AGENDA

REGULAR MEETING OF THE PLANNING COMMISSION

Monday, June 01, 2026

6:30 PM

Village Hall – 21 East Church Street, Lake Orion, MI 48362

(248) 693-8391 ext. 102

REQUIREMENTS FOR PUBLIC COMMENT:

Anyone that would like to make a public comment at any point during the meeting must first sign the "Sign In" sheet located near the main entrance door.

Prior to making any comment a member of the audience MUST first state your name and address for the record.

1. **Call to Order**
2. **Pledge of Allegiance**
3. **Roll Call and Determination of Quorum**
4. **Approval of Agenda**
5. **Election of New Officers**
   - **A.** Election of Officers
6. **Taking of Chair by New Chairperson**
7. **Approval of Minutes**
   - **A.** Approval of May 4, 2026, Planning Commission Regular Meeting Minutes
8. **Public Comments on Non-Agenda Items Only**
9. **Public Hearing**
   - **A.** Public Hearing: Lumber Yard at Paint Creek PUD Preliminary Plan Review
10. **Old Business**

A. Discussion on Accessory Mechanical Units Regulations Article 13.11.E

11. New Business

A. Site Plan Extension Approval of Moceri Starboard Orion

B. Lumber Yard at Paint Creek PUD Preliminary Plan Review

C. Monthly Planning and Zoning Report – May 2026

12. Commissioners' Comments Regarding Planning and Zoning Matters

13. Next Regular Meeting - July 6, 2026

14. Adjournment

In the spirit of compliance with the Americans with Disabilities Act, individuals with a disability should feel free to contact the Village, at least three (3) business days in advance of the meeting, if requesting accommodations. The Village of Lake Orion will provide foreign language or hearing impaired interpretation services for those individuals who contact the village to request such services at least seven (7) days prior to the meeting.

En el espíritu de la observancia de la Ley de Estadounidenses con Discapacidades, las personas con discapacidad debe sentirse libre para ponerse en contacto con el pueblo, por lo menos tres (3) días hábiles de antelación a la fecha de la reunión, si se solicitan alojamiento. El municipio de Lake Orion proporcionará idioma extranjero o personas con problemas de audición servicios de interpretación para las personas que se ponen en contacto con el pueblo de solicitar dichos servicios con no menos de siete (7) días antes de la reunión.

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: June 1, 2026

TOPIC: Election of Officers

BACKGROUND BRIEF:

According to the Bylaws and Rules of Procedure, the Planning Commission is responsible for electing its officers (Chairperson, Vice Chairperson, and Secretary) from among its members the first Regular Meeting in May. The Commission may also create and fill other offices as deemed necessary.

The current officers of the Planning Commission are:

- **Chairperson**: Jim Zsenyuk
- **Vice Chairperson**: Ed Sabol
- **Secretary**: Hank Lorant

The election process is as follows:

- Open nominations for an officer position (nominations do not require a second).
- Accept nominations for that office.
- Close nominations.
- Vote on the nominees.

If only one person is nominated for a position, a motion may be made and seconded to close nominations and cast a unanimous ballot for the nominated individual. Alternatively, a slate of officers may be created (if only one person is nominated for each position), and the entire slate can be voted on with a single motion.

RECOMMENDED MOTION:

To elect _____ as Chairperson of the Planning Commission, with a term expiring on April 30, 2027, with the opportunity for re-election, and the position to be elected annually at the first regular meeting in May, with the Chairperson holding office until a successor is elected and assumes office.

To elect _____ as Vice Chairperson of the Planning Commission, with a term expiring on April 30, 2027, with the opportunity for re-election, and the position to be elected annually at the first regular meeting in May, with the Vice Chairperson holding office until a successor is elected and assumes office.

To elect _____ as Secretary of the Planning Commission, with a term expiring on April 30, 2027, with the opportunity for re-election, and the position to be elected annually at the first regular meeting in May, with the Vice Chairperson holding office until a successor is elected and assumes office.

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: June 1, 2026

TOPIC Approval of May 4, 2026, Planning Commission Regular Meeting Minutes

RECOMMENDED MOTION: To approve the May 4, 2026, Planning Commission Regular Meeting Minutes, as presented.

MINUTES

REGULAR MEETING OF THE PLANNING COMMISSION

Monday, May 04, 2026

6:30 PM

Village Hall – 21 East Church Street, Lake Orion, MI 48362

(248) 693-8391 ext. 102

1. Call to Order

The Monday, May 4, 2026 Regular Meeting of the Lake Orion Planning Commission was called to order by Clerk/Treasurer Stout at 6:30 p.m.

MOTION made by Village Council President Rutt, Seconded by Secretary Lorant to nominate Larry Dunn as the chairman for the Monday, May 4, 2026 regular meeting.

AYES:	Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS:	None
ABSENT:	Zsenyuk, Sabol, Lamb
MOTION:	Carried

2. Pledge of Allegiance

3. Roll Call and Determination of Quorum

PRESENT
Secretary Hank Lorant
Commissioner Larry Dunn
Commissioner James Barry
Village Council President Teresa Rutt
Commissioner/Administrative Official Darwin McClary
Commissioner Matt Craig

ABSENT
Chairperson James Zsenyuk
Vice Chairperson Edward Sabol
Village Council Member Michael Lamb

STAFF PRESENT
Planning and Zoning Coordinator Jake VanBoxel
Clerk/Treasurer Sonja Stout

4. Approval of Agenda

MOTION made by Secretary Lorant, Seconded by Village Council President Rutt to approve the agenda for the May 4, 2026 Planning Commission Regular Meeting, as presented.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

5. Approval of Minutes

A. Approval of April 6, 2026, Planning Commission Regular Meeting Minutes

MOTION made by Secretary Lorant, Seconded by Village Council President Rutt to approve the April 6, 2026 Planning Commission Regular Meeting Minutes, as presented.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

6. Public Comments on Non-Agenda Items Only

None.

7. Public Hearing

A. Proposed Amendments to Village of Lake Orion 2002-2022 Master Plan - Strategic Action Plan Amendments

MOTION made by Village Council President Rutt, Seconded by Secretary Lorant to open the public hearing concerning the Proposed Amendments to Village of Lake Orion 2002-2022 Master Plan - Strategic Action Plan Amendments.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

The Public Hearing opened at 6:33 PM.

MOTION made by Secretary Lorant, Seconded by Commissioner Craig to close the public hearing concerning the Proposed Amendments to Village of Lake Orion

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

The Public Hearing closed at 6:34 PM.

8. Old Business

9. New Business

A. Proposed Amendments to Village of Lake Orion 2002-2022 Master Plan - Strategic Action Plan Amendments

MOTION made by Commissioner/Administrative Official McClary, Seconded by Secretary Lorant to adopt the Proposed Amendments to Village of Lake Orion 2002-2022 Master Plan - Strategic Action Plan Amendments.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

B. Site Plan Extension Approval of Constellation Bay

Jake VanBoxel, Planning and Zoning Coordinator, reported that the Site Plan Approval for Constellation Bay, owned by Moceri Companies, LLC, is set to expire on June 18, 2026. He noted that the applicant submitted a letter requesting an extension (included in the packet), that the development team continues to make progress, and that the Planner recommends extending the site plan approval.

MOTION made by Commissioner/Administrative Official McClary, Seconded by Secretary Lorant to approve the request for site plan approval extension for Constellation Bay by 12 months, for an expiration date of June 18, 2027.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

C. 48 and 52 Highland Ave – Lot Combination Application

Jake VanBoxel, Planning and Zoning Coordinator, reported that the applicant, Ed Sabol, on behalf of property owner John Gehrke, is requesting a lot combination for 48 and 52 Highland Avenue. He noted that a demolition permit is on file for 52 Highland Avenue and that combining the two nonconforming lots would result in a conforming lot. The request was recommended for conditional approval to Village Council.

MOTION made by Village Council President Rutt, Seconded by Commissioner Barry to recommend conditional approval to Village Council for the proposed land combination 48 & 52 Highland Ave, contingent upon the payment of all outstanding utility bills.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

D. Discussion on Accessory Mechanical Units Regulations Article 13.11.E

Jake VanBoxel, Planning and Zoning Coordinator, also introduced a discussion on Accessory Mechanical Units following resident complaints, seeking feedback from the Planning Commission. Commissioners expressed concerns regarding the ambiguity of setback measurements, difficulty in enforcing decibel limits, and potential impacts on egress windows. Several members suggested eliminating decibel standards, limiting generator use to power outages, and establishing reasonable maintenance or testing parameters. Additional concerns included placement considerations for lakefront properties.

Following discussion, Jake VanBoxel, Planning and Zoning Coordinator, reiterated the Planning Commission's feedback for further ordinance review, including whether to increase or eliminate decibel level standards for accessory mechanical units. He noted that if decibel limits are retained, a clear and enforceable process for measuring and documenting compliance should be established. Additional considerations included whether to prohibit placement near or require adjustments for egress windows, establish defined timeframes for testing and routine maintenance, and limit generator operation primarily to power outage situations with allowances for scheduled maintenance testing.

He also raised the possibility of creating exceptions or modified standards for residential lakefront properties, where typical front and rear yard configurations may differ, as well as the need to clarify how required distances and setbacks are measured to ensure consistency and enforceability within the ordinance.

E. Monthly Planning and Zoning Report – March and April 2026

Mr. VanBoxel referenced updates included in the Planning and Zoning report within the agenda packet

MOTION made by Village Council President Rutt, Seconded by Secretary Lorant to receive and file the March and April 2026 Monthly Planning and Zoning Report.

AYES:	Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS:	None
ABSENT:	Zsenyuk, Sabol, Lamb
MOTION:	Carried

10. Commissioners' Comments Regarding Planning and Zoning Matters

Commissioner/Administrative Official Darwin McClary reported that Village Council has requested a review and recommendation regarding potential consolidation of the Downtown Development Authority Board with the Planning Commission, and that he will seek commissioner feedback. He also noted that the Capital Improvement Plan review should be completed and on the June agenda for Planning Commission.

11. Next Regular Meeting - June 1, 2026

12. Adjournment

MOTION made by Secretary Lorant, Seconded by Commissioner Barry to adjourn the May 4, 2026 Regular Planning Commission meeting at 7:03 PM.

AYES: Lorant, Dunn, Barry, Rutt, McClary, Craig
NAYS: None
ABSENT: Zsenyuk, Sabol, Lamb
MOTION: Carried

_____
Henry Lorant
Secretary

_____
Sonja Stout
Clerk/Treasurer

Date Approved: June 1, 2026

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: June 1, 2026

TOPIC: Lumber Yard at Paint Creek PUD Preliminary Plan Review

BACKGROUND BRIEF:

The applicant is requesting Preliminary Plan Review approval for the proposed Paint Creek Planned Unit Development (PUD), also known as the Lumber Yard at Paint Creek. The proposed development includes coordinated site design, preservation of natural features, and enhanced public benefits.

The purpose of the preliminary review is to evaluate the overall site layout, land uses, building placement, circulation, landscaping, and general compliance with applicable zoning ordinance requirements and PUD standards.

In accordance with the Zoning Ordinance requirements, a public hearing is required to receive comments from the public regarding the proposed development. Notices for the public hearing were provided in accordance with ordinance requirements.

RECOMMENDED MOTION:

To **[open/close]** the public hearing for Lumber Yard at Paint Creek PUD Preliminary Plan Review.

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: May 4, 2026

TOPIC Discussion on Accessory Mechanical Units Regulations Article 13.11.E

BACKGROUND BRIEF:

The Planning Commission has requested that McKenna consultants evaluate Zoning Ordinance Section 13.11.E, which has provisions on Accessory Mechanical Units within the Village.

The topic was discussed at the May 4, 2026, Planning Commission meeting, where the Commission members provided recommended updates to the draft ordinance amendment. McKenna Planners have made edits incorporating the recommendations for further review.

RECOMMENDED MOTION(s):

No motion. Discussion only.

MCKENNA

Memorandum

TO: Village of Lake Orion Planning Commission

FROM: Jake VanBoxel, MSA, Principal Planner
Sommer Nafal, Assistant Planner

SUBJECT: **Accessory Mechanical Units – Standby Generator Regulations**

DATE: June 1, 2026

BACKGROUND

Recently, the Village has received complaints regarding the placement of Accessory Mechanical Units (standby generators). Village staff and members of the Planning Commission have asked to be provided with information regarding the current regulations, along with how other similar communities are regulating these items.

The Village's current zoning ordinance language pertaining to standby generators is located in Article 13 General Provisions, Section 13.11 Accessory Buildings and Structures.

Standby generators are identified as "Accessory Mechanical Units" under section 13.11(E) and the section specifies regulations for both *single family residential* and *non-single family residential* uses.

At the May 4th Planning Commission meeting, the Commissioners reviewed ordinances from other nearby communities and discussed options for amending the ordinance. McKenna staff have provided the draft text amendment based on those change requests.

SUMMARY OF CHANGES

- Removal of the noise decibel limit of 55dB at 10'
- Exclude egress windows from the 10' location placement requirement
- Limit operations to only during power outages or during scheduled maintenance testing
- Limit scheduled maintenance testing to Monday through Friday between the hours of 12:00-4:00pm

PROPOSED DRAFT TEXT AMENDMENT

The Village's current Zoning Ordinance language is provided below. Proposed text is provided in blue:

E. Accessory Mechanical Units

1. **Single Family Residential.** Freestanding heating, ventilation, standby generators, and air conditioning equipment may be located in any yard other than the required front yard of the principal structure, subject to the following requirements (window-mounted room air-conditioners are exempt from these requirements):
   a) Location. Placement of accessory mechanical equipment shall not be permitted within 10 feet of a window on an adjacent dwelling, excluding egress windows.
   b) Screening. Accessory mechanical equipment shall be screened in a manner which will reduce the noise output of the unit and to shield the equipment from view of any road, adjacent residence, or the

Lake. ~~The maximum noise output from any such unit shall not exceed 55 decibels, measured at a distance of ten (10) feet from the unit.~~

c) Operations. Standby generators shall operate only during power outages, except as provided for testing and maintenance.

d) Testing and Maintenance. Automatic maintenance and routine testing of standby generators is limited to Monday through Friday between the hours of 12:00p.m. to 4:00p.m.

2. **Non-Single Family Residential.** Freestanding, roof or building mounted equipment (including air conditioning units, transformers, generators and similar) for all non-single family residential buildings and uses, and those on sites zoned non-single family residential districts shall be located in accordance with the following:

a) Front Yards. Equipment shall not be located in a front yard except the Planning Commission may permit equipment to be located in the front yard upon finding that such location will meet the spirit and intent of the zoning district in which the building is located provided such equipment is not located closer than ten (10) feet from an adjacent residential dwelling or district.

b) Side and Rear Yards. Equipment shall be permitted in a side or rear yard provided such equipment is not located closer than ten (10) feet from an adjacent residential dwelling or district.

c) Screening. Equipment shall be screened from public rights-of-way and adjacent uses by evergreen trees or shrubs, walls, or berming. Alternative methods of screening may be approved by the Planning Commission.

d) Operations. Standby generators shall operate only during power outages, except as provided for testing and maintenance.

e) Testing and Maintenance. Automatic maintenance and routine testing of standby generators is limited to Monday through Friday between the hours of 12:00p.m. to 4:00p.m.

f) The Planning Commission shall have the authority to waive or modify the above requirements upon the determination that such waiver or modification meets the spirit and intent of the district in which the equipment is located.

NEXT STEPS

We are requesting the Planning Commission review the draft text amendments provided and discuss the changes during the June 1st meeting. Following the discussion, if consensus from the Planning Commission is reached to move forward with proposed revisions, the Planning Commission may vote to set a public hearing date.

Please feel free to contact us with any questions.

Respectfully submitted,

McKENNA

Jake VanBoxel, MSA
Principal Planner

Sommer Nafal, NCI
Assistant Planner

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: June 1, 2026

TOPIC Site Plan Extension Approval of Starboard Orion

BACKGROUND BRIEF:

The Site Plan Approval for Starboard Orion, owned by Moceri Companies, LLC., is expiring on July 7, 2026.

The reason for expiration is that within 12 months after the date of final plan approval, *building permits must be obtained encompassing a minimum of 25 percent of the gross floor area and site improvements shown on the site plan or the site plan shall be deemed null and void without any further action by the Village. (Z.O. Sec. 19.02.C(8))*.

This provision states *The Planning Commission may, upon application in writing stating the reasons therefore, extend the 12-month period for one (1) additional period of up to 12 months.*

RECOMMENDED MOTION(s):

> **To approve** the request for site plan approval extension for Starboard Orion by 12 months, for an expiration date of July 7, 2027.

MCKENNA

June 1, 2026

Planning Commission
Village of Lake Orion
21 E Church St
Lake Orion, MI 48362

Subject: **Starboard Orion - Site Plan Extension**

Location: **Parcel: 09-02-458-015** *(corner of Lake St. and Darling Dr.)*

Applicant: **Dominic F. Moceri on behalf of Moceri Companies, LLC.**

Dear Planning Commissioners:

We have reviewed the application to extend the validity of the site plan approval for Starboard Orion. The request to extend the site plan was received by the Village prior to the expiration of the site plan, so we believe it is within the letter of the ordinance to consider an extension.

The Site Plan Approval for Starboard Orion is expiring on July 7, 2026. This date is one year prior to when the most recent engineering changes were reviewed and approved "as noted" by the Village Engineer, Nowak & Fraus, which was July 7, 2025.

The reason for expiration is that within 12 months after the date of final plan approval, *building permits must be obtained encompassing a minimum of 25 percent of the gross floor area and site improvements shown on the site plan or the site plan shall be deemed null and void without any further action by the Village. (Z.O. Sec. 19.02.C(8))*. This provision states *The Planning Commission may, upon application in writing stating the reasons therefore, extend the 12-month period for one (1) additional period of up to 12 months.* Therefore, if building permits or an approved extension is not received by this date, the approval will expire.

Consideration of site plan extension should be based on conditions on the site and in surrounding developments. The adjacent and surrounding properties have not had major changes since the approval.

We also look for progress demonstrated by an applicant to complete the conditions of approval. It is apparent the development team continues to make progress on bringing this project to construction. The team has completed the demolition of two former marina buildings, received permit approval for the rehabilitation work on the boathouse located on property, and completed the engineering realignment for the Lake Street entrance.

In summary, we find the project is still appropriate in terms of nearby development and the applicants have made tangible progress toward construction. Therefore, we recommend approval of an extension of one year, extending the validity to July 7, 2027.

If you have any questions regarding this case, please do not hesitate to contact us.

Sincerely,

McKENNA

HEADQUARTERS
235 East Main Street
Suite 105
Northville, Michigan 48167

O 248.596.0920
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MCKA.COM

Jake VanBoxel, MSA
Principal Planner

Sommer Nafal, NCI
Assistant Planner

C: Moceri Companies, LLC., Applicant

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: June 1, 2026

TOPIC: Lumber Yard at Paint Creek Planned Unit Development Eligibility

BACKGROUND BRIEF:

The proposed Lumber Yard at Paint Creek project is located at 215 South Broadway within the Village of Lake Orion. The applicant is requesting a determination of eligibility to pursue development under the Planned Unit Development (PUD) provisions of the Village Zoning Ordinance.

The property, historically used as a lumber yard, is located adjacent to Paint Creek and presents unique site characteristics, including proximity to the waterway, potential environmental constraints, and redevelopment of a former industrial site. These conditions may limit conventional development and may justify flexibility through the PUD process.

The purpose of the PUD option is to encourage coordinated site design, preservation of natural features, and enhanced public benefits that may not otherwise be achieved under standard zoning requirements.

Eligibility for a PUD project was discussed on March 2, 2026, when the Planning Commission recommended approval to Village Council.

On March 23, 2026, the Village Council determined the project was eligible for PUD status. The next step is Preliminary Plan submittal.

RECOMMENDED ACTION:

> Pending any additional information raised at the Public Hearing, it is recommended that the Planning Commission **recommend approval with conditions** of PUD Preliminary Plans for the property located at 215 S. Broadway to the Village Council, based on the information submitted, with the understanding that all required approvals must be obtained, including but not limited to those from the Village Engineer, the Department of Public Works, the Township Fire Department, the Township Building Department, and any other applicable local or state agencies as required during the PUD process.

MCKENNA

June 1, 2026

Planning Commission
Village of Lake Orion
21 E. Church Street
Lake Orion, Michigan 48362

Subject: Preliminary Plan Review Lumber Yard at Paint Creek – 215 S Broadway

Dear Commission Members,

We have reviewed the preliminary Planned Unit Development (PUD) request for an amendment to an existing development of the historic Lumber Yard at Paint Creek property located at 215 South Broadway Street, as submitted by Matthew Gibb on behalf of the Lake Orion Downtown Development Authority (DDA). The applicant proposes to redevelop four parcels consisting of the existing lumber yard site into a multi-use site that includes an event barn, market pavilion, trailhead canopy structure, and commercial and office buildings.

PROPOSED DEVELOPMENT OVERVIEW:

The site is composed of four parcels, totaling 4.2 acres. The existing zoning district of the site is Mixed-Use – MU. The redevelopment is envisioned as a community landmark and a gateway to downtown Lake Orion. Through adaptive reuse of historic structures and coordinated site planning, the project integrates a farmers market pavilion, public event barn, vendor kiosks, trailhead amenities, public gathering spaces, and limited supporting downtown uses.

PRELIMINARY PUD PROCESS SUMMARY

The applicant previously received PUD Eligibility approval from both the Planning Commission and Village Council as it was found that the proposed development satisfies the five (5) PUD eligibility criteria in Section 11.02 of the Zoning Ordinance.

The next (and current step) is for the applicant to seek Preliminary PUD Plan approval. This first requires a Public Hearing, which has been noticed for the June 1, 2026, Planning Commission meeting. The Commission is charged with then making a recommendation to the Village Council for: approval, approval with conditions, or denial.

Following a second public hearing with the Village Council, the applicant must seek Final Development Plan Approval from the Planning Commission within the following year.

RECOMMENDATION

Pending any additional information raised at the Public Hearing, it is recommended that the Planning Commission recommend conditional Preliminary PUD approval for the Lumber Yard at Paint Creek to the Village Council as the proposed plans for the development maintain compliance with the PUD Eligibility Plan that was approved by Council at the March 23, 2026, meeting.

Upon reviewing the items submitted, the requirements for a preliminary plan identified in Section 11.05 of the Zoning Ordinance, and considering the discussion of the Planning Commission and Village Council (from the PUD Eligibility Plan), we have identified potential conditions for the applicant to address moving forward. All identified items are below in bold, with our comments underlined immediately following.

HEADQUARTERS
235 East Main Street
Suite 105
Northville, Michigan 48167

O 248.596.0920
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MCKA.COM

Disclosure of mineral rights ownership (Section 11.05.A.1.a).

This has not been provided by the applicant.

Topographic Survey (Section 11.05.A.1.b):

All features are required to be identified on a survey scaled at 1"=50'.

The applicant has provided all surveys at a scale of 1"=30'.

Site Analysis (Section 11.05.A.1.C):

1) Contiguous Land Uses.
   The applicant has not provided site analysis and information regarding the properties located within 100-feet of the subject property.
3) Soils.
   The applicant has not provided information regarding the depth of topsoil and types of soils on the site.
4) Vegetation.
   The applicant has not provided a list identifying trees and plants.
5) Drainage.
   The Applicant has not provided information demonstrating the direction of watershed drainage.

Preliminary Development Plan (Section 11.05.A.1.d):

1) The date, north arrow and scale.
   The scale for this plan should be 1"=100'.
6) Setback lines with dimensions.
   The applicant should provide the proposed setbacks for each of the buildings. Additionally, the applicant should provide the requested modifications to the requirements of the Zoning Ordinance.
7) Location and height of all existing and proposed structures on and within 100-feet of the subject property.
   This has not been identified in the preliminary plans.
9) The location and dimensions of all existing and proposed drives, sidewalks, curb openings, signs, exterior lighting, curbing, parking areas including total number of parking spaces (with dimensions of a typical parking space), loading areas, recreation areas, common use areas, and areas to be conveyed for public use and purpose
   The applicant should provide an Exterior Lighting/Photometric Plan and revise the parking spaces to meet the 9'x19' requirement or formally request modification through this process.
12) Existing Building Height and Landscaping/Vegetation.
   The applicant will need to provide the height of the existing buildings. Additionally, the applicant should aim to provide more trees/canopy coverage, especially between the site and M-24 and between the site and the multi-family residential property to the east. Sufficient screening when landscaping is discussed in the site plan review process.
14) The plan shall be of sufficient detail to define the proposed location of buildings, parking, interior circulation…
   Based on the implied deviation from off-street parking standards, the applicant should provide a comprehensive Traffic Impact Study to support the 129 parking spaces being proposed. Additionally, the preliminary truck turning plan will need to be revised to meet the engineering standards for Orion Township fire apparatus.

17) Proposed phasing.
Within the project narrative, the applicant has provided written information indicating that the project will be completed in two (2) phases.
The Planning Commission and/or Village Council may require the phasing to be demonstrated in the set of plans.
18) Any requested modifications to the requirements of this Zoning Ordinance that would otherwise be applicable to the subject site.
The modifications necessary for this project are implied throughout the applicant's narrative, however, a detailed account of the deviations should be expressly provided.

Please note, as a PUD, approval by the Village Engineer, the Department of Public Works, the Township Fire Department, the Township Building Department, and any other applicable local or state agencies must be satisfied upon completion of the process.

We are happy to discuss further; please do not hesitate to contact us with any questions.

Thank you.

Respectfully submitted,

MCKENNA

Jake VanBoxel, MSA
Principal Planner

Sommer Nafal, NCI
Assistant Planner

CC: Village Clerk: Ms. Sonja Stout, 21 E. Church Street, Lake Orion, MI 48362 (stouts@lakeorion.org)

PRELIMINARY PLANNED UNIT DEVELOPMENT (PUD)

ELIGIBILITY & CONCEPTUAL REVIEW NARRATIVE

Project: Lumber Yard at Paint Creek
Address: 215 South Broadway Street, Village of Lake Orion, Michigan

Application Type: Preliminary Planned Unit Development (PUD) Eligibility & Conceptual Review

Submitted By:
Lake Orion Downtown Development Authority
118 N. Broadway St. Lake Orion MI 48362

Contact: Matthew Gibb, Executive Director (248) 464-0307; gibb@downtownlakeorion.org

Submitted To:
Village of Lake Orion Planning Commission

Date of Submission: January 23, 2026





Purpose of Preliminary PUD Eligibility Review

The purpose of this submission is to establish eligibility for use of the Planned Unit Development (PUD) zoning mechanism and to obtain conceptual approval of the proposed redevelopment framework for the Lumber Yard at Paint Creek prior to preparation and submission of final site plan drawings, engineered plans, or construction documents.

This Preliminary PUD Narrative is intended to confirm that the proposed redevelopment qualifies for PUD consideration under the Village of Lake Orion Zoning Ordinance, that the requested flexibility is appropriate given the site's historic constraints and public benefit objectives, and that the overall development concept is consistent with the Village Master Plan, Downtown Development Authority goals, and adopted planning policies.

No final site plan approval, engineering approval, or authorization for construction is requested as part of this application. Detailed site layout, grading, utilities, building design, and code compliance will be addressed during subsequent Final PUD and Site Plan review phases.

I. Project Overview

The Lumber Yard at Paint Creek reimagines one of Lake Orion's most significant historic industrial properties as a multi-functional public marketplace, cultural venue, trailhead destination, and extension of downtown retail and civic activity. The project emphasizes preservation-based redevelopment, adaptive reuse, and creation of substantial public amenities while reinforcing the historic character and spatial organization of the former lumber yard.

The redevelopment is centered on the restoration and activation of four primary historic structures and their surrounding grounds, transforming an underutilized site into a community-focused destination serving residents, visitors, and regional trail users.



Key Components (Conceptual)

Event Barn (Main Barn)

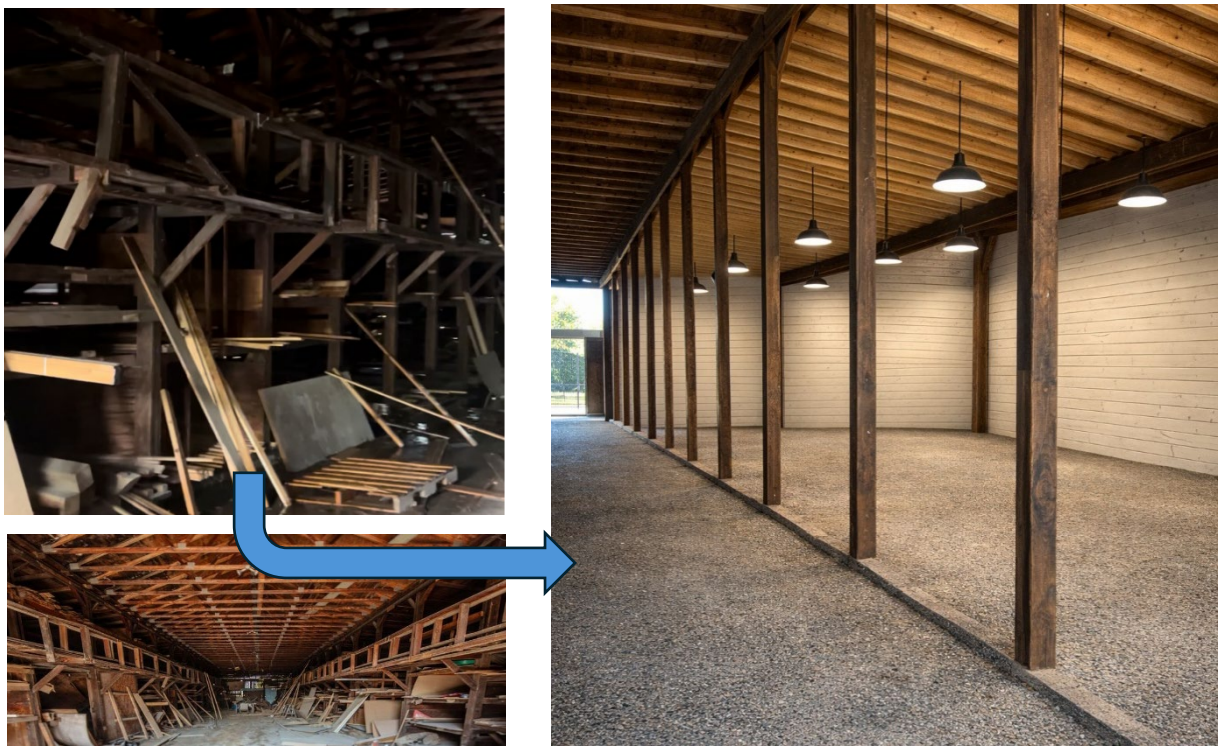
The historic main barn is proposed to be restored and adaptively reused as a flexible public market and event space. Conceptually, the space is designed to accommodate farmers markets, artisan vendors, performances, educational programming, and community gatherings in a manner consistent with its historic form and character.

The Barn consists of two primary spaces, for practical purposes identified as the Main Floor and the Annex. Each section is separately entranced but connected visually by large openings in the North wall. A description, status and rendering of goal is set forth as follows:

Main Floor:

Size: This space is defined in the "As Built" drawings completed by Davis & Davis and is an approximate 4,600 sq ft open market/event space. The original post and beam construction is restored to allow the two sides of the space to be planned for seasonal vendor booths and/or and public gathering space.

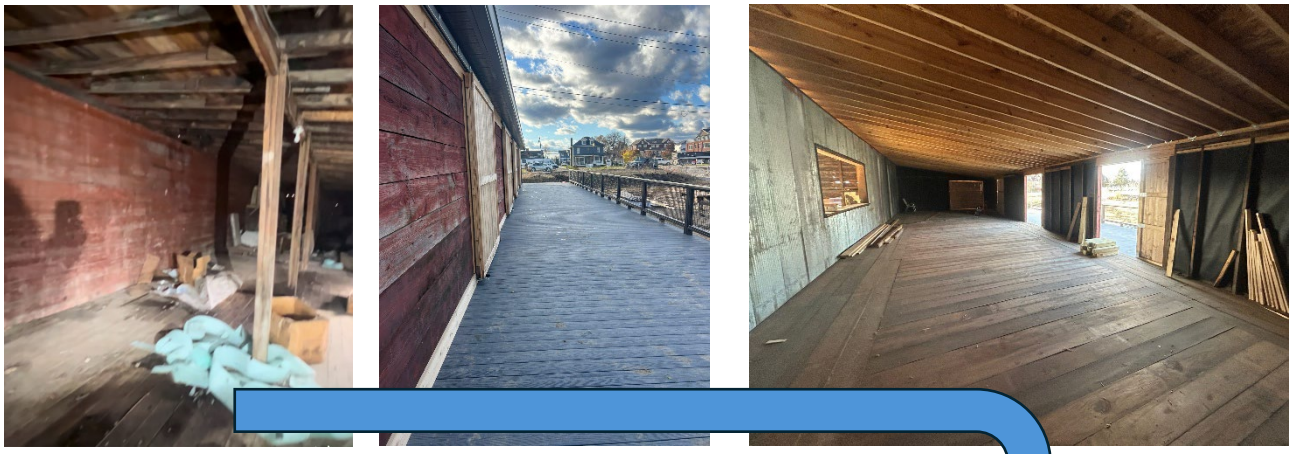
Access: The Main Floor is accessible from three main ingress/egress points. The East Barn Door(s) will be open, at grade, to a width of 18' and height of '14'. This opens into the barn and onto a pre-existing hard surface floor. The Main Floor is also served on the West side by a 7' wide 8' tall glass paneled garage door and a 36" wide crash bar equipped door. The South side is fixed with three 7'x8' glass panel garage doors, and will have an additional 36" crash door.



ANNEX:

Size: This space has a floor height that is 3.5’ above the main floor grade and has a floor area of approximately 1400sq ft. It is supported by an attached exterior deck that is an additional 1200 sq ft.

Access: This space is open from the deck, at level, from five 6-7’ barn doors that open and latch in place. Access into the annex and upon the deck from the ground level is done in two ways, at grade on the west end, where landscaping and p[aver walkway design will flow foot/accessible traffic into the space through a 7’ barn door opening or directly to the 12’ wide open deck (railed). There is also a 12’ wide stair access on the north face of the deck.





Market Pavilion

The former lumber rack structure on the East side the Main Barn is proposed to be repurposed as an open-air market pavilion providing vendor stalls for produce, flowers, seasonal markets, festivals, and artisan sales. This is an existing structure, rebuilt for structural capacity and as built approval by inspection. It will result in 11 stalls, each completely open air, and approx.. 160 sqft/each. The structure will be served on the South by a hard surface loading area that will also allow parking when market activity is not in use. Each stall will have overhead lighting and be served by a 20 Amp weather resistant GFI.





Trailhead & Canopy Structure

A repurposed supply house canopy is envisioned to support Paint Creek Trail users with shaded gathering space and trail-oriented amenities, including public restrooms and wayfinding. This structure has been rebuilt to insure capacity an load, including the addition of new post supports, reinforced truss work and clipping for wind events. It will be powered to support accessory uses such as coffee, donuts, packaged water and soda as pop-up exterior uses.



Outdoor Public Spaces

Conceptual plans include ADA-accessible decks, landscaped gathering areas, performance and event spaces, public art opportunities, and native or low-maintenance plantings. Public areas are planned on the North side of the market pavilion, the north side of the Annex, along the pedestrian path from Downtown behind the frontage retail, and around the trailhead. A trip generation report is attached hereto as Exhibit A. The anticipated use for public areas is as a gathering space, where pedestrians may relax, enjoy a beverage purchased at the market or form a retail use, events can host licensed activities.

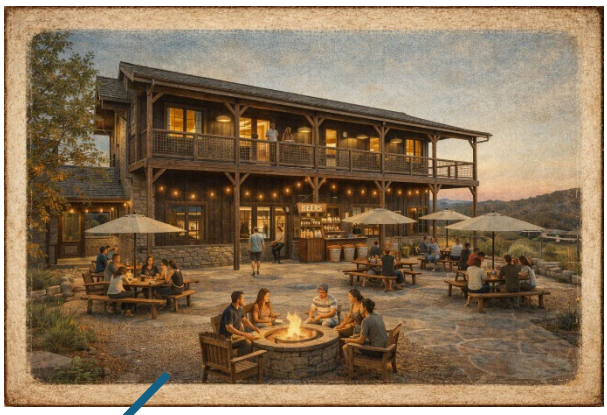
PUBLIC AREA: the active public areas make up approximately 1.2 acres of total open space on the project. This accounts for 26% of the entire development area of the site.

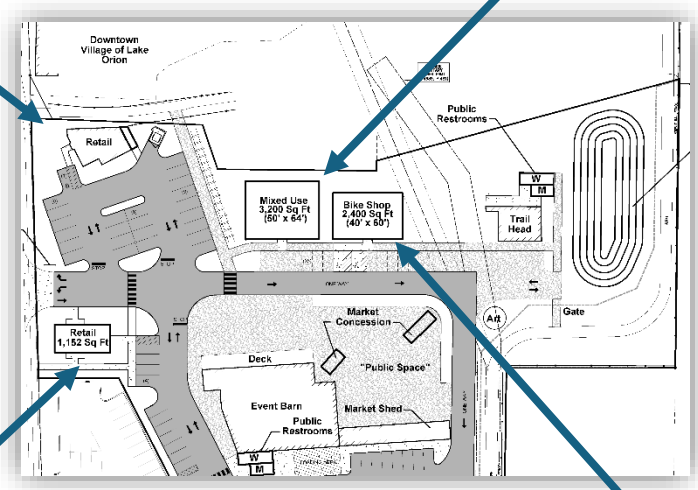
GREENBELT/LANDSCAPE: the additional landscaping and natural plantings, including the retention area, overlay an additional .85 acres, resulting in a total open space on site of 2.05 acres or 49% of the development area.

Commercial / Office Building & Supporting Structures

The historic office building is proposed for white-box renovation to support small-scale commercial uses such as a bakery or complementary retail. There are three proposed new development areas that are intended for pre-fabricated/stick built construction. These are intended for food service, LCC licensed beverage, bike shop, and downtown retail. Additional prefabricated or accessory structures may support these uses in later phases. All use categories will be a permitted use under the Mixed Use / Downtown zoning plan. This is in accord with the Village Master Plan.











II. PUD-Specific Technical Considerations

Utilities

Utilities are addressed at a conceptual level appropriate for Preliminary PUD review. Domestic water, sanitary sewer, electrical service, and fire protection infrastructure are anticipated to be coordinated through shared utility corridors aligned with internal circulation areas. Final sizing, routing, and connections will be determined during subsequent engineering review.

Fire Access & Fire Protection

Fire access is a core organizing principle of the conceptual site framework. Internal circulation is designed to allow emergency vehicle access to primary structures without conflicting with pedestrian gathering areas. Fire protection systems and hydrant placement will be finalized during detailed design and reviewed by the Fire Marshal.

Parking & Circulation

Parking is envisioned as shared, distributed parking serving multiple uses with differing peak demand periods. The site promotes a "park once, walk many" experience with strong pedestrian connections to downtown and the trail system. Event-related parking demand will be managed through a combination of on-site spaces, nearby public parking, and operational strategies.

A report reviewing the daily average trips generated by the site is attached as Exhibit A. In summary the report indicates:

For planning-level estimates, approximate average daily external vehicle trip rates are:

- Public market (7,040 sq ft market area): ≈ 40 vehicle trips / 1,000 sq ft → ~280 daily vehicle trips
- Bakery (1,400 sq ft): ≈ 80 vehicle trips / 1,000 sq ft → ~110 daily vehicle trips
- Bike shop (2,800 sq ft): ≈ 30 vehicle trips / 1,000 sq ft → ~85 daily vehicle trips
- Brewery with food (2,000 sq ft effective guest area): ≈ 120 vehicle trips / 1,000 sq ft → ~240 daily vehicle trips
- Hotel (8 rooms): ≈ 6 vehicle trips / room / day → ~50 daily vehicle trips
- Trailhead (incremental site use): ~40 daily vehicle trips (many additional person trips by bike/foot).
- Farmers market (when active on top of public market): Additional ~150 daily vehicle trips and higher midday peak activity, informed by farmers market studies showing high person-trip intensity.

Proposing 129 Parking Spaces, subject to final sizing of stormwater.

Occupant Load

Based on the traffic and person-trip analysis, the Lumber Yard functions as a distributed, indoor-outdoor destination with a design peak of approximately 350 people site-wide on the busiest days. This occupancy is spread across barns, pavilions, plazas, trail connections, and multiple tenant spaces, rather than concentrated in a single assembly hall. Final occupant loads will be confirmed at building permit, but these planning-level numbers demonstrate that life-safety, fire access, and circulation are well within manageable ranges. For methodology and breakdown of occupancy, see the Report attached as Exhibit B.

Historic Preservation & Adaptive Reuse Strategy

Historic preservation is the foundation of the project. Development prioritizes retention of original building footprints, forms, and materials where feasible, with modern code-compliant improvements integrated sensitively. The PUD mechanism is essential to preserving the site's historic character while enabling viable modern use. Methodology applied for this adaptive and preservation based PUD is set forth in Exhibit C.

Vision & Community Benefits

The proposed redevelopment delivers significant public benefit that exceeds what could be achieved under conventional zoning, including:

- Preservation and adaptive reuse of historically significant structures;
- Creation of the Village's first dedicated public market and event barn;
- Expansion and enhancement of the Paint Creek Trailhead with public amenities;
- New public gathering spaces supporting civic life and cultural programming;
- Economic opportunities for local vendors, artisans, and small businesses;
- Increased downtown visitation supporting existing businesses and events.

III. Rationale for Planned Unit Development

The Planned Unit Development framework is essential to achieving the project's preservation, public benefit, and placemaking objectives. Conventional zoning standards related to use, dimensional requirements, parking, and site layout are incompatible with the historic configuration of the site and would significantly limit adaptive reuse.

The PUD approach allows:

- Flexible integration of civic, commercial, cultural, and recreational uses;
- Preservation of historic building footprints and spatial relationships;
- Shared parking and circulation strategies appropriate for a downtown destination;
- Phased implementation responsive to market demand and funding availability.

IV. Applicability to PUD Ordinance Standards (Eligibility)

The proposed redevelopment is appropriate for review under the Village of Lake Orion Planned Unit Development provisions. For purposes of Preliminary PUD eligibility, the project:

- Advances the intent and purpose of the PUD ordinance by delivering superior design and public benefit;
- Functions as a unified and comprehensively planned development;
- Is compatible with surrounding downtown uses and scale;
- Provides substantial public amenities and preservation outcomes;
- Demonstrates feasibility of infrastructure, access, and services;
- Aligns with the Village Master Plan and Downtown Development Authority objectives.

Preliminary PUD Eligibility

The Lumber Yard at Paint Creek represents a unique historic resource whose preservation and activation cannot be reasonably achieved under conventional zoning. The Planned Unit Development framework enables the Village to preserve historic structures, support phased and flexible redevelopment, and deliver significant public amenities that enhance downtown Lake Orion.

For these reasons, the project is appropriate for Preliminary PUD eligibility determination and conceptual approval, with final site plan, engineering, and permitting to follow in subsequent review phases.

Phasing & Incremental Implementation

The Lumber Yard at Paint Creek is intentionally structured for phased redevelopment. Initial phases focus on restoration and activation of the Event Barn, Market Pavilion, and core public spaces. Subsequent phases include expanded commercial uses, hospitality elements, and additional site amenities. The PUD framework allows this incremental approach while maintaining overall site coherence and public benefit.

Phase 1:

- Compete plan review and approval by April 2026
- Pursuant to a new zoning compliance permit, start foundational repair and expansion to reactive and obtain occupancy permit for original office, completed by May 2026.
- Close on all MDOT permit approval(s) including spillways access.
- Upon plan approval, commence public space development, utility stubbing, finish historic structure renovation and adaptive reuse, engage in protected soft opening of public areas, August/Sept. 2026
- Parking areas, stormwater, lighting, accessibility, seeking completion November 2026

Phase 2:

- Upon plan approval, commence pad development, utility stubbing, pre-fabricated engineering, May 2026
- Construction of prefabricated structures, Summer 2026
- User build out, interior, glass, utility, fire, and permit compliance, seeking completion by March 2027
- Mixed use site fully open by June 2027

V. Requested Action

The applicant respectfully requests that the Planning Commission determine that the proposed Lumber Yard at Paint Creek redevelopment:

1. Qualifies for consideration under the Planned Unit Development (PUD) provisions of the Village of Lake Orion Zoning Ordinance; and
2. Is appropriate for Preliminary PUD eligibility determination and conceptual approval, subject to conditions and further review.

Scope of Review

At this stage, the Planning Commission is being asked to review the proposal at a **conceptual and eligibility level only**. The following are **not** requested or approved as part of this action:

- Final site plan approval;
- Engineered grading, drainage, or utility plans;
- Building design approval or construction authorization;
- Final parking counts or traffic analysis;
- Permits of any kind.

Purpose of Preliminary PUD Eligibility Review

The purpose of this preliminary review is to confirm that the proposed redevelopment qualifies for use of the PUD zoning mechanism, that the requested flexibility is appropriate given the site's historic constraints and public benefit objectives, and that the overall development concept is consistent with the Village Master Plan and Downtown Development Authority goals.

Establishing PUD eligibility at this stage allows the applicant and the Village to proceed with detailed site planning and engineering with clarity, predictability, and reduced risk.

Typical Outcomes of This Review

Upon completion of this review, the Village of Lake Orion may:

- Determine that the project is eligible for PUD consideration;
- Grant conceptual approval of the overall development framework;
- Identify conditions, parameters, or guiding principles to be addressed during Final PUD and Site Plan review;
- Direct the applicant to proceed with preparation of final plans and engineering.

Exhibit(s) A,B,C, and APPENDIX on the following pages

Lumber Yard at Paint Creek

Trip Generation & Foot Traffic Report

This report estimates the **vehicular trips** and **person trips (foot traffic)** anticipated from the proposed reuse of the historic barns and associated structures at the **Lumber Yard at Paint Creek** as:

- A **public market** (Thursday–Sunday, warm season with seasonal winter operations)
- A **farmers market** (Friday and Saturday in market season)
- A **formal trailhead** serving the adjacent trail system

and, in a full build-out scenario, with:

- A **bakery** (±1,400 sq ft)
- A **bike shop** (±2,800 sq ft)
- A small **8-room hotel**
- A seasonal **brewery with food**, using shipping-container bar and kitchen with outdoor seating

The intent is to provide **planning-level estimates** appropriate for:

- Planning Commission packet materials
- Market study and lease preparation
- Internal DDA project planning and communications

These are **reasonable, order-of-magnitude projections**, not a stamped Traffic Impact Study. Final engineering should refine them using the latest ITE Trip Generation Manual datasets and any local traffic counts.

A. Project Description & Operating Assumptions

Program Description:

- Main barn usable interior floor area: approx. 5,500 sq ft
- Pavilion / market rack: 11 stalls × 140 sq ft ≈ 1,540 sq ft
- Total enclosed/open market area: ≈ 7,040 sq ft

Additional program elements (full build-out scenario):

- Bakery: ±1,400 sq ft
- Bike shop: ±2,800 sq ft
- Small hotel: 8 rooms
- Seasonal brewery with food: shipping-container kitchen + bar; effective guest area assumed ≈ 2,000 sq ft (containers plus outdoor seating)

B. Operating Schedule

- Public market (general market use):
  - Open Thursday–Sunday, beginning in warm weather and transitioning to a smaller seasonal/winter market.
  - Typical operating hours: 9:00 a.m. to dark, extended later on weekends with music/events (anticipated every weekend in season).
- Farmers market:
  - Friday and Saturday, 9:00 a.m. to dark, during the regular farmers market season.
- Trailhead:
  - 7 days per week, dawn to dusk, supporting trail users, downtown visitors, and market patrons.
- Coffee / bakery service:
  - Coffee, donuts, and healthy options early morning through early afternoon, at least five days per week.
- Barn event space:
  - Assumed ~20 events/year, with event-day traffic "spikes" occurring primarily on weekend evenings. Event days are treated qualitatively in this report, with core numeric estimates focused on typical market days.

The report focuses on peak-season operation (warmer months when all elements are active).

C. Methodology & Key Assumptions

Data Sources

- The ITE Trip Generation Manual (11th and 12th Editions) and related resources, which provide standard trip rates and methodologies for various land uses.
- Supplemental studies of farmers markets and agritourism/winery/brewery uses, which highlight higher person-trip activity and a stronger share of walking and biking for these uses.
- Summary tables of common trip generation rates for retail, restaurant, and lodging uses derived from the ITE manual.

Where no exact ITE land-use code exists (e.g., public/farmers market, small seasonal brewery), this report uses analogous land uses (specialty retail, restaurant, agritourism) and conservative mid-range rates.

Land-Use Analogues

Approximate land-use analogues used:

- Public & farmers market: Specialty retail / farmers market analogues (ITE specialty retail center + limited farmers market data).
- Bakery / coffee: Coffee/donut shop without drive-through (scaled down), with more walk/bike and sit-down activity than a high-turnover drive-through.
- Bike shop: Specialty retail.
- Hotel: Small hotel, 8 rooms, using typical hotel trip rates per room.

- Brewery with food: Treated similarly to a drinking place / sit-down restaurant, adjusted to reflect its seasonal, evening, and event focus.
- Trailhead: Modeled as a small park/trailhead with parking, recognizing that a large share of trail users are walk/bike arrivals from the neighborhood/downtown grid.

Vehicle Trip Assumptions (Per Day)

For planning-level estimates, approximate **average daily external vehicle trip rates** are:

- Public market (7,040 sq ft market area):
  ≈ 40 vehicle trips / 1,000 sq ft → ~280 daily vehicle trips
- Bakery (1,400 sq ft):
  ≈ 80 vehicle trips / 1,000 sq ft → ~110 daily vehicle trips
- Bike shop (2,800 sq ft):
  ≈ 30 vehicle trips / 1,000 sq ft → ~85 daily vehicle trips
- Brewery with food (2,000 sq ft effective guest area):
  ≈ 120 vehicle trips / 1,000 sq ft → ~240 daily vehicle trips
- Hotel (8 rooms):
  ≈ 6 vehicle trips / room / day → ~50 daily vehicle trips
- Trailhead (incremental site use):
  ~40 daily vehicle trips (many additional person trips by bike/foot).
- Farmers market (when active on top of public market):
  Additional ~150 daily vehicle trips and higher midday peak activity, informed by farmers market studies showing high person-trip intensity.

Peak-Hour Assumptions

- Combined uses (full build-out) are estimated to generate on the order of:
  - ~100 external vehicle trips in a typical design peak hour (late afternoon/early evening on a busy market day).
  - On farmers market days, this rises to about 140 external vehicle trips in the peak hour (approximate).

Person-Trip, Mode Split & Internal Capture

To convert vehicle trips to people and recognize your walkable downtown + trailhead setting, we assume:

- **Average vehicle occupancy:** 1.8 persons/vehicle (typical for mixed-use non-commute trips).
- **Non-motorized share (walk/bike):** approx. **30% of total person trips** for this site, reflecting strong trail, downtown, and internal circulation.
- **Internal capture between uses (full build-out):** approx. **30% reduction** in external vehicle trips due to cross-shopping and guests moving between the hotel, bakery, brewery, market, and bike shop **without re-entering the road system**.

Scenario Definitions

For clarity, two primary scenarios are presented:

Scenario A – Core Barn & Trailhead Program Only

. Public market (barn + pavilion)

. Farmers market (on designated days)

.Trailhead

. No bakery, bike shop, hotel, or brewery

Scenario B – Full Build-Out (Barns + All Tenants)

. All Scenario A uses

. Plus bakery, bike shop, small hotel (8 rooms), and seasonal brewery with food.

D. Estimated Vehicle Trip Generation

Typical Peak-Season Day (Non–Farmers Market Day)

Scenario A – Barns + Trailhead Only

- Daily external vehicle trips: ≈ 325 trips/day
- Peak-hour external vehicle trips: ≈ 50 trips/hour

Scenario B – Full Build-Out

After accounting for internal capture between uses:

- Daily external vehicle trips: ≈ 575 trips/day
- Peak-hour external vehicle trips: ≈ 100 trips/hour

Farmers Market Days (Friday & Saturday in Season)

On days when the farmers market is operating in conjunction with the public market:

Scenario A – Barns + Trailhead + Farmers Market

- Daily external vehicle trips: ≈ 475 trips/day
- (This reflects the base 325 plus ~150 additional trips from farmers market activity.)

Scenario B – Full Build-Out + Farmers Market

- Daily external vehicle trips: ≈ 725 trips/day
- Peak-hour external vehicle trips: ≈ 140 trips/hour

These values reflect the **"most probable"** scenario rather than ultra-conservative or highly optimistic assumptions, per your direction.

E. Estimated Person Trips & Foot Traffic

Using the mode split and occupancy assumptions (1.8 persons/vehicle, 30% non-motorized), the site supports a significantly larger **person-trip** volume than vehicle-trip volume, which is exactly the point of your trail-oriented, walkable design.

Typical Peak-Season Day (Non–Farmers Market Day)

Scenario A – Barns + Trailhead Only

- Total daily person trips (all modes): ≈ 825 people/day
- Peak-hour person trips: ≈ 125 people/hour

Scenario B – Full Build-Out

- Total daily person trips (all modes): ≈ 1,475 people/day
- Peak-hour person trips: ≈ 250 people/hour

Farmers Market Days

Scenario A – Barns + Trailhead + Farmers Market

- Total daily person trips: ≈ 1,225 people/day

Scenario B – Full Build-Out + Farmers Market

- Total daily person trips: ≈ 1,875 people/day
- Peak-hour person trips: ≈ 350–375 people/hour (rounded as ≈ 350 for planning purposes)

These person-trip totals reflect:

- Market shoppers
- Farmers market patrons
- Trail users
- Hotel guests
- Bakery and coffee patrons (including strong AM peak)
- Brewery and food patrons (evening and weekend peaks)
- Cross-shopping between all on-site uses

Design peak hour for vehicles typically occurs **late afternoon / early evening**, when:

- Market activity is still present
- Brewery and food service is ramping up
- Music/events are underway on weekends
- Hotel guests are arriving or returning for dinner

Even under full build-out, this peak is roughly **100–140 vehicles/hour and 250–350 people/hour**, which is significant for site design but generally manageable for a downtown street network when paired with appropriate access management and on-site circulation.

F. Pedestrian, Bicycle, and Trailhead Emphasis

An important qualitative conclusion is that the Lumber Yard at Paint Creek is a pedestrian- and trail-oriented destination, not a conventional auto-only commercial strip:

- Formal trailhead encourages arrivals by bicycle and on foot.
- Direct adjacency to downtown Lake Orion supports short "park once, walk many" trips.
- Internal connectivity (barn, pavilion, bakery, bike shop, brewery, hotel) increases internal capture and reduces repeated driveways interactions.
- The site's programming (events, markets, outdoor seating) and design (decks, paths, plazas) intentionally favors walking and lingering.

For Planning Commission and Council, it is appropriate to emphasize that:

- While the vehicle trip generation is moderate, the person-trip generation is high, which is exactly what a thriving public market, historic barn reuse, and trailhead are supposed to do.

G. Traffic & Parking Implications (High-Level)

At this planning level:

- 100–140 peak-hour vehicle trips is a moderate traffic load typically handled by a standard two-lane downtown street with appropriate access.
- Parking demand will be driven by peak overlapping activity (farmers market + brewery + evening events). Even so, the walk/bike share and internal capture significantly reduce the need for standalone parking compared to an auto-only strip center of equivalent square footage.
- Event days (weddings, concerts) will create spiky peaks; these should be handled through event management (shared lots, shuttle options, and clear wayfinding) rather than trying to size permanent infrastructure for the absolute peak.

The core barns + trailhead program (Scenario A) is expected to generate on the order of:

- ~325 external vehicle trips/day (typical day), rising to ~475/day on farmers market days.
- ~825–1,225 person trips/day depending on whether the farmers market is operating.

The full build-out with bakery, bike shop, small hotel, and brewery (Scenario B) is expected to generate on the order of:

- ~575 external vehicle trips/day (typical peak-season day) and ~725/day on farmers market days.
- ~1,475–1,875 person trips/day, with 250–350 people in the design peak hour.

Occupancy Load Report

Lumber Yard at Paint Creek – Planning-Level Analysis

This Occupancy Load Report provides planning-level occupant estimates for the Lumber Yard at Paint Creek redevelopment, derived directly from the previously prepared Trip Generation & Foot Traffic Report.

The intent is to:

- Demonstrate reasonable maximum occupant levels for code coordination
- Support fire access, life-safety, and circulation discussions
- Avoid premature or overly conservative assumptions prior to final tenant layouts and stamped construction drawings

This report is not a final code occupancy certification, which will be completed during building permit review once tenant layouts, furniture plans, and fire protection systems are finalized.

Methodology

Rather than applying worst-case assembly factors uniformly across the site, this report:

- Uses observed person-trip volumes from the trip study
- Focuses on design peak hour occupancy, not cumulative daily totals
- Accounts for the distributed, indoor–outdoor, multi-use nature of the site
- Reflects real-world market, trailhead, and brewery behavior patterns

This approach aligns with how planning commissions and fire officials typically review adaptive reuse and outdoor market environments.

Design Peak Hour Reference (From Trip Report)

Scenario	Peak-Hour Person Trips
Scenario A – Barns + Trailhead	~125 people/hour
Scenario B – Full Build-Out	~250 people/hour
Scenario B + Farmers Market	~350 people/hour

These values already include:

- Market patrons
- Trail users
- Food & beverage customers
- Cross-shopping between uses
- Walk-in and bike-in visitors

Occupancy Distribution by Functional Area

Because occupants are distributed across multiple spaces, the design peak hour does *not* result in all occupants loading into one structure.

Scenario B – Full Build-Out + Farmers Market (Design Peak)

Total Planning Occupancy: ~350 persons (site-wide)

Area	Approx. Occupants	Notes
Main Barn (market + events)	140–160	Standing + browsing; not seated assembly
Pavilion / Market Stalls	60–70	Open-air, dispersed
Brewery + Outdoor Seating	60–80	High turnover
Trailhead / Paths / Plazas	40–60	Continuous movement
Bakery / Bike Shop / Hotel Lobby	30–40	Distributed, short-stay

Key Point: Occupancy is spread across indoor and outdoor areas, significantly reducing life-safety risk compared to a single enclosed assembly hall.

Planning-Level Occupant Load Summary: For entitlement, zoning, and PUD purposes, the following reasonable maximum planning loads are supported:

Scenario	Planning Occupant Load
Typical Market Day	~250 persons site-wide
Farmers Market / Event Day	~350 persons site-wide
Core Barn Area (subset)	~150 persons

These figures are consistent with the observed person-trip volumes identified in the Trip Generation Report and reflect realistic operational conditions rather than theoretical maximums

Code & Fire Review Context

- Final occupant loads will be established during **building permit review** per the Michigan Building Code.
- Final calculations will be based on:
  - Actual tenant layouts
  - Furniture plans
  - Fire separation
  - Sprinkler coverage
  - Outdoor area definitions

EXHIBIT
four Pages

Distinguishing New Development from Historic Restoration in Municipal Review, Infrastructure Requirements, and Regulatory Application

This Memorandum affirms why a historic restoration project, such as the Lumber Yard at Paint Creek, should not be reviewed or regulated using the same standards that apply to new development. The argument draws from planning practice, preservation policy, engineering norms, and the intent of state and federal laws governing redevelopment, stormwater, and construction.

Foundational Principle: New Development ≠ Historic Restoration

New Development: A new development assumes:

- Vacant, undisturbed land
- No existing impervious surface
- No existing utilities, foundations, or structures
- No cultural or historic resources to preserve
- Full design freedom to shape the site
- Engineering standards applied at their strictest because the site can be fully re-graded, re-engineered, and optimized

Historic Restoration / Adaptive Reuse: A historic restoration project involves:

- Long-existing buildings, foundations, utilities, and soils
- Pre-existing impervious surfaces
- Legally recognized or municipally valued historic resources
- A primary public benefit: preservation of cultural heritage
- Structural, spatial, and environmental constraints that limit redesign options
- A regulatory expectation of flexibility because the project improves rather than creates conditions

Therefore, treating a historic restoration as if it were raw, greenfield land contradicts the core principles of planning, engineering, historic preservation, and redevelopment law.

Purpose of Redevelopment and Historic Preservation Policy

Public Policy Intention. State and federal frameworks clearly encourage:

- Reuse of existing buildings
- Stabilization of historic sites
- Revitalization of downtowns
- Intensification of existing urban areas
- Avoidance of unnecessary demolition
- Reduction of sprawl and greenfield consumption

Compliance Burden Must Be Proportional. These policies assume that:

- Redevelopment receives reasonable regulatory flexibility
- New development receives the strictest application of standards

This is why programs like Brownfield TIF, Main Street, SHPO incentives, and redevelopment credits exist — they recognize that restoration is inherently more constrained.

Engineering and Site Constraints Are Fundamentally Different

Existing Foundations. Historic sites contain:

- Old stone walls
- Timber-frame barns
- Masonry without reinforcement
- Settled or uneven substrates

Deep excavation or major grading can destabilize historic structures.

Utilities and Unknown Subsurface Conditions. Historic sites often include:

- Shallow utilities
- Abandoned lines
- Nonstandard connections
- Fill soils and buried debris
- Potential contamination

These factors eliminate feasibility for many new-development-style infrastructure installations.

High Public Benefit = Lower Infrastructure Footprint

- Tourism and cultural value
- Aesthetic improvement
- Property value uplift
- Pedestrian vibrancy
- Sustainability gains from reuse

Stormwater and MS4 Application Must Differ.

New Development Standards Assume:

- No impervious surface
- No existing historical constraints
- Ability to install large basins or full-site infiltration systems

Historic Restoration Standards Must Consider:

- Existing impervious cover
- Limited infiltration potential
- Existing foundations and utilities
- Preservation constraints
- MS4's Maximum Extent Practicable (MEP) standard

Legal distinction: MS4 compliance for redevelopment is measured against MEP, not absolute performance.

Historic restoration projects should be reviewed using:

- Redevelopment stormwater standards
- Net imperviousness increases
- 90th percentile storm options
- BMP trains
- Alternative compliance allowances

Building Code Distinctions – Historic Buildings Are Not New Construction

IEBC and Michigan Rehabilitation Code:

- Reduce requirements for historic buildings
- Allow alternative compliance

- Permit equivalent performance methods
- Discourage forcing prescriptive new construction standards on historic structures

Planning & Zoning Distinctions: Land Use vs. Preservation Overlay

Historic projects receive:

- Parking flexibility
- Dimensional variances
- Reduced landscaping requirements
- Modified utility standards

The policy goal is preservation, not demolition via regulatory burden.

Public Interest Argument

Historic restoration provides:

- Downtown revitalization
- Cultural preservation
- Tourism draw
- Sustainability benefits
- Enhanced walkability
- Identity and heritage continuity

The Lumber Yard at Paint Creek project is not a new development. It is a historic restoration within a constrained, previously developed site. Forcing new-development engineering and stormwater standards onto a preservation project contradicts MS4 law, the building code, planning practice, and the public policy goals of historic preservation. The correct regulatory path is redevelopment-level review, using flexibility built into MS4, IEBC, and local zoning to achieve compliance to the maximum extent practicable without damaging historic assets.

APPENDIX

Draft Findings of Fact – Preliminary PUD Eligibility

The Planning Commission of the Village of Lake Orion hereby makes the following findings for purposes of Preliminary Planned Unit Development (PUD) eligibility and conceptual review of the Lumber Yard at Paint Creek redevelopment:

1. PUD Eligibility and Purpose

The Planning Commission finds that the proposed redevelopment qualifies for consideration under the Planned Unit Development provisions of the Village of Lake Orion Zoning Ordinance. The project presents unique site conditions, including historic structures and preservation constraints, that warrant flexibility beyond conventional zoning standards.

2. Consistency with the Intent of the PUD Ordinance

The Planning Commission finds that the proposal is consistent with the intent and purpose of the PUD ordinance, as it promotes innovative, flexible, and high-quality development that delivers superior public benefit, historic preservation, and coordinated site planning.

3. Unified and Planned Development

The Planning Commission finds that the Lumber Yard at Paint Creek is proposed as a unified, comprehensively planned development in which buildings, parking areas, circulation, utilities, and open spaces function together as a coordinated whole rather than as independent or piecemeal uses.

4. Compatibility with Surrounding Uses and Downtown Context

The Planning Commission finds that the proposed uses, scale, and historic character of the project are compatible with surrounding downtown uses and are designed to reinforce, enhance, and complement the existing downtown environment.

5. Public Benefit

The Planning Commission finds that the proposed PUD delivers substantial public benefit, including preservation of historic structures, creation of public market and event spaces, enhancement of trailhead amenities, expansion of public gathering spaces, and economic opportunities for local vendors and businesses.

6. Infrastructure, Access, and Services

The Planning Commission finds that, based on conceptual review, the site can be adequately served by public utilities, fire access, parking, and circulation systems without adverse impact to surrounding properties or public infrastructure. Detailed engineering review will occur during subsequent approval phases.

7. Phasing and Flexibility

The Planning Commission finds that the proposed phased development approach is appropriate and consistent with the objectives of the PUD ordinance. The PUD framework allows incremental implementation while maintaining overall site coherence and public benefit.

8. Master Plan and Policy Consistency

The Planning Commission finds that the proposed redevelopment is consistent with the Village of Lake Orion Master Plan and Downtown Development Authority goals related to historic preservation, placemaking, economic development, trail connectivity, and creation of unique public destinations.

9. Scope of Approval

The Planning Commission finds that this action constitutes a determination of Preliminary PUD eligibility and conceptual approval only. Final PUD approval, site plan approval, engineering review, and permitting shall be required prior to construction.

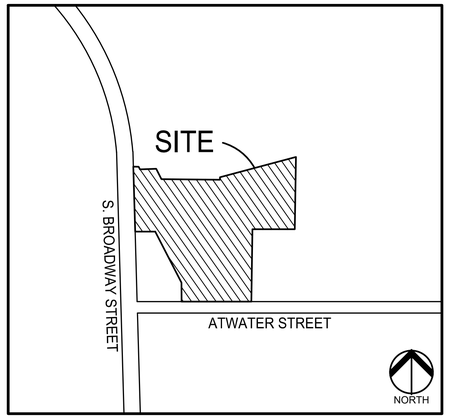
PRELIMINARY SITE PLANS

LAKE ORION LUMBER

215 SOUTH BROADWAY STREET

LAKE ORION, MICHIGAN

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL



LOCATION MAP
NO SCALE

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
C-1.0	TOPOGRAPHIC SURVEY
C-2.0	DEMOLITION PLAN
C-3.0	PRELIMINARY SITE PLAN
C-3.1	TRAFFIC CIRCULATION PLAN
C-4.0	PRELIMINARY GRADING PLAN
C-6.0	PRELIMINARY UTILITY PLAN
C-9.0	NOTES AND DETAILS
C-9.1	DETAILS
C-9.2	DETAILS
L-1.0	PRELIMINARY LANDSCAPE PLAN
	ARCHITECT PLANS
	MAIN BARN AND ANNEX
A000	COVER SHEET
A100	FLOOR PLANS
A300	BUILDING ELEVATIONS
A301	BUILDING ELEVATIONS
	THE BAKERY BUILDING
A000	COVER SHEET
A101	THE BAKERY BUILDING FLOOR PLAN
A102	THE BAKERY BUILDING BASEMENT PLAN
A300	THE BAKERY BUILDING ELEVATIONS
A301	THE BAKERY BUILDING ELEVATIONS
	RANCH HOUSE 2
A-003	3D EXTERIOR VEWS
A-004	3D INTERIOR VIEWS
A-101	MAIN LEVEL
A-102	UPPER LEVEL
A-201	ELEVATIONS
A-202	ELEVATIONS
	LAKE ORION DDA BIKE SHOP
A-001	TITLE SHEET
A-002	3D VIEWS EXTERIOR
A-003	3D VIEWS INTERIOR
A-101	MAIN LEVEL
A-102	UPPER LEVEL
A-103	ROOF PLAN
A-201	ELEVATIONS
A-202	ELEVATIONS
	LAKE ORION DDA STILLWATER
A-001	TITLE SHEET & GENERAL NOTES
A-002	3D EXTERIOR VIEWS
A-003	3D INTERIOR VIEWS
A-101	MAIN LEVEL FLOOR PLAN
A-102	ROOF PLAN
A-201	ELEVATIONS
WL-1	FLOOR PLAN, EXTERIOR ELEVATION AND ELECTRICAL PLAN
	WRC STANDARD DETAILS
1 OF 2	SANITARY SEWER DETAILS AND NOTES
2 OF 2	SANITARY SEWER DETAILS AND NOTES
1 OF 1	STORM DRAIN NOTES
1 OF 7	WATER MAIN STANDARD DETAILS
2 OF 7	WATER MAIN STANDARD DETAILS
3 OF 7	WATER MAIN STANDARD DETAILS
1 OF 1	SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER

LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362
CONTACT: MATHEW GIBB
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EMAIL: GIBB@DOWNTOWNLAKEORION.COM

CIVIL ENGINEER

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AUBURN HILLS, MI 48326
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PHONE: 844.813.2949
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30500 NORTHWESTERN HWY, SUITE 311
FARMINGTON HILLS, MI 48334
CONTACT: JEREMIAH DOORNBOS
PHONE: 248-855-7040
EMAIL: DAVISINTERIORDESIGN.COM

LANDSCAPE ARCHITECT

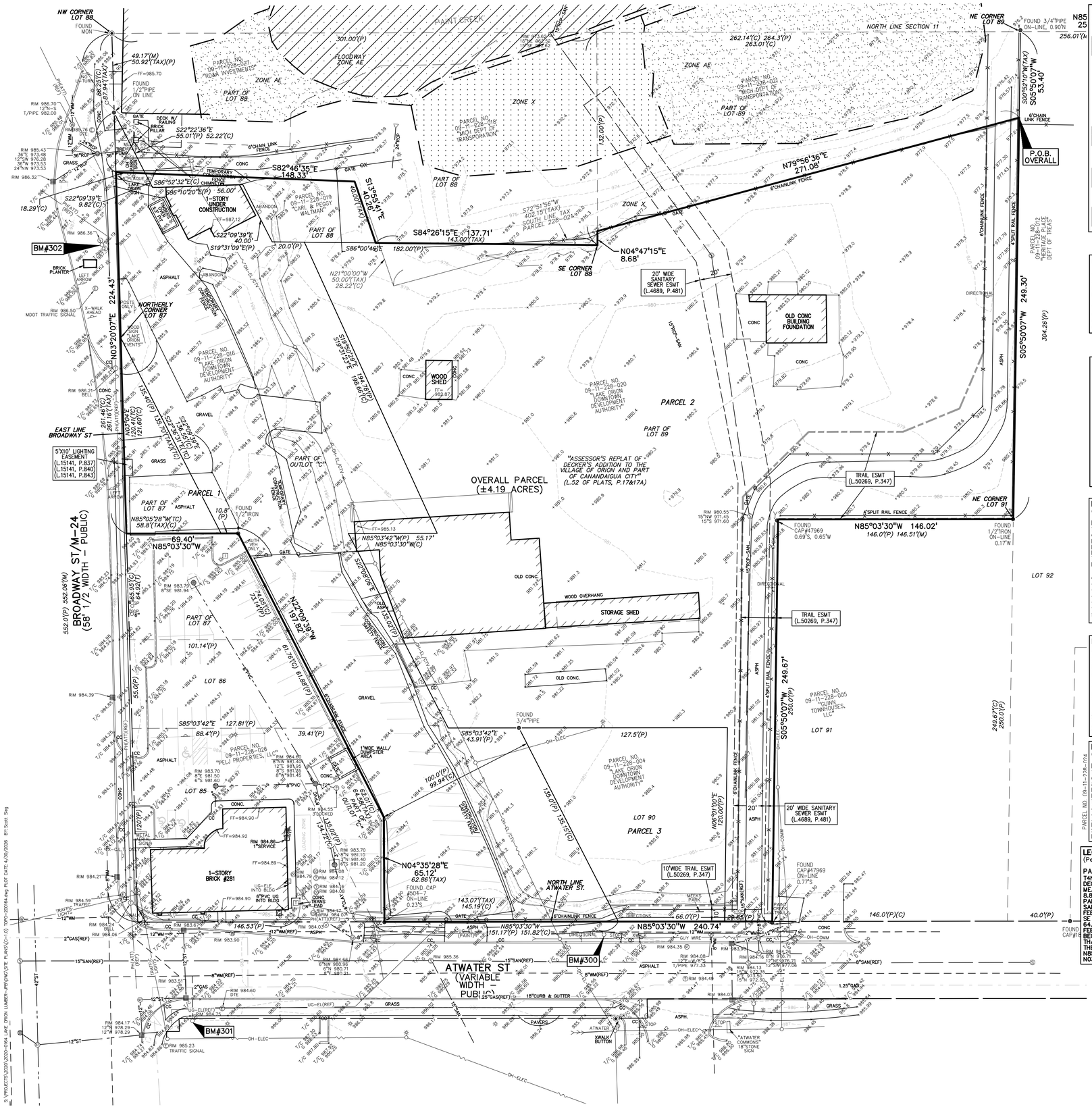
PEA GROUP
7927 NEMCO WAY, STE. 115
BRIGHTON, MI 48116
CONTACT: JANET EVANS, PLA
PHONE: 844.813.2949
EMAIL: JEVANS@PEAGROUP.COM

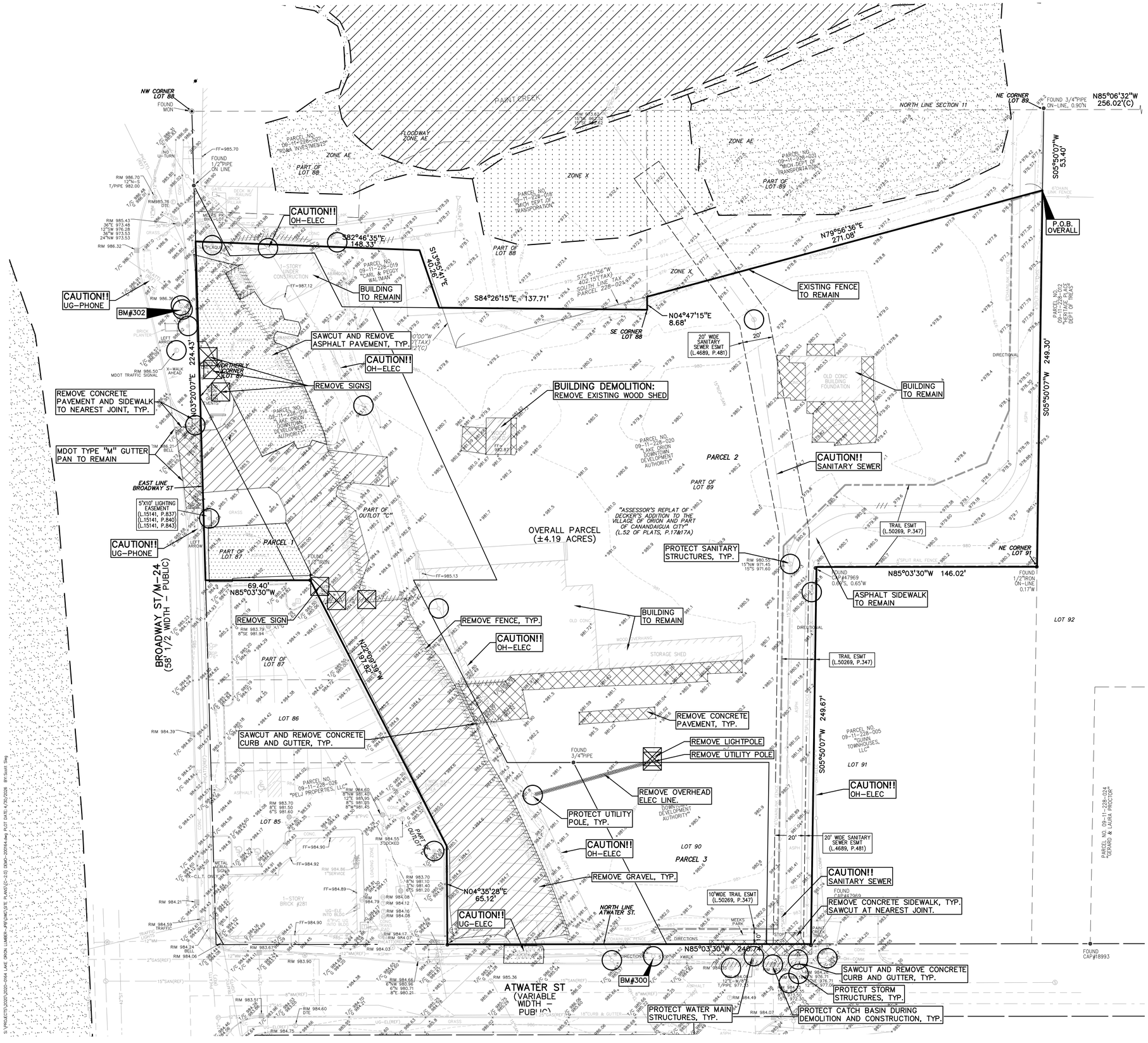
PEA GROUP

REVISIONS	
DESCRIPTION	DATE
ORIGINAL ISSUE DATE	

NOT FOR CONSTRUCTION

PRELIMINARY SITE PLANS | PEA JOB NO. 2020-0164 | LAKE ORION LUMBER


NW CORNER LOT 88
FOUND MON
NORTHERLY CORNER LOT 87
EAST LINE BROADWAY ST
BROADWAY ST/M-24 (58' 1/2 WIDTH - PUBLIC)
ATWATER ST (VARIABLE WIDTH - PUBLIC)
PAINT CREEK
NORTH LINE SECTION 11
NE CORNER LOT 89
NE CORNER LOT 91
SE CORNER LOT 88
P.O.B. OVERALL
BM#302
BM#300
BM#301
OVERALL PARCEL (±4.19 ACRES)
PARCEL 1
PARCEL 2
PARCEL 3
"ASSESSOR'S REPLAT OF DECKER'S ADDITION TO THE VILLAGE OF ORION AND PART OF CANANDAIGUA CITY" (L.52 OF PLATS, P.17&17A)
PARCEL NO. 09-11-228-027 "KOAM INVESTMENTS"
PARCEL NO. 09-11-228-023 "MICH DEPT OF TRANSPORTATION"
PARCEL NO. 09-11-228-018 "MICH DEPT OF TRANSPORTATION"
PARCEL NO. 09-11-228-019 "CARL & PEGGY WALTMAN"
PARCEL NO. 09-11-228-026 "HELI PROPERTIES, LLC"
PARCEL NO. 09-11-228-016 "LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY"
PARCEL NO. 09-11-228-020 "LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY"
PARCEL NO. 09-11-228-004 "LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY"
PARCEL NO. 09-11-228-005 "QUINN TOWNHOUSES, LLC"
PARCEL NO. 09-11-228-012 "MICH DEPT OF TREAS"
PARCEL NO. 09-11-228-014
PART OF LOT 88
PART OF LOT 89
PART OF LOT 87
PART OF OUTLOT "C"
LOT 86
LOT 85
LOT 90
LOT 91
LOT 92
ZONE AE
ZONE X
FLOODWAY ZONE AE
1-STORY UNDER CONSTRUCTION
1-STORY BRICK #281
OLD CONC BUILDING FOUNDATION
WOOD SHED
STORAGE SHED
WOOD OVERHANG
20' WIDE SANITARY SEWER ESMT (L.4689, P.481)
10' WIDE TRAIL ESMT (L.50269, P.347)
5'X10' LIGHTING EASEMENT (L.15141, P.837) (L.15141, P.840) (L.15141, P.843)
TEMPORARY CONSTRUCTION FENCE
6'CHAIN LINK FENCE
6'CHAINLINK FENCE
SPLIT RAIL FENCE
OVERHEAD WIRE FENCE
N85°03'30"W 146.02'
146.0'(P) 146.51'(M)
N85°03'30"W 69.40'
N85°05'28"W(TC) 58.8'(TAX)(C)
N85°03'30"W 240.74'
N85°03'30"W 151.17'(P) 151.82'(C)
N85°03'42"E 43.91'(P)
S82°46'35"E 148.33'
S22°09'39"E 9.82'(C)
S22°09'39"E 40.00'
S19°31'09"E(P) 20.0'(P)
S86°52'32"E(C) S86°10'20"E(P) 56.00'
S84°26'15"E 137.71' 143.00'(TAX)
S72°51'56"W 402.15'(TAX) SOUTH LINE TAX PARCEL 228-024
S13°55'41"E 40.26'(TAX)
S22°22'36"E 55.01'(P) 52.22'(C)
S22°36'37"E 64.58'(C)
S22°36'31"E 135.70'(TAX)
S22°36'31"E 136.31'(C) 135.70'(TAX)
S03°20'07"E 224.43'
N03°20'07"E 224.43'
N22°09'39"W 219.82'
N04°47'15"E 8.68'
N79°56'36"E 271.08'
S05°50'07"W 249.30'
S05°50'07"W 53.40'
N04°35'28"E 62.86'(TAX)
N85°03'42"E 127.81'(M)
S85°03'42"E 127.81'(M)
N85°03'42"E 88.4'(P)
N85°03'42"E 39.41'(P)
N85°03'42"E 127.5'(P)
N85°03'42"E 101.14'(P)
N85°03'42"E 55.17'
N85°03'30"W(C)
N85°03'30"W(P) 55.17'
N85°05'28"W(TC) 58.8'(TAX)(C)
N85°05'28"W 10.8'(P)
N85°03'30"W 69.40'
N85°03'30"W 146.02'
N85°03'30"W 240.74'
N85°03'30"W 151.17'(P) 151.82'(C)
N85°03'30"W 146.53'(P)
N85°03'30"W 146.53'(M)
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N85°03'30"W 146.02'
N85°03'30"W 240.74'
N85°03'30"W 151.17'(P) 151.82'(C)
N85°03'30"W 146.53'(P)
N85°03'30"W 146.53



GENERAL DEMOLITION NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
2. ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES.
3. STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
4. SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
5. REMOVE ALL STRUCTURES DESIGNATED FOR REMOVAL ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES FOUNDATIONS, FOOTINGS, FOUNDATION WALLS, FLOOR SLABS, UNDERGROUND UTILITIES, CONCRETE, ASPHALT, TREES, ETC.
6. THE CONTRACTOR SHALL, AS A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15 FEET OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER LOCAL AGENCY REQUIREMENTS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
8. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER AGENCY REQUIREMENTS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO CONFIRM THAT UTILITY LEADS HAVE BEEN TAKEN OUT OF SERVICE PRIOR TO DEMOLITION.
10. ALL BUILDING GAS LEADS, METERS AND ASSOCIATED EQUIPMENT SHALL BE REMOVED AS SHOWN ON THE PLANS. COORDINATE ALL ASSOCIATED WORK WITH THE APPROPRIATE UTILITY COMPANY.
11. REMOVE ALL OVERHEAD AND UNDERGROUND ELECTRICAL LINES WITHIN THE AREA OF CONSTRUCTION AS SHOWN ON THE PLANS. COORDINATE SHUTDOWNS AND REMOVALS WITH ELECTRICAL SERVICE PROVIDER OR THE APPROPRIATE UTILITY COMPANY. (NOTE: PHONE AND CABLE T.V. SERVICES MAY ALSO BE LOCATED ON OVERHEAD LINES.)
12. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF SIGNS AND SUPPORTS WITHIN THE WORK AREA, AS NECESSARY TO FACILITATE CONSTRUCTION. SIGNS SHALL BE PROTECTED OR STOCKPILED FOR REUSE AS SPECIFIED IN THE PLANS OR AS REQUIRED BY THE AGENCY OF JURISDICTION. THE CONTRACTOR SHALL REPLACE ANY DAMAGED SIGNS AND SUPPORTS AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

DEMOLITION LEGEND:

- ITEM TO BE PROTECTED
- ITEM TO BE REMOVED
- CURB/FENCE REMOVAL
- CONCRETE PAVEMENT AND SIDEWALK REMOVAL
- AREA OR ITEMS TO BE REMOVED
- UTILITY REMOVAL
- ABANDON UTILITY
- ASPHALT REMOVAL
- TREE REMOVAL
- SAWCUT LINE

PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 15 30 60
SCALE: 1" = 30'

Know what's below. Call before you dig.

CAUTION!!
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CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
- -

ORIGINAL ISSUE DATE:
MARCH 31, 2026

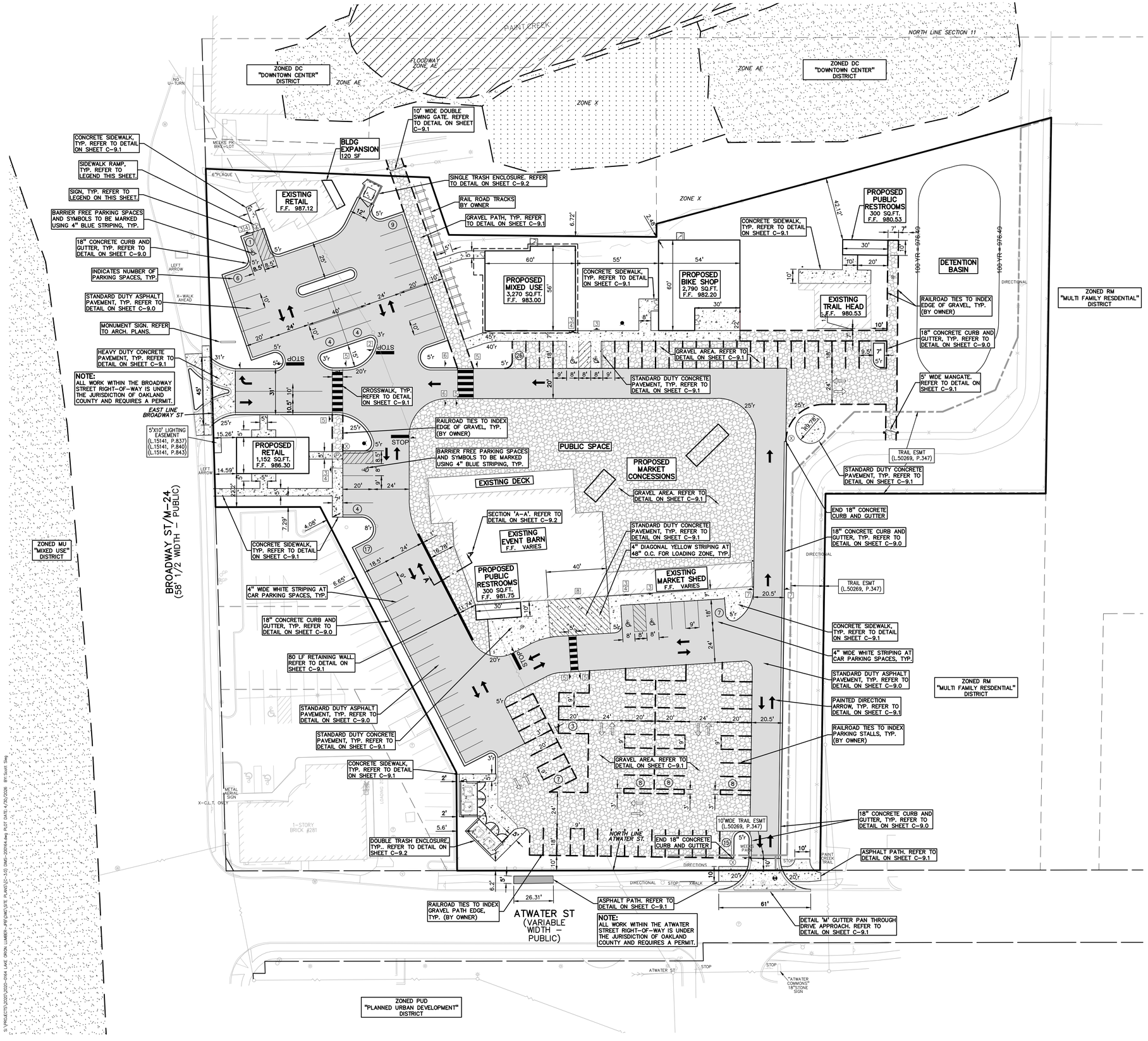
DRAWING TITLE
DEMOLITION PLAN

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-2.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2020\20200-0164 LAKE ORION LUMBER-JPB\DWG\SITE PLANS\(C-2.0) DEMO-20016A.dwg PLOT DATE: 4/30/2026 BY: Scott Sieg



LEGEND:

- CONCRETE PAVEMENT (STD DUTY / HEAVY DUTY / R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY / HEAVY DUTY / DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. 'NO PARKING-FIRE LANE' SIGNS SHALL BE POSTED ALONG ALL FIRE LANES AT 100 FOOT INTERVALS OR AS DIRECTED BY THE FIRE OFFICIAL.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

SIDEWALK RAMP LEGEND:

CURB DROP ONLY	(X)
SIDEWALK RAMP 'TYPE P'	(P)

REFER TO STANDARD RAMP AND DETECTABLE WARNING DETAILS

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN	[1]
'STOP' SIGN	[2]
'BARRIER FREE PARKING' SIGN	[3]
'VAN ACCESSIBLE' SIGN	[4]
'CROSSWALK' SIGN	[5]
'DO NOT ENTER' SIGN	[6]
'ONE WAY ONLY' SIGN	[7]
'NO PARKING LOADING ZONE' SIGN	[8]

REFER TO DETAIL SHEET FOR SIGN DETAILS

SITE DATA TABLE:

SITE AREA: 4.12 ACRES (179,467.20 SF.) NET AND GROSS

ZONING: MU - MIXED USE DISTRICT

PROPOSED USE: RETAIL (4,984 SF) / MIXED USE (12,940 SF.)

BUILDING INFORMATION:
- MAXIMUM ALLOWABLE BUILDING HEIGHT = 36 FT
- PROPOSED BUILDING HEIGHT = 24 FT
- BUILDING FOOTPRINT AREA = 17,524 SF.
- BUILDING LOT COVERAGE = 9.76%

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
REAR (NORTH)	25'	X'
SIDE (EAST)	0'	X'
FRONT (WEST)	10'	X'
FRONT (SOUTH)	10'	X'

PARKING CALCULATIONS:

REQUIRED
- RETAIL = 1 SPACE PER 250 SF.
- TOTAL RETAIL PARKING REQUIRED = 4,972 / 250 = 19.89 OR 20 SPACES
- MIXED USE = 1 SPACE PER 150 SF.
- TOTAL MIXED USE PARKING REQUIRED = 12,540 / 150 = 83.60 OR 84 SPACES
- TOTAL REQUIRED PARKING = 104 SPACES

PROPOSED
- TOTAL PROPOSED PARKING SPACES = 127 SPACES INC. 6 H/C SPACES (4 VAN ACCESS.)

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN — JAMES P. BRUNETTE — LICENSE NO. 039605 — PROFESSIONAL ENGINEER

NORTH

0 15 30 60

SCALE: 1" = 30'

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

CAUTION!!
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CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
- -

ORIGINAL ISSUE DATE:
MARCH 31, 2026

DRAWING TITLE
PRELIMINARY SITE PLAN

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-3.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2020\2020-0164 LAKE ORION LUMBER\~#PE\DWG\SITE PLANS\(C-3.0) DWG-200914.dwg PLOT DATE: 4/30/2026 BY: Scott Sing



LEGEND:

- CONCRETE PAVEMENT (STD DUTY, HEAVY DUTY, R.O.W. ONLY)
- ASPHALT PAVEMENT (STD DUTY, HEAVY DUTY, DEEP STRENGTH)
- GRAVEL
- WETLAND
- CONCRETE CURB AND GUTTER
- REVERSE GUTTER PAN
- SETBACK LINE
- SIGN
- LIGHTPOLE
- FENCE
- GUARD RAIL

GENERAL NOTES:

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1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
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4. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS

SIDEWALK RAMP LEGEND:

CURB DROP ONLY	(X)
SIDEWALK RAMP 'TYPE P'	(P)

REFER TO STANDARD RAMP AND DETECTABLE WARNING DETAILS

SIGN LEGEND:

'NO PARKING FIRE LANE' SIGN	[1]
'STOP' SIGN	[2]
'BARRIER FREE PARKING' SIGN	[3]
'VAN ACCESSIBLE' SIGN	[4]
'CROSSWALK' SIGN	[5]
'DO NOT ENTER' SIGN	[6]
'ONE WAY ONLY' SIGN	[7]
'NO PARKING LOADING ZONE' SIGN	[8]

REFER TO DETAIL SHEET FOR SIGN DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN · JAMES P. BUTLER · LICENSE NO. 039605 · PROFESSIONAL ENGINEER

NORTH

0 15 30 60

SCALE: 1" = 30'

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CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
- -

ORIGINAL ISSUE DATE:
MARCH 31, 2026

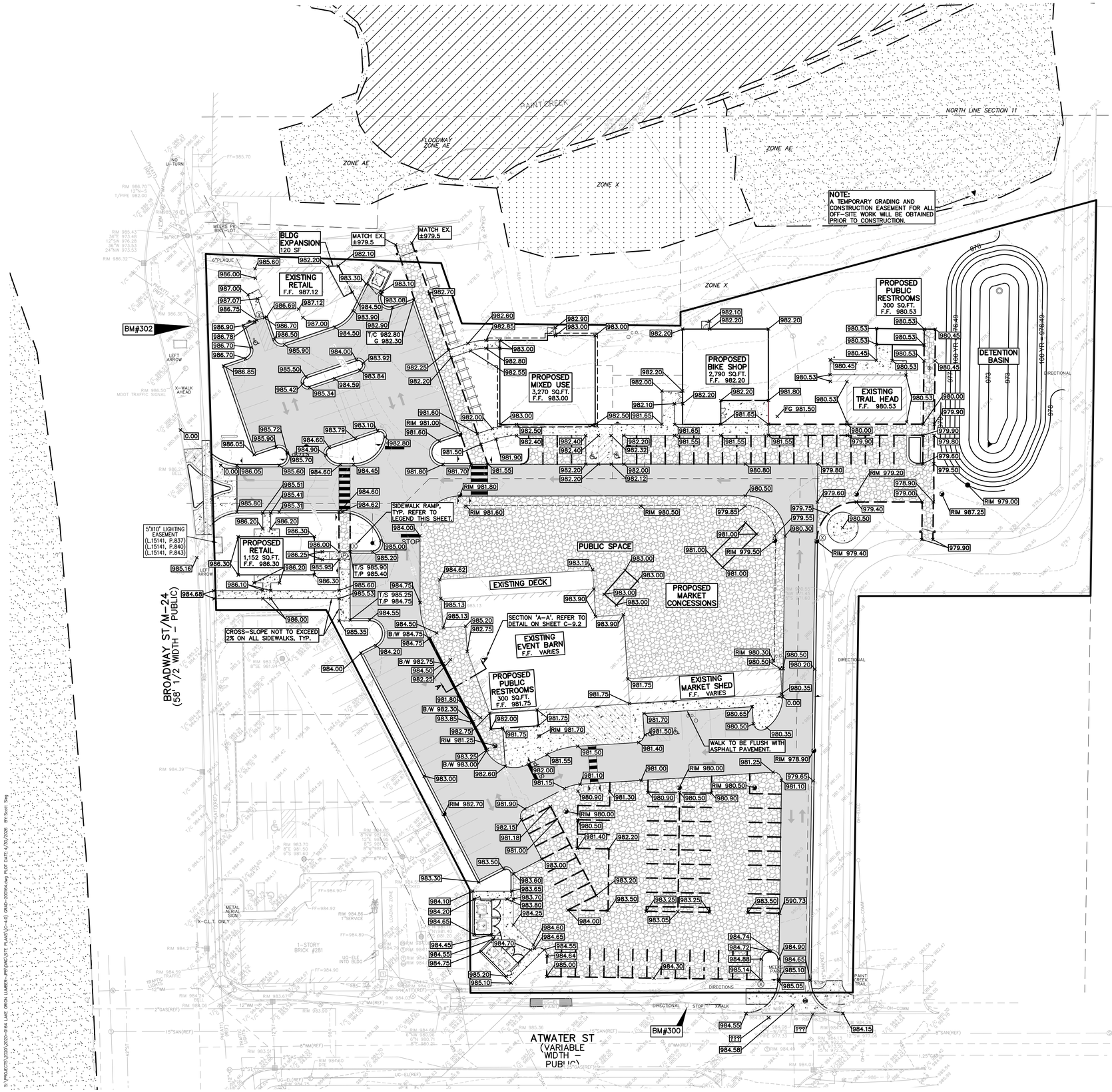
DRAWING TITLE
PRELIMINARY TRUCK TURNING PLAN

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-3.1

NOT FOR CONSTRUCTION

S:\PROJECTS\2020\2020-0164 LAKE ORION LUMBER-JPB\DWG\SITE PLANS\[C-3.1] PRE-20264.dwg PLOT DATE: 1/30/2026 BY: Scott Sieg



GRADING LEGEND:

- EXISTING SPOT ELEVATION (±986.91)
- PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES. (622.50)
- EXISTING CONTOUR (670)
- PROPOSED CONTOUR (922)
- PROPOSED REVERSE GUTTER PAN
- PROPOSED RIDGE LINE
- PROPOSED SWALE/DITCH

ABBREVIATIONS

T/C = TOP OF CURB
T/P = TOP OF PAVEMENT
T/S = TOP OF SIDEWALK
T/W = TOP OF WALL
B/W = BOTTOM OF WALL
G = GUTTER GRADE
FF = FINISH FLOOR
FG = FINISH GRADE
RIM = RIM ELEVATION

REFER TO GRADING NOTES ON SHEET C-9.0

RETAINING WALL NOTE:

TOP OF WALL (T/W) AND BOTTOM OF WALL (B/W) GRADES ARE THE FINISH GRADE AT THE TOP AND BOTTOM OF THE RETAINING WALL, NOT ACTUAL TOP AND BOTTOM OF THE WALL STRUCTURE.

EARTHWORK BALANCING NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPORTING OR EXPORTING ALL MATERIALS AS REQUIRED TO PROPERLY GRADE THIS PROJECT TO THE FINISHED ELEVATIONS SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF CUT AND FILL QUANTITIES AND ALLOW FOR REMOVAL OF EXCESS OR IMPORTATION OF ADDITIONAL MATERIAL AT NO ADDITIONAL COST TO THE OWNER.

BENCHMARKS

(ENTER DATUM HERE)

BM #300
BM DESCRIPTION.....
ELEV. - 000.00

BM #301
BM DESCRIPTION.....
ELEV. - 000.00

SIDEWALK RAMP LEGEND:

CURB DROP ONLY (X)
SIDEWALK RAMP 'TYPE P' (P)
REFER TO STANDARD RAMP AND DETECTABLE WARNING DETAILS

PEA GROUP
t: 844.813.2949
www.peagroup.com

STATE OF MICHIGAN · JAMES P. BOUCHARD · LICENSE NO. 039605 · PROFESSIONAL ENGINEER

NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE BASED UPON LIMITED FIELD SURVEY AND RECORDS AND IS NOT GUARANTEED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
- -

ORIGINAL ISSUE DATE:
MARCH 31, 2026

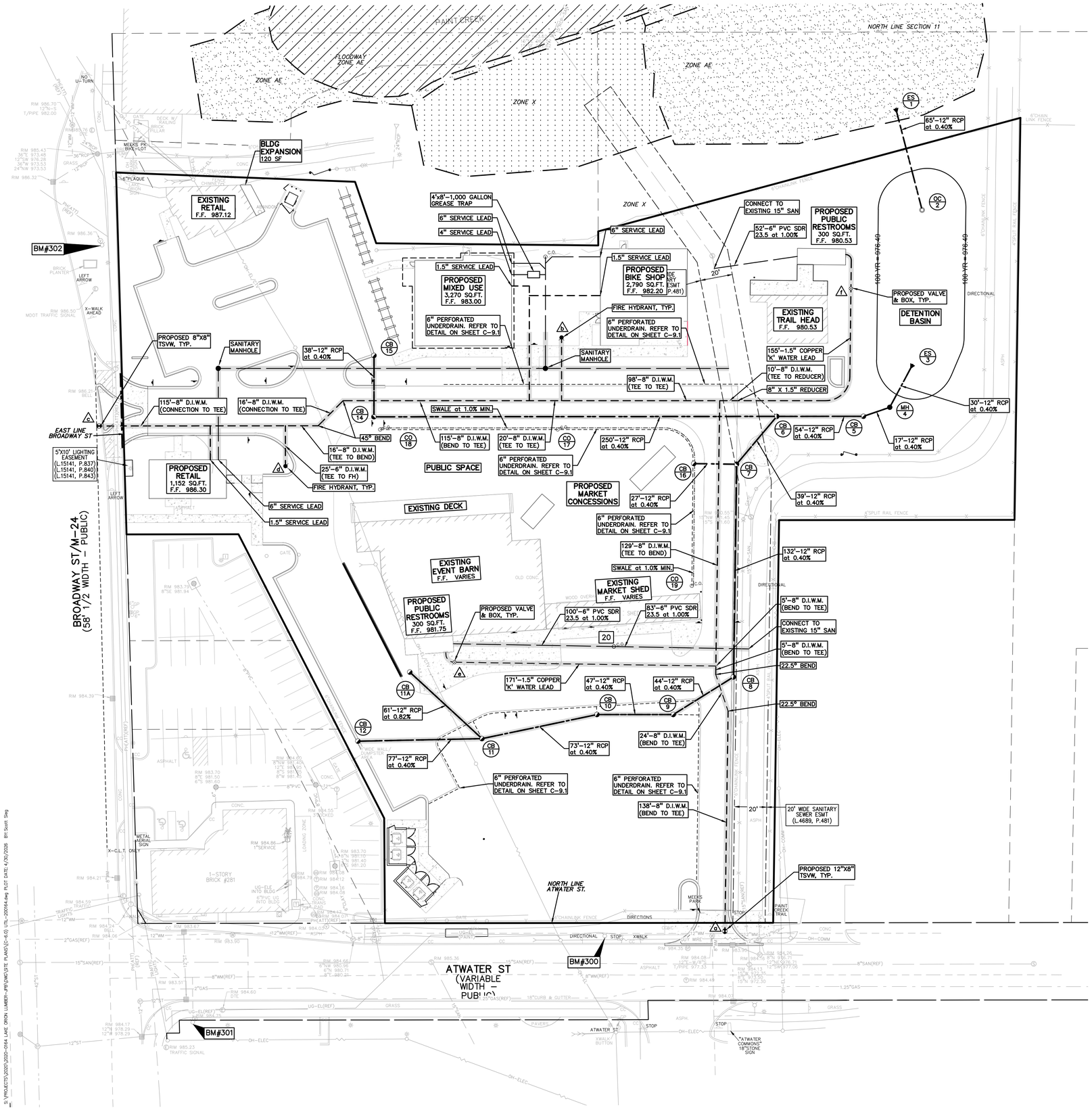
DRAWING TITLE
PRELIMINARY GRADING PLAN

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-4.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2020\2020-0164 LAKE ORION LUMBER\JPB\DWG\SITE PLANS\(C-4.0) GRAD-200164.dwg PLOT DATE: 4/30/2026 BY: Scott Sieg



UTILITY LEGEND:

- EX. OH ELEC, POLE & GUY WIRE
- EX. U.G. CABLE TV & PEDESTAL
- EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
- EX. U.G. ELEC,MANHOLE, METER & HANDHOLE
- EX. GAS LINE
- EX. GAS VALVE & GAS LINE MARKER
- EX. TRANSFORMER & IRRIGATION VALVE
- EX. WATER MAIN
- EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
- EX. WATER VALVE BOX & SHUTOFF
- EX. SANITARY SEWER
- EX. SANITARY CLEANOUT & MANHOLE
- EX. COMBINED SEWER MANHOLE
- EX. STORM SEWER
- EX. CLEANOUT & MANHOLE
- EX. SQUARE, ROUND, & BEEHIVE CATCH BASIN
- EX. YARD DRAIN & ROOF DRAIN
- EX. UNIDENTIFIED STRUCTURE
- PROPOSED WATER MAIN
- PROPOSED HYDRANT AND GATE VALVE
- PROPOSED TAPPING SLEEVE, VALVE & WELL
- PROPOSED POST INDICATOR VALVE
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY CLEANOUT & MANHOLE
- PROPOSED STORM SEWER
- PROPOSED STORM SEWER CLEANOUT & MANHOLE
- PROPOSED CATCH BASIN, INLET & YARD DRAIN

NORTH

0 15 30 60

SCALE: 1" = 30'

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MDOT 2484 (06/2025)

ALL FIELDS SHALL BE COMPLETED BY THE APPLICANT

Data Summary

Site Information	Existing Conditions	Proposed Conditions	
Drainage Area (Acres)	4.12	4.12	
Site % Impervious	1.18	2.87	

Frequency	Existing Flow to MDOT ROW		Proposed Flow to MDOT ROW						
			Without Detention			With Detention*			
	Discharge (cfs)	Runoff Volume (cf)	Discharge (cfs)	Velocity ** (ft/s)	Runoff Volume (cf)	Discharge (cfs)	Velocity (ft/s)	Required Storage Volume*** (cf)	Water Surface Elevation (ft)
2-year Storm Event	2.067	16,235	5.837		19,258	4.902	3.11	3,023	974.63
10-year Storm Event	3.713	28,572	10.12		32,431	7.371	3.11	3,59	975.18
50-year Storm Event	6,131	47,082	16.18		51,750	9,282	3.11	4,668	976.09
100-year Storm Event****	7,352	56,595	19.17		61,572	10.00	3.11	4,977	976.49

* Not required if proposed discharge is less than or equal to the existing discharge without detention
** Not applicable (N/A) if "sheet flow" into MDOT ROW or detention is proposed
*** Difference in volume between proposed and existing conditions. N/A if proposed volume is less than or equal to existing volume
**** Harmful Interference Evaluation

Certification

I, JAMES P. BUTLER (Print your name) P.E., have prepared the attached plans and specifications for the proposed drainage system. The proposed flow from this drainage system is discharged at a flow rate equal to or less than the existing flow rate conditions into the MDOT stormwater conveyance system; the velocity discharged is properly dissipated; there is storage on the permit applicant's property for the range of flows above so that no harmful interference to MDOT ROW or adjacent properties will be caused. This discharge to MDOT's stormwater system will not cause a violation of MDOT's NPDES stormwater discharge permit and the site is designed to include stormwater control measures (SCMs) to treat the first inch of runoff to achieve 80% total suspended sediment removal and maintain the existing discharge rate and volume for the 2-year, 24-hour storm event. A maintenance plan is developed to ensure the long-term operation of the SCMs.

Signature: , P.E.

Michigan Professional Engineer License Number: 6201039605

Date: 03/31/2026

This document shall be sealed in the space to the left and submitted with the application.

PEA GROUP
t: 844.813.2949
www.peagroup.com

CLIENT
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REVISIONS
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ORIGINAL ISSUE DATE:
MARCH 31, 2026

DRAWING TITLE
PRELIMINARY UTILITY PLAN

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-6.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2020\20-0164_LAKE ORION LUMBER-JPB\DWG\SITE PLANS\C-6.0 UTIL-20164.dwg PLOT DATE: 4/XX/2026 BY: Scott Sieg

GENERAL NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

1. ALL CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT OSHA, MDOT AND MUNICIPALITY STANDARDS AND REGULATIONS.
2. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT THE ENGINEER SHOULD THEY ENCOUNTER ANY DESIGN ISSUES DURING CONSTRUCTION. IF THE CONTRACTOR MAKES DESIGN MODIFICATIONS WITHOUT THE WRITTEN DIRECTION OF THE DESIGN ENGINEER, THE CONTRACTOR DOES SO AT HIS OWN RISK.
4. UNLESS OTHERWISE AGREED UPON BETWEEN THE OWNER AND CONTRACTOR, THE CONTRACTOR SHALL PAY ALL MUNICIPAL, COUNTY, AND STATE PERMIT, INSPECTION, AND/OR TESTING FEES. THE CONTRACTOR SHALL ALSO PROVIDE THE NECESSARY BONDS AND INSURANCE REQUIRED TO COMPLETE THE PROJECT
5. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION. IF NO NOTIFICATION IS GIVEN AND DAMAGE RESULTS, SAID DAMAGE WILL BE REPAIRED AT SOLE EXPENSE OF THE CONTRACTOR. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.
6. CONTRACTOR SHALL VERIFY THAT THE PLANS AND SPECIFICATIONS ARE THE VERY LATEST PLANS AND SPECIFICATIONS AND FURTHERMORE, VERIFY THAT THESE PLANS AND SPECIFICATIONS HAVE BEEN APPROVED. ALL ITEMS CONSTRUCTED BY THE CONTRACTOR PRIOR TO RECEIVING FINAL APPROVAL, HAVING TO BE ADJUSTED OR RE-DONE, SHALL BE AT THE CONTRACTORS EXPENSE. SHOULD THE CONTRACTOR ENCOUNTER A CONFLICT BETWEEN THESE PLANS AND/OR SPECIFICATIONS, THEY SHALL SEEK CLARIFICATION IN WRITING FROM THE ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION. FAILURE TO DO SO SHALL BE AT SOLE EXPENSE TO THE CONTRACTOR.
7. ANY WORK WITHIN THE STREET OR HIGHWAY RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.
8. ALL PROPERTIES OR FACILITIES IN THE SURROUNDING AREAS, PUBLIC OR PRIVATE, DESTROYED OR OTHERWISE DISTURBED DUE TO CONSTRUCTION, SHALL BE REPLACED AND/OR RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADING, SIGNAGE, LIGHTS AND TRAFFIC CONTROL DEVICES TO PROTECT THE WORK AND SAFELY MAINTAIN TRAFFIC IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION). THE DESIGN ENGINEER, OWNER, CITY AND STATE SHALL NOT BE HELD LIABLE FOR ANY CLAIMS RESULTING FROM ACCIDENTS OR DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO COMPLY WITH TRAFFIC AND PUBLIC SAFETY REGULATIONS DURING THE CONSTRUCTION PERIOD.
10. THE USE OF CRUSHED CONCRETE IS PROHIBITED ON THE PROJECT WITHIN 100 FEET OF ANY WATER COURSE (STREAM, RIVER, COUNTY DRAIN, ETC.) AND LAKE, REGARDLESS OF THE APPLICATION OR LOCATION OF THE WATER COURSE OR LAKE RELATIVE TO THE PROJECT LIMITS.
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND /OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.

PAVING NOTES:

1. IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.
2. REFER TO ARCHITECTURAL PLANS FOR DETAILS OF FROST SLAB AT EXTERIOR BUILDING DOORS.
3. CONSTRUCTION TRAFFIC SHOULD BE MINIMIZED ON THE NEW PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, THE INITIAL LIFT THICKNESS COULD BE INCREASED AND PLACEMENT OF THE FINAL LIFT COULD BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM.
4. ALL EXPANSION JOINTS AND CONCRETE PAVEMENT JOINTS TO BE SEALED.
5. CONCRETE PAVEMENT JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION;
   - 5.1. WHERE PROPOSED CONCRETE ABUTS A STRUCTURE, PROVIDE A MINIMUM 1/2" EXPANSION JOINT. THE JOINT FILLER BOARD MUST BE AT LEAST THE FULL DEPTH OF THE CONCRETE AND HELD DOWN A 1/2" TO ALLOW FOR SEALING.
   - 5.2. WHERE PROPOSED CONCRETE ABUTS EXISTING CONCRETE OR IN BETWEEN POURS OF PROPOSED CONCRETE (CONSTRUCTION JOINT), PROVIDE 5/8" DOWELS EVERY 30" CENTER TO CENTER HALF WAY ALONG THE THICKNESS OF THE PROPOSED PAVEMENT. ALTERNATE DOWELS SIZES AND SPACING MUST BE APPROVED THE ENGINEER PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
   - 5.3. WHERE PROPOSED CONCRETE ABUTS EXISTING OR PROPOSED SIDEWALK OR CURBING, PROVIDE A MINIMUM 1/2" EXPANSION JOINT.
   - 5.4. CONTROL, LONGITUDINAL AND/OR TRANSVERSE JOINTS SHALL BE PLACED TO PROVIDE PANELS WITHIN THE PAVEMENT AS SQUARE AS POSSIBLE WITH THE FOLLOWING MAXIMUM SPACING PARAMETERS:
     - 5.4.1. 6-INCH THICK CONCRETE PAVEMENT: 12' X 12'
     - 5.4.2. 8-INCH THICK CONCRETE PAVEMENT: 15' X 15'
   - 5.5. IRREGULAR-SHAPED PANELS MAY REQUIRE THE USE OF REINFORCING MESH OR FIBER MESH AS DETERMINED BY THE ENGINEER. THE USE OF MESH MUST BE APPROVED THE ENGINEER PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
   - 5.6. IF A JOINT PLAN IS NOT PROVIDED IN THE PLANS, THE CONTRACTOR SHALL SUBMIT ONE TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
6. CONCRETE CURBING JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION
   - 6.1. JOINTS WHEN ADJACENT TO ASPHALT PAVEMENT
     - 6.1.1. PLACE CONTRACTION JOINTS AT 10' INTERVALS
     - 6.1.2. PLACE 1/2" EXPANSION JOINT AT CATCH BASINS, EXISTING AND PROPOSED SIDEWALK OR EXISTING CURBING.
     - 6.1.3. PLACE 1" EXPANSION JOINT:
       - 6.1.3.1. AT SPRING POINTS OF INTERSECTIONS OR ONE OF THE END OF RADIUS LOCATIONS IN A CURVE
       - 6.1.3.2. AT 400' MAXIMUM INTERVALS ON STRAIGHT RUNS
       - 6.1.3.3. AT THE END OF RADIUS AT OPPOSITE ENDS IN A CURBED LANDSCAPE ISLAND
   - 6.2. JOINTS WHEN TIED TO CONCRETE PAVEMENT
     - 6.2.1. PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT
     - 6.2.2. PLACE 1/2" EXPANSION JOINT AT CATCH BASINS, EXISTING AND PROPOSED SIDEWALK OR EXISTING CURBING.
     - 6.2.3. PLACE 1" EXPANSION JOINT OPPOSITE ALL TRANSVERSE EXPANSION JOINTS IN PAVEMENT
     - 6.2.4. CONCRETE CURB AND GUTTER AND CONCRETE PAVEMENT SHALL BE TIED TOGETHER SIMILAR TO A LONGITUDUNAL LANE TIE ON MDOT DETAIL R-30-G, OR LATEST VERSION. TIE BARS SHALL BE EPOXY COATED #5 DEFORMED BAR (1'-6" LONG FOR A 18" WIDE CURB AND GUTTER AND 2'6" OF A 24" CURB AND GUTTER) SIMILAR TO THE MDOT DETAIL R-41-H, OR LATEST VERSION, TYPE B.
   - 6.3. IN BETWEEN POURS OF PROPOSED CONCRETE CURBING (CONSTRUCTION JOINT):
     - 6.3.1. CARRY THE REBAR CONTINUOUSLY BETWEEN POURS
     - 6.3.2. IF THE REBAR IS NOT LONG ENOUGH TO CARRY CONTINUOUSLY, THEN TIE TWO PIECES OF REBAR PER THE LATEST MDOT SPECIFICATIONS
7. CONCRETE SIDEWALK JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION
   - 7.1. PLACE TRANSVERSE CONTRACTION JOINTS EQUAL TO THE WIDTH OF THE WALK WHEN WIDTH IS LESS THAN 8'
   - 7.2. PLACE TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS EQUAL TO 1/2 THE WIDTH OF THE WALK WHEN WIDTH IS EQUAL TO OR GREATER THAN 8'
   - 7.3. PLACE 1" EXPANSION JOINT WHERE ABUTTING SIDEWALK RAMP AND/OR RADIUS IN INTERSECTION
   - 7.4. PLACE TRANSVERSE 1/2" EXPANSION JOINT AT MAXIMUM OF 100' SPACING
   - 7.5. PLACE 1/2" EXPANSION JOINT WHEN ABUTTING A FIXED STRUCTURE, OTHER PAVEMENT (CONCRETE PAVEMENT AND DRIVE APPROACHES), UTILITY STRUCTURES, LIGHT POLE BASES AND COLUMNS

GENERAL GRADING AND EARTHWORK NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING TREES AND BRUSH AND REMOVE ALL THAT ARE NECESSARY TO GRADE SITE.
2. ALL GRADES ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
3. THE STAGING OF CONSTRUCTION ACTIVITIES SHALL OCCUR ONLY WITHIN THE SITE BOUNDARIES. ANY CONSTRUCTION ACTIVITIES OUTSIDE OF THE SITE BOUNDARIES SHALL BE AT THE SOLE RESPONSIBILITY AND RISK OF THE CONTRACTOR.
4. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL MEET THE REQUIREMENTS OF THE AUTHORIZED PUBLIC AGENCY OF JURISDICTION. AN EROSION CONTROL PERMIT MUST BE SECURED FROM THE COUNTY PRIOR TO CONSTRUCTION.
5. ALL EARTHWORK AND GRADING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE SOILS INVESTIGATION AND REPORT.
6. REFER TO SOIL EROSION CONTROL PLAN FOR ADDITIONAL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND NOTES.
7. THE DETENTION BASIN SIDE SLOPES AND ALL SLOPE EXCEEDING 1:6 MUST BE STABILIZED BY SODDING OR BY PLACING A MULCH BLANKET PEGGED IN PLACE OVER SEED.
8. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR SODDED IN ACCORDANCE WITH THE LANDSCAPE PLANS. PROVIDE A MINIMUM OF 3" OF TOPSOIL IN THESE AREAS UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL NOTE EXISTING UNDERGROUND UTILITIES WITHIN AND ADJACENT TO THE SITE. BACKFILL FOR EXISTING UTILITY TRENCHES SHALL BE EXAMINED CRITICALLY. ANY TRENCHES FOUND TO HAVE SOFT, UNSTABLE OR UNSUITABLE BACKFILL MATERIAL IN THE OPINION OF THE THIRD PARTY TESTING COMPANY, THAT ARE TO BE WITHIN THE ZONE OF INFLUENCE OF PROPOSED BUILDINGS OR PAVEMENT SHALL BE COMPLETELY EXCAVATED AND BACKFILLED WITH SUITABLE MATERIAL.
10. ON-SITE FILL CAN BE USED IF THE SPECIFIED COMPACTION REQUIREMENTS CAN BE ACHIEVED. IF ON-SITE SOIL IS USED, IT SHOULD BE CLEAN AND FREE OF FROZEN SOIL, ORGANICS, OR OTHER DELETERIOUS MATERIALS.
11. THE FINAL SUBGRADE/EXISTING AGGREGATE BASE SHOULD BE THOROUGHLY PROOFROLLED USING A FULLY LOADED TANDEM AXLE TRUCK OR FRONT END LOADER UNDER THE OBSERVATION OF A GEOTECHNICAL/PAVEMENT ENGINEER. LOOSE OR YIELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REINFORCED USING GEOGRIDS OR REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DICTATED BY FIELD CONDITIONS.
12. SUBGRADE UNDERCUTTING, INCLUDING BACKFILLING SHALL BE PERFORMED TO REPLACE MATERIALS SUSCEPTIBLE TO FROST HEAVING AND UNSTABLE SOIL CONDITIONS. ANY EXCAVATIONS THAT MAY BE REQUIRED BELOW THE TOPSOIL IN FILL AREAS OR BELOW SUBGRADE IN CUT AREAS WILL BE CLASSIFIED AS SUBGRADE UNDERCUTTING.
13. SUBGRADE UNDERCUTTING SHALL BE PERFORMED WHERE NECESSARY AND THE EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ANY SUBGRADE UNDERCUTTING SHALL BE BACKFILLED AS RECOMMENDED IN THE GEOTECHNICAL ENGINEERING REPORT FOR THE PROJECT.
14. ANY SUB-GRADE WATERING REQUIRED TO ACHIEVE REQUIRED DENSITY SHALL BE CONSIDERED INCIDENTAL TO THE JOB.

GENERAL UTILITY NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY.
2. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.
3. WHERE EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES 4" CENTER TO CENTER, AROUND PERIPHERY OF OPENING TO CREATE A PLANE OF WEAKNESS JOINT BEFORE BREAKING SECTION OUT.
4. THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING UTILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE DESIGN ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. CONTRACTOR SHALL FIELD VERIFY UTILITIES.
5. THE CONTRACTOR SHALL COORDINATE TO ENSURE ALL REQUIRED PIPES, CONDUITS, CABLES AND SLEEVES ARE PROPERLY PLACED FOR THE INSTALLATION OF GAS, ELECTRIC, PHONE, CABLE, IRRIGATION, ETC. IN SUCH A MANNER THAT WILL FACILITATE THEIR PROPER INSTALLATION PRIOR TO THE PLACEMENT OF THE PROPOSED PAVEMENT AND LANDSCAPING.
6. ALL SEWER CLEANOUTS TO BE PROVIDED WITH EJ #1565 BOX OR EQUAL.
7. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.
8. CONTRACTOR SHALL INSPECT ALL EXISTING PUBLIC STORM SEWER, SANITARY SEWER AND WATER MAIN STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION AND WITH THE GOVERNING AGENCY INSPECTOR PRIOR TO ESTABLISHING FINAL GRADE. NOTIFY THE ENGINEER, OWNER/DEVELOPER, AND GOVERNING AGENCY IF STRUCTURE IS DEEMED TO BE STRUCTURALLY UNSOUND AND/OR IN NEED OF REPAIR.

STORM SEWER NOTES:

1. ALL STORM SEWER 12" DIAMETER OR LARGER SHALL BE REINFORCED CONCRETE PIPE (RCP C-76) CLASS IV WITH MODIFIED TONGUE AND GROOVE JOINT WITH RUBBER GASKETS UNLESS SPECIFIED OTHERWISE (ASTM C-443).
2. ALL STORM SEWER LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL STORM SEWER 10" OR LESS AND/OR LEADS SHALL BE PVC SDR 26.
4. JOINTS FOR P.V.C. PIPE SHALL BE ELASTOMERIC (RUBBER GASKET) AS SPECIFIED IN A.S.T.M. DESIGNATION D-3212.

WATER MAIN NOTES:

1. ALL WATER MAIN SHALL BE INSTALLED WITH A MINIMUM COVER OF 6.0' BELOW FINISH GRADE. WHEN WATER MAINS MUST DIP TO PASS UNDER A STORM SEWER OR SANITARY SEWER, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH BY THE USE OF VERTICAL TWENTY TWO AND A HALF (22.5°) DEGREE BENDS, PROPERLY ANCHORED.
2. ALL TEES, BENDS, CONNECTIONS, ETC. ARE CONSIDERED INCIDENTAL TO THE JOB.
3. MAINTAIN 10' HORIZONTAL CLEARANCE BETWEEN OUTER EDGE OF WATERMAIN AND ANY SANITARY/STORM SEWER OR STRUCTURE.
4. NO PHYSICAL CONNECTION TO THE EXISTING WATER MAIN CAN BE MADE UNTIL ALL NEW WATER MAIN PASSES PRESSURE AND BACTERIOLOGICAL TESTS TO THE SATISFACTION OF THE CITY.
5. ALL WATER MAIN AND FITTINGS (3" DIAMETER AND LARGER) SHALL BE DUCTILE IRON, CLASS 54.
6. WATER MAIN SERVICE LEADS SHALL BE TYPE 'K' ANNEALED SEAMLESS COPPER WITH FLARED FITTINGS, UNLESS OTHERWISE NOTED.
7. ALL FIRE HYDRANTS SHALL BE EJIIV #5BR MODEL #250 PER XXXX STANDARDS.
8. ALL HYDRANTS TO BE A MINIMUM OF 5' FROM BACK OF CURB, TYP.
9. ALL NECESSARY FITTINGS, THRUST BLOCKS, RESTRAINING GLANDS, BLOW OFFS, ETC. FOR WATER MAIN ARE CONSIDERED INCIDENTAL TO THIS PROJECT. THE CONTRACTOR SHALL INSTALL THESE ITEMS AS NECESSARY AND AS REQUIRED BY THE CITY.
10. UNLESS NOTED SPECIFICALLY OTHERWISE ON THE PLANS, THE DESIGN INTENT IS TO HAVE THE WATER MAIN CONSTRUCTED WITH THIS PROJECT BE INSTALLED VIA OPEN CUT TRENCH BY THE CONTRACTOR. IF THE CONTRACTOR CHOOSES A DIFFERENT METHOD OF CONSTRUCTION, OTHER THAN WHAT IS SHOWN ON THE APPROVED PLANS UPON WHICH THE PERMIT WAS GRANTED, THE CONTRACTOR WILL BE RESPONSIBLE TO CONTACT THE REGULATORY AGENCIES TO REVISE THE APPROVED PERMIT.
11. ALL PIPES, PROTECTIVE MATERIALS, JOINING AND SEALING MATERIALS, AND MECHANICAL DEVICES USED IN THE WATERMAIN CONSTRUCTION SHALL COMPLY WITH THE CURRENT NSF/ANSI 61 STANDARDS FOR DRINKING WATER SYSTEM COMPONENTS.
12. THE WATER MAIN CONTRACTOR SHALL NOTIFY THE INSPECTION DEPARTMENT AT LEAST THREE WORKING DAYS IN ADVANCE OF STARTING CONSTRUCTION.

SANITARY SEWER NOTES:

1. DOWNSPOUTS, WEEP TILE, FOOTING DRAINS OR ANY CONDUIT THAT CARRIES STORM OR GROUND WATER SHALL NOT BE ALLOWED TO DISCHARGE INTO A SANITARY SEWER.
2. ALL SANITARY LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL SANITARY SEWER 8" OR LARGER SHALL BE PVC SDR 26 PIPE (ASTM D2680) AND FITTINGS, WITH ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER LEADS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 23.5 PIPE AND FITTINGS. ALL JOINTS TO BE ELASTOMERIC GASKET JOINTS PER ASTM D3212 UNLESS OTHERWISE NOTED.
5. SANITARY LEADS SHALL BE PROVIDED WITH CLEANOUTS EVERY 100 FEET AND AT EVERY BEND AS SHOWN.

CONSTRUCTION MATERIAL SUBMITTALS

UNLESS REQUIRED OTHERWISE IN THE PROJECT SPECIFICATIONS, THE CONTRACTOR SHALL ONLY SUBMIT THE FOLLOWING CONSTRUCTION MATERIAL SUBMITTALS, AS APPLICABLE TO THE PLANS, FOR REVIEW BY THE ENGINEER. UNLESS APPROVED IN ADVANCE AND IN WRITING BY THE ENGINEER, ANY MATERIAL SUBMITTALS PROVIDED TO THE ENGINEER FOR REVIEW IN ADDITION TO THIS LIST SHALL BE RETURNED TO THE CONTRACTOR WITHOUT A REVIEW BEING PERFORMED.

1. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES
2. UTILITY TRENCH BACKFILL MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER
3. RIP RAP MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER
4. STORM AND SANITARY SEWER PIPING INCLUDING JOINTS
5. STORM AND SANITARY SEWER STRUCTURES
6. STORM AND SANITARY SEWER STRUCTURE FRAME AND COVERS INCLUDING CLEAN OUTS
7. WATER DISTRIBUTION SYSTEM PIPING INCLUDING JOINTS
8. WATER DISTRIBUTION SYSTEM STRUCTURES
9. WATER DISTRIBUTION SYSTEM STRUCTURE FRAME AND COVERS
10. WATER DISTRIBUTION SYSTEM SHUT OFF BOXES
11. WATER DISTRIBUTION SYSTEM FIRE HYDRANTS
12. WATER DISTRIBUTION SYSTEM GATE VALVES
13. STORMWATER MANAGEMENT OUTLET CONTROL STRUCTURES INCLUDING COVERS OR GRATES
14. STORMWATER MANAGEMENT OUTLET SEDIMENTATION BASIN RISERS INCLUDING GRATES
15. STORMWATER MANAGEMENT MECHANICAL PRE-TREATMENT UNITS INCLUDING COVERS. CONTRACTOR MUST OBTAIN APPROVAL FROM AUTHORITY HAVING JURISDICTION (AHJ) FOR ANY ALTERNATE SYSTEM PRIOR TO SUBMISSION TO THE ENGINEER.
16. STORMWATER MANAGEMENT OIL/GREASE SEPARATORS
17. STORMWATER MANAGEMENT UNDERGROUND DETENTION SYSTEM MATERIAL AND SHOP DRAWINGS DEPICTING THE LAYOUT OF THE SYSTEM. CONTRACTOR MUST OBTAIN APPROVAL FROM AUTHORITY HAVING JURISDICTION (AHJ) FOR ANY ALTERNATE SYSTEM PRIOR TO SUBMISSION TO THE ENGINEER.
18. PAVEMENT AGGREGATE BASE MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER
19. PAVEMENT UNDERDRAIN MATERIAL AND BACKFILL WITH ALL BACKFILL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER
20. PAVEMENT MIX DESIGNS SUBMITTED FOR REVIEW BY THE ENGINEER MUST FOLLOW THE CURRENT MDOT REVIEW CHECKLISTS AS SUMMARIZED BELOW AND ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER:
   - · 8.1. CONCRETE MIX DESIGN REVIEW CHECKLIST (FORM 2000)
   - · 8.2. SUPERPAVE MIX DESIGN CHECKLIST (FORM 1862)
   - · 8.3. MARSHALL MIX DESIGN CHECKLIST (FORM 1849)
21. SITE FENCING AND GATES INCLUDING FOOTINGS
22. SITE RAILINGS INCLUDING FOOTING OR EMBEDMENTS
23. ANY ITEMS SHOWN IN THE PLANS OR DETAIL SHEETS THAT SPECIFICALLY STATE FOR THE CONTRACTOR TO SUBMIT A SHOP DRAWING TO THE ENGINEER FOR REVIEW. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO:

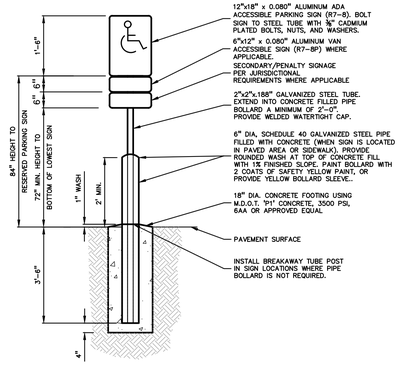
•• RETAINING WALL MATERIAL AND STRUCTURAL CALCULATIONS

•• TRENCH DRAIN MATERIAL AND SHOP DRAWING DEPICTING THE LAYOUT OF THE SYSTEM

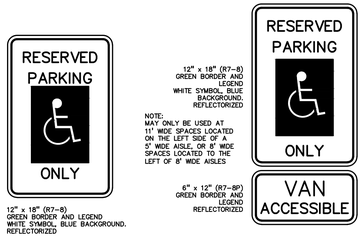
•• ANY SPECIALITY ITEMS SHOWN IN THE PLANS OR DETAIL SHEETS THAT SPECIFICALLY DO NOT STATE FOR THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING TO THE ENGINEER FOR REVIEW BUT THE CONTRACTOR REQUESTS TO BE REVIEWED. THE CONTRACTOR'S REQUEST FOR REVIEW MUST BE IN WRITING AND APPROVED BY THE ENGINEER PRIOR TO SUBMITTING THE INFORMATION.

ADA ACCESSIBLE SIGN NOTES:

1. ONE SIGN IS REQUIRED AT EACH ADA ACCESSIBLE PARKING SPACE.
2. ALL SIGNS SHALL COMPLY WITH THE LATEST STANDARDS OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
3. WHEN TWO ADA ACCESSIBLE PARKING SPACES ARE ADJACENT AND FACING EACH OTHER, TWO SIGNS ARE REQUIRED, BUT CAN BE MOUNTED ON THE SAME POST.
4. SIGN POSTS SHALL BE 2" NOM. SQUARE 14-GAUGE GALVANIZED STEEL TUBE WITH 7/16" HOLES AT 1" CENTERS. POSTS SHALL TELESCOPE INSIDE ANCHOR POSTS A MINIMUM OF 12".
5. ANCHOR POSTS SHALL BE 2.25" NOM. SQUARE 12-GAUGE GALVANIZED STEEL POST, A MINIMUM OF 3 FEET LONG.
6. IF THESE NOTES AND DETAILS CONFLICT WITH LOCAL CODES AND ORDINANCES, THE STRICTER REQUIREMENT SHOULD BE USED.
7. ALTERNATE MATERIALS MAY BE USED IF IN COMPLIANCE WITH ADA GUIDELINES AND LOCAL REQUIREMENTS.



ADA ACCESSIBLE SIGN AND POST DETAIL
NOT TO SCALE



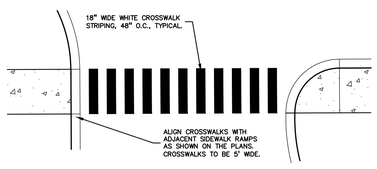
ADA ACCESSIBLE PARKING SIGN DETAIL
NOT TO SCALE

VAN ACCESSIBLE PARKING SIGN DETAIL
NOT TO SCALE

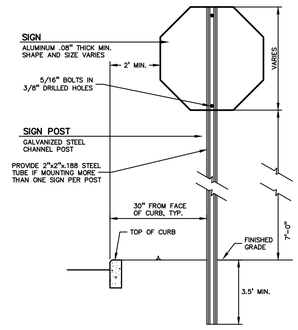


NO PARKING SIGN DETAIL
NOT TO SCALE

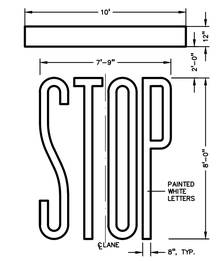
CROSSWALK SIGN DETAIL
NOT TO SCALE



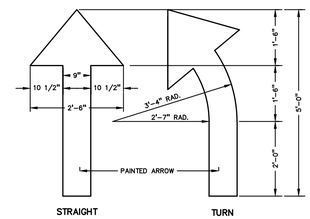
STRIPED CROSSWALK DETAIL
NOT TO SCALE



SIGN AND POST INSTALLATION IN LANDSCAPED AREAS
NOT TO SCALE

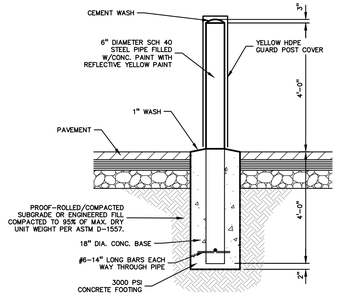


STOP BAR DETAIL
NOT TO SCALE

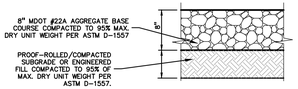


NOTE:
TRAFFIC MARKINGS SHOULD BE STRIPE USING WHITE TRAFFIC PAINT UNLESS OTHERWISE NOTED ON THE PLANS.

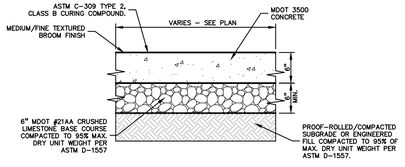
PAINTED DIREC



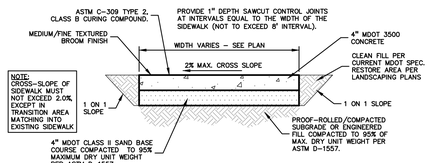
6" DIA. GUARD POST DETAIL
NOT TO SCALE



GRAVEL SHOULDER DETAIL
NOT TO SCALE



STANDARD DUTY CONCRETE DETAIL
NOT TO SCALE



CONCRETE SIDEWALK
NOT TO SCALE

AGGREGATE BASE NOTE:
THIS PAVEMENT SECTION DESIGN ASSUMES THE USE OF MDOT 21AA CRUSHED LIMESTONE BASE MATERIAL THAT MEETS THE REQUIREMENTS OF MDOT STANDARD SPECIFICATION SECTION 902 FOR AGGREGATES. IF CRUSHED CONCRETE AGGREGATE BASE IS PROPOSED IN LIEU OF THE SPECIFIED CRUSHED LIMESTONE MATERIAL, PEA GROUP WILL REQUIRE A MINIMUM 25% INCREASE IN BASE THICKNESS. HOWEVER, IF TESTING DOCUMENTATION IS PROVIDED TO PEA GROUP THAT SHOWS THAT THE CRUSHED CONCRETE MATERIAL MEETS ALL REQUIREMENTS OF MDOT SPECIFICATION SECTION 902, THEN THE 25% INCREASE IN THICKNESS MAY BE REEVALUATED.

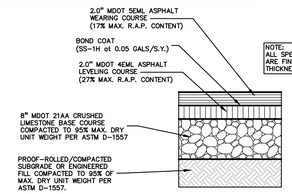
ASPHALT MATERIAL NOTES:
HOT-MIX ASPHALT (HMA) MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) SHALL MEET MDOT SPECIAL PROVISION 12SP501(E). REFER TO ADJACENT CHART FOR BINDER.

IF RAP IS USED IN ANY HMA MIX, THE ASPHALT BINDER GRADE MUST BE ADJUSTED IN ACCORDANCE WITH MDOT TIER1 OR TIER2 REQUIREMENTS (RAP BINDER CONTRIBUTION UP TO 27% MAXIMUM). TIER3 MIXES ARE NOT PERMITTED.

AN APPROVED ASPHALT MIX DESIGN FOR EACH SPECIFIED MIX SHALL BE SUBMITTED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION.

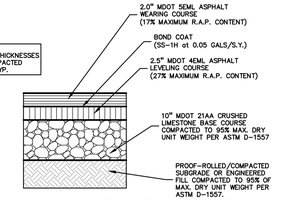
ASPHALT MIX DESIGN CHART

COMMERCIAL ADT 0-300	COMMERCIAL ADT 301-1000	COMMERCIAL ADT 1001-3400	COMMERCIAL ADT 3401	APPLICATION RATE (LBS/YD²), MINIMUM - MAXIMUM	COURSE APPLICATION
2EL	2EML	2EMH	2EH	435-550	BASE
3EL	3EML	3EMH	3EH	330-410	BASE AND/OR LEVELING
4EL	4EML	4EMH	4EH	220-275	LEVELING AND/OR TOP
5EL	5EML	5EMH	5EH	165-220	TOP
PG 58-28	PG 64-28 (TIER 1) PG 64-22 (TIER 2)	PG 64-28 (TIER 1) PG 64-22 (TIER 2)	PG 70-28P		



STANDARD DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY)
NOT TO SCALE

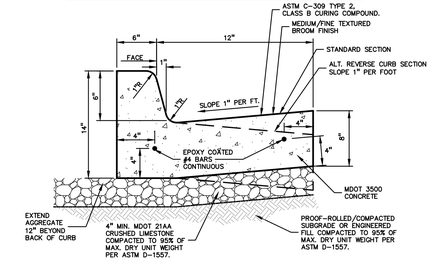
NOTE:
ALL SPECIFIED THICKNESSES ARE FINAL COMPACTED THICKNESSES, TYP.



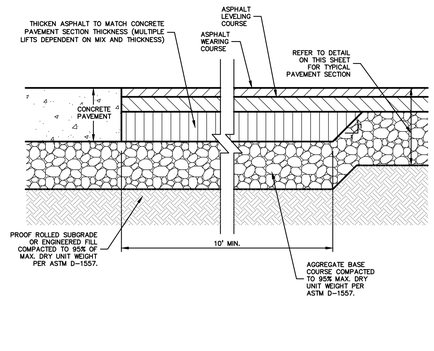
HEAVY DUTY ASPHALT DETAIL
(NOT FOR USE IN THE RIGHT-OF-WAY)
NOT TO SCALE

NOTE:
ALTERNATE REVERSE CURB SECTION TO BE USED ONLY WHEN DRAINING AWAY FROM CURB. SEE PLAN FOR LOCATION.

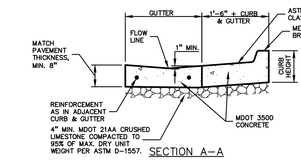
NOTE:
PROVIDE CONTROL JOINTS IN CURB AT 10' O.C. PROVIDE EXPANSION JOINT AND JOINT SEALANT AT END OF RADIUS RETURNS PER MDOT AND ACA STANDARDS. PROVIDE EXPANSION JOINTS AND JOINT SEALANT WHERE CURBS ABUT STRUCTURES.



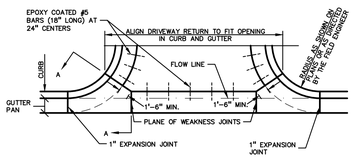
18"x6" STANDARD CONCRETE CURB AND GUTTER
NOT TO SCALE



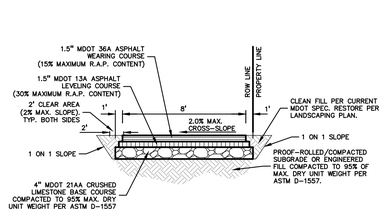
THICKENED EDGE ASPHALT DETAIL
NOT TO SCALE



SECTION A-A



MDOT DRIVEWAY OPENING-DETAIL 'M'
NOT TO SCALE



AGGREGATE BASE NOTE:
THIS PAVEMENT SECTION DESIGN ASSUMES THE USE OF MDOT 21AA CRUSHED LIMESTONE BASE MATERIAL THAT MEETS THE REQUIREMENTS OF MDOT STANDARD SPECIFICATION SECTION 902 FOR AGGREGATES. IF CRUSHED CONCRETE AGGREGATE BASE IS PROPOSED IN LIEU OF THE SPECIFIED CRUSHED LIMESTONE MATERIAL, PEA GROUP WILL REQUIRE A MINIMUM 25% INCREASE IN BASE THICKNESS. HOWEVER, IF TESTING DOCUMENTATION IS PROVIDED TO PEA GROUP THAT SHOWS THAT THE CRUSHED CONCRETE MATERIAL MEETS ALL REQUIREMENTS OF MDOT SPECIFICATION SECTION 902, THEN THE 25% INCREASE IN THICKNESS MAY BE REEVALUATED.

ASPHALT MATERIAL NOTES:
HOT-MIX ASPHALT MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) MUST MEET MDOT SPECIAL PROVISION 12SP501(E). THE BINDER GRADE FOR THIS WORK IS PG58-22. IF ASPHALT MIXES CONTAINING RAP ARE TO BE SUPPLIED FOR THIS PROJECT, THE ASPHALT BINDER MUST BE REVISED PER MDOT TIER 1* OR TIER 2* REQUIREMENTS (RAP CONTENT UP TO 27% MAXIMUM). TIER 3 MIXES ARE NOT ACCEPTABLE ON THIS PROJECT. AN ASPHALT MIX DESIGN FOR ALL SPECIFIED MIXES SHOULD BE FORWARDED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION

ASPHALT BIKE PATH DETAIL
NOT TO SCALE

PEA GROUP
t: 844.813.2949
www.peagroup.com



NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE AND NOT NECESSARILY COMPLETE. NO WARRANTY IS EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
- -

ORIGINAL ISSUE DATE:
MARCH 31, 2026

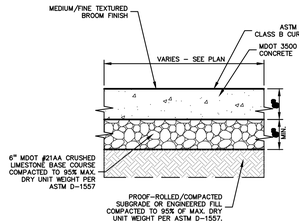
DRAWING TITLE
DETAILS

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

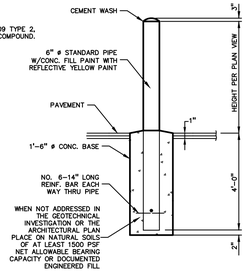
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C-9.1

NOT FOR CONSTRUCTION

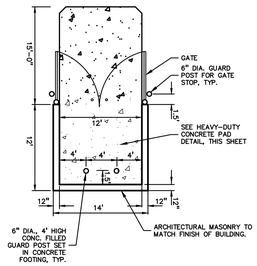
S:\PROJECTS\2020\2020-0164_LAKE ORION LUMBER-JPB\DWG\SITE PLANS\C-903 DETAILS-20016X.dwg PLOT DATE: 4/XX/2026 BY: Scott Sieg



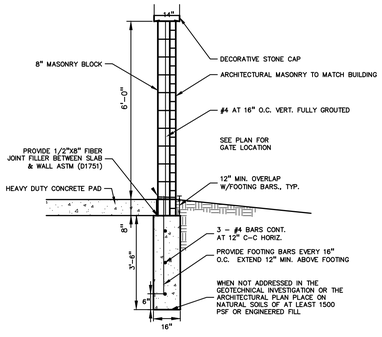
HEAVY DUTY CONCRETE PAD DETAIL
NOT TO SCALE



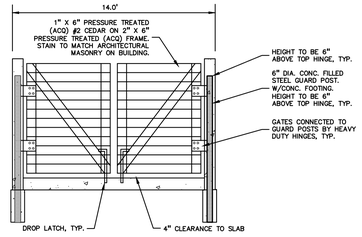
6" DIA. GUARD POST DETAIL
NOT TO SCALE



SINGLE DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

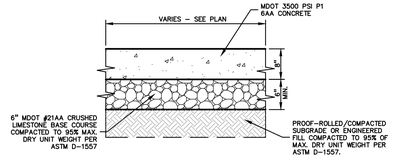


DUMPSTER ENCLOSURE WALL CROSS SECTION
NOT TO SCALE

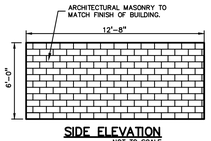


TRASH ENCLOSURE GATE DETAIL
NOT TO SCALE

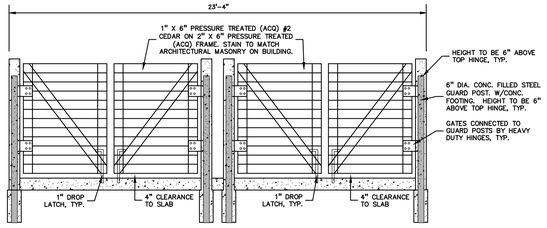
SINGLE TRASH ENCLOSURE DETAILS
NOT TO SCALE



HEAVY DUTY CONCRETE PAD DETAIL

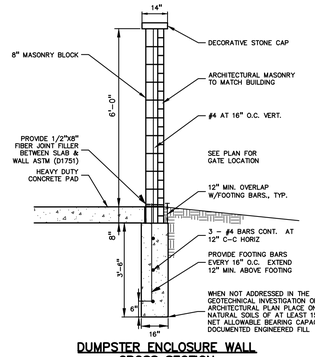


SIDE ELEVATION
NOT TO SCALE

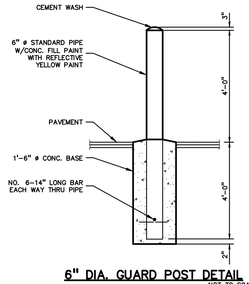


FRONT ELEVATION
NOT TO SCALE

NOT TO SCALE

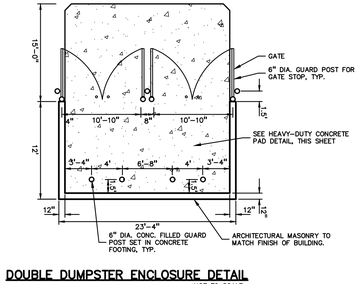


DUMPSTER ENCLOSURE WALL CROSS SECTION
NOT TO SCALE



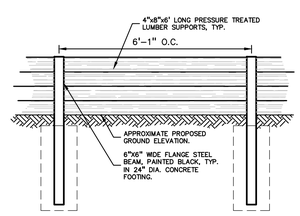
6" DIA. GUARD POST DETAIL
NOT TO SCALE

DOUBLE TRASH ENCLOSURE DETAILS
NOT TO SCALE

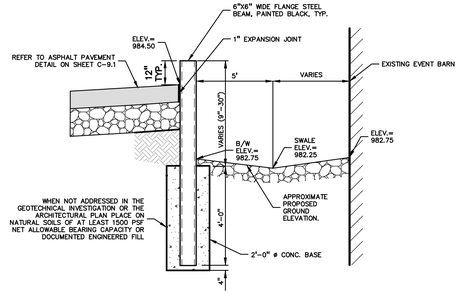


DOUBLE DUMPSTER ENCLOSURE DETAIL
NOT TO SCALE

NOTE:
WALL POSTS TO BE SET BY DRILLING 24" DIA. AUGERS, PLACING STEEL H-BEAMS AND BACKFILLING WITH CONCRETE TO TOP OF PROPOSED FOOTING ELEVATION. SECTION BY SECTION THE WALL WILL BE EXCAVATED AND TIMBER SUPPORTS ADDED BETWEEN POSTS (SEE WALL ELEVATION DETAIL).



RETAINING WALL ELEVATION
NOT TO SCALE



SECTION 'A-A' (RETAINING WALL POST DETAIL)
NOT TO SCALE

GATE POST SIZES FOR DIFFERENT WIDTH/HEIGHT CHAIN LINK FENCE:

FOR FENCE HEIGHT UP TO 6 FOOT:

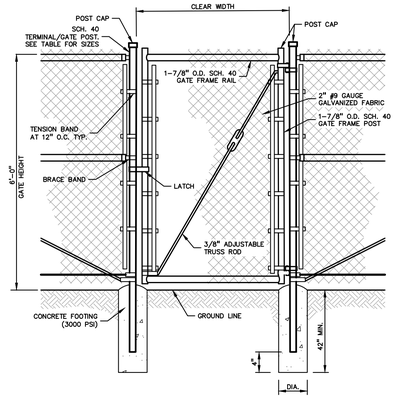
GATE WIDTH	SCH. 40 PIPE MIN.	FOOTING DIA. MIN.
UP TO 4'	2-3/8"	12"

FOR FENCE HEIGHT OVER 6 FOOT TO 12 FEET:

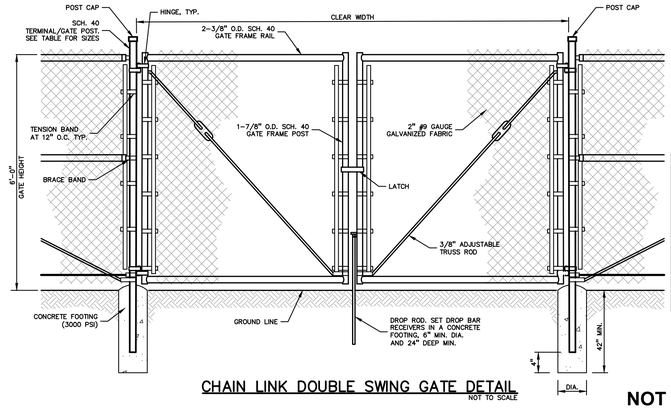
GATE WIDTH	SCH. 40 PIPE MIN.	FOOTING DIA. MIN.
UP TO 6'	2-7/8"	12"

MIN. POST SIZE BASED ON 2" 9-GAUGE MESH, 105MPH WIND SPEED. SCHEDULE 40 PIPE ASSUMES REGULAR GRADE, 30,000 PSI YIELD STEEL.

NOTE:
CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PEA GROUP FOR ALL GATES AS DETAILED BELOW AND CALLED OUT ON THE PLANS. VERTICAL AND HORIZONTAL MEMBERS SHALL BE PLACED AT A MAXIMUM OF 8' ON CENTER. VERTICAL AND HORIZONTAL BRACES SHALL BE INSTALLED AS NEEDED, 1-5/8" SCH.40



CHAIN LINK SINGLE SWING GATE DETAIL
NOT TO SCALE



NOTE:
CONTRACTOR TO SUBMIT SHOP DRAWINGS TO PEA GROUP FOR ALL GATES AS DETAILED BELOW AND CALLED OUT ON THE PLANS. VERTICAL AND HORIZONTAL MEMBERS SHALL BE PLACED AT A MAXIMUM OF 8' ON CENTER. VERTICAL AND HORIZONTAL BRACES SHALL BE INSTALLED AS NEEDED, 1-5/8" SCH.40

GATE POST SIZES FOR DIFFERENT WIDTH/HEIGHT CHAIN LINK FENCE:

FOR FENCE HEIGHT UP TO 6 FOOT:

GATE WIDTH	SCH. 40 PIPE MIN.	FOOTING DIA. MIN.
UP TO 4'	2-3/8"	12"
4' TO 10'	2-7/8"	12"
10' TO 18'	4"	16"

FOR FENCE HEIGHT OVER 6 FOOT TO 12 FEET:

GATE WIDTH	SCH. 40 PIPE MIN.	FOOTING DIA. MIN.
UP TO 6'	2-7/8"	12"
6' TO 12'	4"	16"
12' TO 18'	6-5/8"	24"
18' TO 24'	8-5/8"	30"

MIN. POST SIZE BASED ON 2" 9-GAUGE MESH, 105MPH WIND SPEED. SCHEDULE 40 PIPE ASSUMES REGULAR GRADE, 30,000 PSI YIELD STEEL.

CHAIN LINK DOUBLE SWING GATE DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION

PEA GROUP
t: 844.813.2949
www.peagroup.com



NORTH

0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
- -

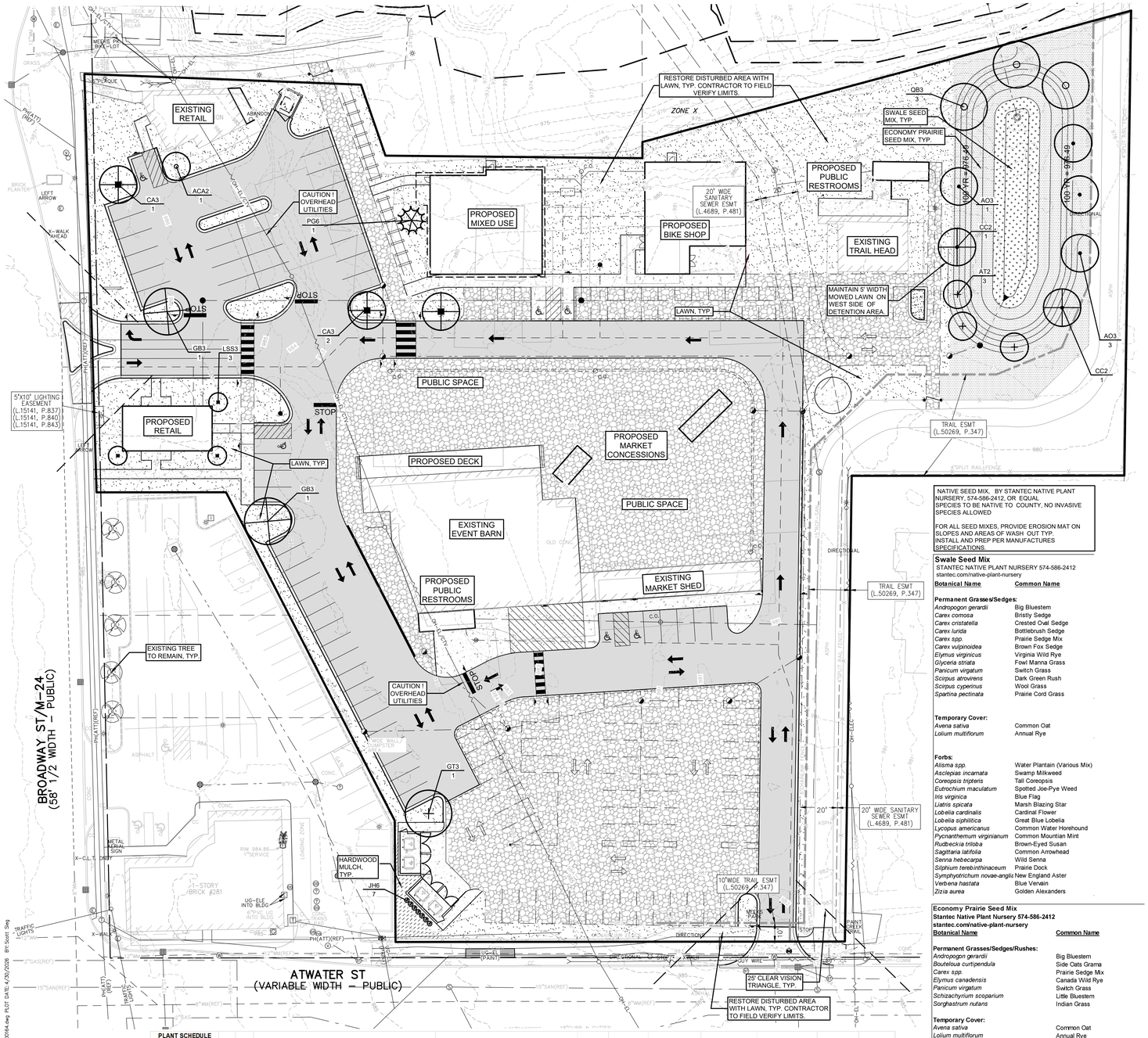
ORIGINAL ISSUE DATE:
MARCH 31, 2026

DRAWING TITLE
DETAILS

PEA JOB NO.	20-0164
P.M.	JPB
DN.	SWS
DES.	SWS

DRAWING NUMBER:
C-9.2

S:\PROJECTS\2020\2020-0164 LAKE ORION LUMBER-JPB\DWG\SITE PLANS\[C-9.0] DETAILS-200164.dwg PLOT DATE: 4/30/2026 BY: Scott Sieg



PLANT SCHEDULE										
DECIDUOUS TREES	**QTY**	**UNIT**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**DESIGNATION**	**REMARKS**	**%**	**GENUS (%)**
AO3	4	ea	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL.	B&B	PER PLAN	NATIVE		17.4%	17.4%
CA3	3	ea	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	3" CAL.	B&B	PER PLAN	NATIVE		13.0%	13.0%
GB3	2	ea	GINKGO BILOBA	MAIDENHAIR TREE	3" CAL.	B&B	PER PLAN	NON-NATIVE	MALE ONLY	8.7%	8.7%
GT3	1	ea	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	SKYLINE® HONEY LOCUST	3" CAL.	B&B	PER PLAN	NATIVE	THORNLESS	4.3%	4.3%
LSS3	3	ea	LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE'	SLENDER SILHOUETTE SWEET GUM	3" CAL.	B&B	PER PLAN	NON-NATIVE		13.0%	13.0%
QB3	3	ea	QUERCUS BICOLOR	SWAMP WHITE OAK	3" CAL.	B&B	PER PLAN	NATIVE		13.0%	13.0%
SUBTOTAL:	**16**										

EVERGREEN TREES	**QTY**	**UNIT**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**DESIGNATION**	**REMARKS**	**%**	**GENUS (%)**
PG6	1	ea	PICEA GLAUCA	WHITE SPRUCE	6' HT.	B&B	PER PLAN	NATIVE		4.3%	4.3%
SUBTOTAL:	**1**										

ORNAMENTAL TREES	**QTY**	**UNIT**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**DESIGNATION**	**REMARKS**	**%**	**GENUS (%)**
ACA2	1	ea	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	2" CAL.	B&B	PER PLAN	NATIVE		4.3%	4.3%
AT2	3	ea	ASIMINA TRILOBA	PAWPAW	2" CAL.	B&B	PER PLAN	NATIVE		13.0%	13.0%
CC2	2	ea	CERCIS CANADENSIS	EASTERN REDBUD	2" CAL.	B&B	PER PLAN	NATIVE		8.7%	8.7%
SUBTOTAL:	**6**								**ALL TREES: 78.3% NATIVE, 0.0% ADAPTED NATIVE, 21.7% NON-NATIVE**		

SHRUBS	**QTY**	**UNIT**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**CONTAINER**	**SPACING**	**DESIGNATION**	**REMARKS**	**%**	**GENUS (%)**
JH6	7	ea	JUNIPERUS CHINENSIS 'HETZII COLUMNARIS'	HETZI COLUMN JUNIPER	6' HT.	B&B	36"O.C.	NON-NATIVE		100.0%	100.0%

NATIVE SEED MIX, BY STANTEC NATIVE PLANT NURSERY, 574-586-2412, OR EQUAL
SPECIES TO BE NATIVE TO COUNTY, NO INVASIVE SPECIES ALLOWED

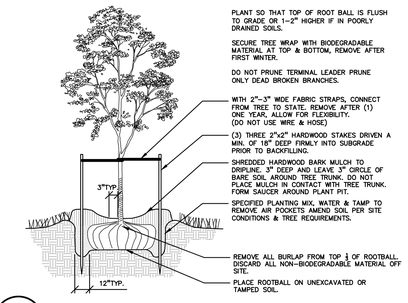
FOR ALL SEED MIXES, PROVIDE EROSION MAT ON SLOPES AND AREAS OF WASH OUT TYP. INSTALL AND PREP PER MANUFACTURES SPECIFICATIONS.

Swale Seed Mix
STANTEC NATIVE PLANT NURSERY 574-586-2412
stantec.com/native-plant-nursery

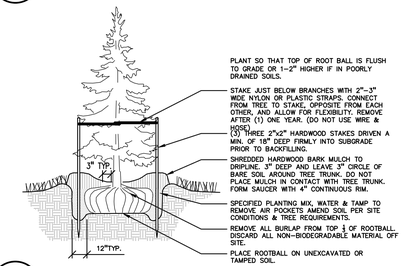
Botanical Name	**Common Name**
Permanent Grasses/Sedges:	
Andropogon gerardii	Big Bluestem
Carex comosa	Bristly Sedge
Carex cristatella	Crested Oval Sedge
Carex lurida	Bottlebrush Sedge
Carex spp.	Prairie Sedge Mix
Carex vulpinoidea	Brown Fox Sedge
Elymus virginicus	Virginia Wild Rye
Glyceria striata	Fowl Manna Grass
Panicum virgatum	Switch Grass
Scirpus atrovirens	Dark Green Rush
Scirpus cyperinus	Wool Grass
Spartina pectinata	Prairie Cord Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye
Forbs:	
Alisma spp.	Water Plantain (Various Mix)
Asclepias incarnata	Swamp Milkweed
Coreopsis tripteris	Tall Coreopsis
Eutrochium maculatum	Spotted Joe-Pye Weed
Iris virginica	Blue Flag
Liatris spicata	Marsh Blazing Star
Lobelia cardinalis	Cardinal Flower
Lobelia siphilitica	Great Blue Lobelia
Lycopus americanus	Common Water Horehound
Pycnanthemum virginianum	Common Mountian Mint
Rudbeckia triloba	Brown-Eyed Susan
Sagittaria latifolia	Common Arrowhead
Senna hebecarpa	Wild Senna
Silphium terebinthinaceum	Prairie Dock
Symphyotrichum novae-angliae	New England Aster
Verbena hastata	Blue Vervain
Zizia aurea	Golden Alexanders

Economy Prairie Seed Mix
Stantec Native Plant Nursery 574-586-2412
stantec.com/native-plant-nursery

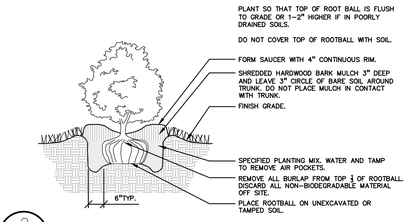
Botanical Name	**Common Name**
Permanent Grasses/Sedges/Rushes:	
Andropogon gerardii	Big Bluestem
Bouteloua curtipendula	Side Oats Grama
Carex spp.	Prairie Sedge Mix
Elymus canadensis	Canada Wild Rye
Panicum virgatum	Switch Grass
Schizachyrium scoparium	Little Bluestem
Sorghastrum nutans	Indian Grass
Temporary Cover:	
Avena sativa	Common Oat
Lolium multiflorum	Annual Rye
Forbs & Shrubs:	
Asclepias syriaca	Common Milkweed
Asclepias tuberosa	Butterfly Weed
Chamaecrista fasciculata	Partridge Pea
Coreopsis lanceolata	Sand Coreopsis
Echinacea purpurea	Broad-leaved Purple Coneflower
Heliopsis helianthoides	False Sunflower
Lupinus perennis	Wild Lupine
Monarda fistulosa	Wild Bergamot
Penstemon digitalis	Foxglove Beard Tongue
Pycnanthemum virginianum	Common Mountain Mint
Ratibida pinnata	Yellow Coneflower
Rudbeckia hirta	Black-Eyed Susan
Solidago speciosa	Showy Goldenrod
Symphyotrichum laeve	Smooth Blue Aster
Symphyotrichum novae-angliae	New England Aster



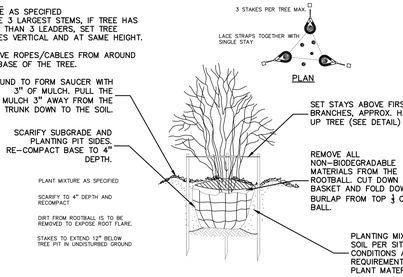
4 DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



3 EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



2 SHRUB PLANTING DETAIL
NOT TO SCALE



1 MULTI-STEM TREE PLANTING DETAIL
NOT TO SCALE

KEY

= DECIDUOUS TREES
= EVERGREEN TREES
= EXISTING TREES TO REMAIN
= EVERGREEN SHRUBS
= LAWN/ RESTORE LAWN
= SWALE SEED MIX SEE SPEC. THIS SHEET
= ECONOMY PRAIRIE SEED MIX SEE SPEC. THIS SHEET
= HARDWOOD MULCH SEE PLANTING NOTE #14 FOR ADDITIONAL HARDWOOD MULCH LOCATIONS

NOTE: NO SINGLE SPECIES SHALL CONSIST OF MORE THAN 20% TOTAL PLANT MATERIAL ON SITE. (EXCEPTIONS MAY BE MADE FOR HEDGES)

LANDSCAPE CALCULATIONS:

PER VILLAGE OF LAKE ORION DC DOWNTOWN

§15.02 C.1.
REQUIRED: TREES SHALL BE PROVIDED AT THE ENTRANCE OF THE BUILDING WHERE DEEMED APPROPRIATE BY THE PLANNING COMMISSION

PROVIDED:
TREES PROVIDED PER ABOVE AND WITHIN PARKING LOT: 11 PROPOSED TREES

§15.02 C.2.
REQUIRED: PLANTER BOXES OR OTHER LANDSCAPE FEATURES SHALL BE INCORPORATED WHERE APPROPRIATE

PROVIDED:
EXISTING PLANTER BOX BY OWNER

§15.02 C.3.
REQUIRED: OUTDOOR UTILITY EQUIPMENT SHALL BE SCREENED TO THE GREATEST EXTENT POSSIBLE BY FENCES, WALLS PLANTER BOXES OR OTHER LANDSCAPE FEATURES.

PROVIDED:
UPRIGHT EVG HEDGE AT TRASH

§15.02 G.1.2.3.
BASIN LANDSCAPE

REQUIRED:
1 DEC TREE / 50' OF POND PERIMETER AND 1 ORN / 75' OF POND PERIMETER. TREES SHALL BE PLANTED ABOVE THE FREEBOARD, ANY PLANT MATERIALS PLANTED BELOW THE FREEBOARD WILL BE SUITABLE FOR INUNDATION.

366 LF POND PERIMETER / 50 = 7.2 DEC TREES AND 366 / 75 = 4.88 ORN TREES

PROVIDED:
7 PROPOSED DECIDUOUS AND 5 PROPOSED ORNAMENTAL TREES

GENERAL PLANTING NOTES:

1. LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING SITE CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, PLAN SHALL GOVERN QUANTITIES. CONTACT LANDSCAPE ARCHITECT WITH ANY CONCERNS.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIS/HER PHASE OF WORK. ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION MAY BE LOCATED BY CALLING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES ON THE JOB AND SHALL REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER'S REPRESENTATIVE PRIOR TO COMMENCING.
3. ALL PLANT MATERIAL TO BE PREMIUM GRADE NURSERY STOCK AND SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARD FOR NURSERY STOCK. ALL LANDSCAPE MATERIAL SHALL BE NORTHERN GROWN, NO. 1, GRADE.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON LANDSCAPE PLAN PRIOR TO PRICING THE WORK.
5. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS.
6. ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
7. ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
8. ALL MULTI STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
9. ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
10. ALL TREES TO HAVE CLAY OR CLAY LOAM BALLS, TREES WITH SAND BALLS WILL BE REJECTED.
11. NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF EXISTING TREES; HAND GRADE ALL LAWN AREAS WITHIN THE DRIP LINE OF EXISTING TREES.
12. ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
13. IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS.
14. ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED HARDWOOD BARK MULCH WITH PRE EMERGENT, SEE SPECIFICATIONS. SHREDDED PALETTE AND DYED MULCH WILL NOT BE ACCEPTED.
15. ALL LANDSCAPED AREAS SHALL RECEIVE 3" COMPACTED TOPSOIL.
16. SEE SPECIFICATIONS FOR ADDITIONAL COMMENTS, REQUIREMENTS, PLANTING PROCEDURES AND WARRANTY STANDARDS.
17. FOR NON-LAWN SEED MIX AREAS, AS NOTED ON PLAN, BRUSH MOW ONCE SEASONALLY FOR INVASIVE SPECIES CONTROL.
18. CONTRACTOR SHALL NOT INSTALL PLANTS UNDER BUILDING OVERHANG AND SHALL NOTIFY LANDSCAPE ARCHITECT IF DRAWINGS CONFLICT WITH BUILDING OVERHANGS.
19. TREES SHALL NOT CONFLICT/ BLOCK PROPOSED REGULATORY/ DIRECTION SIGNAGE, MONUMENT SIGNS, ADDRESS OR LIGHT POLES. SHIFT TREES AS NECESSARY TYP.

PEA GROUP
t: 844.813.2949
www.peagroup.com

C:\Users\jbp\Desktop\Projects\Lake Orion Lumber\Lake Orion Lumber_Preliminary Landscape Plan_v2.dwg

NORTH
0 15 30 60
SCALE: 1" = 30'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE LOCATIONS AND ELEVATIONS ASSESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
LAKE ORION DOWNTOWN AUTHORITY
118 N. BROADWAY ST.
LAKE ORION, MI 48362

PROJECT TITLE
LAKE ORION LUMBER
215 SOUTH BROADWAY
LAKE ORION, MI

REVISIONS
-

ORIGINAL ISSUE DATE:
MARCH 31, 2026

DRAWING TITLE
PRELIMINARY LANDSCAPE PLAN

PEA JOB NO.	20-0164
P.M.	JPB
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-1.0

NOT FOR CONSTRUCTION

S:\PROJECTS\2020\2020-0164 LAKE ORION LUMBER- JPB\CAD\SITE PLANS\L-1.0 LANDSCAPE- 2020164.dwg PLOT DATE: 4/30/2026 BY: Scott Sieg

PUD SUBMITTAL:

LUMBER YARD AT PAINT CREEK

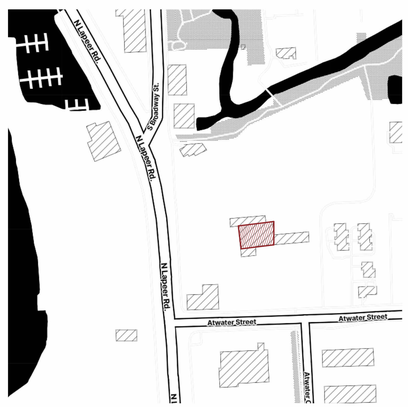
MAIN BARN & ANNEX

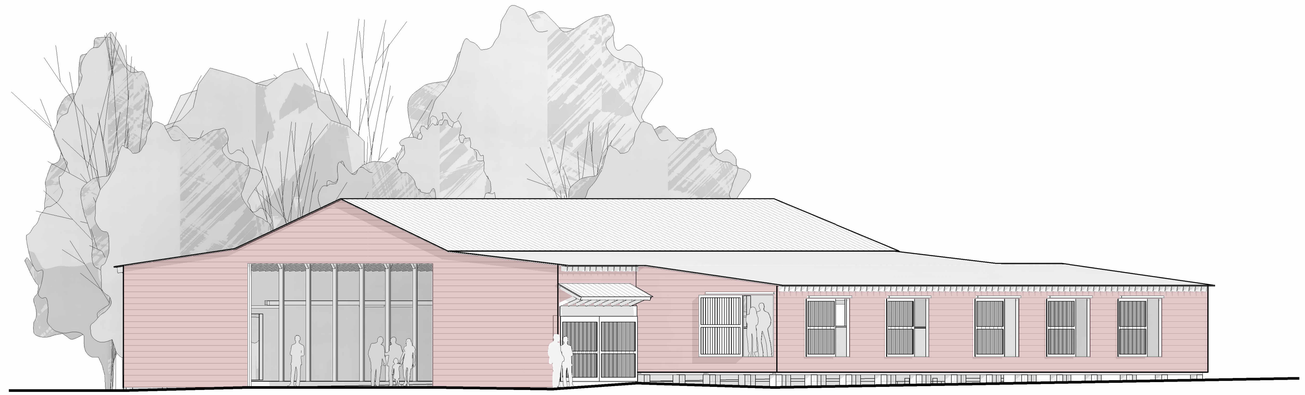
215 S. BROADWAY ST.
LAKE ORION, MI 48362

LOCATION MAP



KEY MAP





BUILDING MANAGED BY:

LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY
CONTACT: MATTHEW GIBB
EMAIL: GIBB@DOWNTOWNLAKEORION.ORG
PHONE: (248) 646-0307

PROJECT TEAM

INTERIOR DESIGNER & ARCHITECT:
DAVIS & DAVIS
30500 NORTHWESTERN HWY. SUITE 311
FARMINGTON HILLS, MI 48334

PHONE: (248) 855-7040

JEREMIAH DOORNBOS
JEREMIAH@DAVISINTERIORDESIGN.COM

CHANCE LAPRATT
CHANCE@DAVISINTERIORDESIGN.COM

NOT FOR CONSTRUCTION

THESE "PUD" DRAWINGS ARE INTENDED TO DOCUMENT EXISTING CONDITIONS AS OBSERVED AT THE TIME OF SURVEY OR INVESTIGATION. THEY REFLECT FIELD OBSERVATIONS TO THE BEST EXTENT POSSIBLE.

THESE DOCUMENTS ARE PROVIDED FOR RECORD AND REFERENCE PURPOSES ONLY. THEY ARE NOT INTENDED FOR PERMITTING OR FUTURE DESIGN WITHOUT FURTHER VERIFICATION. ALL DIMENSIONS, LOCATIONS, AND CONDITIONS SHOWN SHOULD BE FIELD-VERIFIED BY OTHERS PRIOR TO ANY FUTURE WORK OR DESIGN ASSUMPTIONS.

ALTERNATES AND SEPARATE PRICING

PRICING TO BE PROVIDED FOR SPECIFIED ALTERNATE

DRAWING INDEX

NO.	DRAWING NAME	ISSUANCE	
		PUD 04.24.26	
ARCHITECTURAL			
A000	COVER SHEET	•	
A100	FLOOR PLANS	•	
A300	BUILDING ELEVATIONS	•	
A301	BUILDING ELEVATIONS	•	

ARCHITECT

DAVIS & DAVIS
30500 NORTHWESTERN HWY, SUITE 311
FARMINGTON HILLS, MICHIGAN 48334
T. 248.855.7040
WWW.DAVISINTERIORDESIGN.COM

CONSULTANTS

SEAL

DEPARTMENT OF BUILDINGS SCAN

PROJECT

LUMBER YARD AT
PAINT CREEK
215 S. BROADWAY ST.
LAKE ORION, MI 48362

ISSUE

Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL
CHECKED BY: JD

PROJECT NUMBER

25121

SHEET TITLE

COVER SHEET

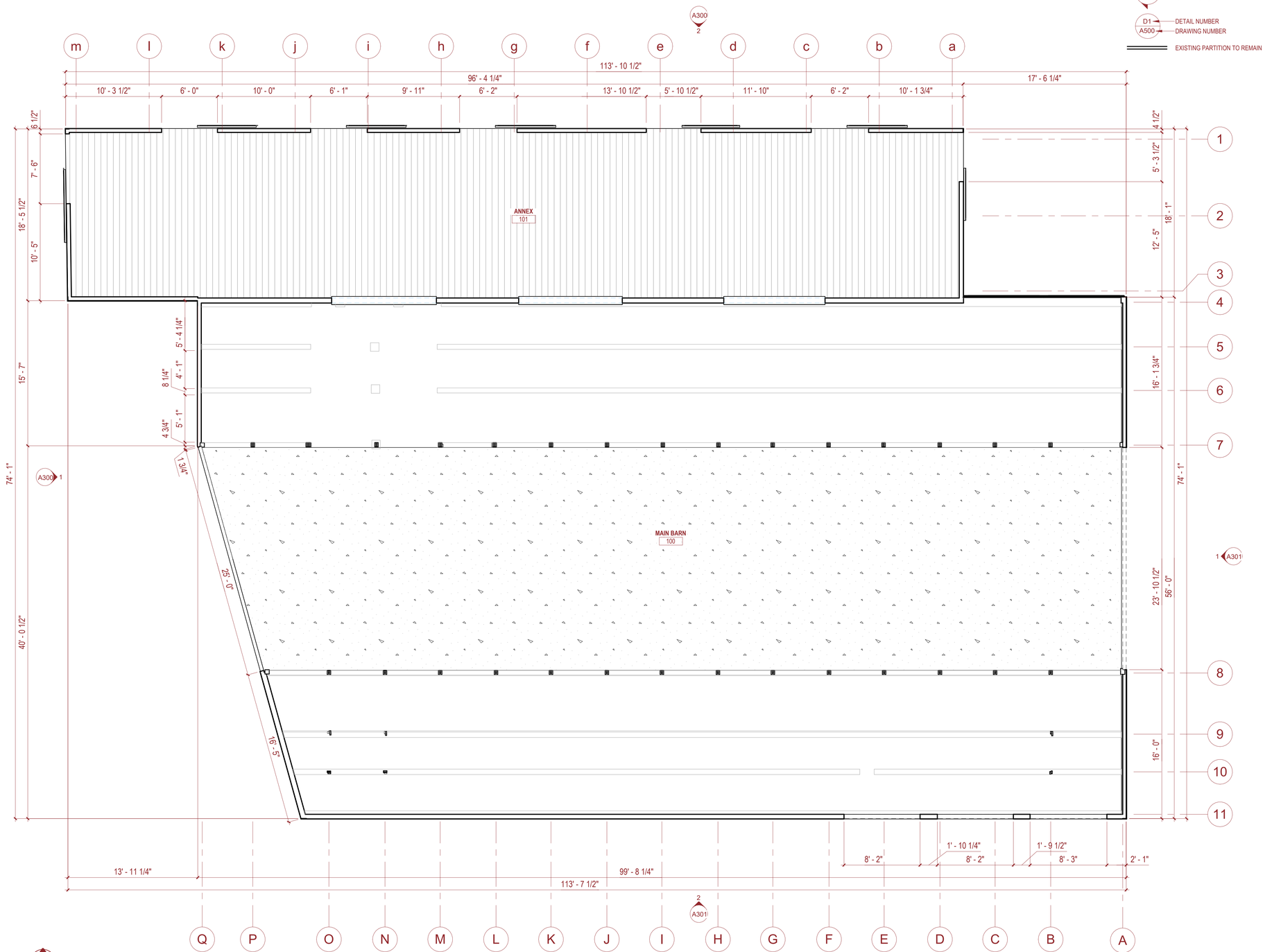
SHEET NUMBER

A000

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CONSTRUCTION LEGEND

- AREA NOT IN CONTRACT
- REFERENCE NOTES
- NAME / X.XX — INDICATES ROOM OR AREA NAME / INDICATES ROOM OR AREA NUMBER
- D1 / A500 — ELEVATION NUMBER / DRAWING NUMBER
- D1 / A500 — DETAIL NUMBER / DRAWING NUMBER
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR & FRAME TO REMAIN. PROTECT DURING CONSTRUCTION.
- EX / NEW — INDICATES ALIGNMENT OF FINISHED SURFACES
- X — INDICATES PARTITION TYPE (SEE DRAWING A-601 FOR SPECIFICATIONS AND DETAILS)
- GLASS (DEMOUNTABLE) PARTITION
- 101 — INDICATES DOOR NUMBER
- NEW DOOR AND FRAME
- INDICATES MILLWORK (SEE ELEVATIONS AND DETAILS)



1 FIRST FLOOR PLAN
3/16" = 1'-0"

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ARCHITECT

DAVIS & DAVIS

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FARMINGTON HILLS, MICHIGAN 48334
T. 248.855.7040
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CONSULTANTS

SEAL

DEPARTMENT OF BUILDINGS SCAN

PROJECT

CLIENT LOGO — DDA LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY — MAIN STREET AMERICA

LUMBER YARD AT PAINT CREEK
215 S. BROADWAY ST.
LAKE ORION, MI 48362

ISSUE

Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL
CHECKED BY: JD

PROJECT NUMBER

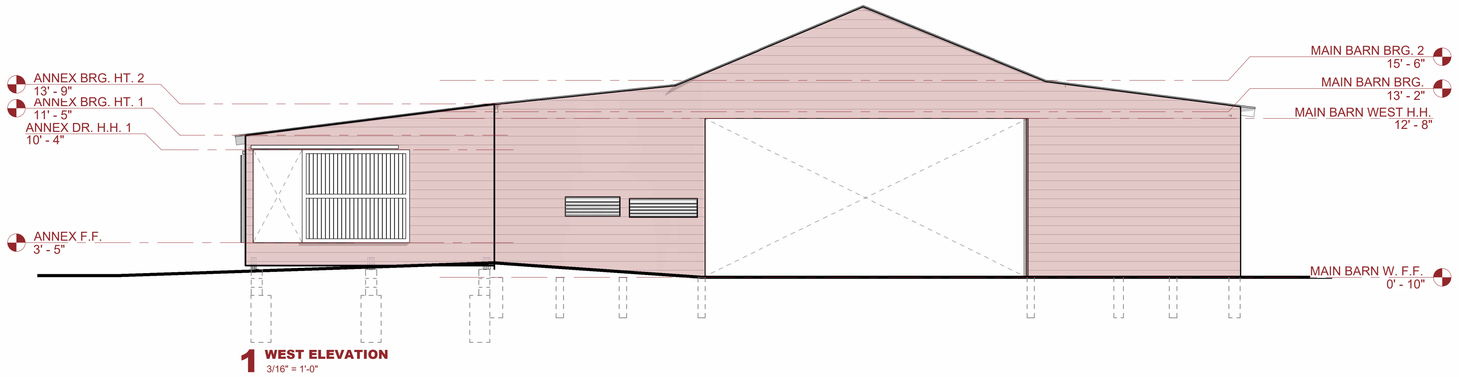
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SHEET TITLE

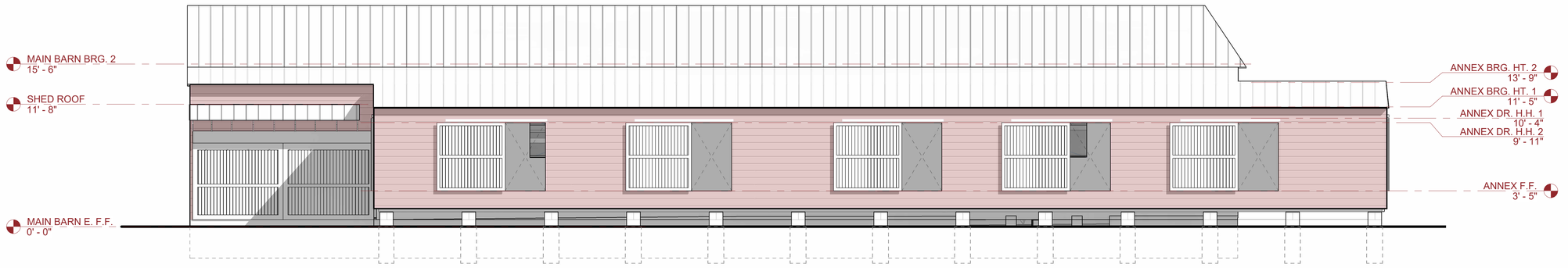
FLOOR PLANS

SHEET NUMBER

A100



1 WEST ELEVATION
3/16" = 1'-0"



2 NORTH ELEVATION
3/16" = 1'-0"

ARCHITECT

DAVIS & DAVIS

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FARMINGTON HILLS, MICHIGAN 48334
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SEAL

DEPARTMENT OF BUILDINGS SCAN

PROJECT

CLIENT LOGO
DDA LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY
MAIN STREET AMERICA

LUMBER YARD AT PAINT CREEK
215 S. BROADWAY ST.
LAKE ORION, MI 48362

ISSUE

Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL
CHECKED BY: JD

PROJECT NUMBER

25121

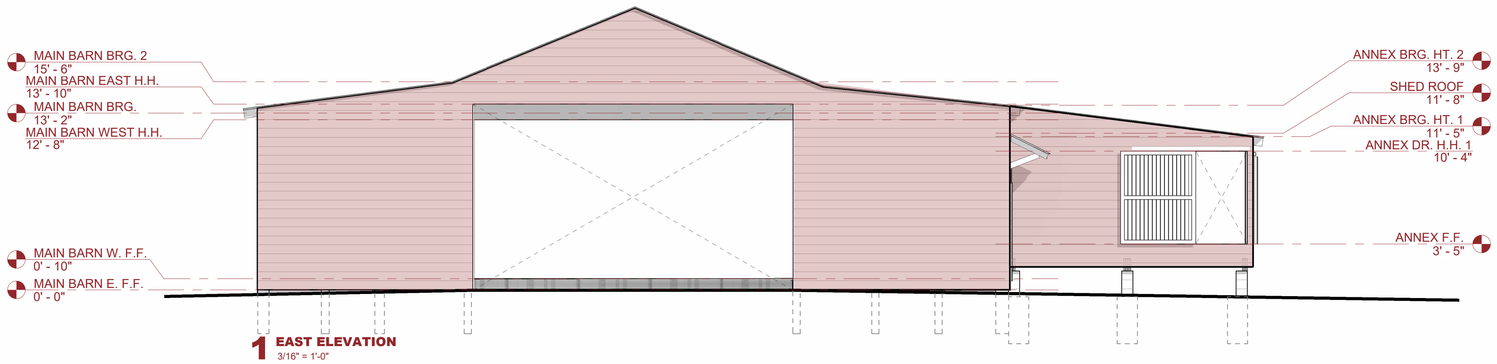
SHEET TITLE

BUILDING ELEVATIONS

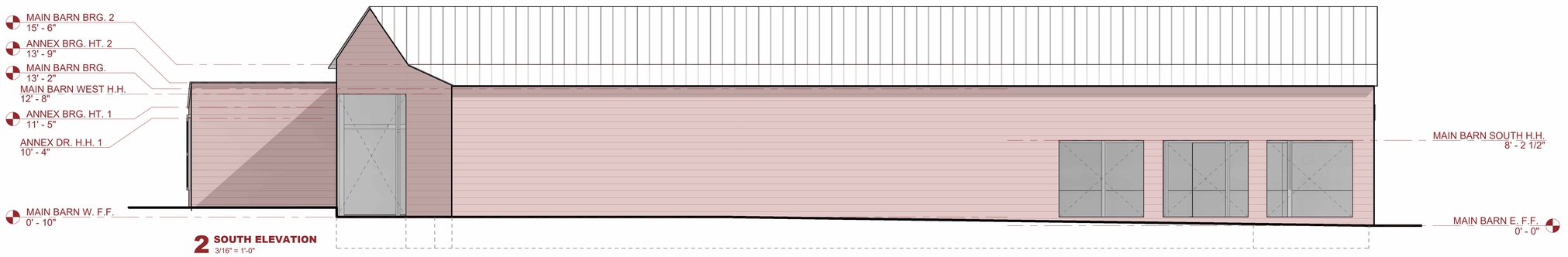
SHEET NUMBER

A300

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1 EAST ELEVATION
3/16" = 1'-0"



2 SOUTH ELEVATION
3/16" = 1'-0"

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MAIN STREET AMERICA

LUMBER YARD AT PAINT CREEK
215 S. BROADWAY ST.
LAKE ORION, MI 48362

ISSUE

Rev.	Issued for	Date
1	PUD	04/24/26

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25121

SHEET TITLE

BUILDING ELEVATIONS

SHEET NUMBER

A301

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PUD SUBMITTAL:

LUMBER YARD AT PAINT CREEK

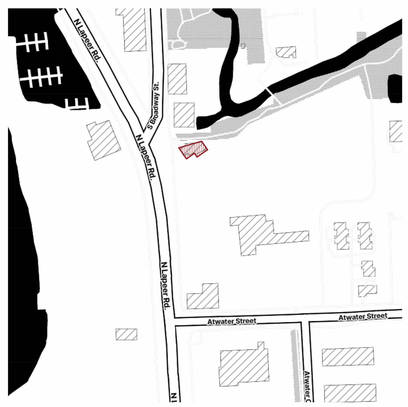
THE BAKERY BUILDING

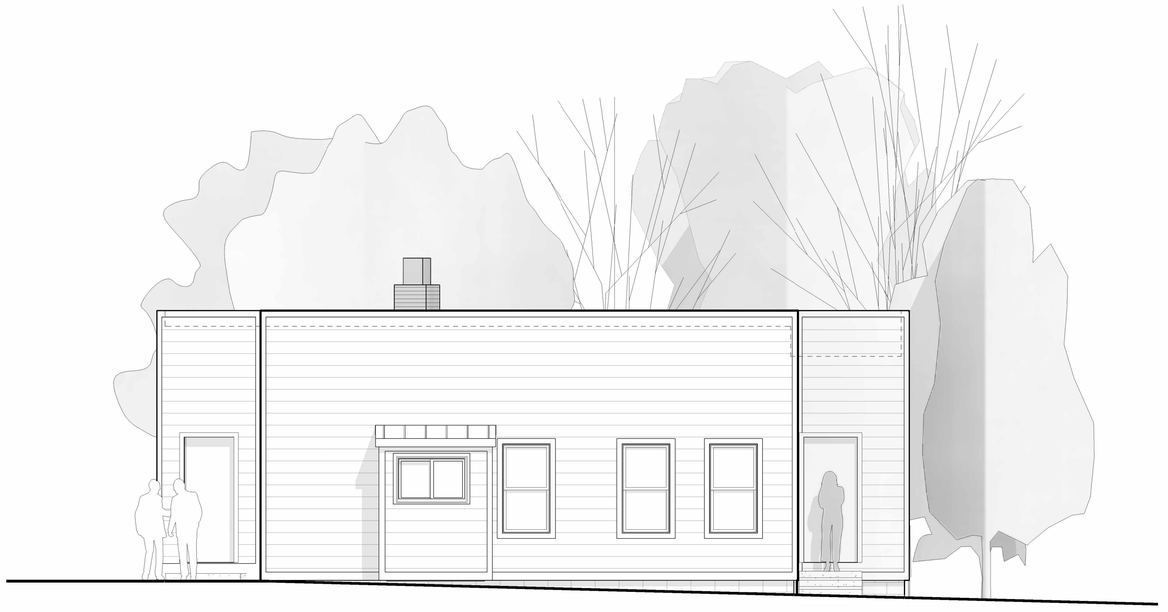
215 S. BROADWAY ST.
LAKE ORION, MI 48362

LOCATION MAP



KEY MAP





BUILDING MANAGED BY:

LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY
CONTACT: MATTHEW GIBB
EMAIL: GIBB@DOWNTOWNLAKEORION.ORG
PHONE: (248) 646-0307

PROJECT TEAM

INTERIOR DESIGNER & ARCHITECT:
DAVIS & DAVIS
30500 NORTHWESTERN HWY. SUITE 311
FARMINGTON HILLS, MI 48334

PHONE: (248) 855-7040

JEREMIAH DOORNBOS
JEREMIAH@DAVISINTERIORDESIGN.COM

CHANCE LAPRATT
CHANCE@DAVISINTERIORDESIGN.COM

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ALTERNATES AND SEPARATE PRICING

PRICING TO BE PROVIDED FOR SPECIFIED ALTERNATE

DRAWING INDEX

NO.	DRAWING NAME	ISSUANCE	
		PUD 04.24.26	
ARCHITECTURAL			
A000	COVER SHEET	•	
A101	THE BAKERY BUILDING FLOOR PLAN	•	
A102	THE BAKERY BUILDING BASEMENT PLAN	•	
A300	THE BAKERY BUILDING ELEVATIONS	•	
A301	THE BAKERY BUILDING ELEVATIONS	•	

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PROJECT

LUMBER YARD AT
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LAKE ORION, MI 48362

ISSUE

Rev.	Issued for	Date
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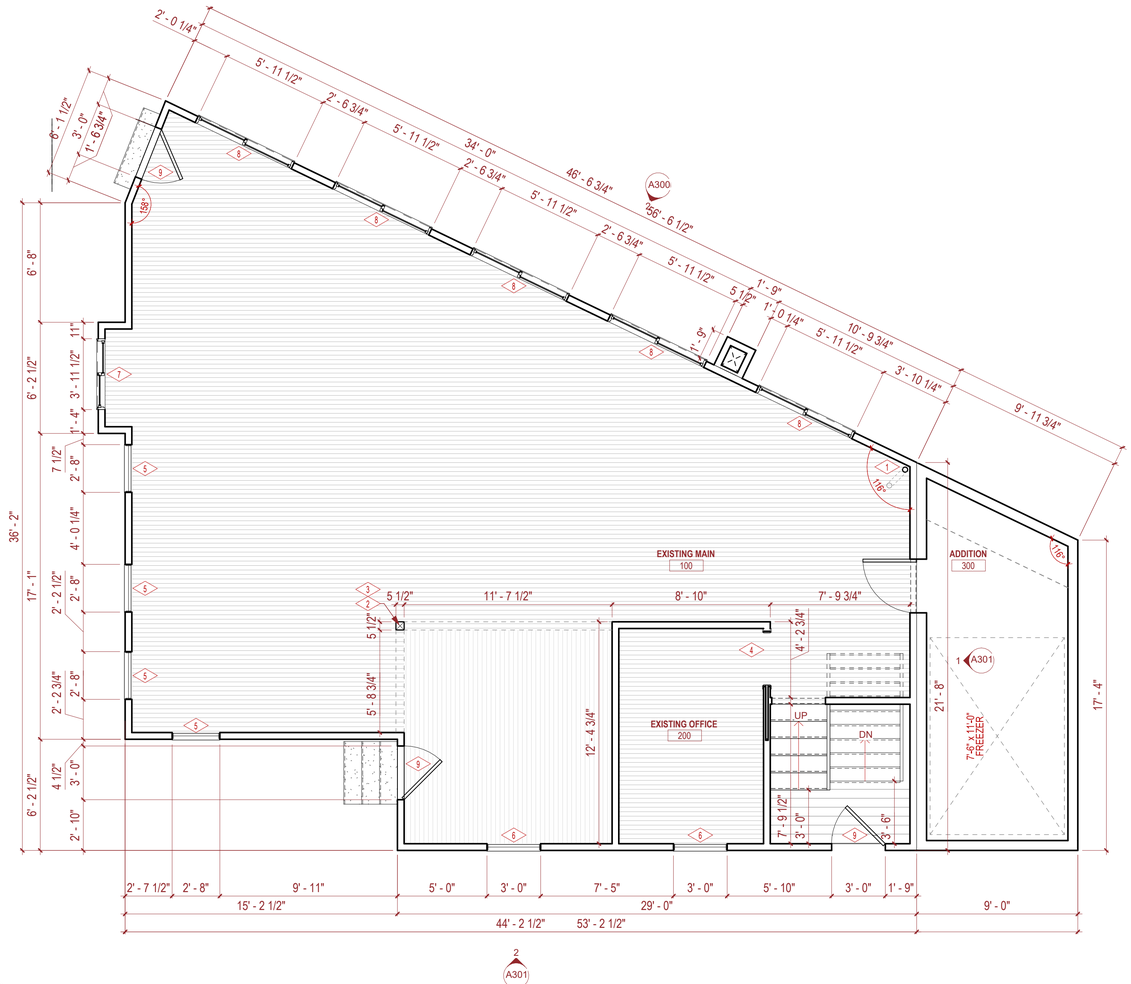
SHEET TITLE

COVER SHEET

SHEET NUMBER

A000

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1 FIRST FLOOR PLAN
1/4" = 1'-0"

CONSTRUCTION LEGEND

- AREA NOT IN CONTRACT
- 1 — REFERENCE NOTES
- NAME / X.XX — INDICATES ROOM OR AREA NAME / INDICATES ROOM OR AREA NUMBER
- D1 / A500 — ELEVATION NUMBER / DRAWING NUMBER
- D1 / A500 — DETAIL NUMBER / DRAWING NUMBER
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR & FRAME TO REMAIN. PROTECT DURING CONSTRUCTION.
- EX / NEW — INDICATES ALIGNMENT OF FINISHED SURFACES
- X — INDICATES PARTITION TYPE (SEE DRAWING A-601 FOR SPECIFICATIONS AND DETAILS)
- GLASS (DEMOUNTABLE) PARTITION
- 101 — INDICATES DOOR NUMBER / NEW DOOR AND FRAME
- INDICATES MILLWORK (SEE ELEVATIONS AND DETAILS)

AS-BUILT REFERENCE NOTES

1. EXISTING WASTE STACK
2. EXISTING "6 x 6" POST/COLUMN
3. EXISTING "6 x 12" HEADER
4. EXISTING OFFICE POCKET DOOR
5. EXISTING 2'-8" x 5'-0" SINGLE-HUNG WINDOW
6. EXISTING 3'-0" x 5'-0" SINGLE-HUNG WINDOW
7. EXISTING 4'-0" x 2'-3" SLIDING WINDOW
8. EXISTING 6'-0" x 4'-8" SLIDING WINDOW
9. EXISTING 3'-0" x 6'-8" DOOR

ARCHITECT

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CLIENT LOGO
DDA LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY
MAIN STREET AMERICA

LUMBER YARD AT PAINT CREEK
215 S. BROADWAY ST.
LAKE ORION, MI 48362

ISSUE

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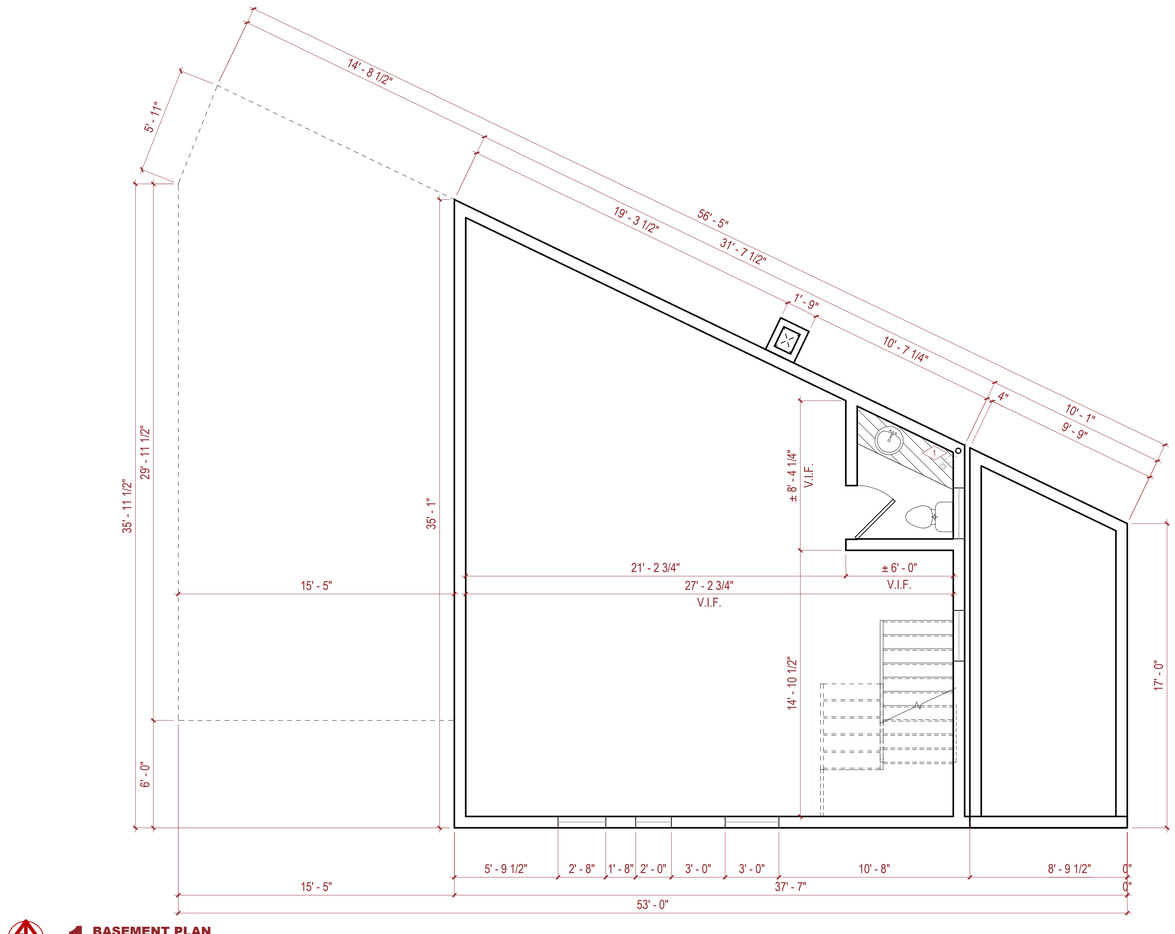
SHEET TITLE

THE BAKERY BUILDING FLOOR PLAN

SHEET NUMBER

A101

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1 BASEMENT PLAN
1/4" = 1'-0"

CONSTRUCTION LEGEND

- AREA NOT IN CONTRACT
- 1 — REFERENCE NOTES
- NAME — INDICATES ROOM OR AREA NAME
- X.XX — INDICATES ROOM OR AREA NUMBER
- D1 / A500 — ELEVATION NUMBER / DRAWING NUMBER
- D1 / A500 — DETAIL NUMBER / DRAWING NUMBER
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR & FRAME TO REMAIN. PROTECT DURING CONSTRUCTION.
- EX / NEW — INDICATES ALIGNMENT OF FINISHED SURFACES
- X — INDICATES PARTITION TYPE (SEE DRAWING A-601 FOR SPECIFICATIONS AND DETAILS)
- GLASS (DEMOUNTABLE) PARTITION
- 101 — INDICATES DOOR NUMBER
- NEW DOOR AND FRAME
- INDICATES MILLWORK (SEE ELEVATIONS AND DETAILS)

AS-BUILT REFERENCE NOTES

1. EXISTING WASTE STACK
2. EXISTING "6 x 6" POST/COLUMN
3. EXISTING "6 x 12" HEADER
4. EXISTING OFFICE POCKET DOOR
5. EXISTING 2'-8" x 5'-0" SINGLE-HUNG WINDOW
6. EXISTING 3'-0" x 5'-0" SINGLE-HUNG WINDOW
7. EXISTING 4'-0" x 2'-3" SLIDING WINDOW
8. EXISTING 6'-0" x 4'-8" SLIDING WINDOW
9. EXISTING 3'-0" x 6'-8" DOOR

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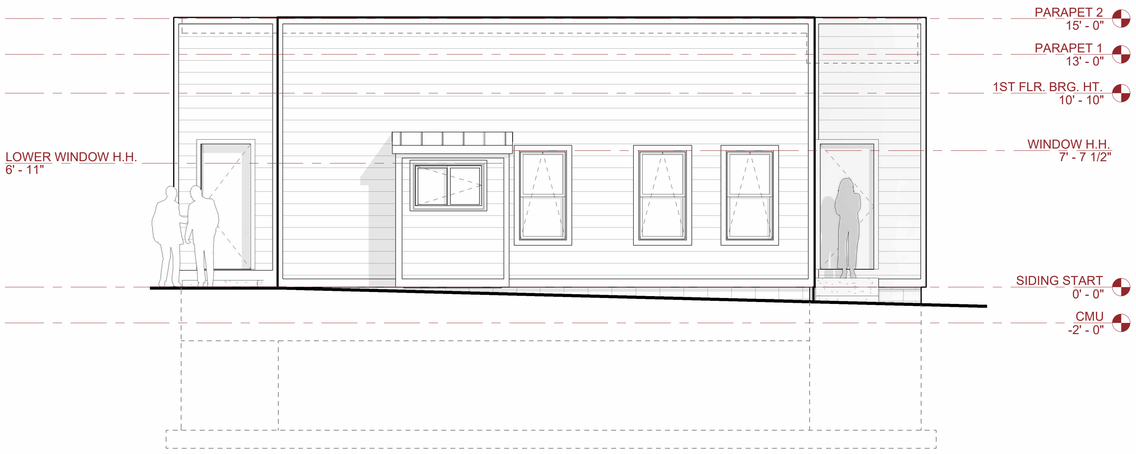
SHEET TITLE

THE BAKERY BUILDING BASEMENT PLAN

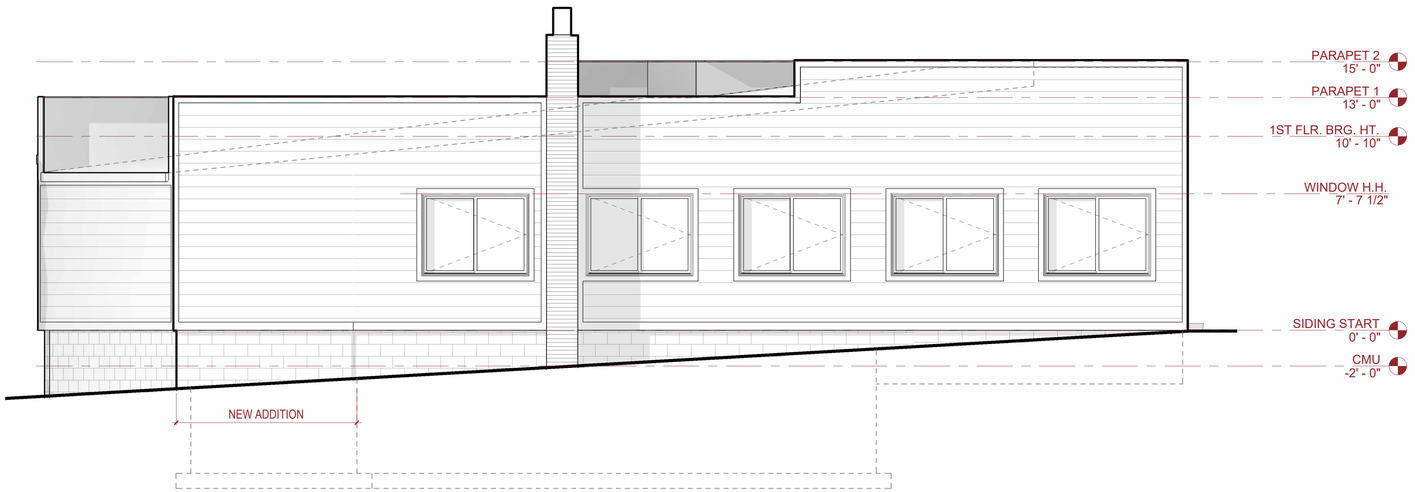
SHEET NUMBER

A102

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



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

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PROJECT

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ISSUE

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PROJECT NUMBER

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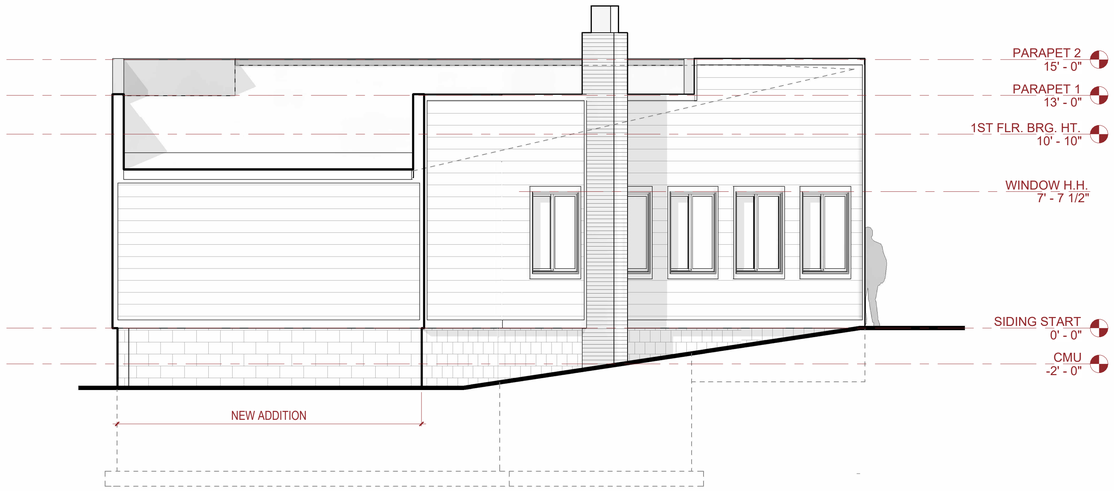
SHEET TITLE

THE BAKERY BUILDING ELEVATIONS

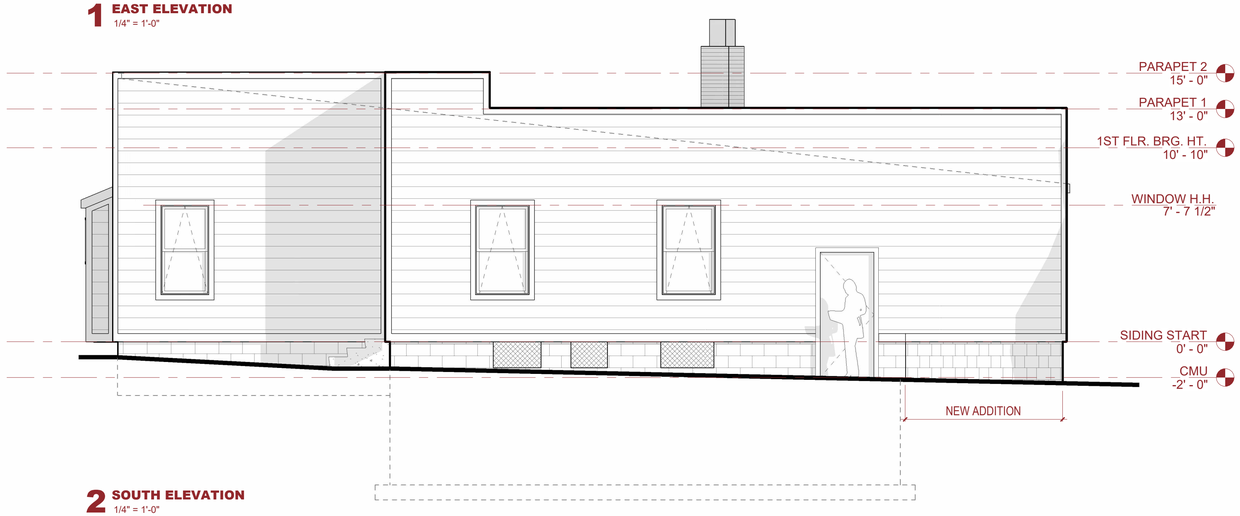
SHEET NUMBER

A300

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



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

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ISSUE

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1	PUD	04/24/26

DRAWN BY: CWL
CHECKED BY: JD

PROJECT NUMBER

25121

SHEET TITLE

THE BAKERY BUILDING ELEVATIONS

SHEET NUMBER

A301

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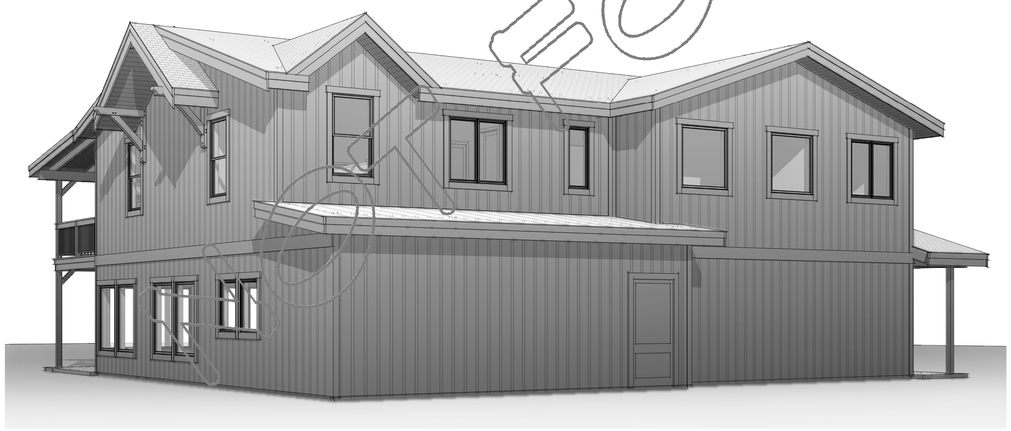
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1 3D EXTERIOR VIEW 1



2 3D EXTERIOR VIEW 2



3 3D EXTERIOR VIEW 3



4 3D EXTERIOR VIEW 4

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Drawing Index

No.	Date	Description

RANCH HOUSE 2

3D EXTERIOR VIEWS

A-003

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18-10-2024 15:34:17

18-10-2024 15:34:17

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1 3D INTERIOR VIEW - BAR 1



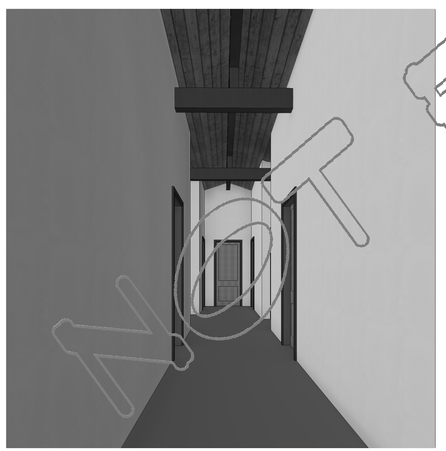
2 3D INTERIOR VIEW - BAR 2



3 3D INTERIOR VIEW - KITCHEN



4 3D INTERIOR VIEW - LOUNGE



5 3D INTERIOR VIEW - HALL



6 3D INTERIOR VIEW - BUNK ROOM



7 3D INTERIOR VIEW - BEDROOM

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Drawing Index

No.	Date	Description

RANCH HOUSE 2

3D INTERIOR VIEWS

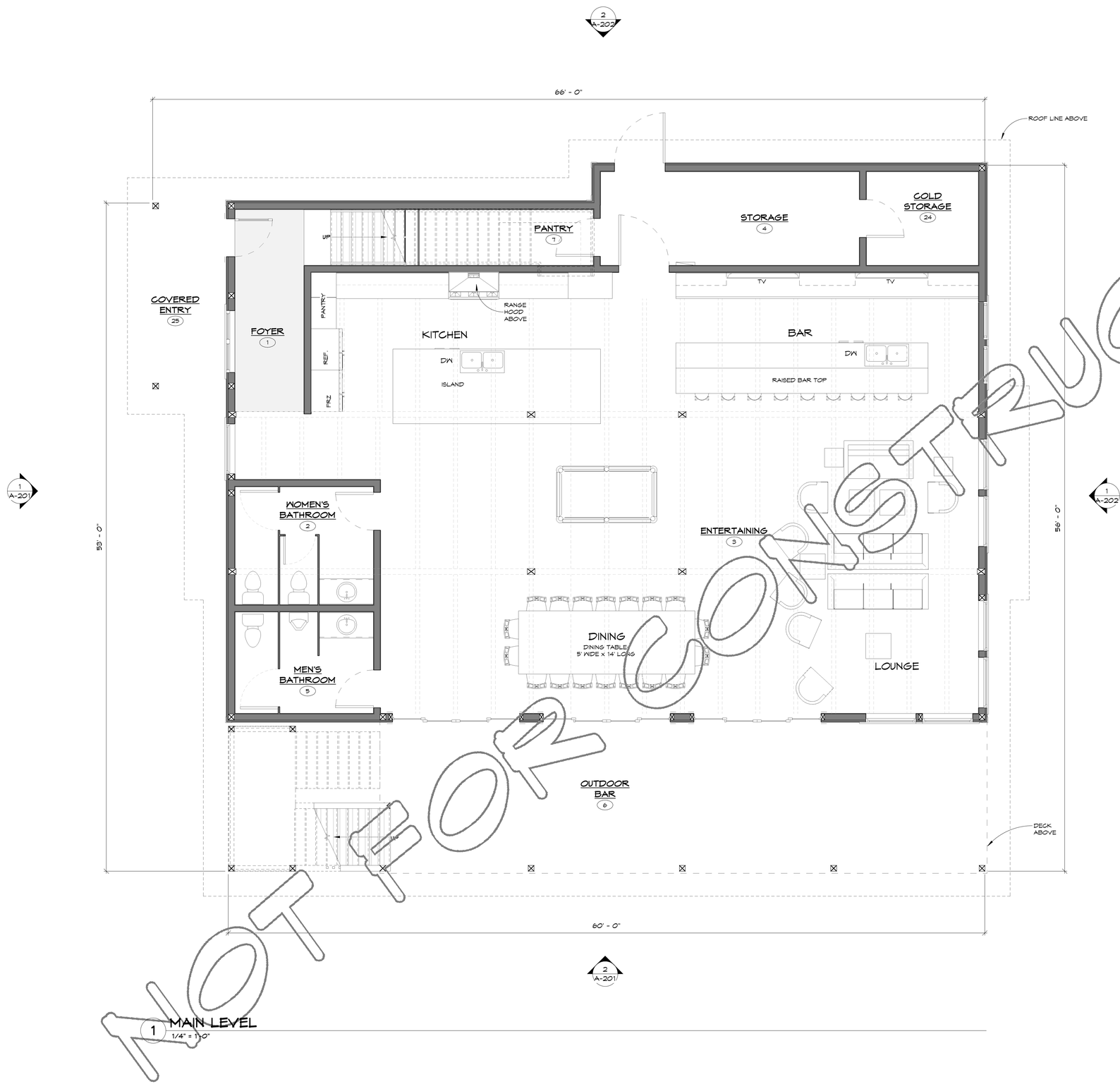
A-004

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GTR
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10-10-2024 15:34:36

NOT FOR CONSTRUCTION

AREA - CONDITIONED SPACE		
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48".		
CONDITIONED		
MAIN LEVEL LIVING	2593 SF	CONDITIONED
UPPER LEVEL LIVING	2217 SF	CONDITIONED
	4710 SF	
UNCONDITIONED		
DECK	576 SF	UNCONDITIONED
PATIO	720 SF	UNCONDITIONED
	1246 SF	
GRAND TOTAL	6065 SF	



1 MAIN LEVEL
1/4" = 1'-0"

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Drawing Index

No.	Date	Description

RANCH HOUSE 2

MAIN LEVEL

A-101

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AREA - CONDITIONED SPACE		
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48".		
CONDITIONED		
MAIN LEVEL LIVING	2553 SF	CONDITIONED
UPPER LEVEL LIVING	2217 SF	CONDITIONED
	4770 SF	
UNCONDITIONED		
DECK	576 SF	UNCONDITIONED
PATIO	720 SF	UNCONDITIONED
	1296 SF	
GRAND TOTAL	6065 SF	



1 UPPER LEVEL
1/4" = 1'-0"

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Drawing Index

No.	Date	Description

RANCH HOUSE 2

UPPER LEVEL

A-102

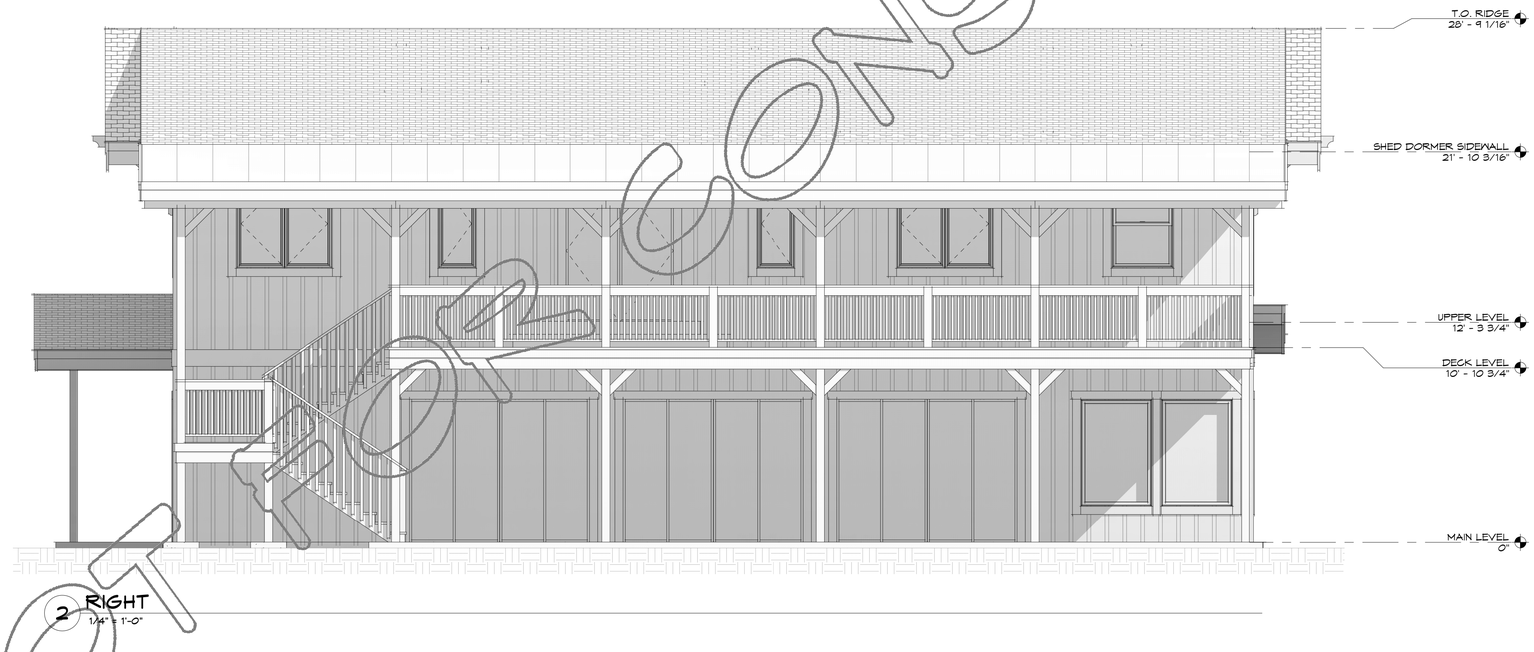
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18-10-2024 15:34:41

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1 FRONT
1/4" = 1'-0"



2 RIGHT
1/4" = 1'-0"

NOT FOR CONSTRUCTION

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Drawing Index

No.	Date	Description

RANCH
HOUSE 2

ELEVATIONS

A-201

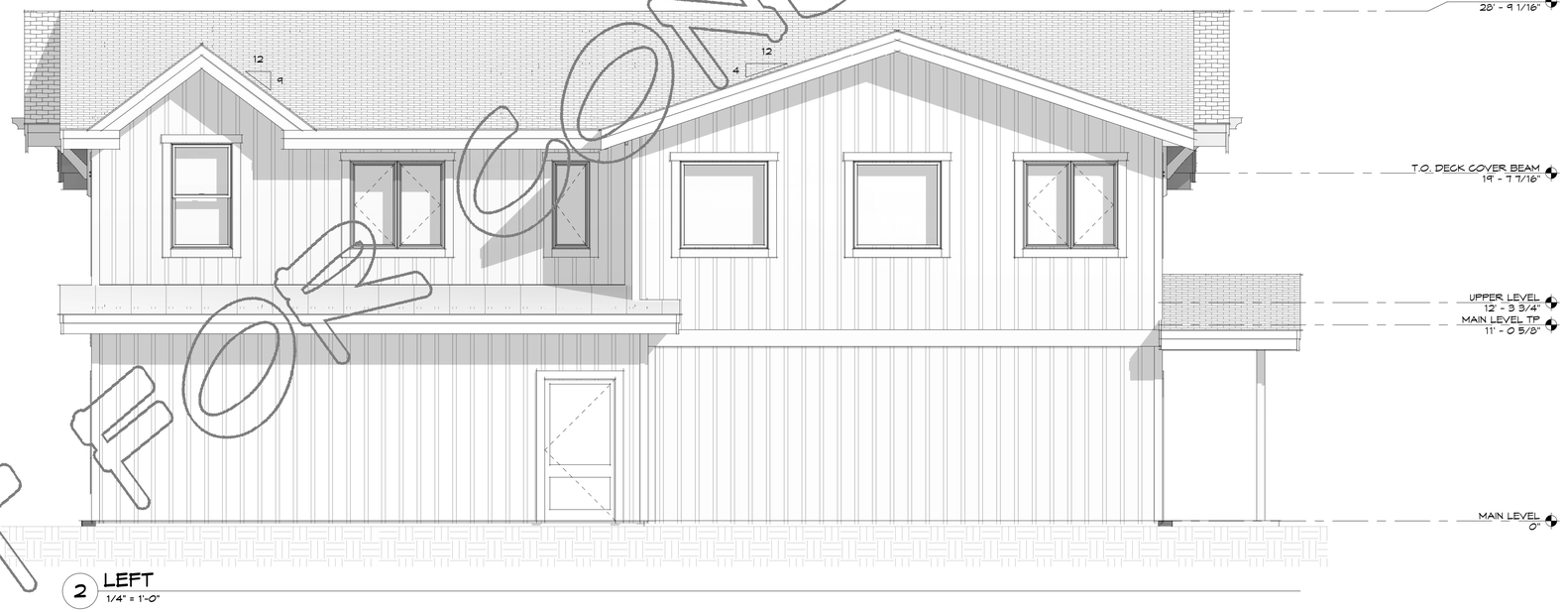
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CTR
10-10-2024 15:34:50

10-10-2024 15:34:50

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1 REAR
1/4" = 1'-0"



2 LEFT
1/4" = 1'-0"

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Drawing Index

No.	Date	Description

RANCH
HOUSE 2

ELEVATIONS

A-202

DRAWN BY
CTR
10-10-2024 15:34:50

10-10-2024 15:34:50

LAKE ORION DDA BIKE SHOP

215 SOUTH BROADWAY
LAKE ORION, MI

GENERAL NOTES

1. CONTACT EACH MUNICIPAL, GOVERNMENTAL, OR PRIVATE UTILITY COMPANIES TO DETERMINE THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
2. SCHEDULE AND COORDINATE ALL SHUT DOWNS OF EXISTING UTILITIES WITH THE OWNER IN ADVANCE A MINIMUM OF SEVEN (7) DAYS PRIOR TO SHUT DOWN.
3. PROVIDE ALL REQUIRED EROSION CONTROL MEASURES PRIOR TO ANY EXCAVATION.
4. A CHEMICAL TOILET IS REQUIRED ON-SITE DURING CONSTRUCTION.
5. OTHER WORK MAY BE PERFORMED UNDER A SEPARATE CONTRACT AT THE CLIENT'S PROPERTY. COORDINATE WITH ALL OTHER CONTRACTED TRADES SO AS TO NOT INTERFERE WITH THEIR WORK.
6. ALL FASTENERS IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED.
7. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL REQUIREMENTS; SIZE, SPACING AND LOCATION OF ALL STRUCTURAL MEMBERS.
8. STRICTLY FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS WHEN USING OR INSTALLING PRODUCTS.
9. ALL DOOR AND WINDOW DIMENSIONS ARE APPROXIMATE, VERIFY MANUFACTURER SPECIFICATIONS FOR EXACT SIZE.
10. USE 5/8" TYPE 'X' GYPSUM WALL BOARD THROUGHOUT. PROVIDE WATER RESISTANT GYPSUM WALL BOARD IN RESTROOMS WITH SHOWERS. PROVIDE FRAMING AT 16" O.C. MAX AT CEILINGS WHERE WATER RESISTANT GYPSUM WALL BOARD IS INSTALLED.
11. FIRE BLOCKING SHALL BE PROVIDED IN STUD CAVITIES OVER 10' IN HEIGHT.
12. CONTACT DESIGNER OR ENGINEER OF RECORD TO CONFIRM DIMENSIONS IF NOT LISTED.

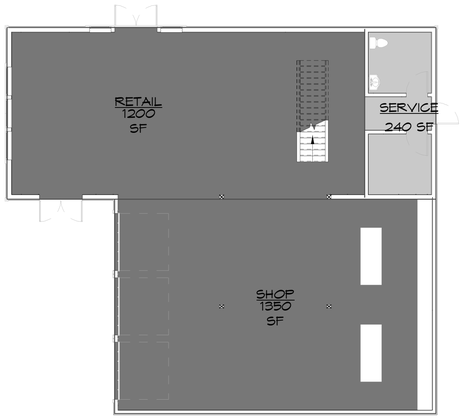
AREA - CONDITIONED SPACE

NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"

CONDITIONED		
LOFT	381 SF	CONDITIONED
RETAIL	1200 SF	CONDITIONED
SERVICE	240 SF	CONDITIONED
SHOP	1350 SF	CONDITIONED
	3171 SF	
GRAND TOTAL	3171 SF	

SHEET INDEX

A-001	TITLE SHEET
A-002	3D VIEWS EXTERIOR
A-003	3D VIEWS INTERIOR
A-101	MAIN LEVEL
A-102	UPPER LEVEL
A-103	ROOF PLAN
A-104	SCHEDULES
A-201	ELEVATIONS
A-202	ELEVATIONS
A-301	SECTIONS



1 MAIN LEVEL - AREA PLAN
1" = 10'-0"



3 UPPER LEVEL - AREA PLAN
1" = 10'-0"

APPLICABLE CODES

2015	(MICHIGAN RESIDENTIAL CODE)
2021	(MICHIGAN BUILDING CODE)
2021	(MICHIGAN PLUMBING CODE)
2021	(MICHIGAN MECHANICAL CODE)
2023	(MICHIGAN ELECTRICAL CODE)

MATERIALS

CONCRETE
METAL
RIGID INSULATION
EARTH
PLYWOOD
WOOD
GYPSUM WALL BOARD
STONE
BATT INSULATION
GRAVEL

PROJECT DESCRIPTION

EXAMPLE PROJECT DESCRIPTION

REFERENCE SYMBOLS

LEVEL
LEVEL OR SPOT ELEVATION

DETAIL CALLOUT
1 — DETAIL NUMBER
S-103 — SHEET WHERE DETAIL IS DRAWN

ELEVATION, SECTION, & DETAIL CALLOUT
1 — DETAIL NUMBER
A-301 — SHEET NUMBER
DIRECTION OF VIEW

101 DOOR TAG

101 WINDOW TAG

101 EQUIPMENT TAG
SEE EQUIPMENT SCHEDULE ON SHEET A-104

A2 SHEARWALL TAG
SHEARWALL TYPE, SEE SCHEDULE ON S-001 FOR NAILING AND ANCHOR BOLT SPACING

V6D WALL TAG
WALL TYPE, SEE ARCH'L DETAILS ON SHEET A-401

PROPERTY LINE

A REVISION CLOUD AROUND REVISION

000 KEYNOTE TAG

PROJECT DIRECTORY

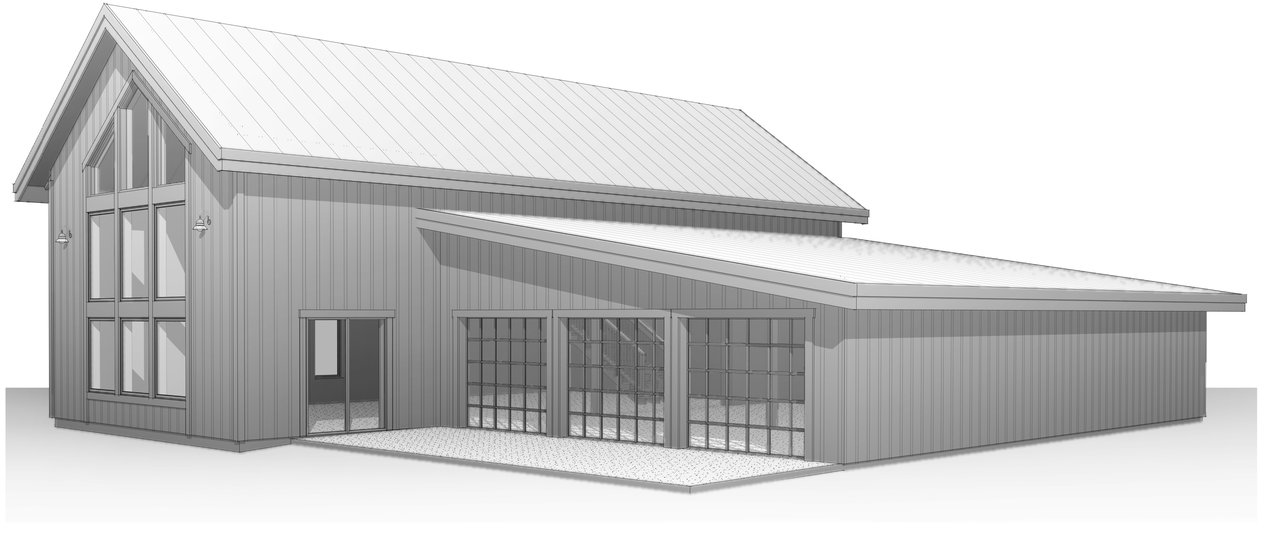
OWNER
LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY
CONTACT: MATT GIBB
E: GIBB@DOWNTOWNLAKEORION.ORG

CONTRACTOR

REGISTERED DESIGN PROFESSIONAL
CUSHING TERRELL
2140 SW JEFFERSON ST., SUITE 200
PORTLAND, OR 97201
CONTACT: JACOB BASLIEN, P.E.
P: 503.395.1224
E: JACOBBASLIEN@CUSHINGTERRELL.COM

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	FC	FRAMING CLIP	NIC	NOT IN CONTRACT	TEL	TELEPHONE
ADJ	ADJACENT	FRP	FIBER REINFORCED PLASTIC	NTS	NOT TO SCALE	TV	TELEVISION
AGGS	AGGREGATE	FFL	FINISHED FLOOR LINE			TEMP	TEMPERED GLAZING
A/C	AIR CONDITIONING	FE	FIRE EXTINGUISHER	OC	ON CENTER (S)	THK	THICK (NESS)
ALT	ALTERNATE	FD	FLOOR DRAIN	OD	OUTSIDE DIAMETER	TPD	TOILET PAPER DISPENSER
ALUM	ALUMINUM	FTG	FOOTING	OV	OVEN	T&G	TONGUE AND GROOVE
AB	ANCHOR BOLT	FND	FOUNDATION			T.O.	TOP OF
ABV	ABOVE			PEN	PENETRATION	TB	TOWEL BAR
ARCH.	ARCHITECT (-URAL)	GA	GAUGE	PT	PRESSURE TREATED	TYP	TYPICAL
ASPH	ASPHALT	GALV	GALVANIZED	PTD	PAPER TOWEL DISPENSER		
		GB	GRAB BAR	PLAM	PLASTIC LAMINATE	UNO	UNLESS NOTED OTHERWISE
BLK	BLOCK	GLB	GLULAM BEAM	PL	PLATE, PROPERTY LINE		
BLKG	BLOCKING	GSN	GENERAL STRUCTURAL NOTES	PLYWD	PLYWOOD	VPB	VAPOR BARRIER
BD	BOARD	GWB	GYPSUM WALL BOARD	PVC	POLYVINYL CHLORIDE	VIF	VERIFY IN FIELD
BLDG	BUILDING			PSF	POUNDS PER SQUARE FOOT	VERT	VERTICAL
		HWD	HARDWOOD	PSI	POUNDS PER SQUARE INCH	VB	VINYL BASE
CAB.	CABINET	HVAC	HEATING/VENTILATING/A/C			VCT	VINYL COMPOSITION TILE
CPT	CARPET (ED)	HSS	HOLLOW STRUCTURAL STEEL	QT	QUARRY TILE	VF	VINYL FABRIC
CLG	CEILING	HB	HOSE BIBB			VT	VINYL TILE
CL	CENTERLINE			RCA	RAISED CENTER AISLE	VWC	VINYL WALL COVERING
CT	CERAMIC TILE	ID	INSIDE DIAMETER	REF	REFRIGERATOR		
CO	CLEANOUT	INSUL	INSULATE (D), (ION)	REINF	REINFORCE (D), (ING)	WC	WATER CLOSET
COL	COLUMN	INT	INTERIOR INV INVERT	REQD	REQUIRED	WRB	WATER RESISTANT BARRIER
CONC	CONCRETE			ROW	RIGHT OF WAY	WH	WATER HEATER
CMU	CONCRETE MASONRY UNIT	KIT.	KITCHEN	RM	ROOM	WP	WATERPROOFING
CJ	CONTROL JOINT			RB	RUBBER BASE	WWF	WELDED WIRE FABRIC
CONT	CONTINUOUS OR CONTINUE	LAB	LABORATORY	RBT	RUBBER TILE	W	WEST, WIDTH, WIDE
CF	CUBIC FOOT	LAM.	LAMINATE (D)			WDW	WINDOW
CY	CUBIC YARD	LAV	LAVATORY	SCH	SCHEDULE	W/O	WITHOUT
		LH	LEFT HAND	SLR	SEALER (CONCRETE SEALER)	WB	WOOD BASE
DEMO.	DEMOLISH	LF	LINEAR FEET	SECT	SECTION	WD	WOOD
DET	DETAIL	LVL	LAMINATED VENEER LUMBER	SHT	SHEET	WPT	WORKING POINT
DIA	DIAMETER	LSL	LAMINATED STRAND LUMBER	SV	SHEET VINYL		
DN	DOWN			SIM	SIMILAR		
DS	DOWNSPOUT	MH	MANHOLE	SC	SOLID CORE		
DW	DISHWASHER	MFR	MANUFACTURE (ER)	SPEC.	SPECIFICATION (S)		
		MAT.	MATERIAL (S)	SF	SQUARE FEET		
ELEC	ELECTRIC (AL)	MAX.	MAXIMUM	SQ	SQUARE		
EQ	EQUAL	MECH	MECHANICAL (-LY)	SS	STAINLESS STEEL		
EQUIP	EQUIPMENT	MTL	METAL	STD	STANDARD		
EN	EDGE NAIL	MM	MILLIMETER (S)	STL	STEEL		
<E>	EXISTING	MIN.	MINIMUM	SD	STORM DRAIN		
		MISC	MISCELLANEOUS	SUSP	SUSPENDED		
				SW	SHEAR WALL		
				SIW	STEP IN WALL		



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Section 11, Item B.

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Drawing Index

No.	Date	Description

LAKE ORION DDA BIKE SHOP

215 SOUTH BROADWAY
LAKE ORION, MI

TITLE SHEET

A-001

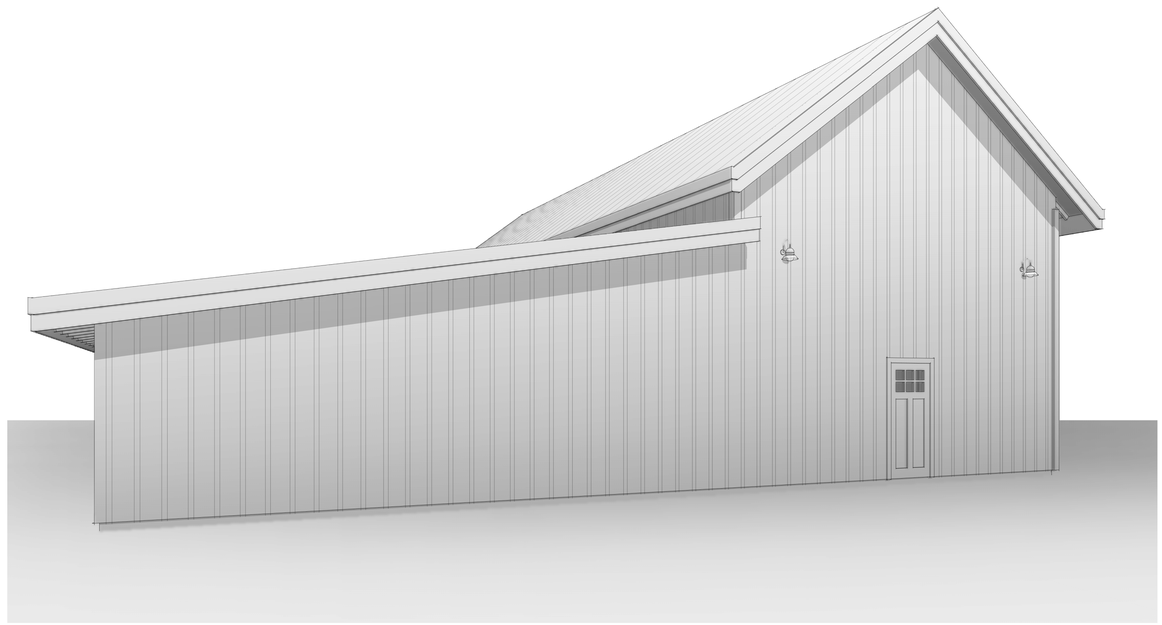
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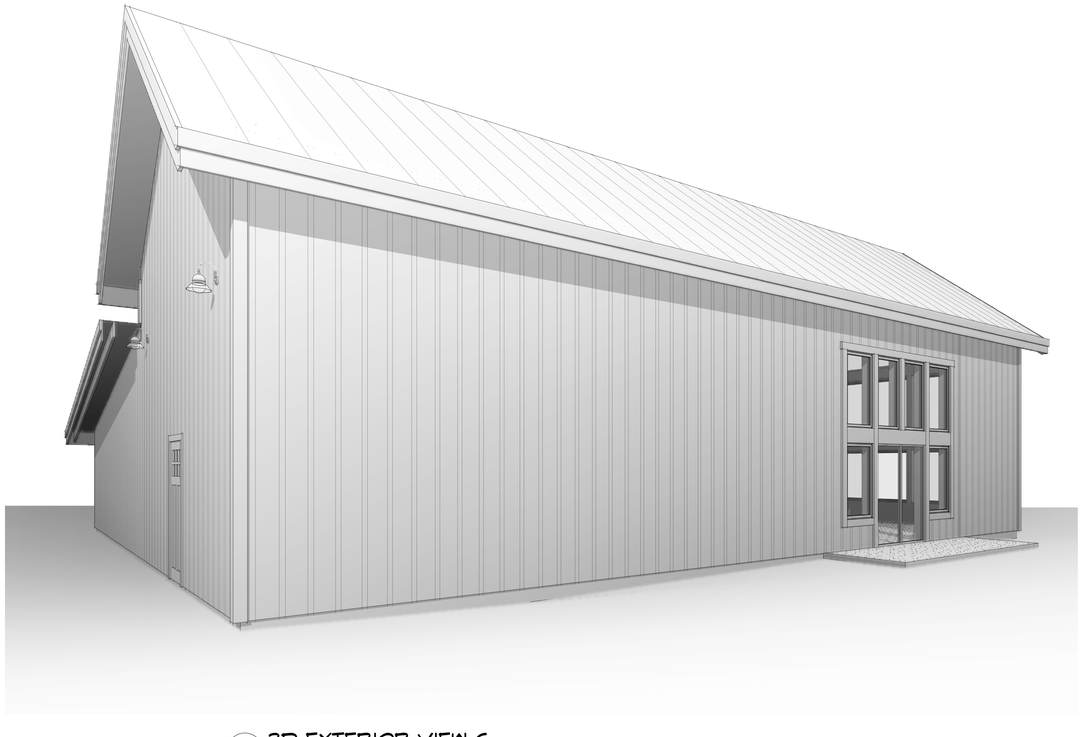
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1 3D EXTERIOR VIEW A



3 3D EXTERIOR VIEW B



4 3D EXTERIOR VIEW C



2 3D EXTERIOR VIEW D

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Drawing Index

No.	Date	Description

LAKE ORION DDA BIKE SHOP

215 SOUTH BROADWAY
LAKE ORION, MI

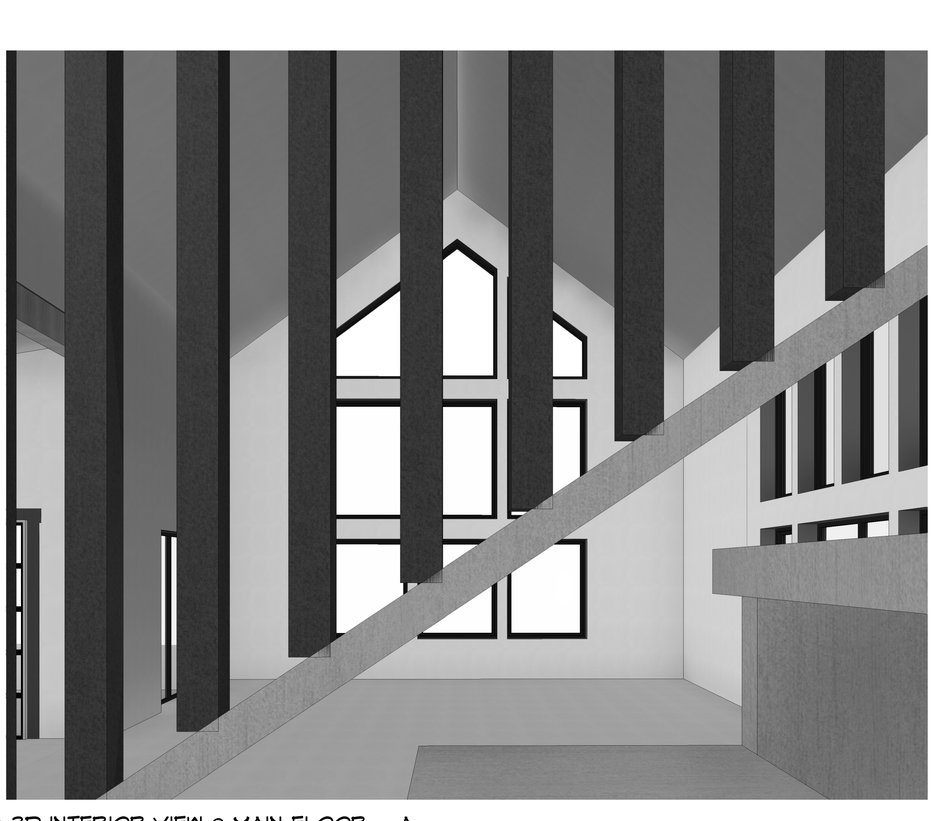
3D VIEWS EXTERIOR

A-002

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1 3D INTERIOR VIEW @ MAIN FLOOR - A



2 3D INTERIOR VIEW @ MAIN FLOOR - B

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Drawing Index

No.	Date	Description
1	DD MMM 14	PERMIT SET

LAKE ORION DDA BIKE SHOP

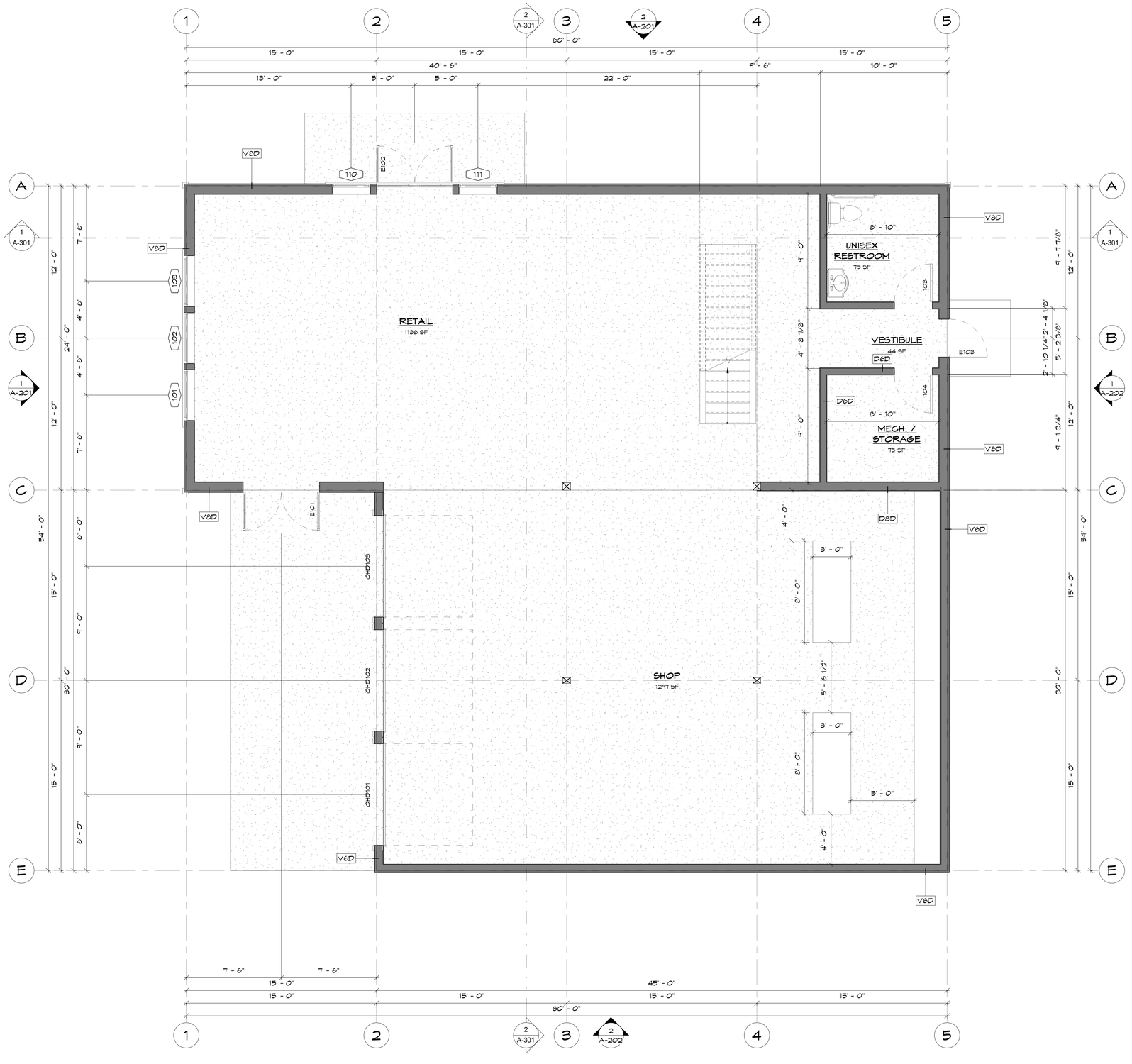
215 SOUTH BROADWAY
LAKE ORION, MI

3D VIEWS INTERIOR

A-003

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1 MAIN LEVEL - FLOOR PLAN
1/4" = 1'-0"

AREA - CONDITIONED SPACE

NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"

CONDITIONED		
LOFT	381 SF	CONDITIONED
RETAIL	1200 SF	CONDITIONED
SERVICE	240 SF	CONDITIONED
SHOP	1350 SF	CONDITIONED
	3171 SF	
GRAND TOTAL	3171 SF	

Room Schedule - Level

NOTE: ROOM AREA MEASURED FROM INTERIOR OF STUD WALL OR USEABLE SPACE.

Number	Name	Area	Floor Finish	Wall Finish	Ceiling Material	Ceiling Height	Comments
GROUND LEVEL							
101	RETAIL	1138 SF	CONCRETE	GWB	GWB	VARIES	
102	VESTIBULE	44 SF	CONCRETE	GWB	GWB	8' - 11"	
103	UNISEX RESTROOM	75 SF	CONCRETE	GWB	GWB	8' - 11"	
104	MECH. / STORAGE	75 SF	CONCRETE	GWB	GWB	8' - 11"	
105	SHOP	1297 SF	CONCRETE	GWB	GWB	VARIES	
		2628 SF					

Door Schedule - Level

SEE SCHEDULES SHEET FOR DOOR TYPES AND COMPLETE SCHEDULE

Mark	Type	Width	Height	Operation	Comments
GROUND LEVEL					
EXTERIOR					
E101	C	6' - 0"	7' - 0"	DOUBLE SWING	
E102	C	6' - 0"	7' - 0"	DOUBLE SWING	
E103	B	3' - 0"	6' - 8"	SWING	
OHD101	D	8' - 0"	7' - 0"	OVERHEAD - GLASS	
OHD102	D	8' - 0"	7' - 0"	OVERHEAD - GLASS	
OHD103	D	8' - 0"	7' - 0"	OVERHEAD - GLASS	
INTERIOR					
103	A	3' - 0"	6' - 8"	SWING	
104	A	3' - 0"	6' - 8"	SWING	

Window Schedule - Level

SEE SCHEDULES SHEET FOR WINDOW TYPES AND COMPLETE SCHEDULE

Mark	Type	Width	Height	Head Height (BTM of HDR)	Sill Height (TOP of SILL)	Operation	Comments
GROUND LEVEL							
101	A	4' - 0"	5' - 0"	7' - 0"	2' - 0"	PICTURE	
102	A	4' - 0"	5' - 0"	7' - 0"	2' - 0"	PICTURE	
103	A	4' - 0"	5' - 0"	7' - 0"	2' - 0"	PICTURE	
104	A	4' - 0"	6' - 0"	14' - 0"	8' - 0"	PICTURE	
105	A	4' - 0"	6' - 0"	14' - 0"	8' - 0"	PICTURE	
106	A	4' - 0"	6' - 0"	14' - 0"	8' - 0"	PICTURE	
110	A	3' - 0"	5' - 0"	7' - 0"	2' - 0"	PICTURE	TEMPERED
111	A	3' - 0"	5' - 0"	7' - 0"	2' - 0"	PICTURE	TEMPERED
112	A	3' - 0"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED
113	A	2' - 9"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED
114	A	2' - 9"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED
115	A	3' - 0"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED

KEYNOTES

FLOOR PLAN GENERAL NOTES

NOTES APPLY TO SHEETS A-101 & A-102 ONLY.

1. REFERENCE SHEET A-104 FOR COMPLETE WINDOW & DOOR SCHEDULES.
2. REFERENCE SHEET A-401 FOR WALL TYPES AND DETAILS.

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Drawing Index

No.	Date	Description

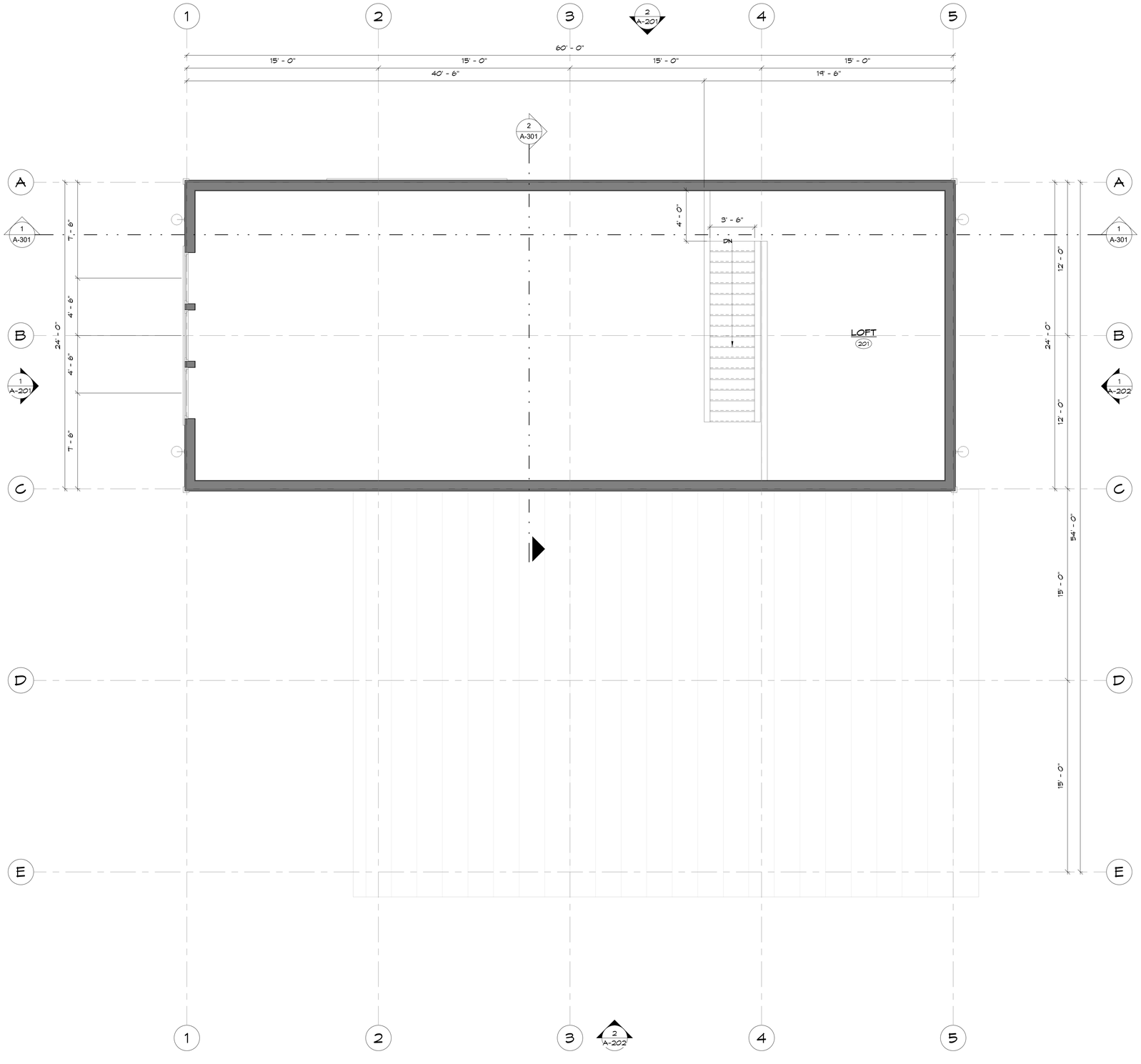
LAKE ORION DDA BIKE SHOP

MAIN LEVEL

A-101

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1 UPPER LEVEL - FLOOR PLAN
1/4" = 1'-0"

AREA - CONDITIONED SPACE

NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"

CONDITIONED		
LOFT	381 SF	CONDITIONED
RETAIL	1200 SF	CONDITIONED
SERVICE	240 SF	CONDITIONED
SHOP	1350 SF	CONDITIONED
	3171 SF	
GRAND TOTAL	3171 SF	

Room Schedule - Level

NOTE: ROOM AREA MEASURED FROM INTERIOR OF STUD WALL OR USEABLE SPACE.

Number	Name	Area	Floor Finish	Wall Finish	Ceiling Material	Ceiling Height	Comments
UPPER LEVEL							
201	LOFT	343 SF	FINISH O/ SHEATHING	GWB	GWB	VARIES	
		343 SF					

KEYNOTES

FLOOR PLAN GENERAL NOTES

NOTES APPLY TO SHEETS A-101 & A-102 ONLY.

1. REFERENCE SHEET A-104 FOR COMPLETE WINDOW & DOOR SCHEDULES.
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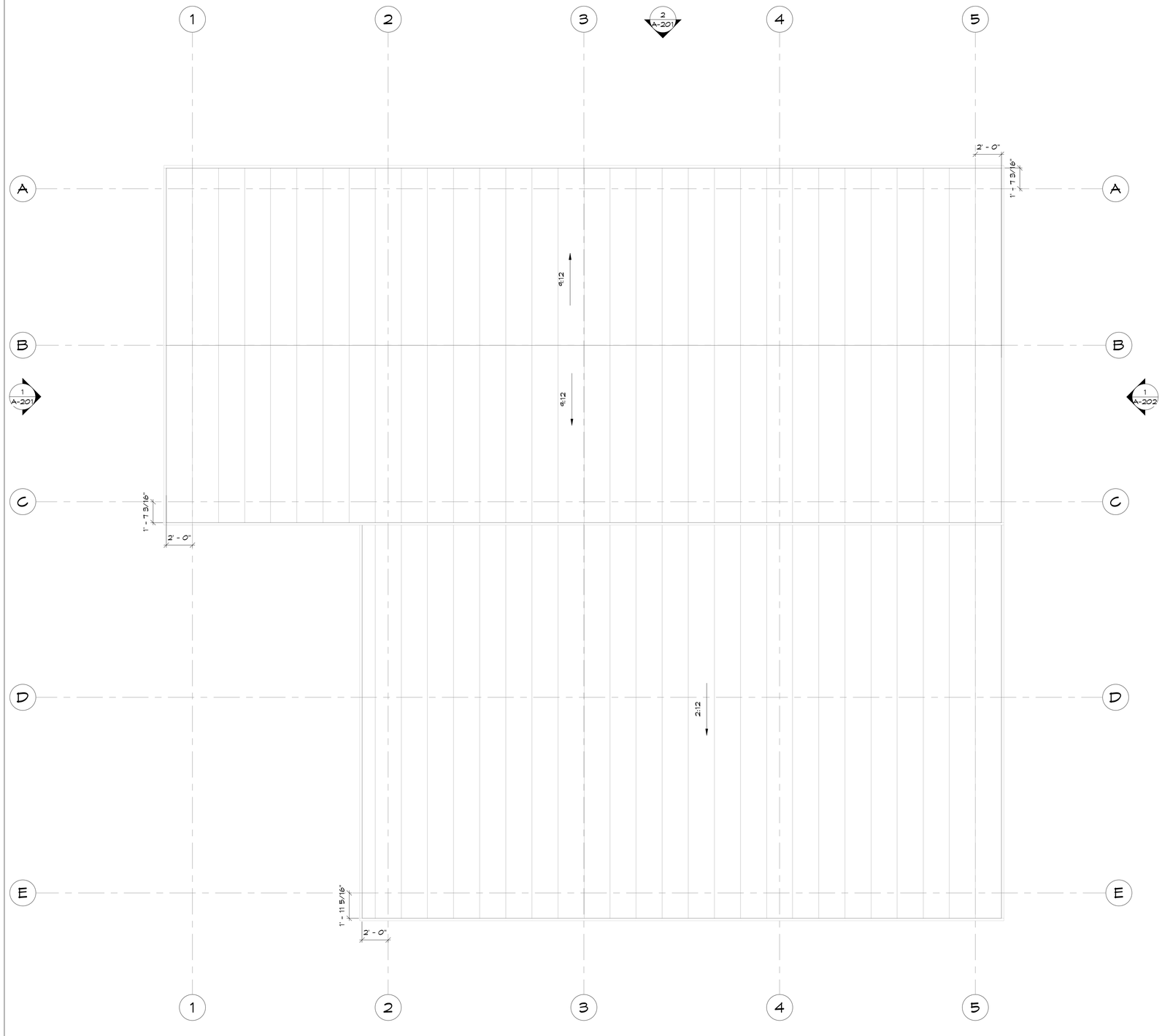
LAKE ORION DDA BIKE SHOP

UPPER LEVEL

A-102

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1 ROOF PLAN
1/4" = 1'-0"

KEYNOTES

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Drawing Index

No.	Date	Description

LAKE ORION DDA BIKE SHOP

ROOF PLAN

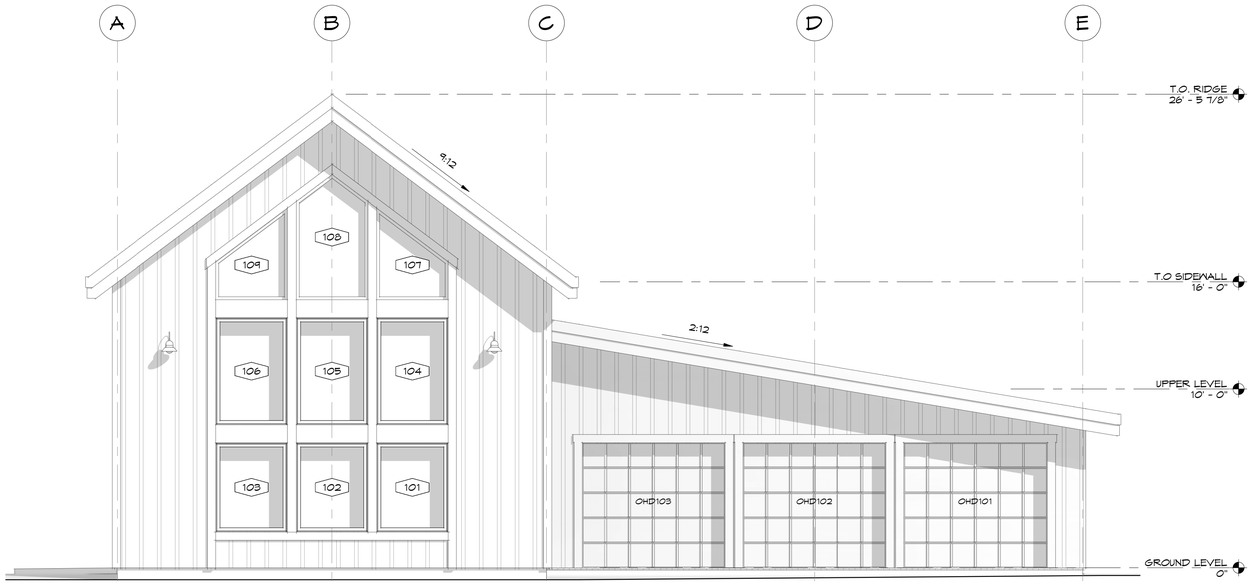
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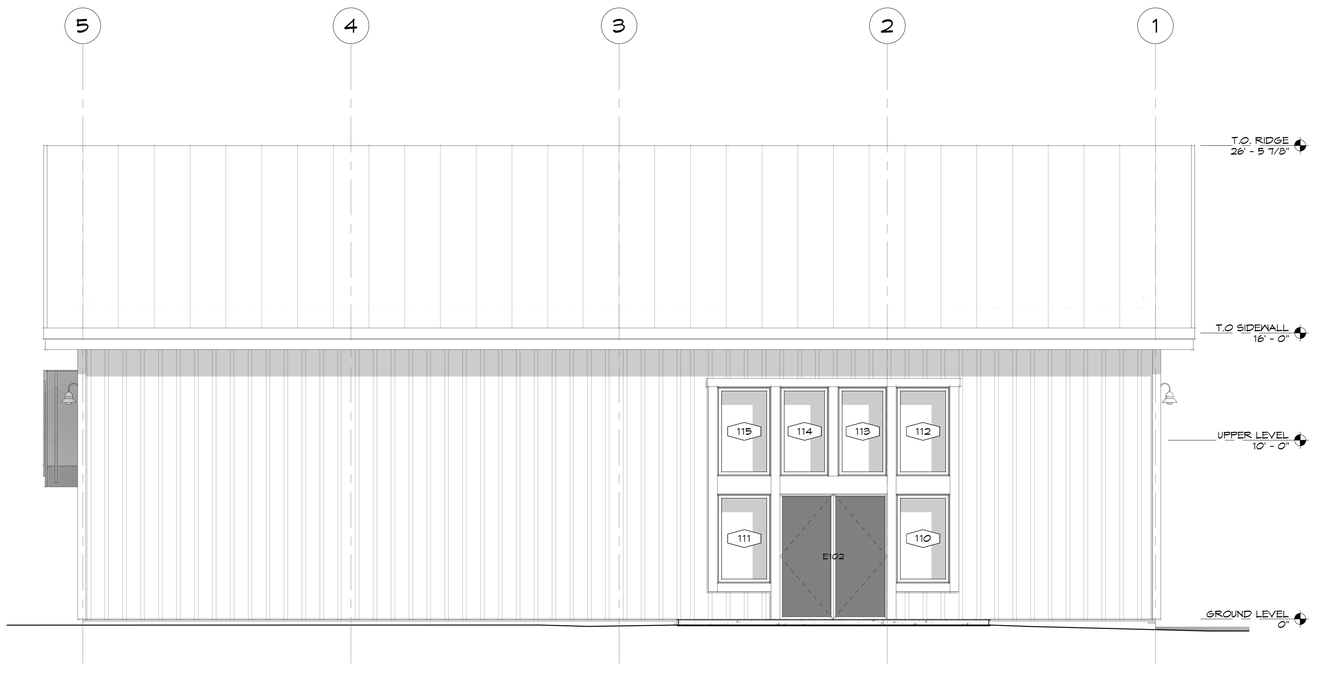
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NOT FOR CONSTRUCTION

KEYNOTES



1 FRONT
1/4" = 1'-0"



2 LEFT
1/4" = 1'-0"

ELEVATION GENERAL NOTES

NOTES APPLY TO SHEETS A-201 & A-202 ONLY.

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Drawing Index

No.	Date	Description

LAKE ORION DDA BIKE SHOP

215 SOUTH BROADWAY
LAKE ORION, MI

ELEVATIONS

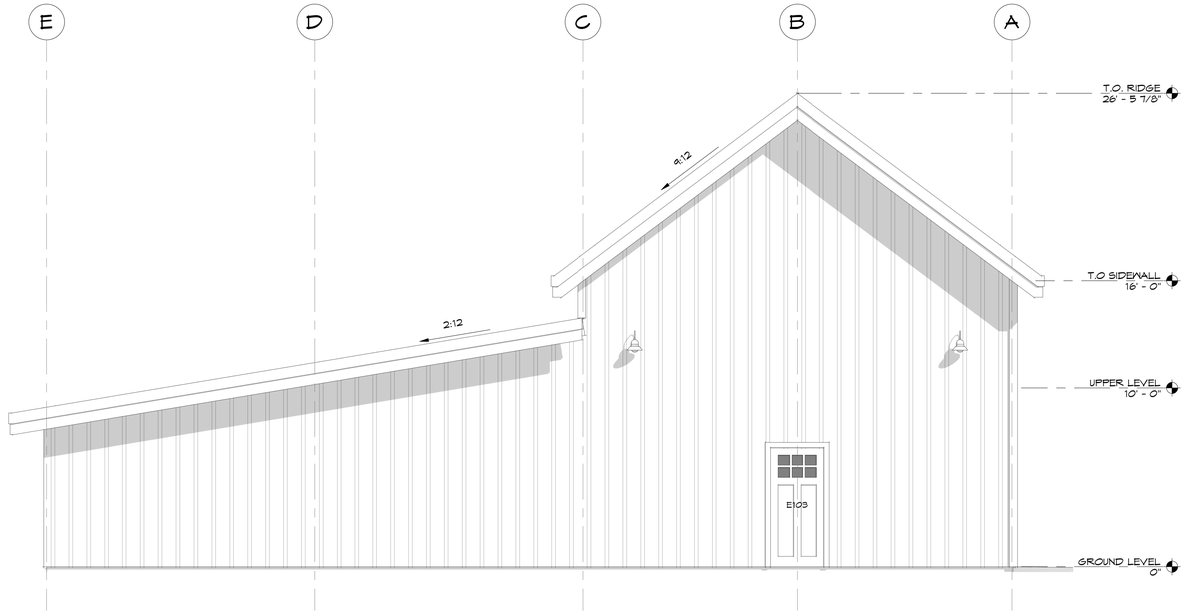
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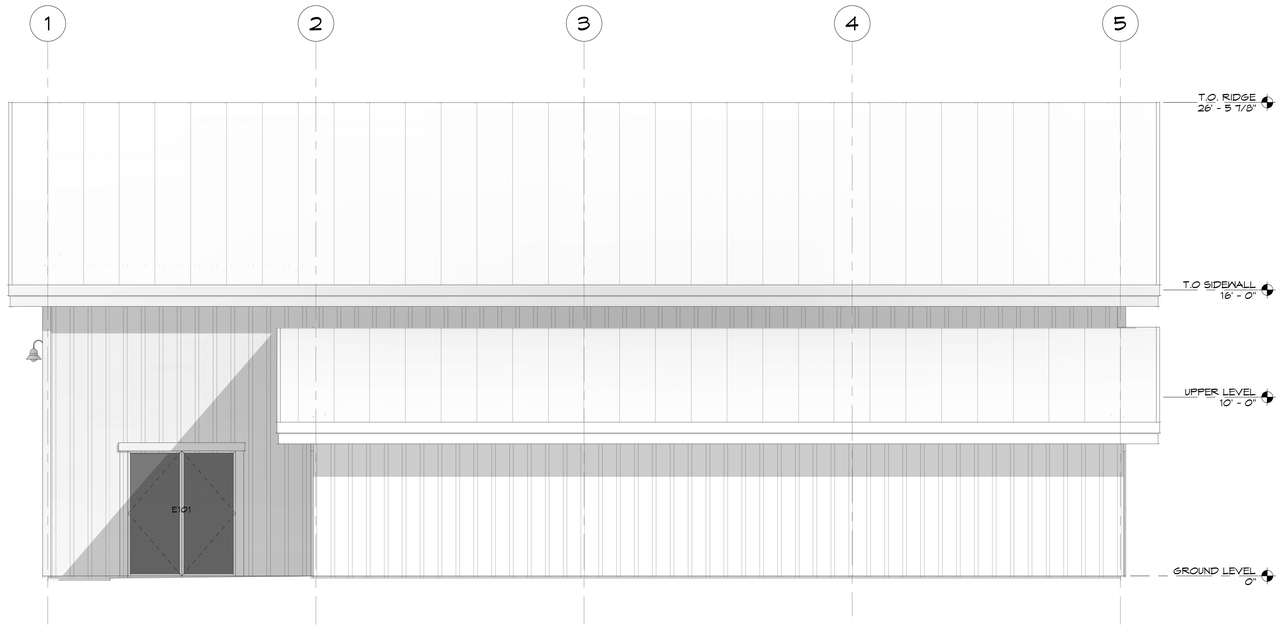
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NOT FOR CONSTRUCTION

KEYNOTES



1 BACK
1/4" = 1'-0"



2 RIGHT
1/4" = 1'-0"

ELEVATION GENERAL NOTES

NOTES APPLY TO SHEETS A-201 & A-202 ONLY.

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Drawing Index

No.	Date	Description

LAKE ORION DDA BIKE SHOP

215 SOUTH BROADWAY
LAKE ORION, MI

ELEVATIONS

A-202

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GENERAL NOTES

1. CONTACT EACH MUNICIPAL, GOVERNMENTAL, OR PRIVATE UTILITY COMPANIES TO DETERMINE THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
2. SCHEDULE AND COORDINATE ALL SHUT DOWNS OF EXISTING UTILITIES WITH THE OWNER IN ADVANCE A MINIMUM OF SEVEN (7) DAYS PRIOR TO SHUT DOWN.
3. PROVIDE ALL REQUIRED EROSION CONTROL MEASURES PRIOR TO ANY EXCAVATION.
4. A CHEMICAL TOILET IS REQUIRED ON-SITE DURING CONSTRUCTION.
5. OTHER WORK MAY BE PERFORMED UNDER A SEPARATE CONTRACT AT THE CLIENT'S PROPERTY. COORDINATE WITH ALL OTHER CONTRACTED TRADES SO AS TO NOT INTERFERE WITH THEIR WORK.
6. ALL FASTENERS IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED.
7. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL REQUIREMENTS; SIZE, SPACING AND LOCATION OF ALL STRUCTURAL MEMBERS.
8. STRICTLY FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS WHEN USING OR INSTALLING PRODUCTS.
9. ALL DOOR AND WINDOW DIMENSIONS ARE APPROXIMATE, VERIFY MANUFACTURER SPECIFICATIONS FOR EXACT SIZE.
10. USE 5/8" TYPE 'X' GYPSUM WALL BOARD THROUGHOUT. PROVIDE WATER RESISTANT GYPSUM WALL BOARD IN RESTROOMS WITH SHOWERS. PROVIDE FRAMING AT 16" O.C. MAX AT CEILINGS WHERE WATER RESISTANT GYPSUM WALL BOARD IS INSTALLED.
11. FIRE BLOCKING SHALL BE PROVIDED IN STUD CAVITIES OVER 10' IN HEIGHT.
12. CONTACT DESIGNER OR ENGINEER OF RECORD TO CONFIRM DIMENSIONS IF NOT LISTED.

AREA - CONDITIONED SPACE

NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"

CONDITIONED

RETAIL	960 SF	CONDITIONED
SERVICE	192 SF	CONDITIONED
	1152 SF	
GRAND TOTAL	1152 SF	

SHEET INDEX

A-001	TITLE SHEET & GENERAL NOTES
A-002	3D EXTERIOR VIEWS
A-003	3D INTERIOR VIEWS
A-101	MAIN LEVEL FLOOR PLAN
A-102	ROOF PLAN
A-103	SCHEDULES
A-201	ELEVATIONS
A-301	SECTIONS

APPLICABLE CODES

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EXAMPLE PROJECT DESCRIPTION

REFERENCE SYMBOLS

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LEVEL OR SPOT ELEVATION

DETAIL CALLOUT
1 — DETAIL NUMBER
S-103 — SHEET WHERE DETAIL IS DRAWN

ELEVATION, SECTION, & DETAIL CALLOUT
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A-301 — SHEET NUMBER
DIRECTION OF VIEW

101 DOOR TAG

101 WINDOW TAG

101 EQUIPMENT TAG
SEE EQUIPMENT SCHEDULE ON SHEET A-104

A2 SHEARWALL TAG
SHEARWALL TYPE, SEE SCHEDULE ON S-001 FOR NAILING AND ANCHOR BOLT SPACING

V6D WALL TAG
WALL TYPE, SEE ARCH'L DETAILS ON SHEET A-401

PROPERTY LINE

A REVISION CLOUD AROUND REVISION

000 KEYNOTE TAG

PROJECT DIRECTORY

OWNER
LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY
CONTACT: MATT GIBB
E: GIBB@DOWNTOWNLAKEORION.ORG

CONTRACTOR

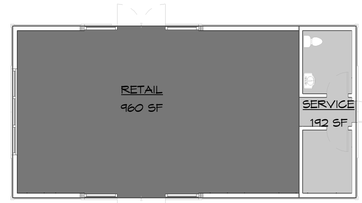
REGISTERED DESIGN PROFESSIONAL
CUSHING TERRELL
2140 SW JEFFERSON ST., SUITE 200
PORTLAND, OR 97201
CONTACT: JACOB BASLIEN, P.E.
503.595.1229
JACOBBASLIEN@CUSHINGTERRELL.COM

ABBREVIATIONS

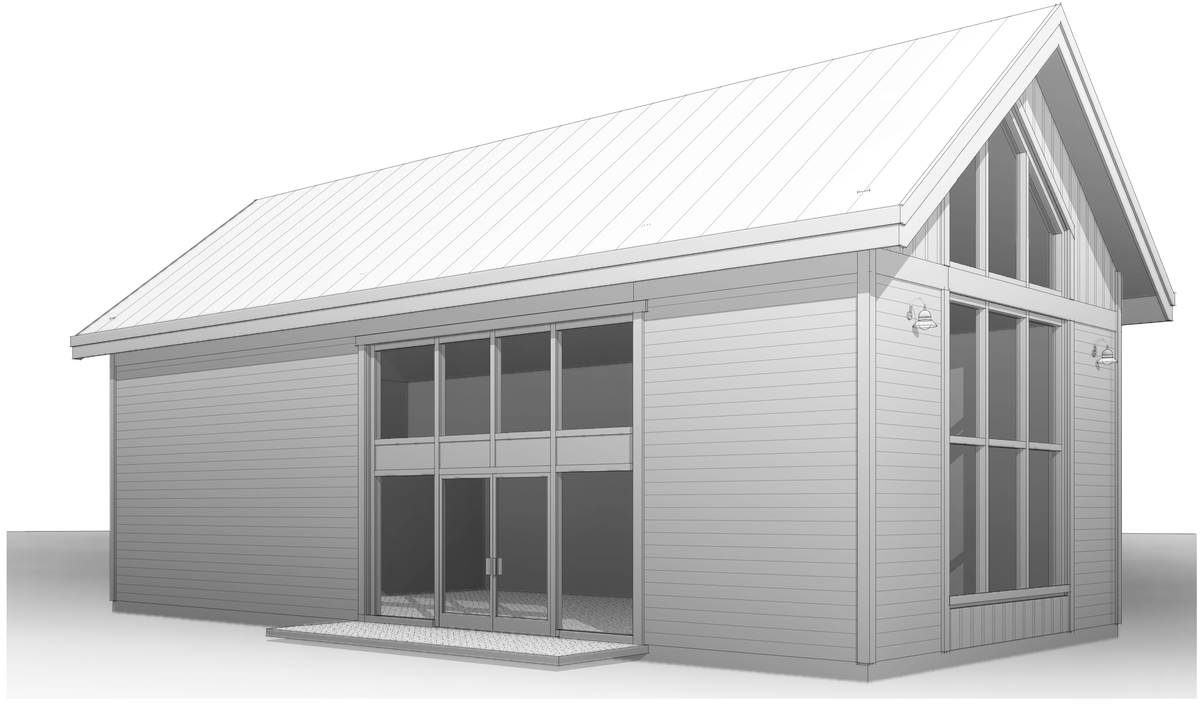
AFF	ABOVE FINISHED FLOOR	FC	FRAMING CLIP	NIC	NOT IN CONTRACT	TEL	TELEPHONE
ADJ	ADJACENT	FRP	FIBER REINFORCED PLASTIC	NTS	NOT TO SCALE	TV	TELEVISION
AGGS	AGGREGATE	FFL	FINISHED FLOOR LINE			TEMP	TEMPERED GLAZING
A/C	AIR CONDITIONING	FE	FIRE EXTINGUISHER	OC	ON CENTER (S)	THK	THICK (NESS)
ALT	ALTERNATE	FD	FLOOR DRAIN	OD	OUTSIDE DIAMETER	TPD	TOILET PAPER DISPENSER
ALUM	ALUMINUM	FTG	FOOTING	OV	OVEN	T&G	TONGUE AND GROOVE
AB	ANCHOR BOLT	FND	FOUNDATION			T.O.	TOP OF
ABV	ABOVE			PEN	PENETRATION	TB	TOWEL BAR
ARCH.	ARCHITECT (-URAL)	GA	GAUGE	PT	PRESSURE TREATED	TYP	TYPICAL
ASPH	ASPHALT	GALV	GALVANIZED	PTD	PAPER TOWEL DISPENSER		
		GB	GRAB BAR	PLAM	PLASTIC LAMINATE	UNO	UNLESS NOTED OTHERWISE
BLK	BLOCK	GLB	GLULAM BEAM	PL	PLATE, PROPERTY LINE		
BLKG	BLOCKING	GSN	GENERAL STRUCTURAL NOTES	PLYWD	PLYWOOD	VPB	VAPOR BARRIER
BD	BOARD	GWB	GYPSUM WALL BOARD	PVC	POLYVINYL CHLORIDE	VIF	VERIFY IN FIELD
BLDG	BUILDING			PSF	POUNDS PER SQUARE FOOT	VERT	VERTICAL
		HWD	HARDWOOD	PSI	POUNDS PER SQUARE INCH	VB	VINYL BASE
CAB.	CABINET	HVAC	HEATING/VENTILATING/A/C			VCT	VINYL COMPOSITION TILE
CPT	CARPET (ED)	HSS	HOLLOW STRUCTURAL STEEL	QT	QUARRY TILE	VF	VINYL FABRIC
CLG	CEILING	HB	HOSE BIBB			VT	VINYL TILE
CL	CENTERLINE			RCA	RAISED CENTER AISLE	VWC	VINYL WALL COVERING
CT	CERAMIC TILE	ID	INSIDE DIAMETER	REF	REFRIGERATOR		
CO	CLEANOUT	INSUL	INSULATE (D), (ION)	REINF	REINFORCE (D), (ING)	WC	WATER CLOSET
COL	COLUMN	INT	INTERIOR INV INVERT	REQD	REQUIRED	WRB	WATER RESISTANT BARRIER
CONC	CONCRETE			ROW	RIGHT OF WAY	WH	WATER HEATER
CMU	CONCRETE MASONRY UNIT	KIT.	KITCHEN	RM	ROOM	WP	WATERPROOFING
CJ	CONTROL JOINT			RB	RUBBER BASE	WWF	WELDED WIRE FABRIC
CONT	CONTINUOUS OR CONTINUE	LAB	LABORATORY	RBT	RUBBER TILE	W.	WEST, WIDTH, WIDE
CF	CUBIC FOOT	LAM.	LAMINATE (D)			WDW	WINDOW
CY	CUBIC YARD	LAV	LAVATORY	SCH	SCHEDULE	W/O	WITHOUT
		LH	LEFT HAND	SLR	SEALER (CONCRETE SEALER)	WB	WOOD BASE
DEMO.	DEMOLISH	LF	LINEAR FEET	SECT	SECTION	WD	WOOD
DET	DETAIL	LVL	LAMINATED VENEER LUMBER	SHT	SHEET	WPT	WORKING POINT
DIA	DIAMETER	LSL	LAMINATED STRAND LUMBER	SV	SHEET VINYL		
DN	DOWN			SIM	SIMILAR		
DS	DOWNSPOUT	MH	MANHOLE	SC	SOLID CORE		
DW	DISHWASHER	MFR	MANUFACTURE (ER)	SPEC.	SPECIFICATION (S)		
		MAT.	MATERIAL (S)	SF	SQUARE FEET		
ELEC	ELECTRIC (AL)	MAX.	MAXIMUM	SQ	SQUARE		
EQ	EQUAL	MECH	MECHANICAL (-LY)	SS	STAINLESS STEEL		
EQUIP	EQUIPMENT	MTL	METAL	STD	STANDARD		
EN	EDGE NAIL	MM	MILLIMETER (S)	STL	STEEL		
<E>	EXISTING	MIN.	MINIMUM	SD	STORM DRAIN		
		MISC	MISCELLANEOUS	SUSP	SUSPENDED		
				SW	SHEAR WALL		
				SIW	STEP IN WALL		

LAKE ORION DDA STILLWATER

215 SOUTH BROADWAY
LAKE ORION, MI



1 MAIN LEVEL AREA PLAN
1" = 10'-0"



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Section 11, Item B.

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Drawing Index

No.	Date	Description

LAKE ORION DDA STILLWATER

215 SOUTH BROADWAY
LAKE ORION, MI

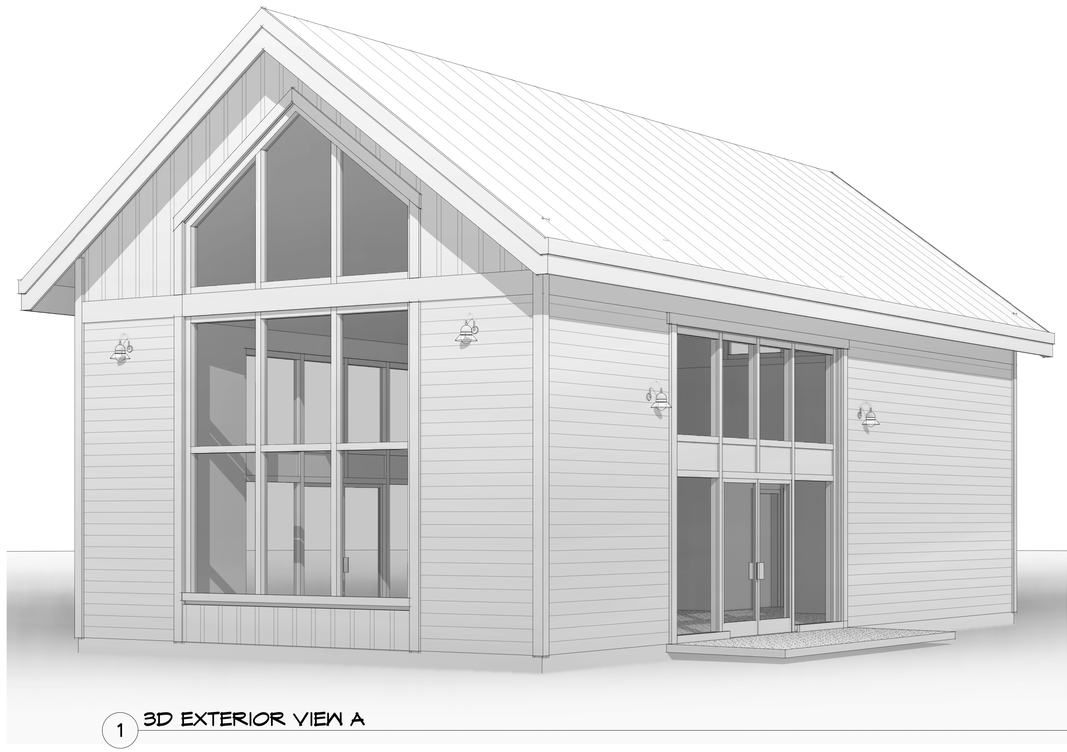
TITLE SHEET & GENERAL NOTES

A-001

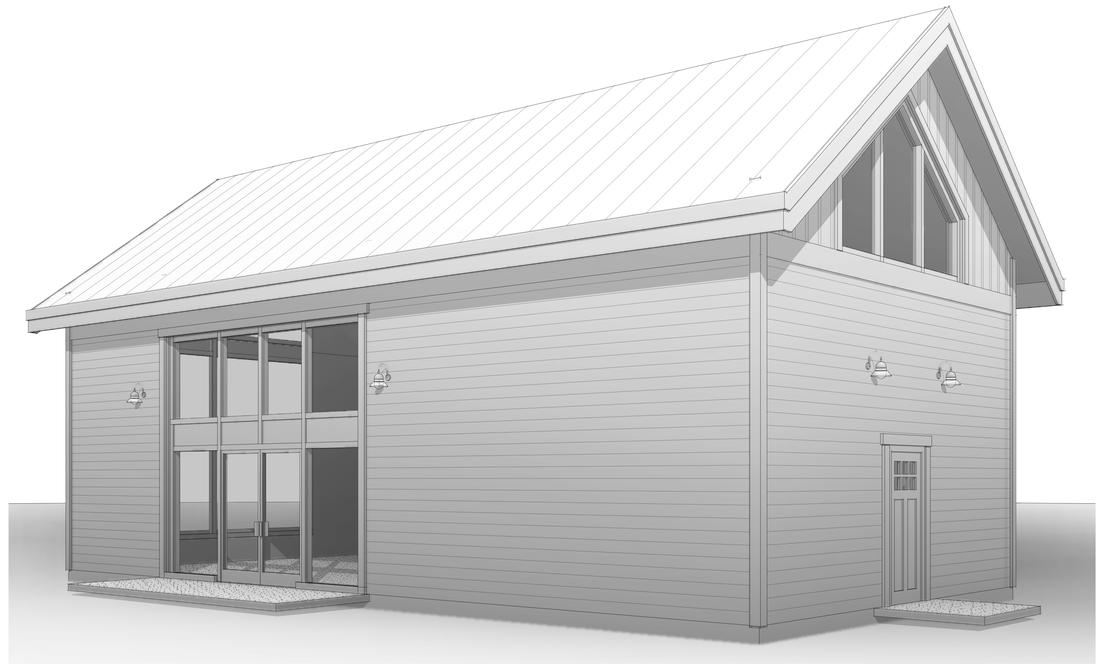
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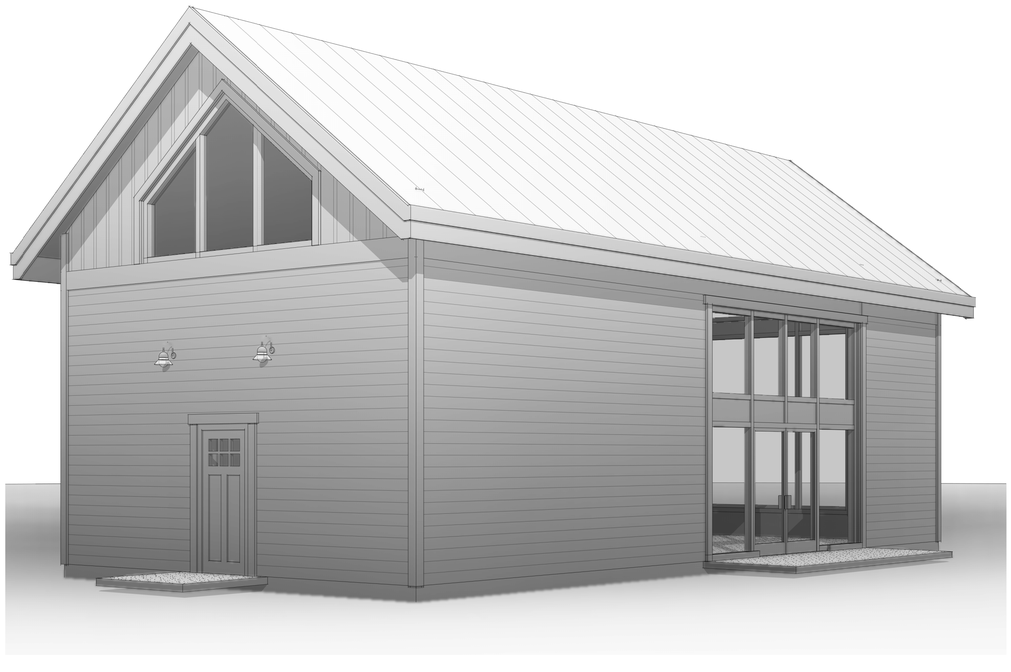
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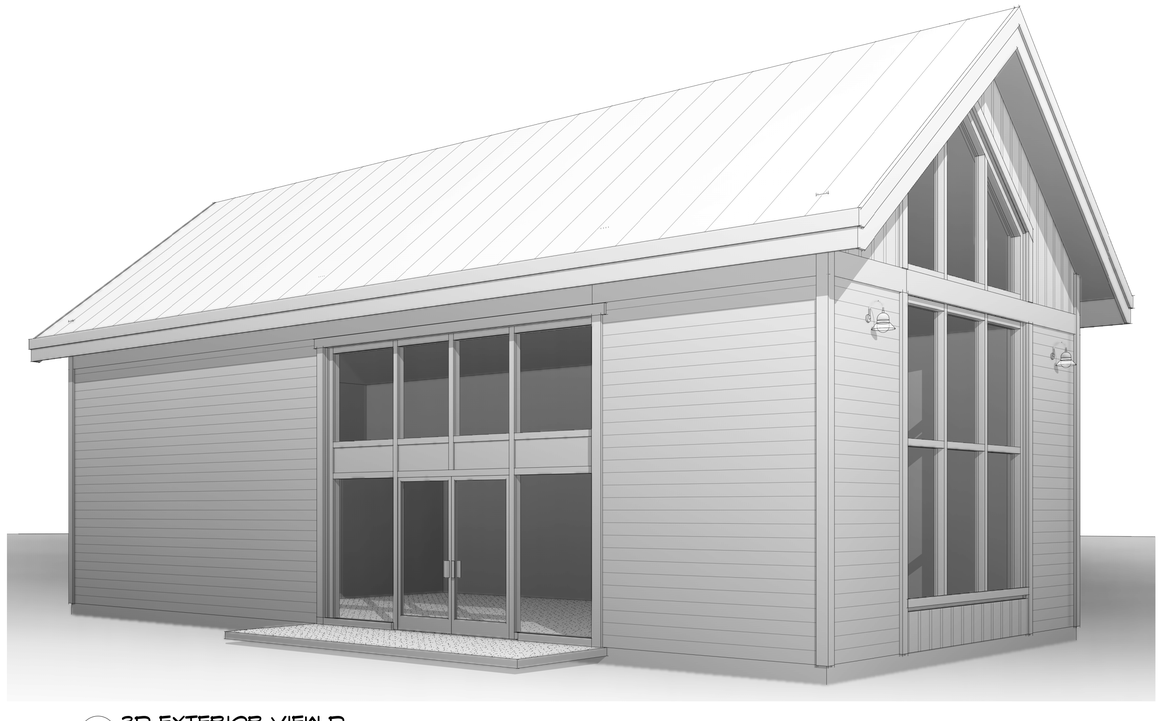
1 3D EXTERIOR VIEW A



2 3D EXTERIOR VIEW B



3 3D EXTERIOR VIEW C



4 3D EXTERIOR VIEW D

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Drawing Index

No.	Date	Description

LAKE ORION
DDA
STILLWATER

215 SOUTH
BROADWAY
LAKE ORION, MI

3D
EXTERIOR
VIEWS

A-002

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1 3D INTERIOR VIEW 1



2 3D INTERIOR VIEW 2



3 3D INTERIOR VIEW 3



4 3D INTERIOR VIEW 4

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Drawing Index

No.	Date	Description

LAKE ORION
DDA
STILLWATER

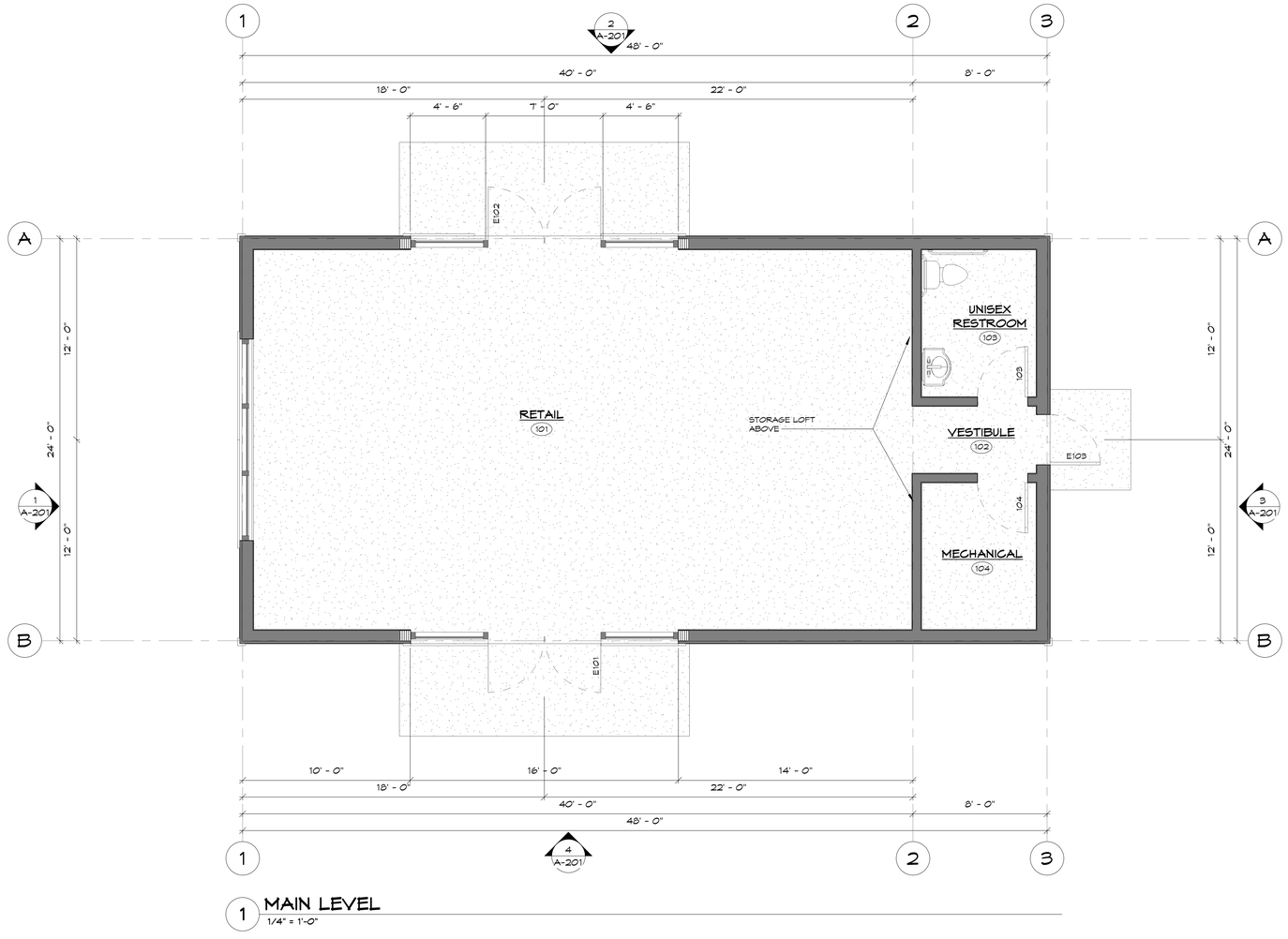
215 SOUTH
BROADWAY
LAKE ORION, MI

3D INTERIOR VIEWS

A-003

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1 MAIN LEVEL
1/4" = 1'-0"

AREA - CONDITIONED SPACE

NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"

CONDITIONED		
RETAIL	960 SF	CONDITIONED
SERVICE	192 SF	CONDITIONED
	1152 SF	
GRAND TOTAL	1152 SF	

Room Schedule - Level

NOTE: ROOM AREA MEASURED FROM INTERIOR OF STUD WALL OR USEABLE SPACE.

Number	Name	Area	Floor Finish	Wall Finish	Ceiling Material	Ceiling Height	Comments
GROUND LEVEL							
101	RETAIL	903 SF	CONCRETE	GWB	GWB	VARIES	
102	VESTIBULE	29 SF	CONCRETE	GWB	GWB	8' - 4 1/8"	
103	UNISEX RESTROOM	60 SF	CONCRETE	GWB	GWB	8' - 4 1/8"	
104	MECHANICAL	60 SF	CONCRETE	GWB	GWB	8' - 4 1/8"	
		1052 SF					

Window Schedule - Level

SEE SCHEDULES SHEET FOR WINDOW TYPES AND COMPLETE SCHEDULE

Mark	Type	Width	Height	Head Height (BTM of HDR)	Sill Height (TOP of SILL)	Operation	Comments

Door Schedule - Level

SEE SCHEDULES SHEET FOR DOOR TYPES AND COMPLETE SCHEDULE

Mark	Type	Width	Height	Operation	Comments
GROUND LEVEL					
103	A	3' - 0"	6' - 8"		
104	A	3' - 0"	6' - 8"		
E101	E	6' - 8 1/2"	7' - 0"		
E102	E	6' - 8 1/2"	7' - 0"		
E103	C	3' - 0"	6' - 8"		

KEYNOTES

FLOOR PLAN GENERAL NOTES

NOTES APPLY TO SHEET A-101 ONLY.

1. REFERENCE SHEET A-103 FOR COMPLETE WINDOW & DOOR SCHEDULES.
2. REFERENCE SHEET A-401 FOR WALL TYPES AND DETAILS.

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DAMASCUS, OR 97089

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Drawing Index

No.	Date	Description

LAKE ORION
DDA
STILLWATER

215 SOUTH
BROADWAY
LAKE ORION, MI

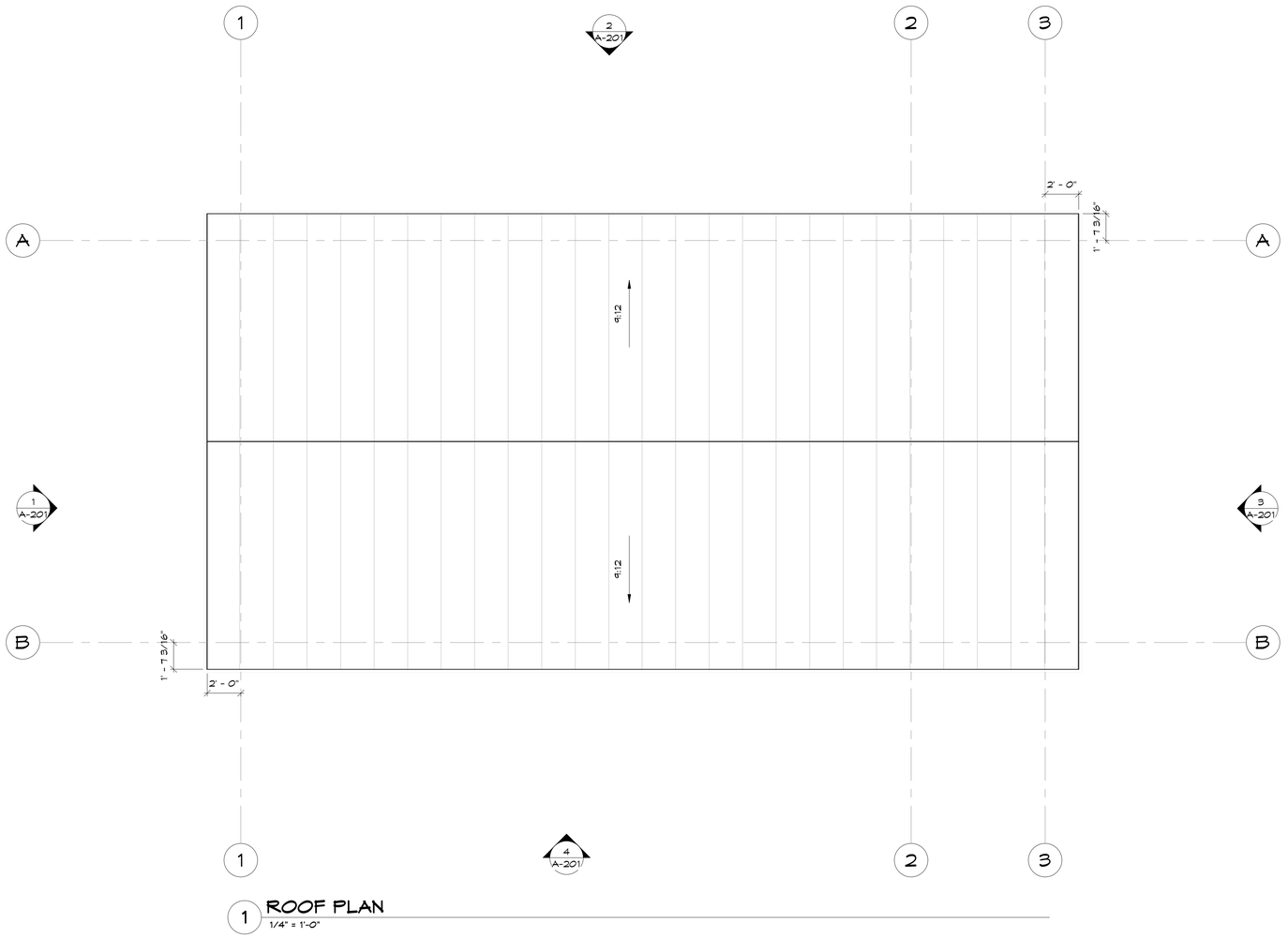
MAIN LEVEL
FLOOR PLAN

A-101

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KEYNOTES



1 ROOF PLAN
1/4" = 1'-0"

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Drawing Index

No.	Date	Description

LAKE ORION
DDA
STILLWATER

215 SOUTH
BROADWAY
LAKE ORION, MI

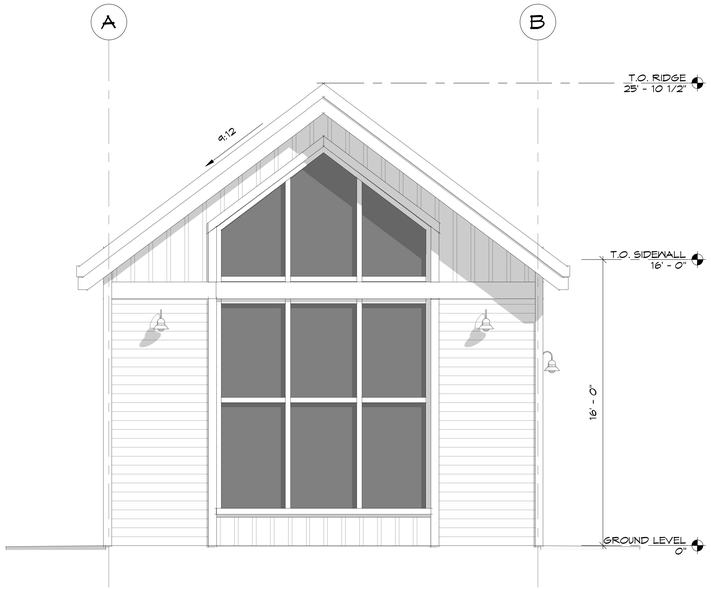
ROOF PLAN

A-102

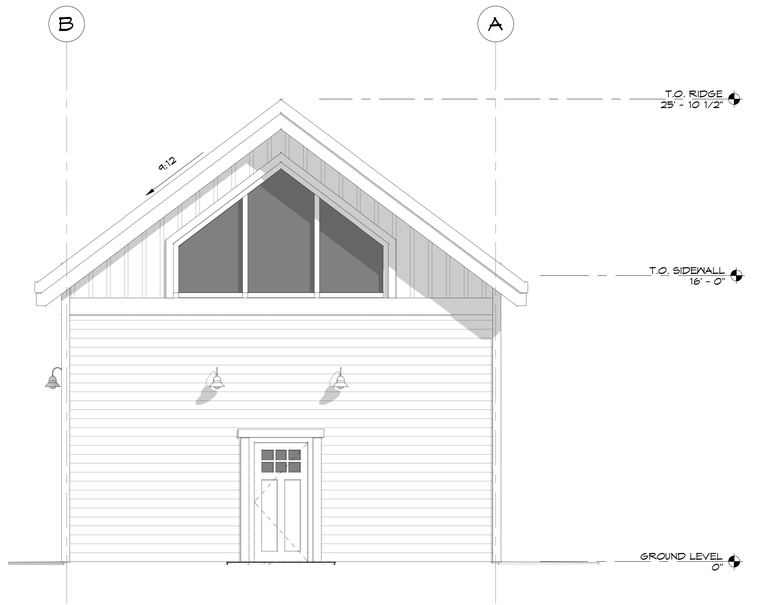
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NOT FOR CONSTRUCTION



1 FRONT
1/4" = 1'-0"



3 REAR
1/4" = 1'-0"



2 LEFT
1/4" = 1'-0"



4 RIGHT
1/4" = 1'-0"

KEYNOTES

ELEVATION GENERAL NOTES

NOTES APPLY TO SHEET(S) A-201 ONLY.

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Drawing Index

No.	Date	Description

LAKE ORION
DDA
STILLWATER

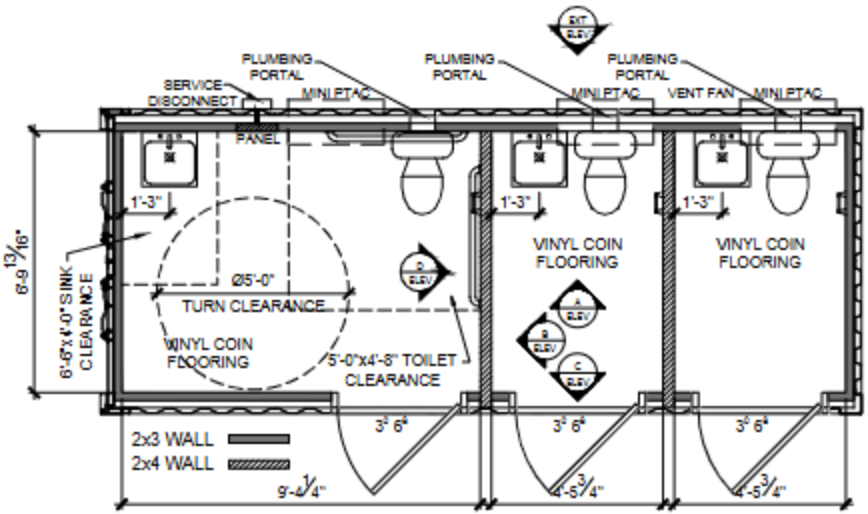
215 SOUTH
BROADWAY
LAKE ORION, MI

ELEVATIONS

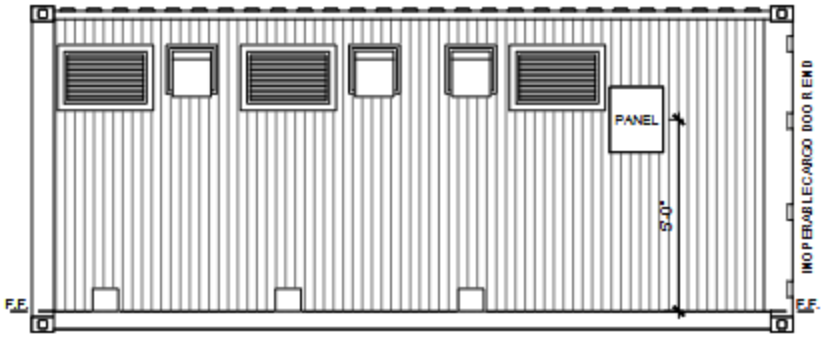
A-201

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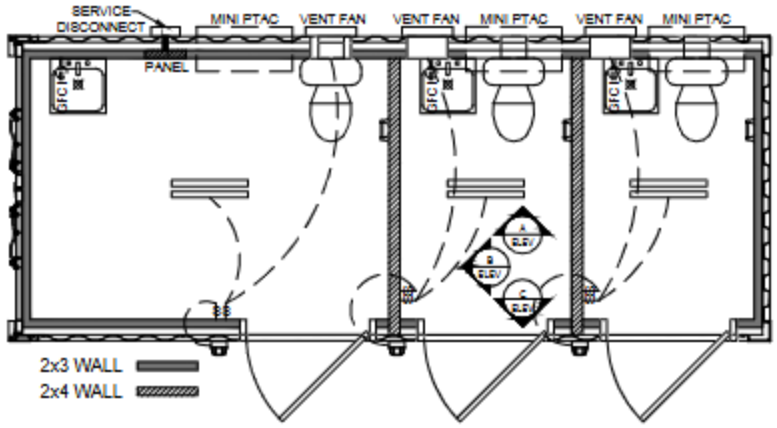
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FLOOR PLAN

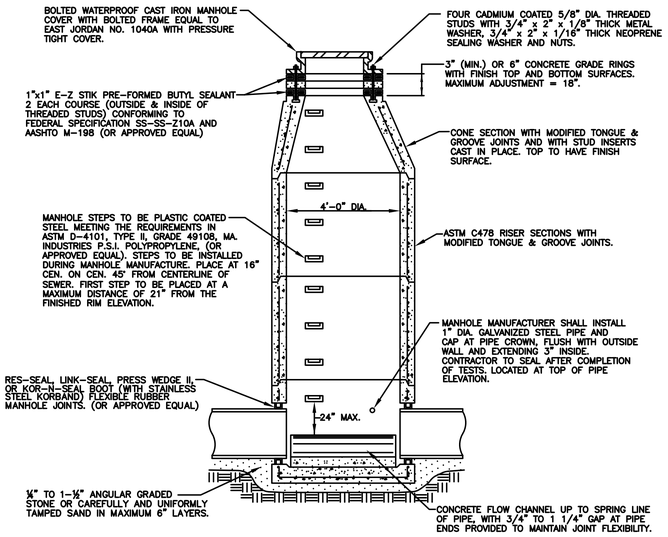


EXTERIOR ELEVATION



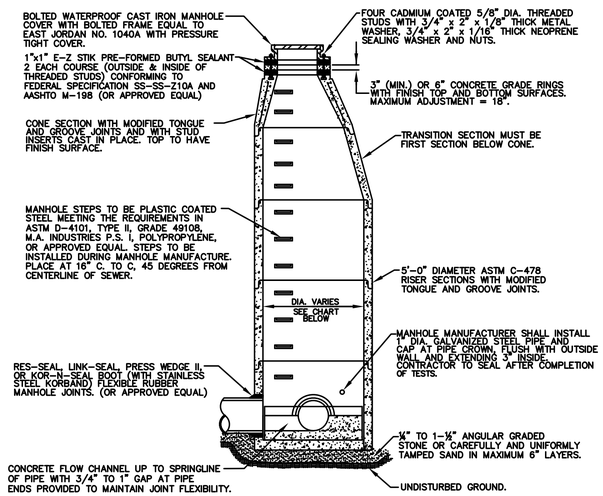
ELECTRICAL PLAN

W I - 1



STANDARD MANHOLE

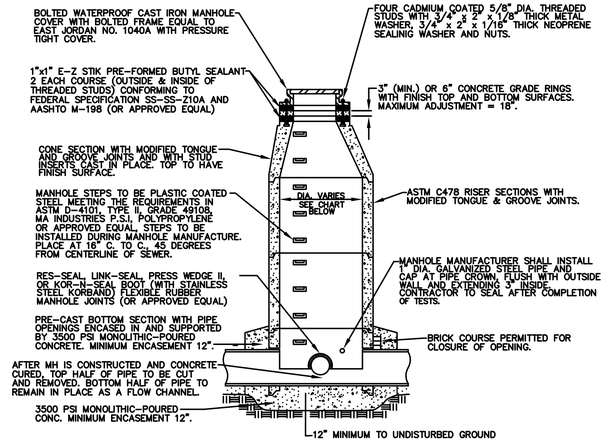
MAX. PIPE SIZE FOR STRAIGHT THRU INSTALLATION	MAX. PIPE SIZE FOR RIGHT ANGLE INSTALLATION
24"	18"



STANDARD OVERSIZED MANHOLE

MANHOLE SIZING CHART

MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.	MAX. PIPE SIZE FOR RIGHT ANGLE INST.
5'	36"	24"
6'	42"	36"
7'	60"	42"



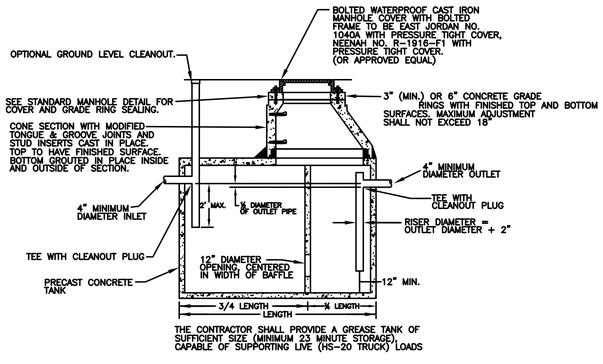
MANHOLE CONSTRUCTED OVER EXISTING SEWER

MANHOLE SIZING CHART

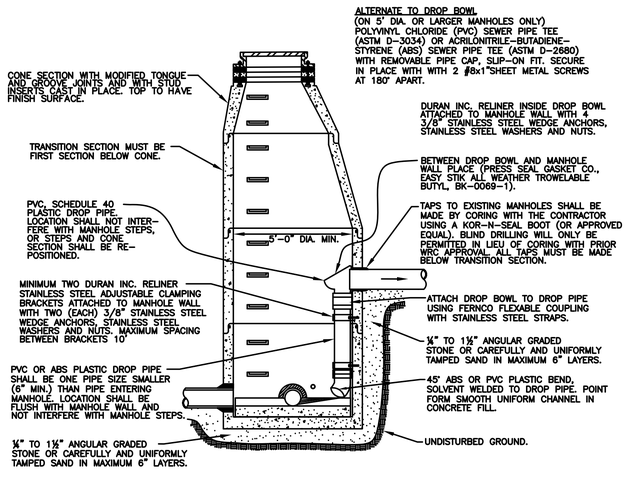
MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4'	24"
5'	36"
6'	42"
7'	60"

SANITARY SEWER CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL UNIT OF GOVERNMENT AND THE WATER RESOURCES COMMISSIONER (WRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE LOCAL UNIT OF GOVERNMENT.
2. AT ALL CONNECTIONS TO WRC SEWERS OF EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY WRC. GRAVITY SEWER PERMIT CHANGES ARE $250 FOR EACH CONNECTION PLUS $25 FOR EACH MANHOLE CONSTRUCTED. PRESSURE SEWER PERMIT CHARGES ARE $250 PER 2,460 L.F. OF FORCE MAIN WITH A MINIMUM PERMIT FEE OF $250. FAILURE TO PASS ANY TEST SEGMENT WILL RESULT IN AN ADDITIONAL CHARGE TO THE CONTRACTOR FOR EACH RETEST, IN ACCORDANCE WITH THE ABOVE PRICE SCHEDULE. THE CONTRACTOR SHALL ALSO HAVE POSTED WITH WRC A $5,000 SURETY BOND AND $500 CASH DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND WRC (248-858-1105) 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL ACCEPTANCE TESTS MUST BE WITNESSED BY COUNTY PERSONNEL AND MUST BE SCHEDULED BY MUNICIPALITY OR IT'S CONSULTANT IN ADVANCE WITH 24 HOUR NOTICE AT 248-858-1105.
3. NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 100 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE WATER RESOURCES COMMISSIONER STANDARDS. ONLY PIPE AND PIPE JOINTS APPROVED BY WRC MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
4. LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING WRC SEWER, OR EXTENSION THERETO, A TEMPORARY 12-INCH DEEP SUMP SHALL BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATERTIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
5. AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATERTIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUG SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED.
6. ALL BUILDING LEADS AND RISERS SHALL BE SIX INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS TO BE FURNISHED WITH REMOVABLE AIRTIGHT AND WATERTIGHT STOPPERS.
7. ALL RIGID SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER. ALL FLEXIBLE, SEMI-FLEXIBLE, OR COMPOSITE SEWER PIPE SHALL BE INSTALLED IN CONFORMANCE TO WRC SPECIFICATIONS.
8. ALL NEW MANHOLES SHALL HAVE WRC APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE WRC APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
9. AT ALL CONNECTIONS TO MANHOLES ON WRC SEWERS, OR EXTENSIONS THERETO, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
10. TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR-N-SEAL BOOT (OR WRC APPROVED EQUAL) AFTER CORING IS COMPLETED. BLIND DRILLING WILL ONLY BE PERMITTED IN LIEU OF CORING WITH PRIOR WRC APPROVAL.
11. MANHOLES CONSTRUCTED DIRECTLY ON WRC SEWERS SHALL BE PROVIDED WITH COVERS READING "WATER RESOURCES COMMISSIONER-SANITARY" IN RAISED LETTERS.
12. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
13. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
14. AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
15. NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWER SHALL HAVE MONOLITHIC POURED BOTTOMS.
16. IF THE STRUCTURE FALLS WITHIN THE ROADBED OF A GRAVEL ROAD OR WITHIN THE UNPAVED SHOULDER OF A PAVED ROAD, THE COVER SHALL BE SIX (6") INCHES BELOW THE FINISHED GRAVEL SURFACE.



DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK FOR OUTLET PIPE BURIAL 42" AND DEEPER



INTERIOR DROP CONNECTION

Plotted: Nov 07, 2023 - 10:41am
File Location: J:\Drafting\Autodrafting\WRC STANDARD DETAILS\Dwg Production Standards\SSN-Sani-1of2.dwg

REVISION BLOCK			
Parcel Base / Source Date: N/A			
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	DS	3-23-11	REMOVED STANDARD MONITORING MANHOLE
2	KB	6-21-16	ADDED NOTE "REQUIRES ADVANCED APPROVAL BY WRC" AND UPDATE PHONE # IN NOTE #2
3	KB	7-22-20	UPDATED MH STEPS TO ASTM# D-4101
4	KB	9-27-23	REMOVED EXTERIOR DROP CONNECTION DETAIL

SANITARY SEWER DETAILS AND NOTES

ORIG. DATE:	08/21/02
SCALE:	NO SCALE
DESIGNED BY:	WRC
DRAWN BY:	WRC Mapping

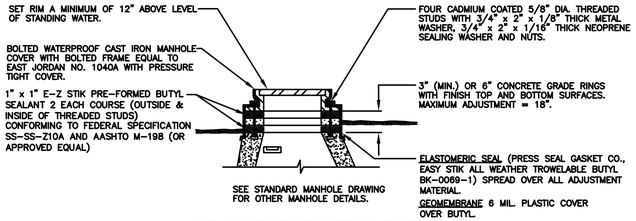
WRC WATER RESOURCES COMMISSIONER Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

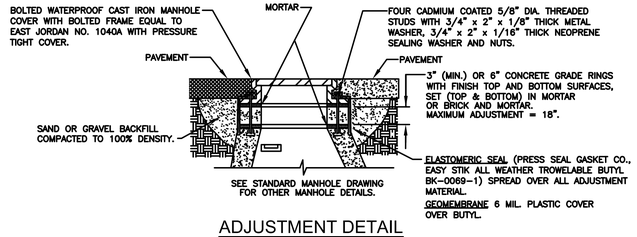
SHEET NO.: 1 of 2

MANHOLE RIM ADJUSTMENT CHART

MANHOLE LOCATION	SET RIM ELEVATION
DITCH	12" ABOVE FINISH GRADE
FLOOD PLAIN	12" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



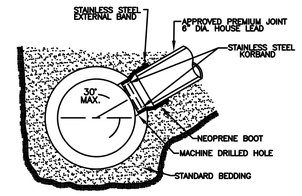
ADJUSTMENT DETAIL FOR
MANHOLE TOPS WITHIN FLOOD PRONE AREAS



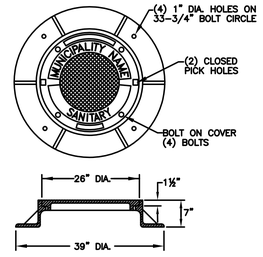
ADJUSTMENT DETAIL
MANHOLE TOPS WITHIN PAVEMENT AREAS

WATER RESOURCES COMMISSIONER
GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

1. ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER WATER RESOURCES COMMISSIONER (WRC) AND/OR LOCAL UNIT OF GOVERNMENT INSPECTION.
2. FOR ALL WRC-OPERATED SYSTEMS, CALL 248-858-1110 24-HOURS IN ADVANCE OR WORK TO SCHEDULE INSPECTION.
3. NO SANITARY SEWER MAY BE USED AS A CLEANOUT OF DEWATERING OUTLET.
4. WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING AN WRC APPROVED ADAPTER.
5. APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
   A. ABS PLASTIC, ASTM D2751, SDR 23.5.
   B. PVC PLASTIC, ASTM D3034, SDR 23.5 OR ASTM D2665, SCHEDULE 40.
   C. DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54. JOINTS SHALL BE SUPER BEL TITE, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
   D. ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY WRC.
6. ALLOWABLE TYPES OF SEWER PIPE ADAPTERS:
   A. FERNCO ADAPTER/REDUCER DONUTS.
   B. FERNCO FLEXIBLE COUPLING.
   C. MISSION CLAY BAND-SEAL COUPLING.
   D. SMITH-BLAIR STAINLESS STEEL REPAIR CLAMP.
   E. HURON-CLINTON O-RING ADAPTER.
   F. HAMILTON-KENT GEAR GRIP ADAPTER.
   G. PLANT FABRICATED JOINT CONVERSION PIPE.

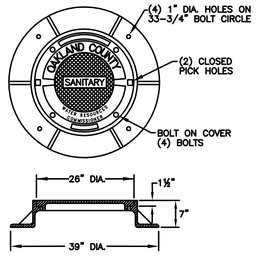


KOR-N-TEE TAP FOR CONCRETE PIPE



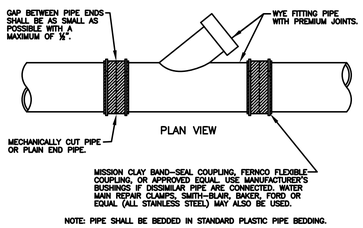
EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

LOCAL MUNICIPALITIES MANHOLE COVER

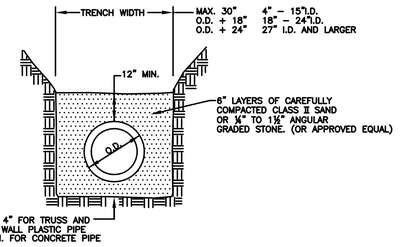


EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040APT
PATTERN NO. 1040A, PRODUCT NO. NCR09-1280 C
2" RAISED LETTERS, 1" RAISED LETTERS, 3/4" RAISED LETTERS
ALL RECESSED FLUSH.

W.R.C. LETTERED MANHOLE COVER

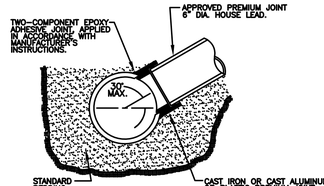


WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS
(RIGID PIPE)



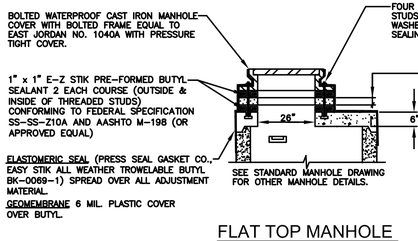
NOTE:
APPROVAL MAY BE GIVEN TO ALTERNATE MATERIALS AND METHODS TO ACHIEVE CLASS B BEDDING.

STANDARD BEDDING
(CLASS B)

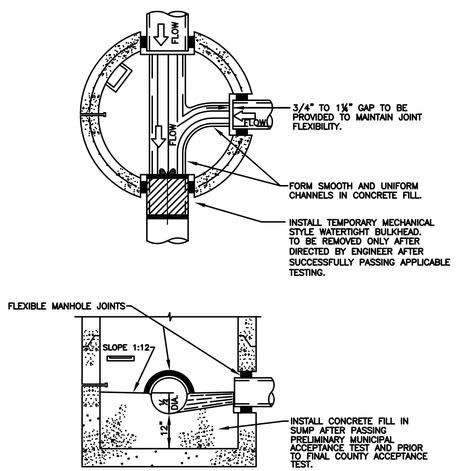


NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION. DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE, ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

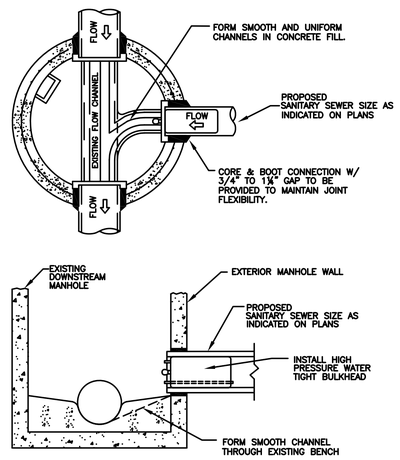
SEWER TAP-ALL SIZES OF MAIN SEWER PIPES
VITRIFIED CLAY



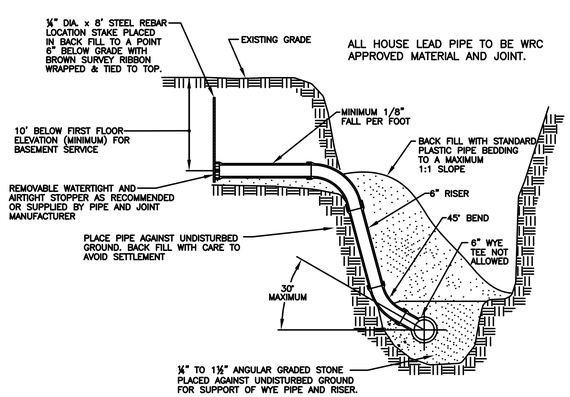
FLAT TOP MANHOLE



SUMP MANHOLE FOR TESTING,
CLEANING AND DEWATERING



TESTING BULKHEAD WITH PIPE TAP



HOUSE LEAD DETAIL

REVISION BLOCK			
Parcel Base / Source Date: N/A			
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	DS	06/28/06	ADDED TESTING BULKHEAD WITH PIPE TAP DETAIL
2	tz	05/28/09	MOVED DETAILS FROM SHEET 1 ONTO SHEET 2
3	tz	07/14/09	STANDARDS COMMITTEE APPROVAL FOR DETAIL CHANGES
4	DS	02/03/14	REPLACE/UPDATE OCDC WITH WRC FOR THE MANHOLE COVER DETAIL

SANITARY SEWER DETAILS AND NOTES

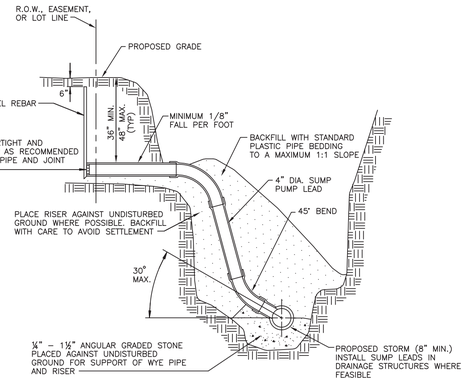
ORIG. DATE:	05-09-03
SCALE:	NO SCALE
DESIGNED BY:	MWD
DRAWN BY:	Mapping Staff

WRC WATER RESOURCES COMMISSIONER
Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

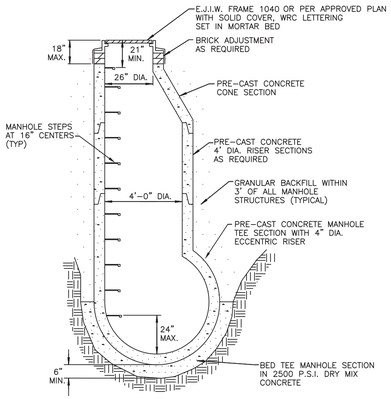
SHEET NO.:
2 of 2

Drafting Name: DSDocs.dft
File Path/Name: J:\Drafting\Autodesk\2013\ADM\D\2013ADMD2\DETAILS\Apply\Public\Sanitary\Standard\Sanitary Sewer Details and Notes.dwg



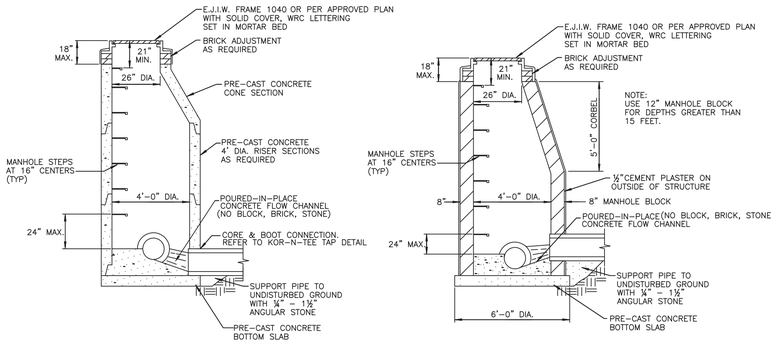
HOUSE LEAD DETAIL FOR 4" DIA. PLASTIC SUMP PUMP LEADS

NO SCALE



PRE-CAST TEE MANHOLE DETAIL

NO SCALE



STANDARD MANHOLE DETAILS

NO SCALE

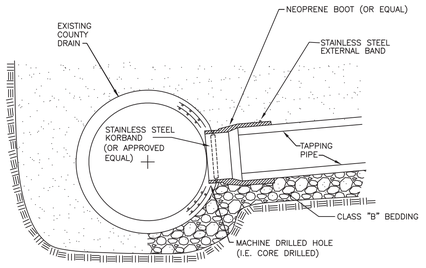
GENERAL NOTES

1. Type and class of pipe shall be as specified on plans.
2. Class "B" bedding shall be used throughout, unless otherwise specified on the plan.
3. All end sections 18" and larger shall be provided with a bar screen unless otherwise approved.
4. Standard rip-rap shall be 8"–15" fragmented rock, heavy rip-rap shall be 16"–24" fragmented rock. (No Broken Concrete)
5. MANHOLE REQUIREMENTS:
   - All new catch basins, inlets, and manholes are to be manufactured to ASTM C–478 specifications.
   - All new catch basins, inlets, and manholes shall have WRC approved flexible, watertight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Pre cast manhole cone sections shall be WRC approved modified eccentric cone type.
   - Taps through manhole joints or cone sections are prohibited unless otherwise approved.
   - Manhole steps to be plastic coated steel meeting the requirements in ASTM D 2146, Type II, Grade 49108, MA. Industries P.S.I. Polypropylene, (or approved equal). Steps to be installed during manhole manufacture. Place at 16" centers 45° from centerline of sewer.
   - Cone section with modified groove tongue joints and with stud inserts cast in place. Top to have flush surface.
   - ASTM C–478 riser section with modified groove tongue joints.
   - Res–seal, link–seal, press wedge II, or kor–n–seal boot (with stainless steel korband) flexible rubber manhole joints. (or approved equal).
   - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
6. CONCRETE PIPE REQUIREMENTS:
   - Concrete pipe to be per ASTM C76 standards.
   - It will be required to TV all pipe 30 days after installation
   - The contractor shall provide reinforced concrete pipe as specified on the plans.
   - All reinforced concrete pipe shall have modified grooved tongue joints with o–ring type rubber gasket, per A.S.T.M. specifications C443.
   - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
7. SUMP PUMP LEAD REQUIREMENTS:
   - All sump pump leads connected to a County Drain pipe shall be pre–manufactured.
   - Sump pump leads connected to a manhole shall be cored and booted. Refer to Kor–N–Tee Tap Detail.
   - Sump pump mains and leads shall be ABS (truss and solid wall), PVC (truss, solid wall , A2000), ADS N–12 WT with premium joints.
   - Ends of all 4" sump pump leads shall be temporarily capped and their location staked, witnessed and recorded.
   - All sump pump leads to be taken to the property line, easement line or as indicated on the plan.
   - Sump pump mains must have a cleanout with a minimum inside diameter of 24" and be constructed at changes of alignment, ends of sump pump mains or as indicated on the plan.
8. RESTORATION REQUIREMENTS:

   All disturbed area within the County Drain right–of–way shall be restored as follows:
   - Under roads, sidewalks, driveways and parking areas, backfill material shall be placed loosely into trenches in six (6) inch layers with each layer compacted to not less than 95% of maximum dry density as determined by the ASTM D 1557 Compaction Standard (modified proctor compaction test). All other areas shall have each layer compacted to not less than 90% of maximum dry density.
   - Finish subgrade
   - Place 3" thickness clean topsoil acceptable to the engineer to attain finished grade. Topsoil must not be contaminated and may not be a mixture of natural underlying soils, subbase materials, or other materials. It must consist of natural loam, sandy loam, silty loam or clay loam humus–bearing soil adapted to the sustenance of plant life. Topsoil must be neither excessively acidic nor excessively alkaline. It must be of mineral origin, exclusive of any peat or muck.
   - Apply seed and fertilizer as follows:*

Location	Seeding Requirements	Fertilizer Requirement
Slopes and Ditch, Banks, Etc.	M.D.O.T. "Roadside Mix" Turf Seed Mixture TGM (10% Kentucky Blue, 20% Perennial Rye, 30% Hard Fescue, 40% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
Other Areas	M.D.O.T. "Roadside Mix" Turf Seed Mixture THM (30% Kentucky Blue, 20% Perennial Rye, 50% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A

   * Sod is required in maintained lawn areas. Refer to WRC General Specifications for additional requirements and information.
   - apply straw or marsh hay mulch in an air–dry condition to all seeded areas over the surface to a uniform thickness at 2 tons/acre.
   - mulch shall be anchored in place with biodegradable netting, not larger than 1½" by 2" nor smaller than ½" by ½".
   - The contractor shall be responsible to insure the growth of all seeded areas, and shall re–seed as necessary to accomplish this.
9. The Storm Drain Notes and Details Sheet shall be a supplement to WRC Standards and Specifications, which are available on the WRC website (www.oakgov.com/water).

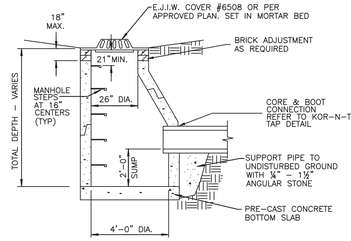


CONNECTION DETAIL FOR DIRECT TAPS TO PIPE WALL OF EXISTING COUNTY DRAINS.

KOR–N–TEE TAP (OR APPROVED EQUAL)

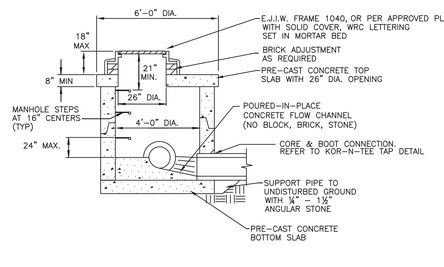
NO SCALE

* For non–concrete to concrete taps.
* Use link–seal, A–lock or approved equal for concrete to concrete taps.



PRE–CAST CATCH BASIN DETAIL

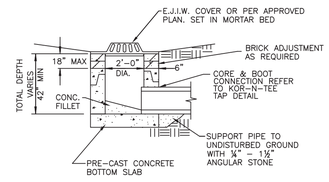
NO SCALE



PRE–CAST LOW HEAD MANHOLE DETAIL

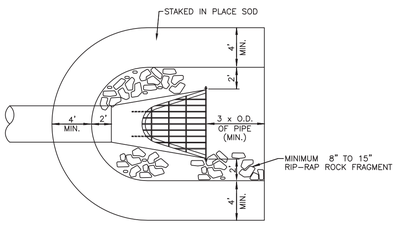
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(PRIOR APPROVAL ONLY)

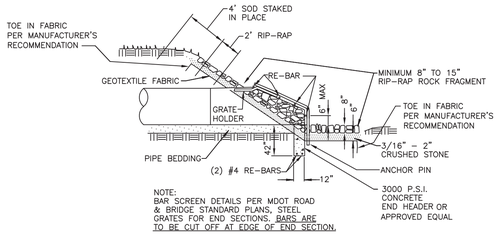


PRE–CAST INLET DETAIL

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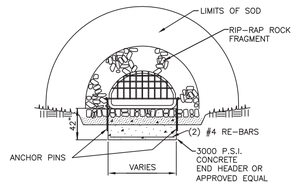
PLAN VIEW



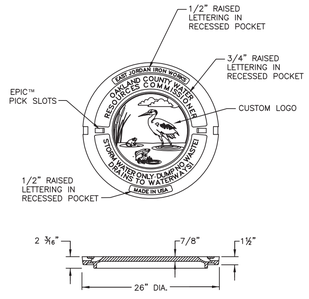
PROFILE VIEW

END SECTION AND BAR SCREEN DETAIL

NO SCALE



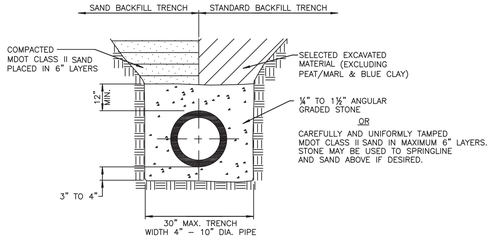
END VIEW



EAST JORDAN IRON WORKS OR APPROVED EQUAL
HEAVY DUTY MATERIAL ASTM A48 CL.35B
CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 104718 OAKCOSTD.
2" HIGH RAISED LETTERS, 1" WIDE RAISED LETTERS
ALL IN RECESSED POCKET.

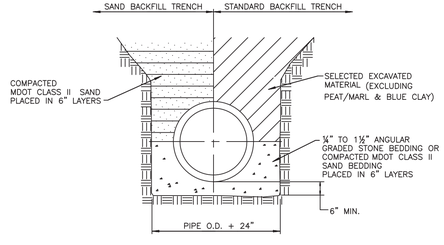
LETTERED MANHOLE COVER FOR WRC

NO SCALE



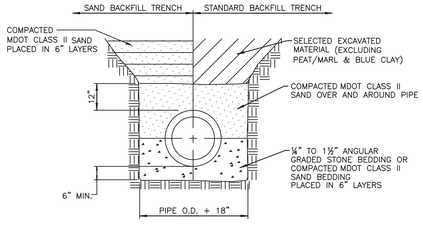
ABS (TRUSS AND SOLID WALL), PVC (TRUSS, SOLID WALL, A2000), ADS N–12 WT PIPE BEDDING DETAIL

NO SCALE



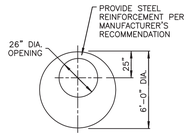
CLASS "B" BEDDING TRENCH DETAIL FOR 27" DIAMETER AND LARGER CONCRETE PIPE

NO SCALE



CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER CONCRETE PIPE

NO SCALE



PRECAST CONCRETE TOP SLAB DETAIL

STORM DRAIN NOTES AND DETAILS

REVISION BLOCK			
Data Source / Source Date: N/A			
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	tb	3/17/09	PROPOSED DETAIL CHANGES / NEW LOGO
2	tb	06/12/09	APPROVAL PER STANDARDS COMMITTEE
3	tb	03/29/10	REVISED MH COVER DETAIL
4	SS	04/27/10	REVISED GENERAL NOTES

ORIG. DATE:	05/05/97	WRC WATER RESOURCES COMMISSIONER Jim Nash	ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907
SCALE:	NONE		
DESIGNED BY:	WRC		SHEET NO.: 1 of 1
DRAWN BY:	Mapping		

GENERAL NOTES

1. ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE WATER RESOURCES COMMISSIONER'S OFFICE AND/OR THE LOCAL MUNICIPALITY.
2. THE CONTRACTOR SHALL OBTAIN AN WATER RESOURCES COMMISSIONER'S OFFICE WATER INSPECTION PERMIT PRIOR TO THE START OF CONSTRUCTION. SEE CORRESPONDING WATER MAIN CONSTRUCTION PERMIT REQUEST LETTER FOR COST OF THE PERMIT.
3. A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION AND SHALL BE SCHEDULED BY THE LOCAL MUNICIPAL ENGINEER. THOSE IN ATTENDANCE SHALL INCLUDE 1) LOCAL MUNICIPAL ENGINEER, 2) DESIGN ENGINEER, 3) OWNER/DEVELOPER, 4) ROAD COMMISSION FOR OAKLAND COUNTY, 5) OAKLAND COUNTY WATER RESOURCES COMMISSIONER'S OFFICE (WATER, SEWER AND STORM DIVISIONS) AND 6) ALL UTILITY COMPANIES. CONTRACTOR SHALL PROVIDE MATERIALS LISTING FOR APPROVAL BY MUNICIPAL ENGINEER AND OCWRC.
4. CONTRACTOR MUST CONTACT MISS DIG (1-800-482-7171) THREE WORKING DAYS BEFORE THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION STARTS.
5. ALL NECESSARY EASEMENTS FOR WATER MAINS SHALL BE PROVIDED IN THE NAME OF THE OWNER OF THE WATER MAIN PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM FOR OPERATION.
6. ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF FIVE AND ONE-HALF (5-1/2) FEET BELOW FINISHED GRADES INCLUDING OPEN DRAINAGE COURSES.
7. ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS SHALL BE BACKFILLED WITH THOROUGHLY COMPACTED CLASS II SAND TO GRADE AT NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT
8. WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN TWELVE (12) INCH COMPACTED LAYERS TO THE UNDERSIDE OF THE HIGHER UTILITY.
9. WHERE WATER MAINS MUST DIP TO PASS UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH AND SHALL BE CONSTRUCTED WITH ELEVEN AND ONE-QUARTER (11-1/4) DEGREE VERTICAL BENDS, PROPERLY ANCHORED. BENDS GREATER THAN 11-1/4° MUST HAVE ROD RESTRAINTS.
10. ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE MANUFACTURED TO CONFORM WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, EXCEPT WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
11. CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 2 (i.e. 2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATEWELL OPENING. FAILURE TO DO SO WILL REQUIRE CONTRACTOR TO CORRECT AT HIS EXPENSE.
12. ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE LOCAL PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE WATER RESOURCES COMMISSIONER'S OFFICE OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY, DIVISION OF DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION
13. ALL WATER SERVICE CONNECTIONS TWO (2) INCHES AND SMALLER SHALL BE MADE BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION AFTER WATER MAIN ACCEPTANCE AND APPLICABLE TAP PERMITS ARE OBTAINED.
14. ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED IN PLANS AND SPECIFICATIONS, IS APPROVED BY WATER RESOURCES COMMISSIONER'S OFFICE AND THE LOCAL MUNICIPALITY.
15. ALL STEEL AND IRON MATERIAL AND PRODUCTS FOR PERMANENT INCORPORATION INTO THE WORK SHELL MEET BUY AMERICA REQUIREMENT, FEDERAL CODE OF REGULATIONS SECTION 635.410

WATER MAIN MATERIALS NOTES

1. WATER SUPPLY SYSTEM PIPING (3-INCH & LARGER) SHALL BE DUCTILE IRON OR HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE APPROVED BY THE LOCAL COMMUNITY.
2. DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH EIGHTEEN (18) INCH, CLASS 55 FOR TWENTY (20) INCH, AND CLASS 56 FOR TWENTY-FOUR (24) INCH AND LARGER. (ABBREVIATED "D.I." IN DETAILS AND ON THIS SHEET).
3. PIPES OF SIZES LARGER THAN TWENTY-FOUR (24) INCHES IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
4. THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
5. REFER TO SHEET 5 FOR HDPE MATERIAL REQUIREMENTS.
6. MECHANICAL AND SLIP-ON JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
7. FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
8. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON OR CAST IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI, PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
9. INSTALL BRASS WEDGES AT ALL PUSH ON JOINTS IN DUCTILE IRON PIPE INSTALLATIONS. TWO (2) WEDGES PER JOINT FOR PIPES 12 INCH IN DIAMETER AND LESS, FOUR WEDGES PER JOINT FOR PIPES GREATER THAN 12 INCHES IN DIAMETER.
10. ALL WATER MAINS SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE.
11. ALL BURIED BOLTS, NUTS, AND WASHERS SHALL BE AWWA C111 LOW ALLOY STEEL COATED WITH A MINIMUM OF TWO (2) COATS OF FLUOROPOLYMER EPOXY COATING AND HEAT CURED (COR-BLUE OR APPROVED EQUAL) AND POLY-WRAPPED WHEN SPECIFIED.
12. ALL BURIED BOLTS, NUTS, AND WASHERS FOR ALL FLANGED CONNECTIONS SHALL BE STAINLESS STEEL (ASTM A320, GRADE B8M) AND HAVE A NEVER SEIZE TYPE COMPOUND APPLIED TO THE THREADS PRIOR TO INSTALLATION.
13. CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE MUELLER TYPE H-15000. FORD METER BOX FB-1000-Y-Q-NL OR FORD METER BOX FB1000-4-Q-NL. ALL STOPS SHALL HAVE BRONZE CAST BODIES, KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
14. TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE REDUCE PRESSURE ZONE (RPZ) VALVE WITH CURRENT CERTIFICATION.

VALVE AND SLEEVE NOTES

1. GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED WITH NON-RISING STEM.
2. ALL IN LINE GATE VALVES THREE (3) INCH AND LARGER SHALL BE IN WELLS AS DETAILED. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES.
3. ALL GATE WELL COVERS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED.
4. ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH A STAINLESS STEEL EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY A STAINLESS STEEL EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
5. TAPPING VALVES SHALL BE AWWA C515 FL X MJ AS MANUFACTURED BY EJ WITH RESILIENT SEATED GATE VALVES AS APPROVED BY LOCAL MUNICIPALITY.
6. TAPPING SLEEVES SHALL BE ALL STAINLESS STEEL (BODY, FLANGE AND HARDWARE), MANUFACTURED BY ROMAC INDUSTRIES SST; JCM 432; SMITH-BLAIR 663/665 OR APPROVED EQUAL BY THE WATER RESOURCES COMMISSIONER'S OFFICE.

HYDRANT REQUIREMENTS

1. ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE, EJ VALVE BOX NO. 8560 OR APPROVED EQUAL.
2. ALL HYDRANTS SHALL BE EJ 5BR250 TRAFFIC MODEL, OR APPROVED EQUAL WITH A MINIMUM OF 6'-0" DEPTH OF BURY UNLESS OTHERWISE INDICATED. SELF-DRAINING HYDRANTS SHALL NOT BE USED. ALL HYDRANTS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
3. ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND AND BLACK BELOW GROUND WITH A FINISH COAT OF GLAMORTEX 501 ENAMEL, COLOR 314 VERMILLION OR APPROVED EQUAL. HYDRANT CAP SHALL BE PAINTED SAME COLOR AS THE HYDRANT. FOR PONTIAC: YELLOW RUST-OLEUM #7543 SAFETY YELLOW.

ACCEPTANCE OF NEW WATER MAINS

1. PRIOR TO WATER MAIN ACCEPTANCE THE FOLLOWING CONDITIONS MUST BE MET:
   - 1.1. PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED IN ACCORDANCE WITH THE WATER RESOURCES COMMISSIONER'S OFFICE REQUIREMENTS
   - 1.2. ALL EASEMENT AND RIGHT-OF-WAY ACQUISITION MUST BE ACCEPTED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, RIGHT-OF-WAY DIVISION
   - 1.3. THE LOCAL MUNICIPALITY MUST BE PROVIDED WITH THE BILL OF SALE
   - 1.4. ALL "RECORD DRAWINGS" MUST BE ACCEPTED AND APPROVED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION. THE WATER RESOURCES COMMISSIONER'S OFFICE AND LOCAL ENGINEER MUST WITNESS THE CONNECTION OF THE WATER MAIN TO THE EXISTING WATER MAIN, AFTER WHICH RESIDENTIAL AND COMMERCIAL TAPS WILL BE ALLOWED.
2. THE CONTRACTOR SHALL NOTIFY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION THROUGH THE LOCAL ENGINEER FOR NEW CONSTRUCTION TAP, PRESSURE TESTING, BACTERIOLOGICAL SAMPLING, CONNECTIONS TO EXISTING WATER MAIN AND FINAL FIELD REVIEW. A SEVENTY-TWO (72) HOUR ADVANCE NOTICE IS REQUIRED.
3. THE CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL NEW WATER MAIN CONSTRUCTION PURSUANT TO THE CURRENT STANDARDS SPECIFIED BY THE WATER RESOURCES COMMISSIONER'S OFFICE.
4. HYDROSTATIC TESTING FOR DUCTILE IRON WATER MAIN SHALL BE COMPLETED IN ACCORDANCE WITH ANSI/AWWA C600, SEC 5.2. THE SPECIFIED TEST PRESSURE IS 150 PSI OR 1.5 TIMES THE MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) OF THE TEST SECTION, WHICHEVER IS GREATER. THE TEST METHOD IS GENERALLY SUMMARIZED AS FOLLOWS:
   - 4.1. SLOWLY FILL PIPELINE WITH WATER, VENTING ENTRAPPED AIR AS NECESSARY.
   - 4.2. REPAIR ANY VISIBLE LEAKS THAT OCCUR DURING FILLING OR AT ANY POINT DURING THE TEST.
   - 4.3. GRADUALLY APPLY PRESSURE UP TO THE SPECIFIED WORKING PRESSURE USING A SUITABLE PUMP CONNECTED TO THE PIPELINE, BLEEDING TRAPPED AIR, AND ADDING WATER AS NECESSARY UNTIL A STABLE PRESSURE IS HELD.
   - 4.4. HYDROSTATIC TEST BEGINS AFTER THE PIPELINE IS STABILIZED AT THE WORKING PRESSURE BY INCREASING THE PRESSURE UP TO THE SPECIFIED TEST PRESSURE AND HOLD IT WITHIN PLUS/MINUS 5 PSI FOR THE DURATION OF THE TEST, OR A MINIMUM OF TWO HOURS.
   - 4.5. CAREFULLY RECORD THE AMOUNT OF MAKEUP WATER ADDED DURING THE TEST. THE HYDROSTATIC TEST PASSES IF THE AMOUNT OF MAKEUP WATER DOES NOT EXCEED THE TESTING ALLOWANCE.
   - 4.6. IF THE TESTING ALLOWANCE IS EXCEEDED, LOCATE AND REPAIR ANY LEAKS AND REPEAT TEST.
5. REFER TO SHEET 5 FOR HYDROSTATIC TESTING REQUIREMENTS FOR HDPE PIPE.
6. PRESSURE TESTING AGAINST VALVES PHYSICALLY CONNECTED TO AN EXISTING WATER SUPPLY SYSTEM IS STRICTLY PROHIBITED.
7. WHERE CONTRACTOR SUPPLIED GAUGES ARE REQUIRED, MINIMUM SIZE SHALL BE 3½" DIAMETER OR LARGER GRADUATED IN ONE (1) OR TWO (2) POUND INCREMENTS FROM 1 TO 160 P.S.I. OR HIGHER.
8. PRESSURE TESTING AND BACTERIA TESTING MUST BE SUCCESSFULLY COMPLETED PRIOR TO CONNECTING TO THE EXISTING WATER SUPPLY SYSTEM.

WATER RESOURCES COMMISSIONER WATER SYSTEM STANDARDS – GATE VALVES

COMMUNITY	DIRECTION TO OPEN	VALVE TYPE STD. GATE VALVE	VALVE TYPE TAPPING VALVE
BINGHAM FARMS	RIGHT	C515	C515
BLOOMFIELD HILLS	RIGHT	C515	C515
COMMERCE TOWNSHIP	LEFT	C515	C515
FARMINGTON HILLS	RIGHT	C515	C515
HIGHLAND TOWNSHIP	LEFT	C515	C515
KEEGO HARBOR	RIGHT	C515	C515
OAKLAND TOWNSHIP	LEFT	C515	C515
ORCHARD LAKE VILLAGE	LEFT	C515	C515
OXFORD TOWNSHIP	LEFT	C515	C515
PLEASANT RIDGE	RIGHT	C515	C515
PONTIAC	LEFT	C515	C515
ROYAL OAK TOWNSHIP	RIGHT	C515	C515
SPRINGFIELD TOWNSHIP	LEFT	C515	C515
SYLVAN LAKE	RIGHT	C515	C515
WALLED LAKE	LEFT	C515	C515

1.) C515 RESILIENT SEATED GATE VALVE – MANUFACTURED BY U.S. PIPE, MUELLER, EAST JORDAN IRON WORKS, AMERICAN FLOW CONTROL OR APPROVED EQUAL.

FIRE HYDRANT NOZZLE SIZE AND THREAD SPECIFICATIONS

CVT	PUMPER NOZZLE	HOSE NOZZLE	OPERATING NUT	DEPTH OF BURY	STYLE	MODEL #
BINGHAM FARMS	(1) – 4"-STORZ	(2) – 2-1/2"-DFD	1-1/2"	5'-6"	5BR250	54831D
BLOOMFIELD HILLS	(1) – 3-3/4"-DFD	(2) – 2-1/2"-DFD	1-1/8"	6'-0"	5BR250	55825D
COMMERCE TWP/ WOLVERINE LAKE	(1) – 5"-STORZ	(2) – 2-1/2"-NST	1-1/2"	5'-6"	5BR250	54913D
FARMINGTON HILLS	(1) – 3-3/4"-DFD	(2) – 2-1/2"-NST	1-1/8"	5'-6"	5BR250	54329D
HIGHLAND TWP	(1) – 5"-STORZ	(2) – 2-1/2"-NST	1-1/2"	5'-6"	5BR250	54913D
KEEGO HARBOR	(1) – 3-3/4"-DFD	(2) – 2-1/2"-DFD	1-1/8"	5'-6"	5BR250	54826D
OAKLAND TWP	(1) – 4"-STORZ	(2) – 2-1/2"-DFD	1-1/2"	5'-6"	5BR250	54831D
ORCHARD LAKE	(1) – 3-3/4"-DFD	(2) – 2-1/2"-DFD	1-1/8"	6'-0"	5BR250	55825D
OXFORD TWP	(1) – 5"-STORZ (1) – 4-1/2"-NST		1-1/2"	6'-0"	5BR250	55601D
PLEASANT RIDGE	(1) – 3-3/4"-DFD (1) – 5"-STORZ		1-1/8"	5'-6"	5BR250	54949D
PONTIAC	(1) – 3-3/4"-DFD	(2) – 2-1/2"-DFD	1-1/2"	6'-0"	5BR250	55822D
ROYAL OAK TWP	(1) – 3-3/4"-DFD	(2) – 2-1/2"-DFD	1-1/8"	5'-6"	5BR250	54826D
SPRINGFIELD TWP	(1) – 5"-STORZ	(2) – 2-1/2"-NST	1-1/2"	5'-6"	5BR250	54913D
SYLVAN LAKE	(1) – 3-3/4-DFD	(2) – 2-1/2"-NST	1-1/2"	6'-0"	5BR250	55827D
WALLED LAKE	(1) – 4-1/2-NST	(2) – 2-1/2"-NST	1-1/8"	5'-6"	5BR250	54534D

1. D.F.D. – DETROIT FIRE DEPARTMENT THREAD
2. N.S.T. – NATIONAL STANDARD THREAD
3. STORZ NOZZLES SHALL BE COMPATIBLE WITH STORZ COUPLED LARGE DIAMETER FIRE HOSE. NOZZLES SHOULD BE MADE OF "LEAD FREE" BRASS OR ALUMINUM, AS APPROVED BY LOCAL CITY, VILLAGE OR TOWNSHIP. THE NOZZLE SHALL BE AN INTEGRAL PART OF THE HYDRANT, RESISTANT TO TAMPER AND REMOVAL. ENGAGEMENT LUGS SHALL BE ON THE NOZZLE AND CAP TO PREVENT FAILURE UNDER HIGH PRESSURE. NOZZLE AND CAP SHALL MEET AWWA C502 SPECIFICATIONS. NOZZLE SHALL BE COMPATIBLE WITH HOSE LOCK TO PREVENT HOSE FROM DISCONNECTING WHILE IN USE.

WATER RESOURCES COMMISSIONER'S OFFICE WATER SYSTEMS OPERATIONS AND MAINTENANCE DIVISION RECORD DRAWING SPECIFICATIONS

IN AREAS WHERE WATER SYSTEMS ARE OPERATED AND MAINTAINED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION, FINAL ACCEPTANCE OF THE WATER SYSTEM MUST BE RENDERED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR FINAL ACCEPTANCE SHALL BE THE SUBMISSION OF RECORD DRAWINGS TO THE WATER RESOURCES COMMISSIONER, OPERATIONS AND MAINTENANCE DIVISION, BY THE DESIGN ENGINEER. RECORD DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

1. THE DESIGN ENGINEER SHALL FURNISH "RECORD DRAWINGS" WATER MAIN PLANS UPON JOB COMPLETION. "RECORD DRAWINGS" SHALL BE FORWARDED TO THE WATER RESOURCES COMMISSIONER BY THE LOCAL MUNICIPAL ENGINEER AFTER THEIR REVIEW AND APPROVAL.
2. THE COVER SHEET SHALL BE SIGNED AND SEALED BY THE PROJECT DESIGN ENGINEER AND INCLUDE THE FOLLOWING CERTIFICATION STATEMENT:

> I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE RECORD DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "RECORD DRAWINGS" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE WATER MAIN AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE WATER RESOURCES COMMISSIONER'S OFFICE.
>
> _____
> (COMPANY NAME)
>
> _____
> (ENGINEER'S SIGNATURE)
>
> PROFESSIONAL ENGINEER NO. _____
>
> ENGINEER SEAL

3. THE MINIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
4. THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
5. THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
6. A TOTAL RECORD DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS A RECORD DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
7. THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
8. THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
9. ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM THE NEAREST PROPERTY CORNER.
10. ALL UNDERGROUND APPURTENANCES, SUCH AS GATE VALVE WELLS, METER PITS, PRESSURE REDUCING VALVE PITS, ETC. SHALL BE LOCATED FROM THE NEAREST HYDRANT THAT IS CONNECTED TO THE SAME WATER MAIN AS THE APPURTENANCE.
11. THE LOCATION, SIZE, BRAND AND MODEL NUMBER OF EVERY RESTRAINED JOINT SHALL BE NOTED.
12. THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE RECOMMENDED SEPARATION, VERTICALLY OR HORIZONTALLY, IS LESS THAN THE TEN STATE STANDARDS SHALL BE NOTED.
13. WATER MAINS 12" AND LARGER IN DIAMETER SHALL BE DRAWN IN PROFILE VIEW IN ADDITION TO PLAN VIEW ON THE CONSTRUCTION PLANS.

Plotted: 07/11/24 By: Kelly Bolton
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WATER MAIN STANDARD DETAILS

REVISION BLOCK
Data Source / Source Date: N/A

Rev. No.:	Rev. By:	Rev. Date:	Description:
1	HRC	08/31/20	GENERAL UPDATE
2	KB	03/29/23	ADD PRC AND SLC INFO TO TABLES
3	KB	05/09/23	UPDATE BFV HYDRANT SPECS
4	KB	07/11/24	UPDATE ROT HYDRANT SPECS

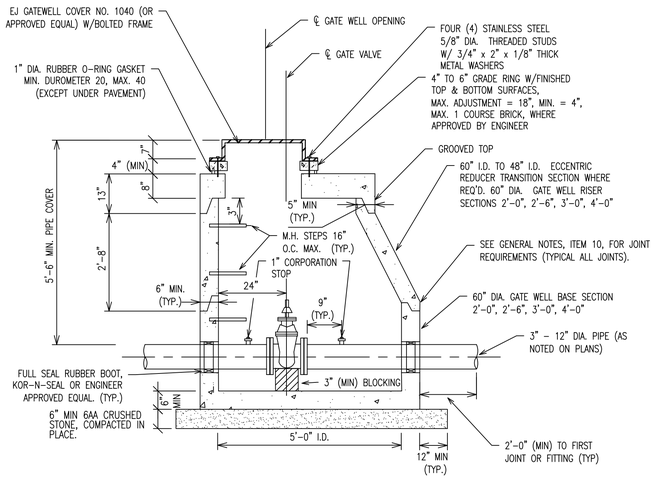
ORIG. DATE: 01/01/01
SCALE: NONE
DESIGNED BY: WRC
DRAWN BY: WRC Mapping

WRC WATER RESOURCES COMMISSIONER Jim Nash

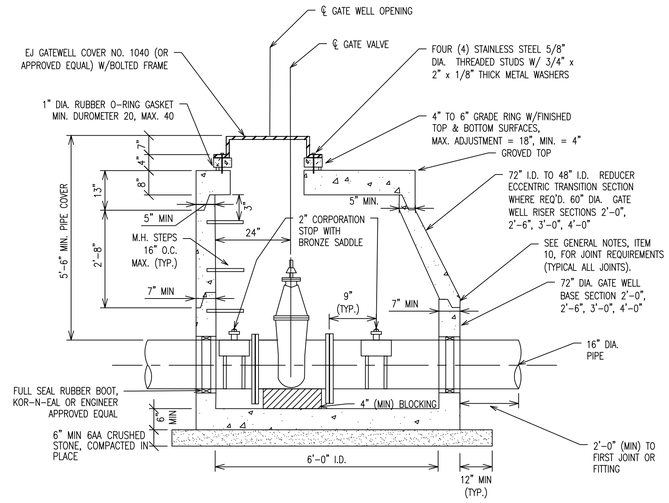
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WATERFORD, MICHIGAN
48328-1907

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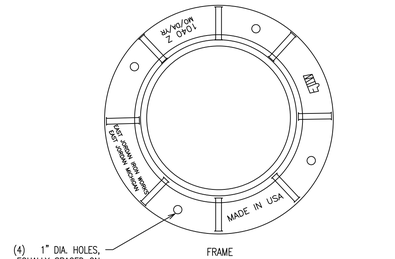
GATE VALVE & WELL DETAILS



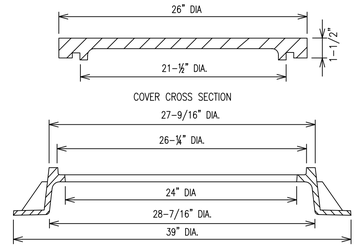
3" THRU 12" GATE WELL



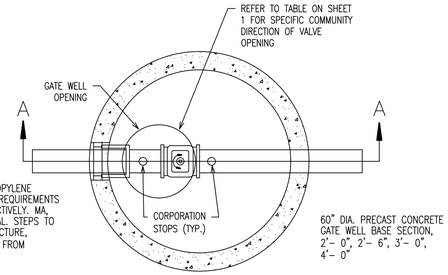
16" GATE WELL



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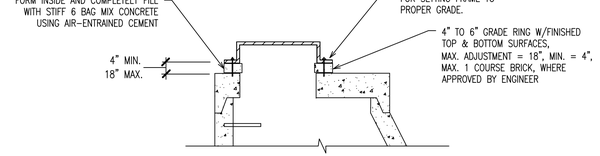


FRAME



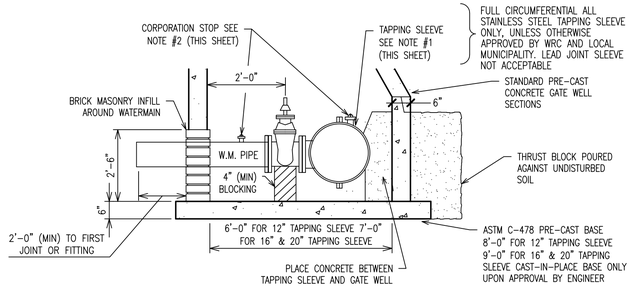
MANHOLE STEPS TO BE COPOLYMER PROPYLENE COATED GRADE 60 STEEL MEETING THE REQUIREMENTS IN ASTM D4101 AND ASTM A615 RESPECTIVELY. MA, INDUSTRIES PS2-PF OR APPROVED EQUAL. STEPS TO BE INSTALLED DURING MANHOLE MANUFACTURE, PLACED AT 16" C. TO C. MAXIMUM, 45° FROM CENTERLINE OF WATER MAIN.

PLAN GATE WELL TYPICAL



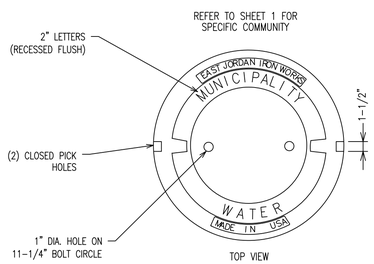
GATE WELL TOPS WITHIN PAVEMENT AREAS

RUBBER O'RINGS SHALL NOT BE USED IN PAVEMENT

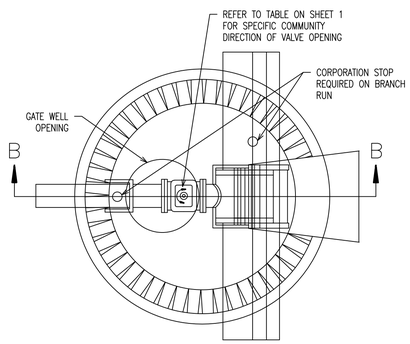


20" x 12", 20" x 8", 16" x 12", 16" x 8", 12" x 8" TAPPING SLEEVE, VALVE & WELL

NOTES:
1. REFER TO NOTE 7 OF "VALVE AND SLEEVE NOTES" ON SHEET 1.
2. FOR PIPE SMALLER THAN 16" USE 1" CORPORATION STOP, FOR 16" PIPE OR LARGER USE 2" CORPORATION STOP WITH BRONZE SADDLE.
3. WRC DOES NOT RECOMMEND SIZE ON SIZE TAPPING.



LETTERING LAYOUT FOR GATEWELL COVERS

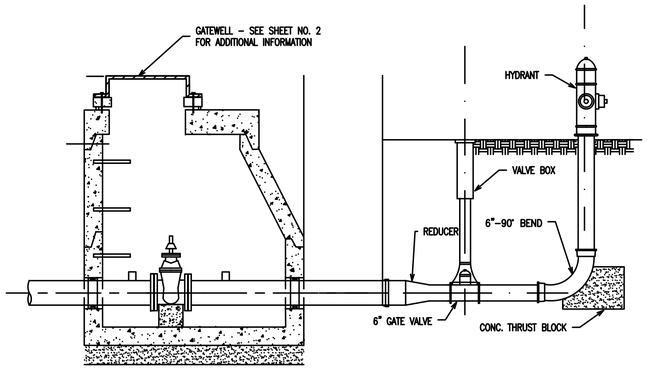


PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)

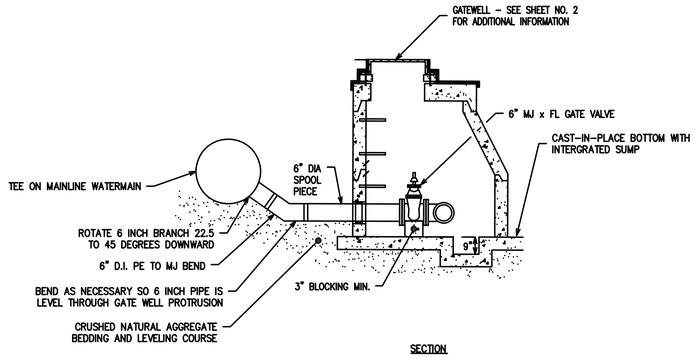
WATER MAIN
STANDARD DETAILS

REVISION BLOCK			
Data Source / Source Date: N/A			
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	DL	03/23/15	FINAL CHANGES TO GATE VALVE STANDARDS, HYDRANT SPECIFICATIONS AND PIPE CLASS UPDATES
2	DL	01/03/17	UPDATE "DIRECTION TO OPEN" COMMERCE TOWNSHIP FROM RIGHT TO LEFT
3	KB	02/14/18	MARKUPS PER G. APPEL
4	HRC	08/31/20	GENERAL UPDATE

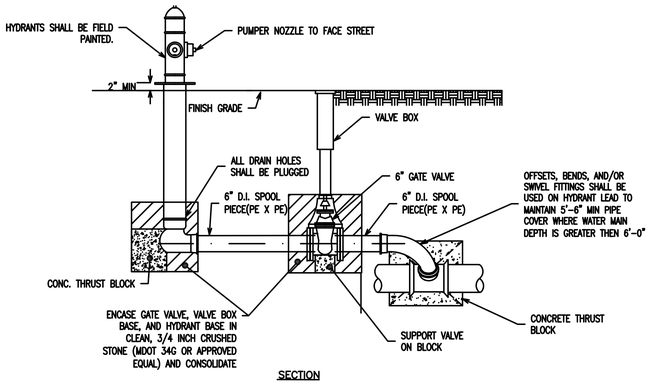
ORIG. DATE:	01/01/01	ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907
SCALE:	NONE	WRC WATER RESOURCES COMMISSIONER Jim Nash
DESIGNED BY:	WRC	SHEET NO.: 2 of 7
DRAWN BY:	WRC Mapping	



DEAD END BLOWOFF CONNECTION



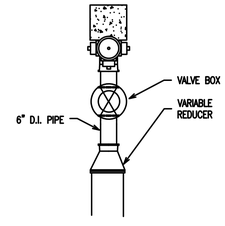
BLOW–OFF VALVE AND WELL



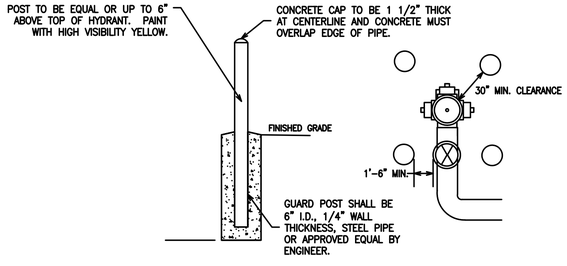
6" HYDRANT SIDE OUTLET

NOTES:

1. HYDRANT EXTENSIONS BETWEEN THE STANDPIPE LOWER SECTION & STANDPIPE UPPER ARE LIMITED TO 18 INCHES
2. ALL HYDRANTS COMPANION VALVES, BENDS, AND TEES TO BE FULLY RESTRAINED BY MECHANICAL JOINT RESTRAINT SYSTEM FITTINGS (MEGA–LUG OR APPROVED EQUAL).
3. THRUST BLOCKS ARE REQUIRED AT ALL TEES, BENDS AND ENDS.
4. ALL HARDWARE (BOLTS, NUTS, WASHERS, ETC.) FOR HYDRANT ASSEMBLIES SHALL BE COR–BLUE OR APPROVED EQUAL.



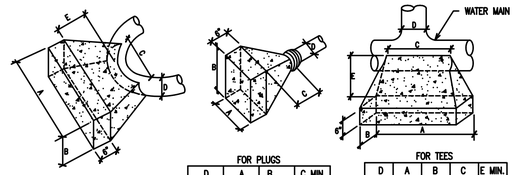
PLAN 6" HYDRANT WATER MAIN END



GUARD POST

NOTES:

1. GUARD POST SHALL NOT INTERFERE WITH HYDRANT OPERATION
2. TO BE INSTALLED IN ALL PAVED AREAS PARKING LOTS, PARKS, PLAZAS, ETC. (NOT RIGHT–OF–WAYS)SPACE WHERE VEHICLE EQUIPMENT DAMAGE TO HYDRANT IS POSSIBLE.



FOR 90° BENDS OR SMALLER

D	A	B	C	E MIN.
20"	8'	6.5'	3.5'	2.5'
16"	6'	4'	2.5'	2'
12"	4'	3'	2'	1.75'
10"	3'	3'	2'	1.75'
8"	3'	2'	2'	1.5'
6"	2'	1.5'	2'	1.25'

FOR PLUGS

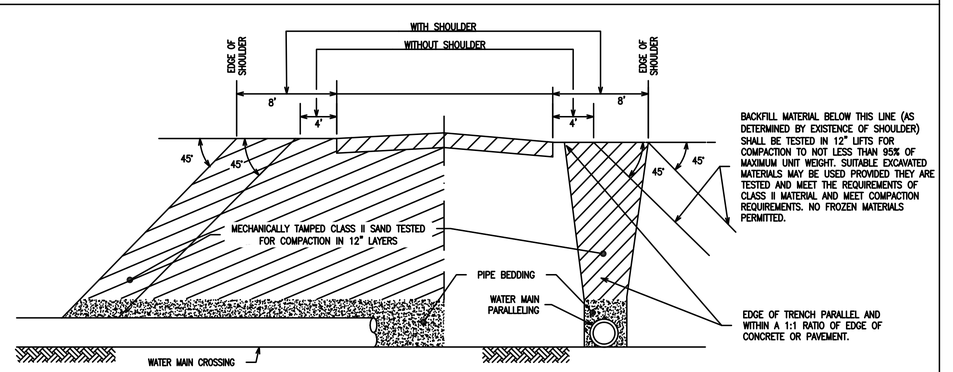
D	A	B	C MIN.
20"	7'	5'	2.5'
16"	4'–10"	4'–10"	2'
12"	4'–4"	3'	1'–9"
10"	3'	2'	1'–6"
8"	2'–10"	2'–6"	1'–6"
6"	1'–6"	1'–6"	3"

FOR TEES

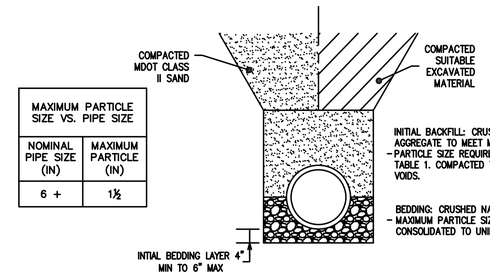
D	A	B	C	E MIN.
20"	6.5'	4.5'	3.5'	3'
16"	4'–8"	4'–8"	2.5'	2.75'
12"	4'	3'	2.5'	2.5'
10"	3'	2'	2'	2.25'
8"	2'–6"	2'	2'	2.25'
6"	2'	2'	2'	2.25'

THRUST BLOCK DETAILS

NOTE:
1. 3000 PSI CONCRETE TO BE USED. THRUST BLOCK TO ABUT & REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 95% MODIFIED PROCTER.



MINIMUM BACKFILL UNDER OR NEAR PAVEMENT



MAXIMUM PARTICLE SIZE VS. PIPE SIZE	
NOMINAL PIPE SIZE (IN)	MAXIMUM PARTICLE (IN)
6 +	1½

MINIMUM TRENCH WIDTH TABLE (IN.)	
NOMINAL PIPE SIZE (IN)	TRENCH WIDTH, W
6 +	D_O + 24

DUCTILE IRON PIPE TRENCH DETAIL

NOTES:

1. DUCTILE IRON PIPE IS CONSIDERED A FLEXIBLE PIPE THAT WHEN INSTALLED UNDERGROUND IS DESIGNED TO DEFLECT UNDER LOAD.
2. DO NOT COMPACT INNER BEDDING OF INITIAL BEDDING LAYER.
3. CAREFULLY EXCAVATE BELL OR COUPLING HOLES FROM THE INITIAL BEDDING LAYER.
4. SHOVEL SLICE BEDDING MATERIAL IN THE HAUNCH AREA ALONG THE BOTTOM CIRCUMFERENCE OF THE PIPE TO CONSOLIDATE BEDDING AND UNIFORMLY SUPPORT THE PIPE BARREL.
5. COMPACT INITIAL BACKFILL MATERIALS IN LIFTS NOT EXCEEDING 6 INCHES BY HAND TAMPING AROUND AND DIRECTLY ABOVE PIPE TO MINIMIZE VOIDS.
6. DO NOT USE MECHANICAL COMPACTION EQUIPMENT DURING INITIAL BACKFILL OPERATIONS UNTIL MATERIAL HAS BEEN BROUGHT TO 12 INCHES ABOVE THE TOP OF PIPE BARREL.
7. COMPACT SAND BACKFILL AND STANDARD TRENCHES OUTSIDE OF PIPE ZONE TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT IN LIFTS NOT EXCEEDING 12 INCHES.
8. FOR MINIMUM TRENCH WIDTHS, REFER TO TABLE 2, MAXIMUM TRENCH WIDTH = D_O + 2D_O UNLESS MINIMUM TRENCH WIDTH IS GREATER.
9. IF THE PIPE IS LOCATED BENEATH THE GROUND WATER TABLE, THE PIPE ZONE SHALL BE WRAPPED IN A GEOTEXTILE SEPARATOR TO MINIMIZE MIGRATION OF SOIL INTO THE PIPE ZONE.

WATER MAIN
STANDARD DETAILS

REVISION BLOCK
Data Source / Source Date: N/A

Rev. No.:	Rev. By:	Rev. Date:	Description:
1	DS	11/21/14	PROPOSED CHANGE TO DELETE REFERENCE TO BOTTLE SLEEVE MANUFACTURER
2	DL	03/23/14	FINAL CHANGE TO DELETE REFERENCE TO BOTTLE SLEEVE MANUFACTURER
3	KB	02/14/18	MARKUPS PER G. APPEL
4	HRC	06/31/20	GENERAL UPDATE

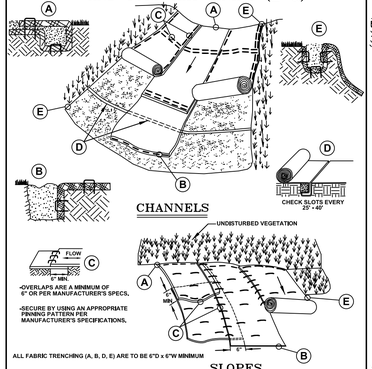
ORIG. DATE: 01/01/01
SCALE: NONE
DESIGNED BY: WRC
DRAWN BY: WRC Mapping

WRC WATER RESOURCES COMMISSIONER
Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

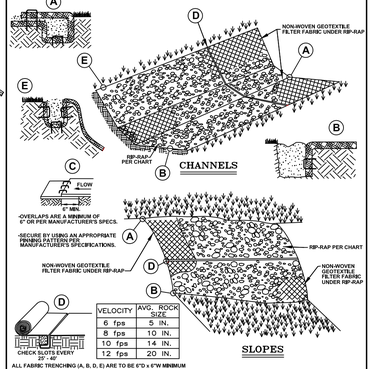
SHEET NO.:
3 of 7

EROSION CONTROL BLANKETS AND TURF MAT LINING (E-9)



DEPENDING ON THE VELOCITY, SLOPE, SOILS, USE PROPER BLANKET OR TURF MAT LINING PER MANUFACTURER'S SPECIFICATIONS TO HANDLE THE SHEER STRESSES OF THE SLOPE/CHANNEL.

RIP-RAP: CHANNELS AND SLOPES (E-10)

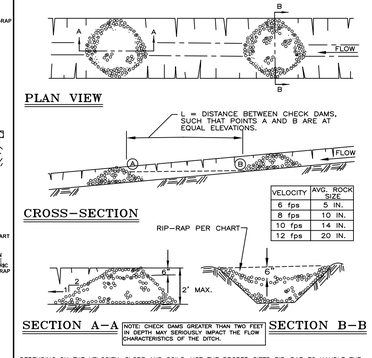


VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

ALL FABRIC TRENCHING (A, B, D, E) ARE TO BE 6"D x 6"W MINIMUM

DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP AND NON-WOVEN GEOTEXTILE FABRIC TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

CHECK DAMS (E-3)



VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

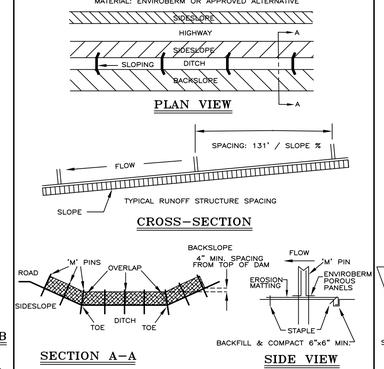
NOTE: CHECK DAMS GREATER THAN TWO FEET IN DEPTH MAY SERIOUSLY IMPACT THE FLOW CHARACTERISTICS OF THE DITCH.

-DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

CHECK DAMS ALTERNATIVE "A" (E-3A)

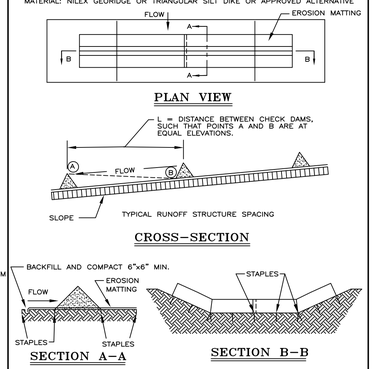
MATERIAL: ENVIROBERM OR APPROVED ALTERNATIVE



-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

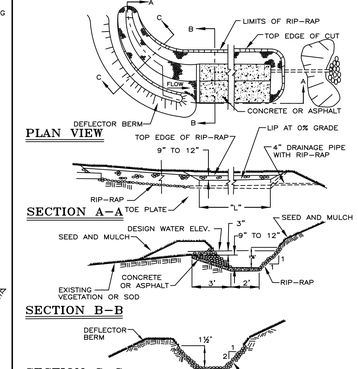
CHECK DAMS ALTERNATIVE "B" (E-3B)

MATERIAL: NILEX GEORIDGE OR TRIANGULAR SILT DIKE OR APPROVED ALTERNATIVE

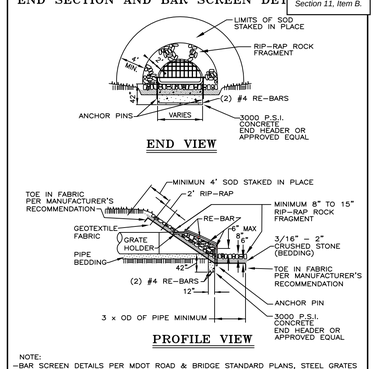


-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LEVEL SPREADER (E-4)



RIP-RAP, END SECTION AND BAR SCREEN DET



NOTE:
-BAR SCREEN DETAILS PER MDOT ROAD & BRIDGE STANDARD PLANS, STEEL GRATES FOR END SECTIONS. BARS ARE TO BE CUT OFF AT EDGE OF END SECTION.
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

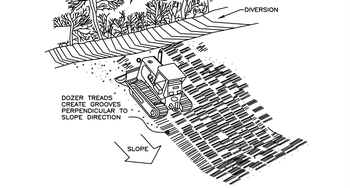
VEGETATIVE BUFFER ZONE (SP-1)

THE GRAPH SHOWN BELOW IS USED TO DETERMINE THE ADEQUACY OF AN EXISTING VEGETATIVE BUFFER ZONE FOR USE AS A SEDIMENT FILTER. THIS GRAPH IS ONLY APPLICABLE IF THE VEGETATION IS 90% DENSE AND AT LEAST 1" IN LENGTH OVER EVERY SQUARE FOOT OF DISTURBED SOIL. AN AREA COVERED WITH WEEDS, OR BUSHES AND TREES WITHOUT A GOOD GROUND COVER IS NOT ACCEPTABLE.

EXAMPLE

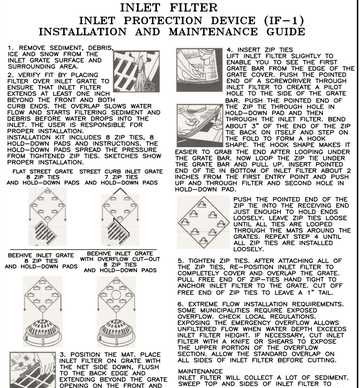
LENGTH OF BUFFER ZONE = ?
% OF SLOPE OF BUFFER ZONE = 5%
WHAT IS THE ACCEPTABLE LENGTH OF THE BUFFER ZONE?

PLOT IN GRAPH BELOW
BUFFER ZONE IS ACCEPTABLE AT 65'



SILT FENCE (SP-2)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)

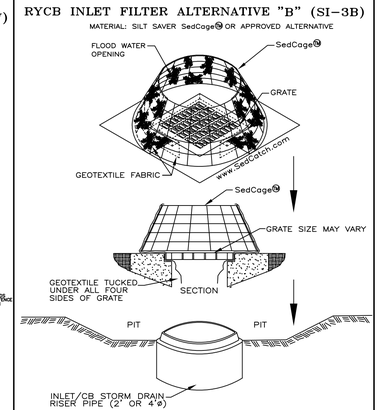


WINTER/FROZEN GROUND SILT FENCE (SP-2W)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)

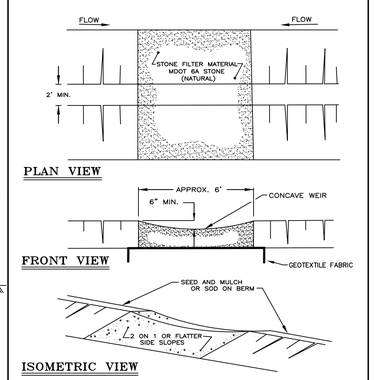
RYCB INLET FILTER ALTERNATIVE "B" (SI-3B)

MATERIAL: SILT SAVER SedCage® OR APPROVED ALTERNATIVE



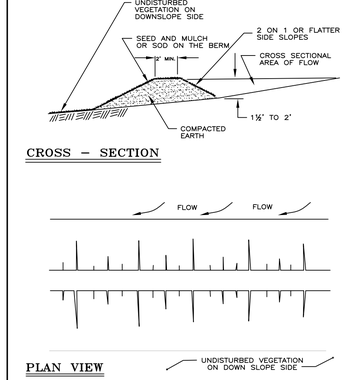
(NOTE: NO PIT REQUIRED WHEN FRAME AND COVER OR GRATE AND COVER ARE IN PLACE.)

EARTH DIVERSION BERM WITH STONE OUTLET FILTER (SP-4)

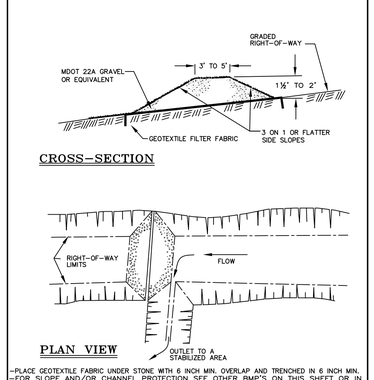


-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

EARTH DIVERSION BERM (E-2)



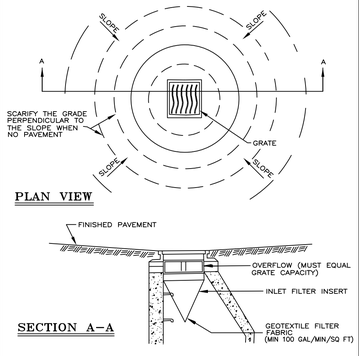
GRAVEL INTERCEPTOR DIKE (SP-6)



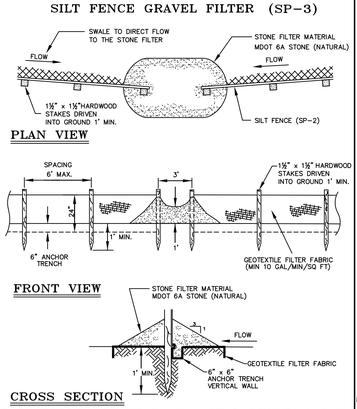
-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LOW POINT INLET FILTER ALT. "A" (SI-2A)

MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

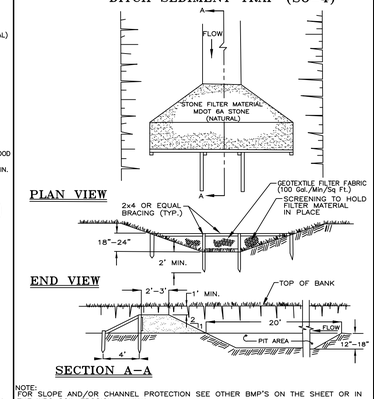


SILT FENCE GRAVEL FILTER (SP-3)



-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

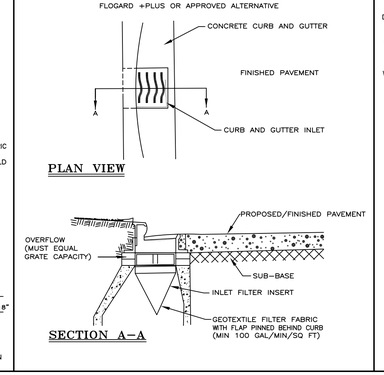
DITCH SEDIMENT TRAP (SO-4)



NOTE:
FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THE SHEET OR IN THE WRC SOIL EROSION MANUAL.

CURB AND GUTTER INLET FILTER ALTERNATIVE "A" (SI-4A)

(BEFORE AND AFTER PAVING)
MATERIAL: FLEX STORM, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

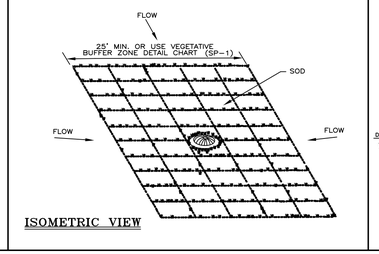


SOD INLET FILTER (SI-1)

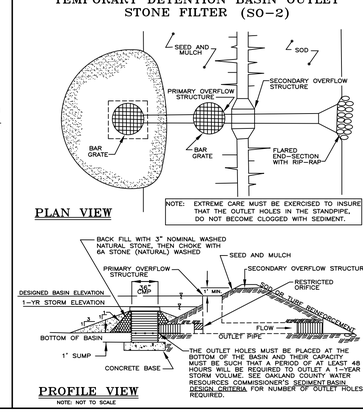
DEFINITION — SOD INLET FILTERS ARE PADS OF SOD PLACED AROUND A STORM DRAIN INLET OR CATCH BASIN.

PURPOSE — SOD INLET FILTERS ARE INSTALLED TO SLOW THE FLOW OF WATER INTO AN INLET OR CATCH BASIN AND TO FILTER OUT SEDIMENT IN THE PROCESS.

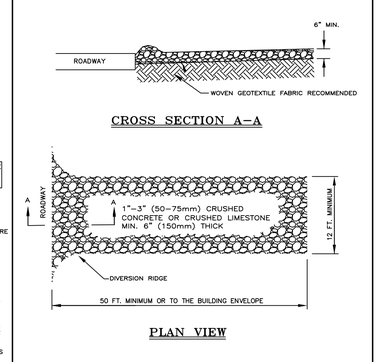
WHERE APPLICABLE — SOD INLET FILTERS SHOULD ONLY BE USED TO HANDLE LIGHT CONCENTRATIONS OF SEDIMENT. THEY ARE BEST USED AFTER FINAL GRADING IS COMPLETE AND DURING THE ESTABLISHMENT OF A VEGETATIVE COVER.



TEMPORARY DETENTION BASIN OUTLET STONE FILTER (SO-2)



TEMPORARY STONE ACCESS DRIVE (SP-9)



SURFACE ROUGHENING AND SCARIFICATION (E-8)

THIS IS AN EASY AND ECONOMICAL WAY TO REDUCE SOIL EROSION. IT IS SIMPLY THE PLACING OF HORIZONTAL GROOVES IN A SLOPE PERPENDICULAR TO THE FLOW OF RUNOFF. THIS CAN BE DONE BY EITHER DISC HARROWING, BACK BLADING OR JUST RUNNING THE TREADS OF A CRAWLER TRACTOR PERPENDICULAR TO THE SLOPE AS SHOWN BELOW.

UNVEGETATED SLOPE SHOULD BE TEMPORARILY SCARIFIED TO MINIMIZE RUNOFF VELOCITIES

INLET FILTER
INLET PROTECTION DEVICE (IF-1)
INSTALLATION AND MAINTENANCE GUIDE

1. REMOVE SEDIMENT, DEBRIS, ICE AND SNOW FROM THE INLET GRATE SURFACE AND SURROUNDING AREA.

2. VERIFY FIT BY PLACING FILTER OVER INLET GRATE TO ENSURE THAT INLET FILTER EXTENDS AT LEAST ONE INCH BEYOND THE FRONT AND BOTH CURB ENDS. THE OVERLAP SLOWS WATER FLOW SO THAT SEDIMENT SETTLES OUT AND DEPOSITS BEFORE WATER DROPS INTO THE INLET. THE USER IS RESPONSIBLE FOR PROPER INSTALLATION.
INSTALLATION KIT INCLUDES 8 ZIP TIES, 8 HOLD-DOWN PADS AND INSTRUCTIONS. THE HOLD-DOWN PADS SPREAD THE PRESSURE FROM TIGHTENED ZIP TIES. SKETCHES SHOW PROPER INSTALLATION.

FLAT STREET GRATE STREET CURB INLET GRATE
8 ZIP TIES AND HOLD-DOWN PADS — 7 ZIP TIES AND HOLD-DOWN PADS

BEEHIVE INLET GRATE
8 ZIP TIES AND HOLD-DOWN PADS

BEEHIVE INLET GRATE WITH CUT-OUT
6 ZIP TIES AND HOLD-DOWN PADS

3. POSITION THE MAT. PLACE INLET FILTER ON GRATE WITH THE NET SIDE DOWN, FLUSH TO THE BACK EDGE AND EXTENDING BEYOND THE GRATE OPENING ON THE FRONT AND SIDES. USE ZIP TIES AS NEEDED TO ATTACH INLET FILTER TO THE INLET GRATE COVER WITHOUT LIFTING THE GRATE COVER.

4. INSERT ZIP TIES
LIFT INLET FILTER SLIGHTLY TO ENABLE YOU TO SEE THE FIRST GRATE BAR FROM THE EDGE OF THE GRATE COVER. PUSH THE POINTED END OF A SCREWDRIVER THROUGH INLET FILTER TO CREATE A PILOT HOLE TO THE SIDE OF THE GRATE BAR. PUSH THE POINTED END OF THE ZIP TIE THROUGH HOLE IN HOLD-DOWN PAD AND THEN THROUGH THE INLET FILTER. BEND ABOUT 1" INCH OF THE END OF THE ZIP TIE BACK ON ITSELF AND STEP ON THE FOLD TO FORM A HOOK SHAPE. THE HOOK SHAPE MAKES IT EASIER TO GRAB THE END AFTER LOOPING UNDER THE GRATE BAR. NOW LOOP THE ZIP TIE UNDER THE GRATE BAR AND PULL UP. INSERT POINTED END OF TIE IN BOTTOM OF INLET FILTER ABOUT 2 INCHES FROM THE FIRST ENTRY POINT AND PUSH UP AND THROUGH FILTER AND SECOND HOLE IN HOLD-DOWN PAD.

PUSH THE POINTED END OF THE ZIP TIE INTO THE RECEIVING END JUST ENOUGH TO HOLD ENDS LOOSELY. LEAVE ZIP TIES LOOSE THROUGH THE NEXT TWO GRATE BARS AND THE MAT AROUND THE GRATES. REPEAT STEP 4 UNTIL ALL ZIP TIES ARE INSTALLED LOOSELY.

5. TIGHTEN ZIP TIES. AFTER ATTACHING ALL OF THE ZIP TIES, RE-POSITION INLET FILTER TO COMPLETELY COVER ALL OVER THE GRATE. PULL FREE END OF ZIP-TIES HAND TIGHT TO ANCHOR INLET FILTER TO THE GRATE. CUT OFF FREE END OF ZIP TIES TO LEAVE A 1" TAIL.

6. EXTREME FLOW INSTALLATION REQUIREMENTS. SOME MUNICIPALITIES REQUIRE EXPOSED OVERFLOW. CHECK LOCAL REGULATIONS. EXPOSING THE EMERGENCY OVERFLOW ALLOWS WATER TO BYPASS THE FILTER IF IT EXCEEDS INLET FILTER HEIGHT. IF NECESSARY, CUT INLET FILTER WITH A KNIFE OR SHEARS TO EXPOSE THE UPPER PORTION OF THE OVERFLOW SECTION. ALLOW THE STANDARD OVERLAP ON ALL SIDES OF INLET FILTER BEFORE CUTTING.

MAINTENANCE
INLET FILTER WILL COLLECT A LOT OF SEDIMENT. SWEEP TOP AND SIDES OF INLET FILTER TO REMOVE SEDIMENT AND DEBRIS AFTER EACH 1" RAIN EVENT. IN CASE OF STANDING WATER AT INLET, SWEEPING AWAY BUILT-UP DEBRIS ALLOWS WATER TO DRAIN THROUGH INLET FILTER.

NOTE:

The Oakland County Water Resources Soil Erosion and Sedimentation Control standard details cannot be modified, reduced, edited, or changed in any way. Any deviation from these standard details must be approved in writing by the Oakland County Water Resources Commissioner. Changes otherwise made are in violation of Part 91 of Act 451 of 1994, the Natural Resources and Environmental Protection Act.

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REVISION BLOCK			
Data Source / Source Date: N/A			
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	KB	12/11/2020	EDIT SI-3B, SI-4A, SO-2, SP-9 / DELETE SI-2, SI-3A, SI-2, SI-4, SP-2A / UPDATE NOTE, ADDED INLET FILTER DETAIL
2			
3			
4			

ORIG. DATE:	01/01/01
SCALE:	NONE
DESIGNED BY:	WRC
DRAWN BY:	Mapping

WRC WATER RESOURCES COMMISSIONER *Jim Nash*

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.: 1 of 1

95

NF ENGINEERS
Civil Engineers | Land Surveyors | Land Planners | Geospatial Engineers
48680 Van Dyke, Ste 200 Shelby Twp, MI 48317 | P: 844-416-3364 | www.nfe-engr.com

May 27, 2026

Planning Commission
Village of Lake Orion
21 E. Church St.
Lake Orion, MI 48362

Re: Lake Orion Lumber
Site Plan Review #1 – Preliminary PUD
NFE Job No. M917-01

Dear Commissioners:

We have reviewed the Preliminary PUD Plan for the above referenced site. Our review is consistent with the requirements of Article 11 of the Zoning Ordinance –Planned Unit Development. We have the following comments:

1. The Zoning Ordinance requires a disclosure of mineral rights ownership, as well as proof of ownership of the site. We have not seen this information and defer to the Planning and Zoning Administrator on these topics.
2. The legal description as written for the Overall Parcel does not include all areas of land shown as proposed to be part of this development; specifically, it excludes parcel 09-11-228-019 labeled with the name "Carl & Peggy Waltman", an apparently landlocked parcel near the northwest portion of the overall site. The property legal description, land ownership, and development plan must all match. Also, the area listed in the plan view (Overall Parcel +/- 4.19 acres) is larger than indicated on the legal description and in the Site Data (4.12acres).
3. Required submittal information includes a Site Analysis detailing existing conditions and properties within 100 feet of the site, as well as other information regarding soil types, existing vegetation, and drainage. We have not seen a Site Analysis but note that certain of this information might most easily be presented on the topographic survey, which does not include all of these listed items.
4. Per Sec. 11.05.A.d, "architectural plans of the buildings shall be prepared by and bear the seal of a Registered Architect." The preliminary building plans are not sealed.
5. Plans must show the required setback lines. We also note the proposed setback dimensions are indicated with "xx" blank information in the Site Date Table.
6. With the exception of northward, the topographic survey ends at the property lines and does not indicate proximity to adjacent buildings, their size, height and description as required. Topographic information must extend to a minimum of 100' from the property lines.
7. Plans must indicate proposed vehicular circulation. The vehicle template used for the Preliminary Truck Turning Plan does not match the Orion Township fire apparatus as required. For reference, design engineer can find this template in Appendix F online at 2021 OT Engineering Standards - UPDATED - 09062023.pdf
8. Existing on-site buildings do not indicate the height or number of stories as required.
9. Proposed exterior lighting locations, if any, have not been provided as required.
10. If phasing of the development is proposed, it must be indicated in the preliminary plans.
11. A preliminary PUD Contract is required at this stage. We have not seen such a document, though it may be under review by the Planning and Zoning Administrator and/or Village Attorney. As the Village Engineer, NFE should review any provisions pertinent to Sec. 11.05.A.1.e.5 relating to "public utilities,

storm and sanitary sewers and drainageways, water, streets, sidewalks" and similar facilities under the jurisdiction of the Village of Lake Orion Department of Public Works.

The following items related to engineering design were noted and can be addressed during the engineering phase of the project:

1. Existing water main information in M-24 is incorrect. The 8" main on the east side along the site frontage, shown on the preliminary utility plan to be tapped, was abandoned as part of the 1987 M-24 improvement plans. A 16" main exists on the west side of M-24.
2. We note that the plan provides stormwater management facilities, including on-site detention, outletting into MDOT's property, and thus will be designed to meet MDOT's MS4 permit requirements rather than the Village's. The total site area must be included in the stormwater detention calculations, once the property legal description and site development boundary are coordinated.
3. We note on the preliminary grading plan that there appears to be a 1:3 slope down between the gravel walkway to the public restrooms and the detention pond (pond bottom slope 1:6). This may present a safety hazard (unrecoverable slip) and may require reworking of the slope or a fence in this vicinity at detailed design.
4. We note that the entrance drive from Atwater is shown as a two-way drive 20 feet wide with parking along the west side, while interior drive lanes on the gravel lot exceed the minimum (24' where 22' is minimum). It may be appropriate to adjust lane widths to widen the entrance drive.
5. Engineering design submittals must include Village of Lake Orion Standard Detail sheets (Sanitary Sewer, Water Main), which can be found online at Engineering Information | Lake Orion, MI.

Complete Engineering Plans meeting the requirements of the Village of Lake Orion Design and Construction Standards must be submitted for review, and no construction shall begin prior to engineering approval.

The preliminary plan appears to present a generally feasible PUD development for this site; however, we recommend that documents be revised and resubmitted subject to the above comments, to provide all necessary information required by the Zoning Ordinance and prove all parcels shown in the proposed development are legally controlled by the DDA / applicant.

If you have any questions, please do not hesitate to call.

Sincerely,

Nowak & Fraus Engineers

Wendy E. Spence, PE
Sr. Project Manager

CC: Sommer Nafal, Planning and Zoning Coordinator
Wesley Sanchez, DPW Director
John Pender, Assistant Chief, Orion Twp Fire Dept
Jeffrey Williams, Fire Marshall, Orion Twp Fire Dept
Jacob Van Boxel, McKenna
Mark Amundson, Lake Orion Police
Sonja Stout, Clerk, Lake Orion
David Goodloe, Building Official, Orion Township

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Charter Township of Orion
3365 Gregory Rd., Lake Orion MI 48359
www.oriontownship.org

Fire Department
Phone: (248) 391-0304, ext. 2000
Fax: (248) 309-6993

To: Village of Lake Orion Planning Commission
From: Jeff Williams, Fire Marshal
Re: Lake Orion Lumber Yard – Site Plan Review #1
Date: May 28, 2026

The Orion Township Fire Department has completed its review of the application for Lake Orion Lumber Yard for the limited purpose of compliance with the Village of Lake Orion's Ordinance's, Michigan Building Code, and all applicable Fire Codes.

Based upon the application and documentation provided, the Fire Department has the following recommendations:

Approved
Approved with Comments (See below)
X Not approved

Comments:

1. Fire apparatus access road width where fire hydrants are present shall be not less than 26 feet in width.
    a. The entire fire access road that surrounds the event barn shall be 26' in width and shall be constructed of either asphalt and or concrete.
    b. At this time the fire department finds it acceptable for the parking areas to be gravel. It must be understood that these areas will be inspected on a routine basis for proper maintenance and sustainability.

2. The turning radius for the emergency apparatus roads shall be in accordance with the Orion Township Fire Department turning performance analysis template. Overlays of the template shall be shown on the plans.
    a. The appropriate template shall be shown circulating all areas of the site. Any area where the template cannot circulate shall be reconfigured to accommodate the fire department truck turning template.

3. Fire department access roads 20 to 26 feet wide shall be posted with NO PARKING FIRE LANE signage on both sides of the fire apparatus access road. Fire department access roads greater than 26 feet shall only require posting on one side of the roadway.
    a. All signage locations shall be shown on the revised plans.

4. Fire Department Connections shall be located on the street side of the building or facing approved fire apparatus access roads, fully visible and recognizable from the street, fire apparatus access road or nearest point of the fire department vehicle access or otherwise approved by the fire code official.
    a. After our review of the site and noted information pertaining to the use and occupant loads of the structures, it has been determined by both the Orion Township Building Official and myself that the Event Barn and Mixed Use / Hotel buildings shall be fully fire suppressed. This information along with

Charter Township of Orion
3365 Gregory Rd., Lake Orion MI 48359
www.oriontownship.org
Fire Department
Phone: (248) 391-0304, ext. 2000
Fax: (248) 309-6993

proposed FDC locations shall be shown on the revised plans for further review and approval.

If there are any questions, the Fire Department may be reached at 248-391-0304 ext. 2004.

Sincerely,

Jeffrey Williams

Jeff Williams, Fire Marshal
Orion Township Fire Department

Village of Lake Orion
EST 1859

BOARD ACTION SUMMARY SHEET

MEETING DATE: June 1, 2026

TOPIC Monthly Planning and Zoning Report – May 2026

BACKGROUND BRIEF:

The Planning and Zoning Coordinator has provided a report on recent planning and zoning activities within the Village.

RECOMMENDED MOTION(s):

To receive and file the May 2026 Monthly Planning and Zoning Report.

21 E. Church Street
Lake Orion, Michigan 48362
Tel 248.693.8391
Fax 248.693.5874
www.lakeorion.org

Monthly Planning & Zoning Report

MAY 2026

Each month, the Village Planning Consultant, McKenna, assists in drafting a report on recent activities of the Planning Commission, Zoning Board, and the Planning & Development Department; we welcome comments.

DEPARTMENT INITIATIVES AND PROJECTS

The following projects are currently in progress:

Generator Ordinance

Recently, the Village has received complaints regarding the placement of Accessory Mechanical Units (standby generators). Village staff and members of the Planning Commission have asked to be provided with information regarding the current regulations, along with how other similar communities are regulating these items.

The Planning Commission reviewed and discussed the information at the May PC meeting and have instructed McKenna to provide draft text revisions which will be further discussed during the June 1 PC meeting

PERMIT DETAILS

PERMIT TYPE	ADDRESS / PROJECT	DESCRIPTION	SUBMITTED	APPROVED
ZONING COMPLIANCE				
TBD	235 PARK	Egress Window Installation	May 8, 2026	Under Review
QRC-MIA	493 ALGENE DR	Home addition	May 18, 2026	Under Review
4CJ-DW1	167 BRIDGE ST	Driveway replacement	May 13, 2026	Under Review
Z-26-07	173 N NORTH SHORE DR	Installation of new deck in waterfront yard, setback 17' from waterline.	Apr 24, 2026	May 8, 2026
Z-26-08	365 N NORTH SHORE DR	Rebuild existing deck along grade after seawall installation.	Apr 24, 2026	May 12, 2026
TEMPORARY USE OF RIGHT OF WAY				
MW8-TDK	205 E SHADBOLT ST	Closed sidewalk to repair a leak on the underground water service line	May 15, 2026	Under Review
R-26-16	159 N WASHINGTON ST	Consumers Energy gas service installation	May 13, 2026	May 15, 2026
R-26-15	144 N WASHINGTON ST	Temporary Dumpster on Jackson Street for Residential Cleanup	May 3, 2026	May 11, 2026
SIGNAGE				
No permits applications have been submitted since the date of the last meeting.				
DEMOLITION				
No permits applications have been submitted since the date of the last meeting.				
CHANGE OF USE				
No permits applications have been submitted since the date of the last meeting.				
SPECIAL EVENT				
XIV-IWY	Lake Orion (East of the Lake)	Lake Orion Police Association 2026 Car Show *Date of Event: July 26, 2026*	May 19, 2026	Under Review

ACTIVE DEVELOPMENT PROJECTS

NAME / LOCATION	DESCRIPTION	REVIEW & APPROVAL STATUS
44. E Flint	VLO-24-02 4-story, mixed-use, multi-family, retail, and office on existing parking lot.	Planning Commission Approval: August 5, 2024; variance required BZA Approval: October 2, 2024. Engineering & Fire Marshal Approval: Awaiting revised plans ***STATUS: Has an extension until August 2026 to submit permits. Applicant will not be continuing with current plans, awaiting submittal of revised plans.***
ORION VILLAS *597 E. Flint*	VLO-23-03 Attached townhomes, 8-unit site condominiums.	Planning Commission Approval: June 5, 2023 Council Condo Docs Approval: April 8, 2024 Engineering Approval: January 10, 2024, as noted Final Zoning Approval: January 9, 2024 ***STATUS: Construction: Nearing Completion. Awaiting stormwater management agreement.*** ***St & Det As-builts Approved.***

WEST VILLAGE *55 W. Elizabeth*	VLO-23-04 Former Ehman Center PUD for mixed-use, multiple-family residential flats and lofts at the former Ehman Center property.	PC / Council PUD Eligibility Approval: September 7 / 13, 2021 PC / Council Preliminary PUD Approval: October 4 / 25, 2021 PUD Extension Approval: October 10, 2022 Planning Commission Final PUD Approval: September 5, 2023 Engineering & Fire Approval: Revise and Resubmit October 24, 2023 Council PUD Agreement Approval: December 11, 2023 Council Amended PUD Agreement Approval: June 10, 2024 PUD Execution / Recording: Completed May 2025 Pre-Construction Meeting: Pending Final Engineering Meeting with Architects and Engineers held January 13, 2026. ***STATUS: Waiting on revised plans based on discussion.***
Lake Street Realignment and Improvements	Improvements to Lake & Flint intersection; license agreement w/Village.	Preliminary Council Approval: August 14, 2023; License Agreement Approval: November 27, 2023. Engineering Approval: August 29, 2024, as noted ***STATUS: Will meet with developer to obtain update***
SNUG HARBOR *160 Heights*	VLO-24-01 Multifamily development; adjacent to Mystic Cove	Planning Commission Approval: May 6, 2024. Engineering Approval: September 25, 2024 Final Zoning Approval: Pending additional information ***STATUS: Condo conversion approved with conditions***
MYSTIC COVE	VLO-22-05 Mixed-use, multifamily townhomes & dock/shoreline improvements.	Planning Commission Approval: October 3, 2022. Council Lot Reconfigurations Approval: June 2023 Final Zoning Approval: April 23, 2024 Engineering Approval: October 31, 2024 ***Construction: In Progress. Phase-1 Final As-builts approved.***
STARBOARD	VLO-23-05 Mixed-use, multifamily townhomes & marina improvements.	Planning Commission Approval: November 6, 2023. Council License Agreement Approval: November 27, 2023 Engineering Approval: Revise & Resubmit Final Zoning Approval: Pending Approved Boat House Renovation Zoning Compliance. Showroom and garage demolished. ***Status: Approved for construction.***
CONSTELLATION BAY	VLO-23-02 Mixed-use residential, multi-family townhomes and apartments, shoreline improvements.	Planning Commission Approval: October 3, 2022. Planning Commission on April 3, 2023 (amended site plan) Engineering Approval: December 16, 2024 Final Zoning Approval: November 26, 2024 Construction: December 3, 2024 - Pre-con; Demo underway ***STATUS: Grading has begun. Need to determine permit status and extent of work.***
THE PENINSULA	VLO-23-07 Single-family site condominiums	Planning Commission Approval: February 5, 2024 Council Condo Doc Approval: April 8, 2024 Engineering Approval: March 10, 2025, as noted Pre-Construction Meeting: March 18, 2025 Final Zoning Approval: Granted ***STATUS: Construction ongoing, nearing finalization.***
146 S. Broadway	VLO-23-06 Commercial site plan 3-unit “white box”, interior & exterior modifications	Planning Commission Approval: October 2, 2023 Final Zoning Approval: November 22, 2023 Construction: Complete Change of Use / Signage Approval: Suite 160 (Robotic Relief); ***Suite 154 granted approval/determining final compliance***
CLOUD RETAIL *494 S. Broadway*	VLO-21-10 Commercial (marijuana retail) site plan.	Council Lot Reconfiguration Approval: March 13, 2023 Planning Commission Approval: April 3, 2023. Engineering Approval: Revise & Resubmit July 12, 2024 **Status: Final Engineering approval received May 2026. Undergoing final planning and zoning review.**

WEST HARBOR ORION *225 Lake Street*	Residential, single family homes (2)	PC / Council Lot Split Approval: January 6 / 13, 2025 Demolition: In Progress Recording: Ready per Engineering Approval April 22, 2025 Zoning Review: TBD; required for each new build. ***Construction: Demolition ongoing***
EASTPORT	VLO-25-01 Cross-jurisdiction redevelopment of former commercial greenhouse for mixed use, retail, multiple-family, and single family.	Site Plan Submitted: May 5, 2025 (Township portion submitted as PUD Concept) Village-Township Joint Public Hearing: June 18, 2025. **Pre-Construction Meeting: Pending Final Engineering – Status: Awaiting submittal.**
ORION LUMBERYARD	Public parking lot, pavilion, and gathering space.	Demolition & Cleanup: Ongoing; Building Structural Rehab: Building permit issued and structures to be saved are receiving necessary structural shoring. PUD Application: Held pre-application at the September Planning **STATUS: Preliminary plans received and undergoing planning review. Set for the June PC Agenda.**
WEST VILLAGE TOWNHOMES *315 N Lapeer St*	VLO-25-003 Demolition of school admin building and construction of 15 townhomes	Planning Commission Approval: September 2, 2025. *Awaiting applicant submittal of revised plans to address conditions of approval.* **STATUS: Awaiting applicant submittal of revised plans to address conditions of approval.**

LOOKING AHEAD: POTENTIAL PROJECTS

Zoning Amendments: The following table summarizes staff recommendations for Zoning Ordinance and/or Map amendments for consideration by the Planning Commission. Should the Planning Commission wish to pursue one or more of these amendments, the Commission may direct staff to further study the issue(s) and/or prepare draft amendment ordinance(s). All proposed amendments require a public hearing, a recommendation by the Planning Commission, and adoption by the Village Council.

SECTION	TOPIC / ISSUE	CHANGES
None at this time.		

Prepared by:

MCKENNA

McKenna provides day-to-day assistance to Village staff and administration, applicants and developers, and the public regarding planning, zoning, and economic development matters. We also assist in the administration of the Planning Commission and the Board of Zoning Appeals. Contact your McKenna team via email:

- **Jake VanBoxel, MSA, Principal Planner (jvanboxel@mcka.com)**
- **Sommer Nafal, NCI, Assistant Planner (snafal@mcka.com)**

Or visit us during on-site office hours:

Orion Township Hall: Tuesdays, 10:00am-3:00pm

Lake Orion Village Hall: Tuesdays, 3:00pm-5:00pm

Virtual: Thursdays, 8:00am-1:00pm, Available by Appointment

(248) 693-8391 ext. 107
zoning@lakeorion.org

As always, thank you for your support and participation – *it takes a Village!*