TOWNSHIP

ADA TOWNSHIP PLANNING COMMISSION MEETING
THURSDAY, APRIL 18, 2024, 5:30 P.M.
ADA TOWNSHIP OFFICE, ASSEMBLY HALL
7330 THORNAPPLE RIVER DR SE, ADA, MI

AGENDA

I. CALL TO ORDER

II. ROLL CALL

III. APPROVAL OF AGENDA

IV. APPROVAL OF MINUTES OF MARCH 21, 2024, REGULAR MEETING

V. PUBLIC HEARING

1. Proposed Text Amendments to the Zoning Ordinance to: (1) Create provisions for public art and murals; and (2) Provide language for zoning compliance permits for agricultural buildings

2. Request for Special Use for a proposed addition (multi-purpose space and related site improvements) to St. Robert of Newminster Church and School, 6477 Ada Drive SE, Parcel No. 41-15-33-101-027

VI. UNFINISHED BUSINESS

1. Request for Planned Unit Development (PUD) Amendment for expansion and amendment of an existing PUD for a commercial warehouse/storage facility (The Caves) to contain a total of 15 buildings (existing and proposed) on a total of +/- 6.75 acres in the I Industrial District, The Caves LLC, Tom Reed, 4900 and 4920 Fulton Street East, Parcel Nos. 41-15-30-300-019 and 41-15-30-300-020

VII. NEW BUSINESS

VIII. COMMISSION MEMBER / STAFF REPORTS

IX. PUBLIC COMMENT

X. ADJOURNMENT

ADA TOWNSHIP PLANNING COMMISSION
MINUTES OF THE MEETING MARCH 21, 2024, REGULAR MEETING

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A regular meeting of the Ada Township Planning Commission was held on Thursday, March 21, 2024, at 5:30 p.m., at the Ada Township Hall, 7330 Thornapple River Drive, Ada, Michigan.

I. CALL TO ORDER

Chair Korth called the meeting to order at 5:30 p.m.

II. ROLL CALL

Members Present: Butterfield, Jacobs, Kluting, Korth, Moyer, VanderVennen
Members Absent: Burton
Staff Present: Bajdek, McIntosh, Said, Suchy
Others Present: 12 members of the public

III. APPROVAL OF AGENDA

Moved by Jacobs, supported by Moyer, to approve the agenda as presented. Motion carried.

IV. APPROVAL OF MINUTES OF FEBRUARY 15, 2024, REGULAR MEETING

Moved by Moyer, supported by Kluting, to approve the February 15, 2024, Regular Meeting minutes as presented. Motion carried.

V. PUBLIC HEARING

1. **Request for Planned Unit Development (PUD) Amendment for expansion and amendment of an existing PUD for a commercial warehouse/storage facility (The Caves) to contain a total of 15 buildings (existing and proposed) on a total of +/- 6.75 acres in the I Industrial District, The Caves LLC, Tom Reed, 4900 and 4920 Fulton Street East, Parcel Nos. 41-15-30-300-019 and 41-15-30-300-020**

Korth summarized the application before recusing himself due to a long-term contract with the owner of the facility. Korth stepped out of the room at 5:35 p.m., Vice-Chair Butterfield presided over the meeting.

Tom Reed, 4900-4920 Fulton, here to present application for The Caves LLC. Mr. Reed is proposing to amend the existing PUD approval/site plan with an expansion with new buildings, related site changes, and a merger between the new site with previously owned adjacent property. He referred to the site plan included in the packet and went over the proposed changes, then he addressed several aspects of the staff report: staff have concerns regarding the frontage

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of the site, the location of the driveway, and concerns regarding the setbacks and other variances that would be needed.

Jacobs asked if there was a pre-application conference on the project as it is unusual for something with this many issues to come before the Planning Commission. Planning Director Said stated there was a pre-application conference in 2023, and the application that we met with him about was pulled and resubmitted. Said stated that the utility issues are a matter of township ordinance, stating that water is a requirement due to the adjoining property.

Vice-Chair Butterfield referred to the Staff for their report. Said stated the original PUD plan was approved in 2017 with several buildings and a driveway through a previously privately owned piece of property. Now that Mr. Reed has acquired the "Anderson" property, he is proposing to unify the adjacent parcel with the preexisting Caves property to become a single development. Said summarized the following items noted in the staff report: front yard setback, and side and rear yard setbacks. He noted that a larger concern is the 10-foot setback proposed for building 24, with a 50-foot setback requirement. Staff believes that is too close to the property line, with no plantings or buffer proposed, with an unknown status to the neighboring property, the setback could be an issue further down the line. Staff also noted a concern with the outside parking due to the dimensions of the parking areas and general visibility of long-term parking and storage.

Butterfield inquired regarding the placement of the buildings towards the front of the property. Reed explained that the problem with changing placement is due to the elevation.

Butterfield opened the public hearing at 6:00 p.m.

Mike Novak, 69 Taos Ave, asked a question regarding the function of the business. Butterfield stated that the use of the property is a long-term storage facility.

There was no other public comment and the public hearing was closed at 6:07 p.m.

Butterfield moves to Board discussion. There was extended discussion among Commissioners, Mr. Reed, and Staff: VanderVennen agreed with staff discussion regarding the setbacks. Butterfield stated the same, where a buffer and screening be utilized regardless of the future of building 24. Jacobs stated that outdoor parking is a concern and that in the past other businesses were not able to utilize their proposed outdoor storage, and she feels this is a similar conclusion regarding the outside parking proposed at this location. Kluting asked a question regarding buildings 24/25 and the setback on Fulton Street. Mr. Reed stated that building 24 is 47-feet due to a drain and is concerned regarding the redesign needed if a setback close to 50-feet was required for building 25. Moyer asked a question regarding why buildings cannot be moved in the drawing to better accommodate the setback requirement. Reed stated that the site plan can be modified but there are limitations due to the MDOT drainage and water. Kluting asked questions regarding the outdoor parking. Mr. Reed summarized the proposed outdoor storage/parking.

Said stated that from the Staff perspective, it is a concern that starting the expectation regarding outdoor storage. Said also stated that making changes on perspective tenants can be an issue with what happens 10 or 20 years later and how to prioritize use of the PUD and retain higher planning standards. Bajdek stated that we do have an approved PUD plan that works where the setback concerns are mitigated.

Kluting requested information regarding signage. Said replied that there is an existing sign and signage is typically reviewed separately from a PUD plan. If a sign doesn't meet ordinance requirements, then you may need a zoning variance unless the signage is approved within the PUD.

Moved by Jacobs, supported by VanderVennen, to table review to a special meeting (date and time to be determined) to discuss the project with applicant. Motion Carried.

2. Request for Special Use for vehicle fleet storage facility on a +/- 4.3 acre site in the I Industrial District, Jeffrey Bowerman/200 Alta Dale Holdings LLC, 200 Alta Dale Ave. SE, Parcel No. 41-15-29-327-005

Korth reentered the meeting at 6:34 p.m. Jacobs noted that she works for the same law firm as Mr. Rabaut (WN+J), but she does not feel necessary to recuse herself because she does not work in his practice group. Jim Rabaut, lawyer representing 200 Alta Dale Holdings, stated the application request is for the conversion and expansion of the existing building. He said the applicant is comfortable with the recommendations made by Staff in their staff report. Todd Palmer, AMDG Architects, stated the request is for a total addition of 19,000 sq. ft. and the required parking is being satisfied. Mr. Palmer said the building addition and parking will accommodate space for the anticipated staff members. He briefly explained the details of the changes and said that they are working with a civil engineer to accommodate storm drains, new lighting and additional security measures. The existing site has wetland to the north which will be integrated with the proposed landscaping.

Moyer asked regarding the chemical impact of the car wash section. Mr. Palmer stated that the car wash is not for commercial use.

Korth opened the public hearing at 6:40 p.m.

Rosa Fraga, 6010 Fulton SE, the property directly to east of 200 Alta Dale, stated that developers moved that land to create the wetland and that the impact on their property has been extremely negative. She stated there is drainage in the area and into Carl Creek due to all the surrounding development. She stated that their concerns are regarding water runoff, soil erosion, contamination, and drainage and is asking about what additional measures are being taken to reduce this environmental impact to Carl Creek, the surrounding wetlands, and their property. She concluded with an additional concern about exterior lighting being directed into their house.

Mr. Palmer addressed the concerns noted and said that the detention tank is set to handle all the storm water/run off, and there is no plan to adjust the grade due to the detention system that will be installed, as well as the installation of a retaining wall. He said that no additional water will be pushed into the wetlands and the car wash will dispose into the city water system, not into the wetland. He added note that an oil separator will be installed to assist in purifying water, and the long-term parking will take place inside buildings with the outdoor parking being for staff member parking. Mr. Rabaut noted that the property to the east is also zoned industrial.

There was Commissioner discussion regarding the type of vehicles being stored there (private use/SUV storage), and the concern about storm water drainage and to possibly add a note for a condition of approval. Said commented on the concern about exterior lighting and stated that there is a condition of approval that has lighting requirements and there is also a lighting plan submitted. Said also discussed details on the height of the building addition.

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Korth stated that staff works hard regarding storm water management communications and that the additional storm water requirements may very well be addressed in this construction. Said noted that the Carl Creek wetlands are owned by the township, and Staff does not have concerns regarding storm water management due to the technology being used to assist in management and preservation of the wetlands.

There was no other public comment and Korth closed the public hearing at 7:04 p.m.

Moved by Jacobs, supported by Kluting, to approve the Special Use request, subject to the following conditions:

1. There shall be no exterior storage of vehicles, trucks, or equipment. Any exterior parking areas shall be for short-term (daily) parking only.

2. All exterior lighting shall consist of horizontal cutoff fixtures to minimize glare.

3. Prior to the issuance of any occupancy permit, the applicant shall install a Knox Box (key box for emergency access) in a location to be approved by the Fire Department.

4. Applicants are required to submit a storm water permit application for approval by staff.

Motion carried.

VI. UNFINISHED BUSINESS - none

VII. NEW BUSINESS

1. Request for Extension of PVM Development Plan approval for 7369 Thornapple River Drive SE (6-unit residential building), Ken Dixon/Ufuk Turan/1411 Robinson LLC, Parcel No. 41-15-34-126-021

Ufuk Turan presented the request for PVM extension. Mr. Turan updated the status of his project and said that all the drawings are done, the contractor bid completed, and a contactor has been selected. He is currently working with banks for financing and is planning to start the project later this year or early next year.

Said summarized the staff report and stated that the Planning Commission approved the original PVM District Development Plan for this project on November 17, 2022, and approved an amended plan (balcony modifications) on June 15, 2023. Absent approval of an extension request, this Plan would expire on May 17, 2024. Said explained that the PVM Plan regulations say that you are allowed 18 months and can request a one-year extension, taking this issue to May 2025. The existing plan remains the same, and this request is only a request for extension.

Moved by Moyer, supported by Jacobs, to approve the one-year extension, to May 17, 2025, with the same conditions from the original approval remaining in place. Motion carried.

2. Request for Site Plan Approval for proposed addition at 6210 E. Fulton Street, Dan Vos Construction/Dale Roseboom, Ada Valley Meats, Parcel No. 41-15-29-445-001

Sean Bates, Dan Vos Construction, on behalf of Ada Valley Meats, presented the request for site plan approval. Mr. Bates explained that they want to make the best use of the existing space and the proposed addition is a little over 8,000 sq. ft. He said they previously worked with the ZBA for a setback variance and were approved. He is currently working with the Township Engineer, Steve Groenenboom, to obtain a storm water permit.

Bajdek summarized the staff report and said the addition is planned to the south of the building with a continuation of the east and west walls. There have been several variances granted in the past for this parcel, with the most recent one being last December. Bajdek noted that the additional parking does require an exception/condition from the Planning Commission due to the total number of parking spaces provided, exceeding the minimum standards by greater than 25%. This exception has been granted in the past (2018/2019 added on front office space).
Bajdek briefly touched on the landscaping requirements and concluded that Staff is recommending approval of this request with outlined conditions.

Mr. Bates said there is a definite need for additional parking, that is mostly employee parking. Moyer asked about compliance with storm water management. Mr. Bates said all calculations (underground storage system) have been submitted, meeting Kent County standards and Ada Township standards, and is awaiting final approval. Korth asked about the empty zone/space in the parking lot. Mr. Bates said the space can be used for maneuvering vehicles or landscaping.

Moved by Moyer, supported by Jacobs, to approve the site plan for a proposed addition, subject to the following conditions:

1. A storm water permit application shall be submitted, and a permit issued by the Township, in compliance with the storm water ordinance, prior to issuance of a building permit and/or construction of any site improvements.

2. Any pole and/or building mounted exterior lighting fixtures shall qualify as "full-cutoff" control of light emission, subject to approval of the Planning Department. Fixture specifications shall be submitted for approval for all lighting fixtures, prior to issuance of a building permit and/or construction of any site improvements.

3. Exception approval from the Planning Commission to allow the proposed total number of parking spaces provided to exceed the minimum standards by greater than 25 percent.

4. Prior to the issuance of any building permit, the applicant shall submit and obtain Staff approval of a landscape plan showing all existing landscaping material, as well as providing one (1) canopy/shade tree and a 150 sq. ft. of landscape area meeting parking lot area landscaping requirements of Zoning Ordinance.

5. A tree should be placed in a landscaped area in the southeast corner of the site.

Motion carried.

3. Planning Commission Annual Report

Said summarized aspects of the annual report with the upcoming ending of the fiscal year scheduled for March 31, 2024. The approved report, with the additions of tonight's motions, will be included in the Township Board meeting in April. He expressed appreciation to the Commissioners regarding their dedication and the additional work put in for training throughout

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the year. Korth requested the final report be provided in next month's Planning Commission packet.

Moved by Jacobs, supported by Moyer, to approve the Planning Commission Annual Report, with the condition that the conclusions from this meeting be updated. Motion carried.

4. Election of Planning Commission Officers (Chair, Vice-Chair, Secretary)

Korth stated that Secretary position is open and current chair (Korth) and vice-chair (Butterfield) are happy with maintaining their positions. Korth mentioned that he is running for Township Supervisor, and if he is elected, he may need someone to take on the Chair position for a half term at the end of November. Said explained the role of the Secretary position; calls roll at each meeting and signs documents. VanderVennen stated he would be happy to be Secretary.

Moved by Jacobs, supported by Kluting, to elect the following Commission officers: Chair Korth, Vice-Chair Butterfiled, Secretary VanderVennen. Motion carried.

VIII. COMMISSION MEMBER / STAFF REPORTS

Said stated that he and Brent met with a resident recently regarding cellular antennas in the Township and current ordinances in the Township. He said that with a potential cell tower at Forest Hills Schools, he is hesitant to do a text amendment to the ordinance regarding this, without further information. Said noted that currently cell towers are only permitted under a special use process.

There was brief discussion regarding cell towers. Said noted that with the upcoming zoning ordinance review/update, cell towers most certainly would be a topic of discussion. The Commission concurred with Staffs approach on this matter.

IX. PUBLIC COMMENT

Bernie Velkamp, 5580 Hall Street, request that when the new township hall is built to have padded seats for the audience members.

X. ADJOURNMENT

Moved by Moyer, supported by Jacobs, to adjourn the meeting at 7:42 p.m. Motion carried.

Respectfully submitted,

_____
Jacqueline Smith, Ada Township Clerk

rs:em/eb

TOWNSHIP

MEMORANDUM

Date: 04.11.24

TO: Ada Township Planning Commission
FROM: Department of Planning
RE: **Zoning Ordinance Text Amendments – Art Murals and Zoning Compliance Permits – April 18, 2024 Planning Commission Meeting**

Background

Township Staff are presenting two separate amendments to the Zoning Ordinance for Planning Commission review and approval. The amendments are discussed in detail in the sections below. While Staff is initiating work on an overall Zoning Ordinance Update project, internal review has indicated a desire to move forward with these particular amendment requests at this time. The information attached to this Report provides suggested language for each of the amendments.

Analysis

Art Murals

The proposed amendments concerning art and murals would be made to Secs. 78-342 and 78-346 of the Zoning Ordinance, which is within Article XXVI (Signs). In summary, the proposed language does the following:

- Adds definitions for murals and public art.
- Classifies murals and public art as exempt signs.
- Suggests a maximum area requirement for murals and paintings.

This proposal was originally reviewed by the Planning Commission approximately 3 years ago (2021); however, it appears the matter was never completed. At the same time, property ownership within the Central Business District ("Village") area has expressed a desire to provide murals in some locations to further enhance the appearance of the area.

Because of these factors, Staff thought it best to bring the matter back to the Planning Commission for a new review. The language has been modified slightly for better clarification, especially to reflect the categories of both artistic murals and public art overall. Staff also requests that the Planning Commission consider adding the noted maximum area of 250 square feet for murals/paintings.

Zoning Compliance Permits – Agricultural Buildings

The proposed language would be added to Sec. 78-63 of the Zoning Ordinance, which is within Article III (Administration and Enforcement). In summary, the proposed language addresses those rare situations where a property owner may claim an exemption from Township requirements for an agricultural building, by adding specific procedures that the property owner must address.

This amendment has been recommended by the Township Attorney, based on a recent court decision concerning a greenhouse constructed on a single-family residential lot without authorization from the Township. The Attorney believes that the recommended clarification to Section 78-63 will help minimize future difficulties with such situations; i.e., where an agricultural exemption is claimed.

Recommendation

Staff recommends that the Planning Commission recommend approval of these amendments. After Planning Commission review, final action on these requests will be taken by the Township Board.

TOWNSHIP

APPLICATION FOR REZONING OR OTHER AMENDMENT OF THE ZONING ORDINANCE (EXCLUDING PUD)

An application to request the rezoning of property or a zoning and text amendment must be heard before the Ada Township Planning Commission. ***Regular meetings of the Planning Commission are held on the third Thursday of each month at 5:30 p.m. at Ada Township Hall.*** After receipt of the application and payment of the fee, your request will be placed on the next Planning Commission meeting agenda for the purpose of scheduling a public hearing. The hearing will be scheduled for the next month's Planning Commission meeting for consideration, with all legal notifications being met.

Recommendations from the Planning Commission are considered by the Ada Township Board of Trustees at the first available Ada Township Board of Trustees meeting following the regular Planning Commission meeting.

A non-refundable filing fee of $750.00 made payable to Ada Township must accompany your application as well as a small-scale map of the property and an accurate legal description of the property. Please note that a $1,000.00 escrow deposit may be required, at the discretion of Township officials and staff.

Applicant Information:

Name: ADA TOWNSHIP

Address: 7330 THORNAPPLE RIVER DR., ADA, MICHIGAN 49301

Phone Number: 616.970.7313 Email: jseid@adatownshipmi.com

Property Owner Name and Address *(if different than above)*: N/A

Property Information for a Rezoning Request:

Property Address: N/A

Parcel Number: 41-____-____-____-____

Current Zone District Classification: _____

Proposed Zone District Classification: _____

For a Zoning Ordinance Text Amendment Request:

The following general amendment is requested to be made to the Zoning Ordinance:

AMENDING ZONING ORDINANCE REQUIREMENTS TO: (1) ADD LANGUAGE ALLOWING PUBLIC ART AND MURALS; AND (2) REVISE ZONING COMPLIANCE LANGUAGE TO ADDRESS AG. BUILDINGS.

For All Requests:

Attach a written statement that addresses the conformity of the request with the Township Master Plan.

I (we), the undersigned, do herby make application and petition the Township to amend the Ada Township Zoning Ordinance and associated zoning map, if applicable, and also herby grant permission to Ada Township and its officials and staff to enter upon the subject property for purposes of review and evaluation of this request.

Applicant's Signature(s): _____ Date: 3.14.24

Property Owner's Signature(s): N/A Date: _____
(If different than above)

APPLICATION FEE: $750.00 **NOTE: Electronic file/pdf is required on all applications (submit via email).**

TO BE COMPLETED BY ADA TOWNSHIP PLANNING DEPARTMENT

Application Received: _____ Initial: _____
mm / dd / yy

Application Fee of $_____ Received: _____ Initial: _____ Check # _____ Receipt # _____
mm / dd / yy

Escrow Deposit of $_____ Received: _____ Initial: _____ Check # _____ Receipt # _____
mm / dd / yy

Updated 12/21/2023 (f:users/planzone/app&forms/app templates)

7330 Thornapple River Drive, P.O. Box 370, Ada, MI 49301 | 616.676.9191 | adatownshipmi.com

Mural/Artwork – proposed text amendment language

Amend Sec. 78-742 (Definitions – Signs) as follows to add the following definitions:

Mural, means a design or representation painted, drawn or sculpted on the exterior surface of a building or other structure.

Public Art, means any visual work of art such as a sculpture, painting, mural, fountain, or similar object, accessible to public view, on public or private property.

Amend Sec. 78-746 (Exempted Signs) as follows to add the following:

(4) Miscellaneous

h. Murals, public art, or other artwork that do not include any representation or advertising of a specific product or business.

OPTION: Include a maximum square footage for murals and paintings, such as 250 square feet.

Ag. buildings – Zoning Compliance – proposed text amendment language

Amend Sec. 78-63(a) to add the following language (***in bold and italics***):

Sec. 78-63. - Zoning compliance permits.

(a) Zoning compliance permit required. Except as otherwise provided in this article, it shall be unlawful to construct, reconstruct, erect or expand any building or structure, except for permitted accessory buildings not exceeding 200 square feet in area, or change the type of use of any land or building, unless a zoning compliance permit verifying that the location, dimensions, use and zoning approval status of the proposed building or structure or the proposed use of land complies with the provisions of this article has been issued by the zoning administrator. ***In those instances where the property owner claims that the building or structure is exempt from the requirements of this Chapter, for reasons other than as set forth in this Chapter, then, prior to construction, the property owner shall notify the building official of the planned construction and the reasons for the claim of exemption and shall receive written acknowledgement from the building official. The building official shall have ten business days in which to respond.***

TOWNSHIP

MEMORANDUM

Date: 04.11.24

TO: Ada Township Planning Commission
FROM: Department of Planning
RE: **April 18, 2024 – Special Use Request – Private School Expansion to add Parish Activities Center (PAC) – 6477 Ada Dr. SE – St. Robert of Newminster/Roman Catholic Diocese of Grand Rapids**

Request Overview

The applicant proposes to amend their existing special use with the addition of a Parish Activities Center (PAC) and related improvements to the existing site and school. The PAC, a 17,500 square foot addition, will consist of gym space, a raised platform, bleacher seating for 280 people, concessions, related ancillary space, and corresponding altered outdoor play areas. The applicant proposes to place the PAC at the north end of the school, immediately north of the planned classroom expansion, which was approved by the Planning Commission in November, 2023, and is depicted on the plans in red (along with the PAC). This proposal will also result in other site changes, including to the parking lot, which are further discussed in this report.

Most importantly, the proposed PAC and related site improvements are intended to serve the existing (and future) student population; there is no request at this time for additional classroom space nor increases in approved maximum student capacity. The school will remain as a Pre-K through Grade 8 facility with a maximum approved student population of 372 students, as approved by the Planning Commission in November 2023 with the classroom additions. A previous approval in January 2023 allowed for expansion of the school to include Grades 6 through 8. The school currently has about 135 students.

The additional school wing approved in November 2023 will contain a total of about 19,000 square feet in two floors. The existing St. Robert's Parish and School building totals +/- 83,800 square feet, along with a 6,745 square foot rectory and a 1,350 square foot maintenance building (to be removed, with new 1,120 SF one to be constructed). The subject property contains approximately 16.64 acres and is zoned R-3 Medium Density Single-Family Residential.

The proposed PAC will match the exterior of the existing building with the use of brick masonry, dark metal panels, and other structural trim elements. The building height at grade will be about 33.63 feet, which will be less than the maximum allowed 35-foot height limit in this zoning district.

Analysis

Parking

The applicant's plans include existing parking, some of which will remain unchanged and some of which will be altered to compensate for the parking the be removed for the PAC. Additional parking will be provided as part of the changes to the site. Proposed parking on the site will total 428 spaces, with a deferred parking area that would allow for a total of 445 spaces, meeting the Zoning Ordinance requirements for parking for the entire facility, including both the church and school.

Based on the offsetting schedule of uses, between typical school operations during weekdays, and typical church activities weeknights and weekends, Staff has no objection to the proposed

parking counts and the deferral of additional parking. This is further supported by the recent Easter weekend worship activities parking counts conducted by the church, which showed at least 57 surplus spaces during the highest demand period (Easter Sunday 9 am Mass), and at least 100 surplus spaces during other times.

Staff is especially desirous of not adding parking to the frontage of the site, so as to maintain as much green space as possible along the Ada Drive frontage area. At the same time, the lower grade of the parking lot (approx. 6-8 feet lower than Ada Drive) would help reduce visibility should this parking need to be added in the future. A recommended condition of approval is included to address the deferred parking matter.

Lighting
The applicant has provided a lighting plan that meets applicable requirements. A condition of approval has been included specifying horizontal cutoff (downward-facing) fixtures.

Stormwater
The applicant's narrative indicates that all stormwater runoff will be managed on site, including that due to the additional impervious surface resulting from this project. A stormwater permit will be required, and the Township Engineer will require verification of additional volume and outlet flows. A condition of approval is included to address this topic.

Traffic
The applicant has provided an updated, and very detailed, traffic study as part of the current request. The study notes recommendations to address internal traffic flow on the site, with the provision of additional "Do Not Enter" restrictions, and a condition of approval is included to reflect this matter.

Staff has no major concerns regarding traffic generation due to the proposed PAC. The following factors are noted in support:

- Daytime (school day) use of the PAC will be associated with the existing and approved expanded student population.

- Any proposed PAC activities taking place during weeknights and weekends will not be at the same times as peak period traffic.

- The previous traffic study done for the site, reviewed in detail at the November 2023 meeting, with the Kent County Road Commission (KCRC) concluding that no major negative impacts would result from the school classroom expansion

- Staff observations when driving along the Ada Drive corridor between 7:30 and 8:00 am, many times during the current school year. While a higher volume of vehicles was observed than is seen during other times/days, there were no major backups or traffic conflicts observed during any of these times. There is also a school zone speed limit during morning and afternoon pickup and drop off periods, and ongoing monitoring by the Sheriff's Department.

- Previous information provided by Staff to the Planning Commission identifying all the schools in the Ada Drive corridor area and the ongoing efforts taken to appropriately manage and monitor their facilities and resulting traffic. As has been noted, while overall student population for all schools in the corridor may increase somewhat in the long-term, school populations are fluctuating between decreasing and increasing numbers. Further,

it should be noted that the daily schedules of the schools along the corridor are staggered. Given the finite time available for a typical school day, it would likely be difficult for schools to adjust their schedules much more.

- Existing societal/cultural trend, which result in the vast majority of students being driven to school in personal vehicles, in lieu of walking or school bus riding. While some carpooling may exist, the personal vehicle drop-off/pickup trend is expected to continue for the foreseeable future, regardless of the Township trail/sidewalk system or any other factors. This may be truer for private schools that would typically have student populations spread over a larger geographical area.

- Previous installation (by St. Robert) of a center left-turn lane along Ada Drive for eastbound traffic entering the St. Robert site from Ada Drive with stacking for approximately 7 vehicles. Also, westbound Ada Drive pavement has a flared approach to this entrance, similar to a reduced-length right-turn lane. These conditions mitigate the need for additional improvements along Ada Drive in the foreseeable future; in the long term a dedicated right-turn lane can be considered for westbound Ada Drive traffic approaching the St. Robert entry drive.

Based on the information noted above, the Township has a very limited opportunity to address traffic other than through the review of special use requests for private school student population increases.

Standards for Special Use

The Zoning Ordinance allows schools as Special Uses in the R-3 zoning district. While there are no Special Use standards specific to schools, the general Special Use standards (Sec. 78-493 of the Zoning Ordinance) apply for review of this proposal; these are addressed below.

The applicable general Special Use standards are noted below along with a Staff summary note:

(1) The special use shall be designed, constructed, operated, and maintained in a manner harmonious with the character of adjacent property and the surrounding area.

(2) The special use shall not change the essential character of the surrounding area.

(3) The special use shall not be hazardous to adjacent property, or involve uses, activities, materials or equipment which will be detrimental to the health, safety or welfare of persons or property through the excessive production of traffic, noise, smoke, fumes, or glare.

(4) The special use shall not place demands on public services and facilities in excess of capacity.

In summary, because the PAC is intended to enhance current school activities/programming, and will not be used for other traffic-generating uses during school hours, and because of existing infrastructure available, it can be argued that the PAC will adhere to the applicable Standards for Special Use.

Conclusion & Recommendation

Based on the applicable Standards for a Special Use, Staff has no objections to the approval of this request by the Planning Commission, and recommends that any action be subject to the following conditions:

1. This Special Use approval is for the existing building, proposed PAC addition, and related improvements only. Further site changes or expansions shall require an amended Special Use review.

2. This approval shall include deferral of seventeen (17) additional spaces as depicted on the "Site & Landscape Plan/Base Parking Option" Plan dated April 5, 2024, prepared by AMDG Architects/First Companies. Prior to any installation of the spaces, the applicant shall obtain Township Planning Department approval of the parking area and landscaping which shall be required to buffer the new parking area.

3. Any significant traffic-generating activities at the campus, including at the Parish Activities Center, shall be scheduled with at least 30 minutes of separation time from the beginning and end of student drop-off and pickup times.

4. The applicant shall revise interior traffic signage to include a "Do Not Enter" restriction in the afternoon of 2 pm to 6 pm, at the western driveway access (to/from Ada Drive).

5. All exterior light fixtures shall be full-horizontal cutoff to control light emission.

6. No signage is approved with this request.

7. Prior to the issuance of a building permit, the applicant shall obtain Township Engineer review and approval of stormwater plans, and shall obtain a stormwater permit.

TOWNSHIP

APPLICATION FOR SPECIAL USE

An application for a special use must be heard before the Ada Township Planning Commission. ***Regular meetings of the Planning Commission are held on the third Thursday of each month at 5:30 p.m. at Ada Township Hall.*** After receipt of the application and payment of the fee, your request will be placed on the next Planning Commission meeting agenda for the purpose of scheduling a public hearing. The hearing will be scheduled for the next month's Planning Commission meeting for consideration, with all legal notifications being met.

A non-refundable filing fee made payable to Ada Township must accompany this application:

For a residential accessory building or Type II home occupation permit: $250.00

For all others, including commercial/industrial uses and non-residential uses in residential districts: $300.00

For subdivision plat, except PUD: $250.00

Please note that a $1,000 escrow deposit may be required, at the discretion of the Township.

Applicant Information:

Name: Roman Catholic Diocese of Grand Rapids, Michigan

Address: 360 Division Avenue South, Grand Rapids, Michigan 49503

Phone Number: (616) 475-1247 Email: mlown@grdiocese.org

Property Owner Name and Address *(if different than above)*: N/A

Property Information:

Property Address: 6477 Ada Drive SE

Parcel Number: 41- 15 - 33 - 101 -027

Zone District Classification: R3

Proposed Use and/or Changes to the Property: See attachment 1.

7330 Thornapple River Drive, P.O. Box 370, Ada, MI 49301 | 616.676.9191 | adatownshipmi.com

In support of this application, the following items are required:

X (a) A complete to-scale site plan that complies with Sec. 78-492 (2)(b) and Sec. 78-524 of the Zoning Ordinance.

X (b) A written statement addressing the extent to which the proposed use complies with the standards set forth in Sec. 78-493 of the Zoning Ordinance.

NOTE: Electronic file/pdf is required on all applications (submit via email).

I (we), the undersigned, do herby make application to the Ada Township Planning Commission for a Special Land Use and also herby grant permission to Ada Township and its officials and staff to enter upon the subject property for purposes of review and evaluation of this request.

Applicant's Signature(s): _____ Date: 3.20 , 2024
Mike Lown, Chancellor and CFO

Signature of Property Owner(s): N/A Date: _____
(If different than above)

TO BE COMPLETED BY ADA TOWNSHIP

Application Received: 3-21-2024 Initial: eb
mm / dd / yy

App. Fee of $ 300.00 Received: 3/25/2024 Initial: KM Check # 608710 Receipt # 365871
mm / dd / yy

Escrow Deposit of $ 1000.00 Received: 4/10/24 Initial: [signature] Check # 609253
mm / dd / yy

Updated 12/21/2023 (I:users/planzone/app&forms/app templates)

Warner Norcross + Judd

#30188020 CR# 366493

7330 Thornapple River Drive, P.O. Box 370, Ada, MI 49301 | 616.676.9191 | adatownshipmi.com

ATTACHMENT 1

Description of Proposed Special Use/Site Plan

Applicant requests approval for the expansion of the current approved special use for the subject property (currently for church, child-care, parish, school (pre-school through eighth grade) and related uses) to also include the expanded facilities described on the proposed Site Plan attached to this Application as *Exhibit A* subject to the specific limitations set forth in this Application. Applicant also seeks approval of the Site Plan attached to this Application as *Exhibit A*.

In 2018, as part of the approval for the original special use granted for Applicant's school (Pre School through 5th Grade), Applicant was required to: (i) add a center turn lane on Ada Drive (at the Eastern Campus Drive entry); (ii) widen the Western Campus Drive entry; (iii) add directional signage; and (iv) maintain a 10' separation between the Township's non-motorized trail and the Ada Drive pavement. On January 19, 2023, the Planning Commission approved an expansion of the Applicant's school (with no new physical improvements) to include grades 6th through 8th and to increase the maximum student population to 225 students. On November 16, 2023, the Planning Commission approved renovations and new facilities and a corresponding increase in the maximum student population to 372 students (which contemplated the school operating at full capacity at each class level). The Planning Commission of the 2023 expansion was made subject to the following conditions: (i) Any further expansion of the school building or to the student population shall require an amended Special Use review; (ii) Any other significant traffic-generating activities at the campus shall be scheduled with at least 30 minutes of separation time from the beginning and end of student drop off and pick up times; (iii) All exterior light fixtures shall be full-horizontal cutoff to control light emission; and (iv) prior to the issuance of a building permit, the applicant shall obtain Township Engineer review and approval of stormwater plans and shall obtain a stormwater permit.

Applicant now returns requesting approval of a proposed Parish Activity Center and other site improvements as reflected in the Site Plan attached to this Application as *Exhibit A*. The proposed Parish Activity Center is a 17,500 square foot addition, which will house a gym space, a raised platform, bleachers (280), concessions, and associated support spaces. This proposed Parish Activity Center is in addition to the previously approved classroom addition, approved at the November 16, 2023 planning commission meeting. Such improvements will not increase the previously approved student population (as the school has already been approved to operate at full capacity at each class level). The Parish Activity Center will provide an additional amenity to the parish and the approved student population and will be primarily used outside of peak travel times. Applicant intends to utilize the existing facilities and the planned new facilities in the manner depicted on the "Building Usage" plans attached to this Application as *Exhibit B*.

Traffic Impact

At the time of the approval of the expansion of the school to full capacity (372 students), the Planning Commission carefully reviewed the impact of the school on traffic along the Ada Drive corridor. In 2023, Applicant engaged Progressive AE to perform a Traffic Impact Study ("2023 Traffic Study") to analyze the impact of the proposed expansion and increase

in student population. After reviewing the 2023 Traffic Study and discussing the matter at the public hearing, the Planning Commission approved the expansion of the school to full capacity (372 students), subject to the conditions set forth above. As stated above, this application seeks approval of proposed Parish Activity Center and other site improvements as reflected in the Site Plan attached to this Application as *Exhibit A*. Such improvements will not increase the previously approved student population (as the school has already been approved to operate at full capacity at each class level). The Parish Activity Center will merely provide an additional amenity to the parish and the approved student population and will be primarily used outside of peak travel times. To review the impact of the Parish Activity Center and other site improvements as reflected in the attached Site Plan, Applicant has engaged Progressive AE to update the 2023 Traffic Study to consider the impact of such improvements and their use (see *Exhibit C* attached to this Application) ("Updated Traffic Impact Study"). The Updated Traffic Impact Study concludes that, overall, the opening and operation of the Parish Activity Center and the other site improvements set forth on *Exhibit A* will not create any additional traffic concerns along Ada Drive. Further, the Updated Traffic Impact Study states that the majority of additional trips generated by the opening and operation of the Parish Activity Center will occur during off-peak hours, and the number of trips generated during school "peak hours" is greater than anticipated for the Parish Activity Center. Therefore, the opening and operation of the Parish Activity Center will not increase traffic during the designated peak hours (i.e., 7:15-8:15 AM, 2:30-3:30 PM, and 4:45-5:45 PM) or create any additional traffic concerns along Ada Drive.

The Updated Traffic Study provides an additional recommendation to improve traffic flow. It recommends that the Applicant extend the hours of the current "Do Not Enter" restriction at the west driveway of the subject property for an additional two (2) hours, from 2 PM to 6 PM (rather than 2 PM to 4 PM) in order to improve the flow of traffic on the subject property. Applicant agrees to include such obligation as a condition to any approval of this Application. Applicant notes that Progressive AE also concludes that "no additional improvements are recommended along Ada Drive as the existing eastbound left-turn lane and westbound right-turn taper will adequately serve the anticipated school volume traffic."

Storm Water

Applicant will manage all storm water from any new impervious surfaces generated by Applicant's proposed improvements in the manner required by applicable law (e.g., any applicable Township Stormwater Permit).

Parking

The proposed Site Plan contemplates a total of 428 parking spaces and 17 deferred parking spaces, which Applicant believes will satisfy the needs of the parish and school. The attached *Exhibit D* further describes this proposed approach for parking, which follows Applicant's discussions with the Ada Township Planning Department, and accounts for the retention of the green space along the southern boundary of the subject property (by the entrances to the subject property from Ada Drive). The proposed 428 parking spaces and 17 deferred parking spaces described in *Exhibit D* are supported by the observed parking counts from the week of Easter (3/24/2024 – 3/31/2024), as set forth in *Exhibit E*.

At present, the maximum parking requirement for the subject property is 445 parking spaces, based on the seating capacity of the existing church worship space, which contains 1,335 seats.[1] The addition of the Parish Activity Center will not increase this requirement, as all assembly and school space uses are non-concurrent with the church worship space. Additional details regarding Applicant's anticipated activities in the Parish Activity Center and other site improvements are laid out below.

The Parish Activity Center seats up to 780 individuals at a maximum, which, pursuant to Section 78-788 of the Ada Township zoning ordinance, requires 260 parking spaces.[2] Applicant anticipates that the maximum capacity of the Parish Activity Center will only be reached approximately 1-2 times per calendar year, for special events—and such special event use will be non-concurrent with any other use of the subject property. By way of example, a special event in the Parish Activity Center will not coincide with use of the existing church worship space.

Additionally, all other use of the Parish Activity Center, even if used concurrently with the other site improvements – such as the existing school facilities – will not exceed the provided 428 parking spaces. Applicant anticipates that there may be concurrent use of the fixed bleacher seating in the Parish Activity Center, which is comprised of 280 fixed bleacher seats (280/3 = 94 parking spaces, to account for one (1) parking spot per three (3) seats), and the fourteen (14) classrooms making up the existing school facilities (14 x 1.5 = 21 parking spaces, to account for 1.5 parking spaces per classroom). However, this concurrent use would result in the need for only 115 parking spaces,[3] which is well within the 428 parking spaces contemplated in *Exhibit A*. Additionally, Applicant anticipates that the Parish Activity Center may be used for parish-related banquet purposes on an infrequent basis (i.e., currently anticipated to be three to four times per calendar year). However, the seating for such occasions will not exceed 328 seats, which would require 110 parking spaces[4]—which falls below the 428 parking spaces contemplated in *Exhibit A*.

SEC. 78-493. - BASIS OF DETERMINATION (SPECIAL USE).

Prior to approval of a special use, the planning commission shall review the particular circumstances of the special use under consideration and shall approve a special use only upon a finding of compliance with each of the following standards, as well as applicable standards established elsewhere in this chapter:

(1) The special use shall be designed, constructed, operated and maintained in a manner harmonious with the character of adjacent property and the surrounding area. **The existing use and planned expanded use are consistent with the use of nearby properties along the Ada Drive corridor. This stretch of Ada Drive is the home of three other primary schools:**

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[1] The calculation of 445 parking spaces is based on the following: 1,335/3 = 445 parking spaces, to account for one (1) parking spot per three (3) seats in the existing church worship space.

[2] The calculation of 260 parking spaces is based on the following: (780/3 = 260 parking spaces, to account for one (1) parking spot per three (3) seats) in the Parish Activity Center.

[3] The calculation of 115 parking spaces is based on the following: (94 parking spaces for the fixed bleacher seating in the Parish Activity Center + 21 parking spaces for the fourteen (14) classrooms = 115 parking spaces total are required for concurrent use of the Parish Activity Center fixed bleacher seating and the use of the classrooms in the existing school facilities.

[4] The calculation of 110 parking spaces is based on the following: 328/3 = 110 parking spaces, to account for one (1) parking spot per three (3) seats for parish-related banquet activities in the Parish Activity Center.

(i) Forest Hills Central Middle School (7th and 8th Grade--5810 Ada Drive), (ii) Ada Christian School (Pre School through 8th Grade--6206 Ada Drive), and Ada Elementary (Pre School through 4th Grade--731 Ada Drive). The existing use of the subject property for religious, educational and related proposes has proven to be harmonious and appropriate with the existing and intended character of the general vicinity. The current school on the subject property has operated harmoniously with the surrounding properties since its opening. The planned expansion will not adversely affect the subject property's relationship with neighboring properties.

(2) The special use shall not change the essential character of the surrounding area. **See response to (1) above.**

(3) The special use shall not be hazardous to adjacent property, or involve uses, activities, materials or equipment which will be detrimental to the health, safety or welfare of persons or property through the excessive production of traffic, noise, smoke, fumes or glare. **The existing use and the planned expanded use will not involve uses, activities, processes, materials, and equipment or conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors. See also Traffic Impact and Storm Water information above.**

(4) The special use shall not place demands on public services and facilities in excess of capacity. **The existing use and the planned expanded use will not create excessive additional requirements at public cost for public facilities and services. See also Traffic Impact and Storm Water information above.**

Exhibit A- New Site Plan
Exhibit B-Building Usage Plan
Exhibit C-Progressive AE Traffic Study (Updated)
Exhibit D-Parking Narrative
Exhibit E-Observed Parking Counts (Easter Week – 3/24/2024 – 3/31/2024)

30187391-4

EXHIBIT A

DEFERRED - south parking lot cross section
(provided for reference only)

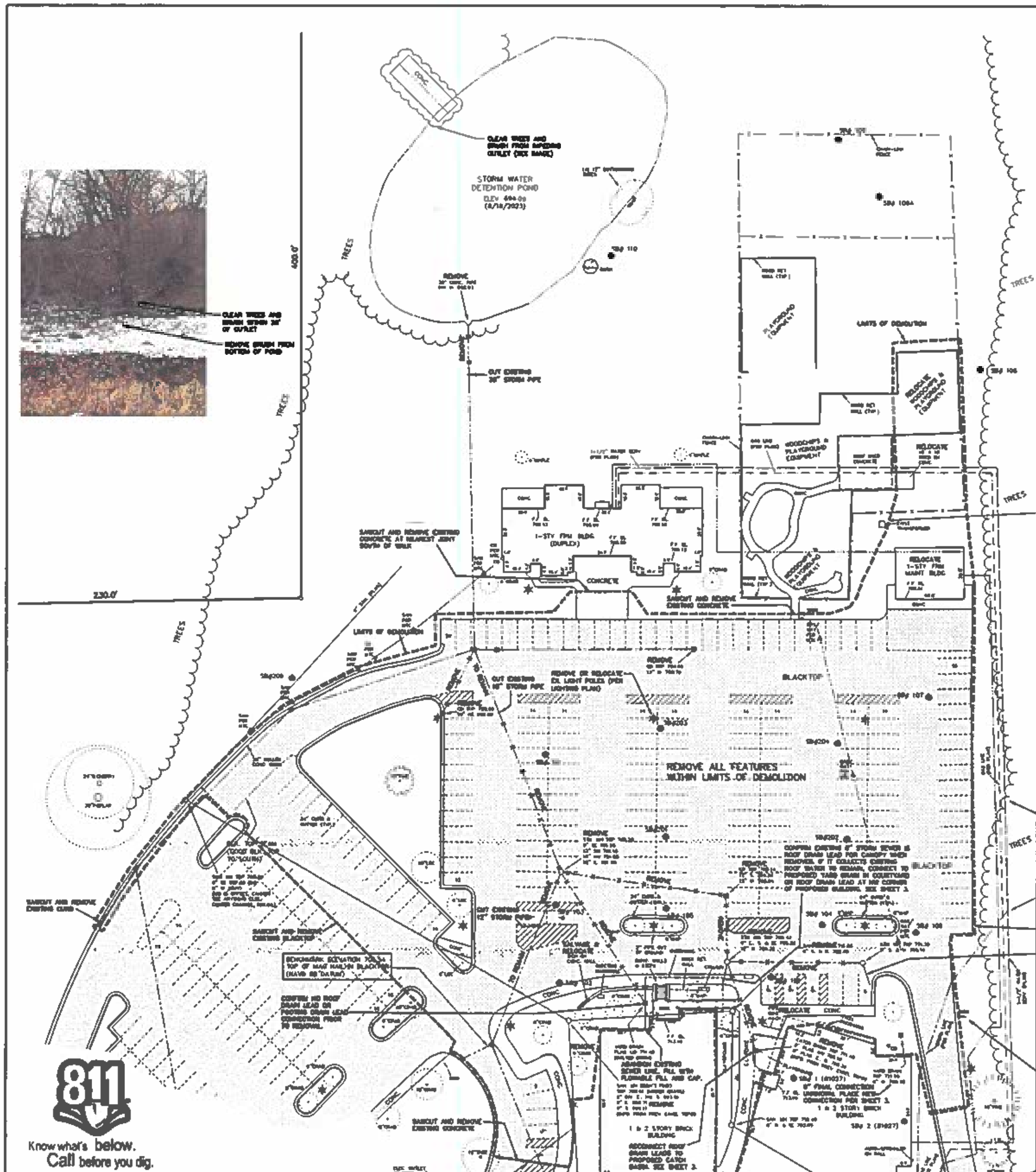
parking requirements (sec. 78-788)
calculations based on campus maximum usage requirement of non-concurrent uses
church worship space: 1,335 seats provided
required: 445 parking spaces REQUIRED by ordinance
(1) parking space per (3) seats on (6 feet of seating
(1335 seats / 3 = 445
provided: 428 parking spaces PROVIDED +(17) deferred

landscape requirements (sec. 78-705)
north parking lot landscape areas

ex lawn play to remain
ex play to remain
ex rectory
new parking
play area
PAC
708.97 ftc
classroom addition
(2) story - 7[illegible] 67 ftc
play area
ex parking (116 spaces)
ex church and school
ex parking (153 spaces)
EXISTING GRADES, LAWN AND TREES
REMAIN UNTIL SUCH TIME AS DEFERRED
DEFERRED
DEFERRED
landscape requirements (sec. 78-705)
ada drive

AMDG & FIRST

proposed building + PAC addition
site & landscape plan | **base parking option**



SITE INFORMATION

- PROPERTY DESCRIPTION
  N 400 FT OF S 1270.3 FT OF W 1/2 W 1/2 NW 1/4 EX W 230 FT ALSO S 870.3 FT OF W 1/2 W 1/2 NW 1/4 * SEC 33 T7N R10W 17.14 A
- PROPERTY ADDRESS: 6477 ADA DRIVE SE
- PERMANENT PARCEL NUMBER: 41-15-33-101-027
- PARCEL SIZE: 17.14 ACRES

MAPPING

- MAPPING AND CONTOURS BASED ON SURVEY BY EXXEL ENGINEERING

ZONING

- EXISTING ZONING: R-3

EXISTING R-3 ZONE REGULATIONS (SPECIAL LAND USE)

MINIMUM LOT AREA		43560 SQFT
MINIMUM LOT WIDTH		200'
MINIMUM BUILDING SETBACKS		
	FRONT YARD	30'
	SIDE YARD	25'
	REAR YARD	50'
SIDE YARD SETBACK FOR ACCESSORY BUILDING		20'

PROPOSED LAND USE

- CHURCH AND SCHOOL

PARKING REQUIREMENTS

1. CHURCH WORSHIP SPACE (NON-CONCURRENT WITH ANY OTHER USE) = 1335 SEATS / 3 = 445 PARKING SPACES
2. PAC SPECIAL EVENTS (MAXIMUM USE 1-2 TIMES PER YEAR) (NON-CONCURRENT WITH ANY OTHER USE) = 780 SEATS / 3 = 260 PARKING SPACES
3. SCHOOL + PAC (280 FIXED BLEACHER SEATS) USED CONCURRENTLY = 14 CLASSROOMS * 1.5 + 280 BLEACHER SEATS / 3 = 21 + 94 = 115 PARKING SPACES
4. PAC BANQUET (NON-CONCURRENT WITH ANY OTHER USE) = 328 SEATS / 3 = 110 PARKING SPACES

EXISTING ONSITE PARKING SPACES = 472
PROPOSED ONSITE PARKING SPACES = 428 WITH 17 DEFERRED SPACES TO BE CONSTRUCTED IF NEEDED
EXISTING PARKING SPACES WITHIN LIMITS OF PROJECT = 207 (INCLUDING 8 BARRIER FREE SPACES)
PROPOSED PARKING SPACES WITHIN LIMITS OF PROJECT = 163 (INCLUDING 8 BARRIER FREE SPACES)

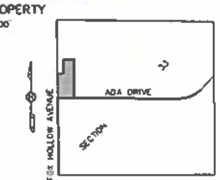
PROPOSED IMPROVEMENTS

- LIGHTING AND LANDSCAPING SHALL MEET TOWNSHIP REQUIREMENTS – SEE SEPARATE PLANS FOR DETAILS
- SANITARY SERVICES TO BE CONNECTED TO EXISTING ONSITE LATERAL
- REFER TO GEOTECHNICAL REPORT (PENDING) FOR SOIL BORING DETAILS
- WATER SERVICE AND FIRE PROTECTION TO BE PROVIDED WITH NEW TAPS ON EXISTING 16" WATERMAIN

OVERALL PROPERTY
SCALE 1"=200'

SHEET INDEX :

1. EXISTING CONDITIONS AND DEMOLITION PLAN
2. SITE LAYOUT PLAN
3. SITE UTILITY PLAN
4. SITE GRADING AND SOIL EROSION CONTROL PLAN
5. SOUTH PARKING LOT



LOCATION MAP

STATE OF MICHIGAN
JEFFREY SCOTT VANLAAN
ENGINEER
No.
LICENSED PROFESSIONAL ENGINEER

SCALE: 1" = 30'
1' CONTOUR INTERVAL

LEGEND

- IRON STAKE FOUND
- LIGHT POLE
- BOLLARD
- HYDRANT
- WATERMAIN VALVE
- STOP BOX
- IRRIGATION VALVE
- CATCH BASIN
- MANHOLE
- CLEAN OUT
- FENCE LINE
- PIPE HANDRAIL
- CRAB = CRABAPPLE TREE
- MAP = MAPLE TREE
- LOC = LOCUST TREE

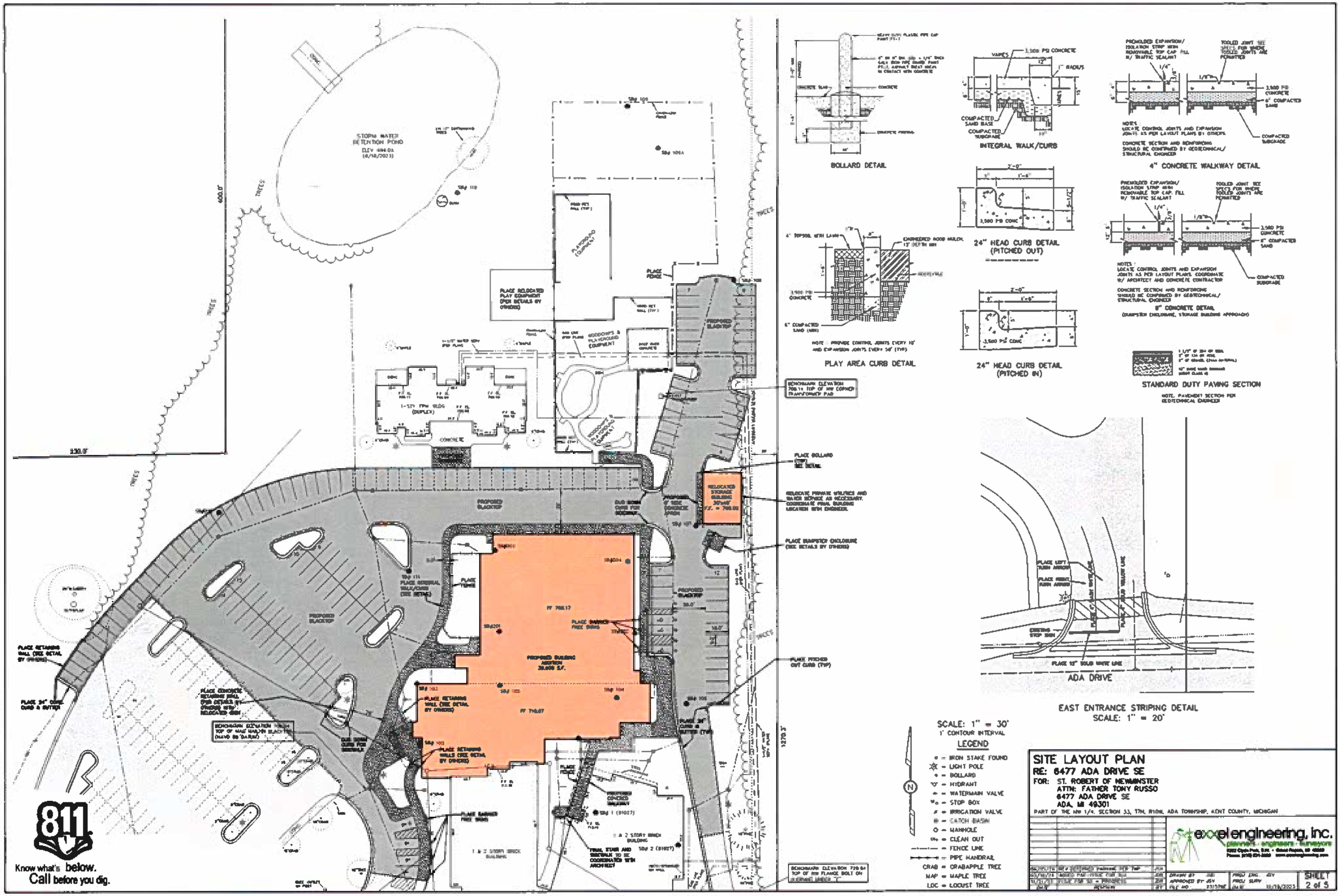
EXISTING CONDITIONS/DEMO PLAN

RE: 6477 ADA DRIVE SE
FOR: ST. ROBERT OF NEWMINSTER
ATTN: FATHER TONY RUSSO
6477 ADA DRIVE SE
ADA, MI 49301
PART OF THE NW 1/4, SECTION 33, T7N, R10W, ADA TOWNSHIP, KENT COUNTY, MICHIGAN

DATE	REVISION	BY
04/05/24	REV DEFERRED PARKING PER TWP	JSV
03/18/24	ADDED PAC-ISSUE FOR SLU	JDR
11/21/23	ISSUE FOR SD – PROGRESS	JDR

exxel engineering, inc.
planners · engineers · surveyors

DRAWN BY: AD	PROJ. ENG.: JSV	SHEET
APPROVED BY: JSV	PROJ. SURV.	1 of 5
FILE NO.: 231576E	DATE: 10/18/2023	


STORM WATER RETENTION POND
BOLLARD DETAIL
INTEGRAL WALK/CURB
4" CONCRETE WALKWAY DETAIL
24" HEAD CURB DETAIL (PITCHED OUT)
24" HEAD CURB DETAIL (PITCHED IN)
PLAY AREA CURB DETAIL
8" CONCRETE DETAIL
STANDARD DUTY PAVING SECTION
PROPOSED BLACKTOP
PROPOSED BUILDING ADDITION
RELOCATED STORAGE BUILDING
ADA DRIVE
EAST ENTRANCE STRIPING DETAIL
SCALE: 1" = 20'
SCALE: 1" = 30'
1' CONTOUR INTERVAL
LEGEND
IRON STAKE FOUND
LIGHT POLE
BOLLARD
HYDRANT
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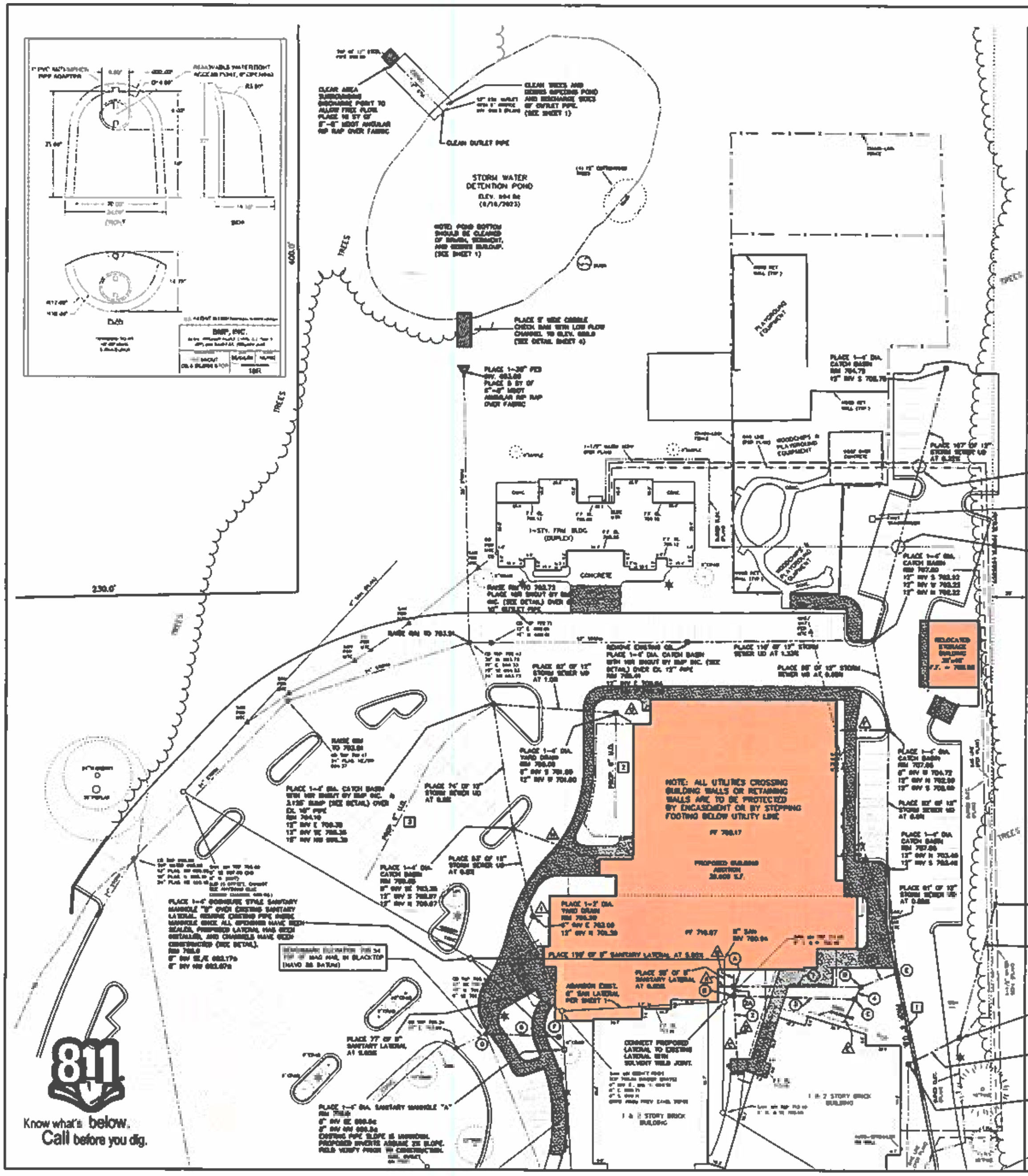
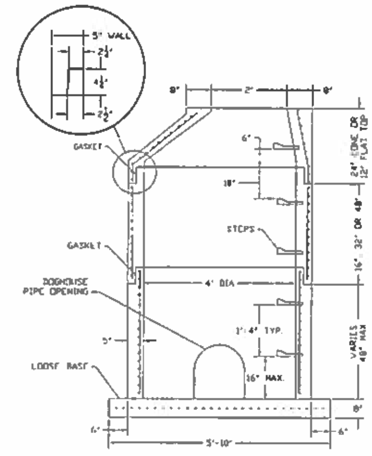
exxel engineering, inc.
planners · engineers · surveyors
SHEET 2 of 5
811
Know what's below.
Call before you dig.





CONFORMS TO ASTM C-478

DOGHOUSE STYLE MANHOLE DETAIL

GENERAL STORM SEWER NOTES

YARD DRAINS

1 ALL 4' DIA. YARD DRAINS (YD) SHALL HAVE 3' DEEP SUMPS. USE E.J. #1046 CASTING WITH TYPE N GRATE.

CATCH BASINS

1 ALL 4' DIA. CATCH BASINS (CB) WITHIN PARKING LOT AREAS SHALL HAVE 3' SUMPS AND USE E.J. #5105 CASTING
2 ALL 4' DIA. CATCH BASINS (CB) WITHIN VALLEY GUTTER LABELED "DBL" SHALL HAVE 3' SUMPS AND USE E.J. #7030 CASTING WITH TYPE M2 GRATE AND TYPE T3 BACK.
3 ALL 4' DIA. CATCH BASINS (CB) WITHIN BLACKTOP VALLEY GUTTER SHALL HAVE 3' SUMPS AND USE E.J. #7065 CASTING WITH TYPE M1 GRATE
4 ALL 4' DIA. CATCH BASINS (CB) WITHIN 2' CONC. ROLLED CURB AND GUTTER SHALL HAVE 3' SUMPS AND USE E.J. #7065 CASTING WITH TYPE M1 GRATE.
5 ALL 4' DIA. CATCH BASINS (CB) WITHIN 2' CONC. HEAD CURB SHALL HAVE 3' SUMPS, UNLESS NOTED OTHERWISE, AND USE E.J. #7045 CASTING WITH TYPE M1 GRATE.
6 ALL 4' DIA. CATCH BASINS (CB) WITHIN MDOT B2 CURB SHALL HAVE 3' SUMPS AND USE E.J. #7085 CASTING

MATERIAL TYPE

1 FOOTING DRAIN LEAD AND ROOF DRAIN LEAD SHALL BE PVC SCH. 40 OR PVC SDR-26
2 ALL STORM LABELED "STORM SEWER" SHALL BE SMOOTH-LINED CORRUGATED PLASTIC PIPE (SLCPP) WITH GASKETED SOIL TIGHT JOINTS, UNLESS OTHERWISE NOTED
3 ALL STORM LABELED "STORM SEWER U.D." SHALL BE SMOOTH-LINED CORRUGATED PLASTIC PIPE (SLCPP), PERFORATED W/ SOCK AND GASKETED SOIL TIGHT JOINTS. (ADS N-12, HANCOR HI-Q OR APPROVED EQUAL)
4 ALL STORM LABELED "CONC. STORM SEWER" SHALL BE C-76-III WITH PREMIUM JOINT
5 6" UNDERDRAIN SHALL BE CORRUGATED PLASTIC PIPE WITH SOCK OR APPROVED EQUAL. MAINTAIN 3' MINIMUM COVER

OTHER

1 ALL 4" - 10" (SLCPP) PIPE SHALL HAVE A SILT TIGHT COUPLER
2 ALL 12" - 30" (SLCPP) PIPE SHALL HAVE A SILT TIGHT, SURE-LOCK TYPE COUPLER

PROPOSED STORM SEWER PIPE LENGTHS

NO	DIAMETER	LENGTH	SLOPE	TYPE
1	12"	75'	1.00%	C-76-III
2	12"	52'	1.00%	C-76-III
2A	12"	5'	1.00%	C-76-III
3	12"	71'	1.00%	C-76-III
4	12"	8'	1.13%	SLCPP
5	12"	24'	0.83%	SLCPP
6	12"	43'	1.00%	C-76-III

* STORM SEWER UD TO HAVE FULL SAND TRENCH BACKFILL TO SUBBASE ELEVATION

PROPOSED STORM SEWER STRUCTURES

	TYPE	DIA.	SUMP	RIM	INVERTS
A	YARD DRAIN	2'	3'	706.50	6" N 705.00 12" E 704.95 12" S 704.95
B	YARD DRAIN	2'	3'	706.30	12" S 705.00 12" E 705.00 12" N 705.00
C	YARD DRAIN	4'	3'	709.50	8" S 706.50 12" N 704.29 12" W 704.29
D	YARD DRAIN	4'	3'	709.50	12" W 704.20 12" SW 704.20 12" NE 704.20
E	CATCH BASIN	4'	3'	706.40	8" S 706.40 12" N 704.00 12" SW 704.00
F	YARD DRAIN	2'	3'	709.00	12" W 703.43
G	EX. CATCH BASIN			706.80	12" E 703.0

RAISE RIM FROM 706.44 TO 706.80
CORE IN FOR 12" PIPE

PROPOSED FOOTING DRAIN AND ROOF DRAIN LEADS

- RECONNECT EXISTING RDL, AS NECESSARY, TO PROPOSED YARD DRAIN IN COURTYARD OR RUN THROUGH BUILDING TO RDL AT NW CORNER OF BUILDING
- PLACE 7' OF 6" FDL AT 5.7% END INV 705.00
- REROUTE EXISTING 8" RDL AROUND PROPOSED BUILDING AND REPLACE 35'± OF RDL. CONNECT TO PROPOSED YARD DRAIN. LAY RDL AT 1% MIN. SLOPE.
- EXTEND EXISTING 8" RDL TO 7' OUTSIDE OF PROPOSED BUILDING AND CONNECT TO 8" RDL FROM SOUTH WITH 8"x8" TEE. INVERTS ARE UNKNOWN. LAY RDL AT 1.0% MIN. SLOPE.
- PLACE 15' OF RDL AT 1.0% END INV 705.65
- PLACE 28' OF 8" RDL AT 1.0% END INV 705.00
- PLACE 10' OF 8" FDL AT 2.0% END INV 703.50
- PLACE 50' OF 8" RDL AT 1.0% END INV 703.85
- PLACE 7' OF 8" FDL AT 16.47% END INV 704.00

PROPOSED UNDERDRAIN

NO.	DIA.	LENGTH	END INV
1	6"	77'	714.80
2	6"	47'	704.00
3	6"	138'	701.00

ALL STORM SEWER UD TO HAVE FULL SAND TRENCH BACKFILL TO SUBBASE ELEVATION

SCALE: 1" = 30'
1' CONTOUR INTERVAL

LEGEND

- IRON STAKE FOUND
- LIGHT POLE
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SITE UTILITY PLAN

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FOR: ST. ROBERT OF NEWMINSTER
ATTN: FATHER TONY RUSSO
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PART OF THE NW 1/4, SECTION 33, T7N, R10W, ADA TOWNSHIP, KENT COUNTY, MICHIGAN

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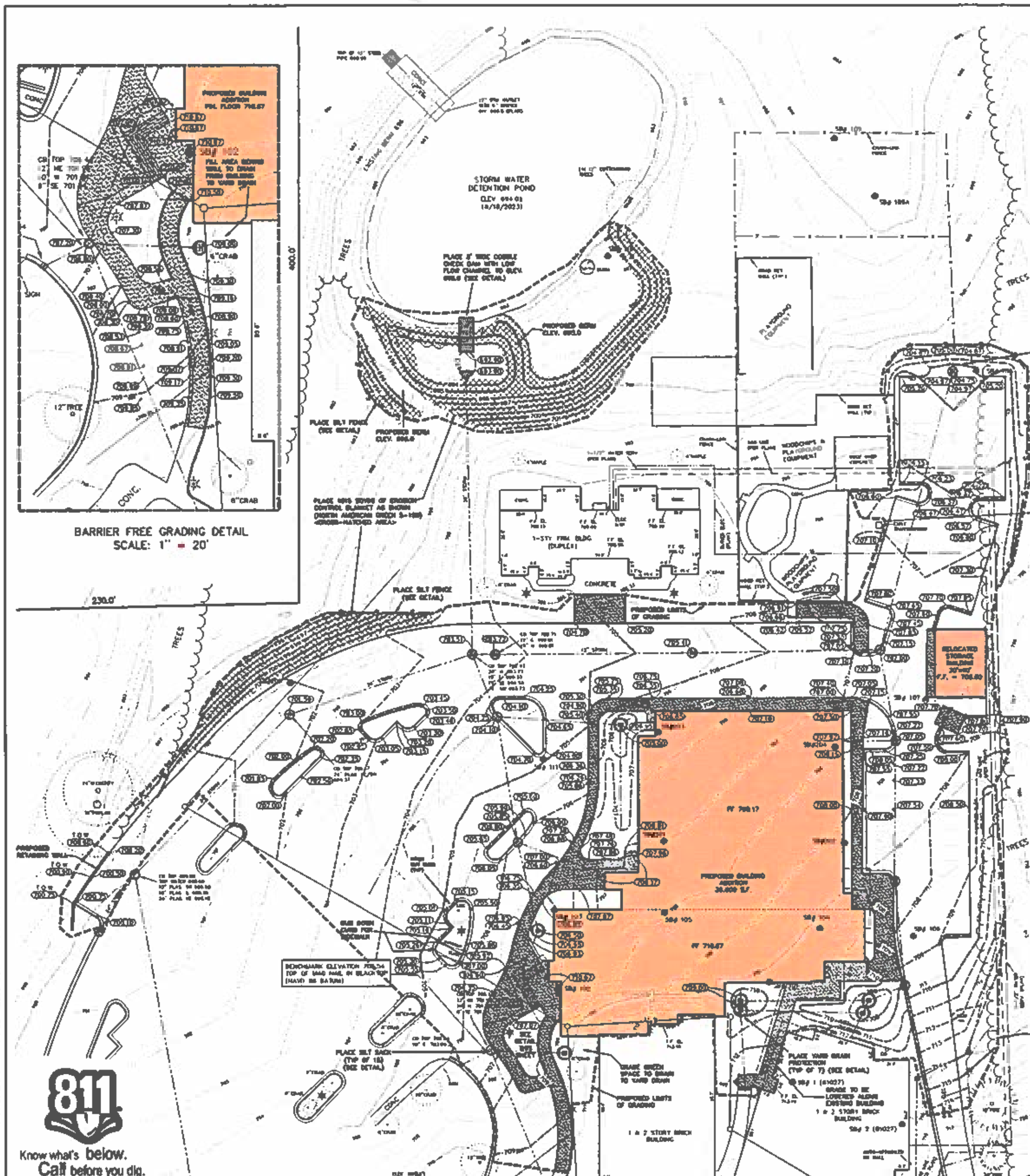
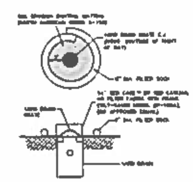
exxel engineering, Inc.
planners · engineers · surveyors

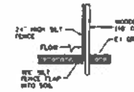
DRAWN BY JDB
APPROVED BY JSV
FILE NO 231576E
PROJ. ENG. JSV
PROJ. SURV.
DATE 10/18/2023

SHEET 3 of 5

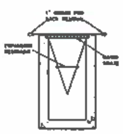




YARD DRAIN PROTECTION DETAIL



SILT FENCE DETAIL

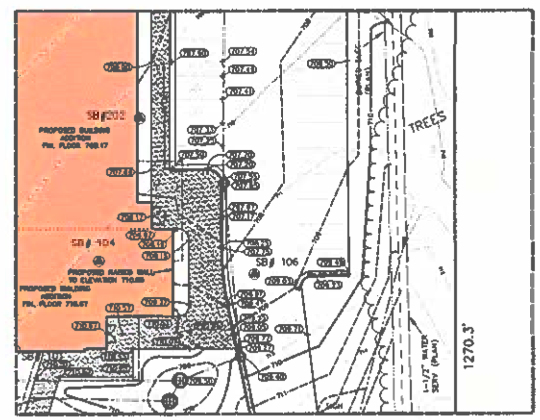


SILT SACK DETAIL

5' WIDE COBBLE CHECK DAM

SOIL EROSION CONTROL NOTES

1. PROPERTY DESCRIPTION: N 400 FT OF S 1270.3 FT OF W 1/2 W 1/2 NW 1/4 EX W 230 FT ALSO S 870.3 FT OF W 1/2 W 1/2 NW 1/4 * SEC 33 T7N R10W 17 14 A
2. TOTAL AREA OF DISTURBANCE = 3.0 ACRES
3. THE OWNER SHALL OBTAIN THE SOIL EROSION CONTROL PERMIT. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SOIL EROSION CONTROL PERMIT
4. ALL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION AND MAINTAINED, AS NECESSARY, UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED
5. ALL DISTURBED NON-PAVED AREAS SHALL BE PERMANENTLY STABILIZED WITH AT LEAST 4" OF TOPSOIL AND BE SEEDED
6. THE CONSTRUCTION ENTRANCE IS OFF ADA DRIVE. PREVENT TRACKING SOIL OFF-SITE. IF TRACKING OCCURS, SWEEP SOIL IMMEDIATELY
7. CONTROL DUST BY DISTRIBUTING WATER REGULARLY OVER DISTURBED AREAS
8. INSPECT AND MAINTAIN ALL TEMPORARY SOIL EROSION CONTROLS DAILY AND AFTER EACH SIGNIFICANT RAINFALL EVENT
9. THE SEDIMENT SHALL BE CONTAINED ON-SITE
10. PLACE SILT SACKS ON CATCH BASINS AFFECTED BY SITE CONSTRUCTION AND REMOVE WHEN SITE IS STABILIZED. INSTALL SILT SACKS PER MANUFACTURERS RECOMMENDATIONS
11. CLEAN OUT CATCH BASIN SUMPS AND DETENTION BASIN AREAS UPON PROJECT COMPLETION
12. PLACE SILT FENCE AS SHOWN ON PLAN AND PER DETAIL AND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS
13. ALL EXCESS SPOILS ARE TO BE REMOVED FROM THE SITE. OTHERWISE STOCKPILES MUST BE PROVIDED WITH TEMPORARY AND PERMANENT SESC MEASURES
14. SILT FENCE IS REQUIRED ALONG ALL DOWNSTREAM EDGES OF THE GRADING LIMITS AND/OR PROPERTY LINES AND MUST REMAIN IN PLACE UNTIL ALL VEGETATION IS UNIFORMLY RE-ESTABLISHED. THE SILT FENCE MUST BE TOED IN A MINIMUM OF 6" ALONG ITS BASE.
15. ALL SLOPES 1V : 4H OR STEEPER SHALL BE STABILIZED, AS NECESSARY, WITH AT LEAST 4" TOPSOIL AND WITH TACKIFYING MULCH AND/OR SOIL EROSION CONTROL MATTING (NAG S-150 OR EQUIVALENT OR BETTER). MATTING, ALONG WITH THE NECESSARY STAPLES OR WOOD PEGS, SHALL BE PLACED PER MANUFACTURER'S RECOMMENDATIONS WITH SEAMS PARALLEL TO THE DIRECTION OF SURFACE RUNOFF
16. ADJACENT TO THE ADACROFT COMMONS COUNTY DRAIN
17. THE SOILS ON THIS SITE CONSIST OF SILTY SAND BASED ON GEOTECHNICAL REPORT PREPARED BY MTC, DATED NOVEMBER 2, 2023. REFERENCE REPORT FOR SOIL BORING INFORMATION
18. CONSTRUCTION SCHEDULE
    - a. JUNE 2024 INSTALL EROSION CONTROL
    - b. JUN 2024 DEMO AND SITE GRADING
    - c. JUN 2024 BEGIN SITE WORK
    - d. JUL 2025 COMPLETE SITE WORK
    - e. JUN-JUL 2025 FINAL RESTORATION
19. THE MAINTENANCE NECESSARY FOR THE PERMANENT SOIL EROSION CONTROL MEASURES IS THE RESPONSIBILITY OF THE OWNER



BARRIER FREE GRADING DETAIL
SCALE: 1" = 20'

SCALE: 1" = 30'
1' CONTOUR INTERVAL

LEGEND

- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED SPOT ELEVATION
- FUTURE SPOT ELEVATION
- EXISTING SPOT ELEVATION
- SILT FENCE
- SILT SACK
- YARD DRAIN PROTECTION

SITE GRADING AND SOIL EROSION CONTROL PLAN

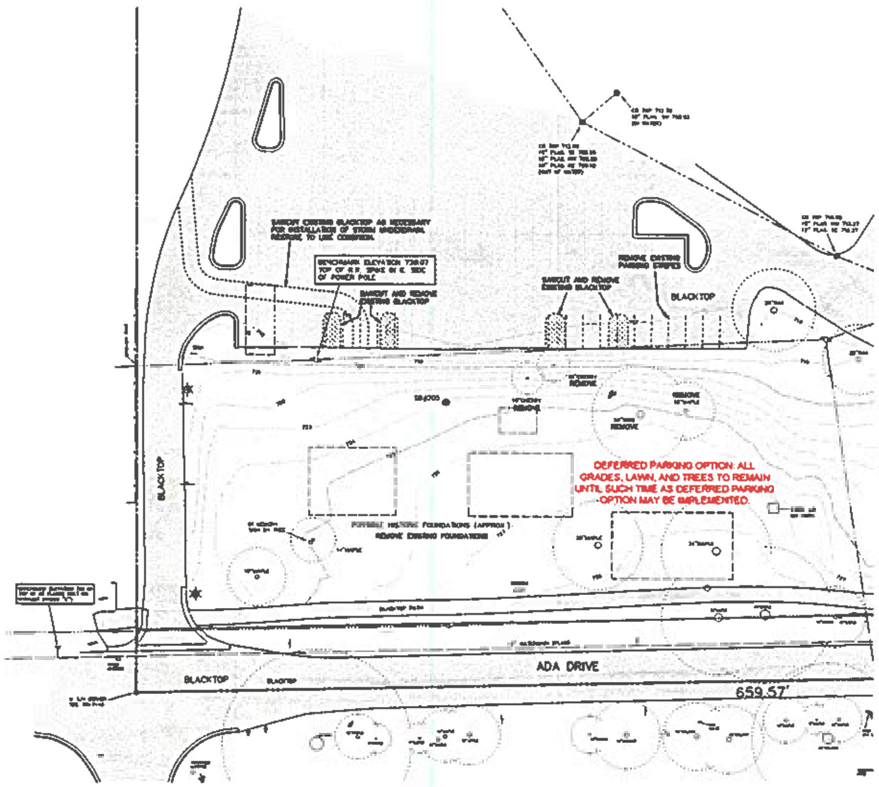
RE: 6477 ADA DRIVE SE
FOR: ST. ROBERT OF NEWMINSTER
ATTN: FATHER TONY RUSSO
6477 ADA DRIVE SE
ADA, MI 49301
PART OF THE NW 1/4, SECTION 33, T7N, R10W, ADA TOWNSHIP, KENT COUNTY, MICHIGAN

DATE	REVISION	BY
04/05/24	REV DEFERRED PARKING PER TWP	JSV
03/16/24	ADDED PAC-STYLE FOR SJJ	JDA
11/21/23	ISSUE FOR SE – PROGRESS	JDA

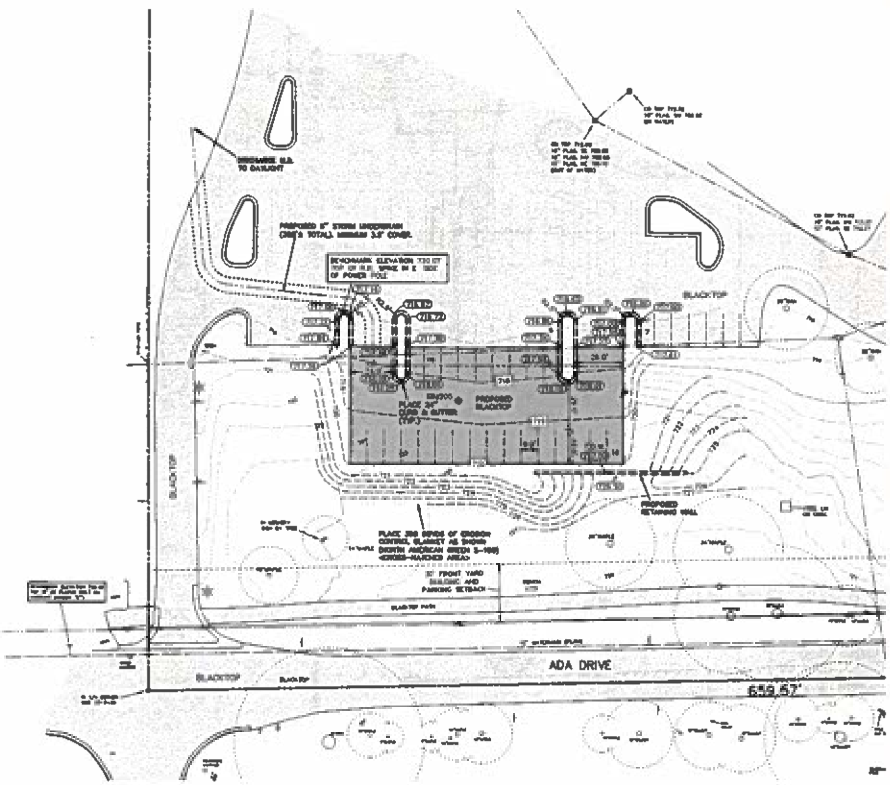
exxel engineering, inc.
planners · engineers · surveyors

DRAWN BY: JSD
APPROVED BY: JSV
REF NO: 231570E
PROJ ENG: JSV
PROJ SURV:
DATE: 10/10/2023

SHEET 4 of 5



DEFERRED SOUTH PARKING LOT
DEMOLITION PLAN
SCALE: 1" = 30'



DEFERRED SOUTH PARKING LOT
LAYOUT & GRADING PLAN
SCALE: 1" = 30'

NOTE: ALL PROPOSED DEMOLITION AND CONSTRUCTION WORK FOR SOUTH PARKING LOT IS TO BE DEFERRED

SCALE: 1" = 30'
1' CONTOUR INTERVAL

LEGEND

- = PROPOSED CONTOUR
- = EXISTING CONTOUR
- = PROPOSED SPOT ELEVATION
- = EXISTING SPOT ELEVATION
- = SILT FENCE
- = SILT SACK
- = YARD DRAIN PROTECTION

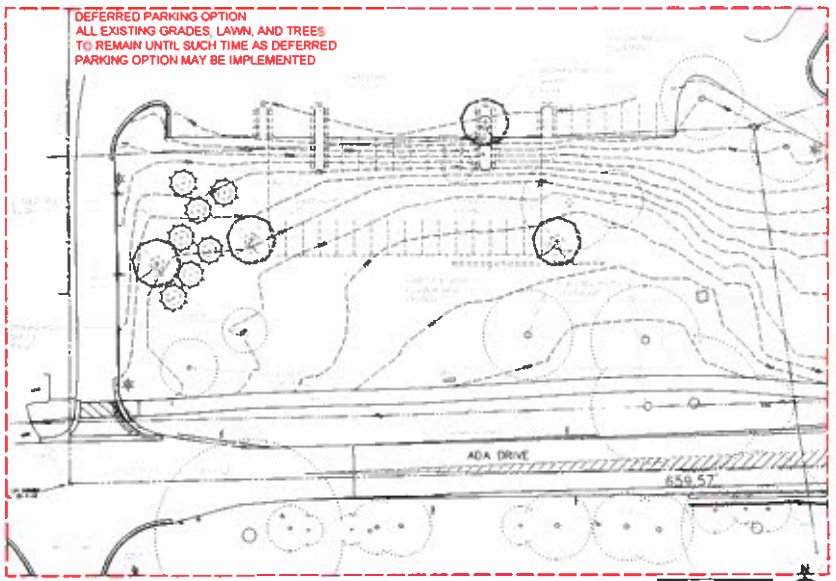
SOUTH PARKING LOT PLAN – DEFERRED
RE: 6477 ADA DRIVE SE
FOR: ST. ROBERT OF NEWMINSTER
ATTN: FATHER TONY RUSSO
6477 ADA DRIVE SE
ADA, MI 49301
PART OF THE NW 1/4, SECTION 33, T7N, R10W, ADA TOWNSHIP, KENT COUNTY, MICHIGAN

exxel engineering, inc.
planners · engineers · surveyors

SHEET 5 of 5

Know what's below. Call before you dig.

DEFERRED PARKING OPTION
ALL EXISTING GRADES, LAWN, AND TREES TO REMAIN UNTIL SUCH TIME AS DEFERRED PARKING OPTION MAY BE IMPLEMENTED



DEFERRED OPTION - SOUTH PARKING LOT LANDSCAPE PLAN

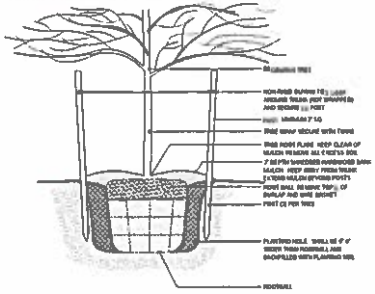
0' 15' 30' 60'

PLANT LIST

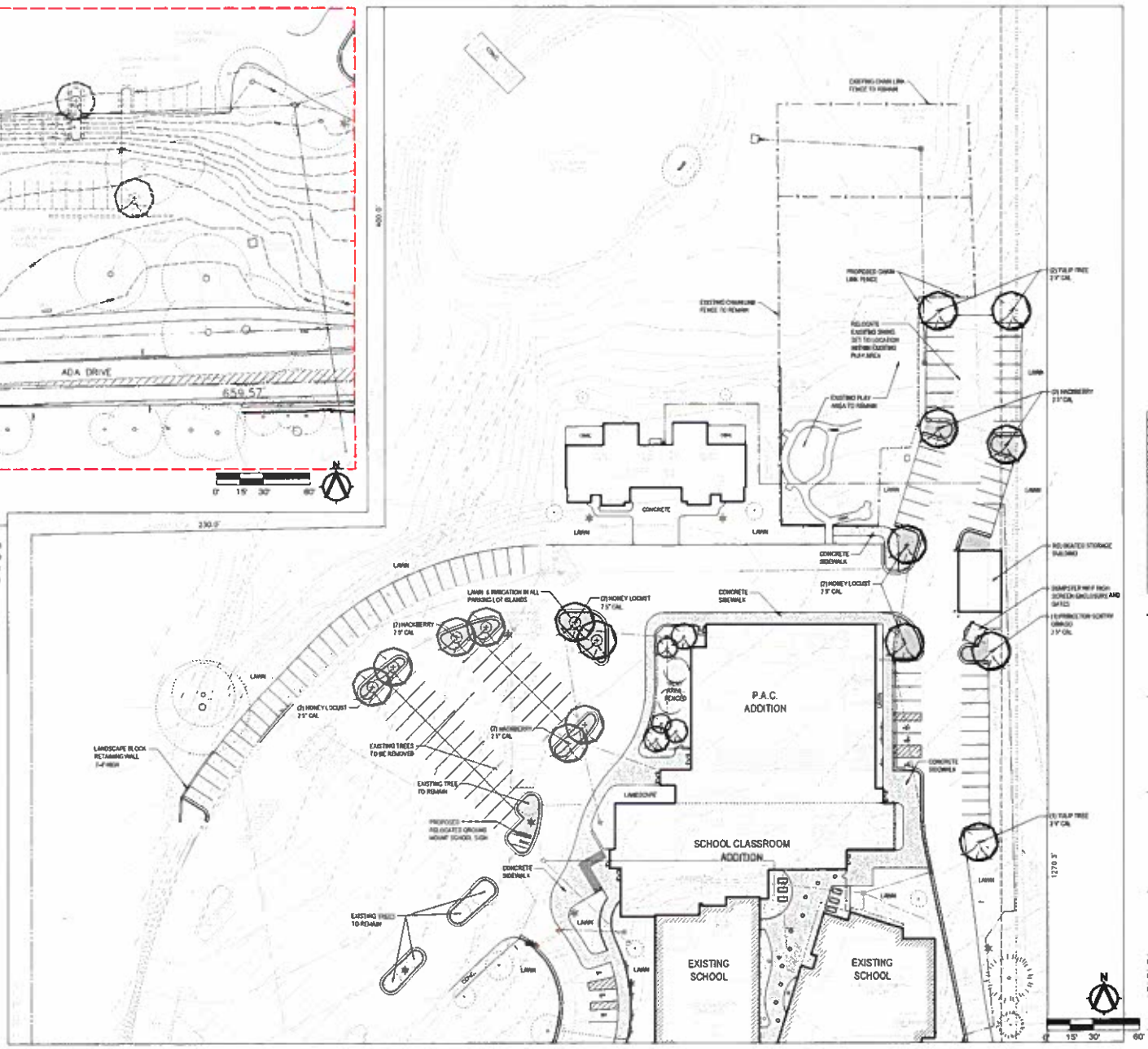
KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
	TREES			
sb	CELTIS OCCIDENTALIS	COMMON HACKBERRY	5	2.5" CAL. B&B
sb	GINKGO BILOBA 'PRINCETON SENTRY'	PRINCETON SENTRY GINKGO	3	2.5" CAL. B&B
sb	GLEDITSIA TRIACANTHOS 'INERMIS' SKYLINE'	SKYLINE HONEY LOCUST	5	2.5" CAL. B&B
sb	LIRIODENDRON TULIPIFERA	TULIP TREE	4	2.5" CAL. B&B
sb	PICEA GLAUCA DENSATA	BLACK HILLS SPRUCE	7	7.0'HT., B&B

Landscape requirements (sec. 78-199)
south parking lot landscape areas

Landscape requirements (sec. 78-199)
south parking lot landscape areas



1 DECIDUOUS TREE PLANTING DETAIL



St. Robert Catholic Church and School

6477 ADA DRIVE SE
ADA, MI 49301

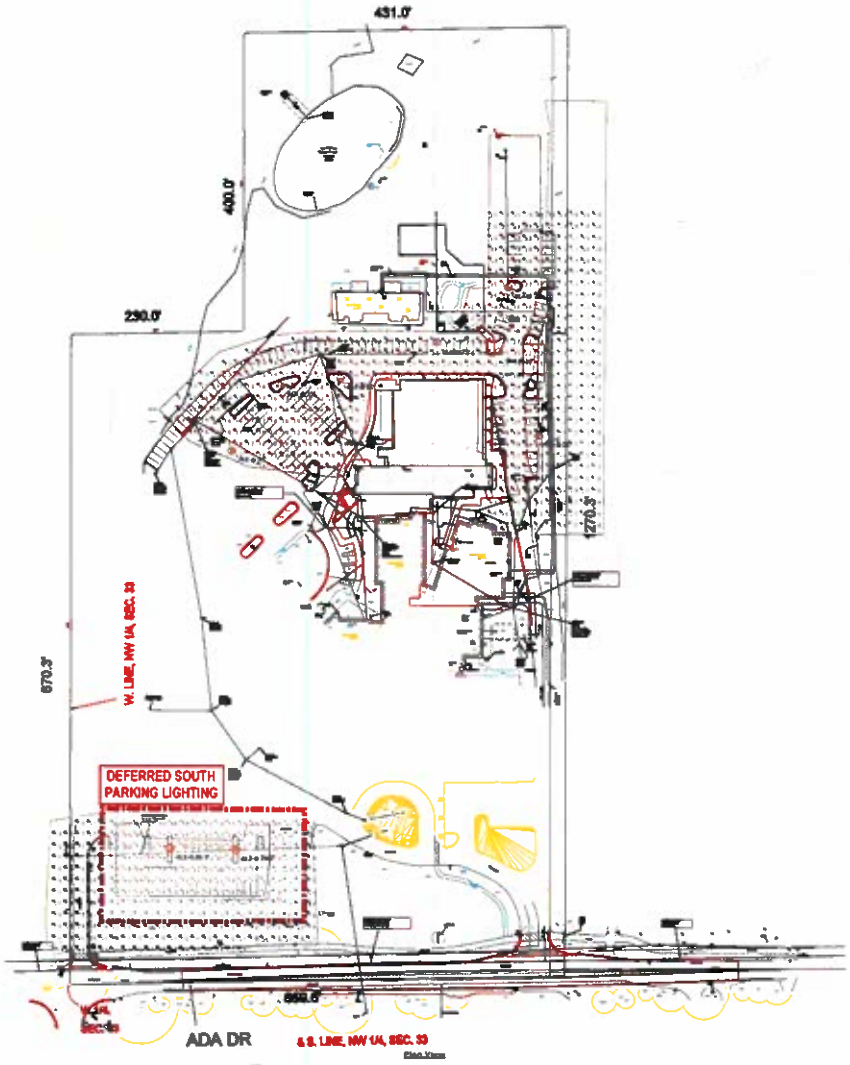
No.	Description	Date
1	TOWNSHIP SUBMITTAL	04.05.24

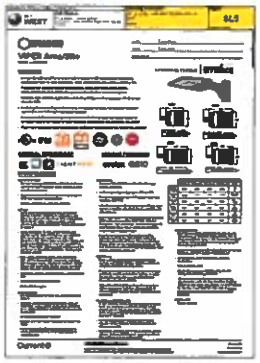
AMDG ARCHITECTS

OVERALL LANDSCAPE PLAN

PROJ. NO	230021
PROJECT MANAGER	GP
PROJECT ARCHITECT	JVWW

L1.1





Schedule

Symbol	Label	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
	SLS	5	Beacon Lighting	VP-J-320L-145-4K[illegible] SQW-* Supplied w/ 22 ft Pole	Type V LED Area Luminaire	1	21870	0.96	150	Max: 9894cd
	SL4	4	Beacon Lighting	VP-J-320L-145-4K[illegible]-4W-* Supplied w/ 32 ft Pole	Type IV W LED Area Luminaire	1	21360	0.96	150	Max: 10427cd
	SLE	1	Existing	Existing Type V	Type V LED Area Luminaire	1	21870	0.96	150	Max: 9894cd

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
North Parking G	+	1.5 fc	4.2 fc	0.0 fc	N/A	N/A
North Tertiary	+	0.2 fc	1.4 fc	0.0 fc	N/A	N/A
South Parking G	+	1.5 fc	2.7 fc	0.1 fc	27.0:1	15.0:1
South Tertiary	X	0.1 fc	0.9 fc	0.0 fc	N/A	N/A

REVISED 04/05/2024

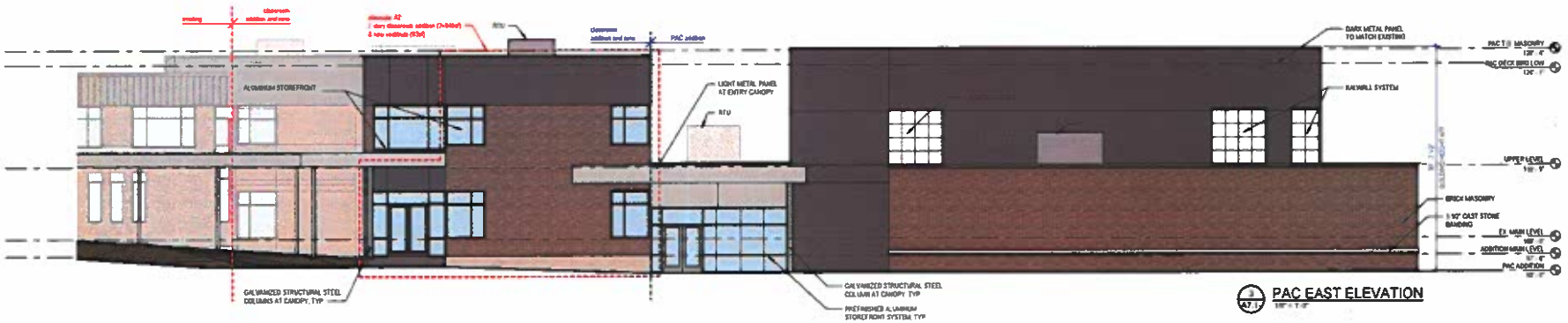
proposed building + PAC addition

site lighting and photometric plan | **base parking option**

Michigan Lighting Systems

St. Robert
Catholic School Site Lighting Additions/Renovations
Ada, Mi

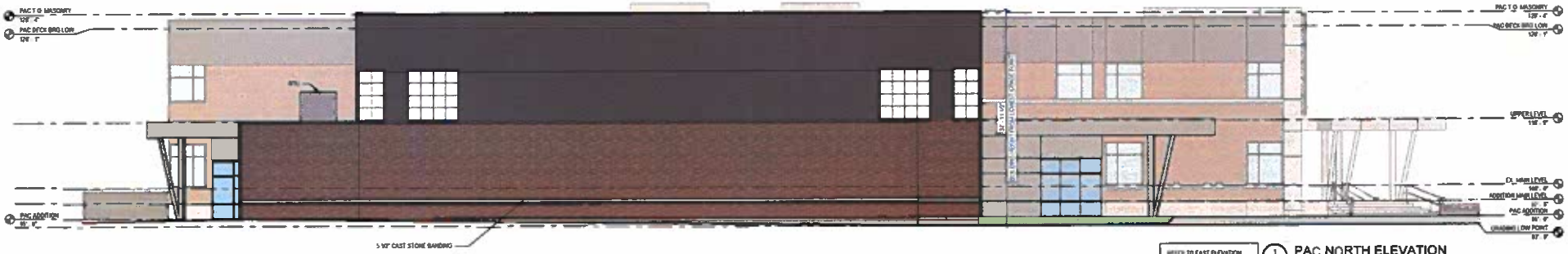
Designer
MLS PDG RE
Date
03/21/2024
Scale
Not to Scale
Drawing No.
1008LXT013/2024
Summary
Revision #2



2 / A7.1 PAC EAST ELEVATION
1/8" = 1'-0"

REFER TO EAST ELEVATION FOR TYPICAL EXTERIOR NOTES

2 / A3 PAC WEST ELEVATION
1/8" = 1'-0"



REFER TO EAST ELEVATION FOR TYPICAL EXTERIOR NOTES

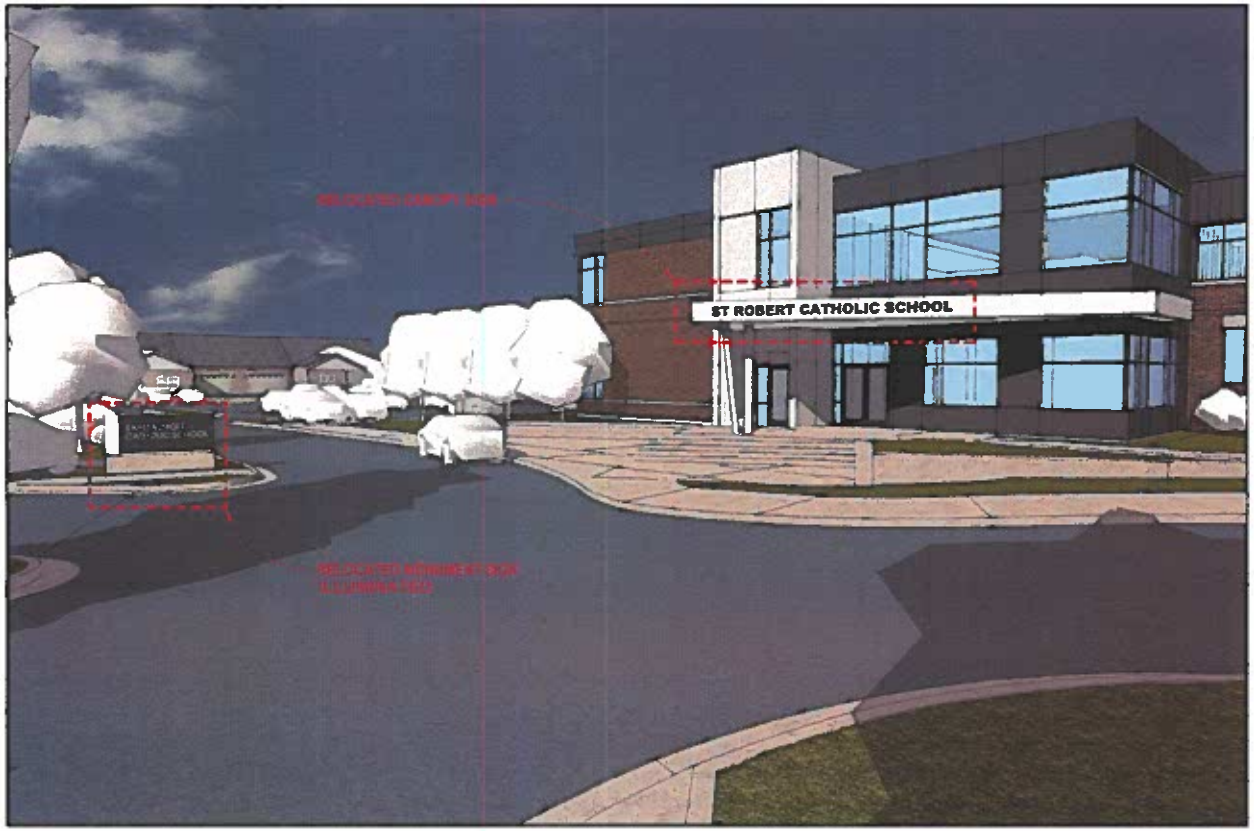
1 / A3 PAC NORTH ELEVATION
1/8" = 1'-0"

3/19/2024 9:14:00 AM

St. Robert of Newminster CATHOLIC CHURCH

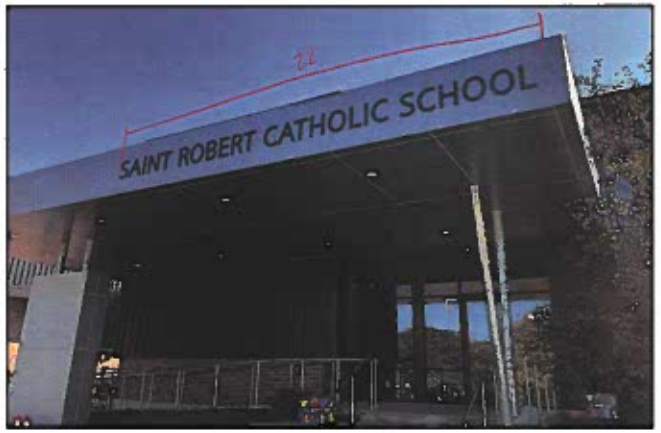
ST. ROBERT SCHOOL AND PARISH

Ada, Michigan

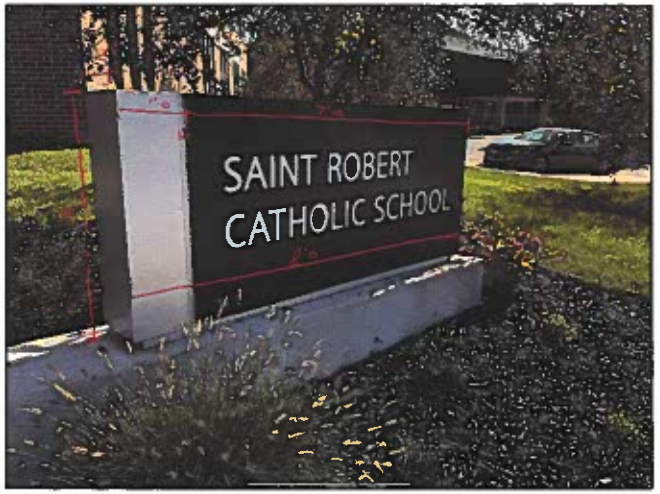


PROPOSED LOCATIONS FOR REUSED ENTRY SIGNAGE

PROPOSED RELOCATED SIGNAGE
EX. RELOCATED CANOPY SIGN: 22' x 1' = 22 SF
EX. RELOCATED MONUMENT SIGN: 3'-4" x 8'-0" = 27 SF



EXISTING CANOPY SIGN TO BE RELOCATED



EXISTING MONUMENT SIGN TO BE RELOCATED

AMDG ARCHITECTS with | First Companies

proposed relocated entry signage

April 5, 2024

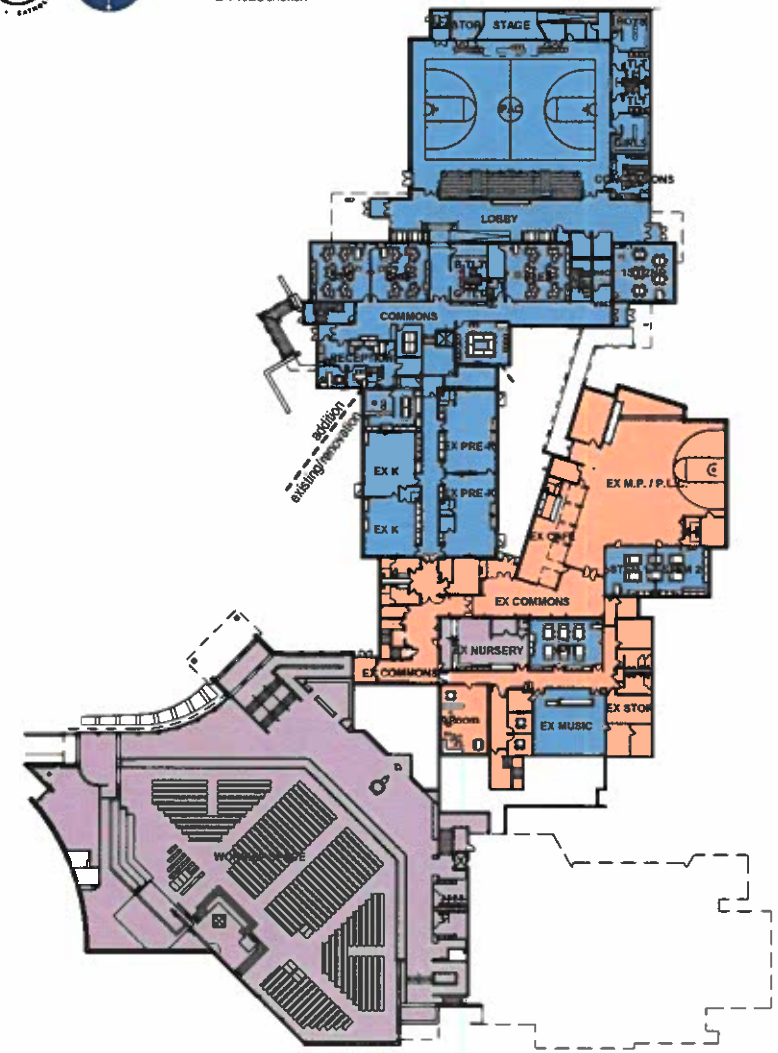
5.3

EXHIBIT B

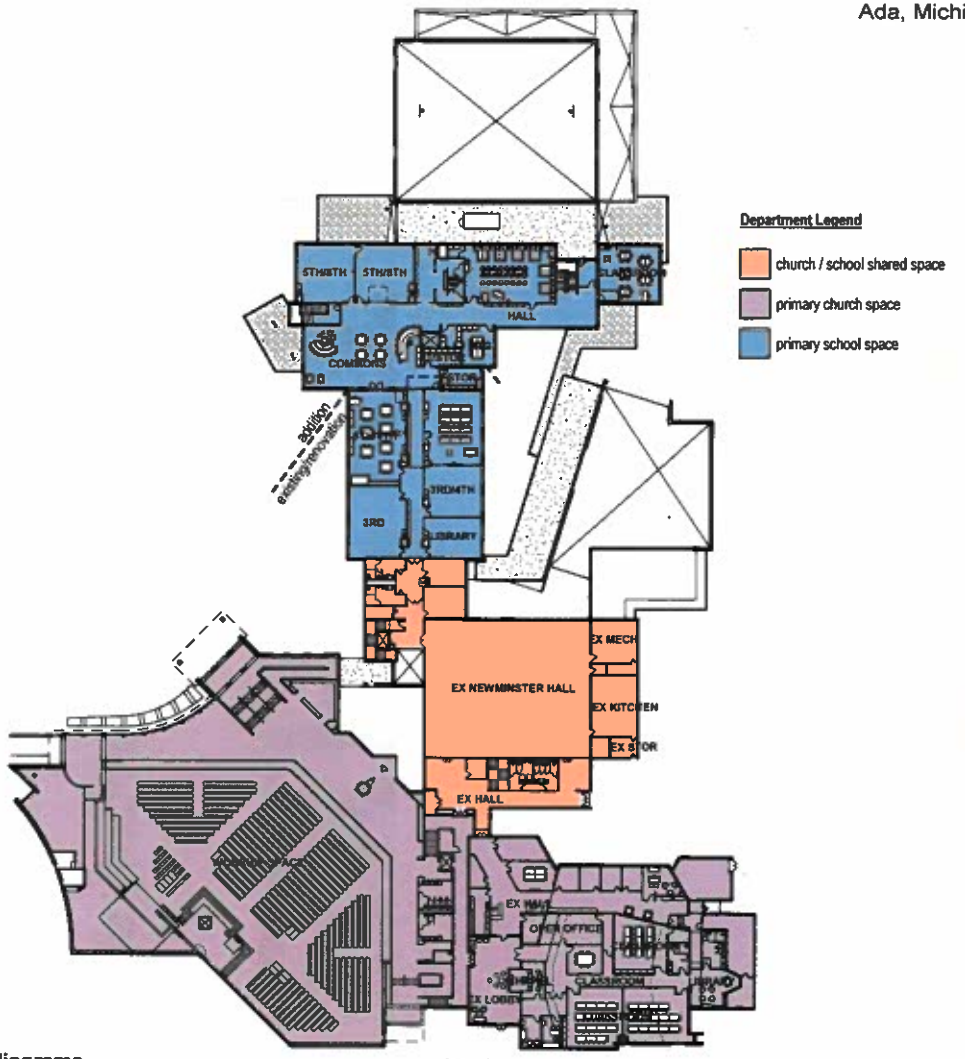
St. Robert of Newminster CATHOLIC CHURCH

ST. ROBERT SCHOOL + PARISH ADDITION AND RENOVATION

Ada, Michigan



main level



upper level

building usage diagrams

AMDG ARCHITECTS with | First Companies

N

0' 30' 60' 120'

proposed plan (pre-k - 8th grade)

April 5, 2024

SP01

EXHIBIT C

(Traffic Report remains unchanged since March 2024)

progressive|ae

Memo

To: To Whom It May Concern

From: Christopher Zull, PE
Nick LaCroix, PE, PTOE

Date: March 12, 2024

Re: St. Robert Catholic School Traffic Impact Study

File No: 96810001

Progressive AE completed a traffic impact study in October 2023 for the proposed St. Robert Catholic School expansion project in Ada, Michigan. Due to a recent donation to the Church, the proposed project has been expanded to include a new parish activity center.

The initial traffic study was revised in March 2024 to include the addition of the parish activity center and is attached to this memo. As outlined in the revised traffic impact study, the trips generated by the proposed parish activity center are anticipated to occur during school "off peak" hours and the number of trips generated during school "peak hours" is greater than anticipated for the parish activity center. Traffic volumes along Ada Drive are also lower during the afternoon peak hour (4:45 p.m. to 5:45 p.m.) compared to the volumes during the typical school afternoon peak hour (2:30 p.m. to 3:30 p.m.). Thus, the proposed parish activity center is not anticipated to create any additional traffic concerns along Ada Drive. Except as provided below, no additional recommendations were included in the revised traffic impact study associated with the proposed parish activity center and other site modifications described in the updated site plan prepared by AMDG Architects, Inc.

Based on the addition of the parish activity center, the following additional recommendation was included in the revised study as follows:

- The current "Do Not Enter" restriction at the west driveway restricts entering vehicles during the school peak hours from 7:00 a.m. to 9:00 a.m. and 2:00 p.m. to 4:00 p.m. This restriction should be extended from 2:00 p.m. to 6:00 p.m. to include entering activity center attendees during the typical afternoon peak hour.

NDL/ecy
P:\96810001.0\03 WIP\C1 PRE DESIGN\Traffic Study\Reports\2024 03 12\2024 03 12 St Roberts TIS Cover Memo.docx

Traffic Impact Study
St. Robert Catholic School Expansion
Ada, Michigan

Prepared for:

AMDG Architects, Inc.
25 Commerce Drive SW
Suite 400
Grand Rapids, MI 49503

Prepared by:

Progressive AE
1811 4 Mile Road NE
Grand Rapids, MI 49525

March 2024
Project No. 96810001

Table of Contents

Appendix

List of Figures and Tables

Figures

Tables

EXECUTIVE SUMMARY

Introduction

St. Robert Catholic School is proposing an expansion of its facilities to accommodate more students and staff. In addition, the proposed project includes a new parish activity center. The activity center is planned to host sporting events with a capacity of 280 attendees, banquets with a capacity of 328 attendees, and special events with a capacity of up to 780 attendees. The school anticipates approximately 70 attendees during a sporting event held on typical weekdays, with additional capacity up to 280 attendees for less frequent larger sporting events. Banquets and other special events will occur infrequently with three (3) to four (4) banquets and two (2) special events per year.

The existing school serves grades P3-6, with approximately 130 enrolled students. Based on the existing student population and planned growth, total enrollment at the proposed school will be 372 students. For this study, a maximum enrollment of 372 students in 2025 was considered as a worst-case scenario.

As trips generated by the activity center are anticipated to occur during school off peak hours and the number of trips expected to be generated during the school peak hours is greater than the activity center, this study focuses on the school morning and school afternoon peak hours.

Access to the existing school site is via two driveways to Ada Drive. The east driveway operates as a full-access driveway, while the west driveway serves only vehicles exiting the site during the peak school periods.

This traffic impact study aimed to analyze the potential impacts of the proposed school expansion and identify what physical and/or operational roadway system improvements may be necessary to mitigate existing or future issues and/or impacts created by the additional traffic to and from the school.

Study Area

The study area includes two stop-controlled intersections as show below:

- Ada Drive / Fox Hollow Avenue / Existing West Driveway
- Ada Drive / Existing East Driveway

Data Collection

Existing turning-movement counts at the study area intersections were collected on Thursday, August 24, 2023, during a typical school day. The turning movement counts were performed from 7:00 a.m. to 9:00 a.m. and from 2:00 p.m. to 6:00 p.m. to capture the existing school peak hours.

These counts indicated that the weekday morning, school afternoon, and afternoon peak hours generally occur between 7:15 a.m. to 8:15 a.m., 2:30 p.m. to 3:30 p.m., and 4:45 p.m. to 5:45 p.m.

Analysis

Two analysis scenarios were completed for the weekday school morning and school afternoon peak hours as part of the study as follows:

- Existing Conditions
- Future (2025) Conditions

An annual background traffic growth rate of 0.75-percent was applied to existing volumes to help reflect anticipated non-development traffic increases by the 2025 horizon year.

Based on the trip generation characteristics of the existing school, the school is expected to generate approximately 273 new vehicle trips (156 entering, 117 exiting) onto the roadway system during the school morning peak hour and approximately 225 new vehicle trips (106 entering, 119 exiting) onto the roadway system during the school afternoon peak hour.

For the existing and future (2025) conditions, capacity analyses were performed to determine the impacts the proposed project would have on the surrounding roadways and intersections within the study area.

Conclusions

Existing Conditions
The existing conditions analyses show that many of the controlled movements at the study area intersections operate acceptably at LoS "D" or better during the school morning and afternoon peak hours, except for the northbound movement along Fox Hollow Avenue that currently operates at a LoS "E" during the school afternoon peak hour. The 95th percentile queue during the school afternoon peak hour is calculated to be 5.7 vehicles.

A review of the existing crash history at the school driveways to Ada Drive indicated that four crashes occurred within 250-feet of the existing school driveways in the past five years. Three crashes near the west driveway and one crash near the east driveway. Of those four crashes, none occurred during the school peak hours; hence, they do not appear related to the existing school driveway movements.

Future (2025) Conditions
On opening day after the completion of the proposed expansion, the traffic volumes within the study area intersections are anticipated to remain relatively the same. However, traffic volumes within the study area will increase with background traffic growth and as student enrollment increases over the next several years to the anticipated levels.

Assuming no mitigation to the surrounding roadway network to mitigate the existing conditions, the future (2025) conditions analysis results show all controlled movements at the study area intersection are anticipated to operate acceptably at LoS "D" or better during the school morning and afternoon peak hours, except for the following movements:

- The northbound approach along Fox Hollow Avenue is anticipated to operate at a LoS "F" during the school morning and afternoon peak hours. The 95th percentile queues during the school morning and afternoon peak hours are calculated to be 9.9 and 10.2 vehicles, respectively.
- The southbound approach along the existing west driveway is anticipated to operate at LoS "F" during the school morning peak hour. The 95th percentile queue during the school morning peak hour is calculated to be 4.8 vehicles.
- The southbound left-turn movement from the existing east driveway onto Ada Drive is anticipated to operate at LoS "F" and LoS "E" during the school morning and afternoon peak hours, respectively. The 95th percentile queues during the school morning and afternoon peak hours are calculated to be 4.8 and 2.6 vehicles, respectively.

Implementing the improvements outlined to mitigate existing conditions results in reduced delay and significantly reduced queuing at the Ada Drive/Fox Hollow Avenue intersection, particularly the northbound approach. A comparison of the northbound approach delay at the Ada Drive/Fox Hollow Avenue intersection shows the approach delay will be reduced from LoS "F" with 98.3-seconds of delay to LoS "D" with 29.4-seconds of delay during the morning peak hour. Similarly, the delay will be reduced from LoS "F" with 80-seconds of delay to LoS "D" with 28.0-seconds of delay during the school afternoon peak hour.

While there is expected to be some delay and queuing at the school driveways during pickup/dropoff operations, this is typical of school sites given the concentrated traffic volumes surrounding the school start and end times. These delays are also often short duration, typically 15 – 30-minutes.

Recommendations
The following recommendations would be made to improve operations within the study area once the proposed project is complete.

Existing Conditions
The existing conditions analysis and site observations revealed poor operations at the Ada Drive/Fox Hollow Avenue intersection, particularly along northbound Fox Hollow Avenue. To improve the safety and operation of the intersection, below are recommended mitigation measures that should be considered regardless of the proposed project.

- A short left-turn lane should be included on the northbound approach from Fox Hollow Avenue to Ada Drive to allow right-turning vehicles to bypass a vehicle waiting to turn left. The left-turn lane should accommodate up to two queued vehicles (50-feet). This turn lane could be developed with pavement markings should the existing pavement width allow. Minor widening on the west side of Fox Hollow Avenue may be necessary to provide adequate lane widths and lane tapers. As an alternative, minor pavement widening on the east side of the roadway would also allow right-turn vehicles to bypass queued left-turning vehicles.
- Construction of a separate westbound left-turn lane from Ada Drive to Fox Hollow Avenue should be considered based on the existing volume of westbound left-turn movements.

Given the significant concentration of schools, growth of Ada Village, and several new residential developments in the area, future capacity and operational improvements should be explored for the Ada Drive corridor. Some options to consider include:

- A continuous center turn lane through the corridor.
- Implementing travel demand management strategies, such as staggered start/dismissal times for schools and/or encouraging ridesharing and carpooling.
- Periodic review of volume and crash data at key intersections.

Future (2025) Conditions
For analysis purposes, this study used a maximum traffic approach for 2025 that presumed full enrollment for the school expansion. The more realistic expectation is that the school will gradually increase its enrollment over several years, reaching capacity in 2029-2030. As the school enrollment increases over the years to full capacity, the operation of the existing driveways slowly deteriorates to LoS "F" due to high traffic volumes during school peak hours. Below are recommended improvements to the existing school driveways to provide a reasonable traffic flow to/from the school.

- The southbound approach to the Ada Drive/East Driveway intersection provides adequate width for one entry lane and two exit lanes. A review of the existing operation at the intersection shows the exit approach currently operates as two lanes. Adding pavement markings to the approach to clearly define two exit lanes, a right-turn and left-turn lane, is recommended.
- The current "Do Not Enter" restriction at the west driveway restricts entering vehicles during the school peak hours from 7:00 a.m. to 9:00 a.m. and 2:00 p.m. to 4:00 p.m. This restriction should be extended from 2:00 p.m. to 6:00 p.m. to include entering activity center attendees during the typical afternoon peak hour.
- No additional improvements are recommended along Ada Drive as the existing eastbound left-turn lane and westbound right-turn taper will adequately serve the anticipated school traffic volumes.
- Vehicular delays, queuing, and safety at the existing school driveways should be monitored as school enrollment increases. Should significant delays, queuing, or safety issues develop at the existing driveways, additional mitigation may be required. These mitigation measures may include revising existing site circulation.

CHAPTER 1

INTRODUCTION

St. Robert Catholic School is proposing an expansion of its facilities to accommodate more students and staff. In addition, the proposed project includes a new parish activity center. The activity center is planned to host sporting events with a capacity of 280 attendees, banquets with a capacity of 328 attendees, and special events with a capacity of up to 780 attendees. The school anticipates approximately 70 attendees during a sporting event held on typical weekdays, with additional capacity up to 280 attendees for less frequent larger sporting events. Banquets and other special events will occur infrequently with three (3) to four (4) banquets and two (2) special events per year.

The existing school serves grades P3-6, with approximately 130 enrolled students. Based on the existing student population and planned growth, total enrollment at the proposed school will be 372 students. For this study, a maximum enrollment of 372 students in 2025 was considered as a worst-case scenario.

As trips generated by the activity center are anticipated to occur during school off peak hours and the number of trips expected to be generated during the school peak hours is greater than the activity center, this study focuses on the school morning and school afternoon peak hours.

Access to the existing school site is via two driveways to Ada Drive. The east driveway operates as a full-access driveway, while the west driveway serves only vehicles exiting the site during the peak school periods.

This traffic impact study aimed to analyze the potential impacts of the proposed project and identify what physical and/or operational roadway system improvements may be necessary to mitigate existing or future issues and/or impacts created by the additional traffic to/from the school. Tasks undertaken to complete the analyses include:

1. ***Data Collection.*** Applicable information regarding the existing operating conditions of the adjacent roadways was obtained in August 2023 on a typical weekday. Morning and afternoon peak hour turning movement counts were completed at the existing study area intersections. Information regarding lane configurations, speed limits, traffic controls, and other related data for the study area roadways was also collected.

Figure 1. Location Map and Study Area

2. ***Background Growth.*** An annual background traffic growth rate of 0.75-percent was applied to existing volumes to help reflect anticipated non-development traffic increases by the 2025 horizon year.

3. ***Trip Generation/Distribution.*** The number of trips the proposed school is expected to generate during peak hours was identified. These trips were then assigned to the adjacent street system based on the patterns followed by existing traffic and engineering judgment.

4. ***Levels of Service.*** Capacity calculations were completed at the study area key intersections and the existing site driveways to identify existing and future peak hour operational characteristics.

5. ***Mitigation.*** Roadway/intersection improvements were identified, when applicable, that will enable the adjacent roadways and study area intersections to maintain equal and/or acceptable levels of operation under future conditions upon adding background traffic growth and/or due to the anticipated development traffic.

Pre-study coordination was completed with Ada Township staff to help identify the required study area, study parameters, and any specific areas of concern. The following chapters outline the results of analyses completed during the study process.

CHAPTER 2

EXISTING CONDITIONS

The first step in identifying potential traffic impacts is determining how well the adjacent streets operate under current conditions. The existing conditions provide a comparison to subsequent future conditions analyses. This chapter summarizes the data collection and existing operating conditions analysis procedures.

Key Study Area Roadways

Ada Drive

Ada Drive is a primary east-west, minor arterial roadway within the study area under Kent County Road Commission (KCRC) jurisdiction. It is a two-lane roadway with a speed limit of 30-miles-per-hour (mph) during school peak hours. Weekday 24-hour traffic volumes along Ada Drive east of Fox Hollow Avenue average approximately 4,700 vehicles per day based on a 2021 Average Daily Traffic (ADT) count by Grand Valley Metropolitan Council (GVMC).

Ada Drive at East Driveway

Fox Hollow Avenue

Fox Hollow Avenue is a north-south roadway within the study area under KCRC jurisdiction. It is a two-lane roadway with a speed limit of 30-mph. Weekday 24-hour traffic volumes along Fox Hollow Avenue south of Ada Drive are estimated to average approximately 2,500-3,500 vehicles per day based on the existing peak hour traffic data.

NB Fox Hollow Avenue at Ada Drive

Existing Intersections

The study area includes two stop-controlled intersections, as listed in Table 1. The existing Ada Drive intersection with Fox Hollow Avenue and east driveway includes one-lane approaches in all directions with no separate turn lanes. The existing west driveway to Ada Drive includes an eastbound left-turn lane, a westbound right-turn taper, and two exit lanes (unmarked).

Table 1. Existing Intersections

Intersection	Traffic Control
Ada Drive / Fox Hollow Avenue / Existing West Driveway	Two-Way Stop
Ada Drive / Existing East Driveway	Two-Way Stop

Data Collection

Existing turning movement counts at the study area intersections were collected on Thursday, August 24, 2023, during a typical school day. The turning movement counts were performed from 7:00 a.m. to 9:00 a.m. and 2:00 p.m. to 6:00 p.m. to capture the existing school peak hours. Detailed printouts of the count reports are included in the Appendix.

These counts indicated that the weekday morning and afternoon school peak hours generally occur between 7:15 a.m. to 8:15 a.m. and 2:30 p.m. to 3:30 p.m. Figure 2 shows the existing morning and afternoon school peak hour volumes at the study area intersections.

Crash Analysis
A review of the existing crash history at the existing school driveways to Ada Drive was performed based on information provided by the Michigan Traffic Crash Facts website. This review shows four crashes occurred within 250-feet of the existing school driveways in the past five years. Three crashes near the west driveway and one crash near the east driveway. Of those four crashes, none occurred during the school peak hours; hence, they do not appear related to the existing school driveway movements.

Existing Conditions Capacity Analysis
Intersection level of service calculations were completed to evaluate the existing operational efficiency of the study area intersections. These calculations were completed using techniques outlined in the Highway Capacity Manual, published by the Transportation Research Board. Per Ada Township (Township) requirements, *Synchro*® traffic analysis software, version 11, based on the Highway Capacity Manual methodologies, was used in the analysis.

Levels of service at signalized and unsignalized intersections relate to the delay, traffic volumes, and intersection geometry. Levels of service are expressed in a range from "A" to "F," with "A" denoting the highest or best operating conditions. Generally, a LoS "D" rating is considered the minimum acceptable service level for signalized and unsignalized intersections in most areas, although a LoS "E" or LoS "F" can be deemed acceptable at times in downtown/urban areas or during the peak hours. The criteria for determining the LoS at signalized and unsignalized intersections are outlined in the Appendix of this report.

The existing school morning and afternoon peak hours were analyzed at the study area intersections. Copies of the *Synchro*® analyses are included in the Appendix.

Levels of service for the controlled movements at the study area intersections are shown in Table 2 and Figure 2. Many of these movements operate acceptably at LoS "D" or better during the school morning and afternoon peak hours, except for the following movement:

- The northbound movement along Fox Hollow Avenue currently operates at a LoS "E" during the school afternoon peak hour. The 95th percentile queue during the school afternoon peak hour is calculated to be 5.7 vehicles.

Table 2. Existing Levels of Service and Delay

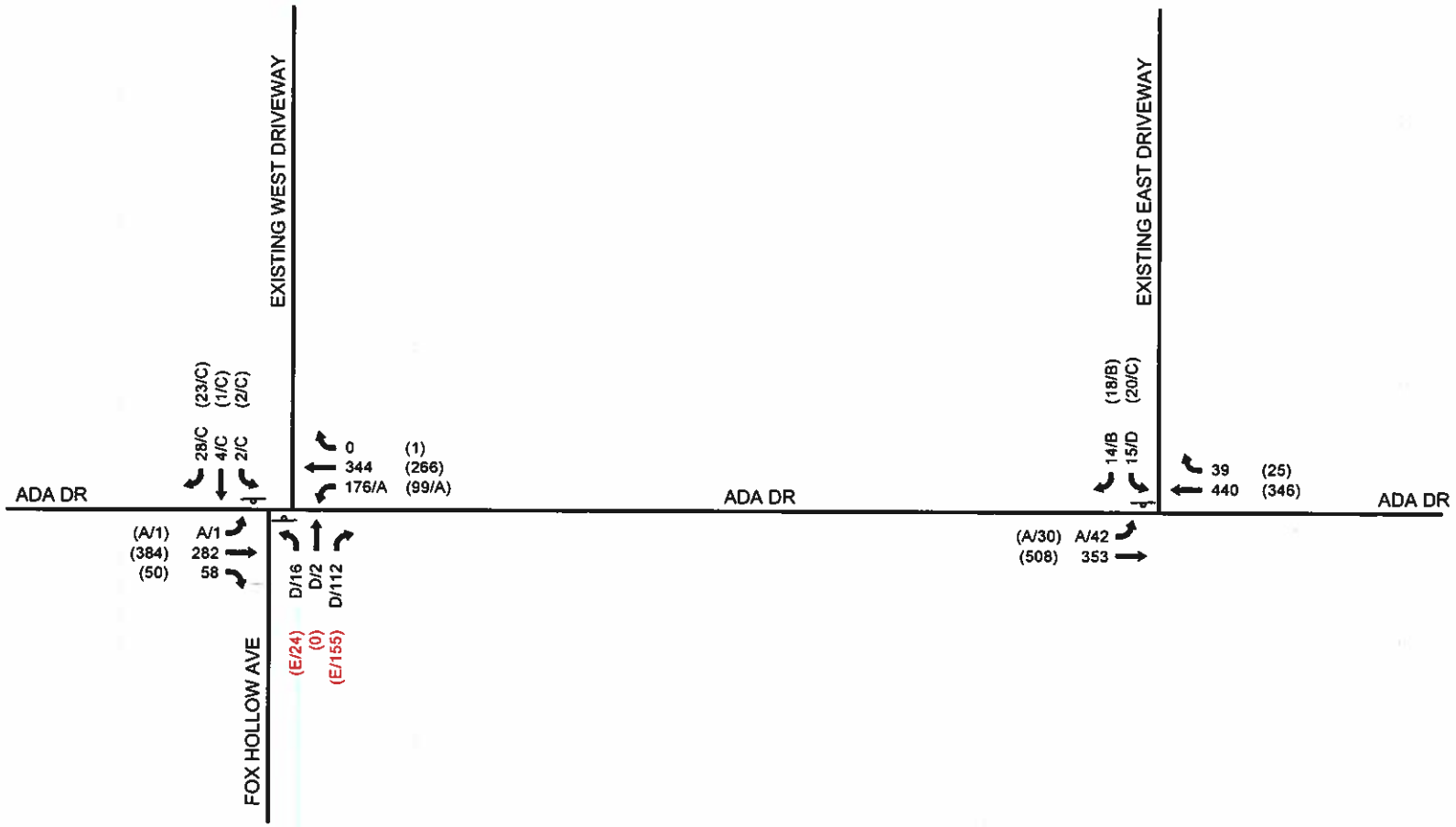
Intersection / Movement	Existing Conditions			
	A.M.		P.M.	
	LoS	Delay(s)	LoS	Delay(s)
Ada Drive / Fox Hollow Avenue / Existing West Driveway[1]				
EBL	A	8.1	A	7.8
WBL	A	9.3	A	9.3
NB	D	30.6	**E**	**36.5**
SB	C	19	C	15
Ada Drive / Existing East Driveway[1]				
EBL	A	9.1	A	9.1
SBL	D	32	D	32
SBR	B	12.6	B	12.6

[1]Unsignalized intersection, critical/worst movement(s) shown.
Source: Progressive AE, August 2023

Existing Conditions Improvements
Reviewing the video data from the Ada Drive/Fox Hollow Avenue intersection shows long queues tend to form along northbound Fox Hollow Avenue during the peak hours due to the high volume of right-turn movements, particularly when a vehicle is waiting to make the northbound left-turn movement. While some vehicles are able to slip past a queued northbound left-turning vehicle, the lane is often blocked resulting in longer northbound queues. Vehicles were observed waiting over 2-minutes to complete the northbound left-turn movement.

Based on reviewing the existing traffic volumes at the study area intersections, existing operations, and results of the capacity analysis, the following improvements should be considered to be implemented by the KCRC or Township at the Ada Drive/Fox Hollow Avenue intersection:

- A short left-turn lane should be included on the northbound approach to allow right-turning vehicles to bypass a vehicle waiting to turn left. The left-turn lane should accommodate up to two queued vehicles (50-feet). This turn lane could be developed with pavement markings, should the existing pavement width allow. Minor widening on the west side of Fox Hollow Avenue may be necessary to provide adequate lane widths and lane tapers. As an alternative, minor pavement widening on the east side of the roadway would also allow right-turn vehicles to bypass queued left-turning vehicles.
- Based on the existing volume of traffic at the intersection, particularly the volume of westbound left-turn movements, the construction of a separate westbound left-turn lane should be considered.



ST ROBERTS SCHOOL EXPANSION TRAFFIC IMPACT STUDY

LEGEND

XX (XX) = AM (PM)
A = LEVEL-OF-SERVICE
(S) = SIGNALIZED INTERSECTION
= STOP-CONTROLLED

EXISTING PEAK-HOUR VOLUMES
+ LEVELS-OF-SERVICE

N
No Scale

FIGURE
2

CHAPTER 3

FUTURE (2025) CONDITIONS

The purpose of this chapter is to summarize the anticipated future (2025) traffic conditions within the study area with background traffic growth and the completion of the proposed project. These analyses provide the before/after comparison of future conditions and help define the timing and applicability of any potential 2025 roadway improvements necessary to mitigate the impact of the proposed project.

Background Traffic Volumes

An annual traffic growth rate of 0.75-percent was applied to the existing peak hour volumes to determine background (2025) peak hour volumes. A separate analysis of the background traffic conditions was not completed as part of this study as the results would be largely the same as existing conditions with only slightly more delay due to the minor increase in traffic volumes.

Proposed Development

St. Robert Catholic School is proposing an expansion of its facilities located on the north side of Ada Drive in Ada Township, Michigan. The project includes the construction of parish activity center and the expansion of the existing school. The activity center is anticipated to be used for school athletics and other special events. Sporting events are anticipated to start at 5:30 p.m. on typical weekdays and 9:00 a.m. on Saturdays. Team practices will be held immediately after school. The activity center is planned to have a capacity of 280 attendees at full capacity; however, the school anticipates approximately 70 attendees during sporting events, held on typical weekdays. The activity center will also host banquets with a capacity of 328 attendees and other special events with a capacity of up to 780 attendees. Banquets and other special events will occur infrequently with three (3) to four (4) banquets and two special events per year.

Currently, the school has approximately 130 students enrolled. The school serves young-fives to 6th grade. In addition, it also provides daycare services to younger ages. The expansion is expected to increase the school's capacity to accommodate more students and employees. Based on the existing student population and planned growth, the total enrollment at the proposed high school will be 372 students. This represents an increase of 242 students.

Site Access

Access to the existing school site is via two driveways to Ada Drive. The east driveway operates as a full-access driveway, while the west driveway opposes Fox Hollow Avenue and serves only vehicles exiting the site during the school peak time periods (7:00 a.m. to 9:00 a.m. and 2:00 p.m. to 4:00 p.m.).

Trip Generation

Trips for the proposed school expansion were calculated for the typical school morning and afternoon peak hours based on the number of existing trips entering and exiting the existing school site. The traffic count data at the existing site driveway was utilized to calculate the trip generation rate per student at the existing school. In addition, the entering and exiting percentages were calculated for the existing school.

Table 3 shows the results of the existing trip generation analysis. As shown, the existing school generates 1.13 trips/student during the school morning peak hour and 0.93 trips/student during the school afternoon peak hour. These rates are consistent with rates provided within the ITE Trip Generation Manual, Eleventh Edition.

Table 3. Existing School Trip Generation Rate

Time / Period	Total Students	Total Existing Trips (Vehicles)			Trip Generation (Trips / Student)		
		Enter	Exit	Total	Rate	% Enter	% Exit
A.M. Peak (7:15 – 8:15 a.m.)	130	84	63	147	1.13	57%	43%
School P.M. Peak (2:30 – 3:30 p.m.)		57	64	121	0.93	47%	53%

Source: Progressive AE, August 2023

For this study, the trip generation rates calculated for the existing school were utilized to estimate the future trip generation of the proposed school expansion. Table 4 shows the typical school morning and afternoon peak hour trips anticipated to be generated by the proposed school expansion.

Table 4. Proposed School Trip Generation Summary

Time / Period	Additional Students	Trip Generation (Trips / Student)			Total Trips (Vehicles)		
		Rate	% Enter	% Exit	Enter	Exit	Total
A.M. Peak	242	1.13	57%	43%	156	117	273
School P.M. Peak		0.93	47%	53%	106	119	225

Source: Progressive AE, August 2023

Upon full enrollment after the proposed school expansion, the school is expected to generate approximately 273 new vehicle trips (156 entering, 117 exiting) onto the roadway system during the school morning peak hour and approximately 225 new vehicle trips (106 entering, 119 exiting) onto the roadway system during the school afternoon peak hour.

Trips for the proposed parish activity center were estimated for the typical weekday based on the maximum number of attendees for a sporting event and an assumed vehicle occupancy of three (3) people per vehicle. Using the maximum activity center's capacity of 280 attendees, a maximum of 93 vehicles would be anticipated to be generated (93 entering, 0 exiting) by the activity center during the typical weekday afternoon peak hour from 4:00 p.m. to 6:00 p.m. The school anticipates about 70 attendees during weekly sporting events, resulting in approximately 25 vehicle trips (25 entering, 0 exiting) being generated during the typical afternoon peak hour from 4:00 p.m. to 6:00 p.m. Both estimates result in fewer anticipated trips than anticipated for typical school day traffic. Traffic volumes along Ada Drive are lower during the afternoon peak hour (4:45 p.m. to 5:45 p.m.) compared to the volumes during the typical school afternoon peak hour (2:30 p.m. to 3:30 p.m.). Therefore, a separate analysis of the typical afternoon peak hour from 4:00 p.m. to 6:00 p.m. was not performed as part of this study. A separate analysis for banquets and other special events was also not performed as part of this study as these events occur infrequently and are not anticipated to occur during the typical weekday morning, school afternoon, or afternoon peak hours.

Trip Distribution

The directional distribution of the new trips to/from the school was based on the existing travel patterns within the study area and engineering judgment. Figure 3 shows the total anticipated school morning and afternoon peak hour trips for the proposed site upon full completion of the expansion and enrollment.

The anticipated site trips were added to the background (2025) peak hour volumes to depict the estimated total Future (2025) volumes during the school morning and afternoon peak hours. Figure 4 shows the total anticipated Future (2025) volumes.

Future (2025) Capacity Analysis (No Mitigation)

Intersection level of service calculations were completed to evaluate the future (2025) school morning and afternoon peak hour conditions at study area intersections, assuming no improvements to the surrounding roadway network. Levels of service for the individual movements at all study area intersections for unimproved conditions are shown in Table 5. Many of these movements are anticipated to operate acceptably at LoS "D" or better during the school morning and afternoon peak hours, except for the following movements:

- The northbound approach along Fox Hollow Avenue is anticipated to operate at a LoS "F" during the school morning and afternoon peak hours. The 95th percentile queues during the school morning and afternoon peak hours are calculated to be 9.9 and 10.2 vehicles, respectively.
- The southbound approach along the existing west driveway is anticipated to operate at LoS "F" during the school morning peak hour. The 95th percentile queue during the school morning peak hour is calculated to be 4.8 vehicles.

- The southbound left-turn movement from the existing east driveway onto Ada Drive is anticipated to operate at LoS "F" and LoS "E" during the school morning and afternoon peak hours, respectively. The 95th percentile queues during the school morning and afternoon peak hours are calculated to be 4.8 and 2.6 vehicles, respectively.

The future (2025) conditions analyses show that the left-turn movements from the existing school driveways and the northbound movements from Fox Hollow Avenue onto Ada Drive will experience some delay and queuing during the morning and afternoon peak hours. This can be expected due to the typical pickup/dropoff operations at school sites and the concentrated traffic volumes surrounding the school start and end times.

Table 5. Existing and Future (2025) Levels of Service and Delay (No Mitigation)

Intersection / Movement	Existing Conditions				Future (2025) Conditions (Without Mitigation)			
	A.M.		P.M.		A.M.		P.M.	
	LoS	Delay(s)	LoS	Delay(s)	LoS	Delay(s)	LoS	Delay(s)
Ada Drive / Fox Hollow Avenue / Existing West Driveway[1]								
EBL	A	8.1	A	7.8	A	8.1	A	7.9
WBL	A	9.3	A	9.3	A	9.8	A	9.6
NB	D	30.6	**E**	**36.5**	**F**	**98.3**	**F**	**80**
SB	C	19	C	15	**F**	**54.1**	D	25.2
Ada Drive / Existing East Driveway[1]								
EBL	A	9.1	A	9.1	B	10.4	A	8.8
SBL	D	32	D	32	**F**	**172.2**	**E**	**44**
SBR	B	12.6	B	12.6	B	14.1	B	12.3

[1]Unsignalized intersection, critical/worst movement(s) shown.
Source: Progressive AE, August 2023

Future (2025) Capacity Analysis (With Mitigation)
On opening day after the completion of the proposed expansion, the traffic volumes within the study area intersections are anticipated to remain relatively the same. However, traffic volumes within the study area will increase as student enrollment increases over the next several years to the anticipated levels in Table 5.

Intersection level of service calculations were completed to evaluate the future (2025) school morning and afternoon peak hour conditions at study area intersections, assuming the proposed improvements to mitigate existing conditions were implemented. Levels of service for the individual movements at all study area intersections for the mitigated conditions are shown in Table 6 and Figure 4. Many of these movements are anticipated to operate acceptably at LoS "C" or better during the school morning and afternoon peak hours, except for the following movements:

- The northbound left-turn movement from Fox Hollow Avenue onto Ada Drive is anticipated to operate at a LoS "F" during the school morning and afternoon peak hours. However, this is a low volume movement and the 95th percentile queues during the school morning and afternoon peak hours are anticipated to decrease to 1.8 and 1.5 vehicles, respectively.

- The southbound approach along the existing west driveway is anticipated to improve and operate at LoS "E" during the school morning peak hour. The 95th percentile queue during the school morning peak hour is calculated to be 4.4 vehicles.

- As with unmitigated conditions, the southbound left-turn movement from the existing east driveway onto Ada Drive is anticipated to continue operating at LoS "F" and LoS "E" during the school morning and afternoon peak hours, respectively.

A comparison of the northbound approach delay at the Ada Drive/Fox Hollow Avenue intersection shows the approach delay will be reduced from LoS "F" with 98.3-seconds of delay to LoS "D" with 29.4-seconds of delay during the morning peak hour. Similarly, the delay will be reduced from LoS "F" with 80-seconds of delay to LoS "D" with 28.0-seconds of delay during the school afternoon peak hour.

Table 6. Existing and Future (2025) Levels of Service and Delay (With Mitigation)

Intersection / Movement	Existing Conditions				Future (2025) Conditions (Without Mitigation)				Future (2025) Conditions (With Mitigation)			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)
Ada Drive / Fox Hollow Avenue / Existing West Driveway[1]												
EBL	A	8.1	A	7.8	A	8.1	A	7.9	A	8.1	A	7.9
WBL	A	9.3	A	9.3	A	9.8	A	9.6	A	9.8	A	9.6
NBL	D	30.6	**E**	**36.5**	**F**	**98.3**	**F**	**80.0**	**F**	**117.8**	**F**	**59.5**
NBR									C	19.4	C	23.6
SB	C	19	C	15	**F**	**54.1**	D	25.2	**E**	**47.6**	C	24.8
Ada Drive / Existing East Driveway[1]												
EBL	A	9.1	A	9.1	B	10.4	A	8.8	B	10.4	A	8.8
SBL	D	32	D	32	**F**	**172.2**	**E**	**44**	**F**	**172.2**	**E**	**44**
SBR	B	12.6	B	12.6	B	14.1	B	12.3	B	14.1	B	12.1

[1]Unsignalized intersection, critical/worst movement(s) shown.
Source: Progressive AE, August 2023

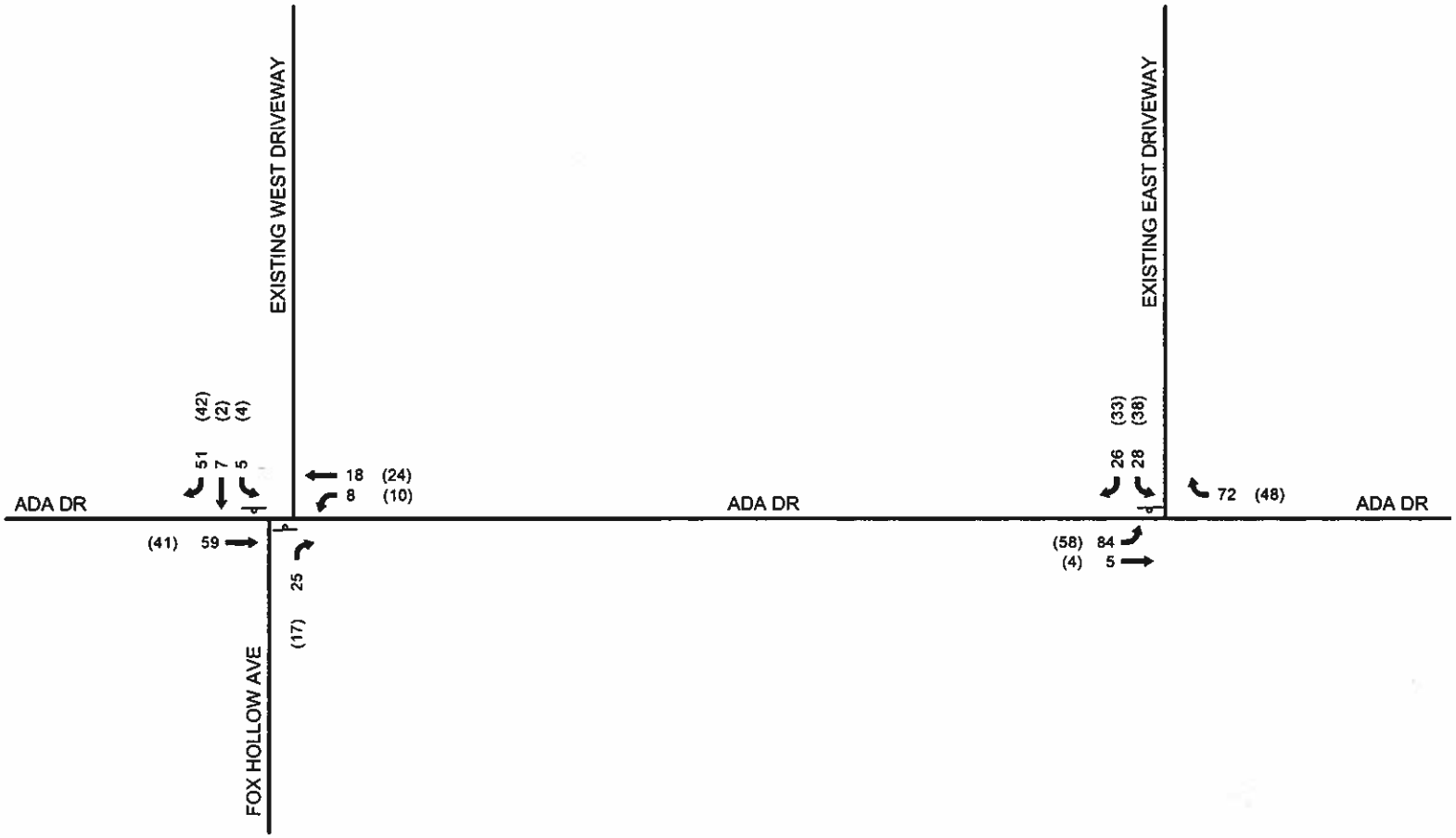
A comparison of calculated queues between the Future (2025) conditions with and without mitigation is provided in Table 7. The analysis shows that the proposed improvements will improve the calculated queues of the critical movements as follows.

- The 95th percentile queues on the northbound left-turn movement are anticipated to decrease from 9.9 to 1.8 vehicles and from 10.2 to 1.8 vehicles during the school morning and afternoon peak hours, respectively.
- The 95th percentile queue on the southbound movement along the existing west driveway is anticipated to decrease from 4.8 to 4.4 vehicles during the school morning peak hour.

Table 7. Existing, Unimproved and Improved Future (2025) 95th Percentile Queues

Intersection / Movement	Existing Conditions		Future (2025) Conditions (Without Mitigation)		Future (2025) Conditions (With Mitigation)	
	A.M. Queue	P.M. Queue	A.M. Queue	P.M. Queue	A.M. Queue	P.M. Queue
Ada Drive / Fox Hollow Avenue / Existing West Driveway						
EBL	0	0	0	0	0	0
WBL	0.7	0.4	0.8	0.5	0.8	0.5
NBL	3.9	5.7	9.9	10.2	1.8	1.5
NBR	3.9	5.7	9.9	10.2	2.6	3.8
SB	0.6	0.4	4.8	1.9	4.4	1.9
Ada Drive / Existing East Driveway						
EBL	0.2	0.1	0.9	0.3	0.9	0.3
SBL	0.5	0.5	4.8	2.6	4.8	2.6
SBR	0.1	0.2	0.5	0.5	0.5	0.5

Source: Progressive AE, August 2023



ST ROBERTS SCHOOL EXPANSION TRAFFIC IMPACT STUDY

LEGEND

XX (XX) = AM (PM) GENERATED TRIPS

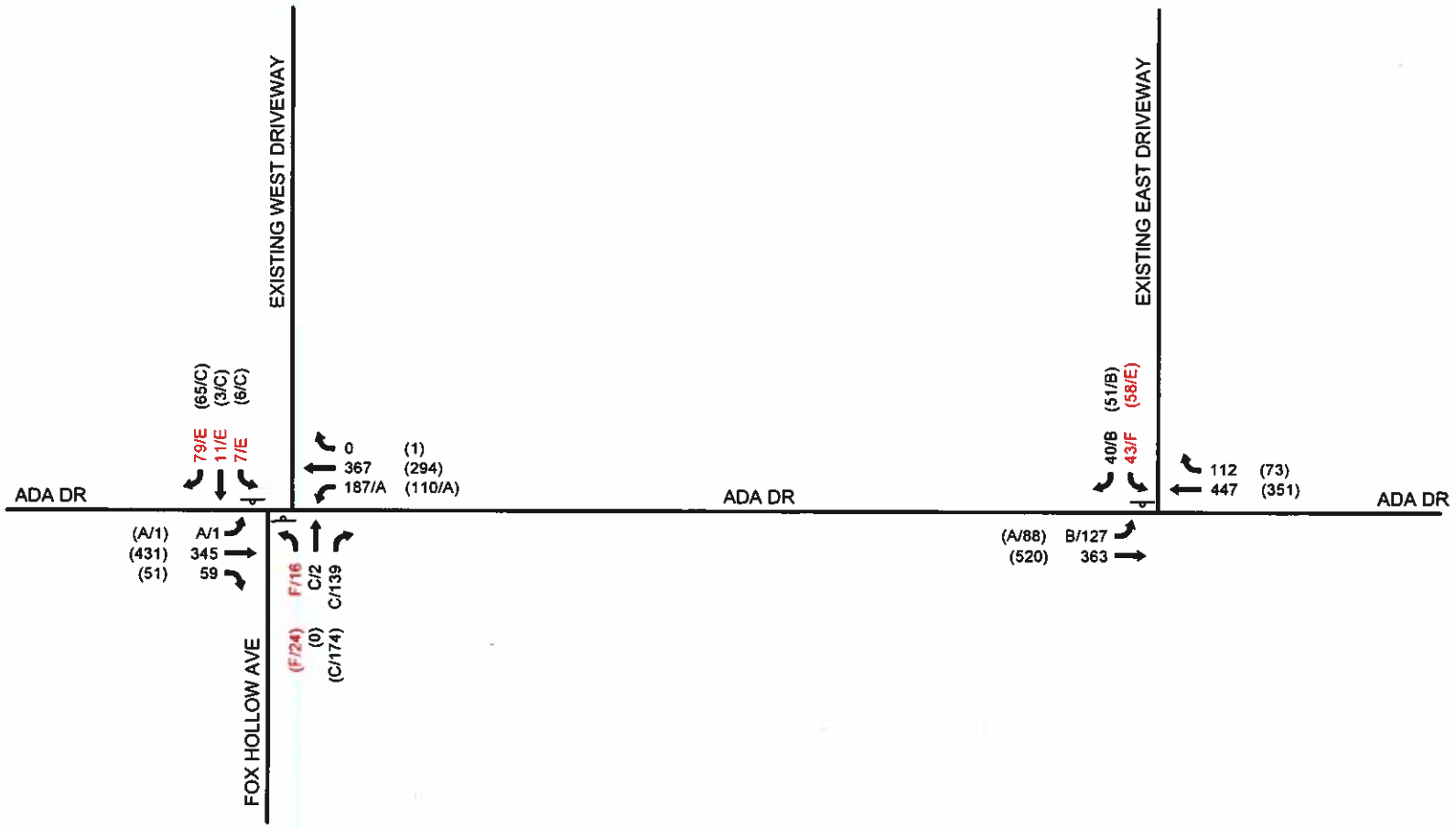
FUTURE (2025) TRIP DISTRIBUTION
+ TRAFFIC ASSIGNMENT

N

No Scale

FIGURE

3



ST ROBERTS SCHOOL EXPANSION TRAFFIC IMPACT STUDY

LEGEND

XX (XX) = AM (PM)
A = LEVEL-OF-SERVICE
(S) = SIGNALIZED INTERSECTION
= STOP-CONTROLLED

FUTURE (2025) PEAK-HOUR VOLUMES
+ LEVELS-OF-SERVICE

N
No Scale

FIGURE
4

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Based on the analyses performed as part of this study, considering the existing conditions, the proposed project will have minor impacts on the surrounding roadway network. The findings of this study are as follows:

Conclusions

Existing Conditions

The existing conditions analyses show that many of the controlled movements at the study area intersections operate acceptably at LoS "D" or better during the school morning and afternoon peak hours, except for the northbound movement along Fox Hollow Avenue that currently operates at a LoS "E" during the school afternoon peak hour. The 95th percentile queue during the school afternoon peak hour is calculated to be 5.7 vehicles.

A review of the existing crash history at the school driveways to Ada Drive indicated that four crashes occurred within 250-feet of the existing school driveways in the past five years. Three crashes near the west driveway and one crash near the east driveway. Of those four crashes, none occurred during the school peak hours; hence, they do not appear related to the existing school driveway movements.

Future (2025) Conditions

On opening day after the completion of the proposed expansion, the traffic volumes within the study area intersections are anticipated to remain relatively the same. However, traffic volumes within the study area will increase with background traffic growth and as student enrollment increases over the next several years to the anticipated levels.

Assuming no mitigation to the surrounding roadway network to mitigate the existing conditions, the future (2025) conditions analysis results show all controlled movements at the study area intersection are anticipated to operate acceptably at LoS "D" or better during the school morning and afternoon peak hours, except for the following movements:

- The northbound approach along Fox Hollow Avenue is anticipated to operate at a LoS "F" during the school morning and afternoon peak hours. The 95th percentile queues during the school morning and afternoon peak hours are calculated to be 9.9 and 10.2 vehicles, respectively.
- The southbound approach along the existing west driveway is anticipated to operate at LoS "F" during the school morning peak hour. The 95th percentile queue during the school morning peak hour is calculated to be 4.8 vehicles.
- The southbound left-turn movement from the existing east driveway onto Ada Drive is anticipated to operate at LoS "F" and LoS "E" during the school morning and afternoon peak hours, respectively. The 95th percentile queues during the school morning and afternoon peak hours are calculated to be 4.8 and 2.6 vehicles, respectively.

Implementing the improvements outlined to mitigate existing conditions results in reduced delay and significantly reduced queuing at the Ada Drive/Fox Hollow Avenue intersection, particularly the northbound approach. A comparison of the northbound approach delay at the Ada Drive/Fox Hollow Avenue intersection shows the approach delay will be reduced from LoS "F" with 98.3-seconds of delay to LoS "D" with 29.4-seconds of delay during the morning peak hour. Similarly, the delay will be reduced from LoS "F" with 80-seconds of delay to LoS "D" with 28.0-seconds of delay during the school afternoon peak hour.

While there is expected to be some delay and queuing at the school driveways during pickup/dropoff operations, this is typical of school sites given the concentrated traffic volumes surrounding the school start and end times. These delays are also often short duration, typically 15 – 30-minutes.

Recommendations
The following recommendations would be made to improve operations within the study area once the proposed project is complete.

Existing Conditions
The existing conditions analysis and site observations revealed poor operations at the Ada Drive/Fox Hollow Avenue intersection, particularly along northbound Fox Hollow Avenue. To improve the safety and operation of the intersection, below are recommended mitigation measures that should be considered regardless of the proposed project.

- A short left-turn lane should be included on the northbound approach from Fox Hollow Avenue to Ada Drive to allow right-turning vehicles to bypass a vehicle waiting to turn left. The left-turn lane should accommodate up to two queued vehicles (50-feet). This turn lane could be developed with pavement markings should the existing pavement width allow. Minor widening on the west side of Fox Hollow Avenue may be necessary to provide adequate lane widths and lane tapers. As an alternative, minor pavement widening on the east side of the roadway would also allow right-turn vehicles to bypass queued left-turning vehicles.
- Construction of a separate westbound left-turn lane from Ada Drive to Fox Hollow Avenue should be considered based on the existing volume of westbound left-turn movements.

Given the significant concentration of schools, growth of Ada Village, and several new residential developments in the area, future capacity and operational improvements should be explored for the Ada Drive corridor. Some options to consider include:

- A continuous center turn lane through the corridor.
- Implementing travel demand management strategies, such as staggered start/dismissal times for schools and/or encouraging ridesharing and carpooling.
- Periodic review of volume and crash data at key intersections.

Future (2025) Conditions
For analysis purposes, this study used a maximum traffic approach for 2025 that presumed full enrollment for the school expansion. The more realistic expectation is that the school will gradually increase its enrollment over several years, reaching capacity in 2029-2030. As the school enrollment increases over the years to full capacity, the operation of the existing driveways slowly deteriorates to LoS "F" due to high traffic volumes during school peak hours. Below are recommended improvements to the existing school driveways to provide a reasonable traffic flow to/from the school.

- The southbound approach to the Ada Drive/East Driveway intersection provides adequate width for one entry lane and two exit lanes. A review of the existing operation at the intersection shows the exit approach currently operates as two lanes. Adding pavement markings to the approach to clearly define two exit lanes, a right-turn and left-turn lane, is recommended.
- The current "Do Not Enter" restriction at the west driveway restricts entering vehicles during the school peak hours from 7:00 a.m. to 9:00 a.m. and 2:00 p.m. to 4:00 p.m. This restriction should be extended to 2:00 p.m. to 6:00 p.m. to include entering activity center attendees during the typical afternoon peak hour.
- No additional improvements are recommended along Ada Drive as the existing eastbound left-turn lane and westbound right-turn taper will adequately serve the anticipated school traffic volumes.
- Vehicular delays, queuing, and safety at the existing school driveways should be monitored as school enrollment increases. Should significant delays, queuing, or safety issues develop at the existing driveways, additional mitigation may be required. These mitigation measures may include revising existing site circulation.

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Technical Appendix

St Roberts School Expansion TIS

- **Level of Service Definitions**
- **Glossary**
- **Site Plan**
- **Traffic Count Data**
- **Synchro Analyses Results**

Level of Service Definitions
Signalized Intersections

Level of Service A: Describes operations with very low average stopped delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B: Describes operations with an average stopped delay in the range of 10.0 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C: Describes operations with an average stopped delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level of Service D: Describes operations with an average stopped delay in the range of 35.1 to 55.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c (volume/capacity) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E: Describes operations with an average stopped delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay in many cases. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.

Level of Service F: Describes operations with an average stopped delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Level of Service Definitions
Unsignalized Intersections

Level of Service A:	Average delay per vehicles for impeded movements is less than 10 seconds. There is little or no delay with typically low side street and/or main street traffic.
Level of Service B:	Average stopped delays from 10.1 seconds to 15.0 seconds. Short delays, many acceptable gaps in main street traffic stream.
Level of Service C:	Average delay per vehicle ranges from 15.1 to 25.0 seconds. Average traffic delays with frequent gaps in main street traffic.
Level of Service D:	Average delays from 25.1 to 35.0 seconds for impeded movements. Long traffic delays for impeded movements due in part to a limited number of acceptable gaps.
Level of Service E:	Average delays in the 35.1 to 50.0 second range. May experience very long delays for impeded movements with a very small number of acceptable gaps in the traffic stream.
Level of Service F:	Average vehicle delays of over 50.0 seconds. Extreme traffic delays with virtually no acceptable gaps in main street traffic.

Glossary

Approach: A set of lanes accommodating all left-turn, through, and right-turn movements arriving at an intersection from a given direction.

Arterial: Signalized streets that serve primarily through traffic and provide access to abutting properties as a secondary function.

Average Stopped Delay: The total time vehicles are stopped in an intersection approach or lane group during a specified time interval divided by the volume departing from the approach or lane group during the same time period, in seconds per vehicle.

Background Traffic: Traffic volumes that will be on the roadway network without the presence of the proposed development.

Bypass Lane: A one-lane widening on a two-lane roadway that allows through traffic to pass by waiting left-turn traffic.

Capacity: The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

Conflicting Traffic Volume: The volume of traffic which conflicts with a specific movement at an intersection.

Corridor: A lineal study area aligned with a roadway facility in which traffic, land use, right-of-way, environmental, and other factors are evaluated to determine future transportation facility needs.

Cycle: Any complete sequence of traffic signal indications.

Cycle Length: The total time for a traffic signal to complete one cycle.

Design Hour Volume: The traffic volume for the design hour, usually a forecast of the relevant peak hour volume, in vehicles per hour.

Diverted Linked Trips: Trips from the traffic volume on roadways within the vicinity of the generator but which requires a diversion from that roadway to another roadway to gain access to the site.

Driveway Offset: Distance between driveways on opposite sides of a roadway, measured parallel to roadway.

Freeway: A multi-lane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

Gaps (Critical Gap): The median time headway between vehicles in a major traffic stream which will permit side-street vehicles to cross through or merge with the major traffic stream.

Green Time: The actual length of the "green" indication for a given movement at a signalized intersection.

Level of Service: A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Operational Analysis: A use of capacity analysis to determine the prevailing level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions. This analysis can involve a particular location, such as an intersection or a corridor.

Pass-by Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination.

Peak Hour (AM): The one hour period in the morning representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour (PM): The one hour period in the afternoon or evening representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour Factor: The hourly volume during the maximum volume hour of the day divided by four times the peak 15-minute flow within the peak hour; a measure of traffic demand fluctuation within the peak hour.

Phase: The part of the signal cycle allocated to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

Roadway Conditions: Geometric characteristics of a street or highway, including the type of facility, number and width of lanes (by direction), shoulder widths and lateral clearances, design speed, etc.

Service Drive: A roadway (usually private) that provides internal access to two or more uses.

Site Traffic: Existing or projected vehicular traffic generated by the development.

Study Area: The geographic area containing site access points and critical intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development, and should be evaluated.

System Improvements: Added lanes, signal improvements, and other roadway improvements not considered site-related improvements.

Traffic Impact: The adverse impact on intersection Level of Service and/or street and highway safety and operations as determined by the criteria and procedures set forth in this handbook.

Trip (Directional Trip): A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

Trip Distribution: The distribution or assignment of site traffic into site driveways and study area roadways/intersections based upon expected direction of approach and departure.

Unsignalized Intersection: Any intersection not controlled by traffic signals.

Volume: The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

Volume-to-Capacity Ratio (V/C): The ratio of demand flow rate to capacity for a traffic facility.

Site Plan

AMDG & FIRST

proposed building + PAC addition
site & landscape plan | **base parking option**

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Traffic Count Data

progressive|ae

Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: Ada Dr SE & W Driveway
Site Code:
Start Date: 08/24/2023

Turning Movement Data

Start Time	Ada Dr SE Eastbound					Ada Dr SE Westbound					Fox Hollow Ave Northbound					W Driveway Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	2	24	4	0	30	7	22	0	0	29	2	0	1	0	3	0	0	0	0	0	62
7:15 AM	0	39	21	0	60	51	74	0	0	125	0	0	9	0	9	0	0	1	0	1	195
7:30 AM	0	85	19	2	104	58	77	0	0	135	4	1	31	0	36	1	0	0	3	1	276
7:45 AM	0	118	17	2	135	55	91	0	0	146	12	1	59	0	72	1	1	23	1	25	378
Hourly Total	2	266	61	4	329	171	264	0	0	435	18	2	100	0	120	2	1	24	4	27	911
8:00 AM	1	40	1	0	42	12	102	0	0	114	0	0	13	0	13	0	3	4	2	7	176
8:15 AM	1	54	2	0	57	8	52	0	0	60	2	0	10	0	12	0	1	0	1	1	130
8:30 AM	3	58	7	0	68	14	82	1	0	97	1	1	8	0	10	0	1	1	4	2	177
8:45 AM	10	39	3	1	52	19	55	0	0	74	2	4	3	0	9	0	0	0	0	0	135
Hourly Total	15	191	13	1	219	53	291	1	0	345	5	5	34	0	44	0	5	5	7	10	618
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	2	31	2	0	35	11	43	0	0	54	3	0	6	0	9	0	0	0	0	0	98
2:15 PM	1	35	0	0	36	10	44	0	0	54	2	0	9	0	11	0	0	1	4	1	102
2:30 PM	1	52	9	0	62	24	68	1	0	93	1	0	12	1	13	0	0	0	0	0	168
2:45 PM	0	139	22	0	161	43	48	0	0	91	3	0	50	0	53	0	0	3	2	3	308
Hourly Total	4	257	33	0	294	88	203	1	0	292	9	0	77	1	86	0	0	4	6	4	676
3:00 PM	0	116	17	0	133	21	62	0	0	83	12	0	58	0	70	0	1	16	0	17	303
3:15 PM	0	77	2	0	79	11	88	0	0	99	8	0	35	0	43	2	0	4	0	6	227
3:30 PM	0	65	1	0	66	5	66	0	0	71	9	1	15	0	25	0	0	2	0	2	164
3:45 PM	3	59	2	0	64	12	111	0	0	123	6	0	13	0	19	1	0	2	0	3	209
Hourly Total	3	317	22	0	342	49	327	0	0	376	35	1	121	0	157	3	1	24	0	28	903
4:00 PM	0	53	1	0	54	8	50	0	0	58	6	0	8	0	14	0	0	4	0	4	130
4:15 PM	0	46	4	0	50	13	36	0	0	49	2	0	15	0	17	0	0	2	1	2	118
4:30 PM	0	52	1	0	53	10	37	0	0	47	4	0	10	0	14	0	1	2	1	3	117
4:45 PM	1	61	3	0	65	12	52	0	0	64	2	0	26	0	28	0	0	0	0	0	157
Hourly Total	1	212	9	0	222	43	175	0	0	218	14	0	59	0	73	0	1	8	2	9	522
5:00 PM	4	69	3	0	76	7	76	0	0	83	7	0	22	0	29	1	0	3	2	4	192
5:15 PM	2	59	1	0	62	7	55	0	0	62	1	1	21	0	23	0	0	2	0	2	149
5:30 PM	2	65	5	0	72	4	47	0	0	51	6	0	16	0	22	1	0	1	0	2	147
5:45 PM	0	50	1	0	51	5	34	0	0	39	2	0	11	0	13	0	0	0	0	0	103
Hourly Total	8	243	10	0	261	23	212	0	0	235	16	1	70	0	87	2	0	6	2	8	591
Grand Total	33	1486	148	5	1667	427	1472	2	0	1901	97	9	461	1	567	7	8	71	21	86	4221
Approach %	2.0	89.1	8.9	-	-	22.5	77.4	0.1	-	-	17.1	1.6	81.3	-	-	8.1	9.3	82.6	-	-	-
Total %	0.8	35.2	3.5	-	39.5	10.1	34.9	0.0	-	45.0	2.3	0.2	10.9	-	13.4	0.2	0.2	1.7	-	2.0	-
Lights	33	1467	144	-	1644	401	1450	2	-	1853	91	8	444	-	543	7	8	71	-	86	4126
% Lights	100.0	98.7	97.3	-	98.6	93.9	98.5	100.0	-	97.5	93.8	88.9	96.3	-	95.8	100.0	100.0	100.0	-	100.0	97.7
Mediums	0	18	4	-	22	26	22	0	-	48	4	1	17	-	22	0	0	0	-	0	92
% Mediums	0.0	1.2	2.7	-	1.3	6.1	1.5	0.0	-	2.5	4.1	11.1	3.7	-	3.9	0.0	0.0	0.0	-	0.0	2.2
Articulated Trucks	0	1	0	-	1	0	0	0	-	0	2	0	0	-	2	0	0	0	-	0	3
% Articulated Trucks	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	2.1	0.0	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	5	-	-	-	-	0	-	-	-	-	1	-	-	-	-	21	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: Ada Dr SE & W Driveway
Site Code:
Start Date: 08/24/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Ada Dr SE Eastbound					Ada Dr SE Westbound					Fox Hollow Ave Northbound					W Driveway Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	39	21	0	60	51	74	0	0	125	0	0	9	0	9	0	0	1	0	1	195
7:30 AM	0	85	19	2	104	58	77	0	0	135	4	1	31	0	36	1	0	0	3	1	276
7:45 AM	0	118	17	2	135	55	91	0	0	146	12	1	59	0	72	1	1	23	1	25	378
8:00 AM	1	40	1	0	42	12	102	0	0	114	0	0	13	0	13	0	3	4	2	7	176
Total	1	282	58	4	341	176	344	0	0	520	16	2	112	0	130	2	4	28	6	34	1025
Approach %	0.3	82.7	17.0	-	-	33.8	66.2	0.0	-	-	12.3	1.5	86.2	-	-	5.9	11.8	82.4	-	-	-
Total %	0.1	27.5	5.7	-	33.3	17.2	33.6	0.0	-	50.7	1.6	0.2	10.9	-	12.7	0.2	0.4	2.7	-	3.3	-
PHF	0.250	0.597	0.690	-	0.631	0.759	0.843	0.000	-	0.890	0.333	0.500	0.475	-	0.451	0.500	0.333	0.304	-	0.340	0.678
Lights	1	280	58	-	339	170	339	0	-	509	15	1	108	-	124	2	4	28	-	34	1006
% Lights	100.0	99.3	100.0	-	99.4	96.6	98.5	-	-	97.9	93.8	50.0	96.4	-	95.4	100.0	100.0	100.0	-	100.0	98.1
Mediums	0	2	0	-	2	6	5	0	-	11	1	1	4	-	6	0	0	0	-	0	19
% Mediums	0.0	0.7	0.0	-	0.6	3.4	1.5	-	-	2.1	6.3	50.0	3.6	-	4.6	0.0	0.0	0.0	-	0.0	1.9
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-	-	-	6	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (2:30 PM)

Start Time	Ada Dr SE Eastbound					Ada Dr SE Westbound					Fox Hollow Ave Northbound					W Driveway Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
2:30 PM	1	52	9	0	62	24	68	1	0	93	1	0	12	1	13	0	0	0	0	0	168
2:45 PM	0	139	22	0	161	43	48	0	0	91	3	0	50	0	53	0	0	3	2	3	308
3:00 PM	0	116	17	0	133	21	62	0	0	83	12	0	58	0	70	0	1	16	0	17	303
3:15 PM	0	77	2	0	79	11	88	0	0	99	8	0	35	0	43	2	0	4	0	6	227
Total	1	384	50	0	435	99	266	1	0	366	24	0	155	1	179	2	1	23	2	26	1006
Approach %	0.2	88.3	11.5	-	-	27.0	72.7	0.3	-	-	13.4	0.0	86.6	-	-	7.7	3.8	88.5	-	-	-
Total %	0.1	38.2	5.0	-	43.2	9.8	26.4	0.1	-	36.4	2.4	0.0	15.4	-	17.8	0.2	0.1	2.3	-	2.6	-
PHF	0.250	0.691	0.568	-	0.675	0.576	0.756	0.250	-	0.924	0.500	0.000	0.868	-	0.639	0.250	0.250	0.359	-	0.382	0.817
Lights	1	380	49	-	430	99	264	1	-	364	23	0	147	-	170	2	1	23	-	26	990
% Lights	100.0	99.0	98.0	-	98.9	100.0	99.2	100.0	-	99.5	95.8	-	94.8	-	95.0	100.0	100.0	100.0	-	100.0	98.4
Mediums	0	4	1	-	5	0	2	0	-	2	1	0	8	-	9	0	0	0	-	0	16
% Mediums	0.0	1.0	2.0	-	1.1	0.0	0.8	0.0	-	0.5	4.2	-	5.2	-	5.0	0.0	0.0	0.0	-	0.0	1.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Ada Dr SE Eastbound					Ada Dr SE Westbound					Fox Hollow Ave Northbound					W Driveway Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	1	61	3	0	65	12	52	0	0	64	2	0	26	0	28	0	0	0	0	0	157
5:00 PM	4	69	3	0	76	7	76	0	0	83	7	0	22	0	29	1	0	3	2	4	192
5:15 PM	2	59	1	0	62	7	55	0	0	62	1	1	21	0	23	0	0	2	0	2	149
5:30 PM	2	65	5	0	72	4	47	0	0	51	6	0	16	0	22	1	0	1	0	2	147
Total	9	254	12	0	275	30	230	0	0	260	16	1	85	0	102	2	0	6	2	8	645
Approach %	3.3	92.4	4.4	-	-	11.5	88.5	0.0	-	-	15.7	1.0	83.3	-	-	25.0	0.0	75.0	-	-	-
Total %	1.4	39.4	1.9	-	42.6	4.7	35.7	0.0	-	40.3	2.5	0.2	13.2	-	15.8	0.3	0.0	0.9	-	1.2	-
PHF	0.563	0.920	0.600	-	0.905	0.625	0.757	0.000	-	0.783	0.571	0.250	0.817	-	0.879	0.500	0.000	0.500	-	0.500	0.840
Lights	9	253	12	-	274	25	229	0	-	254	15	1	85	-	101	2	0	6	-	8	637
% Lights	100.0	99.6	100.0	-	99.6	83.3	99.6	-	-	97.7	93.8	100.0	100.0	-	99.0	100.0	-	100.0	-	100.0	98.8
Mediums	0	1	0	-	1	5	1	0	-	6	0	0	0	-	0	0	0	0	-	0	7
% Mediums	0.0	0.4	0.0	-	0.4	16.7	0.4	-	-	2.3	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	1.1
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	6.3	0.0	0.0	-	1.0	0.0	-	0.0	-	0.0	0.2
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

progressive|ae

Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: Ada Dr SE & E Driveway
Site Code:
Start Date: 08/24/2023

Turning Movement Data

Start Time	Ada Dr SE Eastbound				Ada Dr SE Westbound					E Driveway Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	2	22	0	24	0	29	1	0	30	0	0	2	0	54
7:15 AM	2	44	0	46	0	79	5	0	84	0	0	0	0	130
7:30 AM	12	101	0	113	0	117	7	0	124	0	0	2	0	237
7:45 AM	25	158	0	183	0	133	23	0	156	11	11	2	22	361
Hourly Total	41	325	0	366	0	358	36	0	394	11	11	6	22	782
8:00 AM	3	50	0	53	1	111	4	0	116	4	3	2	7	176
8:15 AM	2	61	0	63	0	60	2	0	62	2	0	1	2	127
8:30 AM	3	66	0	69	0	99	3	0	102	0	0	6	0	171
8:45 AM	4	41	0	45	0	71	9	0	80	0	0	0	0	125
Hourly Total	12	218	0	230	1	341	18	0	360	6	3	9	9	599
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	1	38	0	39	0	55	0	0	55	2	0	0	2	96
2:15 PM	3	42	0	45	0	52	0	0	52	0	1	0	1	98
2:30 PM	7	53	0	60	0	93	6	0	99	2	1	1	3	162
2:45 PM	19	167	0	186	1	89	13	0	103	0	0	3	0	289
Hourly Total	30	300	0	330	1	289	19	0	309	4	2	4	6	645
3:00 PM	3	171	0	174	0	71	5	0	76	13	14	0	27	277
3:15 PM	1	117	0	118	0	93	1	0	94	5	3	0	8	220
3:30 PM	2	77	0	79	0	72	0	0	72	1	0	0	1	152
3:45 PM	5	68	0	73	1	117	0	0	118	1	5	0	6	197
Hourly Total	11	433	0	444	1	353	6	0	360	20	22	0	42	846
4:00 PM	2	58	0	60	0	56	1	0	57	2	2	0	4	121
4:15 PM	0	62	0	62	0	49	0	0	49	0	0	1	0	111
4:30 PM	0	60	0	60	0	45	1	0	46	0	1	1	1	107
4:45 PM	2	86	0	88	1	64	3	0	68	0	0	0	0	156
Hourly Total	4	266	0	270	1	214	5	0	220	2	3	2	5	495
5:00 PM	0	89	0	89	0	80	0	0	80	2	4	2	6	175
5:15 PM	1	79	0	80	0	61	3	0	64	4	1	0	5	149
5:30 PM	1	81	0	82	0	50	1	0	51	1	1	0	2	135
5:45 PM	1	63	0	64	0	39	0	0	39	2	0	0	2	105
Hourly Total	3	312	0	315	0	230	4	0	234	9	6	2	15	564
Grand Total	101	1854	0	1955	4	1785	88	0	1877	52	47	23	99	3931
Approach %	5.2	94.8	-	-	0.2	95.1	4.7	-	-	52.5	47.5	-	-	-
Total %	2.6	47.2	-	49.7	0.1	45.4	2.2	-	47.7	1.3	1.2	-	2.5	-
Lights	101	1818	-	1919	4	1735	88	-	1827	50	47	-	97	3843
% Lights	100.0	98.1	-	98.2	100.0	97.2	100.0	-	97.3	96.2	100.0	-	98.0	97.8
Mediums	0	35	-	35	0	50	0	-	50	2	0	-	2	87
% Mediums	0.0	1.9	-	1.8	0.0	2.8	0.0	-	2.7	3.8	0.0	-	2.0	2.2
Articulated Trucks	0	1	-	1	0	0	0	-	0	0	0	-	0	1
% Articulated Trucks	0.0	0.1	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	23	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

progressive ae

Progressive AE
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525
(616) 361-2664

Count Name: Ada Dr SE & E Driveway
Site Code:
Start Date: 08/24/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Ada Dr SE Eastbound				Ada Dr SE Westbound					E Driveway Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:15 AM	2	44	0	46	0	79	5	0	84	0	0	0	0	130
7:30 AM	12	101	0	113	0	117	7	0	124	0	0	2	0	237
7:45 AM	25	158	0	183	0	133	23	0	156	11	11	2	22	361
8:00 AM	3	50	0	53	1	111	4	0	116	4	3	2	7	176
Total	42	353	0	395	1	440	39	0	480	15	14	6	29	904
Approach %	10.6	89.4	-	-	0.2	91.7	8.1	-	-	51.7	48.3	-	-	-
Total %	4.6	39.0	-	43.7	0.1	48.7	4.3	-	53.1	1.7	1.5	-	3.2	-
PHF	0.420	0.559	-	0.540	0.250	0.827	0.424	-	0.769	0.341	0.318	-	0.330	0.626
Lights	42	348	-	390	1	429	39	-	469	14	14	-	28	887
% Lights	100.0	98.6	-	98.7	100.0	97.5	100.0	-	97.7	93.3	100.0	-	96.6	98.1
Mediums	0	5	-	5	0	11	0	-	11	1	0	-	1	17
% Mediums	0.0	1.4	-	1.3	0.0	2.5	0.0	-	2.3	6.7	0.0	-	3.4	1.9
Articulated Trucks	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (2:30 PM)

Start Time	Ada Dr SE Eastbound				Ada Dr SE Westbound					E Driveway Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
2:30 PM	7	53	0	60	0	93	6	0	99	2	1	1	3	162
2:45 PM	19	167	0	186	1	89	13	0	103	0	0	3	0	289
3:00 PM	3	171	0	174	0	71	5	0	76	13	14	0	27	277
3:15 PM	1	117	0	118	0	93	1	0	94	5	3	0	8	220
Total	30	508	0	538	1	346	25	0	372	20	18	4	38	948
Approach %	5.6	94.4	-	-	0.3	93.0	6.7	-	-	52.6	47.4	-	-	-
Total %	3.2	53.6	-	56.8	0.1	36.5	2.6	-	39.2	2.1	1.9	-	4.0	-
PHF	0.395	0.743	-	0.723	0.250	0.930	0.481	-	0.903	0.385	0.321	-	0.352	0.820
Lights	30	497	-	527	1	344	25	-	370	20	18	-	38	935
% Lights	100.0	97.8	-	98.0	100.0	99.4	100.0	-	99.5	100.0	100.0	-	100.0	98.6
Mediums	0	11	-	11	0	2	0	-	2	0	0	-	0	13
% Mediums	0.0	2.2	-	2.0	0.0	0.6	0.0	-	0.5	0.0	0.0	-	0.0	1.4
Articulated Trucks	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Ada Dr SE Eastbound				Ada Dr SE Westbound					E Driveway Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:45 PM	2	86	0	88	1	64	3	0	68	0	0	0	0	156
5:00 PM	0	89	0	89	0	80	0	0	80	2	4	2	6	175
5:15 PM	1	79	0	80	0	61	3	0	64	4	1	0	5	149
5:30 PM	1	81	0	82	0	50	1	0	51	1	1	0	2	135
Total	4	335	0	339	1	255	7	0	263	7	6	2	13	615
Approach %	1.2	98.8	-	-	0.4	97.0	2.7	-	-	53.8	46.2	-	-	-
Total %	0.7	54.5	-	55.1	0.2	41.5	1.1	-	42.8	1.1	1.0	-	2.1	-
PHF	0.500	0.941	-	0.952	0.250	0.797	0.583	-	0.822	0.438	0.375	-	0.542	0.879
Lights	4	334	-	338	1	249	7	-	257	7	6	-	13	608
% Lights	100.0	99.7	-	99.7	100.0	97.6	100.0	-	97.7	100.0	100.0	-	100.0	98.9
Mediums	0	1	-	1	0	6	0	-	6	0	0	-	0	7
% Mediums	0.0	0.3	-	0.3	0.0	2.4	0.0	-	2.3	0.0	0.0	-	0.0	1.1
Articulated Trucks	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

progressive|ae

Synchro Analysis Results

Intersection												
Int Delay, s/veh	6.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	282	58	176	344	0	16	2	112	2	4	28
Future Vol, veh/h	1	282	58	176	344	0	16	2	112	2	4	28
Conflicting Peds, #/hr	6	0	0	0	0	6	4	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	89	89	89	60	60	60	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	448	92	198	387	0	27	3	187	3	7	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	540	0	0	1312	1287	494	1382	1333	397
Stage 1	-	-	-	-	-	-	498	498	-	789	789	-
Stage 2	-	-	-	-	-	-	814	789	-	593	544	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1177	-	-	1039	-	-	137	166	579	122	155	657
Stage 1	-	-	-	-	-	-	558	548	-	387	405	-
Stage 2	-	-	-	-	-	-	375	405	-	496	522	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1170	-	-	1039	-	-	99	125	579	65	116	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	99	125	-	65	116	-
Stage 1	-	-	-	-	-	-	557	547	-	384	305	-
Stage 2	-	-	-	-	-	-	257	305	-	333	521	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.1	30.6	19
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	350	1170	-	-	1039	-	-	314
HCM Lane V/C Ratio	0.619	0.001	-	-	0.19	-	-	0.18
HCM Control Delay (s)	30.6	8.1	0	-	9.3	0	-	19
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.9	0	-	-	0.7	-	-	0.6

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	353	440	39	15	14
Future Vol, veh/h	42	353	440	39	15	14
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	77	77	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	70	588	571	51	25	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	628	0	-	0	1331	603
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	728	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	964	-	-	-	172	503
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	958	-	-	-	158	500
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	22.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	958	-	-	-	158	500
HCM Lane V/C Ratio	0.073	-	-	-	0.158	0.047
HCM Control Delay (s)	9.1	-	-	-	32	12.6
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	0.1

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	384	50	99	266	1	24	0	155	2	1	23
Future Vol, veh/h	1	384	50	99	266	1	24	0	155	2	1	23
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	92	92	92	64	64	64	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	6	0	0	0	0	0
Mvmt Flow	1	565	74	108	289	1	38	0	242	3	2	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	640	0	0	1131	1113	603	1233	1150	292
Stage 1	-	-	-	-	-	-	605	605	-	508	508	-
Stage 2	-	-	-	-	-	-	526	508	-	725	642	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1281	-	-	954	-	-	177	210	503	155	200	752
Stage 1	-	-	-	-	-	-	478	491	-	551	542	-
Stage 2	-	-	-	-	-	-	528	542	-	420	472	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	953	-	-	149	181	503	72	172	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	181	-	72	172	-
Stage 1	-	-	-	-	-	-	477	490	-	549	468	-
Stage 2	-	-	-	-	-	-	432	468	-	218	471	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.5	36.5	15
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	381	1279	-	-	953	-	-	405
HCM Lane V/C Ratio	0.734	0.001	-	-	0.113	-	-	0.107
HCM Control Delay (s)	36.5	7.8	0	-	9.3	0	-	15
HCM Lane LOS	E	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	5.7	0	-	-	0.4	-	-	0.4

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	508	346	25	20	18
Future Vol, veh/h	30	508	346	25	20	18
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	82	82	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	32	535	422	30	33	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	456	0	-	0	1040	441
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	599	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1115	-	-	-	257	621
Stage 1	-	-	-	-	653	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1111	-	-	-	247	619
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	631	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1111	-	-	-	247	619
HCM Lane V/C Ratio	0.028	-	-	-	0.135	0.048
HCM Control Delay (s)	8.3	-	-	-	21.8	11.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.2

Intersection	
Int Delay, s/veh	21.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	345	59	187	367	0	16	2	139	7	11	79
Future Vol, veh/h	1	345	59	187	367	0	16	2	139	7	11	79
Conflicting Peds, #/hr	6	0	0	0	0	6	4	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	89	89	89	60	60	60	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	548	94	210	412	0	27	3	232	12	18	132

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	642	0	0	1510	1437	595	1555	1484	422
Stage 1	-	-	-	-	-	-	599	599	-	838	838	-
Stage 2	-	-	-	-	-	-	911	838	-	717	646	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1152	-	-	952	-	-	100	135	508	93	126	636
Stage 1	-	-	-	-	-	-	492	494	-	364	384	-
Stage 2	-	-	-	-	-	-	331	384	-	424	470	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1145	-	-	952	-	-	52	96	508	38	89	630
Mov Cap-2 Maneuver	-	-	-	-	-	-	52	96	-	38	89	-
Stage 1	-	-	-	-	-	-	491	493	-	361	273	-
Stage 2	-	-	-	-	-	-	174	273	-	228	469	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.3	98.3	54.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	261	1145	-	-	952	-	-	224
HCM Lane V/C Ratio	1.003	0.001	-	-	0.221	-	-	0.722
HCM Control Delay (s)	98.3	8.1	0	-	9.8	0	-	54.1
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	9.9	0	-	-	0.8	-	-	4.8

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	127	363	447	112	43	40
Future Vol, veh/h	127	363	447	112	43	40
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	77	77	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	212	605	581	145	72	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	732	0	-	0	1689	660
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	1029	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	882	-	-	-	104	467
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	348	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	877	-	-	-	78	464
Mov Cap-2 Maneuver	-	-	-	-	78	-
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	346	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	96
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	877	-	-	-	78	464
HCM Lane V/C Ratio	0.241	-	-	-	0.919	0.144
HCM Control Delay (s)	10.4	-	-	-	172.2	14.1
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.9	-	-	-	4.8	0.5

Intersection	
Int Delay, s/veh	18.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	431	51	110	294	1	24	0	174	6	3	65
Future Vol, veh/h	1	431	51	110	294	1	24	0	174	6	3	65
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	92	92	92	64	64	64	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	6	0	0	0	0	0
Mvmt Flow	1	634	75	120	320	1	38	0	272	10	5	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	710	0	0	1292	1238	673	1373	1275	323
Stage 1	-	-	-	-	-	-	675	675	-	563	563	-
Stage 2	-	-	-	-	-	-	617	563	-	810	712	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1248	-	-	899	-	-	137	177	459	124	168	723
Stage 1	-	-	-	-	-	-	437	456	-	514	512	-
Stage 2	-	-	-	-	-	-	471	512	-	377	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	898	-	-	99	148	459	44	140	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	99	148	-	44	140	-
Stage 1	-	-	-	-	-	-	436	455	-	512	428	-
Stage 2	-	-	-	-	-	-	331	428	-	154	438	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.6	80	25.2
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	319	1246	-	-	898	-	-	299
HCM Lane V/C Ratio	0.97	0.001	-	-	0.133	-	-	0.412
HCM Control Delay (s)	80	7.9	0	-	9.6	0	-	25.2
HCM Lane LOS	F	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	10.2	0	-	-	0.5	-	-	1.9

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	520	351	73	58	51
Future Vol, veh/h	88	520	351	73	58	51
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	82	82	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	93	547	428	89	97	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	521	0	-	0	1210	477
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	733	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1056	-	-	-	204	592
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1052	-	-	-	185	590
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	477	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	29.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1052	-	-	-	185	590
HCM Lane V/C Ratio	0.088	-	-	-	0.523	0.144
HCM Control Delay (s)	8.8	-	-	-	44	12.1
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.3	-	-	-	2.6	0.5

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱		↰	↱			↕	
Traffic Vol, veh/h	1	345	59	187	367	0	16	2	139	7	11	79
Future Vol, veh/h	1	345	59	187	367	0	16	2	139	7	11	79
Conflicting Peds, #/hr	6	0	0	0	0	6	4	0	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	89	89	89	60	60	60	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	548	94	210	412	0	27	3	232	12	18	132

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	642	0	0	1510	1437	595	1555	1484	422
Stage 1	-	-	-	-	-	-	599	599	-	838	838	-
Stage 2	-	-	-	-	-	-	911	838	-	717	646	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1152	-	-	952	-	-	100	135	508	93	126	636
Stage 1	-	-	-	-	-	-	492	494	-	364	384	-
Stage 2	-	-	-	-	-	-	331	384	-	424	470	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1145	-	-	952	-	-	56	104	508	41	97	630
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	104	-	41	97	-
Stage 1	-	-	-	-	-	-	491	493	-	361	297	-
Stage 2	-	-	-	-	-	-	191	297	-	228	469	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.3	29.4	47.6
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	56	481	1145	-	-	952	-	-	237
HCM Lane V/C Ratio	0.476	0.489	0.001	-	-	0.221	-	-	0.682
HCM Control Delay (s)	117.8	19.4	8.1	0	-	9.8	-	-	47.6
HCM Lane LOS	F	C	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	1.8	2.6	0	-	-	0.8	-	-	4.4

Intersection	
Int Delay, s/veh	9.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	127	363	447	112	43	40
Future Vol, veh/h	127	363	447	112	43	40
Conflicting Peds, #/hr	6	0	0	6	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	77	77	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	212	605	581	145	72	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	732	0	-	0	1689	660
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	1029	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	882	-	-	-	104	467
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	348	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	877	-	-	-	78	464
Mov Cap-2 Maneuver	-	-	-	-	78	-
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	346	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	96
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	877	-	-	-	78	464
HCM Lane V/C Ratio	0.241	-	-	-	0.919	0.144
HCM Control Delay (s)	10.4	-	-	-	172.2	14.1
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	0.9	-	-	-	4.8	0.5

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↰	↱		↕	
Traffic Vol, veh/h	1	431	51	110	294	1	24	0	174	6	3	65
Future Vol, veh/h	1	431	51	110	294	1	24	0	174	6	3	65
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	92	92	92	64	64	64	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	6	0	0	0	0	0
Mvmt Flow	1	634	75	120	320	1	38	0	272	10	5	108

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	710	0	0	1292	1238	673	1373	1275	323
Stage 1	-	-	-	-	-	-	675	675	-	563	563	-
Stage 2	-	-	-	-	-	-	617	563	-	810	712	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1248	-	-	899	-	-	137	177	459	124	168	723
Stage 1	-	-	-	-	-	-	437	456	-	514	512	-
Stage 2	-	-	-	-	-	-	471	512	-	377	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	898	-	-	102	153	459	45	145	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	153	-	45	145	-
Stage 1	-	-	-	-	-	-	436	455	-	512	442	-
Stage 2	-	-	-	-	-	-	343	442	-	154	438	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.6	28	24.8
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	102	459	1246	-	-	898	-	-	303
HCM Lane V/C Ratio	0.368	0.592	0.001	-	-	0.133	-	-	0.407
HCM Control Delay (s)	59.5	23.6	7.9	0	-	9.6	-	-	24.8
HCM Lane LOS	F	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	1.5	3.8	0	-	-	0.5	-	-	1.9

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	88	520	351	73	58	51
Future Vol, veh/h	88	520	351	73	58	51
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	75	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	82	82	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	93	547	428	89	97	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	521	0	-	0	1210	477
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	733	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1056	-	-	-	204	592
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	479	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1052	-	-	-	185	590
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	477	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	29.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1052	-	-	-	185	590
HCM Lane V/C Ratio	0.088	-	-	-	0.523	0.144
HCM Control Delay (s)	8.8	-	-	-	44	12.1
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.3	-	-	-	2.6	0.5

EXHIBIT D

St. Robert Parish & School

April 5, 2024

St. Robert of Newminster Parish
6477 Ada Dr.
Ada, MI 49301

re: proposed parking

To: Ada Township Planning Commission

As a supplement to the Special Land Use (SLU) package submitted on 4/5/24 in preparation for the Planning Commission meeting scheduled for 4/18/24, this document is provided as a narrative describing the proposed approach to parking for the parish and school.

Through previous discussions with the Ada Twp. Planning Dept., as well as direction provided by the Parish and Diocese, the intent of the site parking is to provide a total of (428) spaces, with an additional +(17) spaces shown as a deferred option. These additional deferred spaces would bring the proposed total number of spaces to (445), which would then satisfy the township ordinance required number of spaces based on the maximum seating capacity of the parish.

The parish has expressed that the proposed (428) spaces will meet their needs and has also provided actual parking counts observed on Easter weekend of 2024 that are below the proposed (428) parking spaces at all masses. Easter is the highpoint of the liturgical year and has the largest parking demand on an annual basis. These numbers are provided as a separate enclosure and have also been reviewed by the Planning Department.

Thank you for your consideration,

The St. Robert Design Team

EXHIBIT E

St. Robert of Newminster CATHOLIC CHURCH

AMDG ARCHITECTS

St.Robert Parish & School

4/3/2024

6477 Ada Dr., Ada

Observed parking counts

date	service	existing spaces	vacant spaces	net used
3/24/2024	11am Palm Sunday mass	472	105	367
3/28/2024	7pm Holy Thursday	472	243	229
3/29/2024	1pm Good Friday	472	162	310
3/30/2024	9pm Easter vigil	472	246	226
3/31/2024	9am Easter mass	472	57	415
3/31/2024	11am Easter mass	472	125	347

March 22nd, 2024

Ada Township Planning Commission
7330 Thornapple River Dr.
Ada, MI 49301

RE: St. Robert Catholic School

Dear Planning Commission,

I am writing to offer my support of the proposed St Robert Catholic School expansion. I have been a longtime time resident of Ada Township and believe what St. Robert Catholic School is planning will add value to our community.

Best Regards,

Daryn Kuipers
5250 Rollingbrook Ct
Ada MI 490301

March 18th, 2024

Ada Township Planning Commission

7330 Thornapple River Dr.

Ada, MI 49301

Distinguished members of the planning commission:

I would like to offer my support once again for the expansion project for St. Robert Catholic School. As a resident of Ada Township, I see the value in Catholic education in our community and look forward to the growth of the school.

Best Regards,

Dewey I Doyle IV

7461 Thorncrest Dr.

Ada, MI 49301

March 22, 2024

Ada Township Planning Commission

7330 Thornapple River Dr.

Ada, MI 49301

Distinguished members of the planning commission,

We would like to offer my support to the expansion project for the St. Robert Catholic School. As a resident of Ada Township, we see the value in Catholic education in our community and look forward to the growth of the school.

Best Regards

Joe and Jennifer Amaya

620 Village Springs Dr SE

Ada, MI 49301

March 15, 2024

Ada Township Commission
7330 Thornapple River Dr.
Ada, MI 49301

Dear Planning Commission Members,

I would like to offer my support to the expansion project for St. Robert Catholic School. As a resident of Ada Township, I see the value in Catholic education in our community and look forward to the growth of the school.

Thank you for your consideration.

Best,

Beth Banta
645 Greenslate Dr., SE
Ada, MI 49301

March 26, 2024

Ada Township Planning Commission

7330 Thornapple River Dr.

Ada, MI 49301

Distinguished members of the planning commission,

We would like to offer our support to the expansion project for the St. Robert Catholic School. As a resident of Ada Township, we see the value in Catholic education in our community and look forward to the growth of the school.

Best Regards

Victor and Jennifer Chiodini

9125 Green Crest Trail NE

Ada, MI 49301

March 13, 2024

Ada Township Planning Commission
7330 Thornapple River Drive
Ada, MI 49301

Distinguished members of the planning commission,

We would like to offer our support in the expansion project for the St. Robert Catholic School. As a resident of Ada Township, we see the value in Catholic education in our community and look forward to the growth of the school.

Best regards,

Tom and Beth Cowden
1030 Skyevale NE
Ada, MI 49301

March 22, 2024

Ada Township Planning Commission

7330 Thornapple River Dr.

Ada, MI 49301

Distinguished members of the planning commission,

We would like to offer my support to the expansion project for the St. Robert Catholic School. As a resident of Ada Township, we see the value in Catholic education in our community and look forward to the growth of the school.

Best Regards

Courtney L McGivney

Mike and Courtney McGivney

4982 Meadow Springs Trail

Ada, MI 49301

Ada Township Zoning Board:

As a resident of Ada Woods subdivision, I would like to offer strong support in favor of the St. Robert School expansion. The project will result in a substantial redevelopment of the school which is needed to keep up with projected growth. Not only does my family live within a mile of the church, I am also privileged to teach kindergarten in this growing community.

Ada is fortunate to have so many schools to accommodate families and students with high level learning outcomes and goals. The exterior plans and aesthetic is beautiful and I know the inside will be just as fabulous. Liz Peters leads this school with vision and energy and I am positive the build will be a great improvement.

Thank you for your favorable consideration!
Rachel Udy
6190 Scarborough Dr. SE
(Ada)

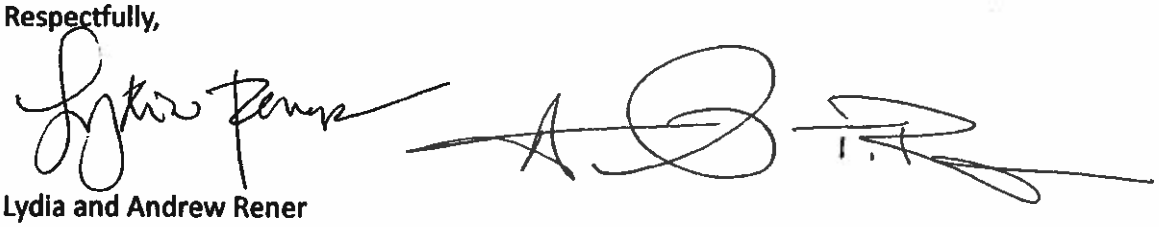
March 21, 2024

Ada Township Planning Commission
7330 Thornapple River Drive SE
Ada, MI 49301

To the members of the Planning Commission:

As Ada Township residents, we see the value of supporting a diverse community. One of the reasons we chose Ada was due to the rave reviews of all the schools. Schools are a visible marker of a community's values. And that is why we offer our support to the expansion building project for St. Robert Catholic School and Parish Activity Center.

Respectfully,



Lydia and Andrew Rener
3380 Egypt Valley Ave NE
Ada, MI 49301

March 13, 2024

Ada Township Planning Commission

7330 Thornapple River Dr.

Ada, MI 49301

Distinguished members of the planning commission,

We would like to offer my support to the expansion project for the St. Robert Catholic School. As a resident of Ada Township, we see the value in Catholic education in our community and look forward to the growth of the school.

Best Regards

George and Missy Sharpe

844 Skyevale Dr. NE

Ada, MI 49301

March 13, 2024

Ada Township Planning Commission

7330 Thornapple River Dr.

Ada, MI 49301

Distinguished members of the planning commission,

We would like to offer my support to the expansion project for the St. Robert Catholic School. As a resident of Ada Township, we see the value in Catholic education in our community and look forward to the growth of the school.

Best Regards

Scott and Kathy Carano

822 Skyevale NE

Ada, MI 49301

TOWNSHIP

MEMORANDUM

Date: 04.11.24

TO: Ada Township Planning Commission
FROM: Department of Planning
RE: **April 18, 2024 – Planned Unit Development (PUD) Amendments – 4900 and 4920 Fulton Street SE – The Caves – (Parcel #s: 41-15-30-300-019 and -020) – Staff Report #2**

Project Application Status Summary

The applicant is returning to the Planning Commission's April 18 meeting for further review of the Planned Unit Development (PUD) request for the subject property. The application, which was originally reviewed at the March 21 meeting, was tabled by the Planning Commission. That motion included direction to set up a special workshop session meeting for review of this request; however, efforts to schedule a Planning Commission (PC) meeting were not successful due to conflicting calendars of PC members.

This proposal would amend the existing Planned Unit Development (PUD) approval for this site ("The Caves") with an expansion to include new buildings, revisions to previously-approved (but not constructed) buildings, and related site changes. The applicant also proposes to unify the adjacent parcel at 4900 Fulton (former Anderson site) with the preexisting subject property (4920 Fulton) to a single development area. The parcel at 4900 contains about 2.27 acres, while the 4920 site has about 4.48 acres, for a combined land area of approximately 6.75 acres.

The applicant has submitted revised site plans, after discussion at the PC meeting and subsequently with Township Staff. The revised plans still include five new buildings for the site, and use of the former Anderson building (+/- 6,500 square feet), for the existing storage/warehouse spaces with ancillary offices. The revisions result in the following proposed site changes/additions:

- Building 12; 3,600 square feet (SF) (60' x 60').
- Building 24; 4,900 SF [*formerly 6,650 SF (70' x 95'); further comments are provided below concerning this building.*]
- Building 25; 3,600 SF (40' x 90').
- Building 26-27; 5,400 SF (30' x 60' and 60' x 60'). Note: the labeled building size and dimensions do not correspond to the plans nor to actual area calculations; the applicant will need to reconcile this figure prior to Planning Commission action. *(This was identified previously but has not been corrected.)*
- Building 28; 1,750 SF (35' x 50').
- Driveways accessing the new buildings.
- Proposed outdoor trailer storage on gravel adjacent to Buildings 1-3 and 4-6, and in the western portion of the site. *(Previous proposed outdoor storage area adjacent to Buildings 26-27 has been omitted; further comments are noted below regarding the proposed outdoor storage area.)*
- Landscape plantings adjacent to the proposed frontage driveway. *(Further comments are provided below concerning landscaping.)*

Based on Zoning Ordinance requirements [Sec. 78-459(c)(2)b.2.], this proposal requires both Township Planning Commission review and Township Board final action; in effect, this is a request

for both preliminary and final PUD approval. Language in this section specifies that any increase in the number of buildings requires review of a preliminary plan by the Planning Commission and Township Board.

The site is accessed via a driveway intersecting Fulton Street. The previously-existing Caves property had an access easement through the Anderson site, which also provides access to two other industrial buildings adjacent the subject property (4850 and 4870 Fulton). The property that the common driveway is located on is part of 4900 Fulton, now owned by the applicant.

Analysis

Project History

The PUD for this location was originally approved in 2017, with approval of 11 buildings on the original 4920 site. The applicant then returned to the Planning Commission in October 2022 for a PUD pre-application conference, then again in February 2023 with another pre-application conference. During the previous preapplication conferences, the Planning Commission and Staff identified a number of topics for the applicant to address. The applicant then submitted an application for a PUD amendment later in 2023, but opted to withdraw the request in September, 2023, before it was scheduled for Planning Commission review.

At the time of pre-application review, the Commission and Staff discussed a number of concerns with the applicant, including the proximity of proposed buildings to the front and side lot lines. The current request also includes a number of new components (such as outside storage) that were not previously proposed, but are commented on in this Staff Report.

Zoning Ordinance Requirements

The proposal does not meet the following Zoning Ordinance requirements:

- Front setbacks for Building 24 (35 feet) and Building 25 (47 feet); required front setback is 50 feet.
- Side yard setback for Buildings 24 (35 feet) and Building 12 (47 feet); required side yard setback is 50 feet.
- Rear yard setback for Building 12 (47 feet); required rear yard setback is 50 feet.

Buildings

The proposed buildings will match the existing Caves structures, and as proposed all meet applicable height requirements.

The applicant will need to combine the two existing lots, as two of the proposed buildings straddle the existing lot line between the two subject sites. A condition of approval is included regarding this item.

The applicant needs to identify the proposed phasing of this project for the Planning Commission and Staff, with, as necessary, submittal of a phasing plan.

Utilities

The applicant proposes to install stormwater drainage improvements to accommodate the new development to accommodate the additional impervious area proposed beyond the originally-approved site plan. The Township consulting engineer will require the project engineer to provide written verification that the stormwater drainage calculations and detention pond size will accommodate this additional area. A condition of approval is included to address this requirement.

As previously noted, Staff has no objection to omitting any restroom count restrictions, based on communications with the Township utilities consultant and Kent County. Well and septic volumes are overseen by the Kent County Health Department, which typically involves overall volume/usage, in lieu of specific bathroom numbers. However, the pre-existing limitations on bathroom and business usage, need to remain a part of this request so as to limit water usage and ensure safe well and septic usage.

Staff had previously recommended a condition of approval regarding municipal water and sewer service. However, after further review, the matter was previously addressed by a resolution approved by the Township Board (in 2022) allowing for an exemption of this property to connecting with municipal sewer service. A connection to Township water service is not a specified requirement in the Municipal Ordinance.

Staff Commentary
The following concerns are identified for Planning Commission review:

- Staff recommends that this PUD ***not*** include any outdoor gravel trailer parking storage areas The authorization of outdoor storage will create a poor precedent for future such proposals, could easily result in additional unauthorized parking/storage, and would be very difficult for Staff to appropriately monitor to ensure compliance. At the March 21 meeting, Commission comments indicated concurrence with this recommendation, although the applicant continues to propose the idea.

- Staff does not have an objection to the location of Building 24, as it has been resized and relocated so as to be 35 feet from the property line. **However, the applicant should provide additional landscape plantings adjacent (immediately to the east) of this building so as to provide a visual buffer from the adjacent property.** A condition of approval is included to reflect this recommendation.

- Staff requests that the Planning Commission determine if the site frontage layout adjacent to Buildings 24 and 25, with the proposed driveway location and landscaping, is adequate.

PUD/Zoning
The following PUD Standards (Sec. 78-446) are provided to assist the Planning Commission with the applicable criteria for review of such requests. It is important to note that a PUD is not a right, but a privilege that must be earned. If the Township Planning Commission and Township Board eventually confirm that that this project is approved, the applicant has specific responsibilities for completing the development as detailed in the approved plans.

The PUD Standards of Sec. 78-446 are as follows:

(c) The PUD regulations provided by this article are intended to:

(1) Provide a more desirable environment by preserving open fields, woodlands, wetlands, areas of steep topography, creeks, ponds and similar natural assets;
(2) Encourage a creative approach to development design in the township;
(3) Encourage an efficient, aesthetic and desirable use of open areas and a reduction in development costs by allowing the developer to avoid and preserve natural obstacles on the site;
(4) Encourage preservation of land meeting certain characteristics as permanent open space, by providing a residential density incentive for residential developments in

specified zoning districts that are designed to set aside a minimum of 40 percent of the land area in the development as permanent open space;

(5) Promote the goals of the township's master plan to maintain the township's rural character, maintain an attractive landscaped corridor along the township's major roadway frontages, maintain the traffic carrying capacity of the township's major roadways, and protect environmentally-sensitive areas; and

(6) Provide the township with a higher degree of control over the types of uses and design details of development in locations where application of traditional zoning requirements may not be appropriate.

(d) The provisions of this article are not intended to be used solely to avoid the otherwise applicable requirements of this chapter, including the provisions of any other zoning districts established by this chapter. For residential PUDs, it is not the intent of this article to permit higher density in a PUD than is reasonably and realistically achievable in conformance with the conventional zoning district standards of this chapter, as demonstrated by the alternative plan submittal required by this article, unless the PUD plan more effectively achieves the purposes and intent of the PUD regulations, as stated herein.

Conclusion & Recommendation

Based on the applicable P.U.D. Standards, Staff has no objections to the approval of this request, Planning Commission consideration and the following recommended conditions of approval. After Commission action on this matter, it will require final action by the Township Board.

1. The approved PUD Plan shall be carried out in substantial conformance with the plans prepared by Callen Engineering, Inc., as follows:

   - Existing Conditions Plan; Site Plan; Grading, Drainage, and SESC Plan dated 04-05-24, by Bruce A. Callen/Callen Engineering, Inc.
   - Cross Sections and Details Plan; dated 02-21-24, by Bruce A. Callen/Callen Engineering, Inc.
   - Landscape Plan, (date to be determined), to be revised and approved by Staff prior to Township Board consideration.
   - Phasing Plan (date to be determined), to be reviewed and approved by Staff prior to Township Board consideration.

2. That the uses permitted in the PUD shall be limited to uses permitted by right in the Industrial (I) district, with the exception of the following uses, which shall be prohibited:

   a. Any manufacturing, fabrication or processing of goods.

   b. Professional and administrative offices, including legal, architectural, engineering, accounting, data processing, insurance, real estate, securities brokerage, financial planning and investment advisory services, but excluding health care professions, banks, saving and loans, mortgage lenders and other financial services.

   c. Vehicle fleet storage, maintenance and fueling facilities.

   d. Offset printing, including ancillary activities such as photocopying and facsimile transmittal services.

e. Commercial photographers' studios, including ancillary portrait photography services as a secondary activity.

f. Churches.

g. Day care centers.

h. Public and private use heliports.

i. Production, sales, storage, or distribution of any food or beverage products.

3. Prior to the issuance of any permit, the applicant shall obtain a stormwater permit from the Township, and shall obtain Township Engineer approval of the proposed stormwater plan.

4. Permits for on-site potable well and on-site waste disposal system shall be issued by the Kent County Health Department, prior to issuance of any building permits.

5. Building wall-mounted exterior lighting shall be limited to one fixture per unit service entry door, plus one additional fixture per building at a location determined by the applicant, with the exception that no fixtures shall be installed along the east wall of buildings along the east edge of the property. All fixtures, whether wall-mounted on buildings or freestanding, shall be full horizontal cutoff fixtures mounted in a vertical downward position. No light shall spill over onto adjacent properties.

6. Prior to the issuance of any permits, the applicant shall complete a lot combination request to merge 4900 and 4920 Fulton.

7. The applicant shall be required to install a Knox Box, or series of Knox Boxes, prior to the issuance of any certificates of occupancy, subject to approval of the Ada Township Fire Chief.

8. No signs are approved with this request.

TOWNSHIP

PLANNED UNIT DEVELOPMENT (PUD) APPLICATION

RECEIVED
FEB 22 2024
PLANNING & ZONING
ADA TOWNSHIP

An application fee and escrow deposit must accompany this form.

Applicant Information:

Name: THE CAVES

Address: 2946 WOODCLIFF CIR SE

Phone Number: 616-644-7514 Email: KEESTON@COMCAST.NET

Property Owner Name and Address *(if different than above)*: _____

Property Information:

Property Address: 4920 FULTON E. ADA, MI 49301

Parcel Number: 41 - 15-30-300-020

Current Zone District Classification: IND

Name of Project: THE CAVES

Summary Description of Project: STORAGE BUILDINGS

Type of Application:

____ **Pre-Application Conference** - (application fee $50.00)

✓ **Preliminary PUD or Revised Preliminary PUD** – (application fee $500.00)

____ **Final PUD** - (application fee $250.00)

____ **Revised Final PUD** - (application fee $250.00)

Note: Electronic file/pdf is required on all applications (submit via email).

I (we), the undersigned, do herby make application and petition the Township to amend the Ada Township Zoning Ordinance and associated zoning map and also herby grant permission to Ada Township and its officials and staff to enter upon the subject property for purposes of review and evaluation of this request.

Applicant's Signature(s): _____ Date: 2-21-24

Property Owner's Signature(s): _____ Date: _____
(If different than above)

TO BE COMPLETED BY ADA TOWNSHIP PLANNING DEPARTMENT

Application Received: 2-22-2024 (mm / dd / yy) Initial: eb

The Caves LLC

Application Fee of $ 500.00 Received: 2/22/24 (mm / dd / yy) Initial: [illegible] Check # 152 Receipt # 364731

Escrow Deposit of $ 1000.00 Received: 2/23/24 (mm / dd / yy) Initial: [illegible] Check # 157 Receipt # 364731

THE Caves

With the purchase of the Blue Anderson building on Fulton The Caves will be expanding.

"The Caves" will provide space for your Small Business, Man-cave, the Hobbyist, Storing your large toys or whatever you may need it for.

This is something we have been working on for years and now we were able to purchase the Anderson property. This was a great fit for our site being that is contiguous with our current property.

We hope to start Construction in the Spring of 2024.

Spaces will range from 1500sf to 6750sf. These spaces will be available for rent. We are planning 3 or 4 more buildings with 5 to 8 additional units. The unique design of our development is more attractive verses one large building divided into smaller spaces, everybody does that. This creates a pride of community and a large cross section of users/businesses. The spacing provides more green space and attractive development that will be well manicured and kept in an orderly manner.

Our development will be built in phases and/or "Built on Demand". Each buildings floor plan will be an open space and will be designed when we apply for the building permit. The floor plan will be determined based on the tenants' requirements. More details on our building process are included later in this document under the "Development Plan Section".

Below please find a rough site sketch.

Other Features:

Custom configured and designed suites. Convenient location for Ada, EGR, Forest Hills & Cascade.

Your New Office, Home away from Home, Hobbyist, Storing your large toys or The Man-cave you have always wanted.

Gas, Water, Sewer, Electric and Cable; 16 foot Ceiling, 12 to 14 foot overhead Doors.

THE Caves

Special Variances requested:

1. Building #12 – we are asking for a **3 to 4-foot variance long the East side** of the building and **a 2 to 3 foot variance along the south side** of the building. Fifty-foot set backs are required in this area. We want to keep this building the same size as the other and provide more vehicle maneuvering in this area.

2. Building #25 we are asking for a **3-foot variance on the north side** of this building. By moving this building north, it will give us more room for utility lines on the south side of the building. The setback in this area is 50 feet

3. Building #24 we are asking for a **35 to 40 foot variance along the east side** and a **15 to 20 variance on the north side**. We came to these setback numbers based on working with staff of Ada Township.

   The reason we have a footage range is to give us some flexibility when laying out the buildings. We would in most cases use the smaller variance number if we can. For example: on building 24 we may need to shift a little bit as we excavate the site. Therefore, we want the flexibility use either number.

4. Number of Bathrooms – currently we are restricted to 5 bathrooms and we want to **expand this number 11 bathrooms**. The KCHD has approved this number of bathrooms. Thus, we feel Ada Township should not have an issue with this request. It is a very important issue for the success of our site expansion.

THE Caves


Fulton
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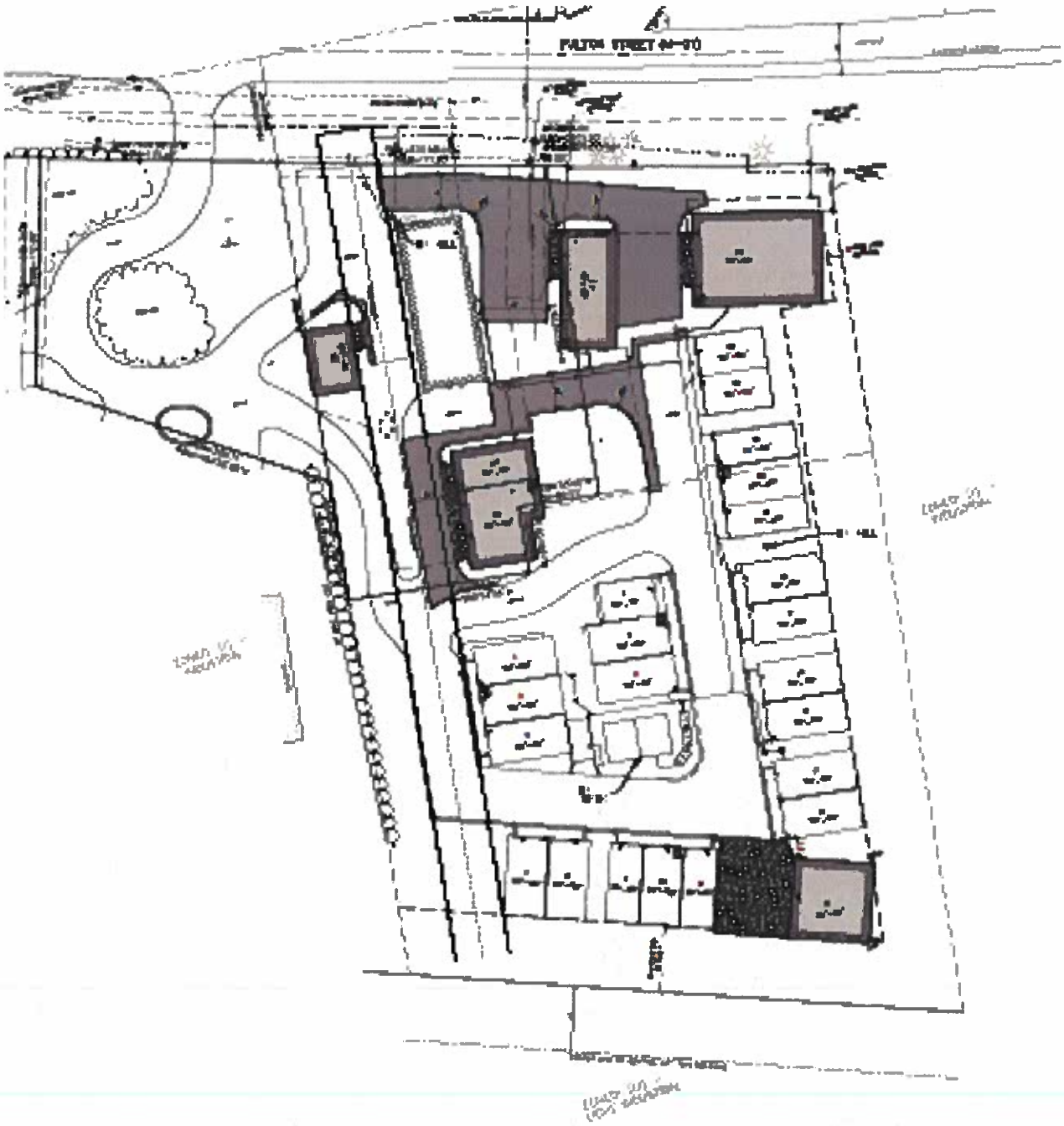
Proposed to be
Built on Org. Plan
Existing Buildings

THE Caves



THE Caves

Legal Parcel Description: (1&2&5)

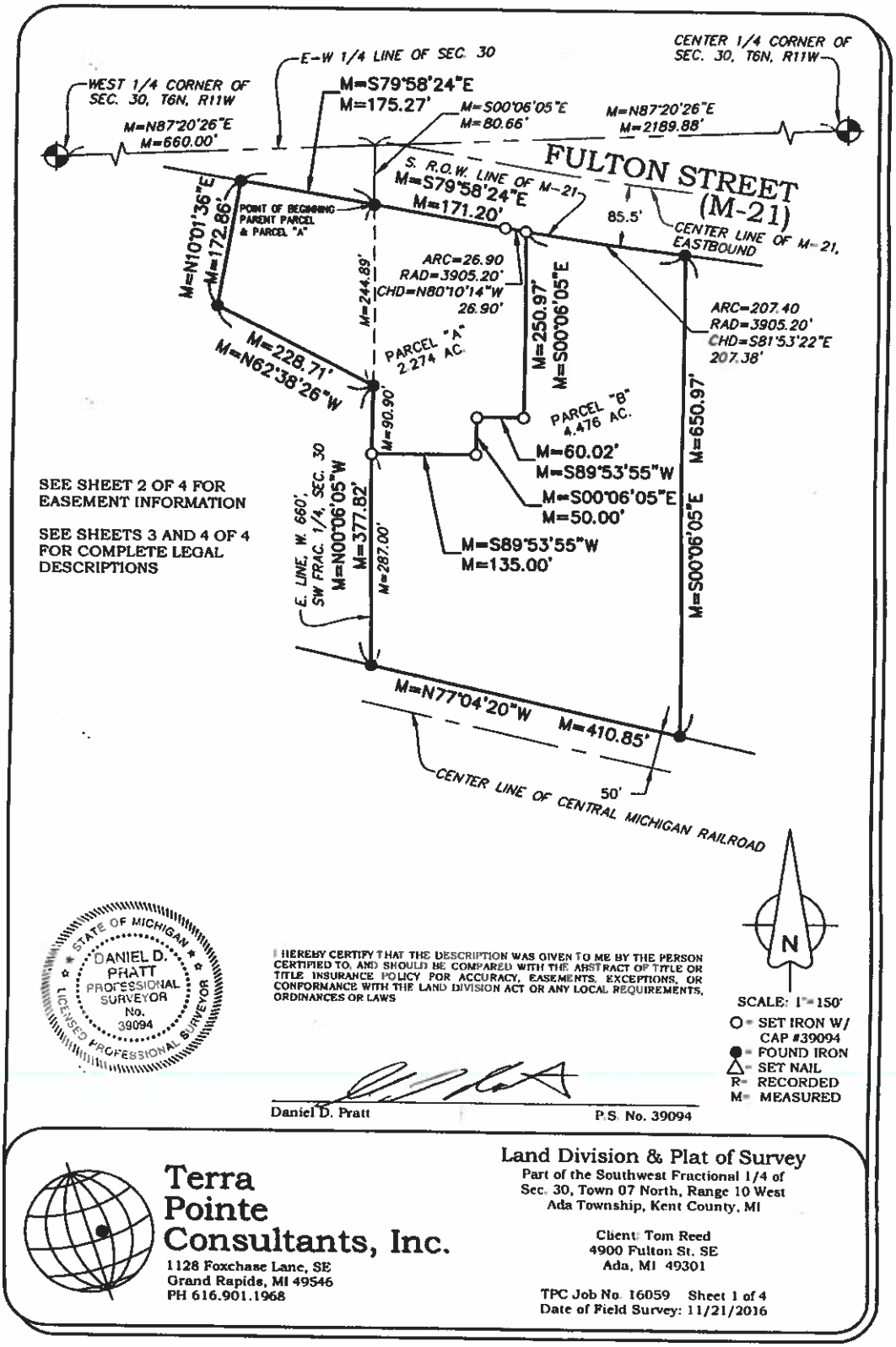
Parcel B:
Part of the Southwest fractional one-quarter of Section 30, Town 07 North, Range 10 West, Ada Township, Kent County, Michigan, described as follows: COMMENCING at the West one-quarter corner of said section 30; thence N 87°20'26" E 660.00 feet along the East-West one-quarter line of said section; thence S 00°06'05" E 416.37 feet along the East line of the West 660 feet of the Southwest fractional one-quarter of said section, to the TRUE PLACE OF BEGINNING; thence N 89°53'55" E 135.00 feet; thence N 00°06'05" W 50.00 feet; thence N 89°53'55" E 60.02 feet; thence N 00°06'05" W 250.97 feet; thence Easterly 207.40 feet along said South right-of-way line, on a 3905.20 foot radius curve to the left, the chord of which bears S 81°53'22" E 207.38 feet; thence S 00°06'05" E 650.97 feet; thence N 77°04'20" W 410.85 feet along the Northerly line of the Central Michigan Railroad right-of-way (100.00 feet wide); thence N 00°06'05" W 287.00 feet to the place of beginning. Parcel contains 4.476 acres.

PART OF SWFRL 1/4 COM 660.0 FT N 87D 20M 26S E ALONG E&W 1/4 LINE & 80.66 FT S 0D 06M 05S E TO S LINE OF HWY M-21 FROM W 1/4 COR TH S 79D 58M 24S E ALONG SD S LINE 171.20 FT TH ELY 26.90 FT ALONG A 3905.20 FT RAD CURVE TO LT /LONG CHORD BEARS S 80D 10M 14S E 26.90 FT/ TH S 0D 06M 05S E 250.97 FT TH S 89D 53M 55S W 60.02 FT TH S 0D 06M 05S E 50.0 FT TH S 89D 53M 55S W 135.0 FT TH N 0D 06M 05S W 90.82 FT TH N 62D 38M 26S W 228.71 FT TH N 10D 01M 36S E 172.86 FT TO S LINE OF HWY M-21 TH S 79D 58M 24S E ALONG SD S LINE 175.27 FT TO BEG * SEC 30 T7N R10W 2.27 A. SPLIT ON 07/31/2007 FROM 41-15-30-300-011, 41-15-30-300-015; SPLIT/COMBINED ON 10/13/2016 FROM 41-15-30-300-017; Roughly 6.75 Acres

Vicinity Map (3)

THE Caves

(7)


CENTER 1/4 CORNER OF SEC. 30, T6N, R11W
E-W 1/4 LINE OF SEC. 30
WEST 1/4 CORNER OF SEC. 30, T6N, R11W
M=S79°58'24"E
M=175.27'
M=S00°06'05"E
M=80.66'
M=N87°20'26"E
M=2189.88'
M=N87°20'26"E
M=660.00'
FULTON STREET (M-21)
S. R.O.W. LINE OF M-21
M=S79°58'24"E
M=171.20'
85.5'
CENTER LINE OF M-21, EASTBOUND
POINT OF BEGINNING PARENT PARCEL & PARCEL "A"
M=N10°01'36"E
M=172.86'
ARC=26.90
RAD=3905.20'
CHD=N80°10'14"W
26.90'
M=244.89'
M=250.97'
M=S00°06'05"E
ARC=207.40
RAD=3905.20'
CHD=S81°53'22"E
207.38'
PARCEL "A"
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M=228.71'
M=N62°38'26"W
M=90.90'
PARCEL "B"
4.476 AC.
M=650.97'
M=60.02'
M=S89°53'55"W
M=S00°06'05"E
M=50.00'
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E. LINE, W. 660', SW FRAC. 1/4, SEC. 30
M=N00°06'05"W
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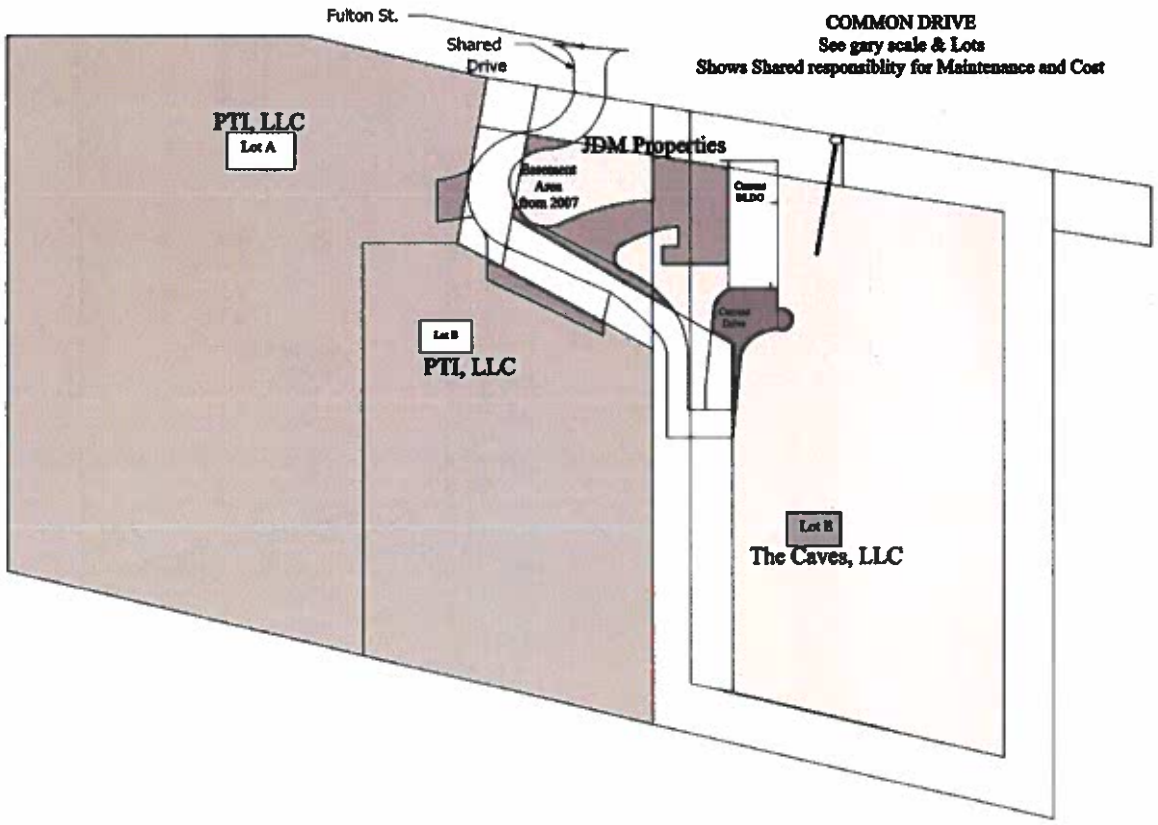
M=287.00'
M=S00°06'05"E
M=N77°04'20"W
M=410.85'
50'
CENTER LINE OF CENTRAL MICHIGAN RAILROAD
SEE SHEET 2 OF 4 FOR EASEMENT INFORMATION
SEE SHEETS 3 AND 4 OF 4 FOR COMPLETE LEGAL DESCRIPTIONS
STATE OF MICHIGAN
DANIEL D. PRATT
PROFESSIONAL SURVEYOR
No. 39094
LICENSED PROFESSIONAL SURVEYOR
I HEREBY CERTIFY THAT THE DESCRIPTION WAS GIVEN TO ME BY THE PERSON CERTIFIED TO, AND SHOULD BE COMPARED WITH THE ABSTRACT OF TITLE OR TITLE INSURANCE POLICY FOR ACCURACY, EASEMENTS, EXCEPTIONS, OR CONFORMANCE WITH THE LAND DIVISION ACT OR ANY LOCAL REQUIREMENTS, ORDINANCES OR LAWS
Daniel D. Pratt
P.S. No. 39094
N
SCALE: 1"=150'
O = SET IRON W/ CAP #39094
● = FOUND IRON
△ = SET NAIL
R= RECORDED
M= MEASURED
Terra Pointe Consultants, Inc.
1128 Foxchase Lane, SE
Grand Rapids, MI 49546
PH 616.901.1968
Land Division & Plat of Survey
Part of the Southwest Fractional 1/4 of
Sec. 30, Town 07 North, Range 10 West
Ada Township, Kent County, MI
Client: Tom Reed
4900 Fulton St. SE
Ada, MI 49301
TPC Job No. 16059 Sheet 1 of 4
Date of Field Survey: 11/21/2016

THE Caves

Shared Common Drive Easement:

Utility Easement: (8&9--None)

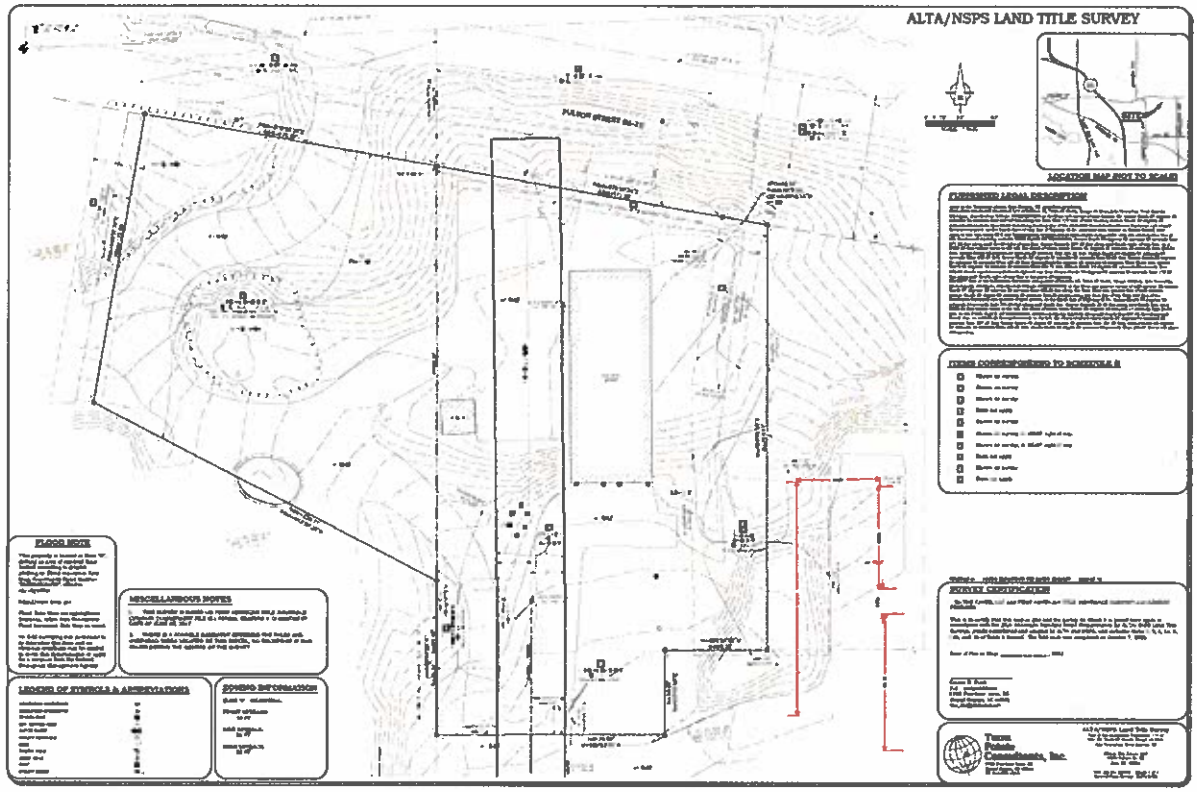
By sharing the Drive we have eliminated another curb cut on M-21/Fulton.



THE Caves

Contours for “The Caves” Site:

See clear copy attached (10)



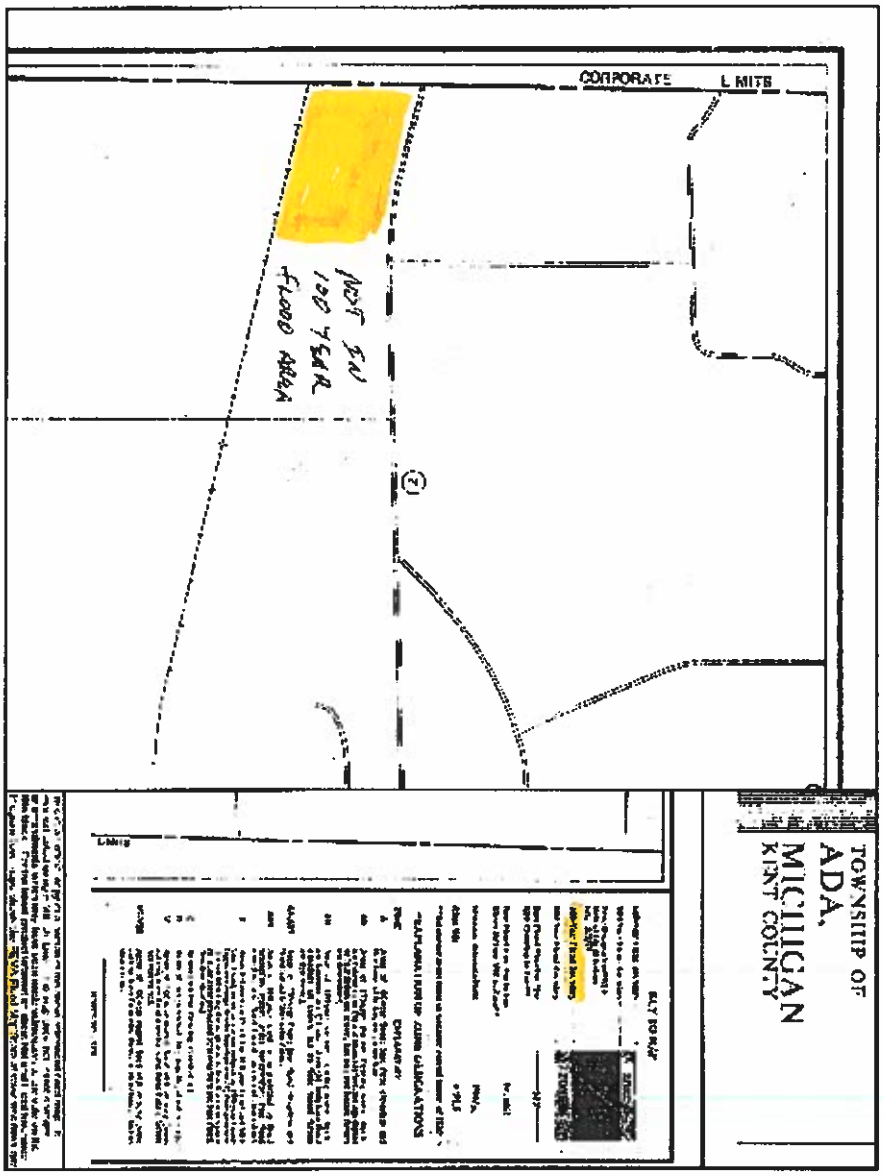
THE Caves

Contours for "The Caves" Site: (11)

THE Caves

100 Year Old Floodplain:

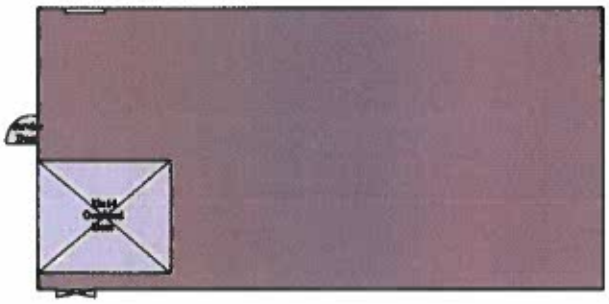
Our site Is not within the 100 year Floodplain (13)

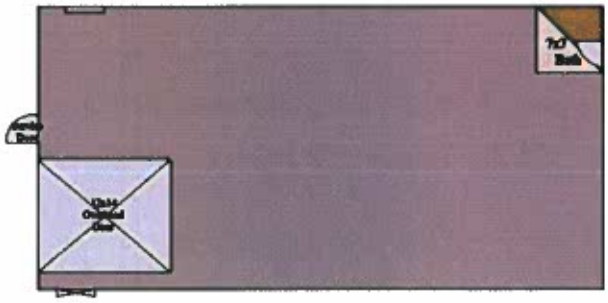


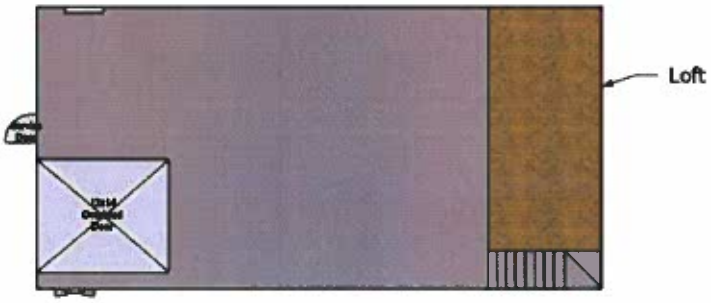
THE Caves

Floor Plans: (19)

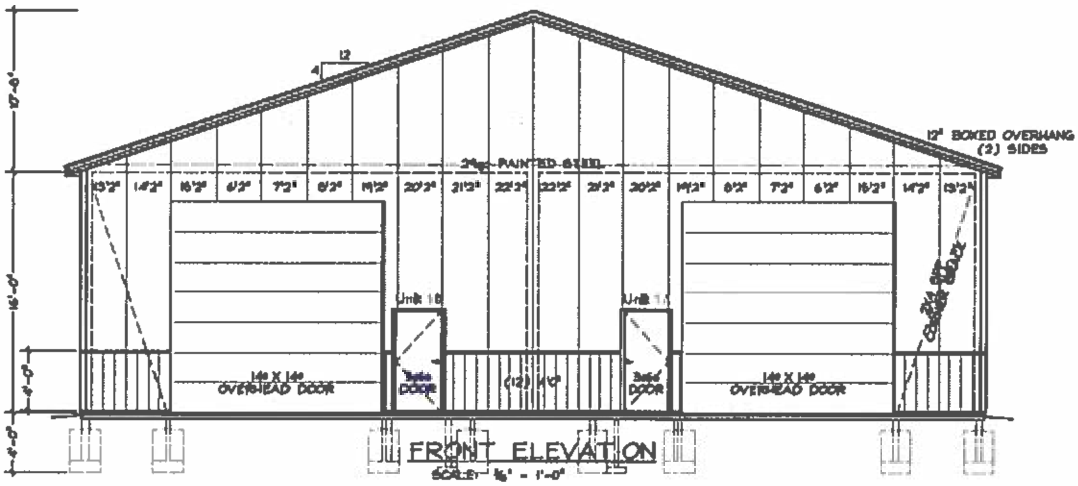
Floor plans will vary per suite depending on Tenants request, but these are the most common floor plans. A more detailed plan will be filed when we apply for building permit. Some of these new buildings will have loft offices as well.

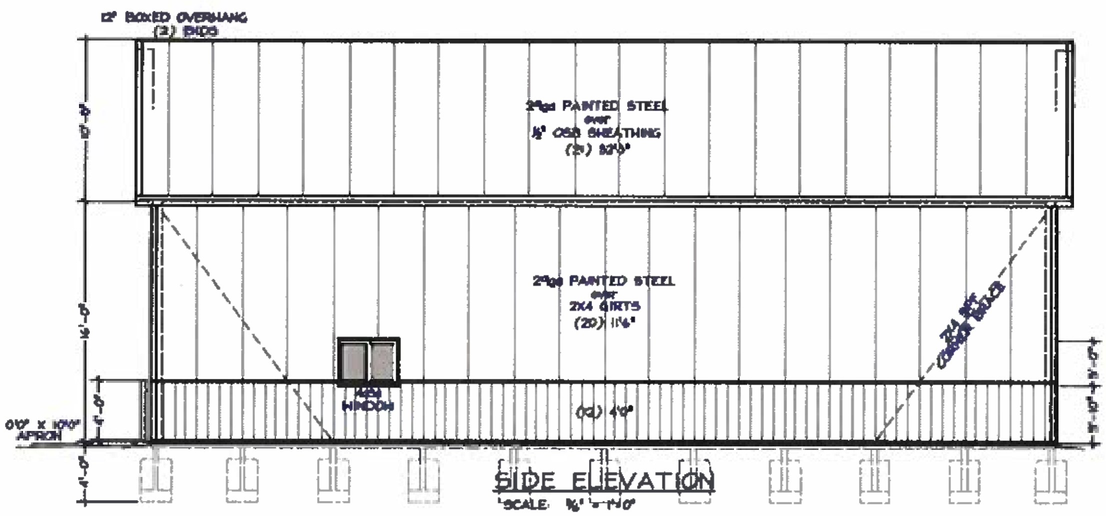


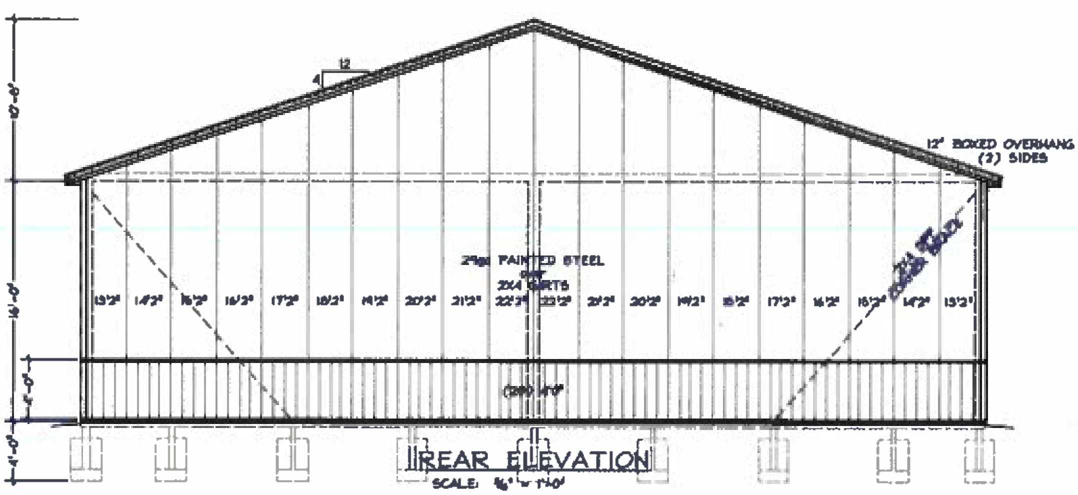




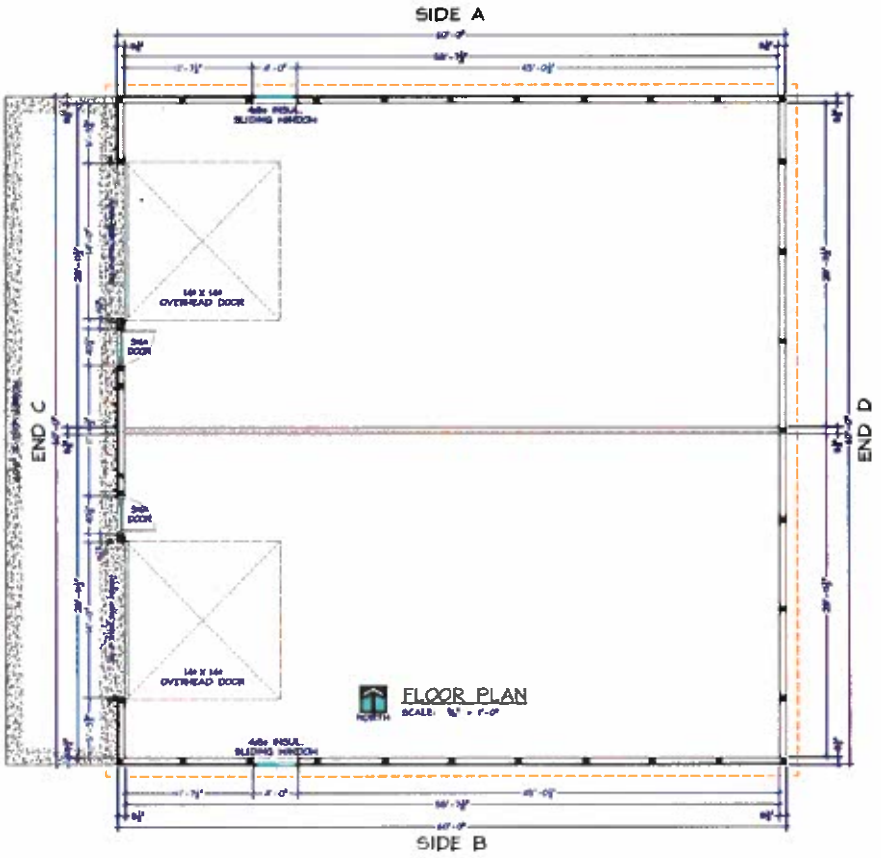
THE Caves

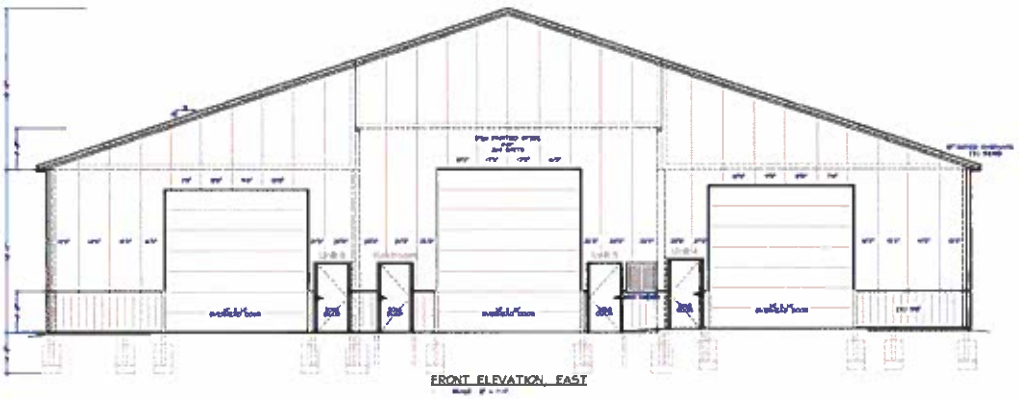

12" BOXED OVERHANG
(2) SIDES
14' X 14' OVERHEAD DOOR
FRONT ELEVATION


12" BOXED OVERHANG
(2) SIDES
PAINTED STEEL
2X4 GIRTS
WINDOW
SIDE ELEVATION


12" BOXED OVERHANG
(2) SIDES
PAINTED STEEL
2X4 GIRTS
REAR ELEVATION

THE Caves





Sample look of Buildings and the layout: (18)

THE Caves

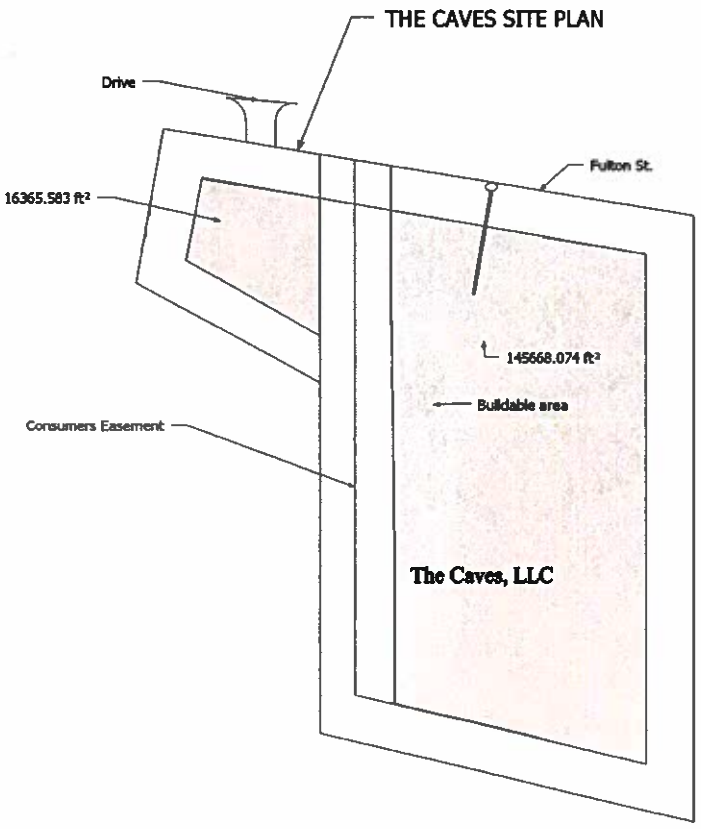
THE Caves


Untitled Map
Write a description for your map.
Legend
Google Earth

THE Caves

THE Caves

Building Envelope: (22)



Other Facts: (21&23)

Total Square footage of Parcel = 294,030 SF or 6.75 Acres

Open Space = 49.3% or 149,000 Square feet;

Buildable Area Square footage = 162,033 SF or 44.90% of coverage;

Drive = 80,680 SF or 27.45% of coverage; Building coverage 70,000 or 23.8% of coverage

Building Colors will match the existing buildings.

Building height 27.6 ft (Lowest) to 42.6 (Highest)

THE Caves

Development Plan/ Phase Plan: (27)

We build on demand until the project is completed. Once we have a committed Tenant for each remaining building.

Because of the extensive excavation required on the site we will complete excavation for each building as we build each building.

Again, when the two suites are Leased, we will begin the process for the next building. After each building is filled with a Tenant(s) we start recruiting/searching for the next building and we repeat this process until all buildings are built.

Final Landscaping will be installed after each building is completed as long it will be out of the way of future construction traffic.

In today's finance world, building on demand allows us to better manage of dollars. Using this Construction method it could take several years to complete, it all depends on demand. It could be sooner if the spaces are popular. **This process may take longer but it yields a more attractive site in the long run.**

THE Caves

SITE PLAN:

This shows layout of Drives, Water, sewer, Storm water, Utilities and More detail will be in larger drawings submitted separate. **(27,28,29,30 &31). NOTE: This site has a large elevation change thus we have the two drives in order to access the upper and lower areas. These 4 buildings floor plans may vary more than the other buildings based on tenants needs.**

THE Caves

Landscaping Plan: (32)

Due to an invasive plant (Japenese Knotweed) we will need to eradicate these plants before we can plant many of our landscape trees.

Our Landscaping plan will have challenges meeting the Ada requirements. We feel we have an equivalent plan that uses many of the native trees thus keeping the contiguous flow with the neighboring properties. On our site and adjacent sites there many young native Scotch pine (which are impossible to find at local nurseries) and Juniper trees and we plan to replant as many of these trees as possible. The main issue is that many of these trees may not meet the minimum height requirement but will provide excellent screening and the deer herd will not eat them. Ada calls for, most of these trees are shorter (2' to 5') than required but are of the same exact species which is what we are trying to maintain. We plan to order a large amount of these rare trees and it will be hard to meet exact specs in the Ada ordinance.

We are big Pine tree fans and plan to create a piney feel that will complement the Entry Drive from Fulton and the other neighboring properties.

Our landscaping plan is perimeter pine tree plants along the north and east of the site and just a very nice lawn. This along with our open/green space in the center of the of the development is our park like setting.

The massive drainage requirements due to neighboring properties run-off limits of our landscaping options and planting options. Along with our network of underground utilities makes it very hard for plantings.

THE Caves

Site Lighting: (34)

Above each Service Entry Door we will mount an 18 Watt LED Wall pack with a dawn and dusk photo eye. We will also have one light at each the south and north end in the middle of the circle drive providing light as you travel around the circle drive, this is a dark area. There will be 21 of these lights mounted at about 10 feet high, they provide a very nice level of lighting and all will be pointed downward yielding virtually no upward lighting.

FEATURES & SPECIFICATIONS

INTENDED USE
Provides years of maintenance-free general illumination for outdoor use in commercial applications such as retail, education, multi-unit housing and storage. Ideal for lighting building facades, parking areas, walkways, garages, loading areas and any other outdoor space requiring reliable safety and security.
CONSTRUCTION
Sturdy weather-resistant aluminum housing with a bronze finish, standard unless otherwise noted. A clear polycarbonate lens protects the optics from moisture, dirt and other contaminants.
OPTICS
8 high performance LEDs are powered by a multi-volt (120V-277V) LED driver that uses 18 input watts and provides 1,490 delivered lumens. 100,000 hour LED lifespan based on IESNA LM-80-08 results and calculated per IESNA TM-21-11 methodology.
ELECTRICAL
Rated for outdoor installations, -40°C minimum ambient.
Adjustable Dusk-to-dawn, multi-volt photocell standard automatically turns light on at dusk and off at dawn for convenience and energy savings.
Photocell can be disabled by rotating the photocell cover.
6KV
Surface or recessed mount. A universal junction box is included standard.
All mounting hardware included.
LISTINGS
UL Certified to US and Canadian safety standards. Wet location listed for mounting higher than 4 feet off the ground.
Tested in accordance with IESNA LM-79 and LM-80 standards.
WARRANTY
5-year limited warranty. Complete warranty terms located at
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application.
Note: Specifications subject to change without notice.
OLW14
Series Color temperature (CCT)[1] Voltage Control Finish
OLW14 1400 lumen LED wall pack **(blank)** 5000K[1]
(blank) MVOLT (120V-277V) **(blank)** MVOLT photocell included **(blank)** Bronze
WH White
Accessories: *Order as separate catalog number.*
FCOS M24 Full cutoff shield
FCOS WH M24 Full cutoff shield, white **Notes**
1 Correlated Color Temperature (CCT) shown is nominal per ANSI C78,377-2008.

THE Caves

7-7/8 (20.1)D
9-5/8 (24.4)D
2 (5.1) T
11-1/8 (28.3) W
4-1/2(11.5)Base W

All dimensions are inches (centimeters) unless otherwise indicated.

Outdoor General Purpose

OLW14

LED WALL PACK
OUTDOOR OLW14
OLW14
OUTDOOR: One Lithonia Way, Conyers, GA 30012 Phone: 800-279-8041 Fax: 770-860-3903 www.lithonia.com Rev. 12/19/13

OLW14 LED Wall Pack

PHOTOMETRIC DIAGRAMS

Full photometric data report available within 2 weeks from request. Consult factory. Tested in accordance with IESNA LM-79 and LM-80 standards.

Lithonia Lighting – a LED Surface mounted Bronze OLW14 –Light

THE Caves

Signage: (35)

We will be reusing the current Anderson Sign: Making spaces for upto 6 to 8 tenants

Also, on the buildings within the site signs will be allowed on the door (like a decal)

THE Caves

Parking: (33)

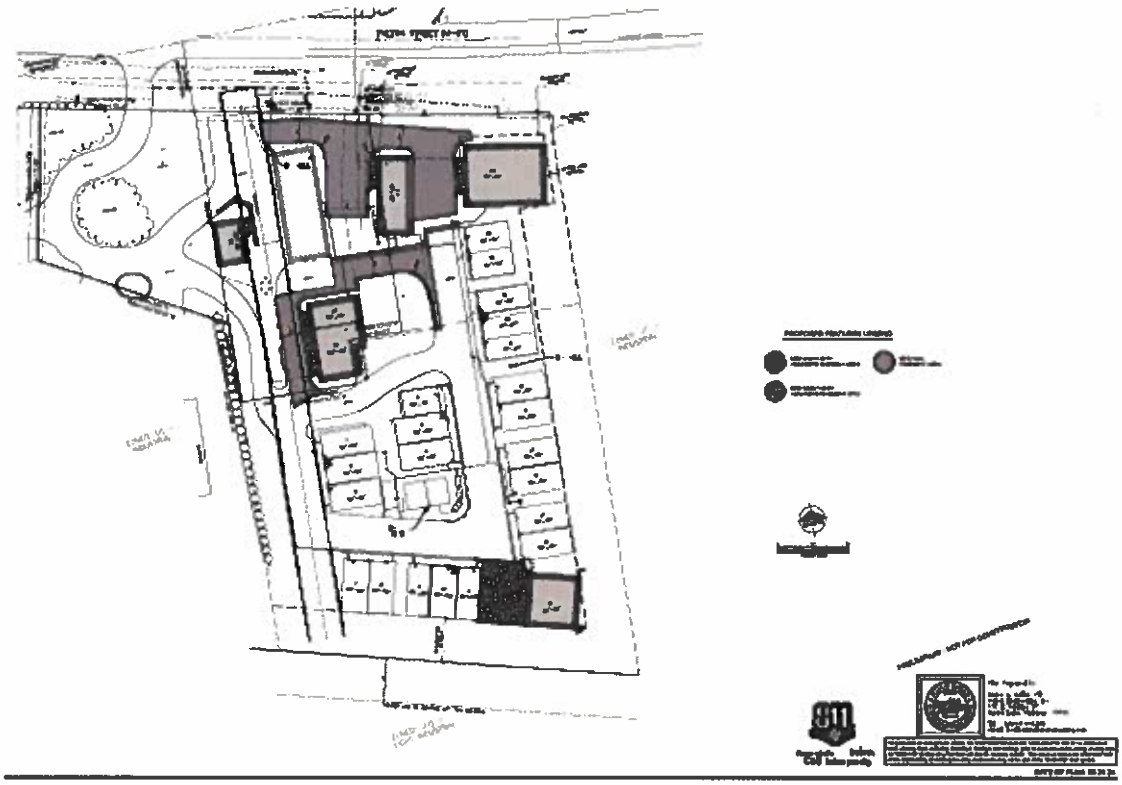
With 30' wide suites each tenant will be allowed to park in front of their suite and shall not infringe on other tenants space, thus yielding a maximum of three spaces per suite. These spaces are not designed for any user requiring more than three parking spaces per suite. No parking lines are planned due to their unsightly nature and the uniqueness of vehicles using the site.

The site is like a village street 60' wide with parking on both sides in front each building front with room for two-way traffic flow.

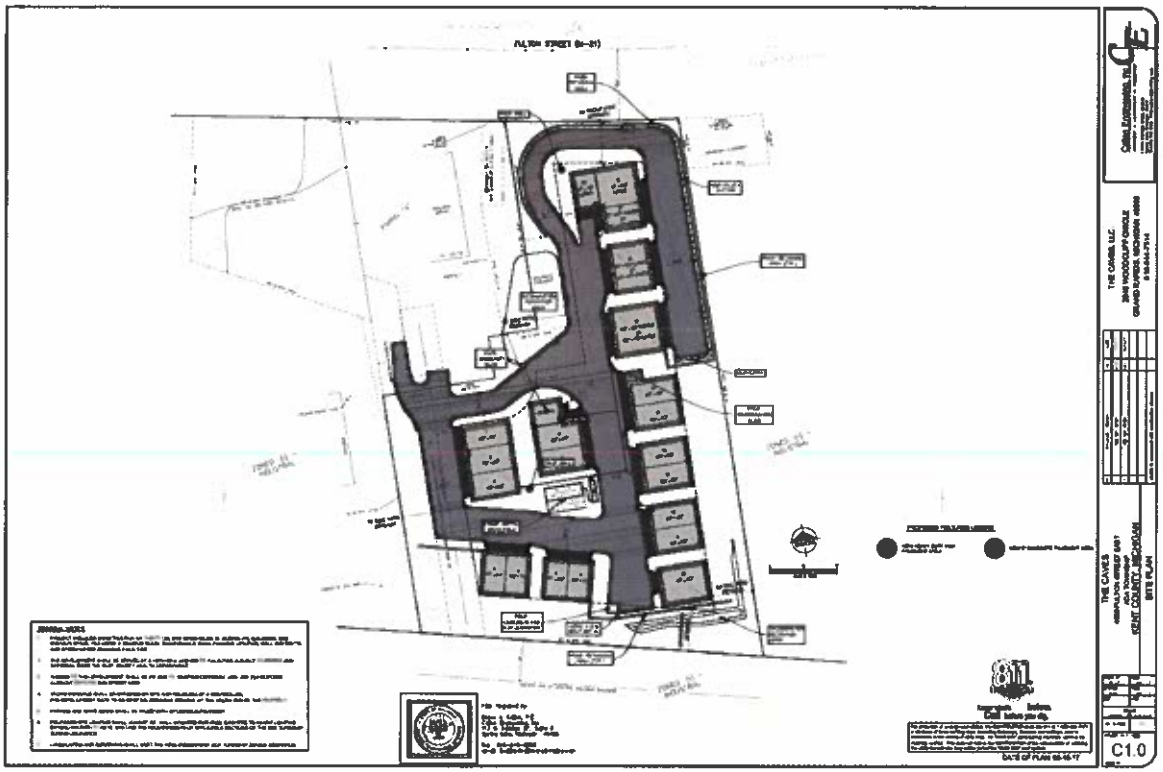
THE Caves

Circle Drive allows for larger vehicles to maneuver the site and the entire site is Barrier-free.

THE Caves



Original Approved site plan



SITE LOCATION MAP

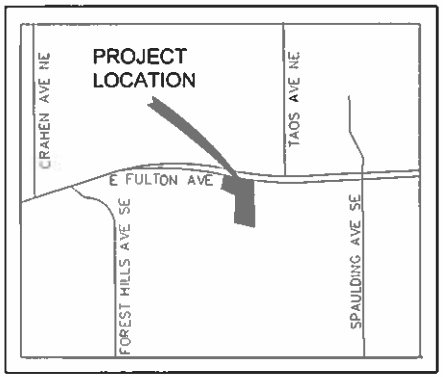
THE CAVES - PHASE 2

GARAGE UNITS

4900 - 4920 FULTON STREET EAST

ADA, MICHIGAN 49301

INDEX OF SHEETS



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BENCH MARKS:

BM1 SPIKE IN SOUTH SIDE OF POWER POLE, SW OF BUILDING #4600, FULTON ST
ELEV 750.67

BM2 NORTHWEST CORNER OF 4' WIDE CONCRETE PAD, ON WEST SIDE, AT MAIN ENTRANCE TO BUILDING #4600 FULTON ST
ELEV 762.61'

PROJECT LOCATION

SECTION 30, T7N, R10W,
ADA TOWNSHIP,
KENT COUNTY, MICHIGAN

OWNER

THE CAVES, LLC
2946 WOODCLIFF CIRCLE
GRAND RAPIDS, MICHIGAN 49506
PHONE: 616-644-7514

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By
Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456
Tel: 616-414-5260
email: bcallen@callenengineering.com

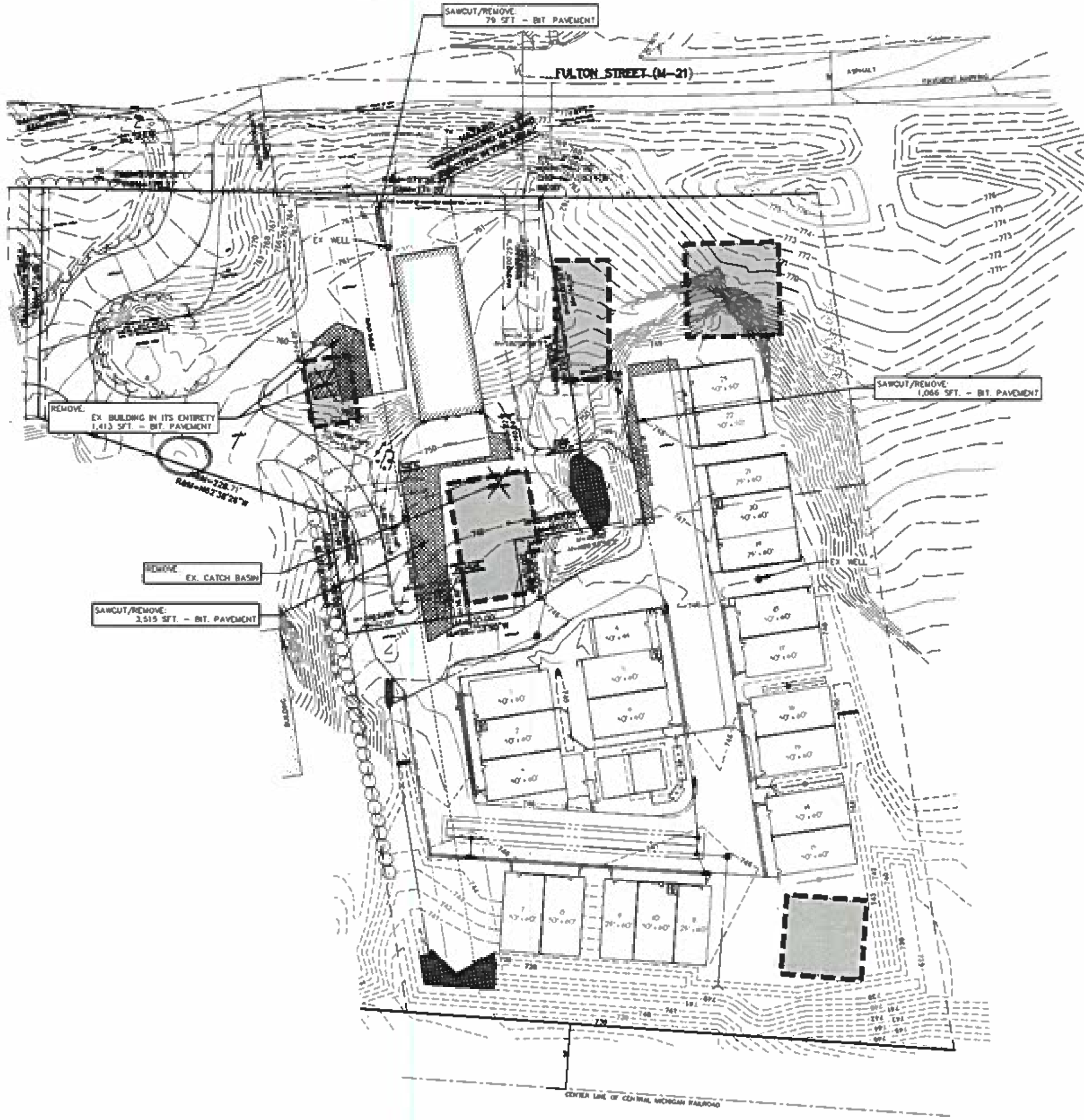
DATE OF PLAN: 04-05-24

ISSUANCES
SITE PLAN REVIEW 04-05-24
REVISIONS
DESIGNED BY:

callen civil engineers
Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

Drawn by J.W.C.
Engineer B.A.C. Check A.J.B.

Callen Engineering Project No: 023 - REED - THE CAVES PHASE 2
Sheet No: CS



Property Address 1
4900 Fulton St. SE
Ada Township, Michigan 49301

Property Address 2
4920 Fulton St. SE
Ada Township, Michigan 49301

Parcel Numbers
41-15-30-300-019
41-15-30-300-020

Property Description 1
411530300019 PART OF SWFRL 1/4 COM 880.0 FT N 87D 20M 26S E ALONG E&W 1/4 LINE & 80.66 FT S 0D 08M 05S E TO S LINE OF HWY M-21 FROM W 1/4 COR TH S 78D 58M 24S E ALONG SD S LINE 171.20 FT TH ELY 26.90 FT ALONG A 3905.20 FT RAD CURVE TO LT ALONG CHORD BEARS S 80D 10M 14S E 26.90 FT/ TH S 0D 08M 05S E 250.07 FT TH S 88D 53M 55S W 40.02 FT TH S 0D 08M 05S E 50.0 FT TH S 89D 53M 55S W 135.0 FT TH N 0D 08M 05S W 90.87 FT TH N 43D 38M 28S W 226.71 FT TH N 10D 01M 30S E 172.88 FT TO S LINE OF HWY M-21 TH S 78D 58M 24S E ALONG SD S LINE 175.27 FT TO BEG * SEC 30 T7N R10W 2.27 A. SPLIT ON 07/31/2007 FROM 41-15-30-300-011, 41-15-30-300-015. SPLIT/COMBINED ON 10/13/2016 FROM 41-15-30-300-017.

Property Description 2
411530300020 PART OF SWFRL 1/4 COM 880.0 FT N 87D 20M 26S E ALONG E&W 1/4 LINE & 416.37 FT S 0D 08M 05S E FROM W 1/4 COR TH N 89D 53M 55S E 135.0 FT TH N 0D 08M 05S W 50.0 FT TH N 89D 53M 55S E 40.02 FT TH N 0D 08M 05S W 250.07 FT TO S LINE OF HWY M-21 TH ELY 207.40 FT ALONG A 3905.20 FT RAD CURVE TO LT ALONG CHORD BEARS S 81D 53M 22S E 207.38 FT/ TH S 0D 08M 05S E 460.87 FT TH N 77D 08M 20S W ALONG N LINE OF CENTRAL MICHIGAN RR R/W 410.85 FT TH N 0D 08M 05S W 287.0 FT TO BEG * SEC 30 T7N R10W 4.48 A. SPLIT ON 07/31/2007 FROM 41-15-30-300-011, 41-15-30-300-015. SPLIT/COMBINED ON 10/13/2016 FROM 41-15-30-300-017.

Property Owner
Reed Investment Group, LLC
2946 Woodcliff Circle
Grand Rapids, Michigan 49506

Acreage Property 1
2.26 Acres (98,446 SFT)

Acreage Property 2
4.48 Acres (195,149 SFT)

Property 1 Zoning
Industrial

Setbacks
Front 50 ft
Side 50 ft
Rear 50 ft

Maximum Allowable Building Height 65 ft

Property 2 Zoning
Industrial / PUD

Setbacks
Front 50 ft
Side 50 ft
Rear 50 ft

Maximum Allowable Building Height 65 ft

NORTH

SCALE IN FEET

REMOVALS LEGEND

- PROPOSED BUILDING FOOTPRINT
- PAVEMENT REMOVAL AREA
- CONCRETE REMOVAL AREA
- X REMOVAL ITEM

PRELIMINARY - NOT FOR CONSTRUCTION

811 Know what's below. Call before you dig.

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Bruce A. Callen, PE
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108 E. Savidge St.
Spring Lake, Michigan 49456
Tel 616-414-5260
email bcallen@callenengineering.com

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DATE OF PLAN: 04-05-24

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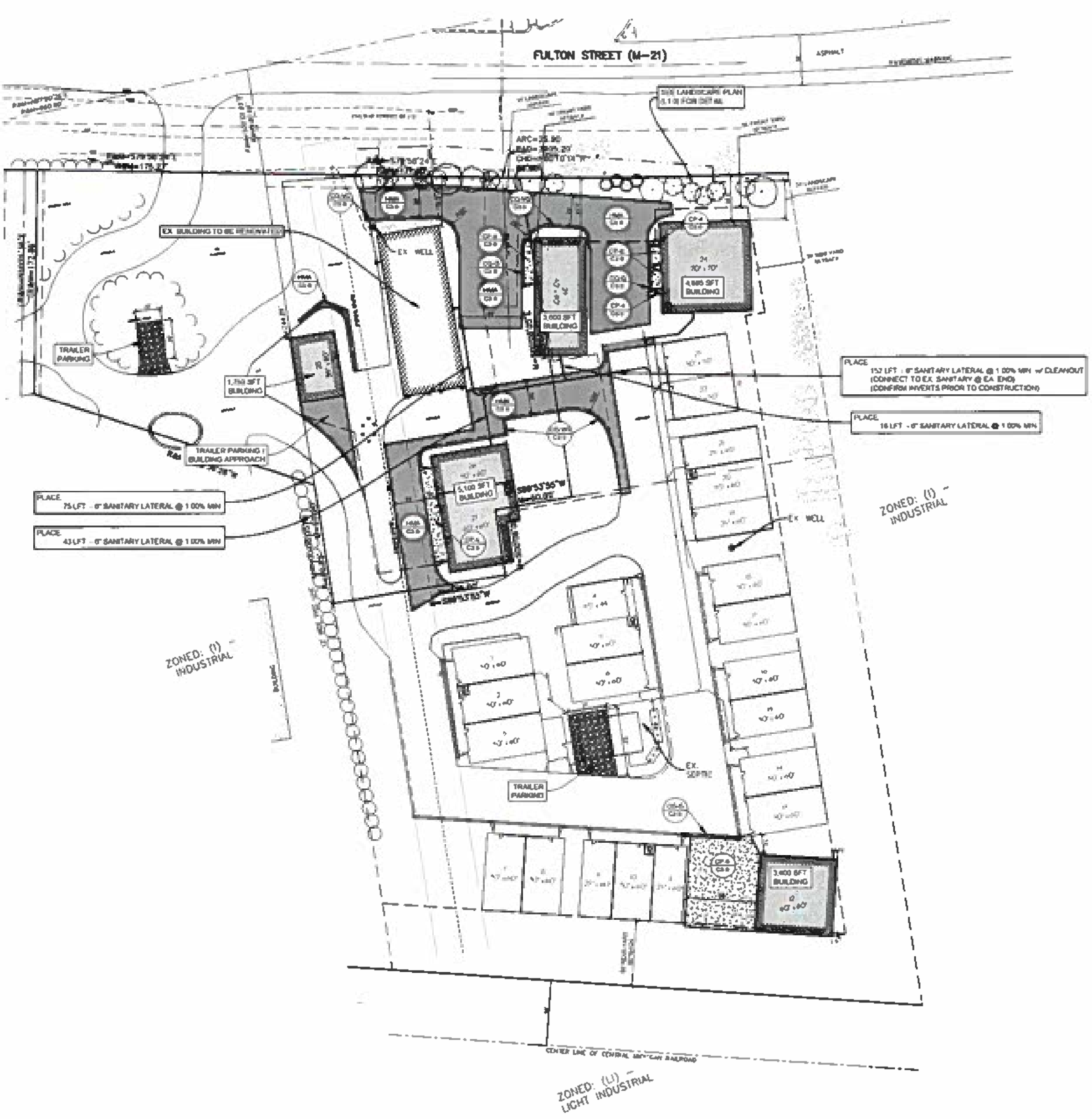
www.callenengineering.com
callen civil engineers

THE CAVES, LLC.
2946 WOODCLIFF CIRCLE
GRAND RAPIDS, MICHIGAN 49506
616-644-7514

THE CAVES - PHASE 2
4900 FULTON STREET EAST
ADA TOWNSHIP
KENT COUNTY, MICHIGAN
EX. CONDITIONS PLAN

SCALE: AS NOTED
SHEET NO. C0.1



GENERAL NOTES

1. PROJECT INCLUDES CONSTRUCTION OF SEVEN (7) GARAGE UNITS IN FIVE (5) SINGLE-STORY BUILDINGS, PARKING, UTILITIES, WELL AND SEPTIC AND STORM WATER DRAINAGE FACILITIES.
2. THE DEVELOPMENT SHALL BE SERVED BY EXISTING WELL AND SEPTIC FACILITIES.
3. ACCESS TO THE DEVELOPMENT SHALL BE VIA ONE (1) EXISTING DRIVEWAY ONTO FULTON STREET EAST
4. STORM DRAINAGE SHALL BE DETAINED ON SITE AND RELEASED AT A CONTROLLED PRE-DEVELOPMENT RATE TO AN EXISTING DRAINAGE COURSE AT THE SOUTH END OF THE PROPERTY
5. PARKING AND DRIVE AREAS SHALL BE PAVED WITH BITUMINOUS PAVEMENT.
6. PROPOSED SITE LIGHTING SHALL CONSIST OF WALL-MOUNTED FIXTURES, DIRECTED TO INHIBIT LIGHTING BEYOND PROPERTY LIMITS MEETING THE REQUIREMENTS OF APPLICABLE SECTIONS OF THE ADA TOWNSHIP ZONING ORDINANCE.
7. LANDSCAPING AND SCREENING SHALL MEET THE REQUIREMENTS OF ADA TOWNSHIP ZONING ORDINANCE

LAND USE TABLE

TOTAL LAND AREA. 294,026 SFT 6.75 ACRES
IMPERVIOUS AREA 161,202 SFT 54.8%
PERVIOUS AREA 132,824 SFT 45.2%

IMPERVIOUS AREA						PERVIOUS AREA		
BUILDINGS		PAVEMENTS		SIDEWALKS		LANDSCAPED AND LAWN AREA		
65,440	SFT	87,045	SFT	8,717	SFT		132,824	SFT
72.5	%	28.6	%	3.0	%		45.2	%

PROPOSED FEATURES LEGEND

NEW LIGHT DUTY CONCRETE SIDEWALK AREA
NEW HMA PAVEMENT AREA
NEW HEAVY DUTY CONCRETE PAVEMENT AREA
CRUSHED ASPHALT SURFACE AREA

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callen civil engineers

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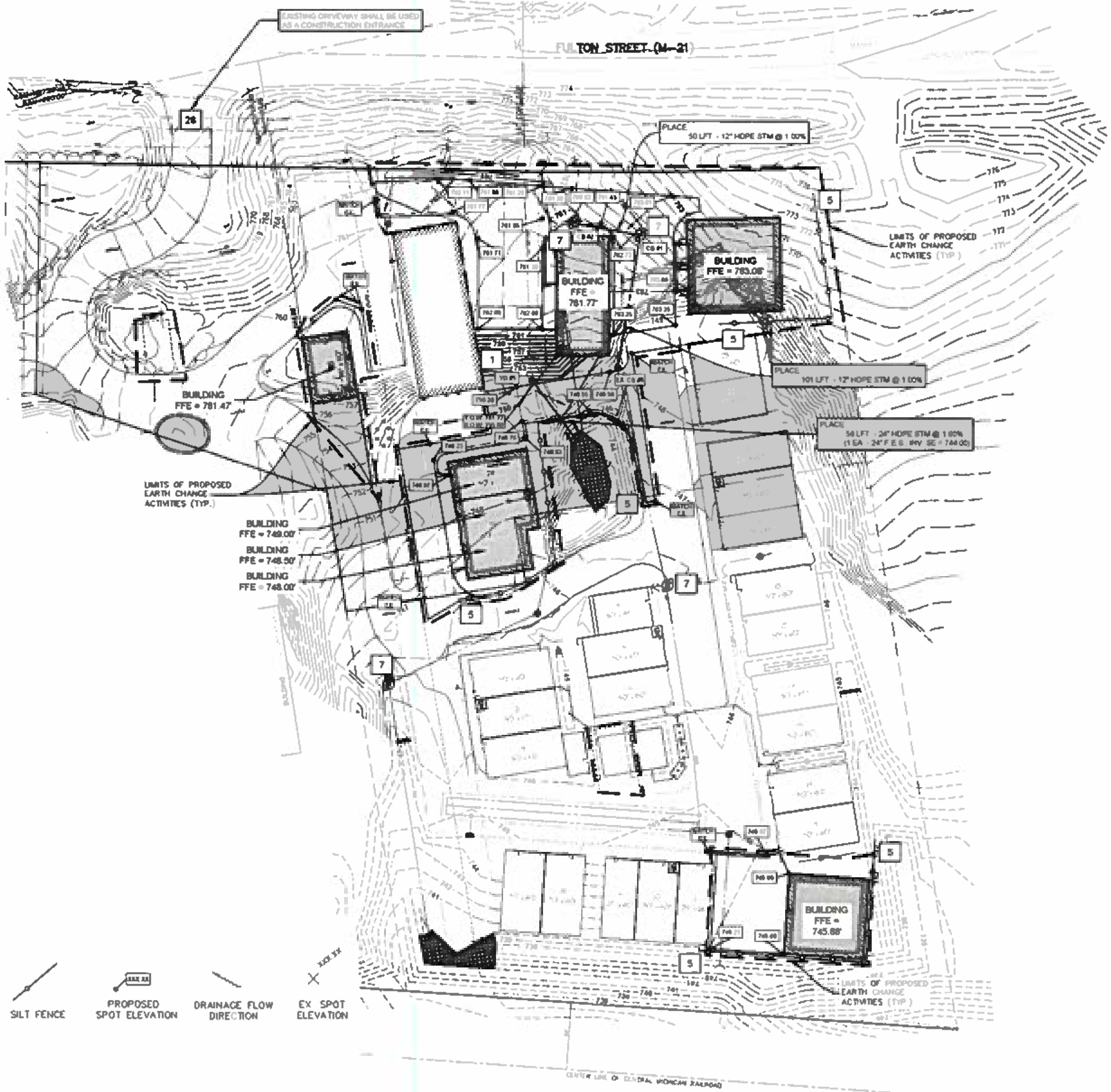
GRAND RAPIDS, MICHIGAN 49506
616-644-7514

THE CAVES - PHASE 2
4900 FULTON STREET EAST
ADA TOWNSHIP
KENT COUNTY, MICHIGAN
SITE PLAN

DRAWN BY JWC AUG. '23
DESIGNED BY BAC AUG. '23
SCALE AS NOTED
C1.0



SUBSURFACE CONDITIONS

Contractor(s) shall familiarize themselves with the information and findings presented in the Geotechnical Evaluation Report prepared by Soils & Structures dated Jun. 29, 2016 Soils & Structures Project No. 2016.0604

EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
	Seeding		[illegible]
	Mulch		[illegible]
4	Trees, Shrubs, Vines and Ground Cover		[illegible]
5	Perimeter Sediment Control Measures (Silt Fence, Straw Wattles, etc.)		[illegible]
7	Storm Drain Inlet Protection		[illegible]
28	Stone Construction Access		[illegible]

*SESC MEASURES SHALL COMPLY WITH MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SESC MANUAL SPECIFICATIONS

STORM STRUCTURE NOTES

STORM SEWER LENGTHS PROVIDED ARE MEASURED FROM CENTER OF STRUCTURE. RIM ELEVATIONS ARE MEASURED AT EDGE OF METAL.

STORM SEWER SHALL BE WATER-TIGHT, SOLID-WALL HDPE OR APPROVED EQUAL, UNLESS INDICATED ON THE PLANS.

MANHOLES AND CATCH BASINS SHALL BE IN ACCORDANCE WITH MDOT STANDARD SPECIFICATIONS. CATCH BASINS SHALL INCLUDE 2-FT SUMP.

CONNECTIONS TO MANHOLES SHALL BE MADE WITH A RESILIENT CONNECTOR FOR PIPE DIAMETERS 24 INCHES OR LESS.

MANHOLE RIM ELEVATIONS SHALL BE SET 1/4" BELOW PLAN GRADE.

CATCH BASIN RIM ELEVATIONS SHALL BE SET 1 1/2" BELOW PLAN GRADE.

ALL CURB DIMENSIONS ARE MEASURED FROM EDGE OF METAL.

THE CONTRACTOR SHALL EXPOSE AND VERIFY LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CONFLICTS IN GRADES SHALL BE REPORTED TO ENGINEER AND ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO OWNER.

SESC NOTES

TOTAL DISTURBED AREA: 79,144 SFT (1.82 ACRES)

ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THE SITE PLAN MAY BE NECESSARY AS SITE WORK PROGRESSES. PERMITTEE IS RESPONSIBLE FOR ALL MEASURES NECESSARY TO PREVENT OFF-SITE SEDIMENTATION.

GEOTEXTILE SILT FENCE AND ALL CATCH BASIN PROTECTION MEASURES SHALL BE PROPERLY PLACED AS SHOWN ON PLANS AND AS NEEDED TO RETAIN SOILS ONSITE. PERIODIC MAINTENANCE AND INSPECTION OF SESC MEASURES IS REQUIRED FOR PROPER EFFECTIVENESS.

STABILIZE SITE AS SOON AS POSSIBLE.

STORM STRUCTURE SCHEDULE (THIS SHEET)

CB#1 (4' DIA) RIM = 760.82 FT
(COVER: EJIW 1045 W/ M1 GRATE OR A.E.)
12" INV. (NW) = 756.62 FT (SOLID WALL HDPE @ 1.00%)
12" INV. (SW) = 744.61 FT (SOLID WALL HDPE @ 1.00%)

CB#2 (2' DIA) RIM = 760.82 FT
(COVER: EJIW MDOT R-15 W/ TYPE K COVER OR A.E.)
12" INV. (SE) = 757.32 FT (SOLID WALL HDPE @ 1.00%)

EX. CB#5
REPLACE CASTING W/ EJIW 1045 W/ SOLID COVER OR A.E.
12" INV. (NE) = 743.60 FT (SOLID WALL HDPE @ 1.00%)
EX. 15" INV. (S) = 743.50 FT
(CONFIRM INVERTS PRIOR TO CONSTRUCTION)

YCB#1 (4' DIA.) RIM = 749.80 FT
(EJIW 1045Z W/ O2 GRATE (BEEHIVE) OR A.E.)
24" INV. (SE) = 744.80 FT (SOLID WALL HDPE @ 1.00%)

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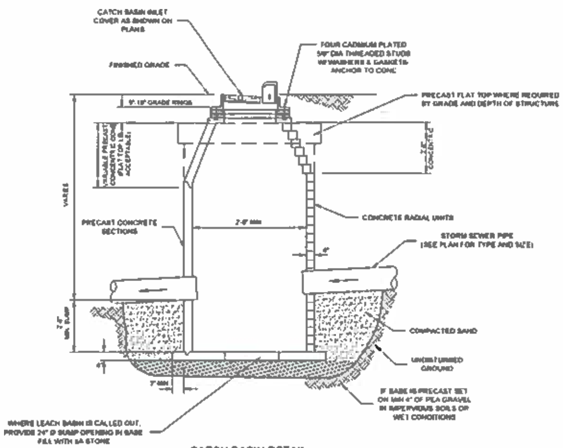
ADA TOWNSHIP
KENT COUNTY, MICHIGAN

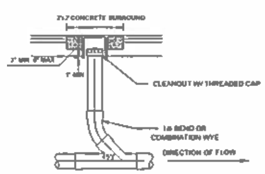
GRADING, DRAINAGE AND SESC PLAN

SCALE: AS NOTED
SHEET NO. C2.0



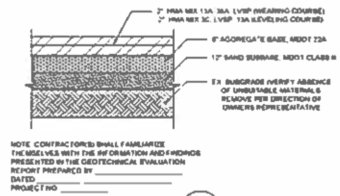
CATCH BASIN DETAIL

NO SCALE



SANITARY LATERAL CLEAN-OUT

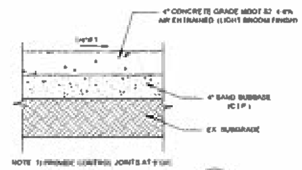
NO SCALE



NOTE: CONTRACTOR(S) SHALL FAMILIARIZE THEMSELVES WITH THE INFORMATION AND FINDINGS PRESENTED IN THE GEOTECHNICAL EVALUATION REPORT PREPARED BY ______ DATED ______ PROJECT NO ______

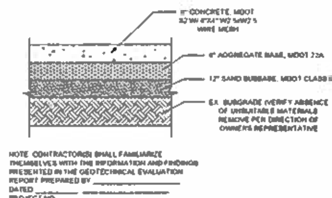
HMA PAVEMENT SECTION (HMA)

NO SCALE



CONCRETE SIDEWALK SECTION (CP-4)

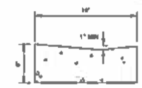
NO SCALE



NOTE: CONTRACTOR(S) SHALL FAMILIARIZE THEMSELVES WITH THE INFORMATION AND FINDINGS PRESENTED IN THE GEOTECHNICAL EVALUATION REPORT PREPARED BY ______ DATED ______ PROJECT NO ______

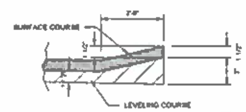
6" CONCRETE PAVEMENT SECTION (CP-6)

NO SCALE



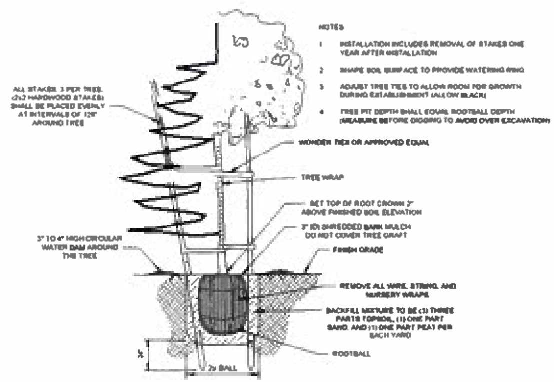
GUTTER DETAIL (CG-G)

NO SCALE



VALLEY GUTTER, HMA DETAIL (CG-VG)

NO SCALE



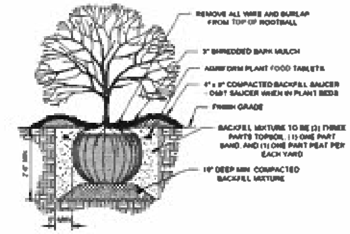
NOTES

1. INSTALLATION INCLUDES REMOVAL OF STAKES ONE YEAR AFTER INSTALLATION
2. SHAPE SOIL SURFACE TO PROVIDE WATERING RING
3. ADJUST TREE TIES TO ALLOW ROOM FOR GROWTH DURING ESTABLISHMENT (ALLOW SLACK)
4. TREE PIT DEPTH SHALL EQUAL ROOTBALL DEPTH (MEASURE BEFORE DIGGING TO AVOID OVER EXCAVATION)

21 GRAM "AGRIFORM" PLANTING TABLETS AS FOLLOWS
2 TABLETS PER 1 GAL. PLANT
3 TABLETS PER 5 GAL. PLANT
4 TABLETS PER 15 GAL. PLANT
LARGER PLANTS (2) TWO TABLETS PER 1/2" DIAM. OF TRUNK CALIPER

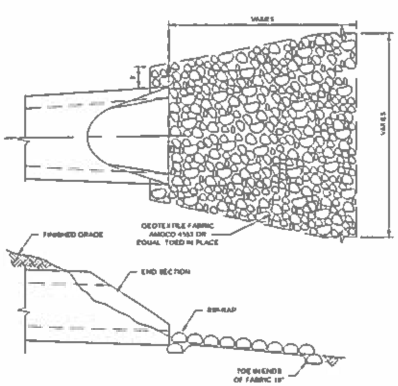
TYPICAL - TREE STAKING

NO SCALE



SHRUB INSTALLATION

NO SCALE



FLARED END SECTION DETAIL

NO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By
Bruce A. Callen, PE
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108 E. Savidge St.
Spring Lake, Michigan 49456
Tel. 616-414-5260
email: bcallen@callenengineering.com

811 Know what's below. Call before you dig.

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.

DATE OF PLAN: 02-21-24

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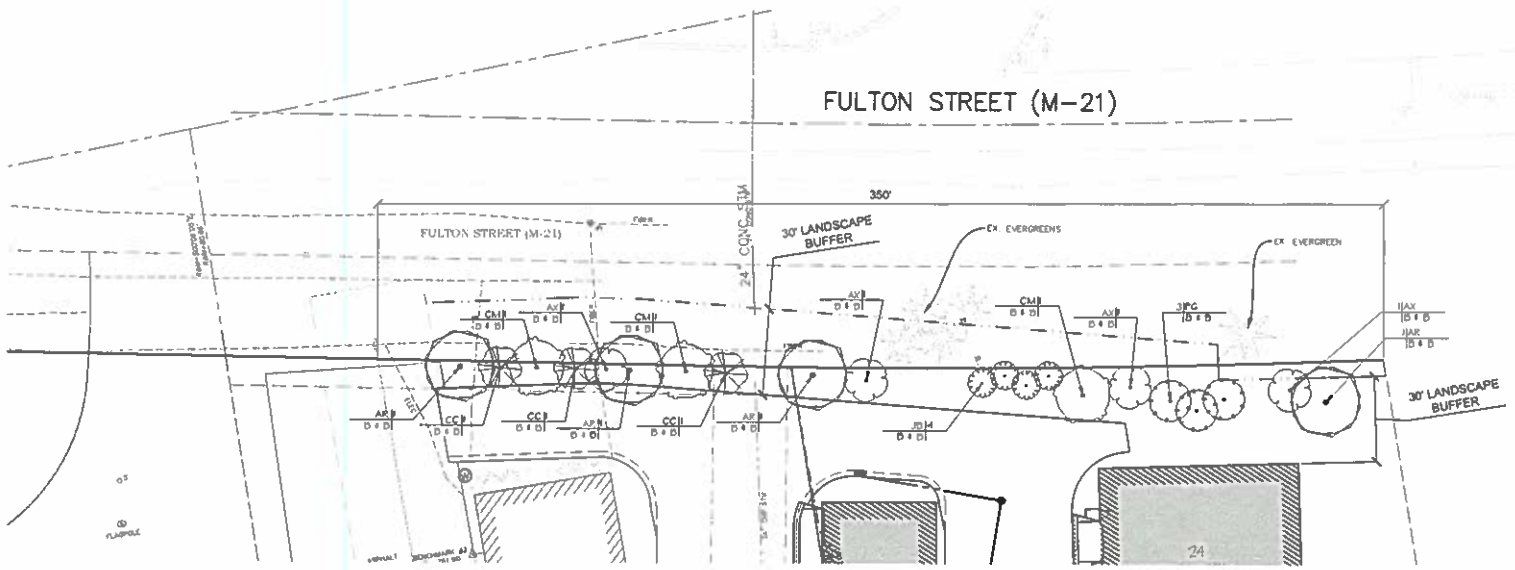
callen civil engineers

THE CAVES, LLC.
2946 WOODCLIFF CIRCLE
GRAND RAPIDS, MICHIGAN 49506
616-644-7514

THE CAVES - PHASE 2
4900 FULTON STREET EAST
ADA TOWNSHIP
KENT COUNTY, MICHIGAN
X-SECTIONS, NOTES AND DETAILS

DRAWN BY J.W.E.	DATE AUG '23
CHECKED B.A.C.	DATE AUG '23
SCALE AS NOTED	

C3.0



PLANT SCHEDULE

TREES	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE		QTY
	AR	Acer rubrum 'Columnare' / Columnare Red Maple	B & B	2.5" Cal			4
	AX	Amelanchier x grandiflora 'Autumn Brilliance' / 'Autumn Brilliance' Serviceberry	B & B	2" Cal			4
	CM	Celtis occidentalis 'Magnifica' / Magnifica Hackberry	B & B	2.5" Cal			3
	CC	Cercis canadensis / Eastern Redbud	B & B	2" Cal			3
	JB	Juniperus chinensis 'Blue Point' / Blue Point Juniper	B & B	2" Cal			4
	PG	Picea glauca 'Densata' / Black Hills Spruce	B & B		Min. 7' Ht		3

LANDSCAPE NOTES

1. ALL PLANTING BEDS SHALL RECEIVE 4" OF EVENLY SPREAD SHREDDED HARDWOOD BARK MULCH OVER 4" OF TOPSOIL. MULCH BLANKET SHALL BE PLACED AT ALL LOCATIONS WITH SLOPES 1:3 OR STEEPER. NO MULCH SHALL BE PLACED IN DETENTION / RETENTION BASIN BOTTOM AREA
2. CONTRACTOR SHALL NOTIFY "MISS DIG" TO LOCATE ANY UNDERGROUND UTILITY LINES OR STRUCTURES PRIOR TO STARTING CONSTRUCTION
3. CONTRACTOR SHALL PROVIDE SPECIFIED SHRUBS, GROUNDCOVERS AND OTHER PLANT MATERIALS THAT COMPLY WITH ALL RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". PLANT MATERIAL SHALL BE CERTIFIED TO BE HARDY TO KENT COUNTY, FREE OF DISEASE AND INSECTS AND BE HEALTHY, VIGOROUS STOCK, GROWN WITH GOOD HORTICULTURAL PRACTICE AND INSTALLED IN ACCORDANCE WITH METHODS ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL LANDSCAPING SHALL BE MAINTAINED IN A HEALTHY, NEAT AND ORDERLY STATE, FREE FROM REFUSE AND DEBRIS. ANY DEAD OR DISEASED PLANTS SHALL BE REPLACED.
4. ALL LANDSCAPE BEDS AND MULCH BORDERS ADJACENT TO LAWN AREAS SHALL HAVE A METAL EDGE UNLESS SPECIFIED OTHERWISE.
5. SEED SHALL BE PLACED OVER 4" OF TOPSOIL IN ALL PROPOSED LAWN AREAS AND ALL AREAS DISTURBED BY CONSTRUCTION WITH SLOPES LESS THAN 1:3.
   SEED MIXES SHALL BE AS FOLLOWS:
   10% TALL FESCUE
   20% PERENNIAL RYE GRASS
   30% CREEPING RED FESCUE
   40% KENTUCKY BLUEGRASS
   @ 6 LBS PER 1000 SFT
   SEED MIXES SHALL BE DROUGHT TOLERANT @ 6 LBS PER 1,000 SFT
6. ALL PLANTINGS AND LANDSCAPE IMPROVEMENTS SHALL BE CONSISTENT WITH LOCAL ZONING REQUIREMENTS

LANDSCAPE DATA

GREENBELT LANDSCAPE

CANOPY TREES
- TOTAL FRONTAGE: 350 LFT
- TREES REQ. (2 TREES / 100 LFT. FRONTAGE) = 7 TREES
- TREES PROVIDED: 7 TREES

UNDERSTORY TREES
- TOTAL FRONTAGE: 350 LFT
- TREES REQ. (2 TREES / 100 LFT. FRONTAGE) = 7 TREES
- TREES PROVIDED: 7 TREES

EVERGREEN TREES
- TOTAL FRONTAGE: 350 LFT
- TREES REQ. (2 TREES / 100 LFT. FRONTAGE) = 7 TREES
- TREES PROVIDED: 7 TREES

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DATE OF PLAN: 04-05-24

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KENT COUNTY, MICHIGAN
LANDSCAPE PLAN

DRAWN BY	DATE
A.W.	AUG. '23
CHECKED BY	DATE
B.A.C.	AUG. '23
SCALE	
AS NOTED	1:1
PROJECT NO.	SHEET NO.
023 REED - THE CAVES PH2	L1.0