.
2. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION.
3. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION.
4. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION.
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33. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION.

SOIL MATTING LEGEND

1	100% MATTING
2	75% MATTING
3	50% MATTING
4	25% MATTING
5	NO MATTING

LEGEND

- 1. 100% MATTING
- 2. 75% MATTING
- 3. 50% MATTING
- 4. 25% MATTING
- 5. NO MATTING
- 6. EROSION CONTROL MEASURES
- 7. SEDIMENTATION CONTROL MEASURES
- 8. STORMWATER MANAGEMENT MEASURES
- 9. UTILITIES
- 10. EXISTING IMPROVEMENTS
- 11. PROPOSED IMPROVEMENTS
- 12. PROPERTY LINES
- 13. ADJACENT PROPERTIES
- 14. ROAD RIGHT-OF-WAY
- 15. RAILROAD RIGHT-OF-WAY
- 16. AIR RIGHTS

FOX SUBARU PARKING  
PUD AMENDMENT  
S.E.S.C. & Grading Plan

7:00 PM TO 8:00 PM  
PART OF THE 17:00 PM TO 8:00 PM PERMITS FOR FOX SUBARU PARKING

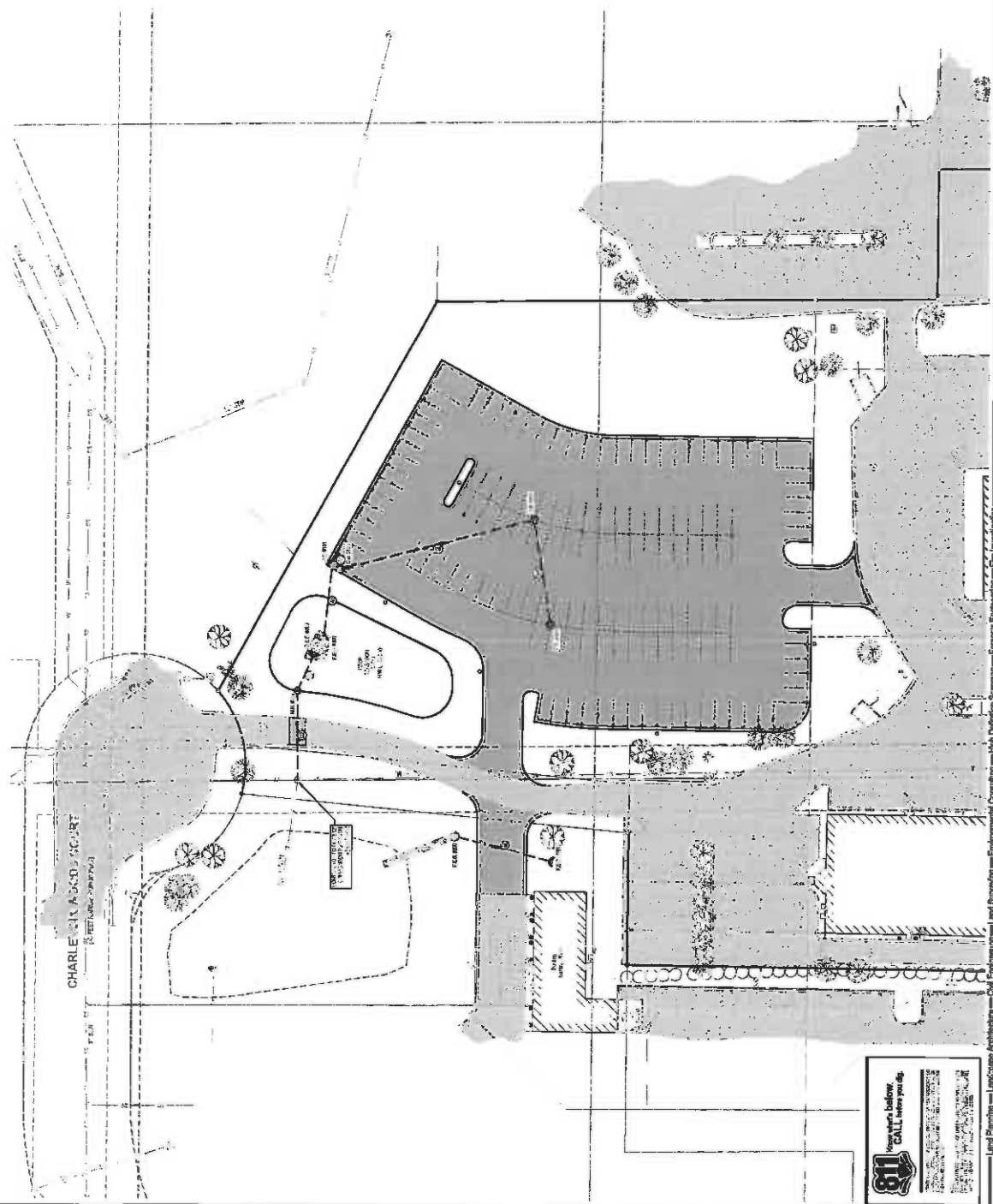
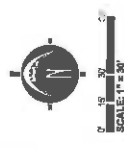


PROJECT NO: 1740032

SHEET NO: C-300



Experiences... the Difference



NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/22/18
2	AS SHOWN	10/22/18

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/22/18
2	AS SHOWN	10/22/18

**LEGEND**

- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN
- STORM SEWER STRUCTURE

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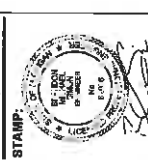
**PREPARED FOR:**  
Green Lotus Property, LLC  
Tom Roberg

**DESIGNED BY:**  
Nederveld Engineering  
1022 18th St NW  
Grand Rapids, MI 49503  
616.221.1800

**REVISIONS:**

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	10/22/18
2	AS SHOWN	10/22/18

**FOX SUBARU PARKING PUD AMENDMENT**  
Utility Plan



**PROJECT NO:** 1746332  
**SHEET NO:** C-400

Land Planning — Landscape Architecture — Civil Engineering — Soil Engineering — Land Surveying — Environmental Consulting — High Definition Scanning — Forest Engineering — Fire Investigation

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 2000 S. WESTLAND AVENUE  
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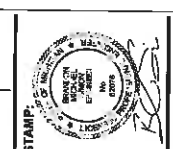
**PREPARED FOR:**  
 City of Grand Rapids, Michigan  
 Tom Kellum

**PROJECT:**  
 FOX SUBARU PARKING  
 1740032

**REVISIONS:**

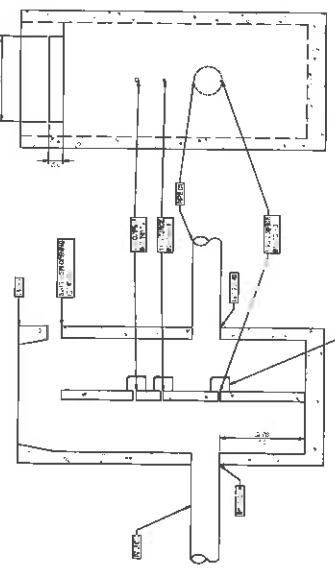
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9	07/11/08	REVISED FOR PERMITS
10	08/11/08	REVISED FOR CONSTRUCTION

**FOX SUBARU PARKING**  
**PUD AMENDMENT**  
**Details & Specifications**

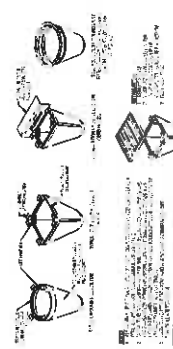


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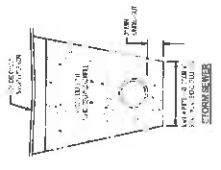
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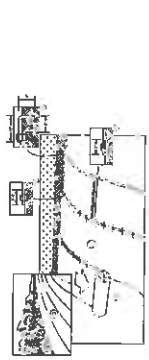
**OUTLET CONTROL STRUCTURE**  
 1740032



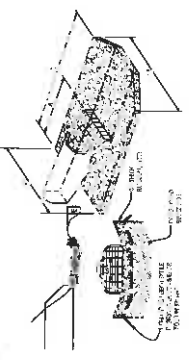
**FLEXSTORM INLET FILTER DETAIL**



**TYPICAL UTILITY TRENCH AND BACKFILL DETAILS**

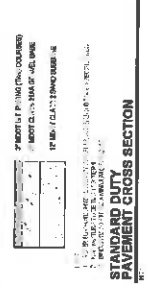


**EROSION CONTROL BLANKET**



**RIP RAP DETAIL**

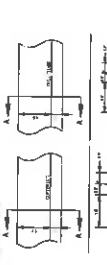
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**STANDARD DUTY PAVEMENT CROSS SECTION**

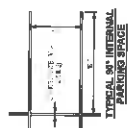


**FLOW CURB CURB ELEVATION DETAILS**

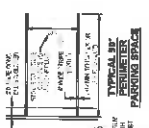


**SPILL CURB CURB ELEVATION DETAILS**

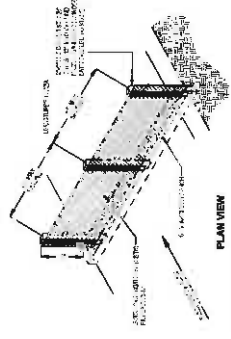
**24" CONCRETE CURB AND GUTTER DETAIL**



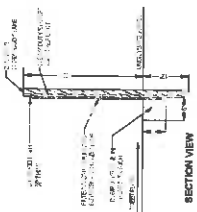
**TYPICAL INTERNAL PARKING SEWAGE**



**TYPICAL PERIMETER PARKING SEWAGE**



**PLAN VIEW SILT FENCE DETAIL**



**SECTION VIEW SILT FENCE DETAIL**

**CONSTRUCTION NOTES**

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS AND BRIDGES (2004 EDITION) AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS (2004 EDITION).
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATERWAYS AND MARINE STRUCTURES (2004 EDITION).
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF UTILITIES (2004 EDITION).
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS (2004 EDITION).
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS (2004 EDITION).
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8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS (2004 EDITION).
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS (2004 EDITION).
10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION OF AIRPORTS (2004 EDITION).



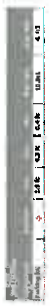


V.T.R. LLC

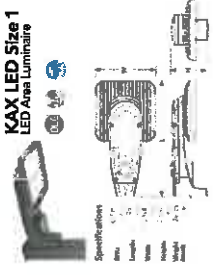
FOX SQUARE PUD AMENDMENT  
SITE LIGHTING PHOTO-METRIC PLAN

Designer: V.T.R. LLC  
Date: 07/15/2023  
Scale: 1" = 100'  
Drawing No.: 23-001  
Summary

Item	Quantity	Description	Unit	Notes
1	1	FOX SQUARE PUD AMENDMENT	LOT	
2	1	FOX SQUARE PUD AMENDMENT	LOT	
3	1	FOX SQUARE PUD AMENDMENT	LOT	
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98	1	FOX SQUARE PUD AMENDMENT	LOT	
99	1	FOX SQUARE PUD AMENDMENT	LOT	
100	1	FOX SQUARE PUD AMENDMENT	LOT	



KAX LED Size 1  
LED Area Luminaire



Specifications

- Item: KAX LED Size 1
- Finish: White
- Material: Aluminum
- Height: 1.5"
- Width: 12"
- Depth: 6"

Optic: Optic Luminaire

Optic Luminaire is a recessed luminaire that provides a wide, uniform distribution of light. It is ideal for use in areas where a soft, even glow is desired, such as in hallways, offices, and retail spaces. The luminaire is made of aluminum and has a white finish. It is available in two sizes: 12" x 6" and 18" x 6".

REVISIONS

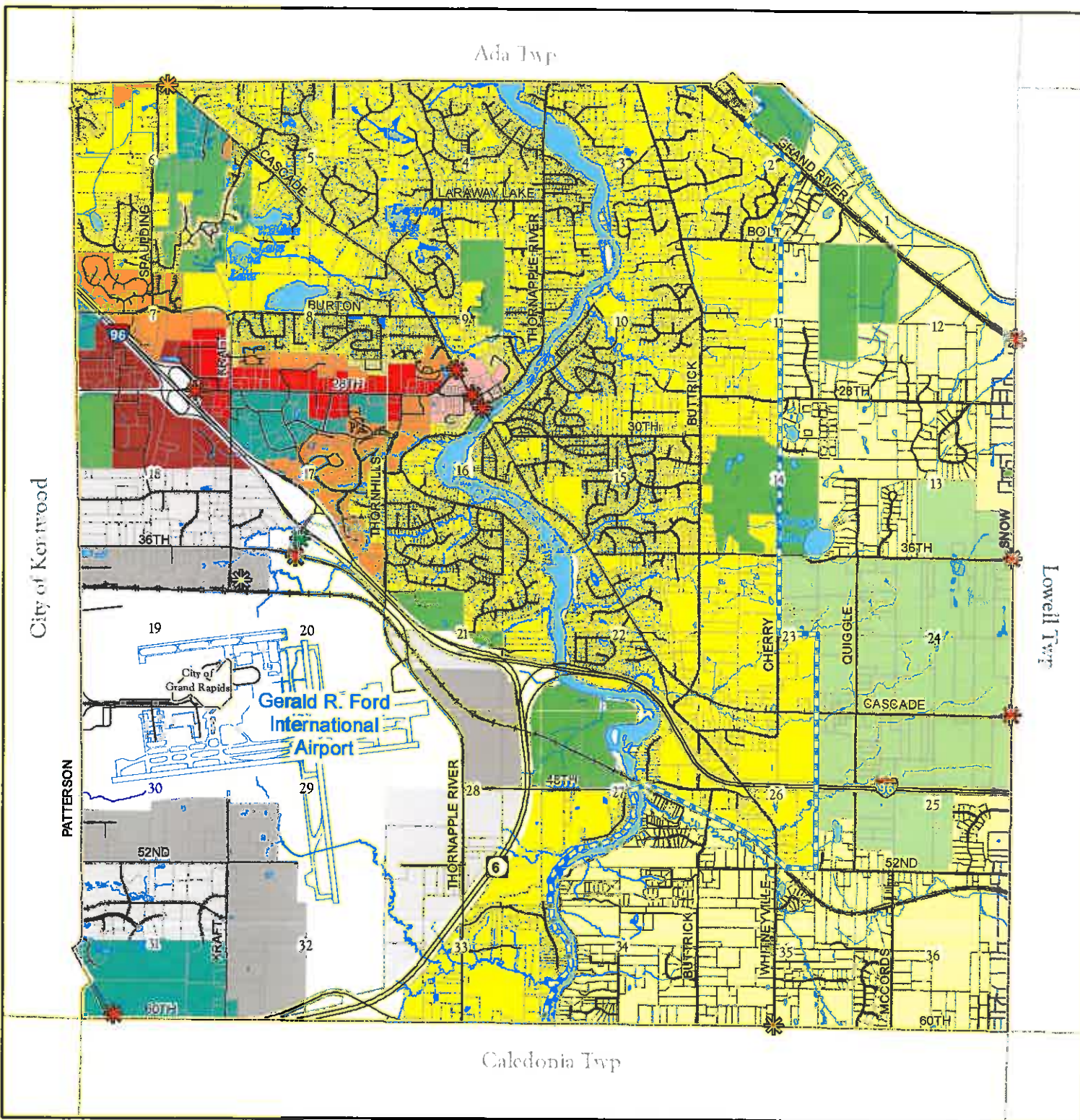
NO.	DATE	DESCRIPTION
1	07/15/2023	ISSUED FOR PERMIT
2	07/15/2023	REVISED TO REFLECT CHANGES TO THE PLAN
3	07/15/2023	REVISED TO REFLECT CHANGES TO THE PLAN
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6	07/15/2023	REVISED TO REFLECT CHANGES TO THE PLAN
7	07/15/2023	REVISED TO REFLECT CHANGES TO THE PLAN
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10	07/15/2023	REVISED TO REFLECT CHANGES TO THE PLAN

Scale: 1" = 100'

Ada Twp



City of Kentwood

Lowell Twp

Caledonia Twp

# Cascade Charter Township

Kent County, Michigan

## Map 15 Future Land Use

### Legend

- Gateway Feature
- Park 'n' Ride
- Rail Station
- Utility Service Area

- Farmland Preservation
- Rural Residential
- Suburban Residential
- Community Residential
- Village Commercial
- General Commercial
- Highway Commercial
- Mixed Use
- Heavy Industrial
- Light Industrial
- Community Facility / Golf Course



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 It is hereby certified that the information contained herein was prepared by the undersigned in accordance with the provisions of the Michigan Professional Land Use Planning Act, Public Act 1997-10, as amended.

**Williams & Works**  
 Professional Land Use Planners

414.224.1388 phone • 414.224.1881 fax  
 541 Cass Avenue NW • Grand Rapids, MI 49508

April 22, 2009

neighborhoods is a primary concern and measures should be taken periodically to assure proper coverage of these services. Private roads should be considered under certain circumstances, such as for the preservation of large stands of trees, or to preserve steep slopes, where drainage and run-off is a concern, or where important natural features have been identified in the Natural Feature Inventory.

#### **COMMUNITY RESIDENTIAL**

**Description:** The community residential land use designation is intended for attached or detached single family and multi-family housing. A project should be designed and developed to provide attractive, up-scale master planned living environments with amenities such as open spaces, walking paths, street trees, street lighting and attractive architectural style. Buildings and structures should be designed to minimize bulk and massing of attached living units.

**Location:** The community residential land use area primarily serves as a transition from commercial/mixed use and suburban residential uses along 28<sup>th</sup> Street. However, there are two areas where this use is proposed along the south side of Cascade Road north of Burton.

**Desired Uses and Densities:** Uses may include attached and detached residential dwellings, including projects that incorporate a variety of housing options, as well as assisted living and retirement communities. Master-planned retirement communities may also incorporate low-impact commercial uses internal and integrated within the development such as personal service establishments (barber shop or hair salon), post office, financial institution and other necessary uses for the convenience of the residents but not available for use by the general public. Development within the community residential area should include a walking system that connects to any existing or planned non-motorized pathway. The Township desires for the community residential areas to be served by mass transit in the future. Water and sewer must be available for new development or redevelopment in this land use category. Additionally, any natural features should be preserved and protected in projects located in the community residential land use area. Only public roads would be permitted in the community residential land use category. Allowable densities would range between 4-6 dwelling units to the acre.

#### **VILLAGE COMMERCIAL**

**Description:** This land use designation is intended to foster a pedestrian-scale, local shopping district confined to the parcels currently zoned for commercial use. It is not the intent of this land use plan to expand commercial uses either north or south along Cascade Road.



**CASCADE CHARTER TOWNSHIP**  
2865 Thornhills SE Grand Rapids, Michigan 49546-7140

**Date:** October 11<sup>th</sup>, 2017  
**To:** Supervisor Beahan and Township Board Members  
**From:** Ben Swayze, Township Manager  
**Subject:** Eagle Creek Renewable Energy – Landlord Consent (Cascade Dam)

---

**FACTS:**

In connection with the sale of STS Hydropower's interest in the Cascade Dam Powerhouse Lease (the "Lease") and other assets to Eagle Creek Renewable Energy ("ECRE"), ECRE's lender, Deutsche Bank, has requested that the Township execute the attached document entitled Landlord's Consent, Estoppel Certificate and Amendment No. Two to Lease (the "Landlord's Consent").

Attached for your review are:

- Proposed Landlord's Consent, Estoppel Certificate and Amendment No. Two to Lease

**ANALYSIS & CONCLUSIONS:**

The primary purposes of the Landlord's Consent are: (i) to confirm certain factual matters relative to the Lease, including that the Lease is in full force and effect and that no defaults exist under the Lease; (ii) to confirm that the Township will not terminate or amend the Lease by agreement with ECRE without the lender's consent; (iii) to confirm that the Township approves of ECRE's pledge of the Powerhouse assets owned by ECRE to the lender; and (iv) to confirm certain rights of the lender in the event of a default by ECRE, either with respect to repayment of its debt to the lender or with respect to performance of its obligations to the Township under the Lease. The lender's rights under this last point include, specifically, the right to receive notice of, and to cure, defaults by ECRE under the Lease, and the right to assume ECRE's position as the tenant under the Lease and to operate the Powerhouse until it can be sold to another operator. These sorts of lender rights are customary in a leasehold mortgage context.

The Lease contemplates, at Section 12.1, that ECRE may "grant a security interest in, or mortgage, or otherwise grant a lien against its interest in [the] Lease, and in the Premises, structures, fixtures and personal property thereon" and that the Township will cooperate to execute "all documents . . . which any Lender of funds for the Powerhouse may reasonably require." Accordingly, the Township appears to have an obligation to reasonably cooperate with the lender with respect to the Landlord's Consent.

The proposed Landlord Consent document was negotiated with help from Township legal Counsel, whom offer the following analysis:

*"After reviewing the Landlord's Consent, we found most of its provisions to be usual and customary for this type of transaction. However, as you know, a number of the deadlines by which the lender would be required to cure defaults of ECRE were proposed to be lengthened beyond those that were acceptable to the prior lender, Allstate Life Insurance Company ("Allstate"). Accordingly, we suggested that the duration of those cure periods*

*be revised to better conform to the cure periods acceptable to Allstate and the lender agreed. Certain other proposed rights of the lender were also modified to better conform to those that were acceptable to Allstate and otherwise to help protect the Township's interests."*

Township Legal Counsel has recommended approval of the proposed Landlord Consent Document.

**FINANCIAL CONSIDERATIONS:**

Approval of the document has no immediate financial impact on the Township.

**RECOMMENDED ACTION:**

Approve the *Landlord's Consent, Estoppel Certificate and Amendment No. Two* with Eagle Creek Renewable Energy.

**DRAFTED BY, RECORDING REQUESTED BY  
AND WHEN RECORDED MAIL TO:**

Greenberg Traurig, LLP  
77 West Wacker Drive, Suite 3100  
Chicago, Illinois 60601  
Attention: Michael D. Robson, Esq.

**LANDLORD'S CONSENT, ESTOPPEL CERTIFICATE  
AND AMENDMENT NO. TWO TO LEASE**

THIS LANDLORD'S CONSENT, ESTOPPEL CERTIFICATE AND AMENDMENT NO. TWO TO LEASE (this "Agreement"), dated as of October \_\_, 2017, by CHARTER TOWNSHIP OF CASCADE (the "Landlord") and STS HYDROPOWER LTD., a Michigan corporation (the "Tenant") for the benefit of DEUTSCHE BANK TRUST COMPANY AMERICAS, as collateral agent for the Secured Parties (as defined in the Collateral Security Agreement described below (the "Collateral Agent").

**RECITALS**

WHEREAS, Landlord and Tenant are parties to that certain Restated Lease Agreement dated as of April 1, 2004 and that certain Amendment No. One to Lease dated as of December 5, 2016 (as amended, restated, supplemented and restated from time to time, the "Lease"), demising certain premises more particularly described in the Lease (the "Premises");

WHEREAS, Eagle Creek Hydro Holdings, LLC, a Delaware limited liability company, as issuer (the "Company") has entered into that certain Note Purchase and Guaranty Agreement (as amended, restated, supplemented, and modified from time to time, the "Note Agreement") dated as of July 31, 2017, by and among Company, Tenant and certain other subsidiaries of Company named therein, as guarantors (the "Guarantors"; together with Company, the "Obligors") and certain purchasers named on Schedule A attached thereto as may be modified or amended from time to time (the "Purchasers") pursuant to which Purchasers have agreed to purchase, and the Company has agreed to issue, certain senior secured notes (the "Notes") guaranteed by the Guarantors, which Notes will be used to refinance indebtedness in respect of a portfolio of hydroelectric projects (including the Premises), fund reserve accounts and for general corporate purposes, among other things;

WHEREAS, it is a condition precedent to the obligations of the Purchasers under the Note Agreement that (i) the Obligors, among other things, enter into that certain Collateral Security Agreement (as may be amended, restated, supplemented, or modified from time to time, the "Collateral Security Agreement"), dated as of July 31, 2017, by and among Obligors, the Secured Parties and Collateral Agent, pursuant to which each Obligor grants to Collateral Agent for the benefit of the Secured Parties a first-priority security interest in all of its right, title and interest in and to its assets, including a collateral assignment in, to and under the Lease, and (ii) the Tenant execute and deliver a Leasehold Mortgage, Assignment of Leases and Rents, Security Agreement and Fixture Filing dated as of July 31, 2017 (as amended, restated, supplemented, and modified from time to time, collectively the "Mortgage"), pursuant to which Tenant

mortgages and conveys in trust, assigns and transfers to Collateral Agent under the Mortgage all of its rights, title and interest in and under the Lease, and grants a security interest in specified personal property, all as security for the performance and observance of the obligations of Tenant and the other Obligor under the Note Agreement, the Notes and certain other financing documents;

WHEREAS, pursuant to Section 12.1 of the Lease, Tenant may grant a security interest in, or mortgage, or otherwise grant a lien against its interest in the Lease, and in the Premises, structures, fixtures and personal property thereon (the "Leasehold Interest") and Landlord agrees to execute all necessary documents reasonably required to create any such interest or which any Lender of funds for the Powerhouse may reasonably require; and

WHEREAS, pursuant to Section 36 of the Lease, the Landlord agreed to certain rights of Tenant, as mortgagor, and Allstate Life Insurance Company, as "Mortgagee" with respect to that certain Leasehold Deed of Trust, Assignment of Rents, Security Agreement, Financing Statement and Fixture Filing dated as of March 15, 1995 (the "Allstate Mortgage"); and

WHEREAS, it is a condition precedent to the Note Agreement that the parties shall have executed this Agreement.

NOW, THEREFORE, in consideration of the mutual agreements contained in this Agreement and for other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereby agree as follows:

1. All initially capitalized terms not otherwise defined in this Agreement shall have the same meaning ascribed to them in the Lease.

2. Landlord hereby consents to the assignment, conveyance, pledge and encumbrance of the Leasehold Interest by Tenant to the Collateral Agent for the benefit of the Secured Parties pursuant to the terms of the Mortgage and the Collateral Security Agreement and agrees and acknowledges that all conditions to such consent, including any requirements set forth in the Lease, have been satisfied or waived. Nothing in this Agreement shall be deemed to assent to any lien on Landlord's fee interest in the Premises, but rather solely to a lien on the Leasehold Interest.

3. Landlord hereby covenants, warrants, represents and certifies for the benefit of Collateral Agent as follows:

(a) Landlord has all requisite power and authority to enter into this Agreement and to perform all obligations it is required to perform under this Agreement and to carry out the transactions contemplated under this Agreement and the Lease as amended by this Agreement. The undersigned has full power and authority to execute and deliver this Agreement on behalf of Landlord.

(b) The execution, delivery and performance by Landlord of this Agreement and the Lease have been duly authorized by all necessary actions, and do not and will not

(i) require any consent or approval which has not been obtained, (ii) violate any provision of Landlord's organizational documents, or, to the best of Landlord's knowledge, any law, rule, regulation, order, writ, judgment, injunction, decree, determination or award presently in effect having applicability to Landlord, or (iii) result in a breach of or constitute a default under Landlord's organizational documents or any agreement relating to the management or affairs of Landlord or any indenture or loan or credit agreement or other material agreement, lease or instrument to which Landlord is a party or by which it or its properties may be bound or affected.

(c) This Agreement and the Lease are the legal, valid and binding obligations of Landlord enforceable against Landlord in accordance with their respective terms.

(d) To the best knowledge of Landlord, there is no pending or threatened action or proceeding affecting the ability of Landlord to perform its obligations under, or which purports to affect the legality, validity or enforceability of, this Agreement or the Lease.

(e) Notwithstanding any provision of the Lease to the contrary, the Lease is in full force and effect and binding upon the parties thereto and, to the best of Landlord's knowledge, all obligations or conditions of the Lease to be performed by Landlord and Tenant, as applicable, (including the payment of all amounts due and owing to or by Tenant as of the date hereof) and necessary to the enforceability of the Lease have been satisfied. All previous defaults by Tenant under the Lease known to Landlord have either been cured to the satisfaction of Landlord or have been irrevocably waived. To the best of Landlord's knowledge, there is no existing default on the part of Landlord or Tenant under the terms of the Lease nor any act, event, happening or contingency which, with the passage of time or giving of notice, or both, would be a default by Landlord or Tenant under the Lease. The Lease has not been assigned by Landlord (or by Tenant pursuant to Landlord's consent), or amended, modified, supplemented or superseded except as set forth in Exhibit A.

(f) Landlord hereby confirms and agrees that all of the lender protection provisions contained in the Lease, as amended and supplemented in this Agreement, and all other provisions of the Lease inuring to the benefit of a lender or its permitted successors and assigns (including Section 36) are hereby incorporated into this Agreement by reference and restated and confirmed by Landlord for the benefit of Collateral Agent and its successors and assigns.

(g) Landlord hereby agrees and confirms that Collateral Agent is not required under the Lease to subordinate its interest in the Lease to any mortgage or deed of trust now or hereafter encumbering the Landlord's fee estate in the Premises.

As used in this Section, the words "to Landlord's knowledge," "to the best of Landlord's knowledge," "to the best knowledge of Landlord," or words of similar import, mean the actual knowledge of Landlord's Township Manager, Benjamin Swayze, on the date of this Agreement, as presently recollect, without duty of inquiry or investigation.

4. Notwithstanding anything to the contrary contained in the lender protection provisions contained in the Lease, if any, Landlord agrees that:

(a) If an event of default under Paragraph 21 of the Lease shall occur, written notice to that effect shall be sent by Landlord to the Collateral Agent or its successor or assignee (the "Lender") and Landlord shall take no action to terminate the Lease or to interfere with the occupancy, use or enjoyment of the Premises until such written notice is given and any applicable cure period shall have expired.

(b) If the Lease shall terminate or be rejected or not affirmed pursuant to any bankruptcy law or other law affecting creditors' rights, to the extent permitted by applicable law, the Lender, or a person designated thereby, shall have the right, but is under no obligation to, enter into a new lease of the Premises with Landlord exercisable by notice to Landlord within the later of (i) seventy-five (75) days after the filing of any bankruptcy or insolvency proceeding by or against the Tenant or (ii) fifteen (15) days after the effective date of such termination. The term of said new lease shall begin on the date of the execution of such new lease and shall continue for the remainder of the term of the Lease. Such new lease shall otherwise contain the same terms and conditions as those set forth in the Lease, except for requirements which are no longer applicable or have already been performed.

(c) No Lender shall become liable for the performance or observance of any covenants or conditions to be performed or observed by Tenant unless and until (i) such Lender becomes the owner of Tenant's interest under the Lease upon the exercise of any remedy provided for in the Mortgage and specifically assumes the Lease in writing, or (ii) such Lender enters into a new lease with Landlord pursuant to subsection (b) above. Thereafter, such Lender shall be liable for the future performance and observance of such covenants and conditions only so long as such Lender owns such interest or is lessee under such new lease.

(d) Tenant acknowledges that the indebtedness secured by the Allstate Mortgage has been extinguished and that all references to Allstate Life Insurance Company shall be replaced with a reference to the "Collateral Agent" in the Lease.

5. So long as any of the obligations secured by the Mortgage are outstanding, Landlord will not amend, modify, or supplement the Lease without the prior written consent of Collateral Agent, which will not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing or any other provisions of this Agreement to the contrary, modifications or amendments to the Lease that (a) do not materially reduce the value of the leasehold estate under the Lease, (b) do not materially increase the obligations of Tenant and (c) are not materially adverse to the interest of Tenant or the Collateral Agent may be effectuated by Landlord and Tenant, provided that a final draft copy of the same is delivered to Collateral Agent at least twenty (20) days prior to the full execution and delivery thereof by the parties thereto and the Mortgage is, as a matter of record, expanded to cover any additional lands which such modification has the effect of including under the terms of the Lease concurrently with the execution and delivery of the same.

6. Notwithstanding anything to the contrary in the Lease, the Collateral Agent, upon and after the exercise of its rights and enforcement of its remedies under the Mortgage, may assign its rights under the Lease to any party with the prior written consent of Landlord (which consent shall not be unreasonably withheld); provided, however, that such assignee shall have expressly assumed in writing for the benefit of Landlord all the obligations and liabilities of Tenant thereafter arising under the Lease (including its existing restrictions on assignment). Upon such assignment and assumption by such assignee, the Collateral Agent shall be relieved of all obligations under the Lease arising after such assignment and assumption. The Collateral Agent and any successor, assignee or designee of the Collateral Agent shall be entitled to fully perform Tenant's obligations under the Lease, and Landlord shall accept such performance as fully as if the Collateral Agent or such successor, assignee or designee were the original party to the Lease. Upon and after the exercise of its remedies under the Mortgage, the Collateral Agent and any successor, assignee or designee of the Collateral Agent shall have the full right and power to enforce directly against Landlord all obligations of Landlord under the Lease and otherwise to exercise all remedies under the Lease and to make all demands and give all notices permitted to be given by Tenant under the Lease.

7. Except as such may be a remedy for breach of the Lease by the Collateral Agent or its successor or assignee, or in the event the Collateral Agent or its successor or assignee fails to exercise its rights to cure the default of Tenant within the time permitted by the Lease and this Agreement, Landlord will not, without the prior written consent of the Collateral Agent, cancel, suspend or terminate the Lease or consent to or accept any cancellation, suspension or termination of the Lease (except upon full performance of all of Landlord's and Tenant's obligations under the Lease).

8. A foreclosure of, or other exercise of remedies under, the Mortgage by the Collateral Agent or its successor or assignee, whether by judicial proceedings or under any power of sale contained in the Mortgage, or any conveyance from Tenant to the Collateral Agent or any such successor or assignee, in lieu of any such action, shall not require the consent of Landlord or, absent any other default under the Lease, constitute a default under the Lease.

9. In the event that the Collateral Agent or its successor or assignee succeeds to Tenant's interest under the Lease, whether by foreclosure or otherwise, or enters a new lease with Landlord pursuant to paragraph 4(b), the Collateral Agent or its successor or assignee shall assume liability for all of Tenant's obligations under the Lease, and shall cure all defaults under the Lease existing as of the date of such succession or new lease within the time periods required by the Lease and this Agreement. Notwithstanding the foregoing, nothing in this Section shall prevent Landlord from sooner terminating the Lease if Collateral Agent or its successor or assignee has failed to cure any default of which it has received notice from Landlord within the time permitted by the lender protection provisions of the Lease and this Agreement (such as, by way of example but not of limitation, the failure of Collateral Agent or its successor or assignee to cure any default by Tenant in the payment of money due Landlord under the Lease within fifteen days after receipt of Landlord's notice).

10. Landlord acknowledges that (a) the obligations secured by the Mortgage are made and entered into in material reliance by Tenant upon this Agreement and the representations, warranties, statements and covenants contained in this Agreement and (b) such

representations, warranties, statements and covenants are made for the benefit and protection of Collateral Agent and its successors and assignees.

11. Landlord and Tenant shall each, without charge, at any time and from time to time during the term of the Lease within thirty (30) days after written request by the other or by Collateral Agent or any of its successors or assignees, execute and acknowledge and deliver to the party making such request a written instrument certifying that (a) that the Lease is in full force and effect and (b) to the best of its knowledge whether the other party has or has not, as the case may be, made any default in the performance by such party of any agreements, terms, covenants and conditions on such party's part to be performed and if any such default exists, specifying such default.

12. Landlord shall simultaneously send Collateral Agent a copy of all default notices that Landlord sends to Tenant under the Lease. Any notice required under this Agreement or the Lease shall be in writing and shall be deemed to have been delivered (i) when presented personally, (ii) when transmitted by telecopy to Collateral Agent's telecopy (facsimile) number specified below or electronic mail (in pdf format), (iii) one (1) business day after being delivered to a courier for overnight delivery to Collateral Agent, addressed to Collateral Agent, at the address indicated below (or such other address as Collateral Agent may have specified by written notice delivered to Landlord) or (iv) three (3) business days after being deposited in a regularly maintained receptacle for the United States Postal Service, postage prepaid, registered or certified, return receipt requested, addressed to Collateral Agent, at the address indicated below (or such other address as Collateral Agent may have specified by written notice delivered to Landlord). The telecopy (facsimile) numbers provided below or to be provided are for the convenience of Landlord only. Transmission by telecopy shall constitute provision of notice under this Agreement only if receipt thereof is acknowledged by Collateral Agent or Landlord, as the case may be:

Collateral Agent:

Deutsche Bank Trust Company Americas  
Trust and Agency Services  
60 Wall Street, 16th Floor  
Mail Stop: NYC60-1630  
New York, NY 10005  
Attention: Project Finance Agency Services – Eagle Creek  
Hydro Holdings, LLC  
Facsimile: (732) 578-4636  
Email: annie.v.jaghatspanyan@db.com

Tenant:

STS Hydropower Ltd.  
c/o Eagle Creek Hydro Holdings, LLC  
65 Madison Avenue, Suite 500  
Morristown, NJ 07960  
Attention: Elijah C. Smith, EVP - Corporate Finance

Phone: (973) 998-8410  
Fax: (973) 998-8401  
Email: eli.smith@eaglecreekre.com

Landlord:

Charter Township of Cascade  
2865 Thornhills Drive, SE  
Grand Rapids, Michigan 49546-7192  
Attention: Benjamin Swayze, Township Manager  
Telephone: 616-949-1500  
Telecopy: 616-949-3918  
Email: bswayze@cascadetwp.com

with copy to:

John M. Huff and David T. Caldon  
Varnum, LLP  
P.O. Box 352  
Grand Rapids, Michigan 49501-0352  
Telephone: 616-336-6000  
Telecopy: 616-336-7000  
Email: jmhuff@varnumlaw.com and dtcaldon@varnumlaw.com

13. This Agreement shall be binding upon the successors and assigns of Landlord and shall inure, together with the rights and remedies of the Collateral Agent under this Agreement, to the benefit of the Collateral Agent and its successors and assignees. For purposes of this Agreement, the successors and assignees of the Collateral Agent shall include any person or entity appointed by the holders of the Notes to hold or otherwise act with respect to all or any part of the collateral conveyed pursuant to the Mortgage as collateral agent, security representative or trustee for such holders and any assignment of this Agreement to such person or entity shall not require the consent of Landlord. At any time after the Collateral Agent or its successor or assignee succeeds to Tenant's interest under the Lease, whether by foreclosure or otherwise, or enters into a new Lease with Landlord pursuant to paragraph 4(b), the Collateral Agent or its successor or assignee shall not be entitled to the benefits of this Agreement.

14. No amendment or waiver of any provisions of this Agreement or consent to any departure by Landlord from any provisions of this Agreement shall in any event be effective unless the same shall be in writing and signed by the Collateral Agent and then such waiver or consent shall be effective only in the specific instance and for the specific purpose for which it was given.

**15. THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF MICHIGAN. IN THE EVENT THAT ANY PROVISION OF THIS AGREEMENT IS HELD BY A COURT OF COMPETENT JURISDICTION TO BE INVALID, UNENFORCEABLE OR VIOLATIVE OF ANY APPLICABLE LAW, IT**

**SHALL BE DEEMED NULL AND VOID TO THE EXTENT OF THE PROVISIONS SO  
AFFECTED WITHOUT AFFECTING THE BALANCE OF THIS AGREEMENT.**

*[signatures on following page]*

IN WITNESS WHEREOF, the undersigned have executed this Agreement as of the date and year first written above.

WITNESSED BY:

CHARTER TOWNSHIP OF CASCADE

\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_  
Name: Robert Beahan  
Title: Supervisor

By: \_\_\_\_\_  
Name: Susan Slater  
Title: Clerk

STS HYDROPOWER LTD.,  
a Michigan corporation

\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_  
Name:  
Title:

ACCEPTED BY:

DEUTSCHE BANK TRUST COMPANY AMERICAS

WITNESSED BY:

By: Deutsche Bank National Trust Company

By: \_\_\_\_\_  
Name:  
Title:

By: \_\_\_\_\_  
Name:  
Title:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

STATE OF MICHIGAN    )  
                                  )SS.  
COUNTY OF KENT        )

Acknowledged before me this \_\_\_ day of October, 2017, by Robert Beahan and Susan Slater, the Supervisor and Township Clerk, respectively, of the Charter Township of Cascade, for the Township.

\_\_\_\_\_  
\*  
Notary Public, Kent County, Michigan  
Acting in the County of Kent, Michigan  
My commission expires: \_\_\_\_\_

[Notarial Seal]

STATE OF \_\_\_\_\_ )  
 )SS.  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_ day of July, 2017, before me, \_\_\_\_\_, a notary public in and for said County, personally appeared \_\_\_\_\_, known or identified to me to be the \_\_\_\_\_ of DEUTSCHE BANK NATIONAL TRUST COMPANY on behalf of DEUTSCHE BANK TRUST COMPANY AMERICAS (the “Collateral Agent”), that executed the above instrument or the person who executed the instrument on behalf of the Collateral Agent and acknowledged to me that the Collateral Agent executed the same.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, \_\_\_\_\_  
My commission expires: \_\_\_\_\_

[Notarial Seal]

STATE OF \_\_\_\_\_ )  
 )SS.  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_ day of July, 2017, before me, \_\_\_\_\_, a notary public in and for said County, personally appeared \_\_\_\_\_, known or identified to me to be the \_\_\_\_\_ of DEUTSCHE BANK NATIONAL TRUST COMPANY on behalf of DEUTSCHE BANK TRUST COMPANY AMERICAS (the “Collateral Agent”), that executed the above instrument or the person who executed the instrument on behalf of the Collateral Agent and acknowledged to me that the Collateral Agent executed the same.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, \_\_\_\_\_  
My commission expires: \_\_\_\_\_

[Notarial Seal]

STATE OF \_\_\_\_\_ )  
  )SS.  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_ day of July, 2017, before me, a notary public in and for said County, personally appeared \_\_\_\_\_, who being by me duly sworn did say that (s)he is the \_\_\_\_\_ of STS HYDROPOWER LTD., a Michigan corporation, that the foregoing instrument was signed on behalf of said corporation by authority of its Board of Directors, and acknowledged said instrument to be the free act and deed of said corporation.

\_\_\_\_\_  
Notary Public  
\_\_\_\_\_ County, \_\_\_\_\_  
My commission expires: \_\_\_\_\_

[Notarial Seal]

## **EXHIBIT A**

- **Amendment No. One to Lease dated as of December 5, 2016**