CITY OF PORTAGE PLANNING COMMISSION

AGENDA

Thursday, February 6, 2025
7:00 PM

Portage City Hall Council Chambers

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

APPROVAL OF MINUTES:

1. Meeting Minutes dated November 21, 2024
2. Meeting Minutes dated January 8, 2025

PUBLIC HEARINGS

SITE/FINAL PLANS:

* 1. Creekside Final PD Plan, 8150 Creekside Dr.

* 2. Stanwood Crossings Final PD Plan, 9617 Portage Rd.

OLD BUSINESS:

NEW BUSINESS:

* 1. Haffner Machinery Alternative Screening, 8935 Portage Industrial Dr.

STATEMENT OF CITIZENS:

ADJOURNMENT:

Star (*) indicates printed material within the agenda packet.

CITY OF PORTAGE PLANNING COMMISSION

Thursday, November 21, 2024
7:00 PM Portage
Portage City Hall Council Chamber

The City of Portage Planning Commission meeting of November 21, 2024, was called to order by Chair Corradini at 7:00 p.m.

IN ATTENDANCE

- Eric Feldt, Senior City Planner
- Catherine Kaufman, City Attorney
- Biqi Zhao, Deputy Director of Planning and Zoning

ROLL CALL

Staff called the roll: Chairman Corradini (yes); Vice Chair Baldwin (yes); Secretary Freiman (yes), Adams (yes); Copp (yes); Joshi (yes); Fries (no); Youngs (yes); and Longjohn (yes – arrived 7:05pm).
8-Present; 1-Absent.

Motion by Vice Chair Baldwin, seconded by Secretary Freiman to approve the excused commissioners. Upon voice vote, motion carried 7-0.

APPROVAL OF MINUTES

1. Minutes dated November 7, 2024.

Motion by Vice Chair Baldwin, seconded by Commissioner Copp to approve the Planning Commission Meeting minutes dated November 7, 2024, as submitted. Upon voice vote, motion carried 8-0.

PUBLIC HEARINGS

1. Parking Reduction Request for a proposed commercial development on 8939 South Sprinkle Road

Eric Feldt provided a presentation that outlined project details, pictures, site location and layout, surrounding area parcels, a description of the reasons for the parking reduction, site plan, applicable codes, and analysis. He further indicated the required public notice distribution, stated that no public comments were received by staff, and that the applicant has contacted all adjacent owners about the project with no objections received. Mr. Feldt concluded his presentation by recommending the parking reduction for 8939 S. Sprinkle Road be approved with the following condition: Prior to issuance of building permit for developing 8939 S. Sprinkle Road, the attached City Parking Agreement shall be recorded.

The applicant's engineer, Pat Flanagan with Monument Engineering, located at 1209 E. Milham Avenue, Portage, MI, approached the podium and had no further comments.

Commissioner Copp asked about the forecasted number of employees, customers, and work vehicles.
Mr. Flanagan indicated that the parking lot would get minimal use, and without official knowledge of type of business, he suspects that work vehicles would be inside overnight.

Secretary Freiman inquired about the setbacks on the site plan.
Mr. Flanagan explained that the rear setback to the east is required due to the nearby residential property. The north setback (side setback) is zero.

Chair Corradini opened the public hearing.

No public comments received.

Motion by Chair Corradini, seconded by Vice Chair Baldwin to close the hearing. Upon a voice vote, motion carried 8-0.

Chair Corradini asked the Commission for any questions.

Commissioner Adams asked if a loading zone was required.
Mr. Feldt stated yes.

Commissioner Longjohn inquired about whether the parking agreement was attached to the property, the use, or the owner. And he asked who is responsible for alerting the City upon the change, the tenant or the owner.
Mr. Feldt replied that the parking agreement is associated with the use, and with the change of use, the tenant and the owner would jointly agree upon and communicate with the City.

Attorney Kaufman informed the Commission that if the parking agreement is recorded now, and there is a change of use where the parking reduction is no longer needed, the City can always record a release of the parking agreement.

Motion by Commissioner Copp, supported by Commissioner Longjohn, to approve the parking reduction request for a proposed commercial development at 8939 S. Sprinkle Road with the following condition: prior to issuance of building permit for developing 8939 S. Sprinkle Road, the attached City Parking Agreement shall be recorded. Upon voice vote, motion carried 8-0.

SITE/FINAL PLANS
None.

OLD BUSINESS
None.

NEW BUSINESS
1. Commissioner Longjohn resignation

Motion by Chair Corradini, supported by Vice Chair Baldwin, to accept Commissioner Longjohn's resignation. Upon voice vote, motion carried 8-0.

STATEMENT OF CITIZENS
None.

STATEMENT OF COMMISSIONERS/ STAFF
The Commission gave Commissioner Longjohn a round of applause for his service to the city.

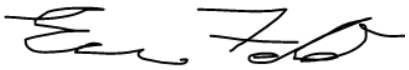
Mr. Feldt stated that the December 5th Planning Commission meeting will likely be cancelled but will send official confirmation at a later date. He also updated the Commission on City Council results of the November 19th meeting where they approved the McConley Cove final preliminary condominium plan allowing the project to move forward which increased that projects dwelling unit count from 40 to 54. Lastly, he asked the Commission for volunteers for the future zoning code overhaul technical advisory committee. Chair Corradini and Vice Chair Baldwin volunteered, and the Commission volunteering Commissioner Fries.

DRAFT

ADJOURNMENT

There being no further business to come before the Commission, Chair Corradini adjourned the meeting at 7:28 p.m.

Respectfully submitted,



Eric Feldt
Senior City Planner

DRAFT

CITY OF PORTAGE PLANNING COMMISSION
WORKSHOP

Wednesday, January 8, 2025
6:00 PM Portage
Portage City Hall Council Chamber

The City of Portage Planning Commission workshop of Wednesday, January 8, 2025, was called to order by Chair Corradini at 6:00 p.m.

IN ATTENDANCE

- Peter Dame, Chief Development Officer
- Biqi Zhao, Deputy Director of Planning and Zoning
- Eric Feldt, Senior City Planner
- Alex Johnson, City Planner

ROLL CALL

Mr. Feldt took attendance: Chairman Corradini (yes); Vice Chair Baldwin (yes); Secretary Freiman (yes), Adams (no); Copp (yes); Joshi (yes); Fries (yes); and Youngs (no).
6-Present; 2-Absent.

WORKSHOP ITEM

Zoning and Development Regulations Updates – 'Portage Unified Development Ordinance'

Mr. Dame introduced the Portage Unified Development Ordinance project, provided a brief background, and introduced two representatives from Kendig Keast Collaborative (KKC) planning consultants who will assist in the project and provide the overall presentation for the workshop.

Marya Morris (KKC) presented the project's topics, committees, timeline and priorities of steps, overview of the process, plans for public engagement, and what information will be carried over to the new Unified Development Ordinance. She also explained how the project and planning goals relate to the new Portage Master Plan – Portage Forward Together 2045.

Ms. Morris took questions of the Commission.
Some Commissioners stated concerns about overall public education about the permitting review process. Ms. Morris informed the Commission that the public would be engaged through a variety of forms during the project. Some Commissioners wanted to see progressive housing options for both scaling up and down for various lifestyle and age needs. Steve Sizemore (KKC) stated support for public awareness and involvement of the project. Ms. Morris asked the Commission to note any problems/inquiries of the existing zoning code or any development for discussion throughout the project's process.

Some clarification on the technical committee was given regarding meeting timing and scheduling, specific roles, and who will be positioned on the committee.

Commissioner Fries asked for clarification on the 'character' and 'quality' aspects of possible future development direction, inquired about parking requirements, and stated wanted to a variety of allowances to avoid 'cookie cutter' areas of the city.

DRAFT

Ms. Morris emphasized the importance of quality in neighborhoods, not specifically building materials. She stated that the aim is to create affordability by decreasing building costs while still improving appearance and character. Parking could be a concern, but the trend is going towards reducing parking, especially around public transit areas.

Mr. Feldt informed the Commission that staff has given KKC past Planning Commission workshop surveys and documents to assist in the project, especially around housing changes.

STATEMENT OF CITIZENS

None.

STATEMENT OF COMMISSIONERS/ STAFF

Mr. Feldt gave an update on the City Council meeting results, communicated the results of a new Planning Commission member, and stated that the January 16th meeting will be cancelled.

ADJOURNMENT

There being no further business to come before the Commission, Chair Corridini adjourned the workshop at 7:09 p.m.

Respectfully submitted,

Eric Feldt
Senior City Planner

TO: Planning Commission **DATE:** February 6, 2025

FROM: Peter Dame, Chief Development Officer

SUBJECT: Creekside Final PD Plan, 8150 Creekside Dr.

I. INTRODUCTION:

The applicant (Mike West, representative of Green Development Ventures, LLC) has filed a Final PD Site Plan for a 46-unit residential housing project at 8150 Creekside Drive. This Plan follows a previously-approved Tentative Plan Amendment (concept level drawings) for the same project. The approved Tentative Plan Amendment drawing is attached as reference.

In the subject Final PD Site Plan, no significant changes are proposed. The project consists of 46 new homes (38 detached single-family homes and 8 attached (townhomes) homes), new private drives (Elton Lane and Crestbrook Court), new utilities, open space, landscaping, and pedestrian connections. On the 9.11-acre site, the project will have a density of 4.17 units per acre. All homes will be rentals. All common areas and infrastructure such as lawn space, landscaping, sidewalks and trails, storm water, new internal private drives, etc. will be maintained by the owner-developer (associated with the applicant). All homes will be 2-stories, sized 1,450 square feet – 2,085 square feet, and containing 3-5 bedrooms with 2-3 bathrooms and attached 2-car garages. An emergency-only access driveway and sidewalk will be constructed to connect to W. Centre Avenue (this area is within the subject property limits). Some guest parking will also be provided. Sidewalks will be provided connecting to all homes and linking to a new trail leading to the common open space of the development and to W. Centre Avenue. A new private stormwater basin will be constructed in the northeast corner which will run under Creekside Drive and connect to an existing stormwater basin serving the overall Creekside properties. This basin was designed and constructed to serve the properties abutting Creekside Drive and is maintained by the office condominium association. The subject development is anticipated to be built in one phase. All of the aforementioned development items are shown and described in the applicant's narrative, site plan drawing, and concept images (see attachments).

The applicant is seeking certain development incentives such as 'Brownfield/ Tax Increment Financing (TIF)' to provide rents for income ranges of 80%-120% Area Median Income levels for at least 20% of the units. This element is not under Planning Commission review but will be voted on by City Council at a future meeting.

If the subject Final PD Plan is approved, the applicant is expected to purchase the property from the current property owner (Portage Land 2, LLC). The applicant obtained the current property owner's consent on all the required approvals and permits (see the attached consent letter) for the development of subject property.

II. BACKGROUND INFORMATION:

The applicant received Tentative Plan Amendment approval to amend the previously approved Planned Development Tentative Plan from a senior housing development to current proposed 46-unit housing development. This Amendment was supported by the Planning Commission on June 20, 2024 and approved by the City Council on August 13, 2024.

Applicable Zoning Regulations

The proposed Final PD Site Plan has no significant changes to the previously approved PD Tentative Amendment. The project has been reviewed in accordance with Chapter 42. Division 4. Subdivision 11 – PD, Planned Development District and Division 5. Subdivision 2 Site Plan Review. This is addressed in the following section.

Proposed Planned Development Final (Site) Plan

The applicant has submitted a Final PD Site Plan application seeking final site plan approval for the project per Sec 42-375 *Planned Development* and Sec 42-482 *Site Plan Review*. The attached plans and narrative address these code sections.

Sec 42-482 *Site Plan Review*

The applicant has submitted a detailed site plan, showing parking areas, access points, building footprint, utility locations, and other site improvements.

Sec 42-375 *Planned Development*

The Planned Development review process involves the following two steps per Sec. 42-375

Step 1) Tentative Plan review (Items A-G, Sec 42-375) identifies part(s) or whole project features; analyzes impact to neighborhood, streets, utilities, and the natural environment; and determines consistency with adopted local plans. *This step was recommended for approval by the Planning Commission on June 20, 2024, and gained approval by Council on August 13, 2024.*

Step 2) Final Plan review (Items H-M, Sec 42-375), identifies and analyzes detailed drawings of project improvements (streets, utilities, lot dimensions, etc.). *The Final PD Site Plan application is at this step.*

The Planning Commission shall review the project for consistency with Sec 42-375 Final Plan H-M and provide a recommendation to City Council. The applicant has submitted a project narrative addressing PD criteria under Sec 42-375 and generally describing the development; site drawings showing general building footprints, proposed topography, setback distances, parking and landscaping, and common areas; and concept renderings of the site and building elevations.

Per Sec 42-373 and -374, PD allows the developer to incorporate a variety of housing style. The following project features are being sought under the PD district:

- The development consists of two housing types: traditional single-family detached homes, and two quadplex townhomes.
- The entire development will be within the existing single property boundary; no land divisions or subdivisions are proposed.

- The applicant is proposing building setbacks unique for the specific project, as provided in table below and explained further in the applicant's narrative.

Proposed Yard Setbacks

Unit Type	Front (To Crestbrook Ct)	Front (Elton Ln & Creekside Dr)	Side (between buildings)	Outer perimeter	From Creekside Dr
Single Family detached	25'	20'	10'	30'	20'
Quadplex	N/A	20'	30'	30'	20'

III. ANALYSIS:

Planned Development - Sec 42-374 *Site Development Requirements* and Sec 42-375 *(Items H-M) Plan review and approval (PD, planned development); Final Plan*

Staff analysis has been prepared based on consistency with the previously approved Tentative Plan Amendment and Sec 42-375 Items H-M Final (Site) Plan. Overall, staff find the proposed plans to be consistent with the previously-approved Tentative Plan Amendment.

Evaluations from the Development Review Team (DRT)

This project was reviewed by the Development Review Team (DRT) who ensures proposed development is consistent with the City's infrastructure, engineering, and other requirements including streets, sewers, water mains, storm water, parking, landscaping, and others. The DRT is comprised of representatives from the Department of Transportation and Utilities, Fire Department, Department of Parks and Recreation, Office of the City Assessor, and Department of Community Development. DRT's review recommend a condition that the applicant shall have the required Stormwater Agreement recorded for the Final PD Plan.

Public Noticing Requirement

This request does require Planning Commission action but does not require a public hearing nor distribution of public notice.

IV. RECOMMENDATION:

Staff recommend the Planning Commission to City Council the approval of the Final PD Site Plan for Creekside Housing a proposed 46-units residential development at 8150 Creekside Drive with the following condition:

1. The applicant shall have the required Stormwater Agreement recorded.

Attachments:

1. Final PD Plan Application
2. Vicinity Map
3. Project Summary Narrative
4. Consent Letter
5. Approved Tentative Plan
6. Proposed Final PD Site Plan
7. Sample Portfolio of Homes (renderings-elevations-floor plans)

DEVELOPMENT REVIEW APPLICATION

Department of Community Development
7900 South Westnedge Avenue – Portage, Michigan 49002 – (269) 329-4477

Applicant must complete all items in sections 1-9 (if applicable).

Please note: Separate applications must be submitted for Plumbing, Mechanical and Electrical Work Permits

No Work is to Start Prior to the Issuance of Building Permit

1) PROJECT INFORMATION

Project Description Creekside Mixed Residential Development	Address 8150 Creekside Drive, Unit 5 (9.1 acres)

2) IDENTIFICATION (OWNER)

Name Portage Land 2, LLC		Address 7927 Nemco Way, Suite 200 Brighton	
City 7927 Nemco Way, Suite 200 Brighton	State Michigan	Zip 48116	Phone (248) 225-9188

3) ARCHITECT OR ENGINEER

Name Monument Engineering	Address 1209 East Milham Avenue	City Portage
State Michigan	Zip 49002	Phone 269-344-6165
License Number	Expiration Date	Email pflanagan@monumentengineering.com

4) BUILDING CONTRACTOR

Company name	Address	City
State	Zip	Phone
Email	Federal Employer ID	
Builder License Number	Expiration Date	
Workers Comp Insurance Carrier	MESC Employer Number	

5) TYPE OF DEVELOPMENT PROJECT

☐ Site Plan ☐ Building Plan ■ Final Plan in Planned Development

☐ Subdivision ☐ Condominium ☐ Land Division Requiring Public Improvements

☐ Landscape Plans ■ Public Water Main ■ Public Sanitary Sewer Main

☐ Other:_____

(Note: Please provide a Portable Document Format (PDF) of the plans for the project at time of document submittal. The submitted format shall be CD/DVD or USB. If a PDF is not submitted, an additional $25 fee plus $1 for each plan sheet after 20 sheets will apply.)

6) TYPE OF IMPROVEMENT

☐ New Building ☐ Alteration ☐ Addition ☐ Repair ☐ Demolition ☐ Foundation Only

☐ Relocation ☐ Special Inspection ☐ Solar ☐ Other:_____

7) DESCRIPTION OF WORK

A) PD Tentative Plan for Creekside Mixed Residential Development (46 units total)
38 Single Family Detached Homes, Two 4-Unit Townhome Buildings

B) Valuation of Project: $ _____

C) Any known soil and/or groundwater contamination? ☐ Yes ■ No

8) CHARACTERISTICS OF THE BUILDING

A) Water Meter Size

☐ 5/8" ☐ ¾" ☐ 1" ☐ 1 ½"

☐ Other_____ ☐ Irrigation Size_____ ☐ Fire Sprinkler Size_____

B) Electric Service Size

☐ 200 AMP ☐ 400 AMP ☐ 600 AMP ☐ 800 AMP ☐ 1000 AMP ☐ Other_____

C) Type of Mechanical

Air Conditioning? ☐ Yes ☐ No Fire Suppression? ☐ Yes ☐ No Hood System? ☐ Yes ☐ No

9) CONSTRUCTION PLANS SUBMITTED

Required submittals for plan review:

- Plans shall be signed and sealed when required in accordance with State of Michigan Act No.299 of Public Acts of 1980.
- All plans shall be drawn on uniform sheets no greater than 30"X42".
- All plans shall be drawn to an architectural scale.
- All plans shall be clear, legible and accurate.
- Plans shall be stapled along the left margin.

Type of Plan Submitted:

☐ Building ☐ Electrical ☐ Plumbing ☐ Mechanical ☐ Energy

Building Code: Site plan, foundation plan, soil bearing capacity, floor plans, building elevations, building sections, framing plan, details, roof plan, roof finish schedule, roof live and dead loads.

Electric Code: Lighting layout, circuiting, switching, conductor and raceway sizes, wattage schedule, service location and riser diagram, load calculations, and appropriate plans showing standard symbols of all electrical equipment.

Plumbing Code: Site plan, floor plans, DWV riser diagrams and water distribution system and roof plan, Show direction of flow, pipe sizes, grade of horizontal piping, elevations, drainage fixture unit loading of both stacks and drains in the DWV system, supply fixture unit load for the water system, branch supplies serving more than one plumbing fixture, appliance or hose outlet, meter locations.

Mechanical Code: Plans indicating heating equipment, air conditioning equipment, ductwork material and layout, fire dampers, ventilation of rooms and areas, location of chimneys and vents, piping layouts, kitchen equipment layout, and combustion air. (Plans for fire suppression systems may be submitted after permit issuance, but are required prior to installation.)

Energy Code: Floor plans, building sections, details, average annual degree days, exterior envelope components materials, "U" values of elements, "R" values of insulating materials, size and type of apparatus and equipment, energy calculations.

Note: Additional plan review fee(s) required of all non-concurrent plan submittals

APPLICANT INFORMATION

Applicant is responsible for the payment of all fees and charges applicable to this application and must provide the following information:

Name Green Development Ventures, LLC	Phone (269) 391-0542 John Lovely
Address 2186 East Centre Avenue	City Portage
State Michigan	Zip 49002

I hereby certify that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent, and I agree to conform to all applicable laws of the State of Michigan and ordinances of the City of Portage. All information submitted on the application is accurate to the best of my knowledge.

Signature of Applicant: John Lovely ***Date:*** 9/17/24

FOR DEPARTMENTAL USE ONLY

□ Vacant
□ A-1: Assembly (Theaters)
□ A-2: Assembly (Restaurants)
□ A-3: Assembly (Library, ETC.)
□ A-4: Assembly (Indoor Sports)
□ A-5: Assembly (Outdoor Sports)
□ B: Business
□ E: Educational
□ F-1: Factory (Moderate hazard)
□ F-2: Factory (Low Hazard)
□ H-1: High Hazard (Detonation)
□ H-2: High Hazard (Deflagration)
□ H-3: High Hazard (Physical)
□ H-4: High Hazard (Health)
□ H-5: High Hazard (HPM)
□ I-1: Institutional (Supervised)
□ I-2: Institutional (Hospital)
□ I-3: institutional (Prisons)
□ I-4: Institutional (Day Cares, ETC.)
□ M: Mercantile
□R-1: Residential (Hotels. Motels, ETC.)
□R-2: Residential (Multi Family, ETC.)
□ R-3: Residential (1 & 2 Fam. Townhomes)
□ R-4: Residential (Assisted living)
□ S-1: Storage (Moderate hazard)
□ S-2: Storage (Low hazard)
□ U: Utility (Garage, Shed)

CHARACTERISTICS OF BUILDING

Frame:

☐ Masonry ☐ Wood Frame ☐ Structural Steel ☐ Reinforced Concrete ☐ Other

Heating System:

☐ Gas ☐ Electricity ☐ Solar ☐ Other_____

New Sewer Connection:

☐ Yes ☐ No

New Water Connection:

☐ Yes ☐ No

Type of Mechanical:

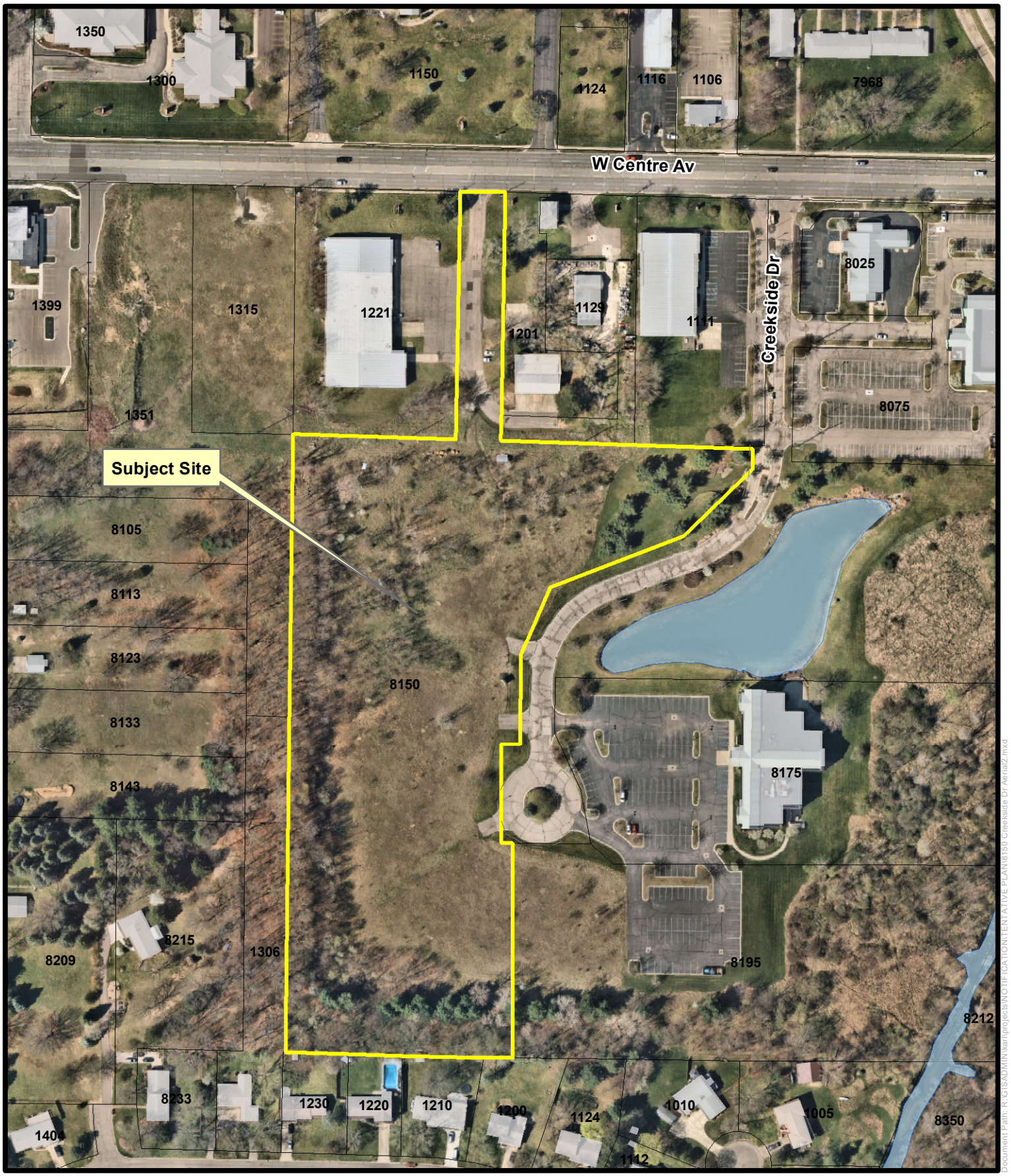
☐ (Y) Air Conditioning ☐ (Y) Fire Suppression

DIMENSIONS / DATA

Number of Stories_____ Use groups_____ Construction Type_____

Number of Occupants_____

Floor Area	Existing	Alterations	New
Basement			
1st Floor			
2nd Floor			
3rd Floor			
4th Floor			
5th Floor			
Total			



Subject Parcels

Aerial Photography Map
8150 Creekside Drive

PORTAGE
A Natural Place to Move

1 inch = 189 feet
Date: 6/11/2024

Document Path: R:\GIS\ADMIN\karl\projects\NOTIFICATIONTENTATIVEPLAN\8150 Creekside Dr Aerial2.mxd

Creekside Mixed Residential Planned Development
8150 Creekside Drive
Project Summary Narrative

October 3, 2024 (revised)

Project Objective

The subject property located at 8150 Creekside Drive (Parcel #00021-125-J) is 9.11 acres in size and currently zoned PD, Planned Development. A PD Tentative Plan approval is requested to accommodate a mixed residential housing project consisting of detached single family homes and attached townhomes (4-unit buildings) in a rental community development concept. The objective of the Creekside PD project is to provide much needed, quality housing options for residents in the City of Portage. A further description of the project is provided below.

PD Tentative Plan Review/Approval

At the June 20, 2024 meeting, the Planning Commission reviewed and unanimously recommended approval of the PD Tentative Plan for the Creekside Mixed Residential project. On August 13, 2024, the City Council reviewed and approved the PD Tentative Plan. Pursuant to Subdivision 11, PD Planned Development District, the PD Final Plan has been prepared and submitted for review and approval by the Planning Commission and City Council.

General Plan of Development

As depicted on the Tentative Plan, the Creekside PD proposes a total of 46 residential dwelling units on the 9.11 acre property with a resulting development density of 5.1 units/acre. More specifically, the project proposes 38 single family detached homes and two 4-unit townhome buildings accessed through a private roadway network from Creekside Drive, and developed and managed as a rental community. Individual homes and exterior grounds including the interior private drives will be professionally managed and maintained by the developer.

Homes within the Creekside PD will be 2-story dwellings ranging between 1,450-2,085 square feet with 3-5 bedrooms, 2-3 bathrooms and an attached 2-car garage (front load for single family homes and rear load for townhome buildings). Each home will also be served by a private driveway capable of parking two additional vehicles. Finally, two areas of off-street parking (16 spaces total) will also be provided along the northeastern and southern portions of the site. A sample portfolio of homes with elevations, floor plans and color renderings is attached with this application.

Minimum building setbacks and separations are proposed as follows:

Single-Family Detached Homes

Front: 25-feet (from back of curb = Crestbrook Court)
20-feet (from back of curb = Elton Lane and Creekside Drive)
Rear/Side: 30-feet (from outer perimeter of property)
Side/Separation: 10-feet (separation between homes)

Townhomes (4-Unit Buildings)

Front: 20-feet (from back of curb = Elton Lane and Creekside Drive)
Rear/Side: 30-feet (from outer perimeter of property)
Side/Separation: 30-feet (separation between townhome buildings)

Individual homes will be leased at market rate with typical 12 month rental agreements. Subject to city approval of a Brownfield/TIF, a percentage of these homes may be designated for more attainable "workforce housing" with reduced rents based on income levels between 80-120% of the Area Median Income (AMI).

The Creekside PD is proposed to be constructed in one development phase with construction activities planned to commence in the Summer of 2025.

Open Space/Natural Feature Preservation, Walkability & Landscaping

As shown on the Tentative Plan, the existing berm and mature trees located along the southern portion of the site (approximately 60 foot wide) will be preserved to retain privacy and separation buffer between the project and the existing single family neighborhood along Woodview Drive. Existing mature trees located along the western property line will also be preserved to the greatest extent possible during construction activities. Since the property abuts Sanitor Manufacturing and Ryder Auto Repair Services to the north, a 30-foot open space area is proposed to provide a separation buffer between these uses and the Creekside PD project.

To provide a walkable neighborhood design, concrete sidewalks will be provided along both sides of the internal private drive network (Elton Lane and Crestbrook Court), along the Creekside Drive frontage and through the opens space area located along the east portion of the project. Benches will be provided along the walkway within the open space area. Finally, concrete sidewalk will be extended from the north end of Crestbrook Court to West Centre Avenue, along the east side of the shared driveway between Sanitor Manufacturing and Ryder Auto Repair Services. This sidewalk will connect to the West Centre Avenue sidewalk project planned by the city in 2025/2026 and will provide residents of the Creekside PD a direct connection to this larger walkway system.

Supplemental tree plantings will also be installed along the along Elton Lane, Crestbrook Court, between the single family homes and townhomes, along the east side of the storm water basin (northeast corner of site) and within open spaces areas.

Access/Private Drives/Utilities

Access to the Creekside PD will be provided through a connection from Creekside Drive (Elton Lane) and an internal private drive network consisting of Elton Lane and Crestbrook Court. The two 4-unit townhome buildings in the northeast portion of the site will be accessed through a separate shared driveway from Creekside Drive. To provide a secondary emergency access to/from West Centre Avenue, Crestbrook Court will be extended to the north and connected to the existing private

driveway which currently serves Sanitor Manufacturing and Ryder Auto Repair Services. An emergency vehicle access gate will be installed between Crestbrook Court and this existing private driveway to prohibit comingling of residential and industrial traffic, while still allowing emergency vehicles a secondary access into the Creekside PD and larger Creekside Commons development.

The project will be served by municipal water, sanitary sewer and underground franchise utilities. Storm water from the project will be collected and conveyed to a new stormwater basin in the northeast corner of the development site with overflow to the existing storm water basin located along the east side of Creekside Drive (within the larger Creekside Commons development). Storm water from the rear yard and back half of Units 14 through 38 will be collected and conveyed to rear yard infiltration areas in the northwest and southeast corners of the development site.

Consistency with Comprehensive Plan & Appropriateness of Proposed PD Project

The city is recently updated the 2014 Comprehensive Plan with completion of the Forward Together 2045 Master Plan. The Future Land Use Map component of this Master Plan Update designates the subject property as appropriate for "Mixed Residential" land use. The "Mixed Residential" classification is described as consisting of *"…multiple housing types including townhomes, duplexes and multifamily buildings…"* that *"…encourage greater variety within Portage housing stock and allow for greater flexibility to build denser residential development in proximity to the City's major roadways, including South Westnedge Avenue, Centre Avenue and Portage Road"*.

The proposed Creekside Mixed Residential Development with attached townhomes and compact single family detached homes in a rental community development concept is consistent with this Future Land Use designation. The 46 new residential housing units will also help address the need for 7,750 new residential dwelling units across Kalamazoo County by 2030, as detailed in the W.E. Upjohn Institute Kalamazoo County Housing Plan published in July 2022.

Conclusion

The Creekside PD has been designed in a unique and creative residential housing concept consisting of a mixture of attached townhomes and detached single family homes in a professionally managed rental community. With an overall development density of 5.1 units/per acre and a mixture of housing types in a pedestrian friendly, walkable design, the Creekside PD is in conformance with the PD ordinance. The project is also consistent and compatible with the Master Plan and the surrounding land use/zoning pattern and will bring much needed, quality housing options for existing and future residents in the City of Portage.

May 22, 2024

Peter Dame, Chief Development Officer
Community Development Department
City of Portage
7900 South Westnedge Avenue
Portage, Michigan 49024

Re: 8150 Creekside Drive (Parcel #10-00021-125-J, 9.11 Acres)

Dear Mr. Dame,

Portage Land 2 LLC land contract vendee of 8150 Creekside Drive (Parcel #10-00021-125-J, 9.11 acres) in the City of Portage, Kalamazoo County, Michigan. I confirm that Green Development Ventures, LLC/Allen Edwin Homes has authorized consent to submit for municipal approvals and permits (rezoning, site plan, utility permits, etc.) that may be required for the development of the subject parcel.

Feel free to contact me with questions or concerns.

Sincerely,

Kevin Denoyer

Kevin Denoyer
President of Common Sail Development

Portage Land 2, LLC
7927 Nemco Way, Suite 100
Brighton, MI 48116
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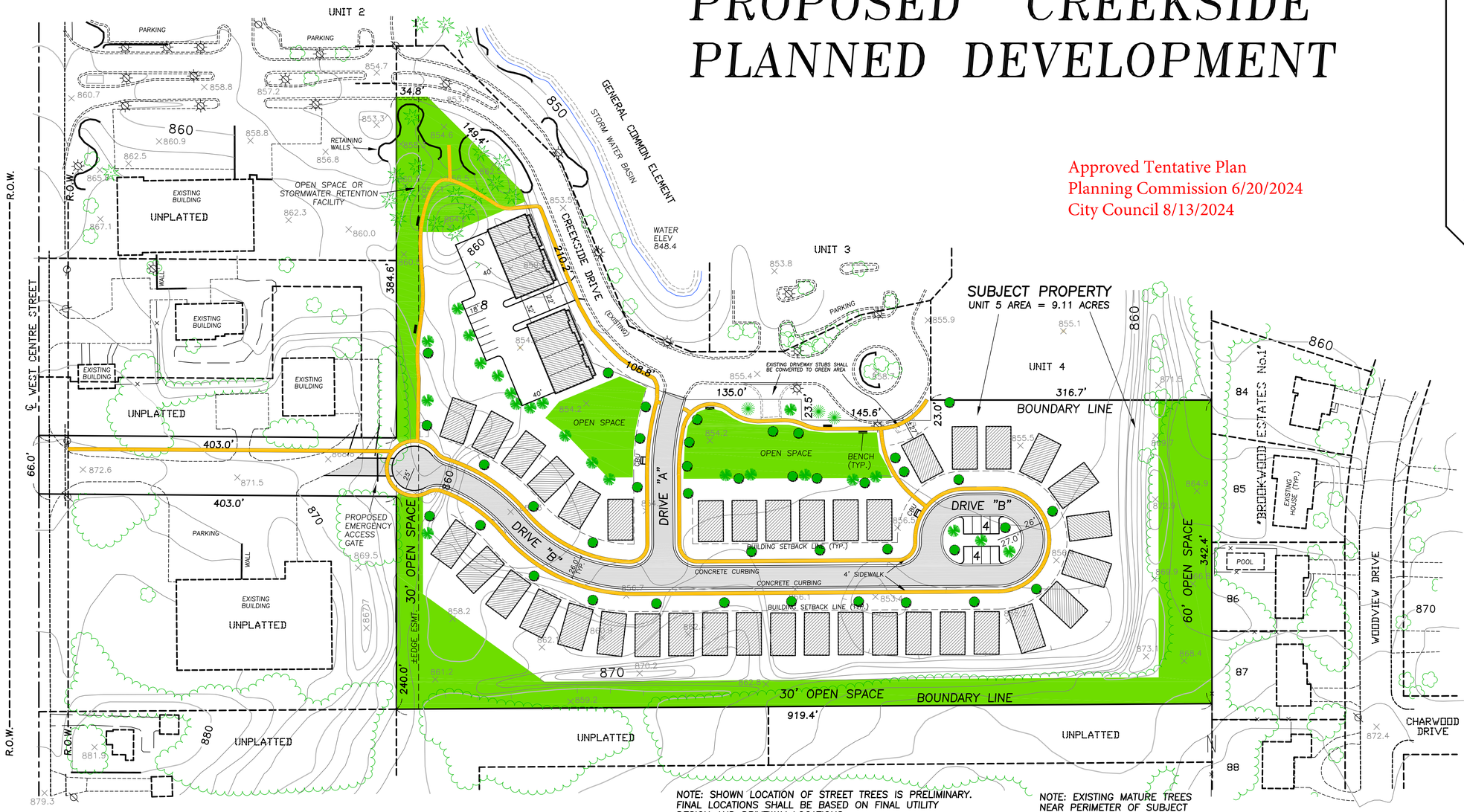
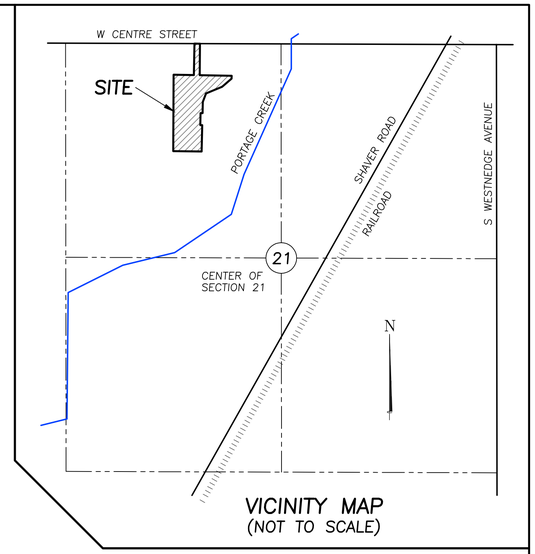
Email: kdenoyer@csig.com

TENTATIVE PLAN for PROPOSED "CREEKSIDE" PLANNED DEVELOPMENT

Approved Tentative Plan
Planning Commission 6/20/2024
City Council 8/13/2024





VICINITY MAP
(NOT TO SCALE)

AERIAL PHOTOGRAPHY OF VICINITY
(NO SCALE)

NOTE: SHOWN LAYOUT IS SUBJECT TO FINAL ADJUSTMENT.

NOTE: SHOWN LOCATION OF STREET TREES IS PRELIMINARY. FINAL LOCATIONS SHALL BE BASED ON FINAL UTILITY DESIGN AND DRIVEWAY LOCATIONS.

NOTE: EXISTING MATURE TREES NEAR PERIMETER OF SUBJECT PROPERTY SHALL BE PRESERVED AS MUCH AS POSSIBLE.

FIRE DEPT. NOTES

COMBUSTIBLE BUILDING CONSTRUCTION SHALL NOT COMMENCE UNTIL FIRE HYDRANTS ARE OPERABLE AND AN ALL WEATHER ROAD SURFACE IS IN PLACE.

THE FIRE FLOW FOR EACH BUILDING IS 1000 GPM FROM ONE HYDRANT WITHIN 400' OF ALL PORTIONS OF THE BUILDING. THIS FLOW IS BASED ON THE FLOOR AREA OF ALL FLOORS INCLUDING BASEMENT FOR A BUILDING OF TYPE V-B CONSTRUCTION. SHOULD A BUILDING EXCEED 3600 SQUARE FEET, THE MINIMUM FIRE FLOW WILL BE BASED ON THE SIZE AND TYPE OF CONSTRUCTION FOR THAT BUILDING.

FIRE APPARATUS ACCESS ROADS 26.1 TO 32 FEET WIDE SHALL BE POSTED ON ONE SIDE AS A FIRE LANE.

ALL STREETS WILL BE WIDE ENOUGH TO ALLOW PARKING ON ONE SIDE OF THE STREET PER THE FIRE CODE.

GENERAL NOTES:

1) CURRENT CITY ZONING = PD.
2) PARCEL AREA = 9.11 ACRES.
3) SITE IS PARTIALLY COVERED WITH TREES AND BRUSH.
4) SITE LANDSCAPING SHALL BE PROVIDED. SHOWN LANDSCAPING IS PRELIMINARY.
5) BUILDING PLANS (BY OTHERS) ARE PENDING.
6) ON-SITE FIRE HYDRANTS SHALL BE PROVIDED AS REQUIRED.
7) ALL ON-SITE WATER MAIN & SANITARY SEWER SHALL BE PUBLIC AND SHALL BE WITHIN AN EASEMENT TO THE CITY OF PORTAGE.
8) BUILDINGS SHALL CONNECT TO CITY WATER SYSTEM AND CITY SANITARY SEWER SYSTEM.
9) SHOWN LAYOUT IS SUBJECT TO FINAL ADJUSTMENT.
10) STORM SEWER SYSTEM AND STORM WATER DISPOSAL SYSTEM SHALL BE PRIVATE. DESIGN IS PENDING.
11) ALL NEW DRIVES SHALL BE PRIVATE.

ADDRESS = 8150 CREEKSIDE DRIVE
PARCEL ID = 00021-125-J
CURRENT ZONING = PD
SUBJECT PROPERTY = 9.11 ACRES
(AREA INCLUDES CENTRE STREET RIGHT-OF-WAY AREA)

BUILDING SEPARATION & SETBACKS

- FRONT SETBACK (ROAD "B"): 25' SETBACK FROM BACK OF CURB
- FRONT SETBACK (ROAD "A" AND CREEKSIDE DRIVE): 20' SETBACK FROM BACK OF CURB
- SINGLE FAMILY: MINIMUM 10' BETWEEN BUILDINGS
- MULTI-FAMILY: MINIMUM 30' BETWEEN BUILDINGS
- PERIMETER SETBACK (EXCLUDING CREEKSIDE DRIVE): 30' FROM PERIMETER PROPERTY LINES

PARCEL DESCRIPTION:

UNIT 5 OF "CREEKSIDE COMMONS" SITE CONDOMINIUM.

SITE DATA:

- PARCEL AREA = 9.11 ACRES
- # DWELLINGS = 46
- DENSITY = 5.05 DWELLINGS / ACRE

72 HOURS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

APPLICANT:

GREEN DEVELOPMENT VENTURES, LLC
2186 EAST CENTRE STREET
PORTAGE, MI 49002
(269) 321-2610

REVISED: 5/14/2024
REVISED: 4/11/2024
REVISED: 3/19/2024
REVISED: 3/18/2024

TENTATIVE PLAN
PROPOSED "CREEKSIDE"
PART OF THE NORTHWEST 1/4 OF SEC. 21, T. 3 S., R. 11 W., CITY OF PORTAGE

DATE: 3/7/2024
SHEET: 1
JOB No.: 24-042

MONUMENT ENGINEERING GROUP ASSOC., INC.
Formerly Ingersoll, Watson & McMachen, Inc.
1209 East Milham Road, Suite B · Portage, Michigan 49002 · Phone 269 344-6165

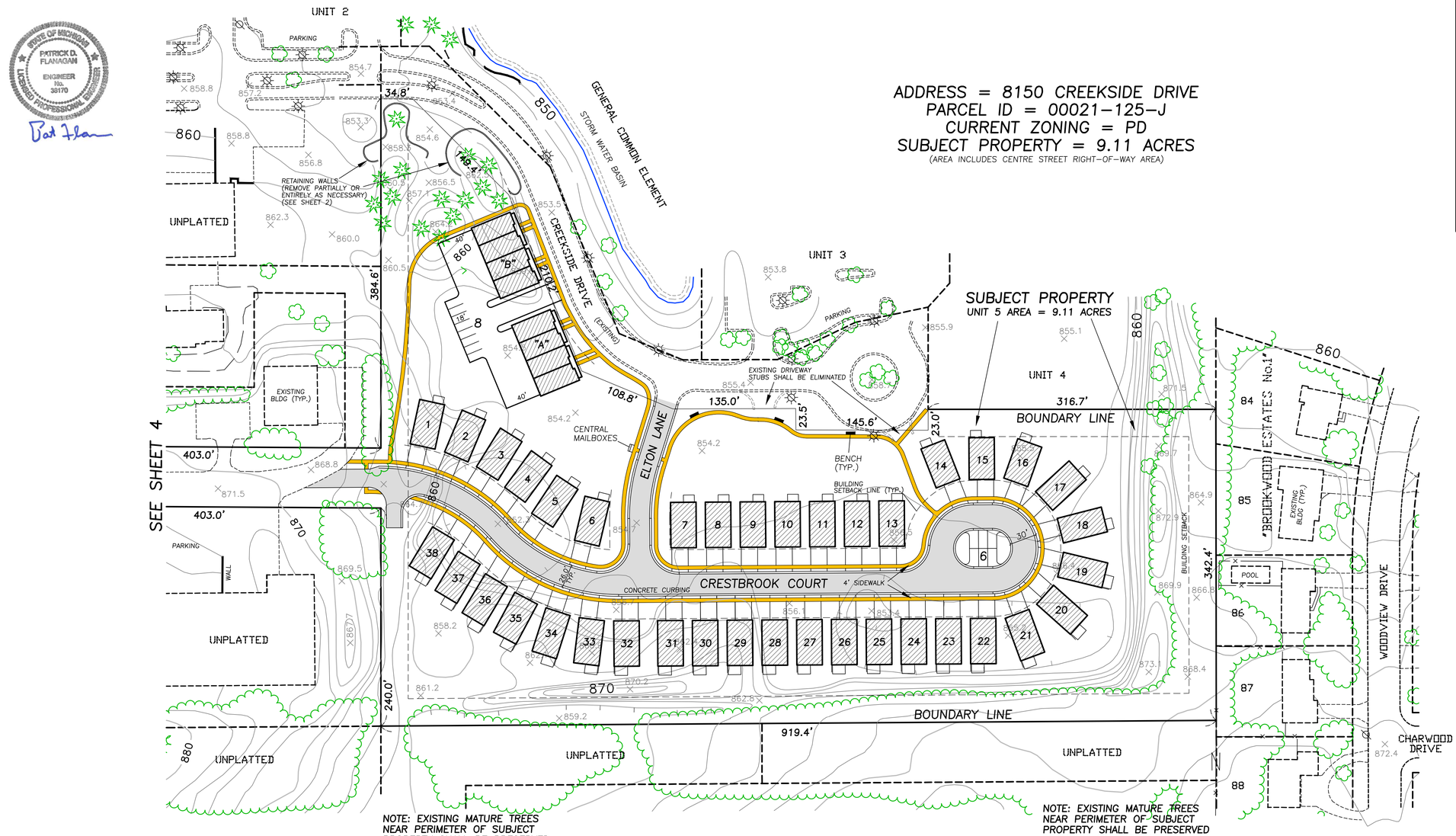
FINAL PLAN for "CREEKSIDE" in PORTAGE, MICHIGAN

N

60' 0' 60' 120' 180'

STATE OF MICHIGAN
PATRICK D. FLANAGAN
ENGINEER
No. 38170
LICENSED PROFESSIONAL ENGINEER

ADDRESS = 8150 CREEKSIDE DRIVE
PARCEL ID = 00021-125-J
CURRENT ZONING = PD
SUBJECT PROPERTY = 9.11 ACRES
(AREA INCLUDES CENTRE STREET RIGHT-OF-WAY AREA)



NOTE: EXISTING MATURE TREES NEAR PERIMETER OF SUBJECT PROPERTY SHALL BE PRESERVED AS MUCH AS POSSIBLE.

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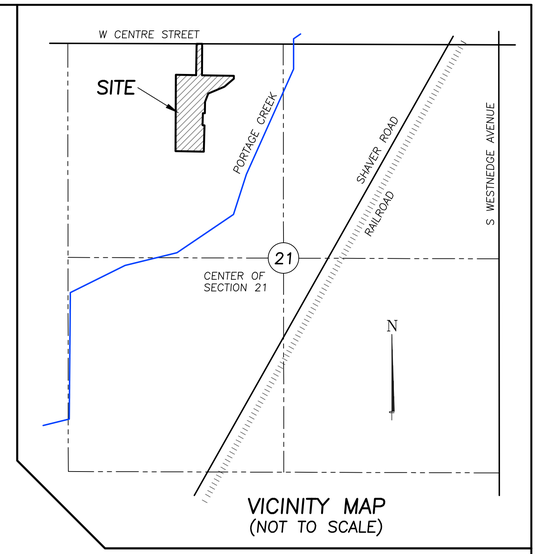

VICINITY MAP
(NOT TO SCALE)

AERIAL PHOTOGRAPH OF VICINITY
(NO SCALE)

GENERAL NOTES:

1) CURRENT CITY ZONING = PD.
2) PARCEL AREA = 9.11 ACRES.
3) SITE IS PARTIALLY COVERED WITH TREES AND BRUSH.
4) SITE LANDSCAPING IS PROVIDED ON SHEET 2.
5) BUILDING PLANS (BY OTHERS) ARE PENDING.
6) ON-SITE FIRE HYDRANTS SHALL BE PROVIDED AS REQUIRED.
7) ALL ON-SITE WATER MAIN & SANITARY SEWER SHALL BE PUBLIC AND SHALL BE WITHIN AN EASEMENT TO THE CITY OF PORTAGE.
8) BUILDINGS SHALL CONNECT TO CITY WATER SYSTEM AND CITY SANITARY SEWER SYSTEM.
9) SHOWN LAYOUT IS SUBJECT TO FINAL ADJUSTENT.
10) STORM SEWER SYSTEM AND STORM WATER DISPOSAL SYSTEM SHALL BE PRIVATE.
11) ALL NEW DRIVES SHALL BE PRIVATE.
12) SHOWN TOPO MAP TAKEN FROM CITY OF PORTAGE RECORDS.

FIRE DEPT. NOTES

COMBUSTIBLE BUILDING CONSTRUCTION SHALL NOT COMMENCE UNTIL FIRE HYDRANTS ARE OPERABLE AND AN ALL WEATHER ROAD SURFACE IS IN PLACE.

THE FIRE FLOW FOR EACH BUILDING IS 1000 GPM FROM ONE HYDRANT WITHIN 400' OF ALL PORTIONS OF THE BUILDING. THIS FLOW IS BASED ON THE FLOOR AREA OF ALL FLOORS INCLUDING BASEMENT FOR A BUILDING OF TYPE V-B CONSTRUCTION. SHOULD A BUILDING EXCEED 3600 SQUARE FEET, THE MINIMUM FIRE FLOW WILL BE BASED ON THE SIZE AND TYPE OF CONSTRUCTION FOR THAT BUILDING.

FIRE APPARATUS ACCESS ROADS 26.1 TO 32 FEET WIDE SHALL BE POSTED ON ONE SIDE AS A FIRE LANE.

BUILDING SEPARATION & SETBACKS

-FRONT SETBACK (CRESTBROOK COURT): 25' SETBACK FROM BACK OF CURB
-FRONT SETBACK (ELTON LANE & CREEKSIDE DRIVE): 20' SETBACK FROM BACK OF CURB
-SINGLE FAMILY: MINIMUM 10' BETWEEN BUILDINGS
-MULTI-FAMILY: MINIMUM 30' BETWEEN BUILDINGS
-PERIMETER SETBACK (EXCLUDING CREEKSIDE DRIVE): 30' FROM PERIMETER PROPERTY LINES

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UNIT 5 OF "CREEKSIDE COMMONS" SITE CONDOMINIUM.

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SHEET INDEX:

1) COVER SHEET
2) LAYOUT & LANDSCAPE PLAN
3) PLAN & PROFILE SHEET (ELTON LANE)
4) PLAN & PROFILE SHEET (CRESTBROOK COURT)
5) PLAN & PROFILE SHEET (WATER MAIN)
6) GRADING & STORM SEWER PLAN
7) CONSTRUCTION DETAILS & NOTES
8) CONSTRUCTION DETAILS & NOTES
9) MDOT EROSION CONTROL DETAILS

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INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS
Engineering Group Associates, Inc. MEGA
1209 MILHAM ROAD,
SUITE B,
PORTAGE, MI 49002
(OFFICE) 269-344-6165

REVISED: 01/16/2025
REVISED: 12/10/2024

COVER SHEET

CREEKSIDE
PART OF NW 1/4 OF SEC. 21, T.3S., R.11W.
CITY OF PORTAGE, MICHIGAN

GREEN DEVELOPMENT VENTURES, LLC
2186 EAST CENTRE STREET
PORTAGE, MICHIGAN 49002

JOB # : 24-042	DRAWN: TB CHK: PF
SCALE : 1" = 60'	SHEET: 1
DATE : 9/16/2024	

N

40' 0' 40' 80' 120'

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(AREA INCLUDES CENTRE STREET RIGHT-OF-WAY AREA)

CONSTRUCTION NOTES:
1) "NO PARKING THIS SIDE OF STREET" SIGNS SHALL BE INSTALLED ATOP THE FIRE HYDRANT SIGNS AND MIDWAY BETWEEN THE FIRE HYDRANTS ON THE HYDRANT SIDE OF THE STREETS.
2) STREET NAME SIGNS SHALL BE AT LEAST 9" FROM TOP TO BOTTOM OF ACTUAL SIGN (& PLACED ATOP STOP SIGNS).
3) ALL PAVEMENT MARKINGS AND ALL TRAFFIC SIGNAGE SHALL COMPLY WITH STANDARDS IN THE M.M.U.T.C.D.(CURRENT EDITION)
4) U-CHANNEL POSTS REQUIRED FOR ALL SIGNS.
5) SOIL EROSION & SEDIMENTATION CONTROL PERMIT SHALL BE OBTAINED AS REQUIRED BY STATE LAW.
6) PERMIT(S) SHALL BE OBTAINED FROM THE CITY OF PORTAGE AS REQUIRED.
7) E.G.L.E. CONSTRUCTION PERMITS REQUIRED (FOR BOTH PUBLIC WATER MAIN & PUBLIC SANITARY SEWER) PRIOR TO THE COMMENCEMENT OF INSTALLATION.

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8) STORM SEWER SYSTEM AND STORM WATER DISPOSAL SYSTEM SHALL BE PRIVATE.
9) ALL NEW DRIVES SHALL BE PRIVATE.
10) ON SITE SPEED LIMIT SHALL BE 25 M.P.H
11) EXISTING MATURE TREES NEAR PERIMETER OF SUBJECT PROPERTY SHALL BE PRESERVED AS MUCH AS POSSIBLE.

FIRE DEPT. NOTES
COMBUSTIBLE BUILDING CONSTRUCTION SHALL NOT COMMENCE UNTIL FIRE HYDRANTS ARE OPERABLE AND AN ALL WEATHER ROAD SURFACE IS IN PLACE.

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- PERIMETER SETBACK (EXCLUDING CREEKSIDE DRIVE): 30' FROM PERIMETER PROPERTY LINES

LANDSACPING LEGEND & NOTES
CONIFEROUS TREES - WHITE SPRUCE, BLACK HILLS SPRUCE OR OTHER CITY APPROVED CONIFER TREE PLANTED AT 6-8' TALL

DECIDUOUS TREES - AUTUMN BLAZE MAPLE, GOLDSPIRE GINKO OR OTHER CITY APPROVED DECIDIOUS TREES PLANTED AT 2.5" CALIPER 6" ABOVE ROOT BALL.

1) WHEN PLANTED, DECIDUOUS TREES SHALL BE 2.5" CALIPER WIDTH AND CONIFEROUS TREES SHALL BE 5" MIN HEIGHT TO ESNSURE CONSISTENCY WITH SEC 42-576.
2) ALL DISTURBED AREAS WILL BE SEEDED AND ESTABLISHED AS GENERAL LAWN.
3) DECIDUOUS TREES MAY BE REPLACED WITH ALTERNATE TREES THAT MEET CITY REQUIREMENTS.

BUILDING ENVELOPES 1-13 & 17-38 ARE 28' BY 50' (TYPE "A")
BUILDING ENVELOPES 14-16 ARE 28' BY 46' (TYPE "B")
BUILDING ENVELOPES 1-18 HAVE 8' BY 12' DECKS
BUILDING ENVELOPES 19-38 HAVE 10' BY 14' PATIOS
DECK & PATIO INFORMATION SUBJECT TO ADJUSTMENT

UNPLATTED LAND
OWNER = B6 HOLDINGS, LLC
ADDRESS = 1111 W CENTRE AVE, PORTAGE
CITY ZONING = I-1

WALL TO REMAIN
WALL TO BE REMOVED
34.8'
149.4'
30' WIDE OPEN SPACE
WET INFILTRATION BASIN AREA
384.6'
30'
EXISTING BUILDING
SEE SHEET 4
PROPOSED SWINGING GATE WITH 'KNOX BOX' AND 'KNOX PADLOCK' PER FIRE DEPT. REQUIREMENTS. (SEE DETAIL SHEET 8)
UNPLATTED LAND
OWNER = DENALI PROPERTY MANAGEMENT, LLC
ADDRESS = 1315 W CENTRE AVE, PORTAGE
CITY ZONING = DD-1
240.0'
30' WIDE OPEN SPACE
REAR YARD INFILTRATION AREA
PROPOSED PAVED AREA
"B"
"A"
PROPOSED 4-PLEX TWO STORIES 3808 SF (TYP.)
CREEKSIDE DRIVE
R210.2'
UNIT 3
NO STRUCTURES WITHIN EASEMENTS
EXISTING DRIVEWAY STUBS SHALL BE ELIMINATED (TYP.)
108.8'
135.0'
23.5'
145.6'
OPEN SPACE
CENTRAL MAILBOX UNIT
PROPOSED BENCH (TYP.)
PROPOSED 4' WIDE CONCRETE SIDEWALK
ELTON LANE
R200'
CRESTBROOK COURT
SANITARY EASEMENT
WATER MAIN EASEMENT
UNIT 4
316.7'
23.0'
8'X12' DECK
BUILDING ENVELOPE "B" 1288 SQ.FT. (TYP.)
REAR YARD INFILTRATION AREA
CONSTRUCTION LIMITS
60' WIDE OPEN SPACE
60'
30'
342.4'
LAWN
UNDISTURBED
BUILDING SETBACK LINE
10'X14' CONCRETE PATIO WITH 8' LONG BY 6' TALL VINYL PRIVACY FENCE
BUILDING ENVELOPE "A" 1400 SQ.FT. (TYP.)
30' WIDE OPEN SPACE
BOUNDARY LINE
919.4'
EXISTING OVERHEAD WIRES
UNPLATTED LAND
OWNER = DENALI PROPERTY MANAGEMENT, LLC
ADDRESS = 1351 W CENTRE AVE, PORTAGE
CITY ZONING = R-1C
UNPLATTED LAND
OWNER = DENNIS & DENISE O'BRIEN
ADDRESS = 1306 WOODVIEW DR, PORTAGE
CITY ZONING = R-1C
"BROOKWOOD ESTATES No.1"
84
85
86
87

72 HOURS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171

NOTE: PROPOSED TREES MAY BE SHIFTED BASED ON LOCATIONS OF UTILIITY LINES. FINAL LOCATIONS ARE PENDING.

REVISED: 01/16/2025
REVISED: 12/10/2024

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS
Monument Engineering Group Associates Inc. MEGA
1209 MILHAM ROAD, SUITE B, PORTAGE, MI 49002
(OFFICE) 269-344-6165

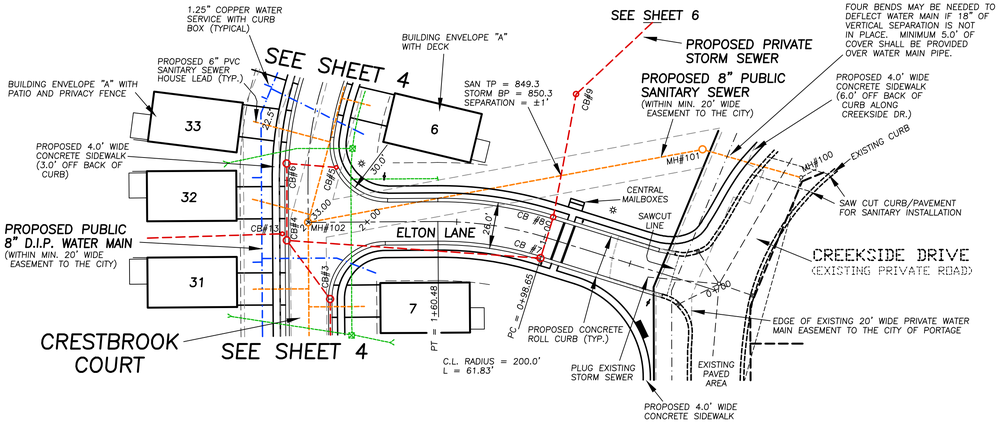
LAYOUT & LANDSCAPING PLAN

CREEKSIDE
PART OF NW 1/4 OF SEC. 21, T.3S., R.11W.
CITY OF PORTAGE, MICHIGAN

GREEN DEVELOPMENT VENTURES, LLC
2186 EAST CENTRE STREET
PORTAGE, MICHIGAN 49002

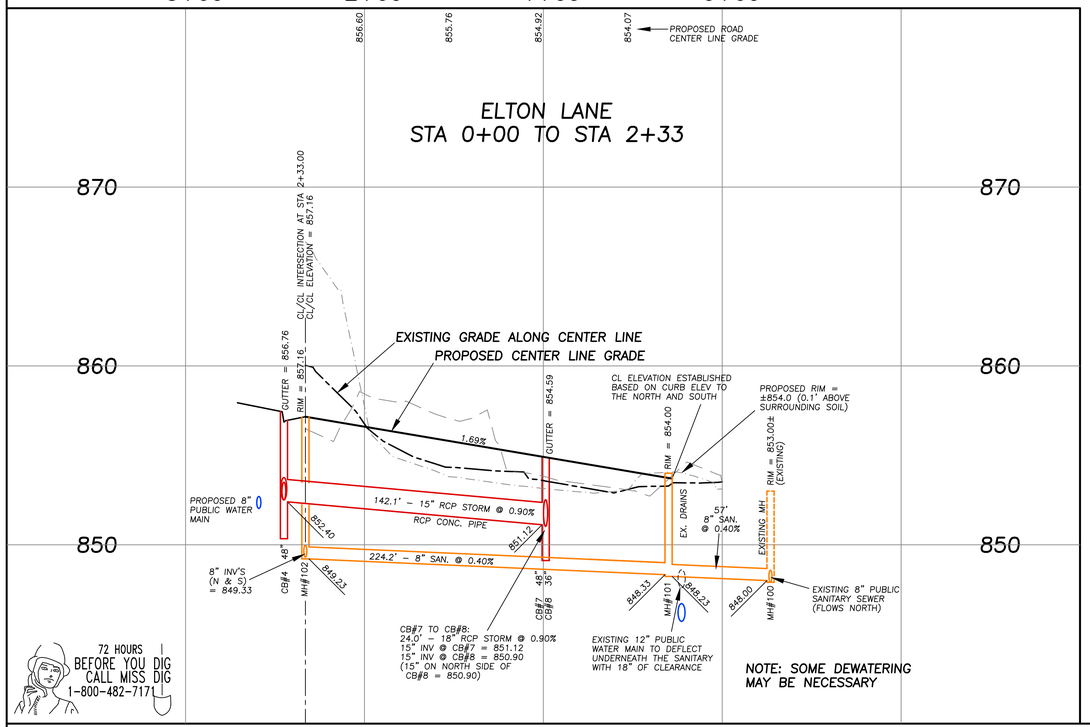
JOB # : 24-042	DRAWN: DJ CHK: PF
SCALE : 1" = 40'	SHEET: 2
DATE : 9/16/2024	

MONUMENT ENGINEERING GROUP ASSOCIATES, INC.
CIVIL ENGINEERS–LAND SURVEYORS 269/344–6165
1209 EAST MILHAM AVENUE PORTAGE, MICHIGAN 49002



WATER MAIN LOOP THROUGH THE SITE WILL NEED TO BE COMPLETED (INCL. PRESSURE, CHLORINATION, AND BACTI TESTING) BEFORE THE DEFLECTION CAN BE CONSTRUCTED. ONCE THE LOOP IS COMPLETE, TEMPORARY LINE STOPS WILL NEED TO BE USED TO ISOLATE AND CUT IN THE NEW VERTICAL DEFLECTION WITHOUT DEPRESSURIZING THE EXISTING MAIN.

SCALES:
PLAN VIEW: 1" = 40'
PROFILE: 1" = 40' HORIZ.
1" = 4' VERTICAL



NOTE: SOME DEWATERING MAY BE NECESSARY

72 HOURS
BEFORE YOU DIG
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BARRIER FREE RAMP NOTES:

1) SIDEWALK RAMPS SHALL BE AT LEAST 5.0' WIDE
2) LANDINGS SHALL BE AT LEAST 5.0' BY 5.0'.
3) IF A RAMP HAS A LONGITUDINAL SLOPE GREATER THAN 5.0%, THEN A LANDING IS REQUIRED AT THE TOP OF THE RAMP.
4) THE MAXIMUM SLOPE OF A RAMP SHALL BE 8.33% (OR 1" FALL OVER 1', OR 10" FALL OVER 10').
5) THE MAXIMUM CROSS SLOPE FOR ANY RAMP OR SIDEWALK SHALL BE 2.0%.
6) SEE MDOT DETAIL FOR ANY ADDITIONAL REQUIREMENTS.
7) ANY RAMPS AND LANDINGS THAT DO NOT COMPLY SHALL BE REMOVED AND REPLACED.

NOTE: ALL SIDEWALK RAMPS (@ CURB) TO BE CONSTRUCTED IN ACCORDANCE WITH MDOT DETAIL R-28-K WITH THE EXCEPTION THAT THE DETECTABLE WARNING PLATES SHALL BE CAST IRON WITH A BLACK ASPHALT COATING.

NOTE: MAXIMUM SLOPE WITHIN LANDINGS SHALL BE 2.0%. MAXIMUM RAMP CROSS SLOPE SHALL BE 2.0%. RUNNING SLOPE SHALL BE 5%–7% OR LESS (8.3% MAX.) RAMP WIDTH AT CURBING SHALL BE 5.0' MINIMUM.

NOTE: ALL SHOWN PROPOSED STORM SEWER FACILITIES (PIPE & BASINS) SHALL BE PRIVATE (OWNED BY PROPERTY OWNER).

NOTE: ALL WATER MAINS & THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTAGE SPECIFICATIONS AND A.W.W.A. STANDARD C600.

NOTE: WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE WITH A.W.W.A. STANDARD C651.

NOTE: WATER MAIN SHALL BE POLY WRAPPED IN ACCORDANCE WITH A.W.W.A. STANDARD C105.

NOTE: PORCHES, ROOF EAVES, AND ALL STRUCTURAL COMPONENTS OF THE PROPOSED BUILDINGS SHALL NOT ENCROACH INTO THE PUBLIC UTILITY EASEMENTS.

LEGEND

- EXISTING PUBLIC SANITARY SEWER
- PROPOSED 8" PUBLIC SANITARY SEWER OR PRIVATE 6" SEWER LEAD
- EXISTING PRIVATE STORM SEWER
- PROPOSED PRIVATE STORM SEWER
- EXISTING PUBLIC WATER MAIN
- PROPOSED 8" PUBLIC WATER MAIN OR PRIVATE 1.25" COPPER WATER SERVICE
- SUGGESTED GAS & ELECTRIC LINES
- PROPOSED 4.0' WIDE CONCRETE SIDEWALK
- PROPOSED CROSSWALK WITH PEDESTRIAN CROSSING SIGNS (IF REQUIRED) & 1.0' WIDE PAINTED CROSSWALK STRIPES (BARRIER FREE RAMPS)
- PROPOSED 2.0' WIDE CONCRETE ROLL CURB
- BUILDING SETBACK LINE
- EDGE OF EASEMENT
- PROPOSED FIRE HYDRANT ASSEMBLY (8" x 6" TEE, 6" GATE VALVE, & HYD.)
- PROPOSED SIGN
- SUGGESTED LOCATION OF PROPOSED STREET LIGHT

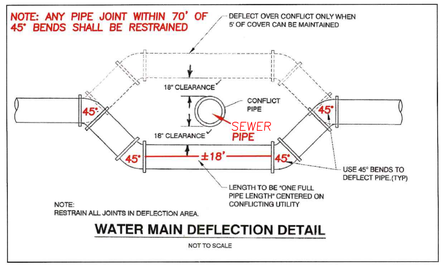
SOIL/GROUNDWATER CONTAMINATION NOTES:

IF SOIL AND/OR GROUNDWATER CONTAMINATION IS ENCOUNTERED OR SUSPECTED DURING CONSTRUCTION THE FOLLOWING STEPS SHALL BE FOLLOWED:

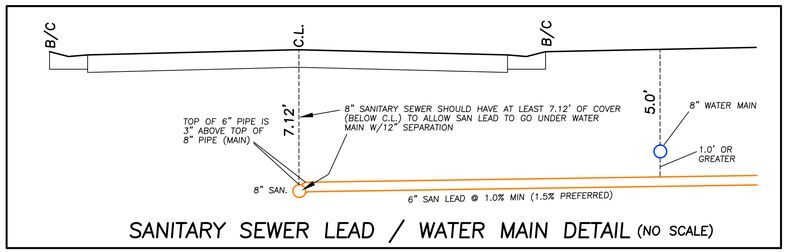
1) CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY OWNER AND/OR OWNER'S REPRESENTATIVE.
2) OWNER AND/OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE CITY.
3) OWNER SHALL ENGAGE THE SERVICES OF A QUALIFIED ENVIRONMENTAL CONSULTANT.
4) CONSULTANT SHALL CONDUCT A SITE ASSESSMENT AND REPORT TO THE ABOVE PARTIES.
5) CONSULTANT SHALL DEVELOP A PLAN TO ADDRESS ANY CONTAMINATION WHICH MAY BE FOUND DURING CONSTRUCTION.
6) THE CONSULTANT TOGETHER WITH THE DESIGN ENGINEER SHALL COMPLETE A SITE EVALUATION PROCESS FOLLOWING THE DOCUMENT ENTITLED IMPLEMENTING STORMWATER INFILTRATION PRACTICES AT VACANT PARCELS AND BROWNFIELD SITES (EPA, 2013) TO DETERMINE IF THE STORMWATER MANAGEMENT SYSTEM REQUIRES REDESIGN AND RESUBMITTAL TO THE CITY FOR REVIEW AND APPROVAL.
7) OWNER AND/OR OWNER'S REPRESENTATIVE SHALL SUBMIT TO THE CITY SUPPORTING DOCUMENTATION OF THE SITE EVALUATION PROCESS. A REVISED STORMWATER REVIEW PACKAGE MUST ALSO BE SUBMITTED IF IT BECOMES NECESSARY TO CHANGE THE DESIGN OF THE STORMWATER MANAGEMENT SYSTEM.
8) MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) REMEDIATION OF REDEVELOPMENT DIVISION (RRD) STAFF SHALL BE NOTIFIED AS APPLICABLE.

GENERAL NOTES:

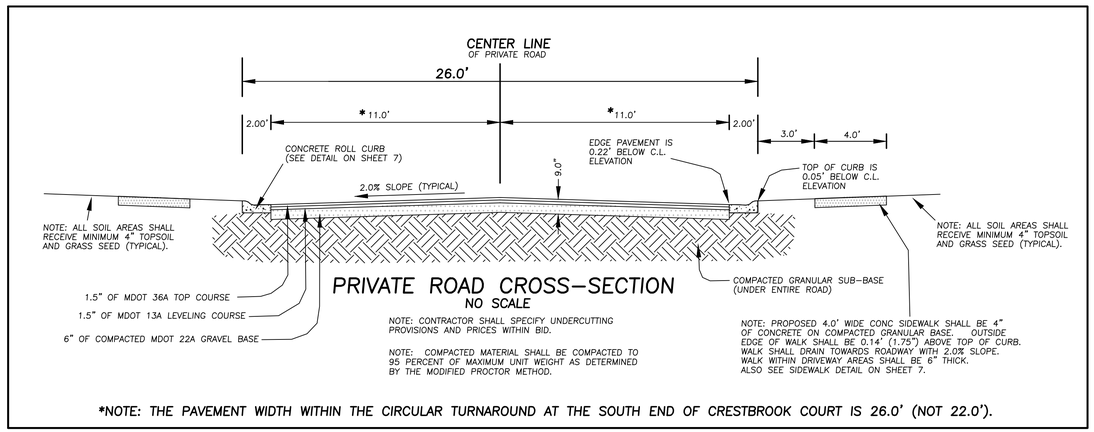
1) LIGHT POLES AND ANY UTILITY POLE/BOX SHALL NOT BE LOCATED WITHIN THE PUBLIC SEWER & WATER EASEMENT.
2) STREET NAME SIGNS SHALL BE AT LEAST 9" FROM TOP TO BOTTOM OF ACTUAL SIGN (& PLACED ATOP STOP SIGNS).
3) ALL PAVEMENT MARKINGS AND ALL TRAFFIC SIGNAGE SHALL COMPLY WITH STANDARDS IN THE M.M.U.T.C.D.(CURRENT EDITION)
4) U-CHANNEL POSTS REQUIRED FOR ALL SIGNS.
5) SOIL EROSION & SEDIMENTATION CONTROL PERMIT SHALL BE OBTAINED AS REQUIRED BY STATE LAW.
6) PERMIT(S) SHALL BE OBTAINED FROM THE CITY OF PORTAGE AS REQUIRED.
7) E.G.L.E. CONSTRUCTION PERMITS REQUIRED (FOR BOTH PUBLIC WATER MAIN & PUBLIC SANITARY SEWER) PRIOR TO THE COMMENCEMENT OF UTILITY INSTALLATION.
8) "NO PARKING THIS SIDE OF STREET" SIGNS SHALL BE INSTALLED ATOP THE FIRE HYDRANT SIGNS AND MIDWAY BETWEEN THE FIRE HYDRANTS ON THE HYDRANT SIDE OF THE STREETS.
9) FIVE INCH "STORZ" FITTINGS SHALL BE USED ON FIRE HYDRANTS.
10) FOR ON-SITE DWELLINGS, BASEMENT FOOTINGS AND FOUNDATIONS SHALL COMPLY WITH BUILDING CODE REQUIREMENTS BASED ON TYPE OF SOIL PRESENT AND STABILITY OF SOIL.
11) FOR ON-SITE DWELLINGS, REQUIRED RADON VENTING SYSTEM BELOW BASEMENT FLOOR SHALL, AS A PRECAUTION, BE PLUMBED TO ALSO BE A DRAINAGE SYSTEM DURING PERIODS OF HIGH GROUNDWATER.
12) ALL PROPOSED STREET LIGHTS SHALL COMPLY WITH CITY OF PORTAGE STANDARDS AND CONSUMERS ENERGY STANDARDS WITH REGARDS TO LOCATION AND LIGHT SPECIFICATION.
13) AS-BUILT CONSTRUCTION PLANS SHALL BE SUBMITTED TO THE CITY UPON COMPLETION OF THE ROADWAY PROJECT.
14) UNDERGROUND GAS, ELECTRIC, TELEPHONE AND CABLE TV LINES SHALL DESIGNED BY UTILITY OWNERS AND SHALL NOT BE LOCATED IN PROPOSED STREET RIGHT-OF-WAYS UNLESS UTILITY IS CROSSING STREET (SQUARE TO CENTER LINE).
15) FIRE HYDRANT SIGNS SHALL BE LOCATED 4.0 FEET FROM THE CENTER OF THE FIRE HYDRANT.
16) PRIOR TO START OF CONSTRUCTION, PRE-CONSTRUCTION MEETING SHALL BE HELD AT CITY OF PORTAGE OFFICES.
17) IF A FIRE HYDRANT EXTENSION IS USED TO RAISE A HYDRANT, THE EXTENSION SHALL BE PAINTED THE SAME COLOR OF THE HYDRANT PER CITY OF PORTAGE SPECIFICATIONS.
18) A "STORM WATER BEST MANAGEMENT PRACTICES OPERATIONS & MAINTENANCE AGREEMENT" SHALL BE COMPLETED AND PREPARED PRIOR TO OBTAINING CITY FINAL APPROVAL.



WATER MAIN DEFLECTION DETAIL
NOT TO SCALE



SANITARY SEWER LEAD / WATER MAIN DETAIL (NO SCALE)



PRIVATE ROAD CROSS-SECTION
NO SCALE

NOTE: CONTRACTOR SHALL SPECIFY UNDERCUTTING PROVISIONS AND PRICES WITHIN BID.

NOTE: COMPACTED MATERIAL SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM UNIT WEIGHT AS DETERMINED BY THE MODIFIED PROCTOR METHOD.

NOTE: PROPOSED 4.0' WIDE CONC SIDEWALK SHALL BE 4" OF CONCRETE ON COMPACTED GRANULAR BASE. OUTSIDE EDGE OF WALK SHALL BE 0.14' (1.75") ABOVE TOP OF CURB. WALK SHALL DRAIN TOWARDS ROADWAY WITH 2.0% SLOPE. WALK WITHIN DRIVEWAY AREAS SHALL BE 6" THICK. ALSO SEE SIDEWALK DETAIL ON SHEET 7.

*NOTE: THE PAVEMENT WIDTH WITHIN THE CIRCULAR TURNAROUND AT THE SOUTH END OF CRESTBROOK COURT IS 26.0' (NOT 22.0').

REVISED 01/16/2025
REVISED 12/10/2024

MONUMENT ENGINEERING GROUP ASSOCIATES, INC.
CIVIL ENGINEERS–LAND SURVEYORS 269/344–6165
1209 EAST MILHAM AVENUE PORTAGE, MICHIGAN 49002

NOTE: ALL SIDEWALK RAMPS (@ CURB) TO BE CONSTRUCTED IN ACCORDANCE WITH MDOT DETAIL R–28–K WITH THE EXCEPTION THAT THE DETECTABLE WARNING PLATES SHALL BE CAST IRON WITH A BLACK ASPHALT COATING.

NOTE: MAXIMUM SLOPE WITHIN LANDINGS SHALL BE 2.0%. MAXIMUM RAMP CROSS SLOPE SHALL BE 2.0%. RUNNING SLOPE SHALL BE 5%–7% OR LESS (8.3% MAX.) RAMP WIDTH AT CURBING SHALL BE 5.0' MINIMUM.

BARRIER FREE RAMP NOTES:

1) SIDEWALK RAMPS SHALL BE AT LEAST 5.0' WIDE
2) LANDINGS SHALL BE AT LEAST 5.0' BY 5.0'.
3) IF A RAMP HAS A LONGITUDINAL SLOPE GREATER THAN 5.0%, THEN A LANDING IS REQUIRED AT THE TOP OF THE RAMP.
4) THE MAXIMUM SLOPE OF A RAMP SHALL BE 8.33% (OR 1" FALL OVER 1', OR 10" FALL OVER 10').
5) THE MAXIMUM CROSS SLOPE FOR ANY RAMP OR SIDEWALK SHALL BE 2.0%.
6) SEE MDOT DETAIL FOR ANY ADDITIONAL REQUIREMENTS.
7) ANY RAMPS AND LANDINGS THAT DO NOT COMPLY SHALL BE REMOVED AND REPLACED.

SOIL/GROUNDWATER CONTAMINATION NOTES:

IF SOIL AND/OR GROUNDWATER CONTAMINATION IS ENCOUNTERED OR SUSPECTED DURING CONSTRUCTION THE FOLLOWING STEPS SHALL BE FOLLOWED:

1) CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY OWNER AND/OR OWNER'S REPRESENTATIVE.
2) OWNER AND/OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE CITY.
3) OWNER SHALL ENGAGE THE SERVICES OF A QUALIFIED ENVIRONMENTAL CONSULTANT.
4) CONSULTANT SHALL CONDUCT A SITE ASSESSMENT AND REPORT TO THE ABOVE PARTIES.
5) CONSULTANT SHALL DEVELOP A PLAN TO ADDRESS ANY CONTAMINATION WHICH MAY BE FOUND DURING CONSTRUCTION.
6) THE CONSULTANT TOGETHER WITH THE DESIGN ENGINEER SHALL COMPLETE A SITE EVALUATION PROCESS FOLLOWING THE DOCUMENT ENTITLED IMPLEMENTING STORMWATER INFILTRATION PRACTICES AT VACANT PARCELS AND BROWNFIELD SITES (EPA, 2013) TO DETERMINE IF THE STORMWATER MANAGEMENT SYSTEM REQUIRES REDESIGN AND RESUBMITTAL TO THE CITY FOR REVIEW AND APPROVAL.
7) OWNER AND/OR OWNER'S REPRESENTATIVE SHALL SUBMIT TO THE CITY SUPPORTING DOCUMENTATION OF THE SITE EVALUATION PROCESS. A REVISED STORMWATER REVIEW PACKAGE MUST ALSO BE SUBMITTED IF IT BECOMES NECESSARY TO CHANGE THE DESIGN OF THE STORMWATER MANAGEMENT SYSTEM.
8) MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) REMEDIATION OF REDEVELOPMENT DIVISION (RRD) STAFF SHALL BE NOTIFIED AS APPLICABLE.

NOTE: ALL SHOWN PROPOSED STORM SEWER FACILITIES (PIPE & BASINS) SHALL BE PRIVATE (OWNED BY PROPERTY OWNER).

NOTE: ALL WATER MAINS & THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTAGE SPECIFICATIONS AND A.W.W.A. STANDARD C600.

NOTE: WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE WITH A.W.W.A. STANDARD C651.

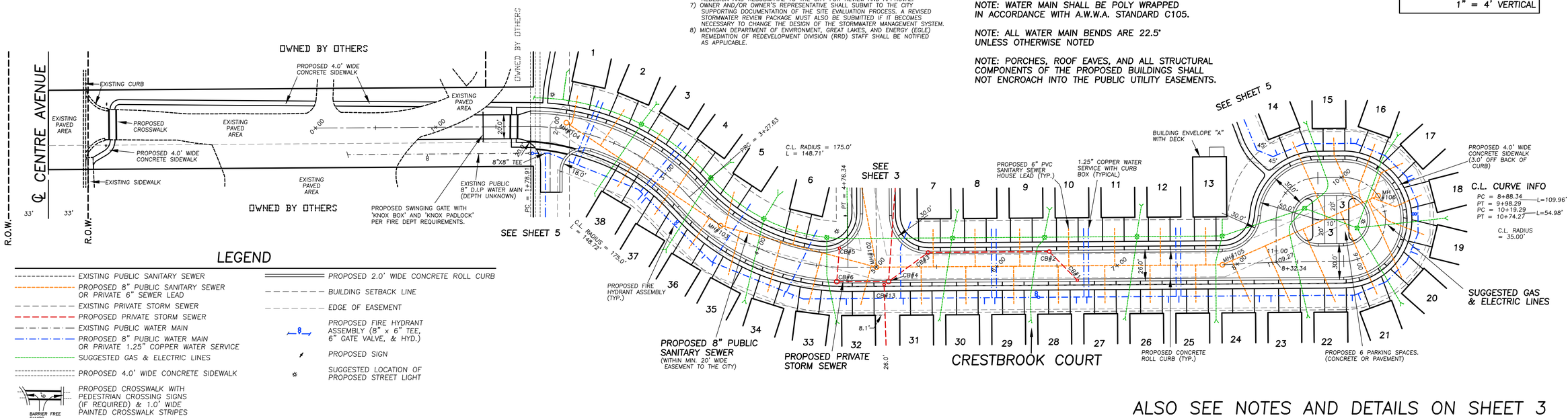
NOTE: WATER MAIN SHALL BE POLY WRAPPED IN ACCORDANCE WITH A.W.W.A. STANDARD C105.

NOTE: ALL WATER MAIN BENDS ARE 22.5° UNLESS OTHERWISE NOTED

NOTE: PORCHES, ROOF EAVES, AND ALL STRUCTURAL COMPONENTS OF THE PROPOSED BUILDINGS SHALL NOT ENCROACH INTO THE PUBLIC UTILITY EASEMENTS.

N

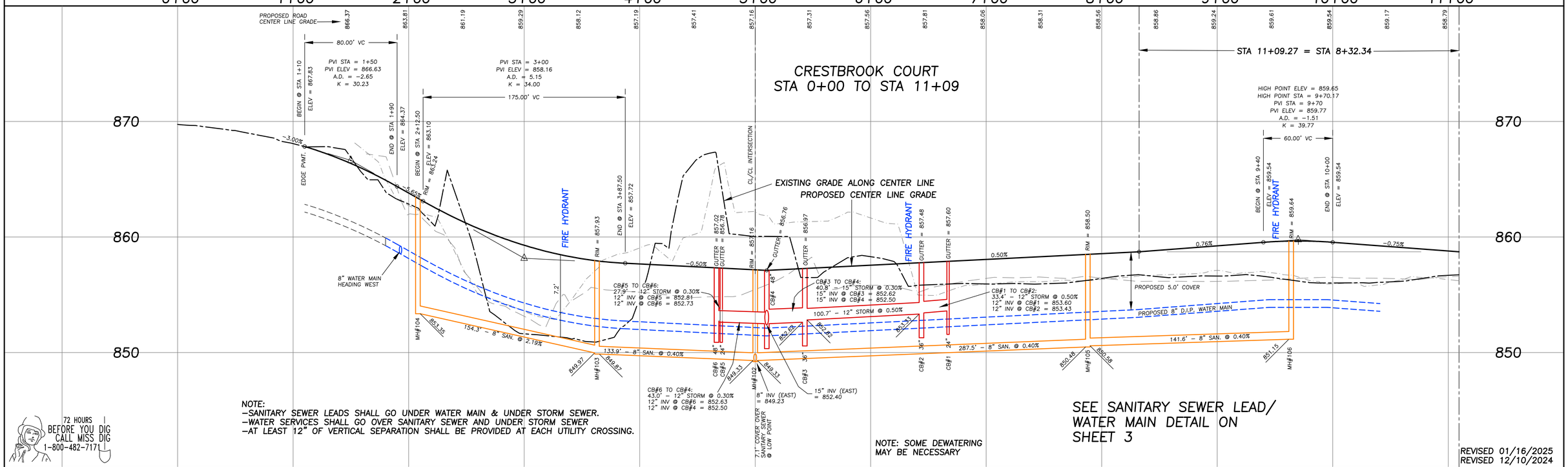
SCALES:
PLAN VIEW: 1" = 40'
PROFILE: 1" = 40' HORIZ.
1" = 4' VERTICAL



LEGEND

- EXISTING PUBLIC SANITARY SEWER
- PROPOSED 8" PUBLIC SANITARY SEWER OR PRIVATE 6" SEWER LEAD
- EXISTING PRIVATE STORM SEWER
- PROPOSED PRIVATE STORM SEWER
- EXISTING PUBLIC WATER MAIN
- PROPOSED 8" PUBLIC WATER MAIN OR PRIVATE 1.25" COPPER WATER SERVICE
- SUGGESTED GAS & ELECTRIC LINES
- PROPOSED 4.0' WIDE CONCRETE SIDEWALK
- PROPOSED CROSSWALK WITH PEDESTRIAN CROSSING SIGNS (IF REQUIRED) & 1.0' WIDE PAINTED CROSSWALK STRIPES (BARRIER FREE RAMPS)
- PROPOSED 2.0' WIDE CONCRETE ROLL CURB
- BUILDING SETBACK LINE
- EDGE OF EASEMENT
- PROPOSED FIRE HYDRANT ASSEMBLY (8" x 6" TEE, 6" GATE VALVE, & HYD.)
- PROPOSED SIGN
- SUGGESTED LOCATION OF PROPOSED STREET LIGHT

ALSO SEE NOTES AND DETAILS ON SHEET 3



NOTE:
–SANITARY SEWER LEADS SHALL GO UNDER WATER MAIN & UNDER STORM SEWER.
–WATER SERVICES SHALL GO OVER SANITARY SEWER AND UNDER STORM SEWER
–AT LEAST 12" OF VERTICAL SEPARATION SHALL BE PROVIDED AT EACH UTILITY CROSSING.

NOTE: SOME DEWATERING MAY BE NECESSARY

SEE SANITARY SEWER LEAD/ WATER MAIN DETAIL ON SHEET 3

72 HOURS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171

REVISED 01/16/2025
REVISED 12/10/2024

MONUMENT ENGINEERING GROUP ASSOCIATES, INC.
CIVIL ENGINEERS–LAND SURVEYORS 269/344–6165
1209 EAST MILHAM AVENUE PORTAGE, MICHIGAN 49002

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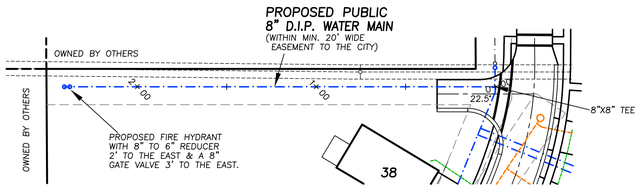
NOTE: WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE

NOTE: WATER MAIN SHALL BE POLY WRAPPED IN ACCORDANCE WITH A.W.W.A. STANDARD C105.

NOTE: PORCHES, ROOF EAVES, AND ALL STRUCTURAL COMPONENTS OF THE PROPOSED BUILDINGS SHALL NOT ENCROACH INTO THE PUBLIC UTILITY EASEMENTS.



SEE SHEET 4

LEGEND

- EXISTING PUBLIC SANITARY SEWER
- PROPOSED 8" PUBLIC SANITARY SEWER OR PRIVATE 6" SEWER LEAD
- EXISTING PRIVATE STORM SEWER
- PROPOSED PRIVATE STORM SEWER
- EXISTING PUBLIC WATER MAIN
- PROPOSED 8" PUBLIC WATER MAIN OR PRIVATE 1.25" COPPER WATER SERVICE
- SUGGESTED GAS & ELECTRIC LINES
- PROPOSED 4.0' WIDE CONCRETE SIDEWALK
- PROPOSED CROSSWALK WITH PEDESTRIAN CROSSING SIGNS (IF REQUIRED) & 1.0' WIDE PAINTED CROSSWALK STRIPES (BARRIER FREE RAMPS)
- PROPOSED 2.0' WIDE CONCRETE ROLL CURB
- BUILDING SETBACK LINE
- EDGE OF EASEMENT
- PROPOSED FIRE HYDRANT ASSEMBLY (8" x 6" TEE, 6" GATE VALVE, & HYD.)
- PROPOSED SIGN
- SUGGESTED LOCATION OF PROPOSED STREET LIGHT

N

SCALES:
PLAN VIEW: 1" = 40'
PROFILE: 1" = 40' HORIZ.
1" = 4' VERTICAL

NOTE: ALL SIDEWALK RAMPS (@ CURB) TO BE CONSTRUCTED IN ACCORDANCE WITH MDOT DETAIL R–28–K WITH THE EXCEPTION THAT THE DETECTABLE WARNING PLATES SHALL BE CAST IRON WITH A BLACK ASPHALT COATING.

NOTE: MAXIMUM SLOPE WITHIN LANDINGS SHALL BE 2.0%. MAXIMUM RAMP CROSS SLOPE SHALL BE 2.0%. RUNNING SLOPE SHALL BE 5%–7% OR LESS (8.3% MAX.) RAMP WIDTH AT CURBING SHALL BE 5.0' MINIMUM.

BARRIER FREE RAMP NOTES:

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2) LANDINGS SHALL BE AT LEAST 5.0' BY 5.0'.
3) IF A RAMP HAS A LONGITUDINAL SLOPE GREATER THAN 5.0%, THEN A LANDING IS REQUIRED AT THE TOP OF THE RAMP.
4) THE MAXIMUM SLOPE OF A RAMP SHALL BE 8.33% (OR 1" FALL OVER 1', OR 10" FALL OVER 10').
5) THE MAXIMUM CROSS SLOPE FOR ANY RAMP OR SIDEWALK SHALL BE 2.0%.
6) SEE MDOT DETAIL FOR ANY ADDITIONAL REQUIREMENTS.
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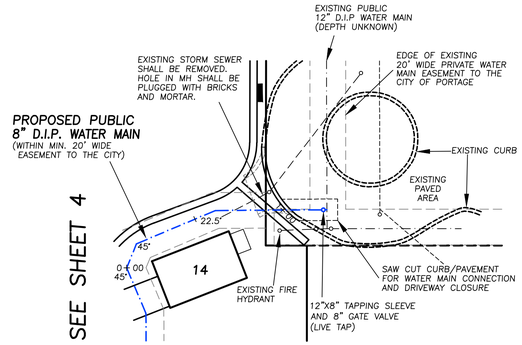
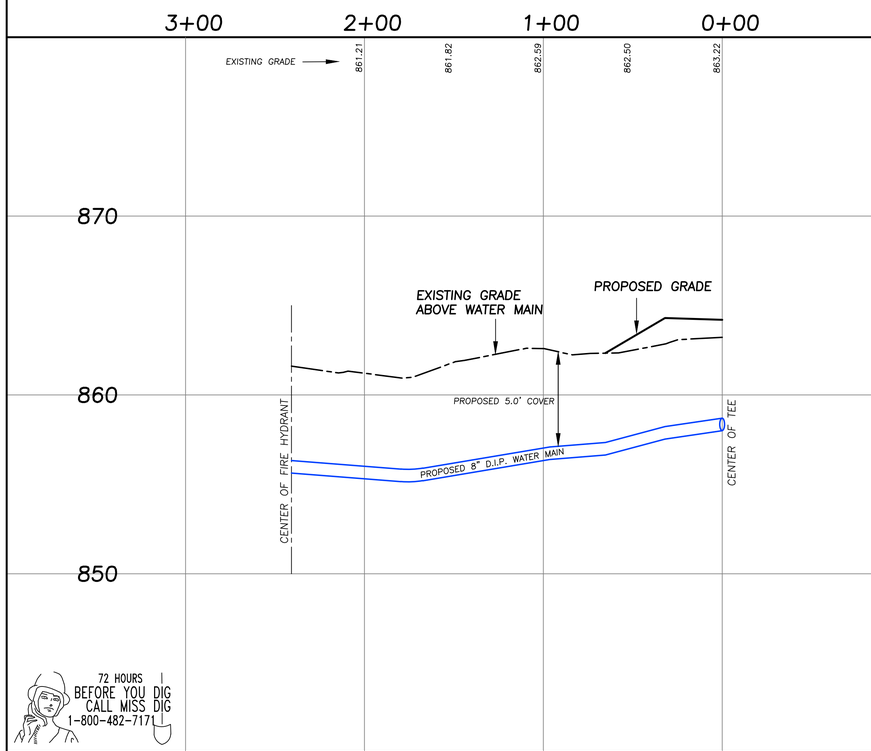
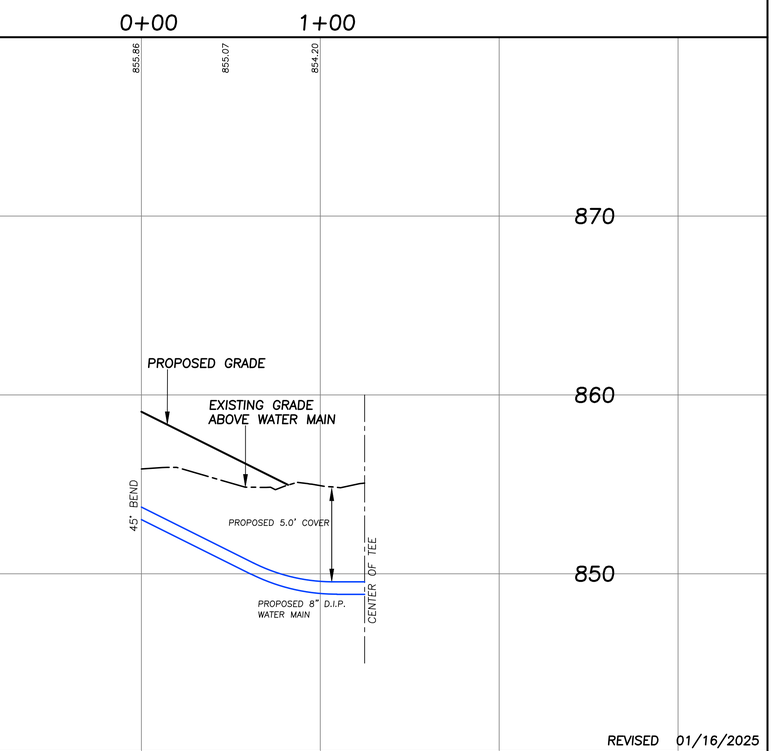


SEE SHEET 4





72 HOURS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

REVISED 01/16/2025

SHEET 5 #24–042 12/10/2024

EXISTING STORM WATER BASIN.
WATER LEVEL ON 8/8/2024 = 847.3
EARTH BERM OVERFLOW ELEVATION = 849.4
(30' SE OF BASIN)
VOLUME (847.3 TO 849.4) = ±119,700 CF
(WATER LEVEL ON 10/2/2024 = ±847.1)

EXISTING 24" STORM

MONITORING WELL
GROUNDWATER= 848.0'
(12/2/2024)

FLARED ENDS & RIP RAP PAD 200 SF

2-12" RCP PIPES
INV'S = 874.61

XG = 851.74
STORM BP = 848.60
SANITARY TP = 847.60

EM = 851.61
GUT = 851.51
STORM TP = 850.08

SWALE OVER WATER MAIN TO AVOID CROSSING WITH STORM

RIP RAP

PROPOSED WET INFILTRATION BASIN.
GROUND WATER LEVEL = 848.
REQUIRED VOLUME (2.4") = 23,600 CF.
PROVIDED VOLUME (849 TO 852) = 25,000 CF.
DESIGN VOLUME (848 TO 851.75) = 24,380 CF.
SIDE SLOPES = 4:1.

RIP RAP PAD 200 SF

GROUND WATER LEVEL

BASIN

OVERFLOW ELEVATION AT CATCH BASIN GRATE = ±846.95 (300' SE OF BASIN)

EARTH BERM OVERFLOW ELEVATION = 849.4 (30' SE OF BASIN)

KSI#1 DETAIL

KENNEDY SOLUTIONS.
STORM WATER TREATMENT CHAMBER.
KSI SERIES 2500 HDPE CHAMBER.
TREATMENT FLOW RATING = 12.6 CFS.
SEE FULL DETAIL ON SHEET 8

STORM SEWER DATA (MAIN SYSTEM TO NE BASIN)

CB#1
24" DIAMETER
RIM = 857.60
12" INV NE = 853.60

CB#1 TO CB#2
33.4' – 12" STORM @ 0.50%

CB#2
36" DIAMETER
RIM = 857.48
12" INV SW = 853.43
12" INV N = 853.33

CB#2 TO CB#3
100.7' – 12" STORM @ 0.50%

CB#3
36" DIAMETER
RIM = 856.97
12" INV S = 852.82
12" INV NW = 852.62

CB#3 TO CB#4
40.8' – 15" STORM @ 0.30%

CB#5
24" DIAMETER
RIM = 856.78
12" INV W = 852.81

CB#5 TO CB#6
27.9' – 12" STORM @ 0.30%

CB#6
48" DIAMETER
RIM = 857.02
12" INV E = 852.73
12" INV S = 852.63

CB#6 TO CB#4
43.0' – 12" STORM @ 0.30%

CB#4
48" DIAMETER
RIM = 856.76
15" INV SE = 852.50
12" INV N = 852.50
15" INV E = 852.40

CB#4 TO CB#7
142.1' – 15" RCP @ 0.90%

CB#7
48" DIAMETER
RIM = 854.59
15" INV W = 851.12
15" INV N = 851.12

CB#7 TO CB#8
24.0' – 15" RCP @ 0.9%

CB#8
36" DIAMETER
RIM = 854.59
15" INV S = 850.90
15" INV N = 850.90

CB#8 TO CB#9
70.0' – 15" RCP @ 0.85%

CB#9
36" DIAMETER
RIM = 853.6
15" INV S = 850.30
18" INV N = 849.00

CB#9 TO CB#10
117.0' – 18" STORM @ 0.60%

CB#10
36" DIAMETER
RIM = 852.8
18" INV S = 848.30
18" INV E = 848.20

CB#10 TO CB#11
116.0' – 18" STORM @ 0.70%

CB#11
48" DIAMETER
RIM = 852.8
18" INV W = 847.39
24" INV E = 847.04

CB#11 TO KS#1
20.0' – 24" STORM @ 0.20%

KS#1
RIM'S = 853.3
24" INV W = 847.00
24" INV E = 846.90

KS#1 TO BASIN
30.0' – 24" STORM @ 0.20%

24" INV AT BASIN = 846.84

CB#12
60" DIAMETER
RIM = 851.75
2 12" INV'S SE = 849.11

CB#12 TO BASIN
83.0' – 12" RCP @ 1.8%

2 12" INV'S AT BASIN = 847.61

GENERAL NOTES:

1) CURRENT CITY ZONING = PD.
2) PARCEL AREA = 9.11 ACRES.
3) SITE IS PARTIALLY COVERED WITH TREES AND BRUSH.
4) BUILDING PLANS (BY OTHERS) ARE PENDING.
5) ALL ON-SITE WATER MAIN & SANITARY SEWER SHALL BE PUBLIC AND SHALL BE WITHIN AN EASEMENT TO THE CITY OF PORTAGE.
6) BUILDINGS SHALL CONNECT TO CITY WATER SYSTEM AND CITY SANITARY SEWER SYSTEM.
7) SHOWN LAYOUT IS SUBJECT TO FINAL ADJUSTENT.
8) STORM SEWER SYSTEM AND STORM WATER DISPOSAL SYSTEM SHALL BE PRIVATE.
9) ALL NEW DRIVES SHALL BE PRIVATE.
10) EXISTING MATURE TREES NEAR PERIMETER OF SUBJECT PROPERTY SHALL BE PRESERVED AS MUCH AS POSSIBLE.

N

40' 0' 40' 80' 120'

CONSTRUCTION NOTES:

1) "NO PARKING THIS SIDE OF STREET" SIGNS SHALL BE INSTALLED ATOP THE FIRE HYDRANT SIGNS AND MIDWAY BETWEEN THE FIRE HYDRANTS ON THE HYDRANT SIDE OF THE STREETS.
2) STREET NAME SIGNS SHALL BE AT LEAST 9" FROM TOP TO BOTTOM OF ACTUAL SIGN (& PLACED ATOP STOP SIGNS).
3) ALL PAVEMENT MARKINGS AND ALL TRAFFIC SIGNAGE SHALL COMPLY WITH STANDARDS IN THE M.M.U.T.C.D.(CURRENT EDITION)
4) U-CHANNEL POSTS REQUIRED FOR ALL SIGNS.
5) SOIL EROSION & SEDIMENTATION CONTROL PERMIT SHALL BE OBTAINED AS REQUIRED BY STATE LAW.
6) PERMIT(S) SHALL BE OBTAINED FROM THE CITY OF PORTAGE AS REQUIRED.
7) E.G.L.E. CONSTRUCTION PERMITS REQUIRED (FOR BOTH PUBLIC WATER MAIN & PUBLIC SANITARY SEWER) PRIOR TO THE COMMENCEMENT OF INSTALLATION.

STORM SEWER DATA (YARD DRAINS)

YD#9
24" DIAMETER
RIM = 858.5
10" INV = 855.09

YD#9 TO YD#8
68.7' – 10" STORM @ 0.3%

YD#8
24" DIAMETER
RIM = 858.3
10" INV'S = 854.88

YD#8 TO YD#7
71.9' – 10" STORM @ 0.3%

YD#7
24" DIAMETER
RIM = 858.1
10" INV'S = 854.67

YD#7 TO YD#6
84.1' – 10" STORM @ 0.3%

YD#6
24" DIAMETER
RIM = 857.9
10" INV'S = 854.42

YD#6 TO YD#5
76.5' – 10" STORM @ 0.3%

YD#5
24" DIAMETER
RIM = 857.6
10" INV'S = 854.19

YD#5 TO YD#4
76.5' – 10" STORM @ 0.3%

YD#4
24" DIAMETER
RIM = 857.6
10" INV = 853.96
12" INV = 853.96

YD#4 TO YD#3
78.6' – 12" STORM @ 0.3%

YD#3
24" DIAMETER
RIM = 857.4
12" INV'S = 853.72

YD#3 TO YD#2
81.5' – 12" STORM @ 0.3%

YD#2
48" DIAMETER
RIM = 857.1
12" INV'S = 853.48

YD#2 TO YD#1
100.3' – 12" STORM @ 0.25%

YD#2 TO CB#13
105.6' – 12" STORM @ 0.25%

CB#13
24" DIAMETER
RIM = 857.1
12" INV = 853.74

YD#1
24" DIAMETER
RIM = 856.9
12" INV'S = 853.23

YD#1 TO BASIN
90.4' – 12" STORM @ 0.25%

12" INV AT BASIN = 853.00

BASIN

UNIT 3

UNIT 4

CREEKSIDE DRIVE

ELTON LANE

CRESTBROOK COURT

BLDG.

PROPOSED SWINGING GATE WITH "KNOX BOX" AND "KNOX PADLOCK" PER FIRE DEPT REQUIREMENTS

EXISTING OVERHEAD WIRES

FLARED END & RIP RAP PAD 100 SF

12" INV = 853.00

PROPOSED REAR YARD INFILTRATION AREA.
REQUIRED VOLUME (2.4") = 5,930 CF.
PROVIDED VOLUME (854 TO 856) = 7,080 CF.
DESIGN VOLUME (853 TO 857) = 12,240 CF
SIDE SLOPES = 5:1.

NOTE: ANY POORLY DRAINING SOILS AT BASIN BOTTOM OR WITHIN 5' OF BASIN BOTTOM SHALL BE REMOVED AND REPLACED WITH CLEAN, WELL DRAINING COURSE SAND.

PROPOSED REAR YARD INFILTRATION AREA.
REQUIRED VOLUME (4.8") = 2,600 CF.
PROVIDED VOLUME (854 TO 856) = 3,500 CF.
SIDE SLOPES = 4:1.

NOTE: ANY POORLY DRAINING SOILS AT BASIN BOTTOM OR WITHIN 5' OF BASIN BOTTOM SHALL BE REMOVED AND REPLACED WITH CLEAN, WELL DRAINING COURSE SAND.

84

85

86

87

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REVISED : 01/16/2025
REVISED : 12/10/2024

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

Engineering Group Associates, Inc. MEGA Monument

1209 MILHAM ROAD,
SUITE B,
PORTAGE, MI 49002
(OFFICE) 269-344-6165

GRADING & STORM SEWER PLAN

CREEKSIDE
PART OF NW 1/4 OF SEC. 21, T.3S., R.11W.
CITY OF PORTAGE, MICHIGAN

GREEN DEVELOPMENT VENTURES, LLC
2186 EAST CENTRE STREET
PORTAGE, MICHIGAN 49002

JOB # : 24-042	DRAWN: DJ CHK: PF
SCALE : 1" = 40'	SHEET: 6
DATE : 9/16/2024	

GENERAL NOTES

1) CONTRACTOR SHALL NOTIFY MISS DIG AT 1-800-482-7171 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
2) LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST ON THIS SITE WHICH ARE NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL UTILITIES ON SITE, WHETHER SHOWN ON THESE PLANS OR NOT.
3) CONTRACTOR SHALL PROVIDE ALL SIGNS, FENCING, LIGHTS, BARRICADES, ETC. NECESSARY TO PROVIDE FOR PUBLIC SAFETY DURING CONSTRUCTION.
4) REQUESTS FOR CONSTRUCTION STAKING SHALL BE DIRECTED TO THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO THEIR ACTUAL NEED.
5) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL UTILITY COMPANIES FOR THE PROTECTION AND/OR RELOCATION OF EXISTING UTILITIES.
6) ALL MATERIALS PLACED DURING CONSTRUCTION SHALL BE IN NEW CONDITION, SHALL BE FREE FROM DEFECTS AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE CITY AND THEIR INSPECTOR.
7) ALL CONSTRUCTION SHALL BE SUBJECT TO CONSTRUCTION INSPECTION BY OWNER, OWNER'S REPRESENTATIVE, AND THE CITY OF PORTAGE.
8) ELEVATIONS SHOWN ON THESE PLANS ARE BASED ON USGS DATUM AS PROMULGATED WITHIN THE CITY OF PORTAGE.
9) ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF PORTAGE CONTRACT CONDITIONS AND SPECIFICATIONS.
10) A SOIL EROSION CONTROL PERMIT NEEDS TO BE OBTAINED PRIOR TO THE COMMENCEMENT OF ANY GRADING ACTIVITIES.

CONSTRUCTION NOTES

1) ALL PIPE LENGTH DISTANCES ARE FROM CENTER TO CENTER OF STRUCTURE.
2) ALL TRENCHING AND BACKFILLING FOR UTILITIES SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF PORTAGE STANDARD SPECIFICATIONS AND THE REQUIREMENTS INDICATED ON THE CONSTRUCTION DRAWINGS.
3) ALL CONSTRUCTION SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL RULES, REQUIREMENTS, AND LAWS.

WATER MAIN NOTES

1) ALL 8" OR 10" WATER MAIN SHALL BE AWWA C151, CLASS 52 DUCTILE IRON PIPE. ALL 12" WATER MAIN SHALL BE AWWA C151, CLASS 53 DUCTILE IRON PIPE. ALL PIPE SHALL HAVE CEMENT LINING AND SHALL BE INSTALLED ACCORDING TO THE CITY OF PORTAGE STANDARD SPECIFICATIONS (AVAILABLE AT CITY OF PORTAGE WEBSITE: www.portagemi.gov).
2) ALL WATER MAIN CONSTRUCTION SHALL BE SUBJECT TO INSPECTION BY A CITY OF PORTAGE APPROVED INSPECTOR.
3) MINIMUM 5.0' AND MAXIMUM 6.0' OF COVER OVER NEW WATER MAIN PIPE IS REQUIRED ONCE FINAL SITE GRADING IS COMPLETE.
4) WATER SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF PORTAGE STANDARD DETAIL SD-153, TYPICAL SERVICE LINE AND METER BOX INSTALLATIONS. PLUMBING PERMIT REQUIRED.
5) HYDRANT ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF PORTAGE STANDARD DETAIL SD-144, AUXILIARY VALVE LOCATION.
6) HYDRANT SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF PORTAGE STANDARD DETAIL SD-145, STANDARD HYDRANT SIGN. NOTE FIRE HYDRANT SIGNS SHALL BE INSTALLED A MINIMUM 4.0' FROM THE CENTER OF THE INSTALLED HYDRANT PER THE CITY'S NEW REQUIREMENTS.

SANITARY SEWER NOTES

1) ALL SANITARY SEWER PIPE SHALL BE SDR26 PVC AND SHALL COMPLY WITH ASTM D 3033 OR ASTM D 3034. PIPE SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
2) ALL SANITARY SEWER CONSTRUCTION, INCLUDING MAINLINES, LATERALS, MANHOLES, AND APPURTENANCES, SHALL CONFORM WITH THE CITY OF PORTAGE REQUIREMENTS AND SPECIFICATIONS AND SHALL BE SUBJECT TO THEIR INSPECTION.

PRIVATE UTILITY NOTES

1) UNDERGROUND ELECTRIC, NATURAL GAS, TELEPHONE, AND CABLE TV PRIVATE UTILITIES SHALL BE SIZED AND INSTALLED BY UTILITY OWNERS.

STORM SEWER NOTES

1) STORM SEWER PIPE SHALL BE EITHER CORRUGATED POLYETHYLENE (C.P.E.), REINFORCED CONCRETE (R.C.P.), OR OTHER TYPES MEETING MDOT AND CITY OF PORTAGE APPROVAL.
2) CORRUGATED POLYETHYLENE (C.P.E.) PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M 294 TYPE S (DUAL WALL, SMOOTH INSIDE, CORRUGATED OUTSIDE, NO PERFORATIONS). THE JOINTS SHALL BE WATERTIGHT AND COMPLY WITH ASTM D 3212. (HANCOR HI-Q, ADS N-12, OR EQUIVALENT)
3) REINFORCED CONCRETE PIPE (R.C.P.) SHALL MEET THE REQUIREMENTS OF ASTM C 76. THE JOINTS SHALL BE WATERTIGHT AND COMPLY WITH ASTM C 443.
4) ALL STORM SEWER PIPE AND INSTALLATION SHALL COMPLY WITH CITY OF PORTAGE "CONSTRUCTION SPECIFICATIONS AND STANDARDS"
5) PREMIUM WATERTIGHT JOINTS (RUBBER OR SLIP SEAL) ARE REQUIRED AT EACH STORM SEWER PIPE JOINT IN ACCORDANCE WITH CITY OF PORTAGE REQUIREMENTS.
6) PIPE CONNECTIONS AT ALL SOLID WALLED STRUCTURES SHALL BE MADE WITH A WATERTIGHT RESILIENT CONNECTOR (RUBBER TYPE BOOT WITH STAINLESS STEEL BANDS, OR OTHER TYPE AS APPROVED BY CITY OF PORTAGE).
7) STORM SEWER PIPE SHALL HAVE A MINIMUM OF 24 INCHES OF COVER.
8) ALL STORM SEWER PIPE, JOINTS, AND GASKETS SHALL BE INSPECTED. ANY DEFECTIVE PRODUCTS SHALL NOT BE INSTALLED AND SHALL BE REMOVED FROM THE SITE.
9) ALL SOLID WALLED STRUCTURES SHALL HAVE CONCRETE BOTTOMS.
10) DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER THE BACKFILL HAS BEEN PLACED AND PRIOR TO INSTALLING ANY ASPHALT OR CONCRETE SURFACE. NO PIPE SHALL EXCEED A DEFLECTION OF FIVE (5) PERCENT. THE DEFLECTION TEST SHALL BE RUN USING A RIGID BALL OR MANDREL, HAVING A DIAMETER EQUAL TO 95 % OF THE INSIDE DIAMETER OF THE PIPE. DEFLECTION SHALL BE CONDUCTED AFTER FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS.

SOIL EROSION CONTROL NOTES (SEE SHEET 6)

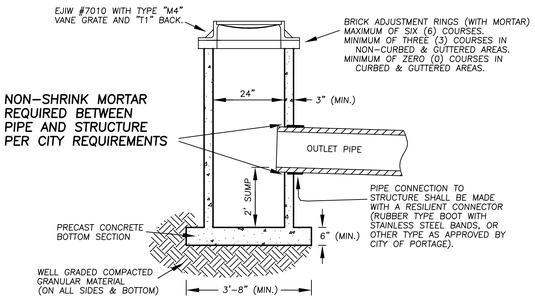
1) ALL CONSTRUCTION SHALL COMPLY WITH THE SOIL EROSION AND SEDIMENTATION CONTROL ACT (P.A. 451 OF 1994, AS AMENDED) AS ADMINISTERED BY THE CITY OF PORTAGE.
2) EARTHWORK CONTRACTORS SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   A) BERMING OR FILTERING OF RUNOFF AT PROPERTY LINES WHERE EROSION COULD OCCUR.
   B) PROTECTION OF ALL EXISTING AND NEWLY CONSTRUCTED STORM SEWER STRUCTURES, WHETHER ADJACENT TO THE SITE OR ON THE SITE.
   C) MINIMIZATION OF TRACKING OF MATERIAL OFF-SITE.
   D) SWEEPING AND CLEANING OF ADJACENT STREETS AS NECESSARY.
3) OWNER SHALL OBTAIN 'SOIL EROSION CONTROL PERMIT' FROM THE CITY OF PORTAGE.

RESTORATION NOTES

1) ALL DISTURBED AREAS SHALL BE RESTORED WITH MINIMUM 4" TOPSOIL AND GRASS SEED, OR OTHER REQUIRED LANDSCAPING.
2) EXISTING STREETS AND YARDS SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED PRIOR TO CONSTRUCTION.

STREET LIGHTS & STREET SIGNS

1) DECIDUOUS TREES AT PLANTING SHALL HAVE A MINIMUM CALIPER OF 1.5" AT 6" ABOVE THE ROOT BALL; A CLEAR STEM OF 4 FEET; AND A BURLAP BALL SIZE OF AT LEAST 10 TIMES THE CALIPER. ALLOWED TREES INCLUDE SARGENT CHERRY, AMUR CORKTREE, GOLDENRAIN TREE, MAPLES (HEDGE, PACIFIC SUNSET, TRIDENT, TATARIAN MAPLE), AMERICAN & EUROPEAN HORNBEAM, KATSURA TREE, IVORY SILK JAPANESE TREE LILAC, & ORNAMENTAL PEARS (CLEVELAND AND REDSPIRE CALLERY PEAR).
2) STREET LIGHTS SHALL BE 8500 LUMEN, HIGH PRESSURE SODIUM VAPOR. DECORATIVE LIGHT POLES SHALL HAVE A HEIGHT OF 19 FEET. ALL LIGHT STANDARDS AND UTILITY POLES SHALL BE LOCATED AT LEAST 5 FEET OFF PROPOSED BACK OF CURB.
3) ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS MUST CONFORM TO THE STANDARDS SET FORTH IN THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES ("M.M.U.T.C.D.").
4) ALL STREET SIGNS SHALL CONFORM TO CITY OF PORTAGE PUBLISHED REQUIREMENTS. ALL SIGNS SHALL BE INSTALLED ON 3 POUND GALVANIZED U-CHANNEL POSTS AND SHALL HAVE A MINIMUM POST BURY OF 36 INCHES. DISTANCE FROM BOTTOM OF SIGN TO GROUND SHALL BE 7 FEET. ANYTHING NOT SPECIFIED IN THESE PLANS SHALL BE IN ACCORDANCE WITH THE M.M.U.T.C.D. STREET NAME SIGNS SHALL BE 9 INCHES TALL (VERTICAL DIMENSION OF ACTUAL SIGN).

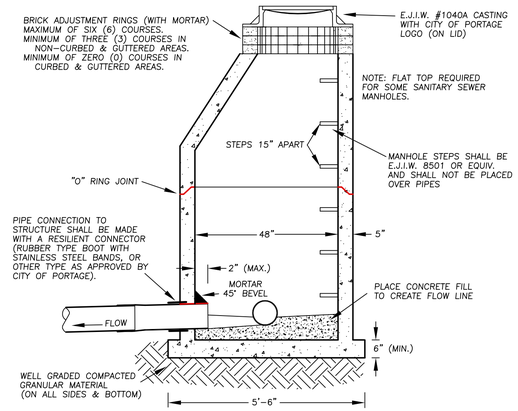


24" STORM SEWER INLET

NO SCALE

NOTES:
1) STRUCTURE SHALL HAVE A 2 FOOT SUMP.
2) HEIGHT OF STRUCTURES WILL VARY BUT SHALL NOT EXCEED FIVE (5.0) FEET.
3) STRUCTURES SHALL BE PRECAST CONCRETE AND CONFORM TO ASTM C-478.
4) SEE RELATED CITY OF PORTAGE STANDARD DETAILS:
   SD-102, 24" CATCH BASIN
   SD-103, STANDARD CURB INLET CASTING
   SD-104, STANDARD DROP CURB INLET CASTING

NOTE: SANITARY SEWER MANHOLE LIDS SHALL HAVE A STANDARD CITY OF PORTAGE LOGO ON LID.

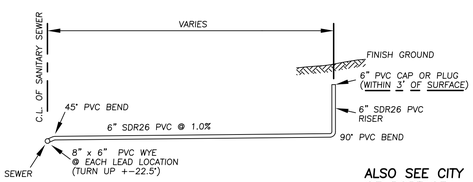


48" SANITARY SEWER MANHOLE

NO SCALE

NOTES:
1) HEIGHT OF STRUCTURES WILL VARY.
2) STRUCTURES SHALL BE PRECAST CONCRETE AND CONFORM TO ASTM C-478 WITH O-RING RUBBER GASKET TYPE JOINTS, ASTM C-443. RUBBER GASKETS SHALL NOT BE REMOVED.
3) INSTALL STEPS AFTER STRUCTURE IS IN PLACE, IF NECESSARY, TO INSURE STEPS ARE LOCATED UNDER OPENING. TOP STEP SHALL BE NO MORE THAN 24 INCHES FROM TOP OF CASTING. BOTTOM STEP SHALL BE NO MORE THAN 24 INCHES FROM BENCH.
4) SEE RELATED CITY OF PORTAGE STANDARD DETAILS:
   SD-105, STANDARD MANHOLE
   SD-106, SANITARY SEWER STANDARD MANHOLE CASTING
   SD-107, SANITARY SEWER PRESSURE-TIGHT MANHOLE CASTING
   SD-108, STANDARD MANHOLE STEP

NOTE: ALL SANITARY SEWER SHALL BE SDR26 PIPE.

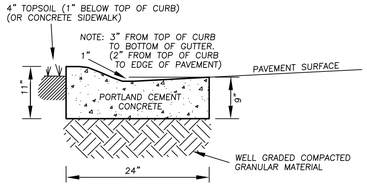


SANITARY SEWER LEAD

NO SCALE

ALSO SEE CITY OF PORTAGE STANDARD DETAIL SD-110.

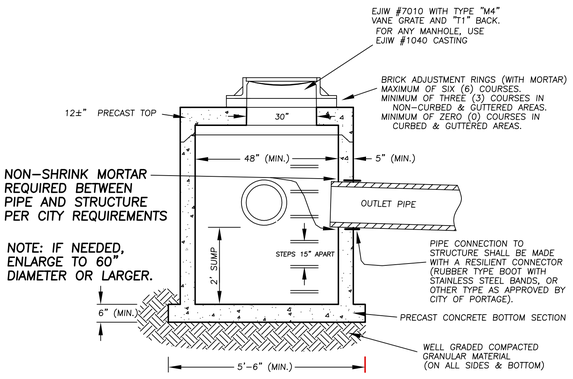
NOTES:
1) 4" x 4" RISER MARKER STAKE REQUIRED AT EACH RISER LOCATION.
2) BEDDING AND COMPACTION SHALL BE PER CITY STANDARD SPECIFICATIONS.
3) SEE RELATED CITY OF PORTAGE STANDARD DETAILS:
   SD-110, SANITARY SEWER STANDARD HOUSE CONNECTIONS (PROPERTY LINE RISER)
4) MAIN LINE RISERS REQUIRED WHEN DEPTH OF SEWER MAIN IS 15' OR GREATER.



CONCRETE ROLL CURB

NO SCALE

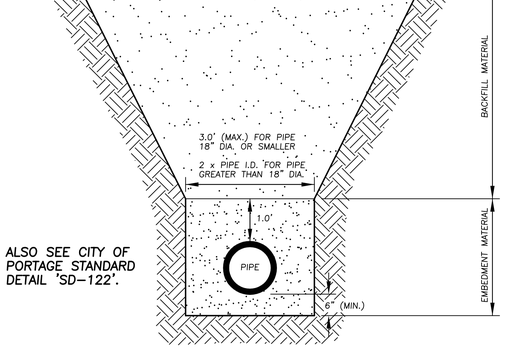
NOTES:
1) CONCRETE SHALL BE MDOT GRADES 35P OR 35S, AND MEET THE FOLLOWING REQUIREMENTS:
   * ALL AGGREGATES SHALL BE LIMESTONE OR SLAG MATERIAL
   * ENTRAINED AIR, 6 TO 8 PERCENT
   * COMPRESSIVE STRENGTH AT 28 DAYS = 3500 P.S.I.
   * SLUMP = 1.5 TO 3 INCHES
   * MODULUS OF RUPTURE AT 28 DAYS = 650 P.S.I.
   * MINIMUM PORTLAND CEMENT CONTENT = 5.50 SACKS PER CUBIC YARD
2) EXPANSION JOINTS SHALL BE PLACED AT SPRING POINTS AND UNIFORM INTERVALS OF NOT MORE THAN 100 FEET.
3) PLANE OF WEAKNESS JOINTS SHALL BE PLACED AT UNIFORM INTERVALS OF TEN (10) FEET. IRREGULAR SECTIONS SHALL NOT BE LESS THAN EIGHT (8) FEET.
4) CONCRETE SHALL BE CURED IN A MANNER APPROVED BY THE CITY OF PORTAGE.



48" STORM SEWER STRUCTURE W/FLAT TOP

NO SCALE

NOTES:
1) MANHOLE STRUCTURES SHALL NOT HAVE A SUMP AND SHALL REQUIRE EJIW #1040A CASTING ~~WITH CITY OF PORTAGE LOGO PER CITY STANDARDS.~~
2) HEIGHT OF STRUCTURES WILL VARY.
3) STRUCTURES SHALL BE PRECAST CONCRETE AND CONFORM TO ASTM C-478.
4) SOME STRUCTURES MAY HAVE TO BE ENLARGED TO ACCOMMODATE PIPES AND RESILIENT CONNECTORS. STRUCTURAL DIMENSIONS FOR LARGER DIAMETER STRUCTURES SHALL CONFORM TO ASTM C-478.
5) MANHOLE STEPS SHALL BE EJIW #8501 OR EQUIVALENT.
6) INSTALL STEPS AFTER STRUCTURE IS IN PLACE TO INSURE STEPS ARE LOCATED UNDER OPENING. TOP STEP SHALL BE NO MORE THAN 24 INCHES FROM TOP OF CASTING. BOTTOM STEP SHALL BE NO MORE THAN 24 INCHES FROM BENCH/BOTTOM OF STRUCTURE.
7) SEE RELATED CITY OF PORTAGE STANDARD DETAILS:
   SD-101, STANDARD 48" DRAINAGE STRUCTURE
   SD-103, STANDARD CURB INLET CASTING
   SD-104, STANDARD DROP CURB INLET CASTING
   SD-108, STANDARD MANHOLE STEP

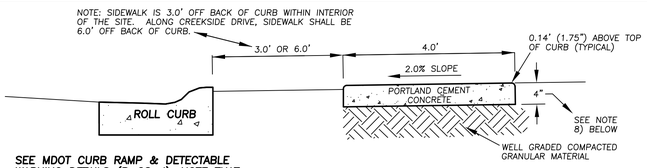


ALSO SEE CITY OF PORTAGE STANDARD DETAIL 'SD-122'.

UTILITY TRENCH DETAIL

NO SCALE

NOTES:
1) LARGE ROCKS, BOULDERS, AND STONES OVER ONE (1.0) INCH IN DIAMETER SHALL BE REMOVED TO PROVIDE A CLEARANCE OF SIX (6) INCHES (MIN.) FROM ANY PART OF THE PIPE.
2) ALL EMBEDMENT AND BACKFILL MATERIALS SHALL BE FREE FROM FROZEN EARTH, ICE, SNOW, TOPSOIL, MUCK, CINDERS, ASHES, REFUSE, ORGANIC MATTER, BOULDERS, ROCKS, OR OTHER MATERIALS WHICH, IN THE OPINION OF THE ENGINEER, ARE UNSUITABLE.
3) EMBEDMENT MATERIAL SHALL BE GRANULAR MATERIAL WITH MAXIMUM PARTICLE SIZE OF 1.0" COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT AS DETERMINED BY THE MODIFIED PROCTOR METHOD.
4) BACKFILL MATERIAL UNDER PAVEMENT AREAS AND AREAS WITHIN TRENCH INFLUENCE OF BACK OF CURB OR EDGE OF PAVEMENT SHALL BE GRANULAR MATERIAL COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT AS DETERMINED BY THE MODIFIED PROCTOR METHOD.
5) BACKFILL MATERIAL FOR PIPE TRENCHES NOT UNDER PAVEMENT AREAS AND AREAS OUTSIDE OF TRENCH INFLUENCE MAY BE NONGRANULAR NATIVE MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, IS ACCEPTABLE MATERIAL AND IS ADEQUATELY COMPACTED TO PREVENT SETTLEMENT.
6) BACKFILL MATERIAL MAY BE PLACED, SPREAD, AND COMPACTED WITH EQUIPEMENT OPERATED LONGITUDINALLY ALONG THE PIPE LINE. PUSHING MATERIAL INTO THE TRENCH FROM THE SIDE WITHOUT LONGITUDINAL SPREADING AND COMPACTION SHALL NOT BE ALLOWED.
7) SEE RELATED CITY OF PORTAGE STANDARD DETAIL:
   SD-122, STANDARD TRENCH DETAIL



SEE MDOT CURB RAMP & DETECTABLE WARNING DETAILS (R-28-J). NOTE THAT DETECTABLE WARNING PLATES SHALL BE CAST IRON WITH A BLACK ASPHALT COATING.

SIDEWALK DETAIL

NO SCALE

NOTES:
1) CONCRETE SHALL BE MDOT GRADES 35P OR 35S, AND MEET THE FOLLOWING REQUIREMENTS:
   * ALL AGGREGATES SHALL BE LIMESTONE OR SLAG MATERIAL
   * ENTRAINED AIR = 6 TO 8 PERCENT
   * COMPRESSIVE STRENGTH AT 28 DAYS = 3500 P.S.I.
   * SLUMP = 1.5 TO 3 INCHES
   * MODULUS OF RUPTURE AT 28 DAYS = 650 P.S.I.
   * MINIMUM PORTLAND CEMENT CONTENT = 5.50 SACKS PER CUBIC YARD
2) ONE (1) INCH TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT UNIFORM INTERVALS OF NOT MORE THAN 50 FEET.
3) PLANE OF WEAKNESS JOINTS SHALL BE PLACED AT UNIFORM INTERVALS OF FOUR (4) FEET.
4) ALL JOINTS SHALL BE CONSTRUCTED AT RIGHT ANGLES TO THE CENTERLINE OF THE WALK.
5) ALL EDGES AND JOINTS SHALL BE PROPERLY TOOLED.
6) THE SURFACE SHALL BE FINISHED WITH A WOOD FLOAT OR BRUSH TO PROVIDE A NON-SLIP SURFACE.
7) CONCRETE SHALL BE CURED IN A MANNER APPROVED BY THE OWNER.
8) WALK WITHIN DRIVEWAY AREAS SHALL BE 6" THICK.

SEE ROAD CROSS-SECTION DETAIL ON SHEET 3

REVISED: 01/16/2025
REVISED: 12/10/2024
REVISED: 12/03/2024

CONSTRUCTION DETAILS & NOTES
CREEKSIDE
PART OF THE NW. 1/4 OF SEC. 21, T. 3 S., R. 11 W., CITY OF PORTAGE, MICHIGAN

DATE: 9/16/2024
SHEET: 7
JOB No.: 24-042

MONUMENT ENGINEERING GROUP ASSOC., INC.
Formerly Ingersoll, Watson & McMachen, Inc.
1209 East Milham Road, Suite B · Portage, Michigan 49002 · Phone 269 344-6165

STORM WATER TREATMENT CHAMBER
KSI SERIES 2500 HDPE CHAMBER

NOTE:
KSI REP MUST BE ON SITE DURING INSTALLATION. IF INSTALLED WITHOUT KSI REP ON SITE, WARRANTY WILL BE VOID.

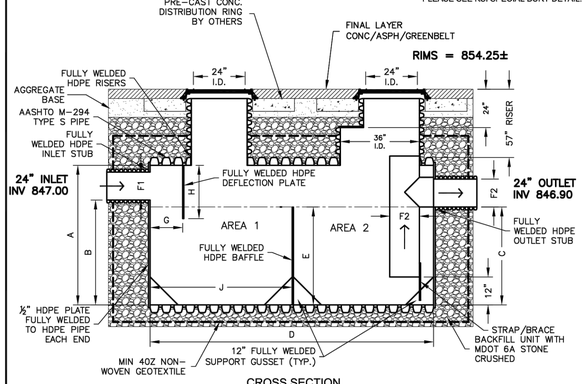
TANK MUST BE INSTALLED PER KSI TANK INSTALLATION INSTRUCTION MANUAL

24" CLEARANCE REQUIRED AROUND TANK PERIMETER

NOTE:
INSTALL UNIT PER ASTM D2321

4 OZ NON-WOVEN GEOTEXTILE FABRIC WRAP REQUIRED SEE TRENCH DETAIL

IF WATER TABLE IS AN ISSUE, PLEASE SEE KSI SPECIAL BURY DETAIL.

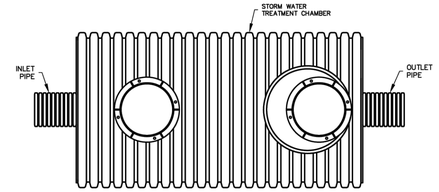


CROSS SECTION

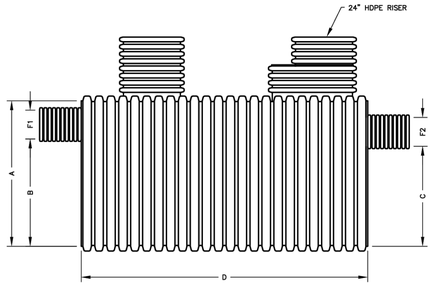
STORM WATER TREATMENT CHAMBER DIMENSIONS AND CAPACITIES

MODEL NO.	A	B	C	D	E	F1	F2	G	H	J	AREA 1	AREA 2
2500-60-24	60"	33"	32"	309"	32"	24"	24"	24"	33"	155"	137 CF	307 CF

DESIGN BY: AG / RK	REV: DATE: 12-9-24	2 OF 2	KSI KENNEDY SOLUTIONS, INC. 10051 Bergin Road Howell, MI 48843 Ph: 517-225-8338
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SERIES 2500 SWTC v2022			



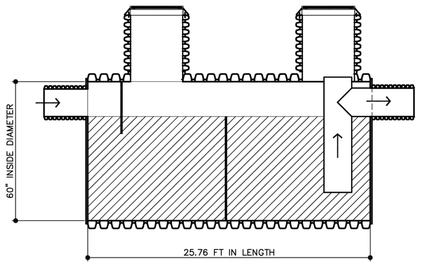
PLAN VIEW



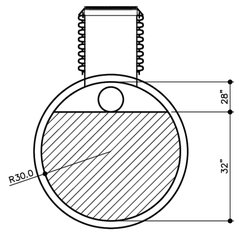
SIDE VIEW

DESIGN BY: AG / RK	REV: 12-9-24 DATE: 10-10-08	1 OF 2	KSI KENNEDY SOLUTIONS, INC. 10051 Bergin Road Howell, MI 48843 Ph: 517-225-8338
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SWTC TANK VIEWS v2022			

SPILL CONTAINMENT VOLUME WITHIN STORM WATER TREATMENT CHAMBER



VOLUME DIAGRAM



END VIEW

Q TREAT = 9.7 CFS
USE KSI 2000-60-24 SWTC (224.76 CF) FOR TREATMENT WITH 150 GALLONS (20 CF) OF SPILL CONTAINMENT CAPACITY = KSI 2500-60-24

REQUIRED CAPACITY = 224.76 CF + 20 CF = 244.76 CF

VOLUME BELOW THE OUTLET TEE IS 32"

A = 10.6469 CF/FT

KSI 2500-60-24 SWTC IS 25.76 FT LONG
10.6469 CF/FT X 25.76 FT = 274.26 CF

274.26 CF > 244.76 CF (REQUIRED CAPACITY)

THEREFORE: OK

Qmax = 12.6 CFS > Q TREAT = 9.7 CFS

USE KSI 2500-60-24 SWTC INLINE - NO BYPASS REQIRED

DESIGN BY: AG / RK	REV: DATE: 12-9-24	1 OF 2	KSI KENNEDY SOLUTIONS, INC. 10051 Bergin Road Howell, MI 48843 Ph: 517-225-8338
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SWTC TANK VIEWS v2022			

STORM WATER TREATMENT CHAMBER
INSTALLATION AND MAINTENANCE GUIDELINES

INSTALLATION GUIDELINES

1. KSI REQUIRES A COMPANY REP TO BE ON SITE TO WITNESS THE INSTALLATION. KSI MUST BE NOTIFIED OF THE INSTALLATION DATE WITH A 3-4 DAY LEAD TIME TO ENSURE HAVING A REP ON SITE. FAILURE TO COMPLY WILL RESULT IN THE WARRANTY BEING NULL & VOID.

2. EXCAVATE AREA FOR KSI SWTC AND PREPARE TRENCH BOTTOM PER ASTM D2321, SECTIONS 6 & 7.

3. THE KSI SWTC SHALL BE INSTALLED ON A BED OF NO LESS THAN 12" MDOT 6A CRUSHED STONE MATERIALS COMPACTED TO 95% PROCTOR DENSITY. COMPACTED TO 95% (90% MIN. FOR MDOT 6A CRUSHED STONE MATERIAL) OF THE BACKFILL MATERIAL'S MAXIMUM WEIGHT AT A MOISTURE CONTENT NOT GREATER THAN THE OPTIMUM.

4. INSTALL KSI SWTC UNIT, HIGH FLOW BYPASS LINE (IF APPLICABLE), DIVERSION STRUCTURE AND EXITING STRUCTURE AT ELEVATIONS INDICATED ON SITE PLAN. COUPLE INLET AND OUTLET HDPE SPLIT COUPLERS TO CONVEYANCE PIPE.

5. BACKFILL UNIT WITH MDOT 6A CRUSHED STONE MATERIALS PER ASTM D2321. BACKFILL SHALL BE COMPACTED TO 95% PROCTOR DENSITY.

6. THE HDPE ACCESS RISERS SHALL BE FIELD CUT TO FINISH GRADE BY THE CONTRACTOR. SEE RISER INSTALLATION OPTIONS PAGE.

7. KSI RECOMMENDS FILLING THE UNIT WITH WATER UPON COMPLETION OF INSTALLATION UP TO THE BAFFLE HEIGHT.

8. ONCE THE UNIT IS INSTALLED, PLACE A ORANGE SAFETY FENCE 4-5 FT HIGH WITH TEE POST, AROUND THE SYSTEM. PLACE FENCE 5 FT BEYOND GRID FOOTPRINT. ANY DAMAGE TO THE SYSTEM AS A RESULT OF NOT FOLLOWING THESE INSTRUCTIONS AND THE BLUEPRINT DETAILS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR THE SYSTEM TO KSI'S SATISFACTION.

MAINTENANCE GUIDELINES

1. ALL STORM WATER TREATMENT CHAMBERS WILL REQUIRE PERIODIC MAINTENANCE DEPENDING ON SPECIFIC SITE CONDITIONS.

2. KSI RECOMMENDS CLEANING THE SWTC QUARTERLY AND AFTER HEAVY RAIN STORMS. SEDIMENT IS EASIER TO REMOVE WHEN IT IS REMOVED ON A REGULAR BASIS.

3. DISPOSAL OF MATERIAL FROM THE KSI SWTC ARE SIMILAR TO THAT OF ANY OTHER BEST MANAGEMENT PRACTICES (BMP). LOCAL GUIDELINES SHOULD BE CONSULTED PRIOR TO DISPOSAL OF THE SWTC CONTENTS. PETROLEUM WASTE PRODUCTS SHOULD BE REMOVED BY A LICENSED WASTE MANAGEMENT COMPANY.

4. IF A HYDROCARBON REMOVAL SYSTEM WAS INSTALLED - REPLACE IT WHEN IT TURNS BLACK. UNIT CAN BE DISPOSED OF VIA NORMAL REFUSE REMOVAL. SPENT UNIT DOES NOT LEACH CAPTURED CONTAMINATES.

WHITE = NEW
GRAY = WORKING
BLACK = SPENT - NEEDS REPLACEMENT - CONTACT KSI FOR REPLACEMENT PARTS

5. AFTER CLEANING THE UNIT - KSI RECOMMENDS REFILLING THE UNIT WITH WATER.

DESIGN BY: AG / RK	REV: 12-9-24 DATE: 10-10-08	1 OF 1	KSI KENNEDY SOLUTIONS, INC. 10051 Bergin Road Howell, MI 48843 Ph: 517-225-8338
MANUF. APPROVAL BY: .	SCALE: NTS	SHEET NO.	
DRAWING NO. SWTC INSTALL & MAINT.			

American Revolution Full Cutoff LED
Series 247CL

PRODUCT OVERVIEW

NOTE: 19' POLE HEIGHT

Features:

- Colonial LED lantern, replaces up to 250W HID models for street and area lighting applications
- Fifteen (15) LED performance packages deliver just the right amount of light for any given application up to 9,300 lumens
- Available in color temperature choices of 2700K, 3000K and 4000K
- Four (4) distinct light distribution options provide design flexibility, available in Type II, Type III, Type IV, and Type V
- Die-cast aluminum housing, engineered for sturdy lifelong performance
- Luminaire is rated for 3g vibration per ANSI C136.31
- Die-cast aluminum hood features a trigger latch (TL) option and captive thumb screws for fast, easy electrical and optical chamber access
- Standard paint finish is smooth gloss
- Housing is tenon pole-mounted and designed for use with a 3" tall by 2-3/8" to 3" diameter tenon, and secured by three set screws
- Rated LED and driver life greater than 100,000 hours at 25°C
- Surge protection device (standard) exceeds ANSI/IEEE C62.41-2002 Category C High (10kV/10kA) and ANSI C136.2-2015 Enhanced (10kV/5kA). 20kV Option exceeds ANSI/IEEE C62.41-2002 Category C High (10kV/10kA) and ANSI C136.2-2015 Extreme (20kV/10kA)
- Equipped with LED electronic 0-10V dimmable driver with DALI driver option

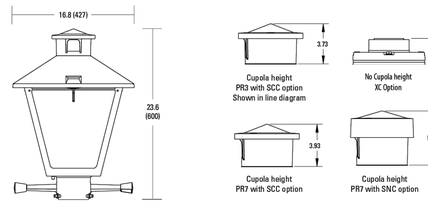
Applications:

Streetscapes
Walkways
Pathways
Parks

Standards:

- Complies with all applicable ANSI C136 standards.
- CSA listed and suitable for up to 40°C ambient
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- **GOVERNMENT PROCUREMENT** — BAA – Buy America(n) Act: Product with the BAA option qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under DOT Buy America regulations.
  BABA – Build America Buy America: Product with the BAA option also qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
  Please refer to www.acuitybrands.com/buy-american for additional information.

DIMENSIONS



Effective Projected Area (EPA)
The EPA for the American Revolution Series 247 is 1.6 sq. ft.
Fixture weight = 36 lbs.

**See Cupola Control Node Compatibility chart to ensure compatibility with smart controls*

All dimensions are inches (millimeters) unless otherwise noted.

Note: Specifications subject to change without notice.
American Revolution Series 247CL LED

American Revolution LED
Series 247CL

ORDERING INFORMATION

Example: 247CL P154 MVOLT 30K R3 BK SCC PR7

Series
247CL American Revolution LED

Performance Package

Package	Input Watts	Lumens (nominal)
P101	20	2,300
P102	30	3,100
P103	40	4,000
P104	49	4,800
P151	30	3,500
P152	40	4,300
P153	50	5,200
P154	60	6,000
P155	70	6,800
P201	70	7,400
P202	80	8,100
P300	41	4,800
P301	60	7,000
P302	70	7,800
P303	80	8,600

Voltage
MVOLT 120-277V
HVOLT 347-480V
XVOLT 277-480V with enhanced power quality protection

Color Temperature (CCT)
27K 2700K
30K 3000K
40K 4000K

Distribution
R2 Type II
R3 Type III
R4 Type IV
R5 Type V

Paint (smooth gloss)
BK Black
GY Gray
DDB Dark Bronze
WH White
BZ Bronze

Cupola
SCC Standard cupola
SNC Smart node cupola
XC No cupola

Photocontrol Receptacle
NR No photocontrol receptacle
PR3 3 pin NEMA photocontrol
PR7 7 pin NEMA photocontrol

Options

Options
PCLL Solid State Long Life Photocontrol, 120-277V (fail off)
P34 Solid State Long Life Photocontrol, 347V (fail off)
P48 Solid State Long Life Photocontrol, 480V (fail off)
PCSS Solid state photocontrol, 120-277V (Not CSA Listed) (fail on)
SH Shorting cap
A0 Field adjustable output module
DALI DALI driver (RFD required)

Miscellaneous
SS Stainless steel hardware
TL Tool-less trigger latch entry
NL1X1 1" x 1"NEMA label
NL2X2 2" x 2"NEMA label
XL Not CSA Listed
LDR Ladder Rest
CR Epoxy Pre-Coat Finish
20kV 20kV/10kA surge protection device
BAA Buy America(n) Act and/ or Build America Buy America Qualified

House-Side Shields
HSS House Side Shield

Prewired leads
L1H 1.5 ft. prewire leads
L03 3 ft. prewire leads
L10 10 ft. prewire leads
L20 20 ft. prewire leads
L25 25 ft. prewire leads
L30 30 ft. prewire leads

Accessory
House Side Shield shipped separately and installed in the field
FHSSLEM10-15R2/R5 P10x or P15x package, R2 or R5 optic
FHSSLEM10-15R3 P10x or P15x package, R3 optic
FHSSLEM20-30R2/R5 P20x or P30x package, R2 or R5 optic
FHSSLEM20-30R3 P20x or P30x package, R3 optic
FHSSLEM45R2/R5 P45x package, R2 or R5 optic
FHSSLEM45R3 P45x package, R3 optic

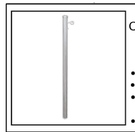
Note: Check the OPTIONS MATRIX on Page 3 for compatibility & restrictions

AEL Headquarters, One Lithonia Way, Conyers Georgia 30012.
www.americanelectriclighting.com Phone: 1-866-HOLOPHANE
Email: TechSupport-LightingB@AcuityBrands.com
© 2019-2024 Acuity Brands Lighting, Inc. All Rights Reserved. 247CL Rev. 04/16/24

Warranty Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at www.acuitybrands.com/support/warranty/terms-and-conditions

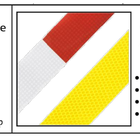
Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Please contact your sales representative for the latest product information.



Optional Swing Gate Barrier Receiver Post - 14030R

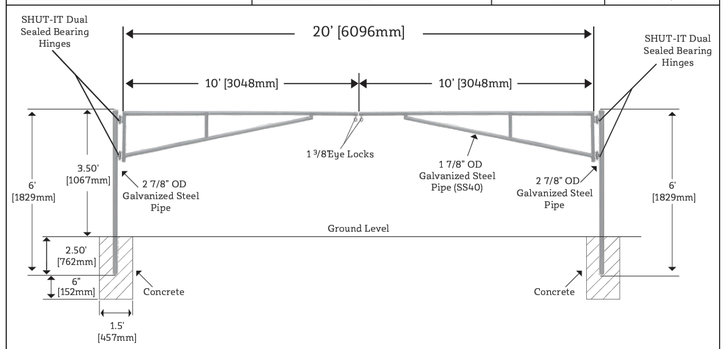
- Height: 6 ft.
- Galvanized Steel
- Diameter: 3 in. [2 7/8 in. OD]
- 1 3/8 in. Eye-Lock Loop



Optional Barrier Arm Gate & Post Safety Tape Kit

- Thickness: 8 Mil.
- MUTCD Compliant
- Red/White & Yellow
- Increases Visibility

Single Gate Models:	Double Gate Models:
14010-10 | 10 ft.	14020-20 | 20 ft.
14010-12 | 12 ft.	14020-24 | 24 ft.
14010-14 | 14 ft.	14020-28 | 28 ft.
14010-15 | 15 ft.	14020-30 | 30 ft.
14010-16 | 16 ft.	14020-32 | 32 ft.
14010-20 | 20 ft.	14020-40 | 40 ft.



Contact Information:	Manufacturer:	Part Number:	Product Description:	Product Specifications:
Web: www.TigerTeethStore.com Phone: (800) 878-7829 Email: Sales@TigerTeethStore.com	Barrier Gate Brands™	14020-20	SENTINEL 20 ft. Manual Double Swing Barrier Gate	• Width: 20 ft. • Material: Galvanized Steel • Installation Type: In-Ground • Barrier Gate Type: Manual Double Swing Gate

REVISED: 01/16/2025
REVISED: 12/10/2024

CONSTRUCTION DETAILS & NOTES
CREEKSIDE
PART OF THE NW. 1/4 OF SEC. 21, T. 3 S., R. 11 W., CITY OF PORTAGE, MICHIGAN

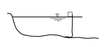
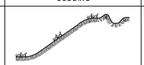
MONUMENT ENGINEERING GROUP ASSOC., INC.
Formerly Ingersoll, Watson & McMachen, Inc.
1209 East Milham Road, Suite B · Portage, Michigan 49002 · Phone 269 344-6165

DATE: 9/16/2024
SHEET: 8
JOB No.: 24-042

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

(COMPREHENSIVE DETAILS ARE LOCATED IN SECTION 6 OF THE SOIL EROSION & SEDIMENTATION CONTROL MANUAL)

- A = SLOPES
- B = STREAMS AND WATERWAYS
- C = SURFACE DRAINAGEWAYS
- D = ENCLOSED DRAINAGE (INLET & OUTFALL CONTROL)
- E = LARGE FLAT SURFACE AREAS
- F = BORROW AND STOCKPILE AREAS
- G = DNRE PERMIT MAY BE REQUIRED

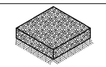
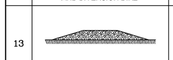
KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
1	 TURBIDITY CURTAIN	A Turbidity Curtain is used when slack water area is necessary to isolate construction activities from the watercourse. The still water area contains the sediments within the construction limits.		•					
2	GRUBBING OMITTED	Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gullying. Discourages off-road vehicle use.	•				•		
3	PERMANENT/TEMPORARY SEEDING	Inexpensive but effective erosion control measure to stabilize flat areas and mild slopes. Permits runoff to infiltrate soil, reducing runoff volumes. Proper preparation of the seed bed, fertilizing, mulching and watering is critical to its success.	•		•		•	•	
4	DUST CONTROL	Dust control can be accomplished by watering, and/or applying calcium chloride. The disturbed areas should be kept to a minimum. PERMANENT/TEMPORARY SEEDING (KEY 3) should be applied as soon as possible.	•				•	•	
5	SODDING	Provides immediate vegetative cover such as at spillways and ditch bottoms. Proper preparation of the topsoil, placement of the sod, and watering is critical to its success.	•				•	•	
6	 VEGETATED BUFFER STRIPS	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection of sediments by filtering runoff. Assists in the establishment of a permanent vegetative cover.	•				•		

MDOT — PREPARED BY DESIGN DIVISION
DRAWN BY: R.L.T.
CHECKED BY: W.L.P.

DEPARTMENT DIRECTOR
Kirk T. Steudle
APPROVED BY: John C. Friend — ENGINEER OF DELIVERY
APPROVED BY: Paul A. VanFalkenberg — ENGINEER OF DEVELOPMENT

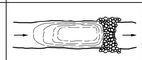
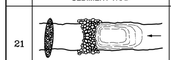
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 1 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
7	RIPRAP	Used where vegetation cannot be established. Very effective in protecting against high velocity flows. Should be placed over a geotextile liner.	•	•	•	•			•
8	 AGGREGATE COVER	Can be used in any area where a stable condition is needed for construction operations, equipment storage or in heavy traffic areas. Reduces potential soil erosion and fugitive dust by stabilizing raw areas.	•				•	•	
9	BENCHES	Reduces sheet flow velocities preventing rilling and gullying. Assists in the collection and filtering of sediments. Provides access for stabilizing slopes.	•					•	
10	DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Collects and diverts runoff to properly stabilized drainage ways. Works well with INTERCEPTING DITCH (KEY 11)	•				•	•	
11	INTERCEPTING DITCH	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying. Works well with DIVERSION DIKE (KEY 10)	•				•	•	
12	INTERCEPTING DITCH AND DIVERSION DIKE	Assists in the diversion of runoff to a stable outlet or sediment control device. Reduces sheet flow velocities preventing rilling and gullying.	•				•	•	
13	 GRAVEL FILTER BERM	Useful in filtering flow prior to its reentry into a lake, stream or wetland. Works well with SEDIMENT TRAP (KEY 20) and TEMPORARY BYPASS CHANNEL (KEY 35). Not to be used in lieu of a CHECK DAM (KEY 37) in a ditch.	•		•			•	
14	GRAVEL ACCESS APPROACH	Provides a stable access to roadways minimizing fugitive dust and tracking of materials onto public streets and highways.					•	•	

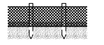
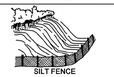
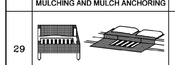
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 2 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
15	SLOPE DRAIN SURFACE	Excellent device for carrying water down slopes without creating an erosive condition. Generally used in conjunction with DIVERSION DIKE (KEY 10), INTERCEPTING DITCH (KEY 11) and INTERCEPTING DITCH AND DIVERSION DIKE (KEY 12) to direct flow to a stable discharge area or SEDIMENT TRAP (KEY 20).	•		•				
16	TREES, SHRUBS AND PERENNIALS	Trees, shrubs and perennials can provide low maintenance long term erosion protection. These plants may be particularly useful where site aesthetics are important along the roadside slopes.	•				•		
17	PIPE DROP	Effective way to allow water to drop in elevation very rapidly without causing an erosive condition. Also works as a sediment collector device. May be left in place as a permanent erosion control device.	•		•				
18	DEWATERING WITH FILTER BAG	It may be necessary to dewater from behind a cofferdam or construction dam to create a dry work site. Discharged water must be pumped to a filter bag. A GRAVEL FILTER BERM (KEY 13) may be placed downslope of the filter bag to provide additional filtration prior to entering any stream or wetland.		•					•
19	ENERGY DISSIPATORS	A device to prevent the erosive force of water from eroding soils. Used at outlets of culverts, drainage pipes or other conduits to reduce the velocity of the water. Prevents structure scouring and undermining.	•	•	•	•			
20	 SEDIMENT TRAP	Used to intercept concentrated flows and prevent sediments from being transported off site or into a watercourse or wetland. The size of a Sediment Trap is 5 cubic yards or less. Works well when used with CHECK DAM (KEY 37).	•		•	•			
21	 SEDIMENT BASIN	A Sediment Basin is used to trap sediments from an upstream construction site. Requires periodic inspections, repairs, and maintenance. Where practical, sediments should be contained on site. A Sediment Basin should be the last choice of sediment control. The size of a Sediment Basin is greater than 5 cubic yards.			•				•
22	VEGETATIVE BUFFER AT WATERCOURSE	This practice is used to maintain a vegetative buffer adjacent to a watercourse. When utilized with SILT FENCE (KEY 26) it will, under normal circumstances, prevent sediment from leaving the construction site.	•	•	•		•	•	

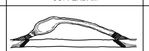
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 3 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
23	STREAM RELOCATION	A detail depicting the proper procedures for stream relocation. Maintains same width, depth, and fow velocity as the natural stream. Revegetate banks with PERMANENT/TEMPORARY SEEDING (KEY 3), MULCHING AND MULCH ANCHORING (KEY 28), MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS (KEY 33) and woody plants to shade the stream.		•					•
24	SAND AND STONE BAGS	Sand and stone bags are a useful tool in the prevention of erosion. Can be used to divert water around a construction site by creating a DIVERSION DIKE (KEY 10). Works well for creating a CONSTRUCTION DAM (KEY 36) and temporary culvert end fill.	•	•	•	•	•	•	•
25	 SAND FENCE AND DUNE STABILIZATION	A Sand Fence traps blowing sand by reducing wind velocities. Can be used to prevent sand from blowing onto roads. Must be maintained until sand source is stabilized.	•				•	•	
26	 SILT FENCE	A permeable barrier erected below disturbed areas to capture sediments from sheet flow. Can be used to divert small volumes of water to stable outlets. Ineffective as a filter and should never be placed across streams or ditches where flow is concentrated.	•				•	•	
27	PLASTIC SHEETS OR GEOTEXTILE COVER	Plastic Sheets can be used to create a liner in temporary channels. Can also be used to create a temporary cover to prevent erosion of stockpiled materials.	•	•	•			•	
28	MULCHING AND MULCH ANCHORING	Anchored mulch provides erosion protection against rain and wind. Mulch must be used on seeded areas to promote water retention and growth. Should be inspected after every rainstorm and repaired as necessary until vegetation is well established.	•		•		•	•	
29	 INLET PROTECTION FABRIC DROP	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Can be used in median and side ditches where vegetation will be disturbed. Allows for early use of drainage systems prior to project completion.				•		•	
30	INLET PROTECTION GEOTEXTILE AND STONE	Provides settling and filtering of silt laden water prior to its entry into the drainage system. Should be used in paved areas where drainage structures are existing or proposed. Allows for early use of drainage systems prior to project completion.				•		•	

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 4 OF 6

KEY	DETAIL	CHARACTERISTICS	A	B	C	D	E	F	G
31	INLET PROTECTION SEDIMENT TRAP	An Inlet Protection Sediment Trap is a temporary device that can be used in areas where medium flows are anticipated. Effective in trapping small quantities of sediments prior to water entering the drainage system. Can be used in areas such as median and side ditches.			•		•		
32	SLOPE ROUGHENING AND SCARIFICATION	A simple and economical way to reduce soil erosion by wind and water. Can be accomplished by harrowing with a disk, back blading, or tracking with a dozer perpendicular to the slope.	•				•	•	
33	MULCH BLANKETS AND HIGH VELOCITY MULCH BLANKETS	Mulch blankets provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion. High velocity mulch blankets work well for stabilizing the bottom of ditches in waterways.	•		•		•	•	
34	COFFERDAM	Used to create a dry construction area and protect the stream from raw erodible areas. Must be pumped dry or dewatered according to DEWATERING WITH FILTER BAG (KEY 18).			•				•
35	 TEMPORARY BYPASS CHANNEL	Utilized when a dry construction area is needed. Isolates stream flows from raw erodible areas minimizing erosion and subsequent siltation. Can incorporate SEDIMENT BASIN (KEY 21), CHECK DAM (KEY 37), and GRAVEL FILTER BERM (KEY 13) to remove sediments from water. Construction sequence of events may be necessary.			•				•
36	CONSTRUCTION DAM	Used to create a dry or slack water area for construction. Isolates the stream from raw erodible areas. Can be created out of any non-erodible materials such as SAND AND STONE BAGS (KEY 24), a gravel dike with clay core or plastic liner, steel plates or plywood.			•				•
37	CHECK DAM	Can be constructed across ditches or any area of concentrated flow. Protects vegetation in early stages of growth. A Check Dam is intended to reduce water velocities and capture sediment. A Check Dam is not a filtering device.	•		•			•	

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 5 OF 6

NOTES:

THIS STANDARD PLAN WILL SERVE AS A KEY IN THE SELECTION OF THE APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL DETAILS. THIS PLAN ALSO PROVIDES THE KEY TO THE NUMBERED EROSION CONTROL ITEMS SPECIFIED ON THE CONSTRUCTION PLANS. REFER TO THE MOST SOIL EROSION & SEDIMENTATION CONTROL MANUAL, SECTION 6 FOR SPECIFIC DETAILS, CONTRACT ITEMS (PAY ITEMS), AND PAY UNITS.

COLLECTED SILT AND SEDIMENT SHALL BE REMOVED PERIODICALLY TO MAINTAIN THE EFFECTIVENESS OF THE SEDIMENT TRAP, SEDIMENT BASIN, AND SILT FENCE. AGGREGATES PLACED IN STREAMS SHOULD CONTAIN A MINIMUM OF FINES.

TEMPORARY EROSION AND SEDIMENTATION CONTROL PROVISIONS SHALL BE COORDINATED WITH THE PERMANENT CONTROL MEASURES TO ASSURE EFFECTIVE CONTROL OF SEDIMENTS DURING CONSTRUCTION OF THE PROJECT.

ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE REMOVED AFTER VEGETATION ESTABLISHMENT OR AT THE DISCRETION OF THE ENGINEER. CARE SHALL BE TAKEN DURING REMOVAL TO MINIMIZE SILTATION IN NEARBY DRAINAGE COURSES.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
SOIL EROSION & SEDIMENTATION CONTROL MEASURES

9-10-2010 F.H.W.A. APPROVAL	6-3-2010 PLAN DATE	R-96-E	SHEET 6 OF 6

NOTE: ALL SESC MEASURES AND PROVISIONS SHALL COMPLY WITH DETAILS ON THIS SHEET.

REVISED: 01/16/2025
REVISED: 12/10/2024

EROSION CONTROL DETAILS
CREEKSIDE
PART OF THE NW. 1/4 OF SEC. 21, T. 3 S., R. 11 W., CITY OF PORTAGE, MICHIGAN

DATE: 9/16/2024
SHEET: 9
JOB No.: 24-042

MONUMENT ENGINEERING GROUP ASSOC., INC.
Formerly Ingersoll, Watson & McMachen, Inc.
1209 East Milham Road, Suite B · Portage, Michigan 49002 · Phone 269 344-6165

Creekside Planned Development

Sample Portfolio of Homes

April 11, 2024

The following plans represent a sample set of homes which are planned within the Creekside PD

Integrity 1800 – Single Family Detached (Bi-Level, 3 Bedroom)

Integrity 1910 – Single Family Detached (2-Story, 4 Bedroom)

Integrity 2085 – Single Family Detached (2-Story, 5 Bedroom)

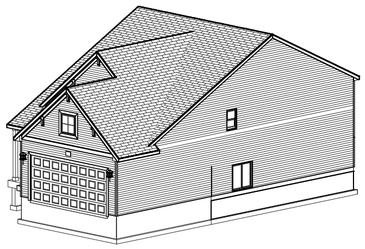
Village 1490MS – Attached Townhome (2-Story, 3 Bedroom)

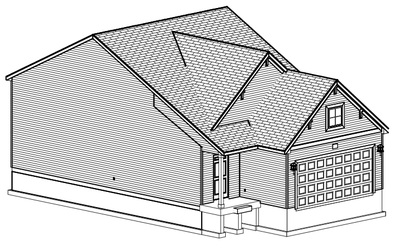
i1910
i2085
i1800
i1910
i1910
i2085

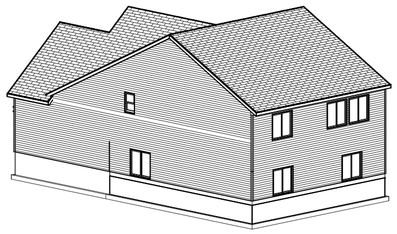
Integrity 1800

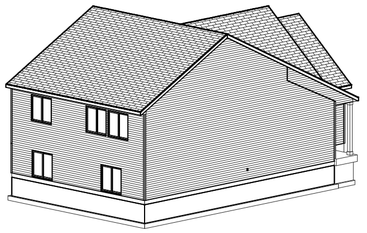
- **Single Family Detached Home**
- **1,800 Square Feet, Bi-Level**
- **3 Bedrooms/2½ Bathrooms**
- **Attached 2-Stall Garage (front load)**

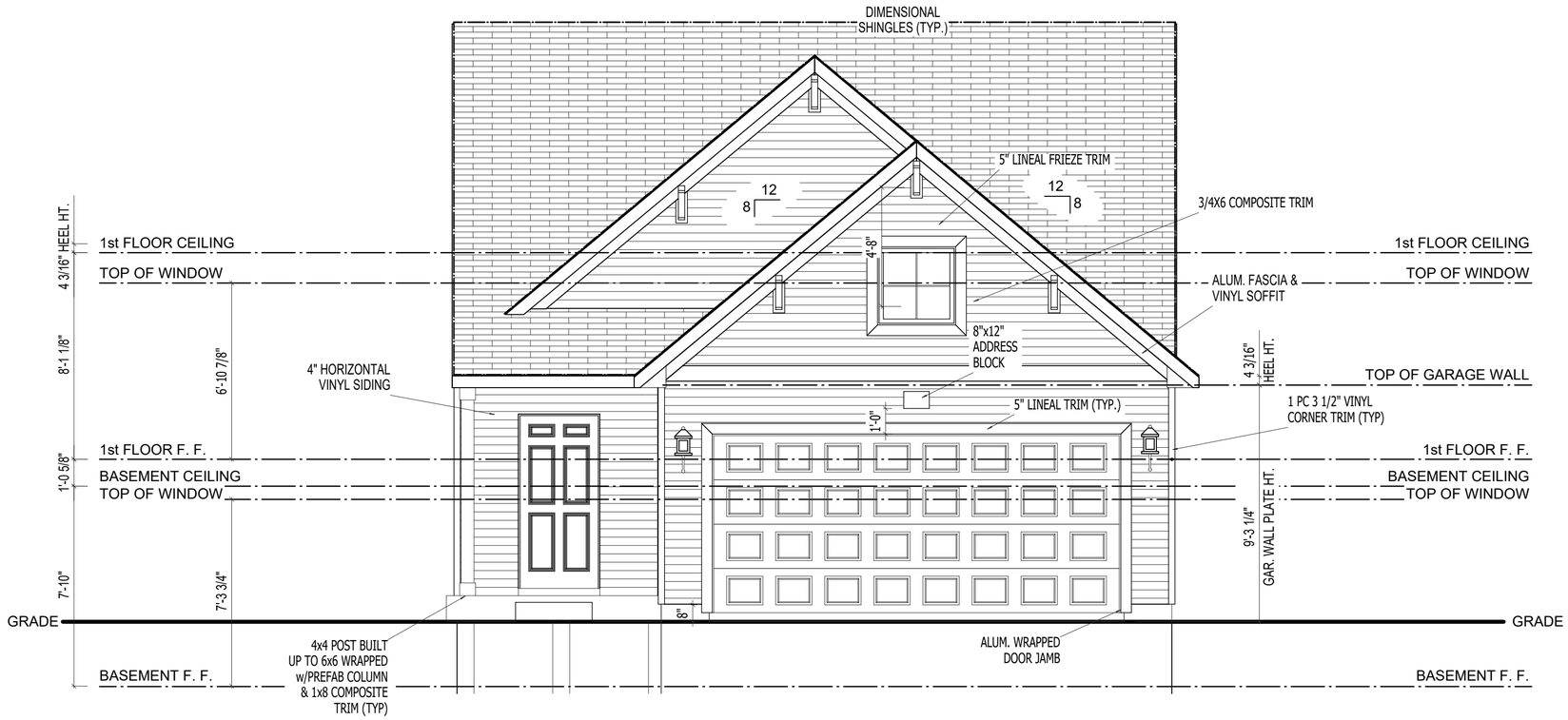
i1800
324











FRONT ELEVATION A1

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

PRINT DATE: 03/05/2024

i1800
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-01.00

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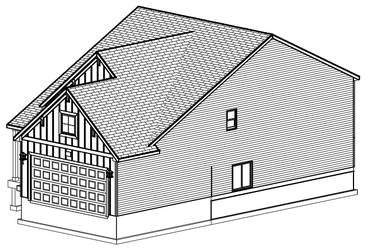
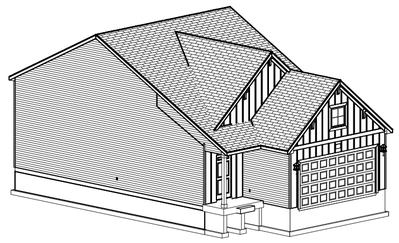
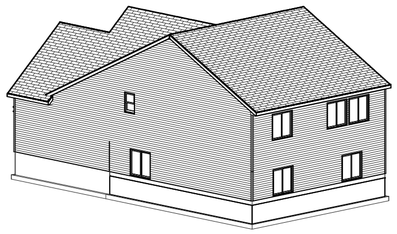
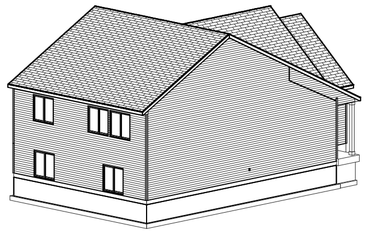
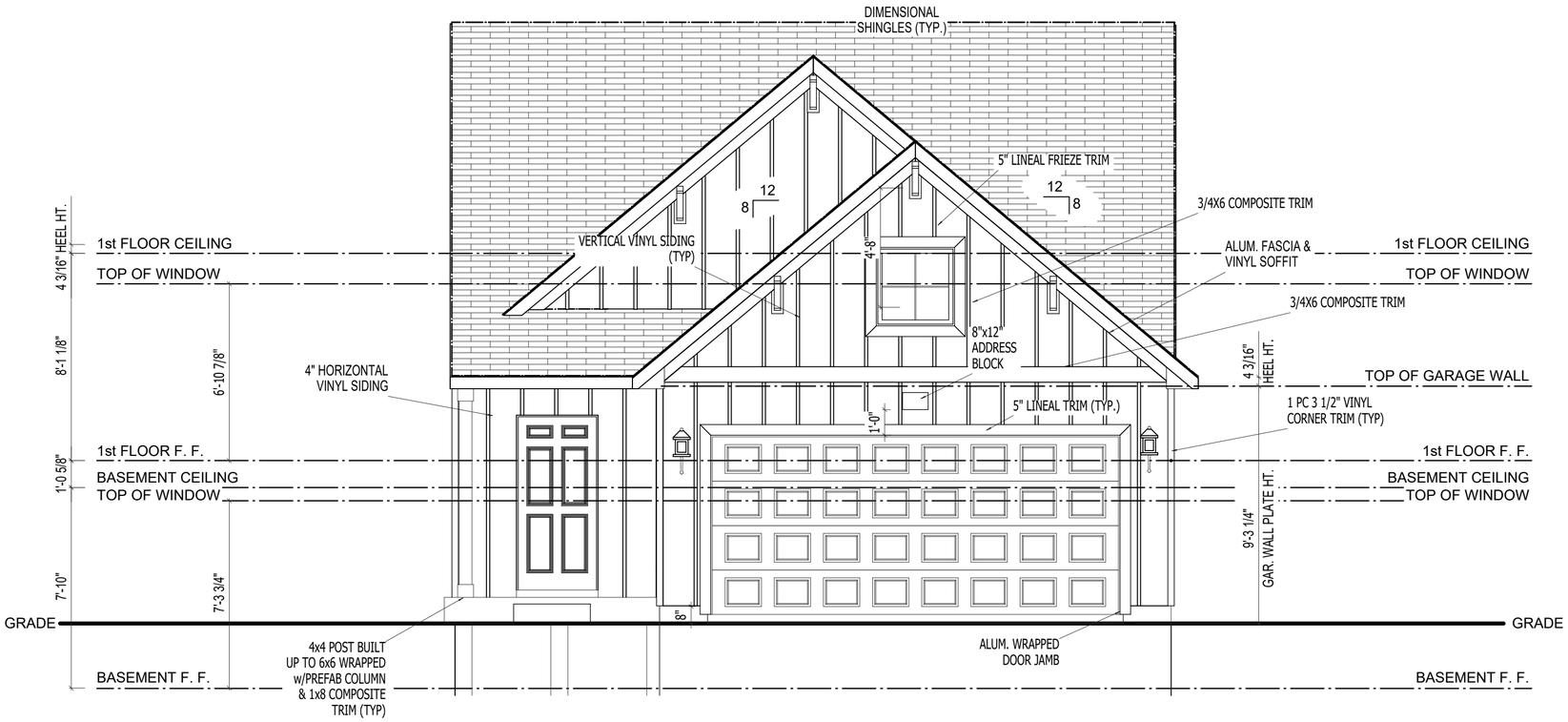
ms/A-01.00.vxp











FRONT ELEVATION A2

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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Portage, MI 49002
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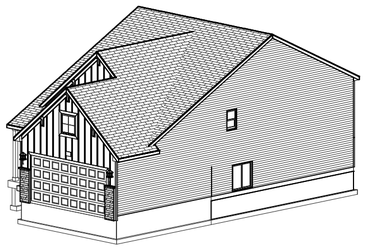

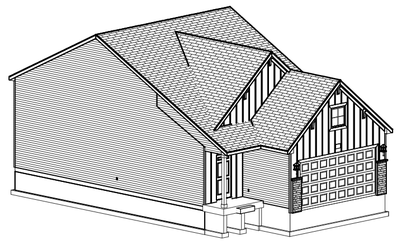

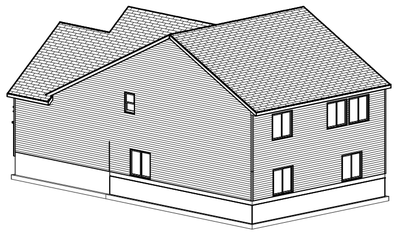

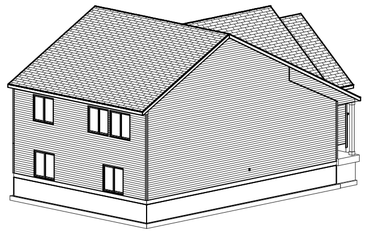

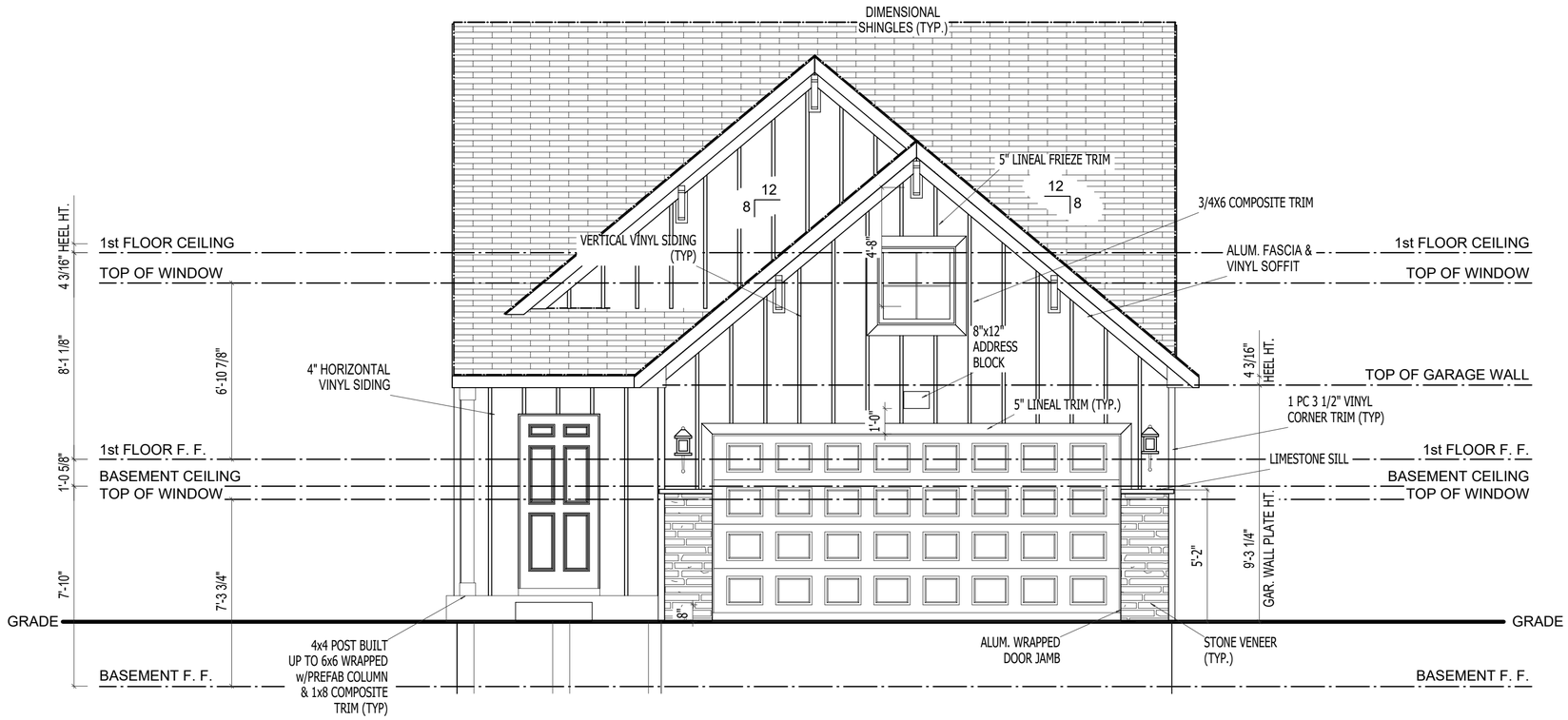

FRONT ELEVATION A3

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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Portage, MI 49002
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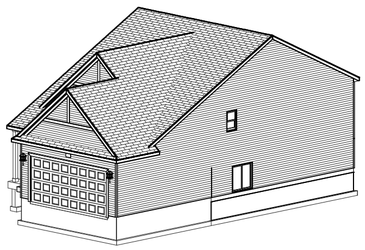

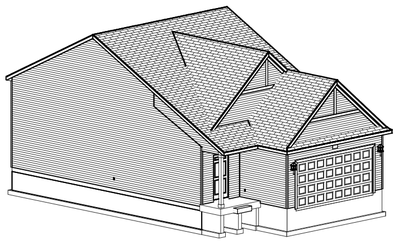

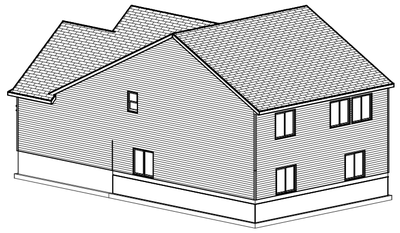

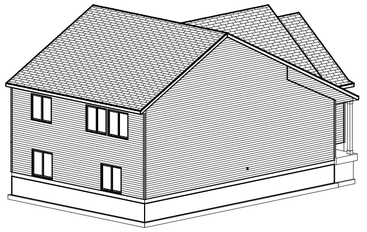

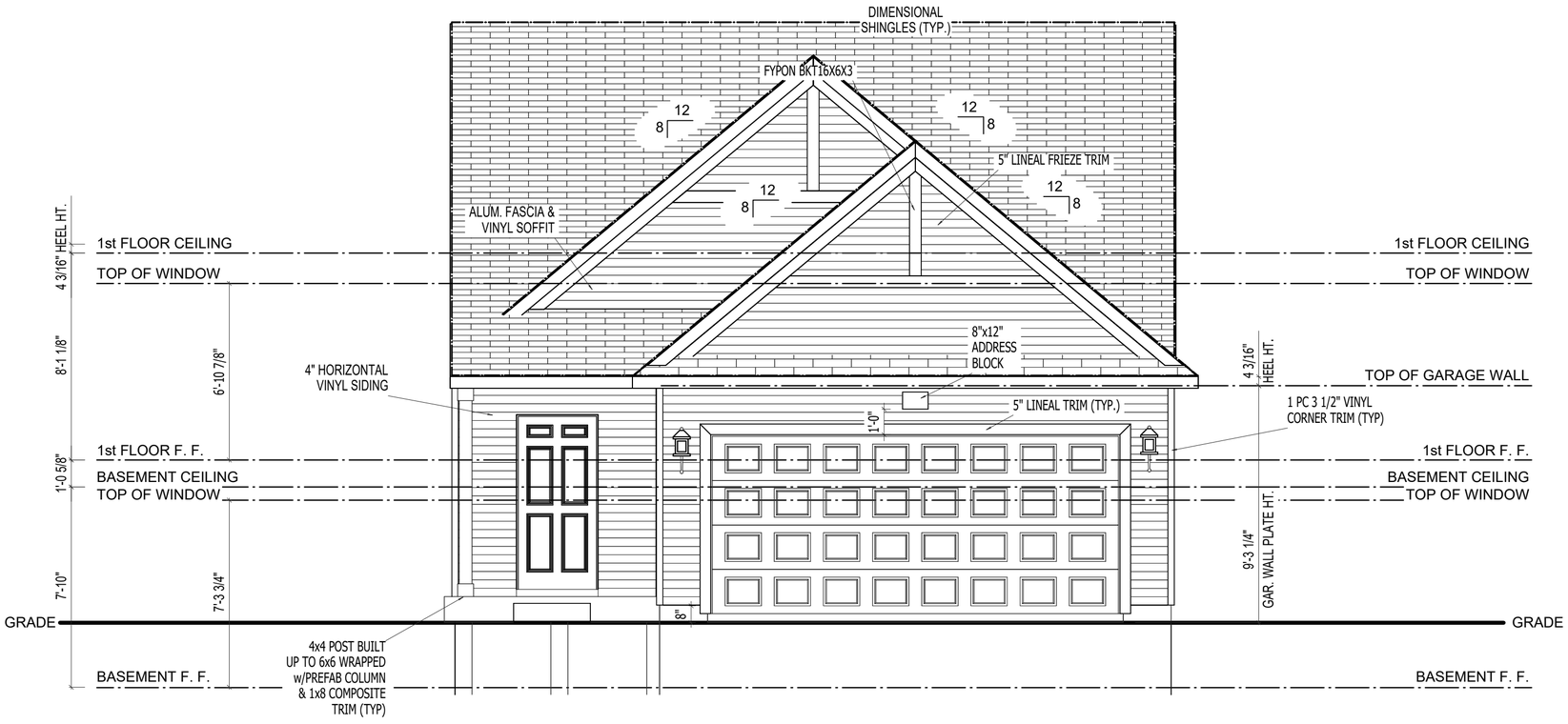

FRONT ELEVATION B1

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

ALLEN EDWIN HOMES
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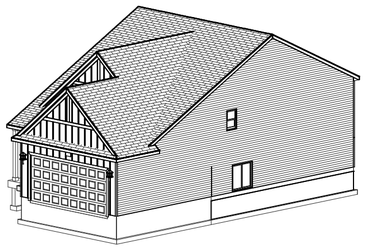

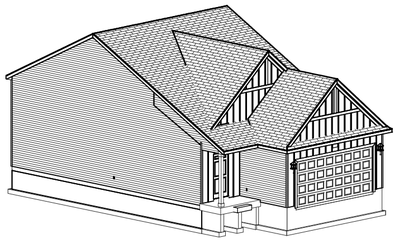

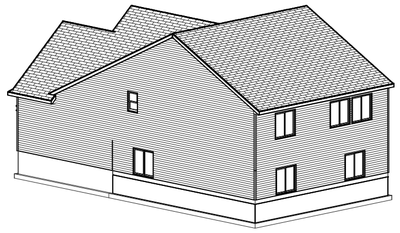

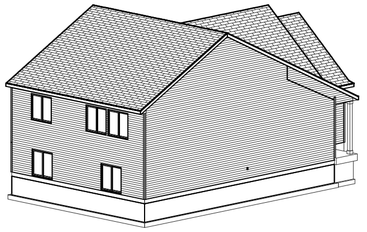

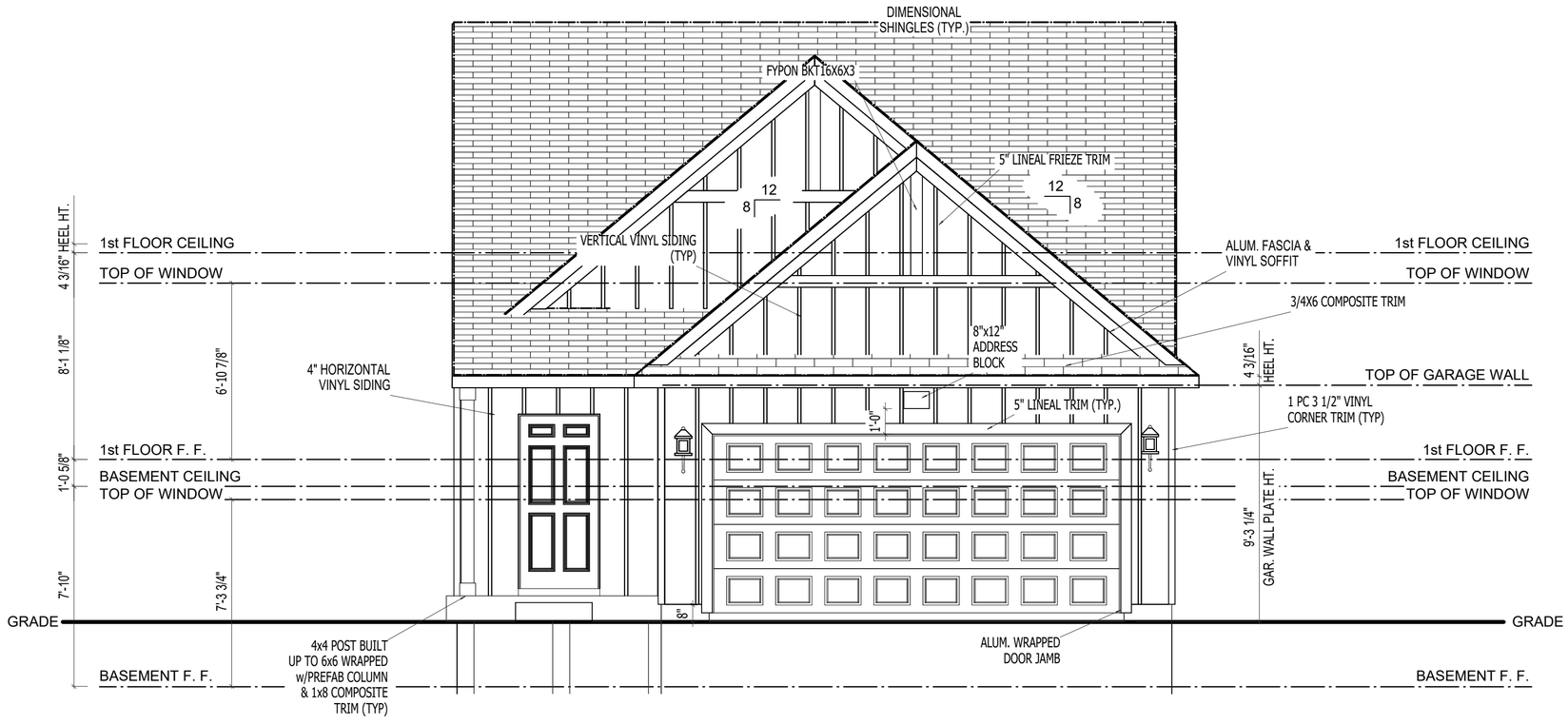

FRONT ELEVATION B2

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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Portage, MI 49002
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PRINT DATE:
03/05/2024

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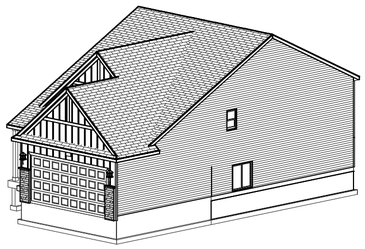

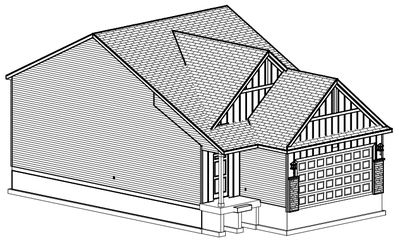

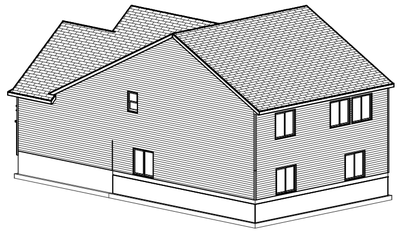

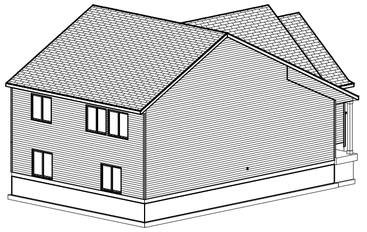

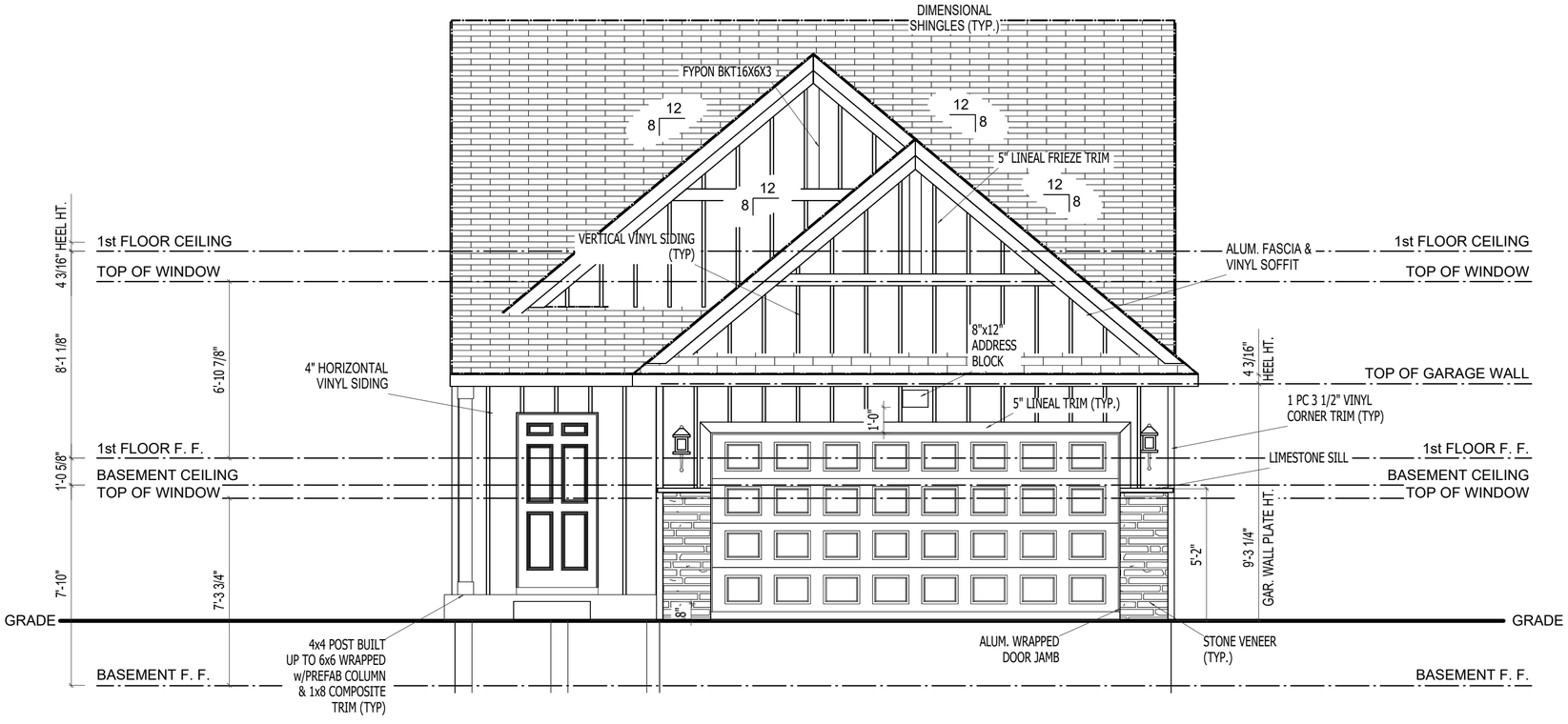

FRONT ELEVATION B3

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

ALLEN EDWIN HOMES
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Portage, MI 49002
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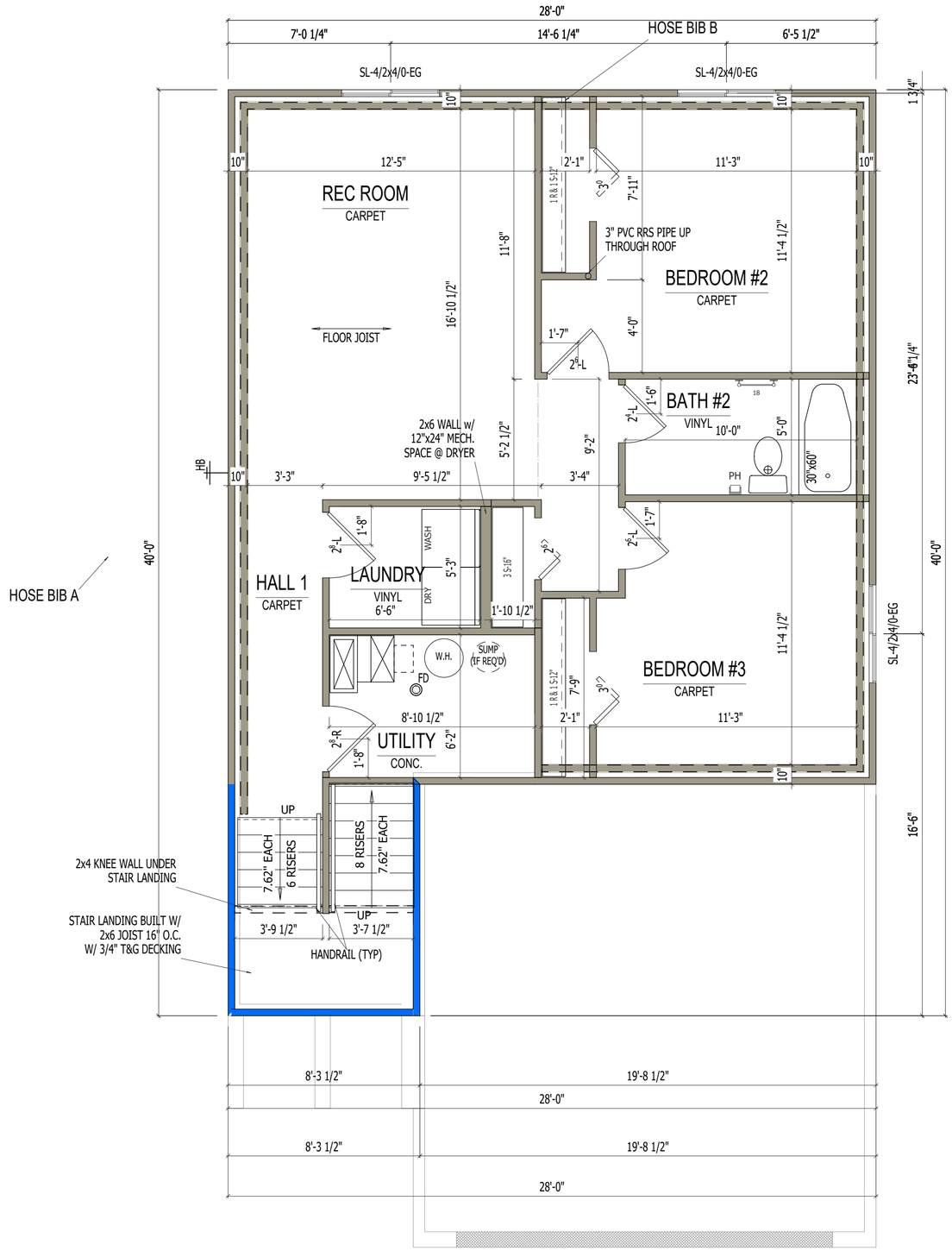

BASEMENT FLOOR PLAN

SCALE: 1/4"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1
GARAGE RIGHT
REVISION

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
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PRINT DATE:
03/05/2024

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LOCATION:

SHEET NUMBER

A-07.00

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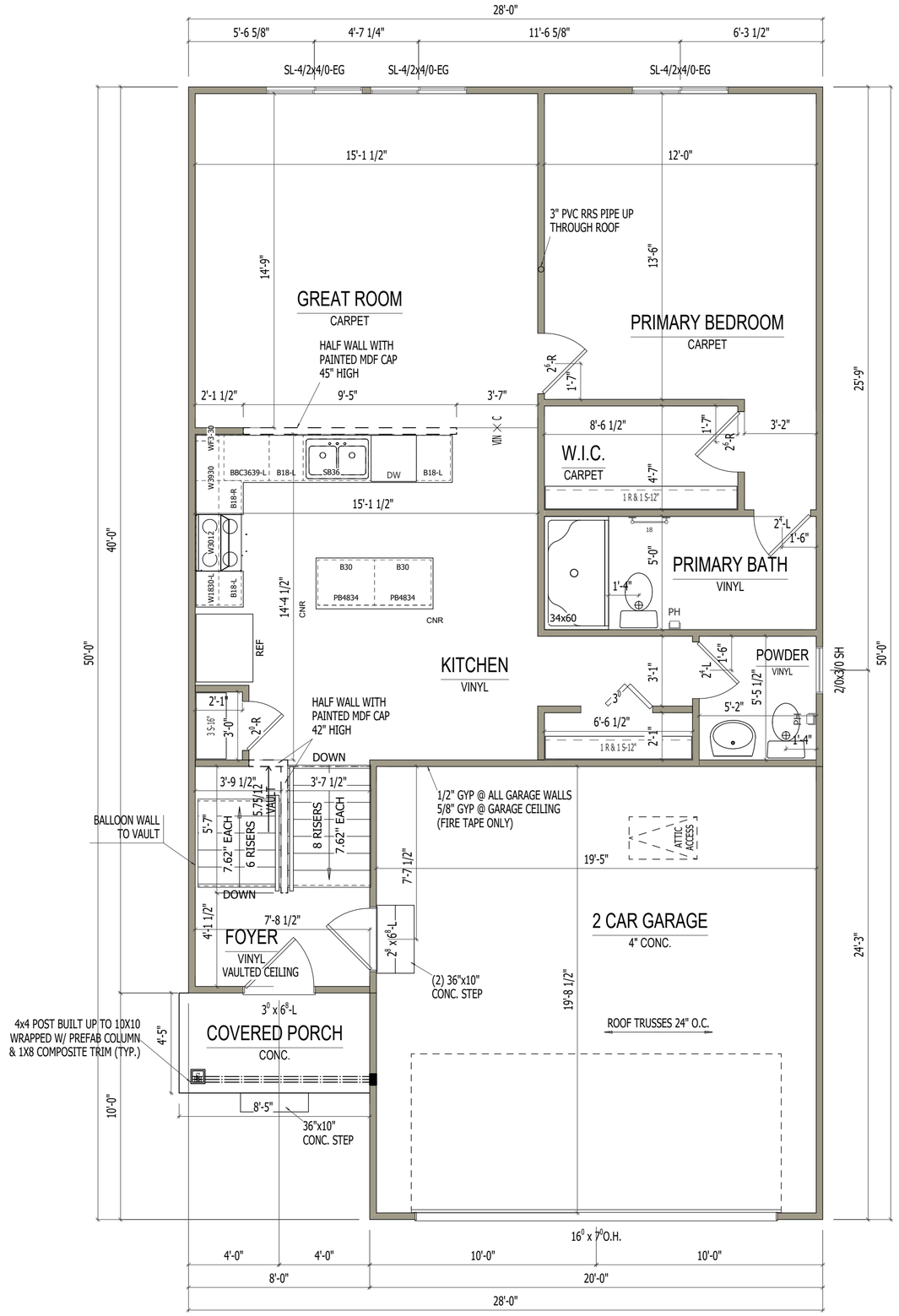

FIRST FLOOR PLAN

SCALE: 1/4"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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Portage, MI 49002
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PRINT DATE: 03/05/2024

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FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-08.00

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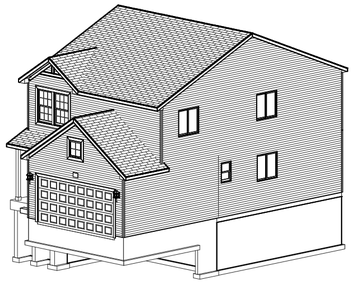
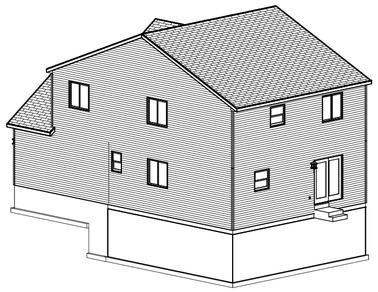
ms/A-08.00.vxp

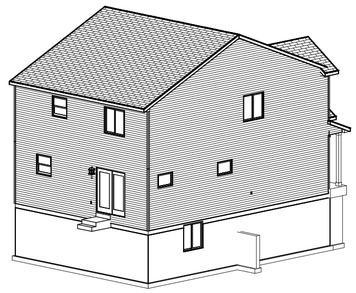
Integrity 1910

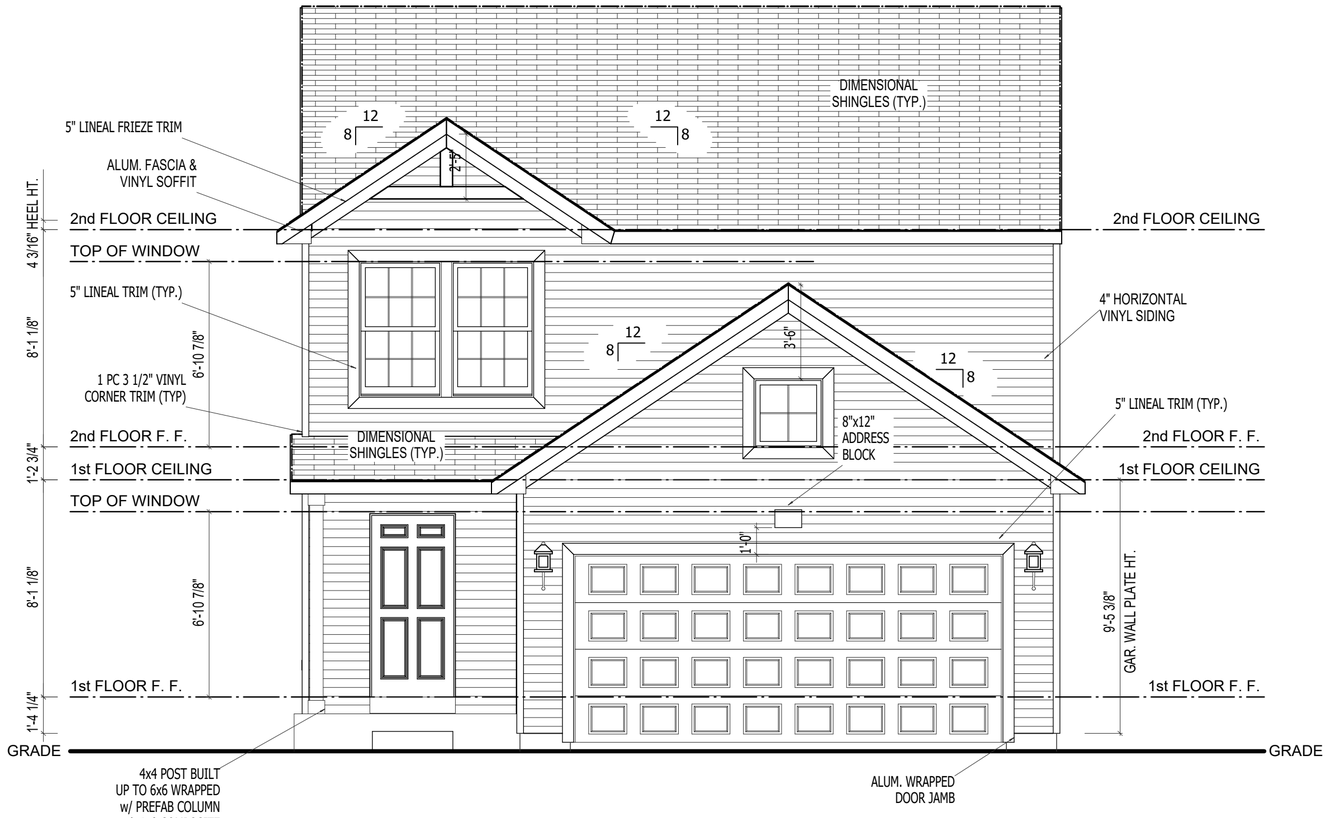
- **Single Family Detached Home**
- **1,910 Square Feet, Two-Story**
- **4 Bedrooms/2½ Bathrooms**
- **Attached 2-Stall Garage (front load)**

i1910
326









FRONT ELEVATION A1

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

PRINT DATE:
02/29/2024

i1910
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-01.00

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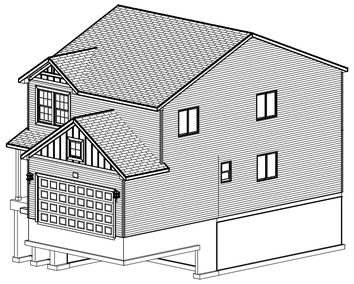

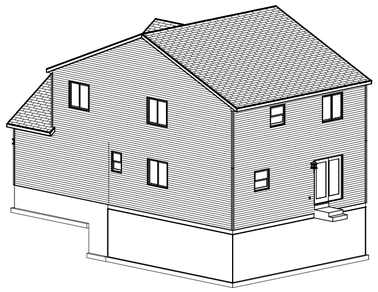

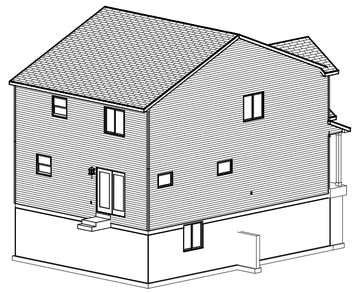

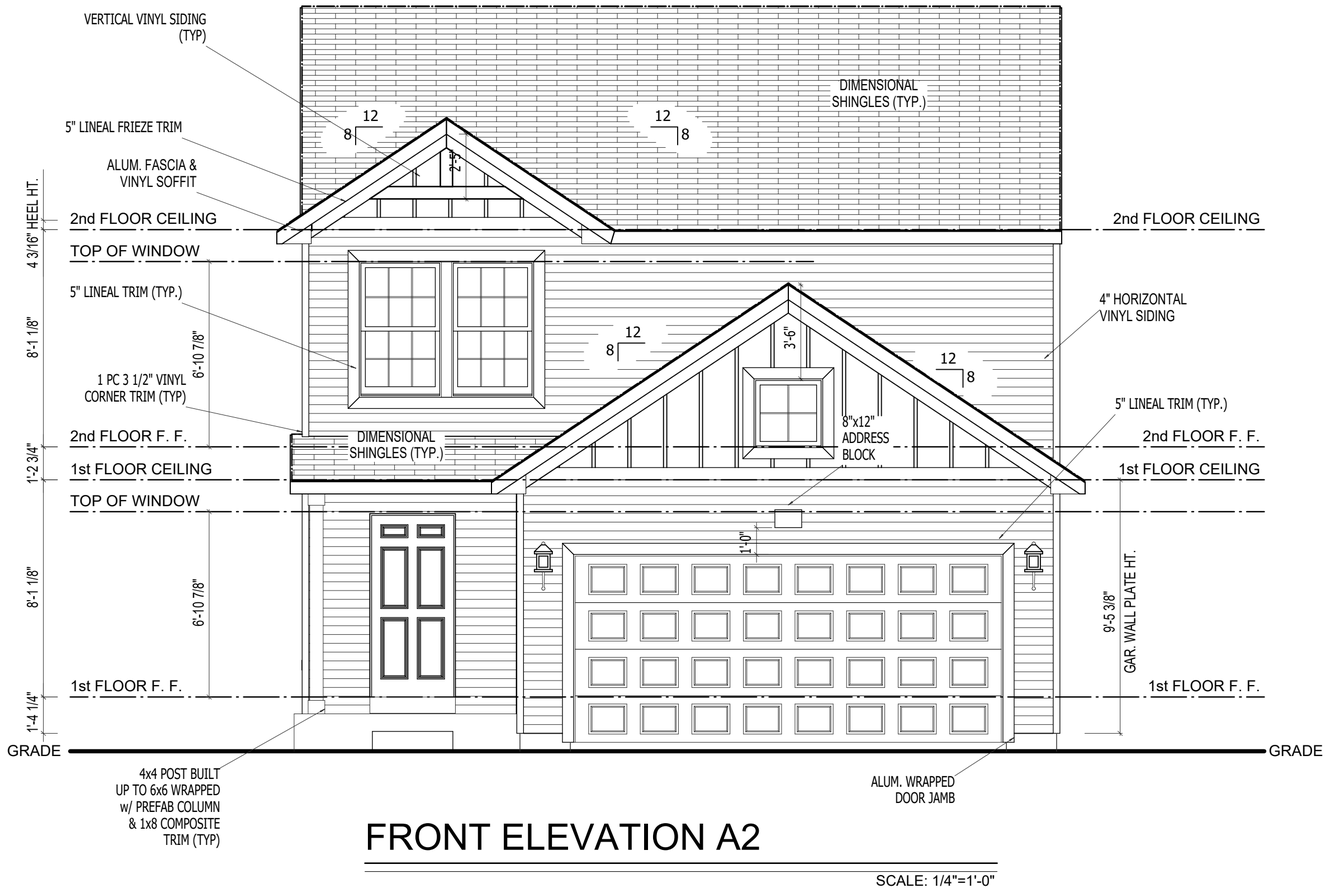

FRONT ELEVATION A2

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1

GARAGE RIGHT

REVISION ----------

ALLEN EDWIN HOMES

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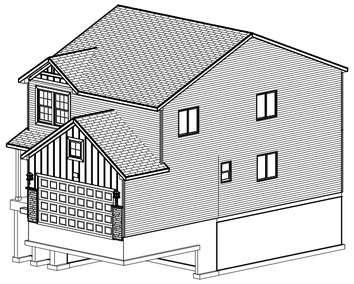

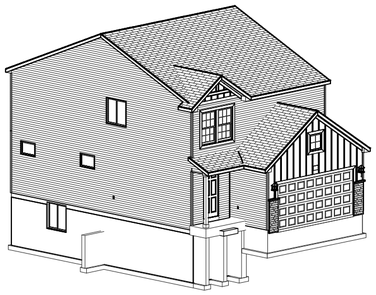

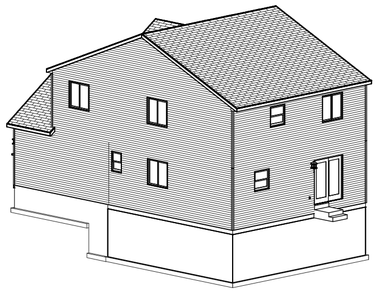

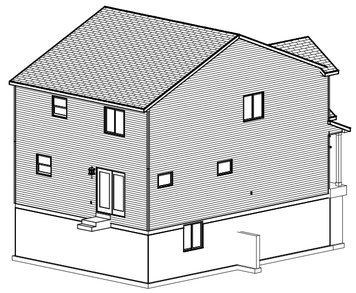

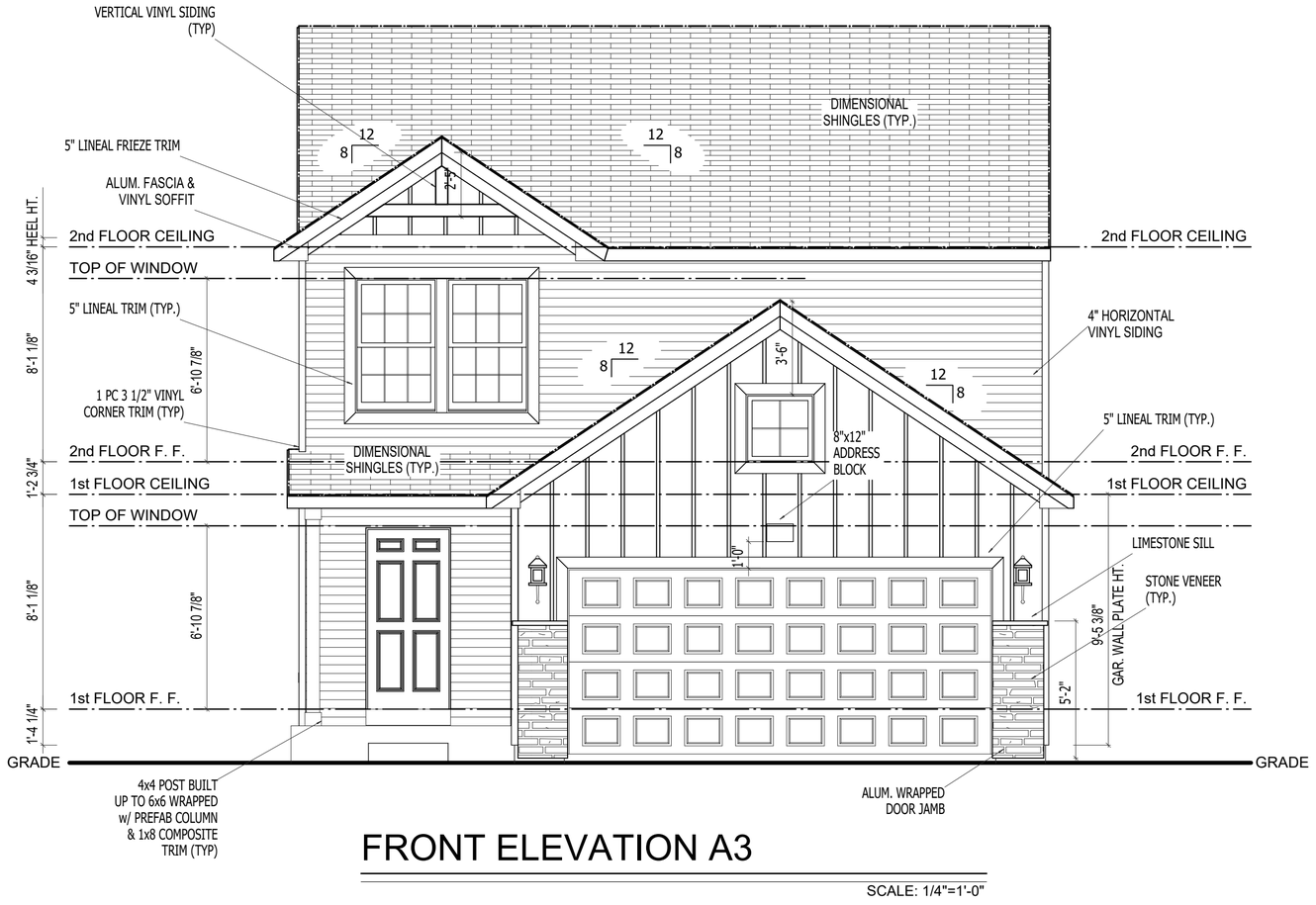

FRONT ELEVATION A3

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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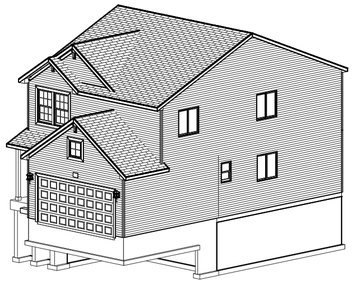

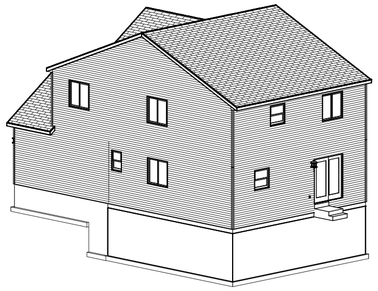

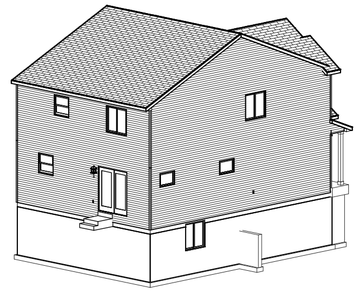

FRONT ELEVATION B1

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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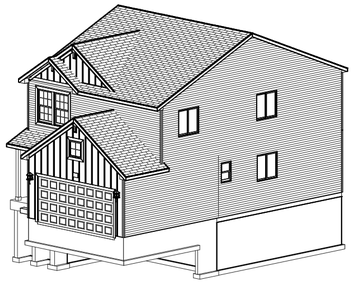

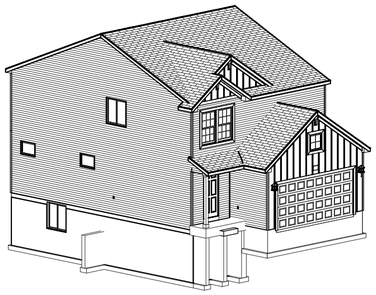

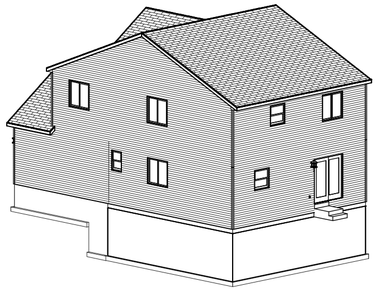

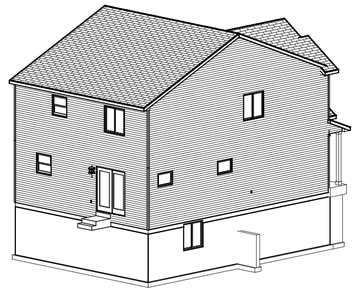

FRONT ELEVATION B2

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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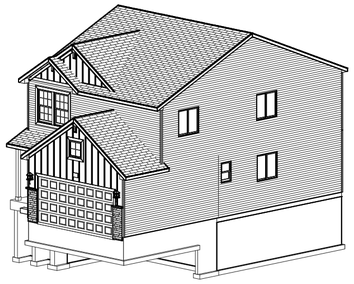

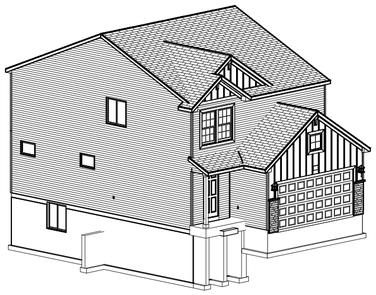

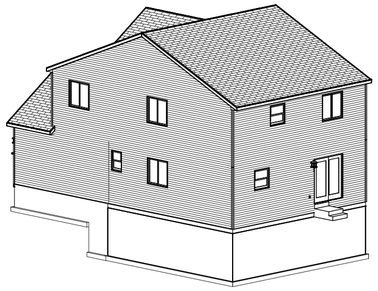

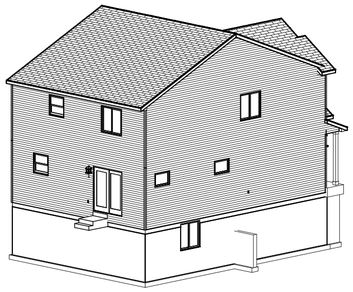

FRONT ELEVATION B3

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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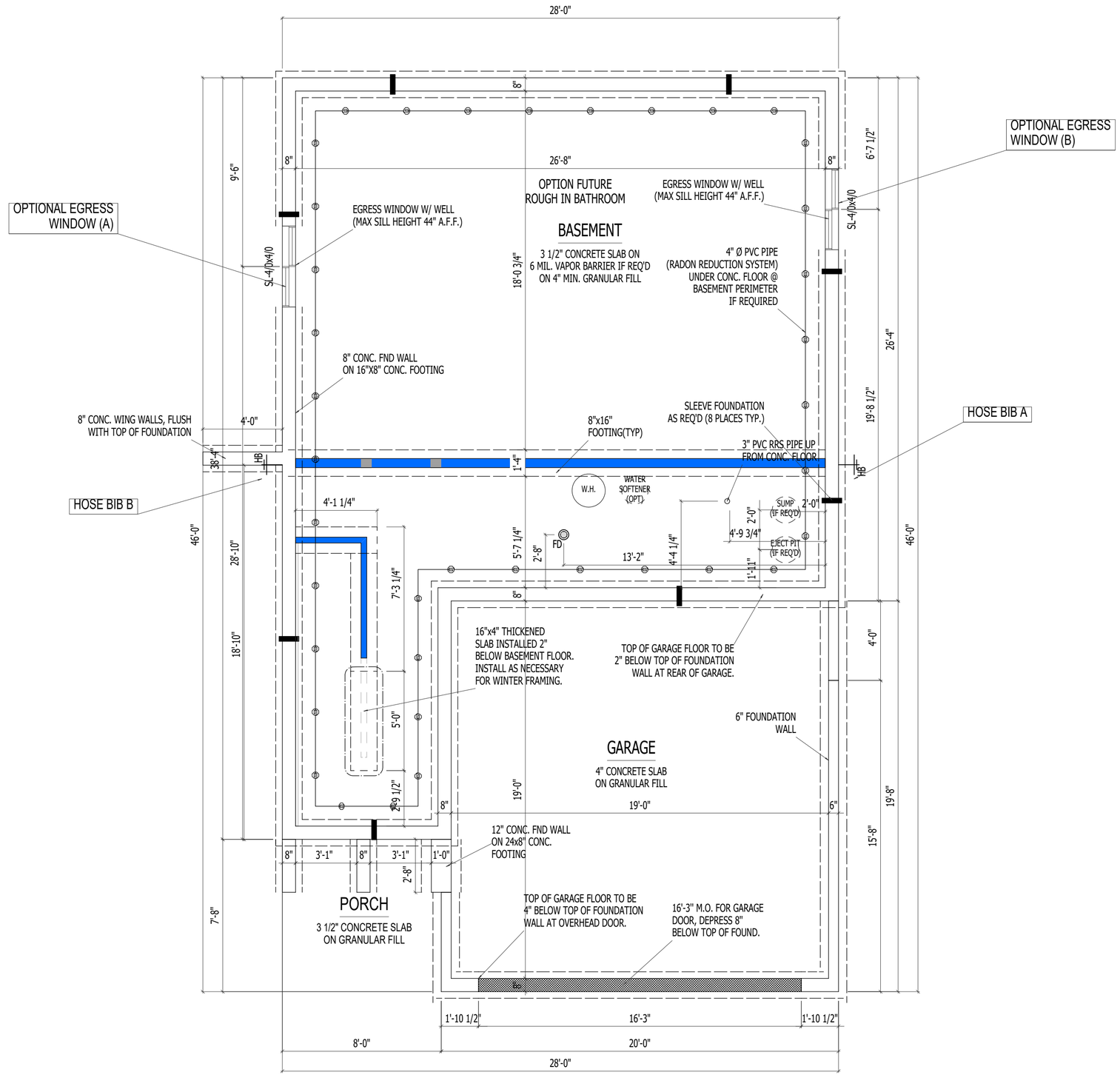

BASEMENT FOUNDATION: STANDARD ELEVATION

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION

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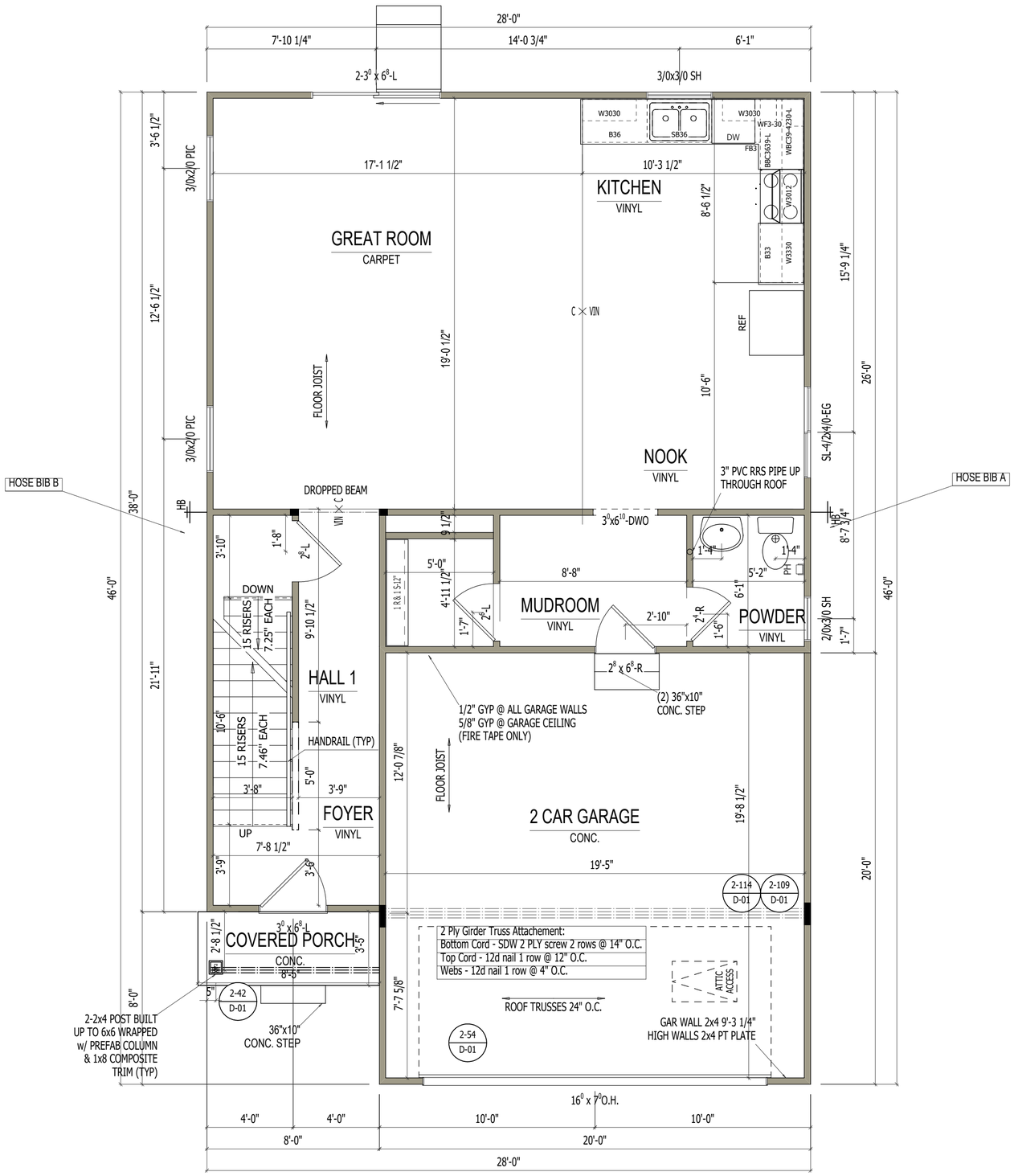

FIRST FLOOR i1910

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
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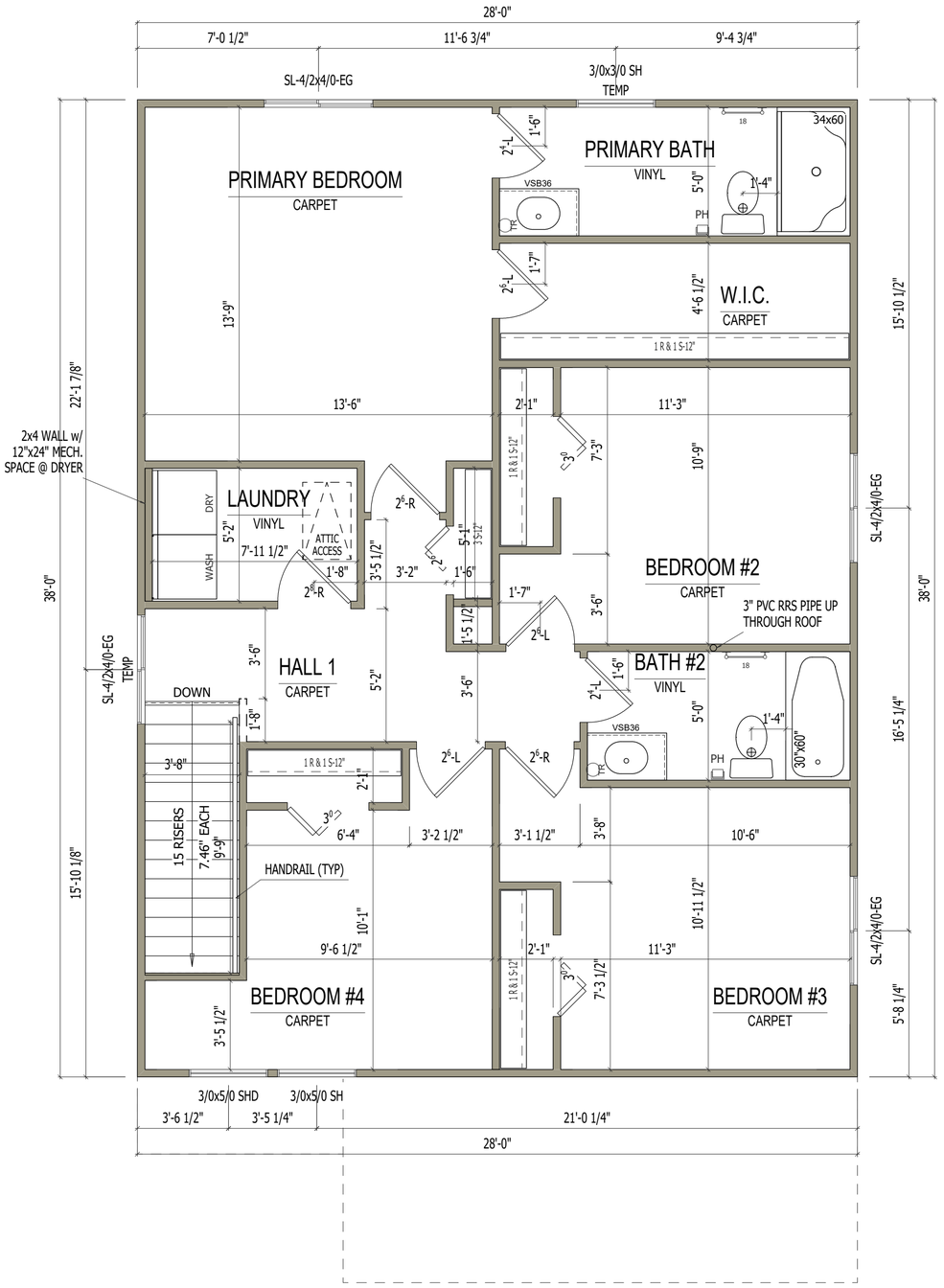

SECOND FLOOR i1910

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1

GARAGE RIGHT

REVISION ----------

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LOCATION:

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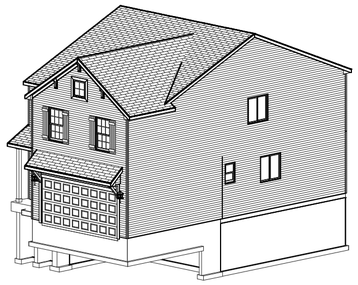
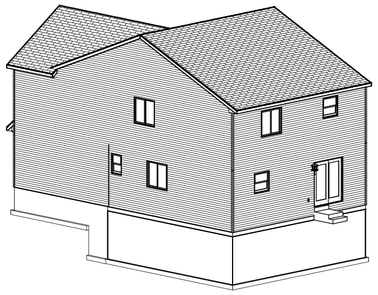
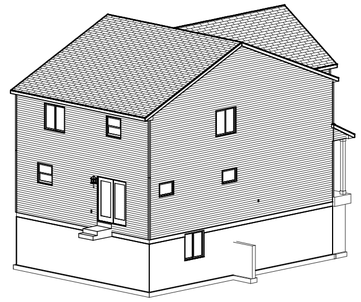
Integrity 2085

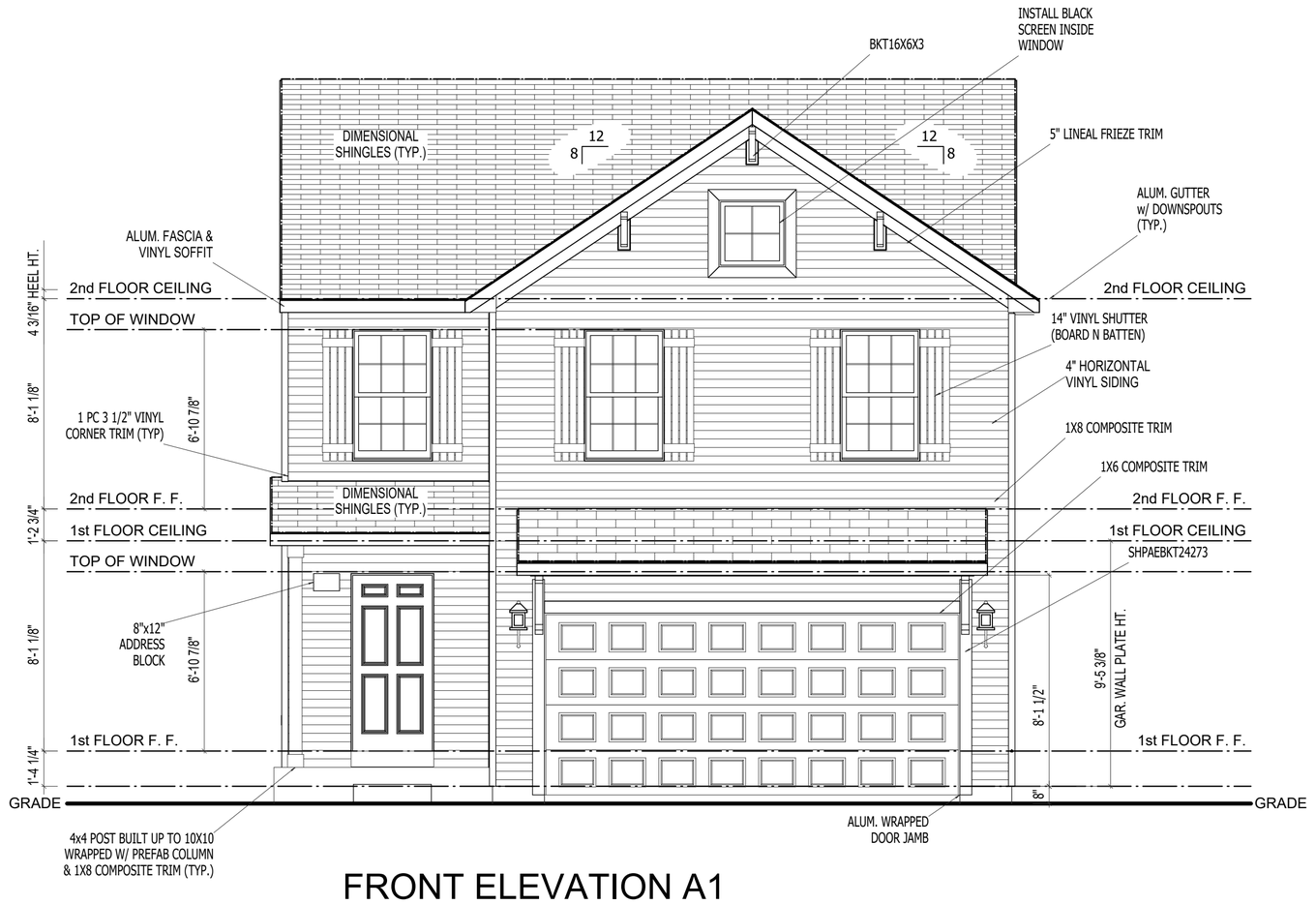
- **Single Family Detached Home**
- **2,085 Square Feet, Two-Story**
- **5 Bedrooms/2½ Bathrooms**
- **Attached 2-Stall Garage (front load)**

i2085
322









FRONT ELEVATION A1

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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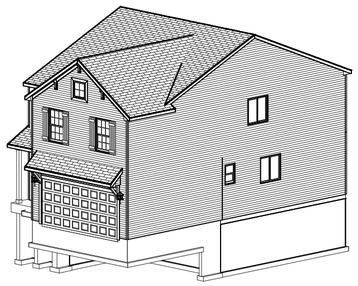

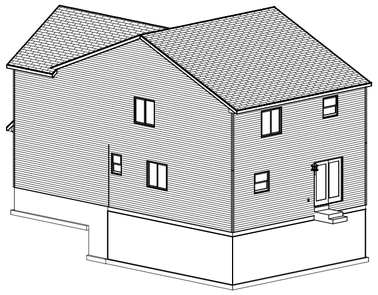

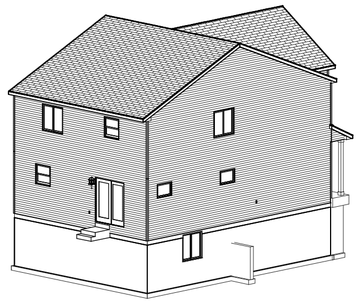

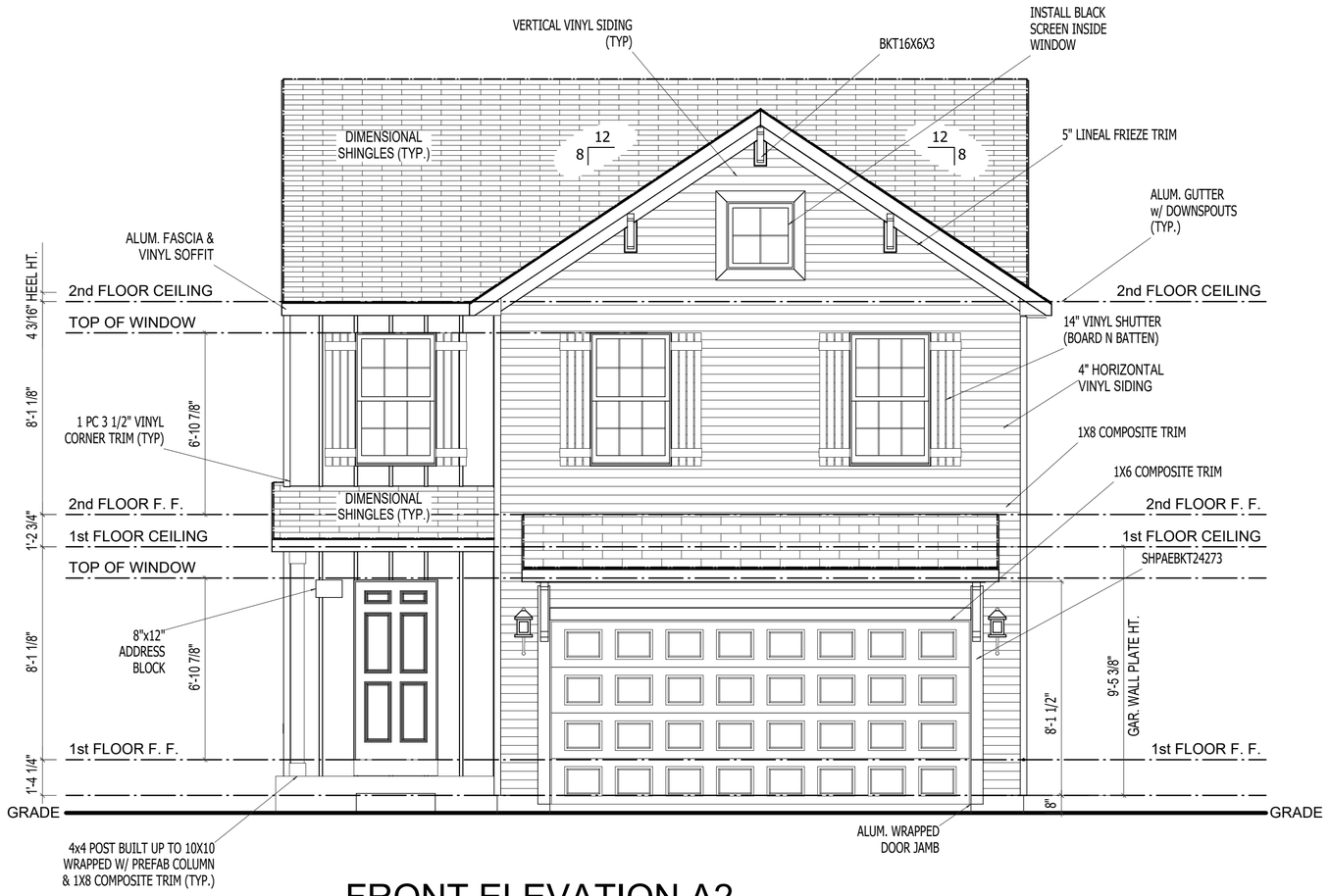

FRONT ELEVATION A2

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
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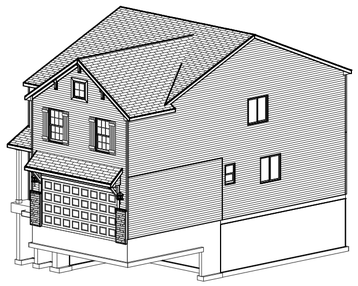

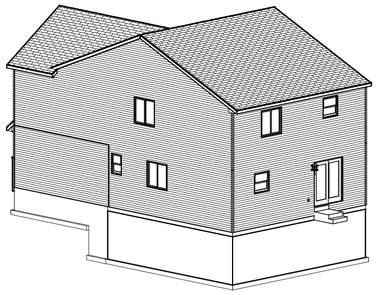

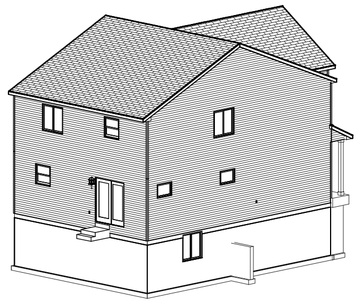

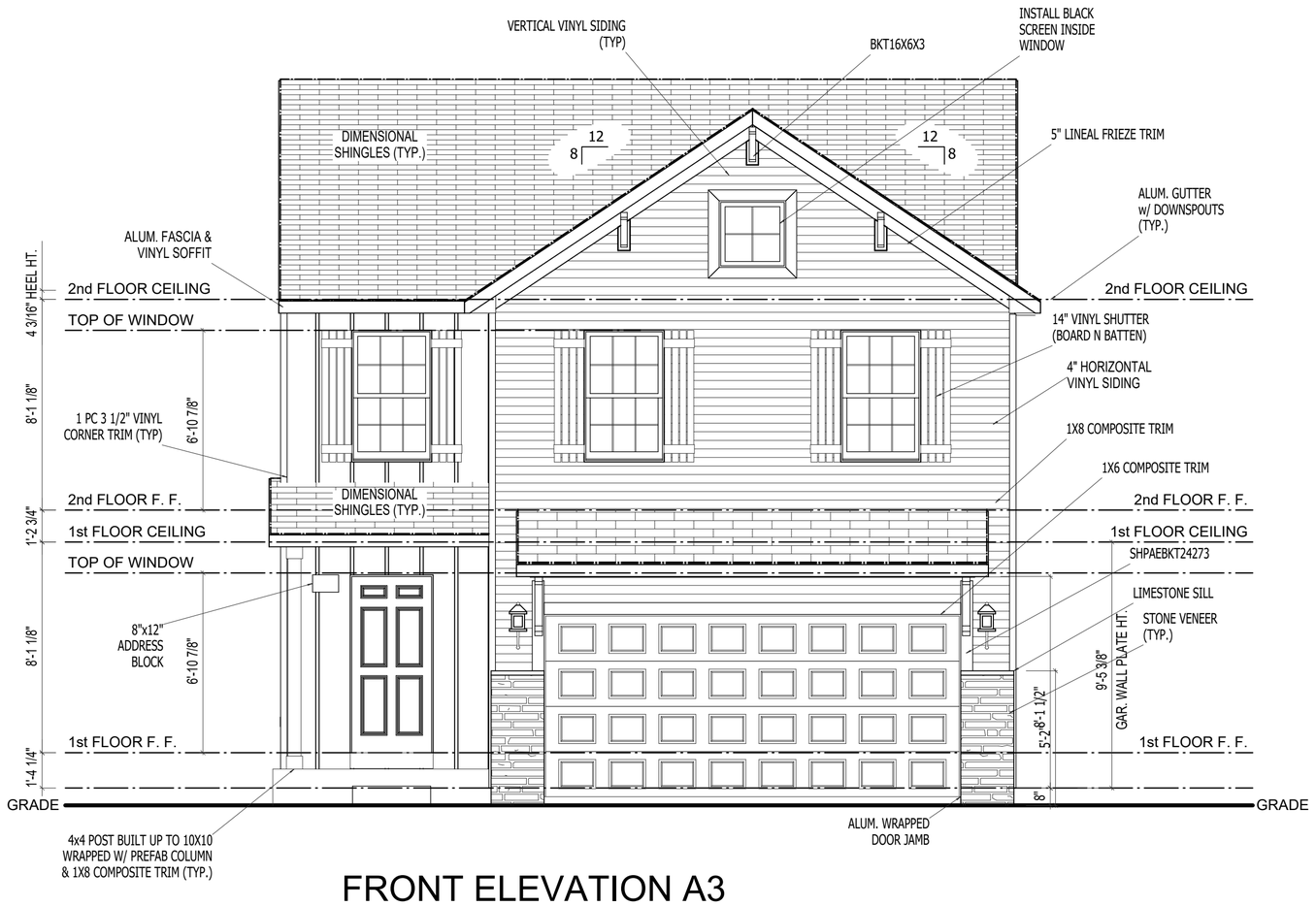

FRONT ELEVATION A3

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
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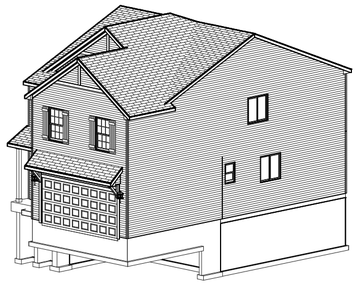

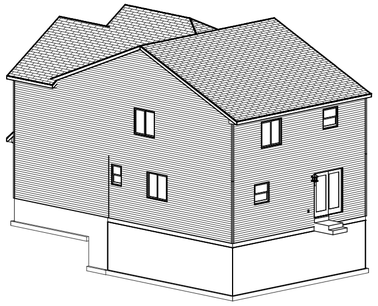

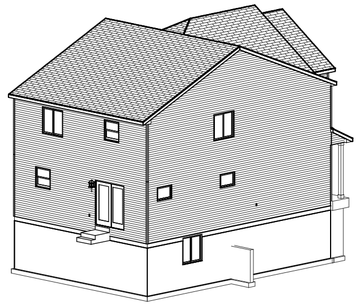

FRONT ELEVATION B1

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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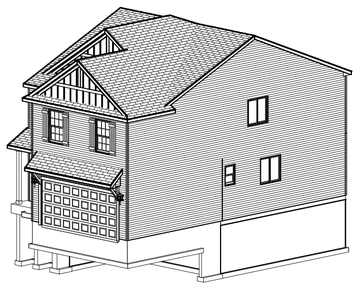

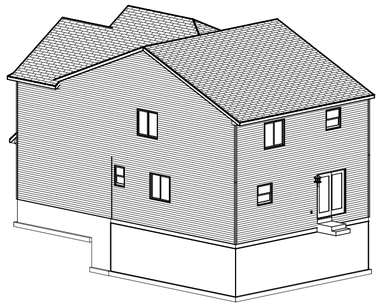

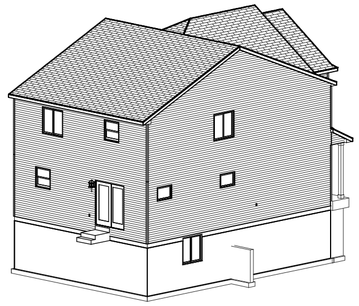

FRONT ELEVATION B2

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

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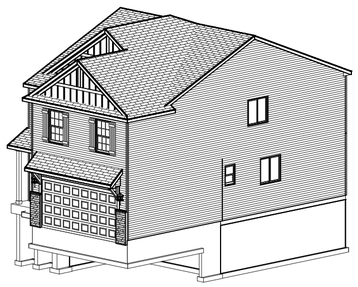
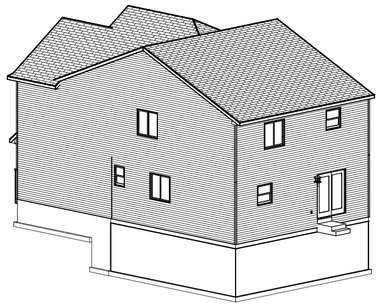
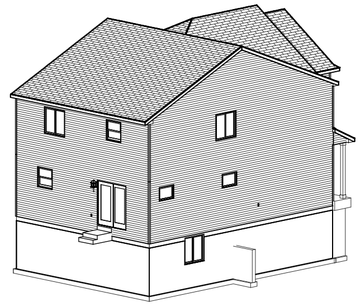
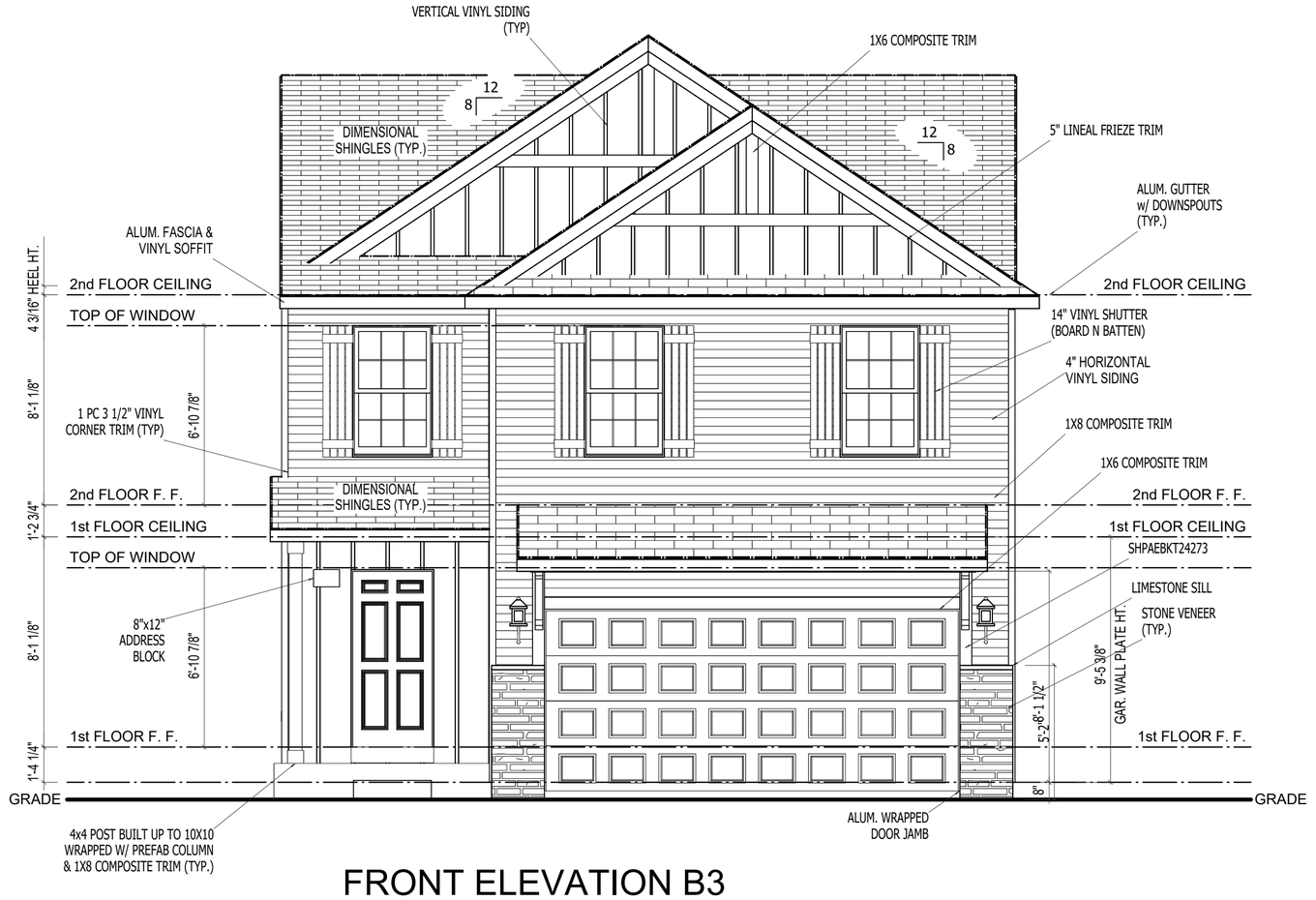








FRONT ELEVATION B3

SCALE: 1/4"=1'-0"

REMARKS	DATE	REV. NO.

ELEVATION A1
GARAGE RIGHT
REVISION ----------

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

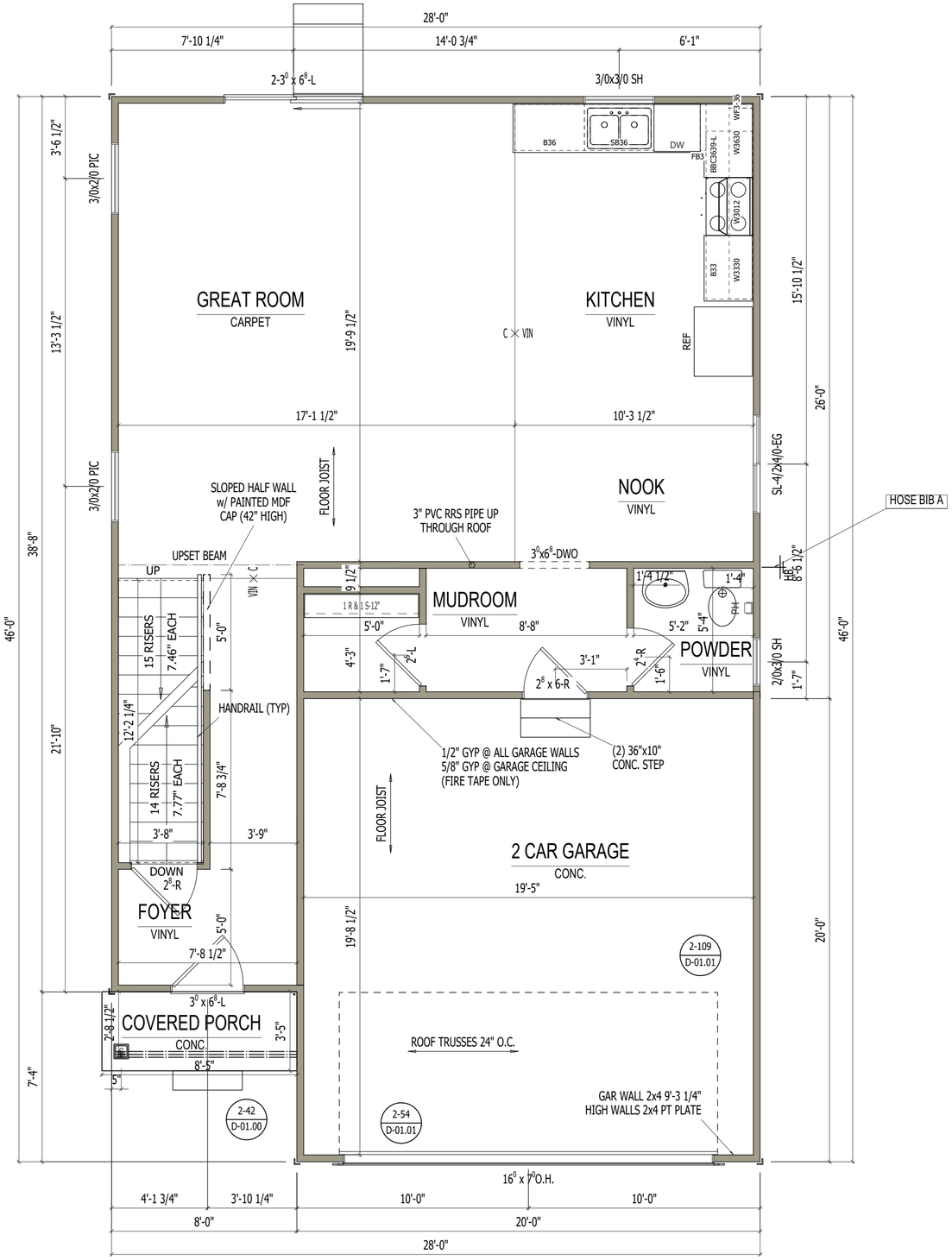
PRINT DATE: 04/09/2024

i2085
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-01.05

© CG Visions 2006 PLAN CREATION DATE 01/24/2024

ms\A-01.05.vxp



FIRST FLOOR i2085

SCALE: 1/4"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1
GARAGE RIGHT
REVISION ----------

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
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PRINT DATE:
03/04/2024

i2085
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-07.00

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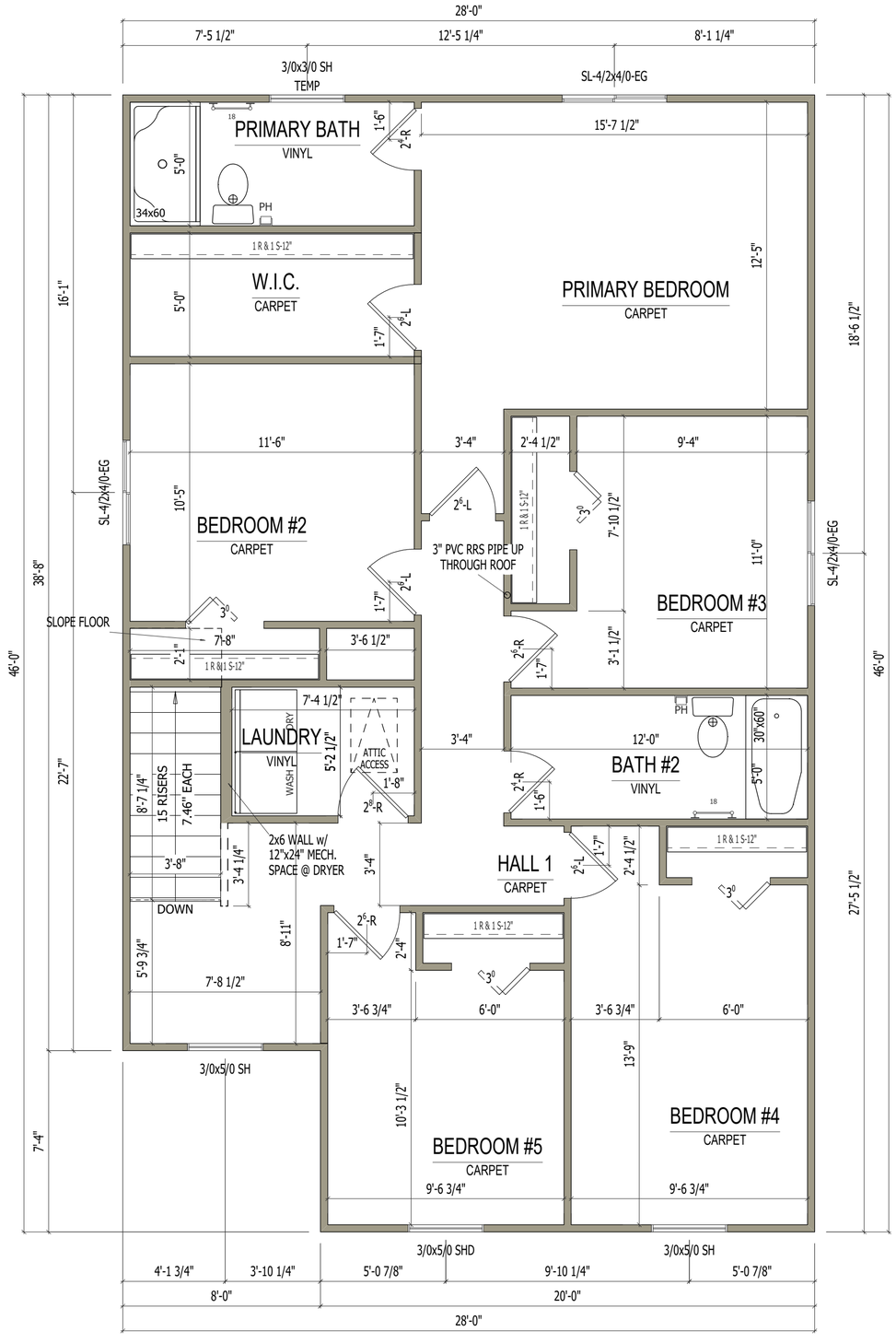

SECOND FLOOR i2085

SCALE: 1/4"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1
GARAGE RIGHT
REVISION

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
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PRINT DATE:
03/04/2024

i2085
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-08.00

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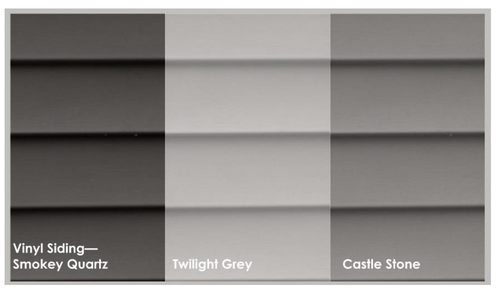
ms\A-08.00.vxp

Village 1490MS

- 3-Unit and 4-Unit Attached Townhome
- 1,490 Square Feet, Two-Story
- 3 Bedrooms/2½ Bathrooms
- Attached 2-Stall Garage (rear load)



REAR LOADED ATTACHED FOUR-UNIT TOWNHOME

ALLEN EDWIN HOMES

FRONT ELEVATION

SCALE: 1/4"=1'-0"

ELEVATION A1	REV. NO.	DATE	REMARKS
GARAGE RIGHT			
REVISION			

ALLEN EDWIN HOMES
2188 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

PRINT DATE:
11/08/2023

V1490MS

FOR:
Allen Edwin Homes

LOT #:

LOCATION:

SHEET NUMBER

A-01

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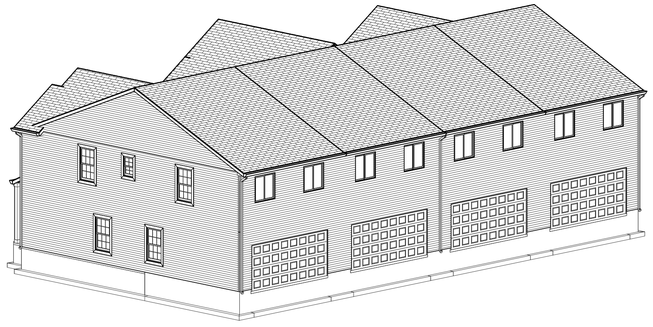

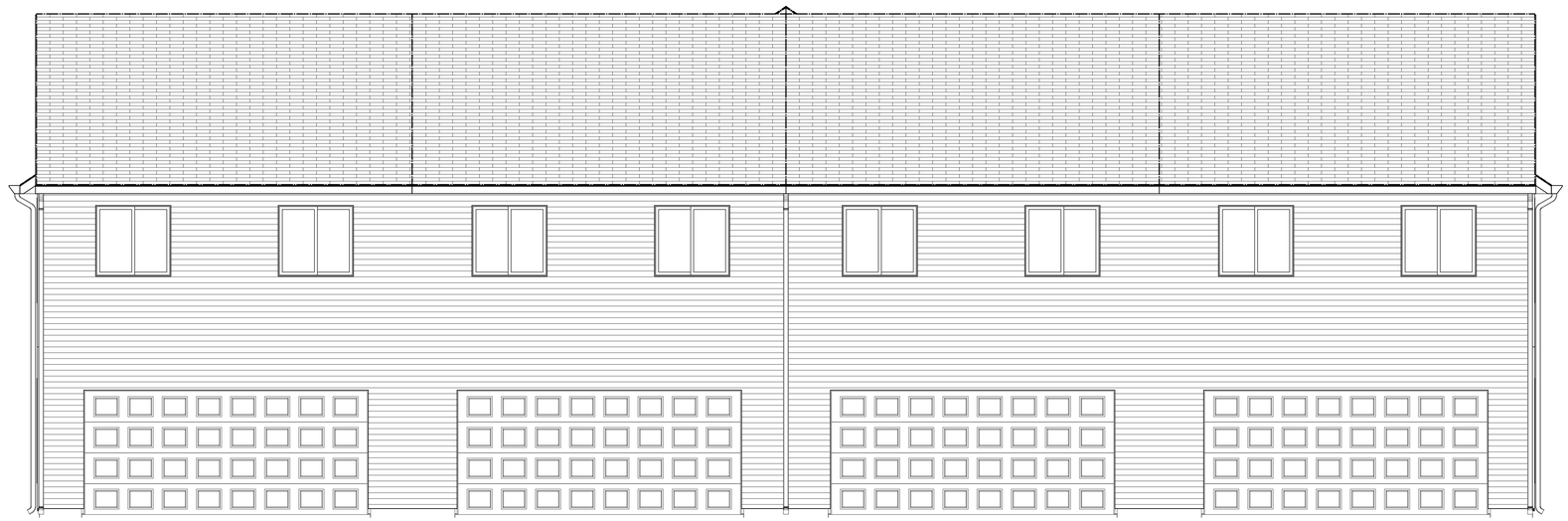

REAR ELEVATION

SCALE: 1/4"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1

GARAGE RIGHT

REVISION

ALLEN EDWIN HOMES

2188 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

PRINT DATE:
11/08/2023

V1490MS

FOR: Allen Edwin Homes

LOT #:

LOCATION:

SHEET NUMBER

A-02

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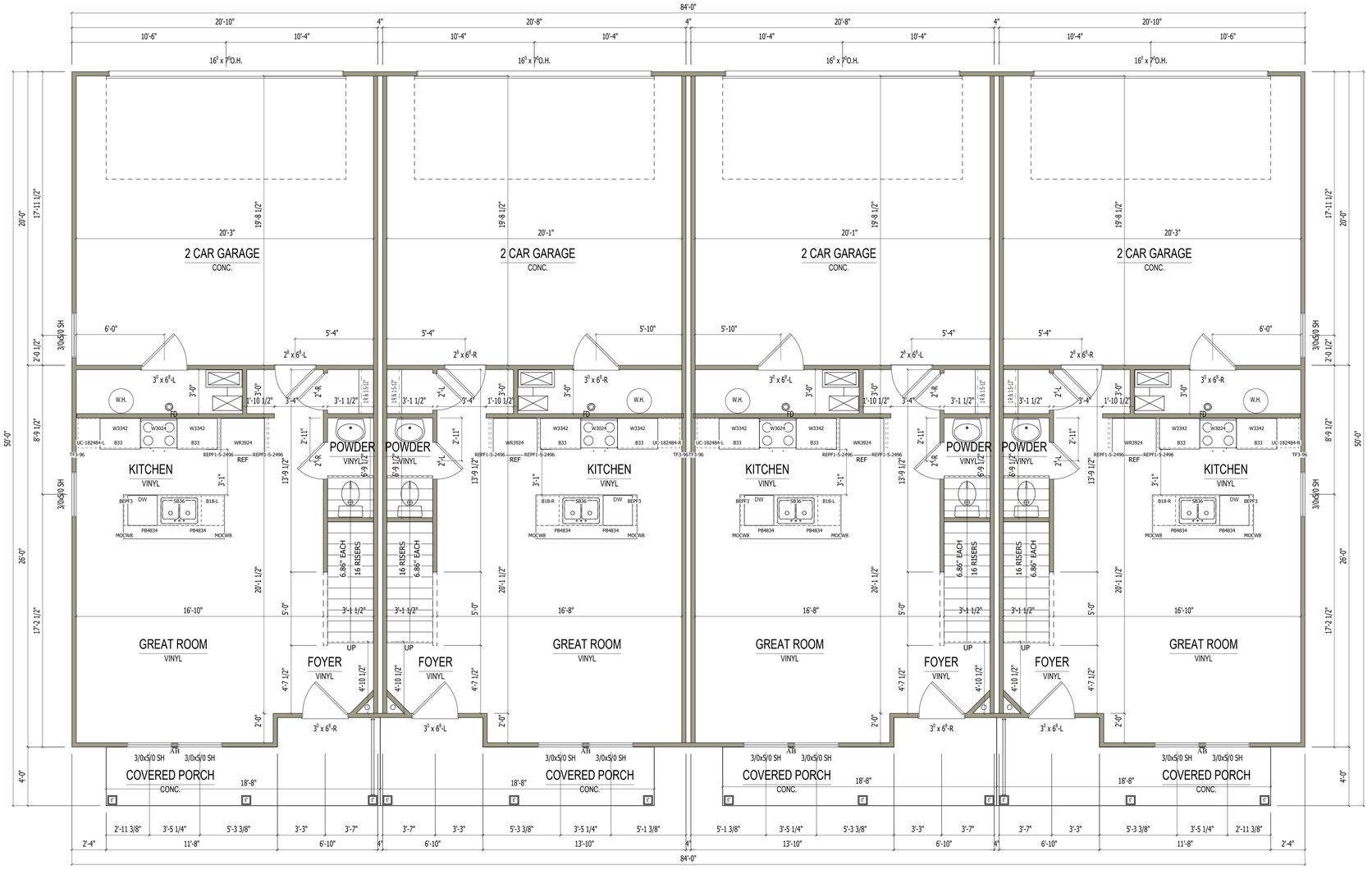
GENERAL FLOOR PLAN NOTES:

1. ALL INTERIOR NON LOAD BRG WALLS TO BE 2x4 STUDS 24" O.C.
2. WINDOWS TO BE VINYL SINGLE-HUNG, SIZE AS INDICATED BY NUMBER ON PLAN.
3. DIMENSIONS ARE FROM FACE OF STUDS.
4. PROVIDE BLOCKING ABOVE WINDOWS & DOORS 16" O.C. TYP.
5. PROVIDE EXTRA STUDS AS INDICATED AT ALL BEAM BEARING LOCATIONS.
6. ALL WINDOW HT. TO BE 6'-10 7/8" ABOVE FLOOR UNLESS OTHERWISE NOTED.
7. PROVIDE DOUBLE CRIPLES UNDER HEADERS FOR BEARING AT OPENINGS 6'-0" WIDE AND GREATER.
8. SHIM EXTERIOR DOORS & PKT. DOORS 1/2" ABOVE SUBFLOOR.
9. 16" O.C. STUDS AT KITCHEN WALLS w/ CABINETS.



FIRST FLOOR PLAN

SCALE: 1/4"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1
GARAGE RIGHT
REVISION

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

PRINT DATE:
11/08/2023

V1490MS
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-06

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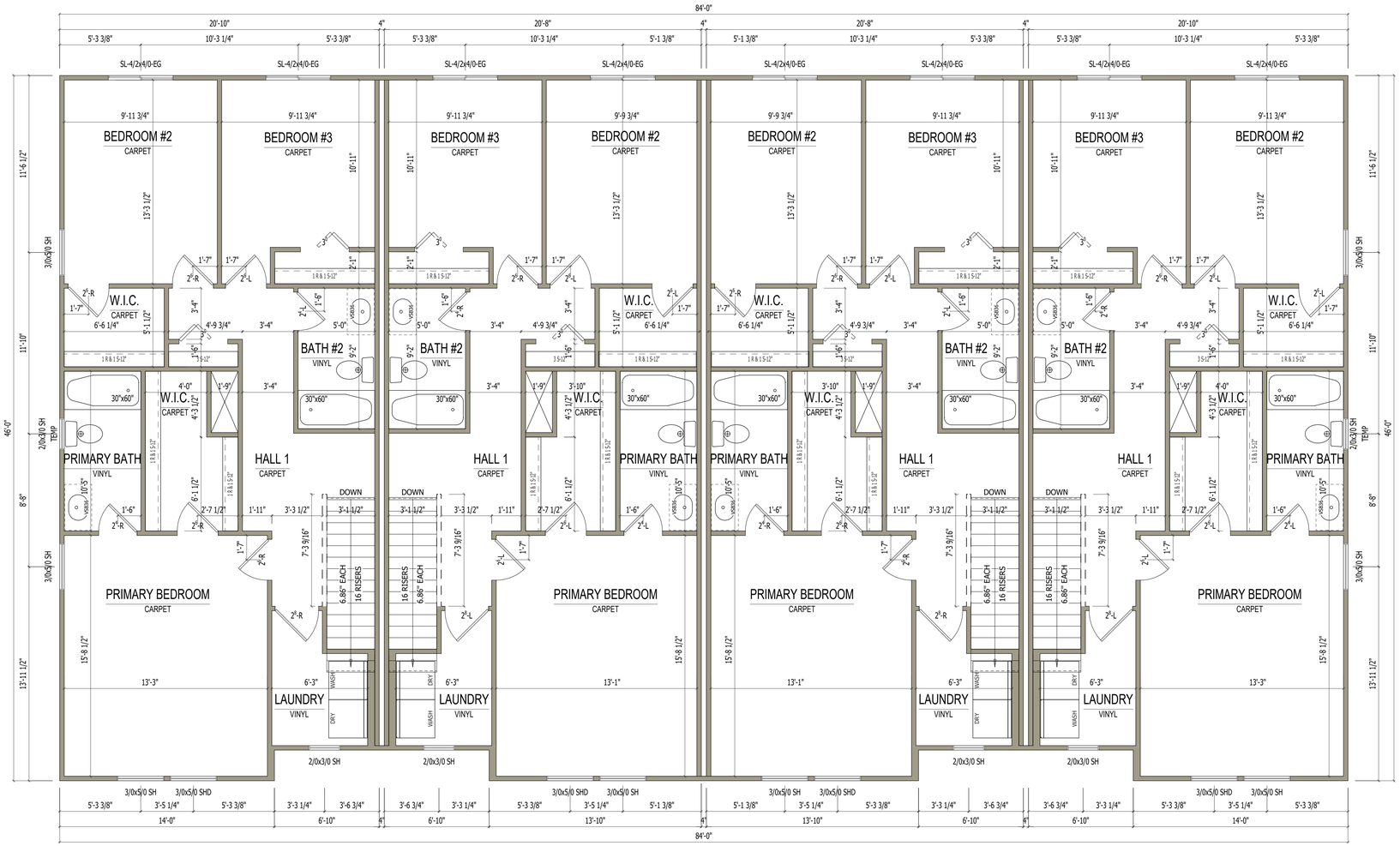
View_Sheets\A-06.vxp

GENERAL FLOOR PLAN NOTES:

1. ALL INTERIOR NON LOAD BRG WALLS TO BE 2x4 STUDS 24" O.C.
2. WINDOWS TO BE VINYL SINGLE-HUNG, SIZE AS INDICATED BY NUMBER ON PLAN.
3. DIMENSIONS ARE FROM FACE OF STUDS.
4. PROVIDE BLOCKING ABOVE WINDOWS & DOORS 16" O.C. TYP.
5. PROVIDE EXTRA STUDS AS INDICATED AT ALL BEAM BEARING LOCATIONS.
6. ALL WINDOW HT. TO BE 6'-10 7/8" ABOVE FLOOR UNLESS OTHERWISE NOTED.
7. PROVIDE DOUBLE CRIPLES UNDER HEADERS FOR BEARING AT OPENINGS 6'-0" WIDE AND GREATER.
8. SHIM EXTERIOR DOORS & PKT. DOORS 1/2" ABOVE SUBFLOOR.
9. 16" O.C. STUDS AT KITCHEN WALLS w/ CABINETS.



SECOND FLOOR PLAN

SCALE: 3/16"=1'-0"

REV. NO.	DATE	REMARKS

ELEVATION A1
GARAGE RIGHT
REVISION

ALLEN EDWIN HOMES
2186 E. Centre Street
Portage, MI 49002
(269) 321-2600
www.allenedwin.com

PRINT DATE:
11/08/2023

V1490MS
FOR: Allen Edwin Homes
LOT #:
LOCATION:

SHEET NUMBER
A-07

© CG Visions 2006 PLAN CREATION DATE 01/17/2023

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TO: Planning Commission **DATE:** February 6, 2025

FROM: Biqi Zhao, Deputy Director of Planning and Zoning

SUBJECT: Stanwood Crossings Final PD Plan, 9617 Portage Rd.

I. INTRODUCTION:

The City has filed a Final PD Site Plan for a 42-unit single-family residential housing project at 9617 Portage Road. This Plan follows a previously-approved Tentative Plan Amendment (concept level drawings) for the same project. The approved Tentative Plan Amendment drawing is attached as reference.

This is the first City-led housing project to provide housing to future eligible homeowners in Portage. As noted in the previously approved Tentative Plan, the costs to development homesites and build new homes increased over 50% since 2019 are pushing costs beyond middle-income households. To alleviate this challenge for developers and potential homebuyers, the City has partnered with AVB Inc. (local housing developer) and Wightman Associates (local engineering firm) to help design the overall project.

In the proposed Final PD Site Plan, two lots were removed to ensure adequate sizing of the stormwater basin in the SW corner of property. The project reduced in overall lots from 44 to 42 lots for 42 future new single family detached homes. The project continues to be designed with new public streets, public water and sewer utilities, open space, landscaping, and pedestrian connections. The density slightly lowers from 3.3 to 3.14 dwelling units/ acre. Lot sizes generally remain unchanged at a range from 6,481 square feet (smallest) to 13,210 square feet (largest). Future homes will be one- and two-story options, all with attached garages and consist of 2-3 bedrooms and 2-2.5 bathrooms. One-story home sizes range: 1,206 - 1,353 square feet. Two-story home sizes range: 1,505 - 1,640 square feet. Basements will not be provided. Each home will have direct access to new interior public streets with sidewalks and City water, sewer, and storm sewer utilities. Private utilities such as electricity, internet, cable, etc. will also be provided. New streets will connect to Stanley Avenue and Woodbine Avenue, which connect to Portage Road. New sidewalks will be provided on both sides of the new interior streets which will lead to an open space area in the southwest part of the project where a new paved trail connecting to Portage Road sidewalk and a new City stormwater basin will be provided. The project also consists of an easterly street stub for future expansion. These development items are described and shown in the attached narrative, site plan drawing, and concept images.

II. BACKGROUND INFORMATION:

This project gained approvals (Rezone, Tentative Plan PD, and Site Condominium) by Planning Commission support on September 5, 2024 and Council approval on October 22, 2024.

Applicable Zoning Regulations

The proposed Final PD Site Plan has no significant changes to the previously-approved PD Tentative and its in substantial compliance with the previously approved tentative plan per Sec. 42-375.H. Therefore, the project has been review in accordance with Chapter 42. Division 4. Subdivision 11 – PD, Planned Development District and Division 5. Subdivision 2 Site Plan Review. This is addressed in the following section.

Proposed Planned Development Final (Site) Plan

The applicant has submitted a Final PD Site Plan application seeking final site plan approval for the project per Sec 42-375 *Planned Development* and Sec 42-482 *Site Plan Review*. The attached plans and narrative address these code sections.

Sec 42-482 *Site Plan Review*

The applicant has submitted a detailed site plan, showing parking areas, access points, building footprint, utility locations, and other site improvements.

Sec 42-375 *Planned Development*

The Planned Development review process involves the following two steps per Sec. 42-375

Step 1) Tentative Plan review (Items A-G, Sec 42-375) identifies part(s) or whole project features; analyzes impact to neighborhood, streets, utilities, and the natural environment; and determines consistency with adopted local plans. *This step was recommended for approval by the Planning Commission on September 5, 2024, and gained approval by Council on October 22, 2024.*

Step 2) Final Plan review (Items H-M, Sec 42-375), identifies and analyzes detailed drawings of project improvements (streets, utilities, lot dimensions, etc.). *The Final PD Site Plan application is at this step.*

The Planning Commission shall review the project for consistency with Sec 42-375 Final Plan H-M and provide a recommendation to City Council. The applicant has submitted a project narrative addressing PD criteria under Sec 42-375 and generally describing the development; site drawings showing general building footprints, setback distances, parking and landscaping, and common areas; and concept renderings of the site and building elevations. See attachments.

Per Sec 42-373 and -374, PD allows the developer to incorporate a variety of housing styles. The following project features are being sought under the PD district:

- The applicant is proposing building setbacks, parcel sizes, and house sizes unique for the specific project, as provided in the table.

Zoning Standards	Approved Tentative Plan

	PD Stanwood Crossings
Min. Lot Size	9,009 sq ft - average
Min. Lot Width	60'
Front Setback	25'
Side Setback	5'
Rear Setback	40'
1-story house	1,206-1,353 sq ft
2-story house	1,505-1,640 sq ft
Max. Building Height	1-2 story proposed

There are no defined building yard setbacks under the Planned Development standards Sec 42-374. Instead, the Planning Commission shall review the proposed building locations to generally determine neighborhood appropriateness. Therefore, if the project is approved, those setbacks would become the established yard setbacks for the subject PD project. The proposed distances in the table are similar to typical One Family Residential zoning districts.

III. ANALYSIS:

Planned Development - Sec 42-374 *Site Development Requirements* and Sec 42-375 *(Items H-M) Plan review and approval (PD, planned development); Final Plan*

Staff analysis has been prepared based on consistency with the previously approved PD Tentative Plan and Sec 42-375 Items H-M Final (Site) Plan. Overall, staff find the proposed plans to be consistent with the previously-approved PD Tentative Plan.

Evaluations from the Development Review Team (DRT)
This project was reviewed by the Development Review Team (DRT) who ensures that the proposed development is consistent with the City's infrastructure, engineering, and other requirements including streets, sewers, water mains, storm water, parking, landscaping, and others. The DRT is comprised of representatives from the Department of Transportation and Utilities, Fire Department, Department of Parks and Recreation, Office of the City Assessor, and Department of Community Development. DRT's review recommend some clerical changes such as realigning call out labels etc., which will be addressed administratively.

Public Noticing Requirement

This request does require Planning Commission vote, but does not require a public hearing nor distribution of public notices.

IV. RECOMMENDATION:

Staff recommends the Planning Commission to City Council the approval of the Final PD Site Plan for Stanwood Crossings a proposed 42-unit single-family residential development at 9617 Portage Road, with technical/clerical corrections if needed prior to the City Council approval.

Attachments:

1. Final PD Plan Application
2. Vicinity Map
3. Approved Tentative Plan and Preliminary Condo Plan
4. Proposed Final PD Site Plan 1.30.2025
5. Conceptual House Floor Plans, Facades

COMMERCIAL DEVELOPMENT APPLICATION

Department of Community Development
7900 South Westnedge Avenue – Portage, Michigan 49002 – (269) 329-4477

Applicant must complete all items in sections 1-9 (if applicable).
Please note: Separate applications must be submitted for Plumbing, Mechanical and Electrical Work Permits

No Work is to Start Prior to the Issuance of Building Permit

1) PROJECT INFORMATION

Project Description	Address
Single-family detached (Stanwood Crossings)	9617 Portage Rd, Portage MI 49002

2) IDENTIFICATION (OWNER)

Name	Address		
City of Portage	7900 S Westnedge		
City Portage	State MI	Zip 49002	Phone 269.329.4403

3) ARCHITECT OR ENGINEER

Name	Address	City
Paul Schram	433 E Ransom Street	Kalamazoo
State MI	Zip 49007	Phone 269.921.0100
License Number 6201067420	Expiration Date 7/25/26	Email pschram@gowightman.com

4) BUILDING CONTRACTOR

Company name	Address	City
AVB. Inc	4200 W Centre Avenue	Portage
State MI	Zip 49024	Phone 269.323.2022
Email jack@avbinc.com	Federal Employer ID 38-2361980	
Builder License Number 2102185971	Expiration Date 5/31/26	
Workers Comp Insurance Carrier Comp Insurance Carrier MI Ins. Company	MESC Employer Number 0993199000	

5) TYPE OF DEVELOPMENT PROJECT

☐ Site Plan ☐ Building Plan ☑ Final Plan in Planned Development

☐ Subdivision ☐ Condominium ☐ Land Division Requiring Public Improvements

☐ Landscape Plans ☐ Public Water Main ☐ Public Sanitary Sewer Main

☐ Other: _____

(Note: Please provide a Portable Document Format (PDF) of the plans for the project at time of document submittal. The submitted format shall be CD/DVD or USB. If a PDF is not submitted, an additional $25 fee plus $1 for each plan sheet after 20 sheets will apply.)

6) TYPE OF IMPROVEMENT

☐ New Building ☐ Alteration ☐ Addition ☐ Repair ☐ Demolition ☐ Foundation Only

☐ Relocation ☐ Special Inspection ☐ Solar ☑ Other: See below

7) DESCRIPTION OF WORK

A) 42 new single-family residential home community - new roads, utilities and landscaping.

B) Valuation of Project: $ TBD

8) CHARACTERISTICS OF THE BUILDING

A) Water Meter Size

☐ 5/8" ☐ ¾" ☐ 1" ☐ 1 ½"

☐ Other_____ ☐ Irrigation Size_____ ☐ Fire Sprinkler Size_____

B) Electric Service Size

☐ 200 AMP ☐ 400 AMP ☐ 600 AMP ☐ 800 AMP ☐ 1000 AMP ☐ Other_____

C) Type of Mechanical

Air Conditioning? ☐ Yes ☐ No Fire Suppression? ☐ Yes ☐ No Hood System? ☐ Yes ☐ No

9) CONSTRUCTION PLANS SUBMITTED

Required submittals for plan review:

- Plans shall be signed and sealed when required in accordance with State of Michigan Act No.299 of Public Acts of 1980.
- All plans shall be drawn on uniform sheets no greater than 30"X42".
- All plans shall be drawn to an architectural scale.
- All plans shall be clear, legible and accurate.
- Plans shall be stapled along the left margin.

Type of Plan Submitted:

☐ Building ☐ Electrical ☐ Plumbing ☐ Mechanical ☐ Energy

Building Code: Site plan, foundation plan, soil bearing capacity, floor plans, building elevations, building sections, framing plan, details, roof plan, roof finish schedule, roof live and dead loads.

Electric Code: Lighting layout, circuiting, switching, conductor and raceway sizes, wattage schedule, service location and riser diagram, load calculations, and appropriate plans showing standard symbols of all electrical equipment.

Plumbing Code: Site plan, floor plans, DWV riser diagrams and water distribution system and roof plan, Show direction of flow, pipe sizes, grade of horizontal piping, elevations, drainage fixture unit loading of both stacks and drains in the DWV system, supply fixture unit load for the water system, branch supplies serving more than one plumbing fixture, appliance or hose outlet, meter locations.

Mechanical Code: Plans indicating heating equipment, air conditioning equipment, ductwork material and layout, fire dampers, ventilation of rooms and areas, location of chimneys and vents, piping layouts, kitchen equipment layout, and combustion air. (Plans for fire suppression systems may be submitted after permit issuance, but are required prior to installation.)

Energy Code: Floor plans, building sections, details, average annual degree days, exterior envelope components materials, "U" values of elements, "R" values of insulating materials, size and type of apparatus and equipment, energy calculations.

Note: Additional plan review fee(s) required of all non-concurrent plan submittals

APPLICANT INFORMATION

Applicant is responsible for the payment of all fees and charges applicable to this application and must provide the following information:

Name Jonathon Hallberg, City of Portage	Phone 269.329.4474
Address 7900 S Westnedge	City Portage
State MI	Zip 49002

I hereby certify that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent, and I agree to conform to all applicable laws of the State of Michigan and ordinances of the City of Portage. All information submitted on the application is accurate to the best of my knowledge.

Signature of Applicant: _____ ***Date:*** 1/23/25

Aerial Photography
9617 Portage Road
Date: 8/20/2024

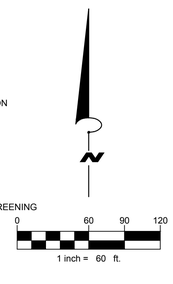
PORTAGE
A Natural Place to Move

1 inch = 400 feet
NearMap Aerial Photography March 2024

STANWOOD CROSSINGS

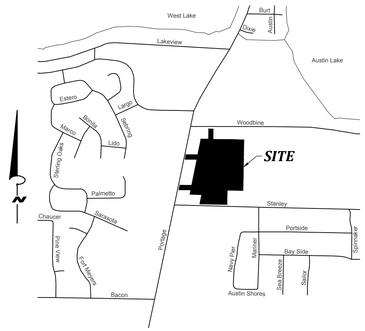
A SITE CONDOMINIUM

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 11 WEST, CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN



PROPRIETOR/OWNER
CITY OF PORTAGE
7900 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002
(269) 323-2022

SURVEYOR/ENGINEER
WIGHTMAN & ASSOCIATES, INC.
433 EAST RANSOM STREET
KALAMAZOO, MI 49007
(269) 200-2703



VICINITY MAP
(NOT TO SCALE)

NOTES:

UNIT COUNTS
44 UNITS

PROPOSED ZONING/SETBACKS
ZONING - PD
SETBACKS:
PROPOSED = 25' FRONT
PROPOSED = 40' REAR
PROPOSED = 5' +/- SIDE (10' BETWEEN FOUNDATIONS)

PROPOSED UNIT WIDTH (SECTION 42-350/42-112)
MINIMUM UNIT WIDTH AT BUILDING SETBACK
PROPOSED = 60'

PROPOSED UNIT AREA (SECTION 42-350)
MINIMUM UNIT AREA
PROPOSED = 6,481 SQUARE FEET

PAVEMENT WIDTH (EXCLUDING CURB) (SECTION 42-803)
PROPOSED = 32' WIDE PAVING

SANITARY SEWER
PROPOSED CONDOMINIUM WILL BE SERVED BY PUBLIC SANITARY SEWER.

WATER
THE PROPOSED CONDOMINIUM WILL BE SERVED BY PUBLIC WATER MAIN, TO BE CONNECTED TO THE EXISTING WATER MAIN AT WOODBINE AVENUE AND STANLEY AVENUE. ANY WATER MAIN NOT LOCATED IN PUBLIC RIGHT OF WAY SHALL LIE WITHIN A PERMANENT PUBLIC WATER MAIN EASEMENT. HYDRANTS SHALL BE LOCATED NOT MORE THAN 500' APART AND SITUATED SUCH THAT ALL PORTIONS OF BUILDINGS ARE WITHIN 250' OF A HYDRANT.

STORM SEWER
THE STORM SEWER SYSTEM AND STORM WATER RETENTION AREA WILL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTAGE STANDARDS AND DEDICATED TO THE CITY. STORM WATER RETENTION VOLUME WILL BE PROVIDED IN ACCORDANCE WITH THE CITY'S DESIGN CRITERIA MANUAL AND IT'S ADDENDUM.

STREETS
ALL STREETS WILL BE PUBLIC WITH CONCRETE CURB AND GUTTER AND ASPHALT SURFACE, WIDTH TO BE 36' AT BACK OF CURB IN A 60' RIGHT-OF-WAY. ALL CURB RADII AT INTERSECTIONS TO BE 25' AT THE FACE OF CURB.

SIDEWALKS
SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTAGE STANDARDS. ANY SIDEWALKS OUTSIDE RIGHT-OF-WAY WILL BE LOCATED WITHIN A SIDEWALK EASEMENT. A NON-MOTORIZED PATH WILL CONNECT THE SIDEWALK IN THE DEVELOPMENT TO NON-MOTORIZED FACILITIES ON PORTAGE ROAD.

STREET LIGHTING
STREET LIGHTING WILL BE PROVIDED BY THE DEVELOPER IN ACCORDANCE WITH THE CITY OF PORTAGE STREET LIGHTING POLICY.

PRIVATE UTILITIES
PRIVATE UTILITIES SUCH AS GAS, ELECTRIC, CABLE TV, ETC. SHALL BE LOCATED IN PRIVATE EASEMENTS, ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.

CONTIGUOUS PROPERTIES
THE PROPRIETOR HAS OWNERSHIP INTEREST IN THE OVERALL PARCEL IN WHICH THE DEVELOPMENT IS BEING PROPOSED.
NO OTHER CONTIGUOUS PROPERTIES ARE OWNED BY THE PROPRIETOR/OWNER.

Approved Tentative/Preliminary Condo Plan
Planning Commission 9/5/2024
City Council 10/22/2024

LEGAL DESCRIPTION:

LAND SITUATED IN THE CITY OF PORTAGE, COUNTY OF KALAMAZOO, STATE OF MICHIGAN, DESCRIBED AS FOLLOWS:

LAND SITUATED IN THE SOUTHWEST 1/4 OF SECTION 26, TOWN 3 SOUTH, RANGE 11 WEST, DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF LOT 46, SUPERVISOR'S PLAT OF MCCAMLEY BEACH AS RECORDED IN LIBER 13 OF PLATS, PAGE 5, KALAMAZOO COUNTY RECORDS; THENCE WEST ALONG THE NORTH LINE OF STANLEY DRIVE 1724.85 FEET (RECORDED AS 1725.00 FEET); THENCE CONTINUING WEST ALONG THE NORTH LINE OF SAID DRIVE, 220 FEET, FOR THE PLACE OF BEGINNING OF THE LAND HEREINAFTER DESCRIBED; THENCE WEST ALONG SAID NORTH LINE OF STANLEY DRIVE 382.08 FEET MORE OR LESS TO A POINT WHICH IS 330 FEET EAST OF THE EAST LINE OF PORTAGE ROAD; THENCE NORTHEASTERLY PARALLEL WITH THE EAST LINE OF PORTAGE ROAD 134.13 FEET; THENCE WEST PARALLEL TO THE NORTH LINE OF STANLEY DRIVE 165.15 FEET; THENCE NORTHEASTERLY PARALLEL TO THE EAST LINE OF PORTAGE ROAD 64.94 FEET; THENCE WEST PARALLEL TO THE NORTH LINE OF STANLEY DRIVE 165 FEET TO THE EAST LINE OF PORTAGE ROAD; THENCE NORTHEAST ALONG SAID EAST LINE 67.13 FEET; THENCE EAST PARALLEL TO THE NORTH LINE OF STANLEY DRIVE 165 FEET; THENCE NORTHEASTERLY PARALLEL TO THE EAST OF PORTAGE ROAD 369.2 FEET; THENCE WEST PARALLEL TO THE NORTH LINE OF STANLEY DRIVE 165 FEET TO THE EAST LINE OF PORTAGE ROAD; THENCE NORTHEASTERLY ALONG SAID EAST LINE 67.13 FEET; THENCE EAST PARALLEL TO THE NORTH LINE OF STANLEY DRIVE 165 FEET; THENCE NORTHEASTERLY 221.72 FEET MORE OR LESS TO THE SOUTHWEST CORNER OF LOT 32 OF THE RECORDED PLAT OF MCCAMLEY MANOR; THENCE EAST ALONG THE SOUTH LINE OF SAID PLAT 592 FEET MORE OR LESS, TO A POINT BEING 968 FEET WEST OF AND ALONG SOUTH LINE OF SOUTHEAST CORNER OF LOT 60, OF SAID MCCAMLEY MANOR; THENCE SOUTH 712.60 FEET AT RIGHT ANGLES WITH THE NORTH LINE OF STANLEY DRIVE; THENCE WEST PARALLEL WITH THE NORTH LINE OF STANLEY DRIVE 220 FEET; THENCE SOUTH 200 FEET, AT RIGHT ANGLES WITH THE NORTH LINE OF STANLEY DRIVE, TO PLACE OF BEGINNING.

ALSO OUTLOT B, MCCAMLEY MANOR, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 25 OF PLATS, PAGE 42, KALAMAZOO COUNTY RECORDS.

CONTAINING 13.55 ACRES MORE OR LESS.

SUBJECT TO ANY AND ALL EASEMENTS AND RESTRICTIONS OF RECORD, OR OTHERWISE.

BEARINGS SHOWN HEREON ARE RELATED TO THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.

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STATE OF MICHIGAN
Gary D. Hahn
License No. 4001038116
LICENSED PROFESSIONAL SURVEYOR
GARY D. HAHN
PS-4001038116

PROJECT NAME:
STANWOOD CROSSINGS
9617 PORTAGE ROAD
PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002

01	8/27/2024	GDH
	PD REZONING AND CONDOMINIUM SUBDIVISION PLAN	

REVISIONS

P:\Wightman\222353 Portage - Portage Road Residential Planned Development\05 Drawings\850 Acad\CAD\Survey Work\plan\222353 Condominium Subdivision Plan.dwg 01 8/27/2024 8:39:05 AM
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DATE: JULY, 2024
SCALE: 1" = 60'
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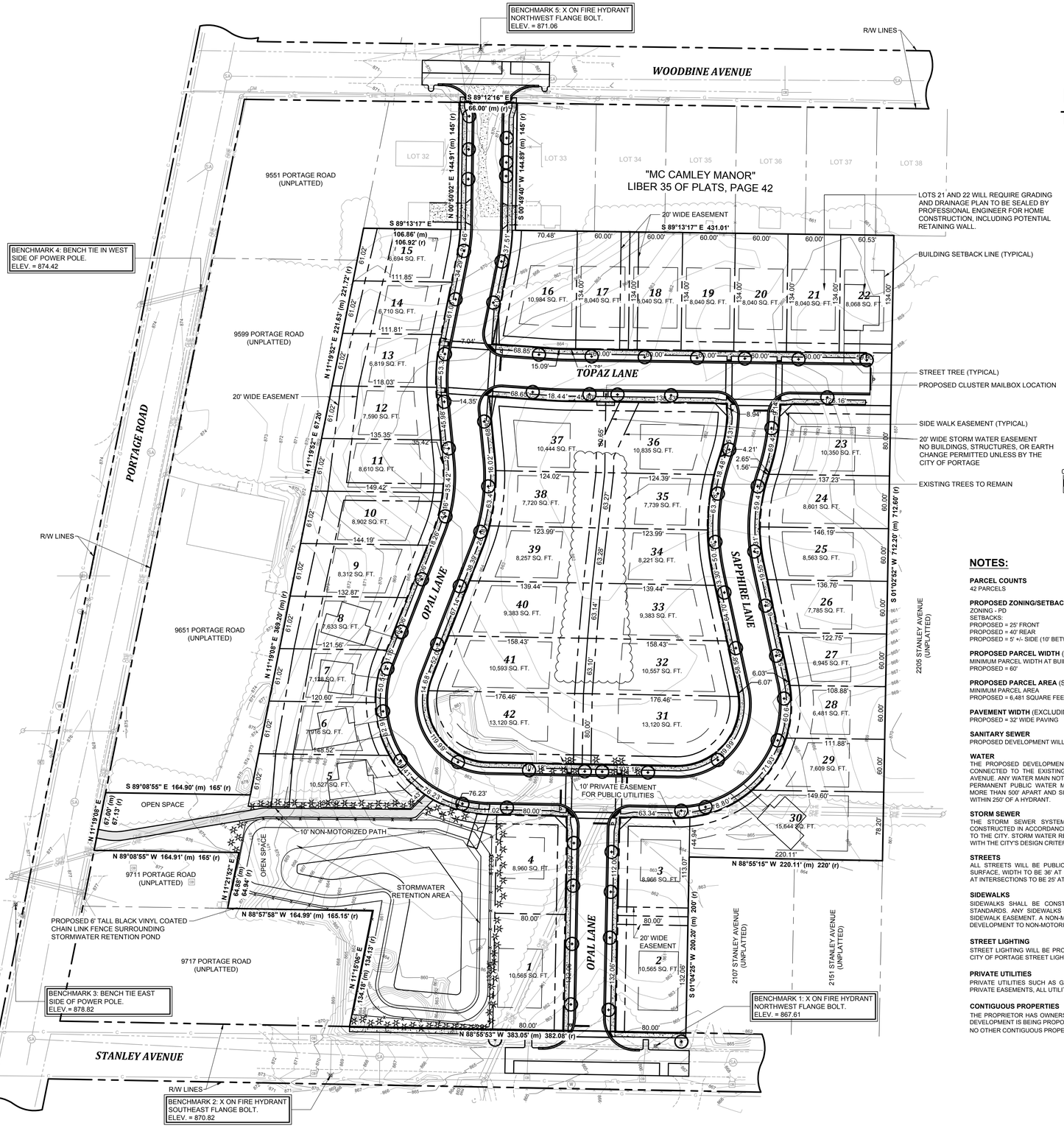
CONDOMINIUM SUBDIVISION PLAN

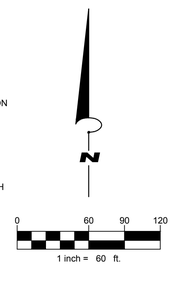
JOB No. 222353
01

STANWOOD CROSSINGS

A PLANNED DEVELOPMENT

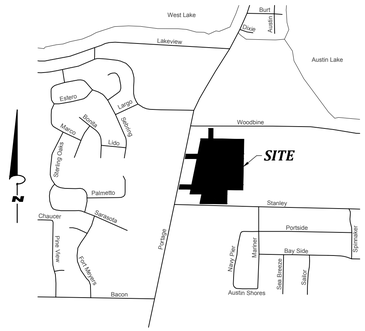
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 11 WEST, CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN





PROPRIETOR/OWNER
CITY OF PORTAGE
7900 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002
(269) 323-2022

SURVEYOR/ENGINEER
WIGHTMAN & ASSOCIATES, INC.
433 EAST RANSOM STREET
KALAMAZOO, MI 49007
(269) 200-2703



VICINITY MAP
(NOT TO SCALE)

NOTES:

PARCEL COUNTS
42 PARCELS

PROPOSED ZONING/SETBACKS
ZONING - PD
SETBACKS:
PROPOSED = 25' FRONT
PROPOSED = 40' REAR
PROPOSED = 5' +/- SIDE (10' BETWEEN FOUNDATIONS)

PROPOSED PARCEL WIDTH (SECTION 42-350/42-112)
MINIMUM PARCEL WIDTH AT BUILDING SETBACK
PROPOSED = 60'

PROPOSED PARCEL AREA (SECTION 42-350)
MINIMUM PARCEL AREA
PROPOSED = 6,481 SQUARE FEET

PAVEMENT WIDTH (EXCLUDING CURB) (SECTION 42-803)
PROPOSED = 32' WIDE PAVING

SANITARY SEWER
PROPOSED DEVELOPMENT WILL BE SERVED BY PUBLIC SANITARY SEWER.

WATER
THE PROPOSED DEVELOPMENT WILL BE SERVED BY PUBLIC WATER MAIN, TO BE CONNECTED TO THE EXISTING WATER MAIN AT WOODBINE AVENUE AND STANLEY AVENUE. ANY WATER MAIN NOT LOCATED IN PUBLIC RIGHT OF WAY SHALL LIE WITHIN A PERMANENT PUBLIC WATER MAIN EASEMENT. HYDRANTS SHALL BE LOCATED NOT MORE THAN 500' APART AND SITUATED SUCH THAT ALL PORTIONS OF BUILDINGS ARE WITHIN 250' OF A HYDRANT.

STORM SEWER
THE STORM SEWER SYSTEM AND STORM WATER RETENTION AREA WILL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTAGE STANDARDS AND DEDICATED TO THE CITY. STORM WATER RETENTION VOLUME WILL BE PROVIDED IN ACCORDANCE WITH THE CITY'S DESIGN CRITERIA MANUAL AND IT'S ADDENDUM.

STREETS
ALL STREETS WILL BE PUBLIC WITH CONCRETE CURB AND GUTTER AND ASPHALT SURFACE, WIDTH TO BE 36' AT BACK OF CURB IN A 60' RIGHT-OF-WAY. ALL CURB RADII AT INTERSECTIONS TO BE 25' AT THE FACE OF CURB.

SIDEWALKS
SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF PORTAGE STANDARDS. ANY SIDEWALKS OUTSIDE RIGHT-OF-WAY WILL BE LOCATED WITHIN A SIDEWALK EASEMENT. A NON-MOTORIZED PATH WILL CONNECT THE SIDEWALK IN THE DEVELOPMENT TO NON-MOTORIZED FACILITIES ON PORTAGE ROAD.

STREET LIGHTING
STREET LIGHTING WILL BE PROVIDED BY THE DEVELOPER IN ACCORDANCE WITH THE CITY OF PORTAGE STREET LIGHTING POLICY.

PRIVATE UTILITIES
PRIVATE UTILITIES SUCH AS GAS, ELECTRIC, CABLE TV, ETC. SHALL BE LOCATED IN PRIVATE EASEMENTS, ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.

CONTIGUOUS PROPERTIES
THE PROPRIETOR HAS OWNERSHIP INTEREST IN THE OVERALL PARCEL IN WHICH THE DEVELOPMENT IS BEING PROPOSED.
NO OTHER CONTIGUOUS PROPERTIES ARE OWNED BY THE PROPRIETOR/OWNER.

INDEX OF PLANS:

01	MASTER LAND DIVISION PLAN
02	NOTES AND SPECIFICATIONS
03	TYPICALS AND DETAILS
04	SOIL EROSION AND SEDIMENTATION CONTROL PLAN
05	OVERALL DRAINAGE PLAN
06	PLAN & PROFILE SHEET - OPAL LANE - STA 10+00 TO STA 14+00
07	PLAN & PROFILE SHEET - SAPPHIRE LANE - STA 20+00 TO STA 24+50
08	PLAN & PROFILE SHEET - SAPPHIRE LANE - STA 24+50 TO STA 28+00
09	PLAN & PROFILE SHEET - OPAL LANE - STA 30+00 TO STA 34+50
10	PLAN & PROFILE SHEET - OPAL LANE - STA 34+50 TO STA 38+50
11	PLAN & PROFILE SHEET - OPAL LANE - STA 38+50 TO STA 42+00
12	PLAN & PROFILE SHEET - TOPAZ LANE - STA 45+50 TO STA 50+50
13	PLAN & PROFILE SHEET - STANLEY AVENUE - STA 63+50 TO STA 68+50
14	PLAN & PROFILE SHEET - WOODBINE AVENUE - STA 77+00 TO STA 80+00
15	SIDEWALK RAMP DETAILS
16	TREE CLEARING SOIL EROSION AND SEDIMENTATION CONTROL PLAN

LEGAL DESCRIPTION:

LAND SITUATED IN THE CITY OF PORTAGE, COUNTY OF KALAMAZOO, STATE OF MICHIGAN, DESCRIBED AS FOLLOWS:
THAT PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 3 SOUTH, RANGE 11 WEST, CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTHWEST CORNER OF LOT 46, SUPERVISOR'S PLAT OF MCCAMLEY BEACH AS RECORDED IN LIBER 13 OF PLATS, PAGE 5, KALAMAZOO COUNTY RECORDS; THENCE NORTH 88° 55' 53" WEST (RECORDED AS WEST) ON THE NORTH RIGHT OF WAY LINE OF STANLEY DRIVE 1944.85 FEET (RECORDED AS 1945.00 FEET) TO A CAPPED IRON ID #16935 AND THE POINT OF BEGINNING OF THE LAND HEREIN DESCRIBED: THENCE CONTINUING NORTH 88° 55' 53" WEST (RECORDED AS WEST) ON SAID NORTH RIGHT OF WAY LINE 383.05 FEET (RECORDED AS 382.08 FEET MORE OR LESS) TO A CAPPED IRON ID #16935 AND A POINT THAT IS 329.88 FEET (RECORDED AS 330 FEET) EAST OF THE EAST RIGHT OF WAY LINE OF PORTAGE ROAD; THENCE NORTH 11° 15' 06" EAST ON A LINE PREVIOUSLY DESCRIBED AS BEING PARALLEL WITH SAID EAST RIGHT OF WAY LINE 134.18 FEET (RECORDED AS 134.13 FEET) TO A CAPPED IRON #16935; THENCE NORTH 88° 57' 58" WEST (RECORDED AS WEST) ON A LINE PREVIOUSLY DESCRIBED AS BEING PARALLEL WITH THE NORTH LINE OF SAID STANLEY DRIVE 164.99 FEET (RECORDED AS 165.15 FEET) TO A CAPPED IRON; THENCE NORTH 11° 21' 52" EAST ON A LINE PREVIOUSLY DESCRIBED AS BEING PARALLEL WITH SAID EAST RIGHT OF WAY LINE 64.88 FEET (RECORDED AS 64.94 FEET) TO A RECTANGULAR IRON ROD: THENCE NORTH 89° 08' 55" WEST (RECORDED AS WEST) ON A LINE PREVOUSLY DESCRIBED AS BEING PARALLEL WITH THE NORTH RIGHT OF WAY LINE OF SAID STANLEY DRIVE 164.91 FEET (RECORDED AS 165 FEET) TO A CAPPED IRON ID #38116 ON THE EAST RIGHT OF WAY LINE OF SAID PORTAGE ROAD; THENCE NORTH 11° 19' 08" EAST ON SAID EAST RIGHT OF WAY LINE 67.00 FEET (RECORDED AS 67.13 FEET) TO A ½" REBAR WITH BROKEN CAP; THENCE SOUTH 89° 08' 55" EAST (RECORDED AS EAST) ON A LINE PREVIOUSLY DESCRIBED AS BEING PARALLEL WITH THE NORTH RIGHT OF WAY LINE OF STANLEY DRIVE 164.90 FEET (RECORDED AS 165 FEET) TO A CAPPED IRON ID #38116; THENCE NORTH 11° 19' 52" EAST PARALLEL WITH SAID EAST RIGHT OF WAY LINE 369.20 FEET TO A CAPPED IRON ID #38116; THENCE NORTH 11° 01' 52" EAST 67.20 FEET TO A ½" SQUARE IRON; THENCE NORTH 11° 19' 52" EAST 221.63 FEET (RECORDED AS 221.72 FEET) TO A CONCRETE MONUMENT AT THE SOUTHWEST CORNER OF LOT 32 OF THE RECORDED PLAT OF MCCAMLEY MANOR AS RECORDED IN LIBER 25 OF PLATS, PAGE 42 KALAMAZOO COUNTY RECORDS; THENCE SOUTH 89° 13' 17" EAST (RECORDED AS EAST) ON THE SOUTH LINE OF SAID LOT 32 A DISTANCE OF 106.86 FEET (RECORDED AS 106.92 FEET) TO A CONCRETE MONUMENT AT THE SOUTHWEST CORNER OF OUTLOT "B", SAID MCCAMLEY MANOR; THENCE NORTH 00° 50' 02" EAST (RECORDED AS NORTH) ON THE WEST LINE OF SAID OUTLOT "B" 144.91 FEET (RECORDED AS 145 FEET) TO A ½" REBAR ON THE NORTH LINE OF SAID OUTLOT "B"; THENCE SOUTH 89° 12' 16" EAST (RECORDED AS EAST) ON SAID NORTH LINE 66.00 FEET TO A CAPPED IRON ID #16935 AT THE NORTHEAST CORNER OF SAID OUTLOT "B"; THENCE SOUTH 00° 49' 40" WEST (RECORDED AS SOUTH) ON THE EAST LINE OF SAID OUTLOT "B" 144.89 FEET (RECORDED AS 145 FEET) TO A CONCETE MONUMENT AT THE SOUTHEAST CORNER OF SAID OUTLOT "B"; THENCE SOUTH 89° 13' 17" EAST (RECORDED AS EAST) ON THE SOUTH LINE OF SAID MCCAMLEY MANOR 431.01 FEET TO A CAPPED IRON ID #16935 AT A POINT THAT IS 968 FEET WEST OF THE SOUTHEAST CORNER OF LOT 50, SAID MCCAMLEY MANOR; THENCE SOUTH 01° 02' 52" WEST (RECORDED AS SOUTH) ON A LINE PREVIOUSLY DESCRIBED AS BEING PERPENDICULAR TO THE NORTH RIGHT OF WAY LINE OF SAID STANLEY DRIVE 712.20 FEET (RECORDED AS 712.60 FEET) TO A CAPPED IRON ID #16935; THENCE NORTH 88° 55' 15" WEST (RECORDED AS WEST) ON A LINE PREVIOUSLY DESCRIBED AS BEING PARALLEL WITH THE NORTH RIGHT OF WAY LINE OF SAID STANLEY DRIVE 220.11 FEET (RECORDED AS 220 FEET) TO A CAPPED IRON ID #16935; THENCE SOUTH 01° 04' 25" WEST (RECORDED AS SOUTH) ON A LINE PREVIOUSLY DESCRIBED AS BEING PERPENDICULAR TO SAID NORTH RIGHT OF WAY LINE 200.20 FEET (RECORDED AS 200 FEET) TO THE POINT OF BEGINNING. CONTAINING 13.30 ACRES MORE OR LESS.

BEARINGS ARE RELATED TO THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.

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STATE OF MICHIGAN
PAUL D. SCHRAM
ENGINEER
No. 6201067420
LICENSED PROFESSIONAL ENGINEER

PAUL D. SCHRAM
6201067420

PROJECT NAME:
STANWOOD CROSSINGS
9617 PORTAGE ROAD
PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002

05	02/05/2025	PDS
	CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 3	
04	01/30/2025	PDS
	CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2	
03	01/24/2025	PDS
	CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1	
02	01/02/2025	PDS
	CONSTRUCTION PLAN REVIEW AND PERMITTING	
01	09/06/2024	GDH
	PD REZONING AND CONDOMINIUM SUBDIVISION PLAN	

REVISIONS

P:\Wightman\2022\02 Portage - Portage Road Residential Planned Development\05 Drawings\850 AutoCAD\Survey Workspace\222353 Condominium Subdivision Plan.dwg 01/25/2025 10:30:46 AM
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DATE: JANUARY, 2025
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MASTER LAND DIVISION PLAN

JOB No. 222353
01

PROJECT NOTES

1. THE "2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND "STANDARD PLANS" BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) ARE HEREBY INCORPORATED INTO THESE CONTRACT DOCUMENTS. COPIES OF THESE STANDARDS ARE AVAILABLE FOR INSPECTION AT THE OFFICE OF THE ENGINEER.

2. THE "2016 CITY OF PORTAGE GENERAL SPECIFICATIONS AND STANDARD DETAILS" ARE HEREBY INCORPORATED INTO THESE CONTRACT DOCUMENTS. COPIES OF THESE STANDARDS ARE AVAILABLE FOR INSPECTION AT THE OFFICE OF THE ENGINEER.

3. THE PLACING OF TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), AS AMENDED.

4. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.

5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND/OR PLANS PREPARED BY OTHERS. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSTING ALL BONDS AND INSURANCE CERTIFICATES AND SUBMITTING TRAFFIC CONTROL PLANS FOR REVIEW AND APPROVAL WHICH MAY BE REQUIRED BY THE CITY FOR THE CONSTRUCTION OF THIS PROJECT WITHIN THE RESPECTIVE ROAD RIGHT-OF-WAY. THE CONTRACTOR SHALL APPLY FOR THESE PERMITS UNLESS OTHERWISE NOTED.

7. IN CONFORMANCE WITH PUBLIC ACT 174 OF 2013, ALL CONTRACTORS SHALL CALL MISS DIG @ 811 OR 800-482-7171 FOR PROTECTION OF UNDERGROUND UTILITIES A MINIMUM OF THREE FULL WORKING DAYS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO BEGINNING EACH EXCAVATION IN ANY AREA. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

8. THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

9. FILL SHALL BE PLACED AND ADEQUATELY KEYED INTO STRIPPED AND SCARIFIED SOILS PER THE MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL FILL MATERIAL SHOULD BE AT APPROXIMATELY THE OPTIMUM MOISTURE CONTENT DURING COMPACTION. FURTHERMORE, FILL MATERIAL SHOULD NOT BE FROZEN NOR BE PLACED ON A FROZEN BASE. IT IS RECOMMENDED THAT ALL EARTHWORK AND SITE PREPARATION ACTIVITIES BE CONDUCTED UNDER ADEQUATE SUPERVISION AND PROPERLY CONTROLLED IN THE FIELD BY A GEOTECHNICAL ENGINEERING TESTING FIRM.

10. COMPACTION OF ANY FILL BY FLOODING IS NOT ACCEPTABLE. THIS METHOD WILL GENERALLY NOT ACHIEVE THE DESIRED COMPACTION, AND THE LARGE QUANTITIES OF WATER WILL TEND TO SOFTEN THE FOUNDATION SOILS.

11. COMPACTION TESTS OR PROOF ROLLING OF EXISTING SUBSOIL SHALL BE PERFORMED BEFORE ANY FILL MATERIAL IS PLACED WITHIN THE PROPOSED PUBLIC STREET RIGHT OF WAYS.

12. ALL FILL FOR THIS PROJECT MUST BE OBTAINED AND FURNISHED BY THE CONTRACTOR. ALL REQUIRED FILL SHALL BE SELECTED EXCAVATED MATERIAL FROM THE SITE APPROVED BY THE ENGINEER, OR MDOT CLASS II GRANULAR MATERIAL FROM BORROW. EXCESS FILL SHALL BE STOCKPILED ON SITE BY THE CONTRACTOR AT THE OWNER'S DIRECTION. NOTE: NO BORROW OR SOIL REMOVAL ARRANGEMENTS HAVE BEEN PREARRANGED FOR THIS PROJECT, AND SHALL BE THE TOTAL RESPONSIBILITY OF THE CONTRACTOR.

13. REFER TO SUBSURFACE SOIL INVESTIGATION PREPARED BY **SOILS & STRUCTURES** FOR FURTHER INFORMATION AND SITE DEVELOPMENT REQUIREMENTS.

14. THE SOIL BORINGS WERE TAKEN BY **SOILS & STRUCTURES** ON **AUGUST 28, 2024**.

15. THE TEST BORINGS REPRESENT POINT INFORMATION AND MAY NOT HAVE ENCOUNTERED ALL THE TYPES AND MATERIALS WHICH ARE PRESENT AT THE SITE. THESE BORING LOGS DO NOT CONSTITUTE A GUARANTEE OF THE SOIL OR GROUNDWATER CONDITIONS, OR THAT THE TEST BORINGS ARE AN EXACT REPRESENTATION OF THE SOIL OR GROUNDWATER CONDITIONS AT ALL POINTS ON THE SITE.

16. SEE PLANS FOR SOIL BORING DATA. SLOPE ALL BANKS AND GRADE UNIFORMLY FROM BACK OF CURB AND GUTTER AT STREET TO EXISTING OR PROPOSED GRADES; OR FROM CURB AND GUTTER TO PROPOSED/EXISTING SIDEWALKS. IN AREAS WHERE NO GUTTER IS PROPOSED, UNIFORMLY SLOPE GRADE FROM TOP OF PAVEMENT TO EXISTING GRADE AT A MAXIMUM SLOPE OF 1 ON 4, UNLESS OTHERWISE NOTED.

17. THE CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVERNIGHT, AS REQUIRED.

18. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING DRAINAGE PATTERNS, AND SHALL RESOLVE ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH MAY RESULT FROM THE CONTRACTOR'S ACTIVITIES.

19. MULCH BLANKET HIGH VELOCITY SHALL BE PLACED ON THE BOTTOM OF ALL DITCHES WHEN THE LONGITUDINAL GRADE IS GREATER THAN OR EQUAL TO 2.00% UNLESS OTHERWISE NOTED, OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

20. MATERIAL FOR AGGREGATE BASE SHALL BE MDOT 22A GRAVEL, 22A SLAG, 22A LIMESTONE, 22A RECYCLED CONCRETE, OR COLD MILLED, HMA MATERIAL WHICH APPROXIMATES THE GRADATION OF 22A MATERIAL. IF MILLED HMA MATERIAL IS USED, IT MAY BE USED FULL DEPTH OR ON TOP OF 22A AGGREGATE TO OBTAIN THE REQUIRED THICKNESS. 22A GRAVEL SHALL NOT BE PLACED ON TOP OF MILLED HMA MATERIAL. A MIX GREATER THAN 50% MILLED HMA MATERIAL SHALL NOT BE USED AS AN AGGREGATE FROM SEPTEMBER 15 TO MAY 1 WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

21. VERTICAL ELEVATIONS ARE ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

22. ALL SCALES FOR DRAWINGS AND DETAILS ARE BASED ON 24"x36" PRINTED PLANS. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.

23. TAPER THE CURBS TO ZERO HEIGHT AT SIDEWALKS. SIDEWALK RAMPS SHALL BE BARRIER FREE AND CONSTRUCTED IN ACCORDANCE WITH THE MDOT SIDEWALK RAMP AND DETECTABLE WARNING DETAILS (CURRENT EDITION OF R-28 SERIES) DETECTABLE WARNING PLATES TO BE ASPHALT COATED CAST IRON. SIDEWALK JOINTS SHALL BE IN ACCORDANCE WITH THE MDOT DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS (CURRENT EDITION OF R-29 SERIES) UNLESS NOTED OTHERWISE.

24. THE TELEPHONE, GAS, AND CABLE COMPANIES SHALL PROVIDE UNDERGROUND SERVICES TO THE BUILDINGS AT THE OWNER'S EXPENSE. THE ELECTRIC UTILITY COMPANY SHALL PROVIDE SERVICE TO THE RIGHT-OF-WAY LINE. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THESE UTILITIES WITH THEIR WORK.

25. ALL PERMANENT SIGNAGE SHALL COMPLY WITH THE MICHIGAN'S BARRIER FREE DESIGN REQUIREMENTS AND THE AMERICANS WITH DISABILITIES ACT.

26. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED ELECTRICIAN ACCORDING TO THE NATIONAL ELECTRICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE WORKING SYSTEM.

27. ALL PLUMBING WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED PLUMBER AND ACCORDING TO THE NATIONAL PLUMBING CODE AS MODIFIED BY THE STATE OF MICHIGAN AND LOCAL HEALTH DEPARTMENT. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE WORKING SYSTEM.

28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, INSPECTIONS AND ALL FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY. THE CONTRACTOR SHALL MAKE ALL PERMANENT UTILITY APPLICATIONS AND SHALL BE RESPONSIBLE FOR ALL APPLICABLE FEES AND UTILITY SERVICE INSTALLATION FEES. THIS INCLUDES BUT IS NOT LIMITED TO PRIMARY AND SECONDARY ELECTRICAL SERVICES, PERTAINING TO SUCH, ON BEHALF OF THE OWNER.

29. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PRE-EXISTING ON-SITE IMPROVEMENTS WITHIN LIMITS OF CONSTRUCTION UNLESS OTHERWISE NOTED. THIS INCLUDES BUT IS NOT LIMITED TO BUILDINGS, FOUNDATIONS, FOOTINGS, CURBS, ASPHALT, TREES, SHRUBS, EXISTING UTILITY LINES, DEBRIS AND ALL OTHER ITEMS AND UTILITIES TO BE ABANDONED.

30. SOILS EXPOSED IN THE BASE OF ALL SATISFACTORY FOUNDATION EXCAVATIONS SHOULD BE PROTECTED AGAINST ANY DETRIMENTAL CHANGES IN CONDITION SUCH AS FROM DISTURBANCE, RAIN, AND FREEZING. SURFACE RUN-OFF WATER SHOULD BE DRAINED AWAY FROM THE EXCAVATION AND NOT ALLOWED TO POND. IF POSSIBLE, ALL FOOTING CONCRETE SHOULD BE POURED THE SAME DAY THE EXCAVATION IS MADE. IF THIS IS NOT PRACTICAL, THE FOOTING EXCAVATIONS SHOULD BE ADEQUATELY PROTECTED.

31. PROPERTY OWNER'S NAMES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THEIR ACCURACY IS NOT GUARANTEED.

32. FOLLOWING FOUNDATION BACKFILL, CONTRACTOR SHALL SLOPE BACKYARDS TO YARD DRAINS.

CITY OF PORTAGE CONSTRUCTION STANDARDS

1. YIELD CALCULATIONS AND DENSITY TESTS OF THE ROAD MATERIAL SHALL BE PROVIDED. EXTRACTION/GRADATION/ANALYSIS SHALL BE DOCUMENTED TO CONFIRM THE MATERIAL MEETS MDOT SPECIFICATIONS. THE ENGINEER, TESTING FIRM, OR BOTH NEED TO BE PRESENT DURING PAVING OPERATIONS.

2. COMPACTION TESTS OR PROOF ROLLING OF EXISTING SUBSOIL SHALL BE PERFORMED BEFORE ANY FILL MATERIAL IS PLACED WITHIN THE PROPOSED PUBLIC STREET RIGHT OF WAYS.

3. IF SOIL OR GROUNDWATER CONTAMINATION IS ENCOUNTERED OR SUSPECTED DURING CONSTRUCTION THE FOLLOWING STEPS SHALL BE FOLLOWED:
   - 3.1. CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY OWNER AND/OR OWNER'S REPRESENTATIVE.
   - 3.2. OWNER AND/OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE CITY.
   - 3.3. OWNER SHALL ENGAGE THE SERVICES OF A QUALIFIED ENVIRONMENTAL CONSULTANT. (CONSULTANT).
   - 3.4. CONSULTANT SHALL CONDUCT A SITE ASSESSMENT AND REPORT TO THE ABOVE PARTIES.
   - 3.5. CONSULTANT SHALL DEVELOP A PLAN TO ADDRESS ANY CONTAMINATION WHICH MAY BE FOUND DURING CONSTRUCTION.
   - 3.6. THE CONSULTANT TOGETHER WITH THE DESIGN ENGINEER SHALL COMPLETE A SITE EVALUATION PROCESS FOLLOWING THE DOCUMENT ENTITLED *IMPLEMENTING STORMWATER INFILTRATION PRACTICES AT VACANT PARCELS AND BROWNFIELD SITES* (EPA, 2013) TO DETERMINE IF THE STORMWATER MANAGEMENT SYSTEM REQUIRES REDESIGN AND RESUBMITTAL TO THE CITY FOR REVIEW AND APPROVAL.
   - 3.7. OWNER AND/OR OWNER'S REPRESENTATIVE SHALL SUBMIT TO THE CITY SUPPORTING DOCUMENTATION OF THE SITE EVALUATION PROCESS. A REVISED STORMWATER REVIEW PACKAGE MUST ALSO BE SUBMITTED IF IT BECOMES NECESSARY TO CHANGE THE DESIGN OF THE STORMWATER MANAGEMENT SYSTEM.
   - 3.8. MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) REMEDIATION AND REDEVELOPMENT DIVISION (RRD) STAFF SHALL BE NOTIFIED AS APPLICABLE."

4. STORM SEWER PIPING SHALL BE CLASS C76-IV CONCRETE, ADS - N12 OR HANCOR HI-Q HDPE UNLESS INDICATED OTHERWISE. SEE PLAN FOR SIZES AND LOCATIONS OF PIPING. HDPE PIPE SHALL HAVE A MINIMUM COVER OF 3 FEET. ALL PIPE JOINTS SHALL BE PREMIUM JOINTS AS TO PROVIDE A WATERTIGHT SEAL IN ACCORDANCE WITH THE CITY OF PORTAGE CONSTRUCTION SPECIFICATIONS AND STORM WATER DESIGN CRITERIA MANUAL.

5. ALL WATER MAINS, WATER SERVICES, STORM SEWERS, SANITARY SEWERS, SANITARY SEWER SERVICES, AND THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTAGE SPECIFICATIONS AND REQUIREMENTS.

6. DEFLECTION TESTING IS REQUIRED FOR ALL FLEXIBLE PIPE (SANITARY AND STORM SEWER) IN ACCORDANCE WITH SECTION 208.2.4 OF THE CITY OF PORTAGE SPECIFICATIONS.

7. SANITARY AND STORM SEWER REQUIRE TELEVISION INSPECTION IN ACCORDANCE WITH SECTION 208.2.6 OF THE CITY OF PORTAGE SPECIFICATIONS.

8. ALL WATER MAINS AND THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTAGE SPECIFICATIONS AND AWWA C600.

9. ALL HYDRANTS SHALL BE INSTALLED IN A MANNER SUCH THAT THE CENTER OF THE PUMPER CONNECTION IS A MINIMUM OF 21" AND A MAXIMUM OF 36" ABOVE THE ADJACENT FINISHED GRADE. THE HYDRANT SHALL HAVE AN AREA OF 36" CLEAR OF OBSTRUCTIONS SURROUNDING THE OUTLET NOZZLES AND OPERATING NUT.

10. WATER MAINS AND THEIR APPURTENANCES SHALL BE WRAPPED IN POLYETHYLENE MATERIAL IN ACCORDANCE WITH AWWA C105. AT THE DEVELOPER'S OPTION WITH THE CITY'S APPROVAL, POLYETHYLENE WRAP MAY BE OMITTED IF WATER MAIN BEDDING SOILS ARE TESTED IN ACCORDANCE WITH APPENDIX A OF AWWA C105. SOIL EVALUATION IS TO BE TAKE AT PIPE DEPTH AT 500 FOOT INTERVALS ALONG THE WATER MAIN ROUTE. TESTS NEED TO BE PERFORMED BY QUALIFIED ENGINEERS OR TECHNICIANS EXPERIENCED IN SOIL ANALYSIS AND EVALUATION. THE TESTING NEEDS TO BE CONDUCTED IN ACCORDANCE WITH ASTM TESTS: G51 - PH, G 200 - REDOX, G187 - RESISTIVITY, AND 4500 S METHYLENE BLUE METHOD FOR SULFIDE. THE TESTING AND EVALUATION TO DETERMINE WHETHER POLYETHYLENE ENCASEMENT SHOULD BE USED NEEDS TO BE COMPLETED AND A COPY OF THE EVALUATION PROVIDED TO THE CITY. SOIL TESTING NEEDS TO BE PERFORMED AFTER THE EARTHWORK IS COMPLETED AND BEFORE ANY WORK ON THE WATER MAIN MAY BEGIN.

11. WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE WITH AWWA C651.

12. ALL WATER MAIN 4 INCHES TO 10 INCHES IN DIAMETER SHALL BE CEMENT LINED CLASS 52 DUCTILE IRON AND 12-INCH DIAMETER AND LARGER SHALL BE CEMENT LINED CLASS 53 DUCTILE IRON CONFORMING TO AWWA C151.

13. PROJECT SANITARY SEWER SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST REVISION OF ASTM SPECIFICATION D3034 "TYPE PSM POLY VINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS AND HAVE A MINIMUM WALL THICKNESS OF SDR 26.

14. MAINTAIN 10 FOOT MINIMUM HORIZONTAL SEPARATION BETWEEN THE SANITARY OR STORM SEWER AND WATER MAIN UTILITIES. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE THE WATER MAIN CROSSES A SANITARY OR STORM SEWER.

15. ANY SANITARY SEWER, SANITARY SEWER SERVICE LEADS, WATER MAIN, WATER SERVICES, OR STORM SEWER THAT IS DAMAGED BY THE CONTRACTOR DURING THEIR OPERATIONS SHALL BE REPAIRED TO THE OWNER'S AND CITY OF PORTAGE'S SATISFACTION AND AT THE CONTRACTOR'S EXPENSE.

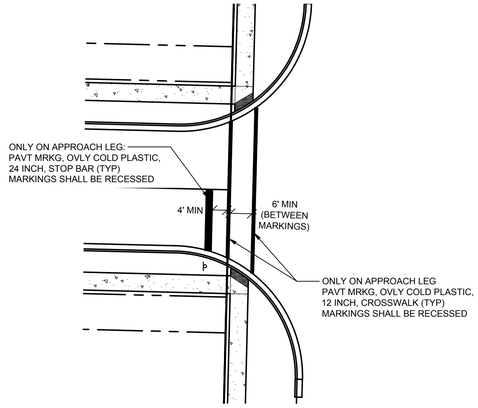
16. EXTERIOR CONCRETE SHALL BE 3500 PSI, LIMESTONE AGGREGATE AND 6.5% AIR ENTRAINMENT WITH A TOLERANCE OF 1.5% AND A LIGHT BROOM FINISH.

17. SIDEWALK SHALL BE INSTALLED AT THE SAME TIME AS THE UNIT IT FRONTS. SIDEWALK ON STANLEY AVENUE WEST OF LOT 1 AND ALONG RUBY LANE NORTH OF LOT 15 SHALL BE INSTALLED AS PART OF ROAD CONSTRUCTION.

18. CONCRETE TESTING - CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING ENGINEER TO VERIFY THE SLUMP, AIR ENTRAINMENT AND PROVIDE (3) CYLINDER SAMPLES FOR EACH DAYS POUR, OR 50 C.Y. OF CONCRETE, WHICHEVER OCCURS MORE OFTEN.

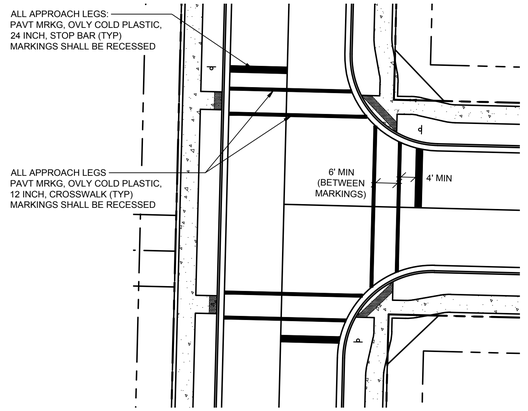
19. TESTING REQUIREMENTS (ALL CONTRACTORS) SOIL AND AGGREGATE DENSITY TESTING - CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING CONSULTANT TO VERIFY THE DENSITY OF ALL FILL EXCAVATION AS SPECIFIED AND ALL SLAB, FOUNDATIONS, AND FOOTING SURFACES AS RECOMMENDED BY ENGINEER. TESTING SHALL TAKE PLACE PRIOR TO INSTALLATION OF THE AGGREGATE BASE AND PRIOR TO THE INSTALLATION OF THE HMA PAVEMENT. COPIES OF ALL COMPACTION TEST RESULTS SHALL BE FORWARDED TO THE ENGINEER.

20. HMA TESTING - CONTRACTOR MUST SUBMIT MIX DESIGN FROM SUPPLIER. EXTRACTION TESTS AND MATERIAL YIELD SHALL BE PERFORMED IN ACCORDANCE WITH 208.3.3.2 OF CITY OF PORTAGE SPECS AND STANDARD DETAILS. YIELD CALCULATIONS AND DENSITY TESTS OF THE MATERIAL PLACED NEEDS TO BE PROVIDED. EXTRACTION, GRADATION, AND ANALYSIS ALSO NEEDS TO BE PROVIDED TO CONFIRM THAT THE MATERIAL PLACED MEETS MDOT SPECIFICATIONS. THE ENGINEER, AND OR TESTING FIRM WILL BE PRESENT DURING PAVING OPERATIONS.



TYPICAL INTERSECTION STRIPING AT WOODBINE AND STANLEY

SCALE: N.T.S



TYPICAL INTERSECTION STRIPING LAYOUT

SCALE: N.T.S.

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PROJECT NAME:

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9617 PORTAGE ROAD
PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002

05 02/05/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 3

04 01/30/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2

03 01/24/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1

02 01/02/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING

01 09/06/2024 GDH
PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

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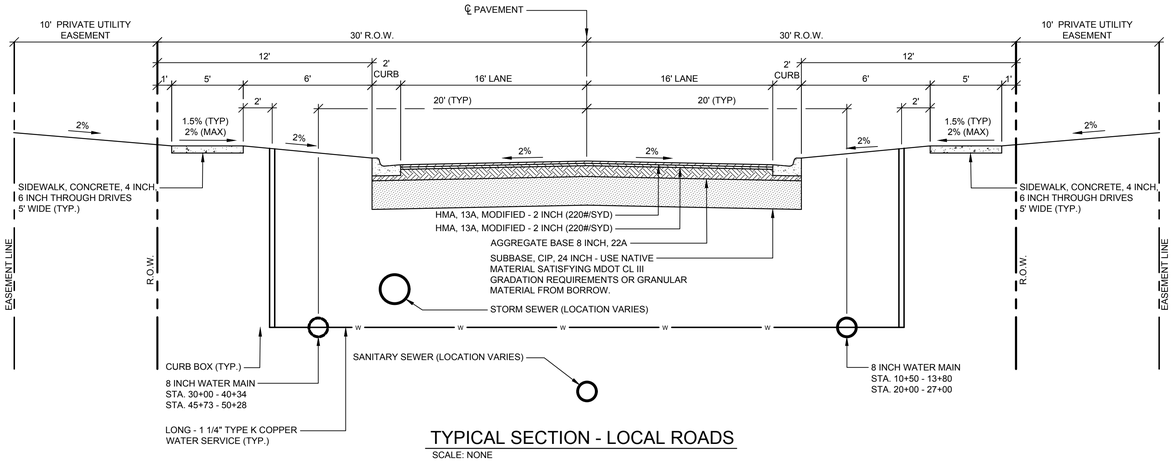
SCALE: NONE

NOTES AND SPECIFICATIONS

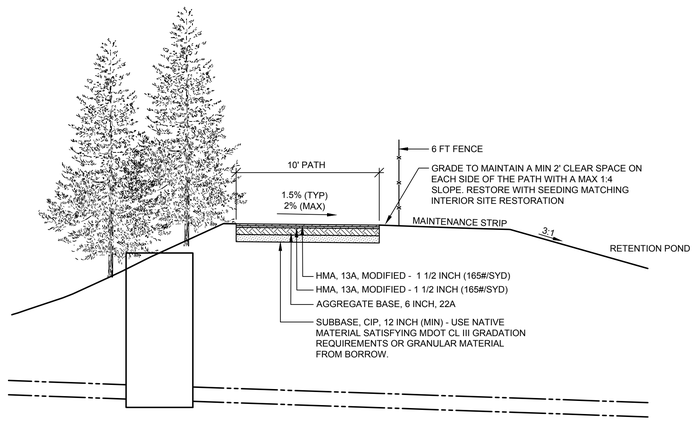
JOB No. 222353

02



TYPICAL SECTION - LOCAL ROADS

SCALE: NONE



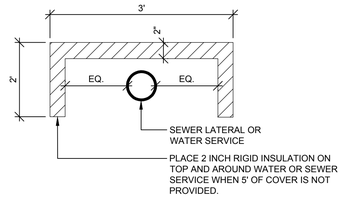
TYPICAL SECTION - HMA PATHWAY

SCALE: NONE

ITEM	AWI	YIELD	PERFORMANCE GRADE	NOTES
HMA, 13A, MODIFIED (TOP)	220	220#/SYD	P.G. 58 - 28	ALL ROADS
HMA, 13A, MODIFIED (LEVELING)		220#/SYD	P.G. 58 - 28	ALL ROADS
HMA, 13A, MODIFIED (TOP)	N/A	165#/SYD	P.G. 58 - 28	HMA PATHWAY / POND ACCESS
HMA, 13A, MODIFIED (LEVELING)		165#/SYD	P.G. 58 - 28	HMA PATHWAY / POND ACCESS
HMA BOND COAT (NOT A PAY ITEM)		0.05 TO 0.15 GAL/SYD	SS - 1h	

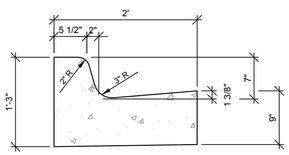
HMA APPLICATION TABLE

LEACHING BASIN DETAIL



SERVICE INSULATION DETAIL

SCALE: NTS



CURB & GUTTER - SD-113

STANDARD MDOT C-4 CURB WITHOUT REBAR

HMA SPECIFICATIONS

1. FURNISH HOT MIX ASPHALT (HMA) MIXTURE, DESIGNED USING MARSHALL MIXTURE DESIGN METHODS IN ACCORDANCE WITH MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND AS NOTED HEREIN.

2. SUBSTITUTING RECLAIMED ASPHALT PAVEMENT (RAP) FOR A PORTION OF THE NEW MATERIAL REQUIRED TO PRODUCE HMA MIXTURE IS ALLOWED PROVIDED THAT THE MIXTURE IS DESIGNED AND PRODUCED TO MEET ALL CRITERIA SPECIFIED HEREIN, UNLESS OTHERWISE PROHIBITED. RAP MATERIALS MUST BE IN ACCORDANCE WITH THE MDOT 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION.
   - 2.1. LIMITATIONS ON THE USE OF RAP. RAP SHALL BE RESTRICTED TO TIER I LIMITS
     - 2.1.1. TIER I (0% TO 17% RAP BINDER BY WEIGHT OF THE TOTAL BINDER IN THE MIXTURE). NO BINDER GRADE ADJUSTMENT IS MADE TO COMPENSATE FOR THE STIFFNESS OF THE ASPHALT BINDER IN RAP.
   - 2.2. RECYCLED ASPHALT SHINGLES (RAS) SHALL NOT BE ALLOWED.

3. MATERIALS: HMA MIXTURE SHALL BE IN ACCORDANCE WITH THE FOLLOWING MIX DESIGN CRITERIA AND VOLUMETRIC PROPERTIES. USE AGGREGATES OF THE HIGHEST QUALITY AVAILABLE TO MEET THE MINIMUM SPECIFICATIONS.

PROPERTY	MIX TYPE	
	13A, MOD	36A, MOD
TARGET AIR VOID, % (a)	3.5	3.5
VMA (min) % (b)	14.00	15.00
VFA	65 - 78	65 - 78
FINES TO BINDER RATIO (max) (c)	1.2	1.2
FLOW (0.01 INCH)	8 - 16	8 - 16
STABILITY (min), lbs	900	900
ASPHALT BINDER CONTENT, %	5.0 - 6.0	5.5 - 6.5

a. LOWER TARGET AIR VOIDS BY 1.00% IF USED IN A SEPARATE SHOULER PAVING OPERATION. CONSIDER REDUCING AIR VOID TARGETS TO 3.00% FOR LOWER TRAFFIC VOLUME ROADWAYS WHEN DESIGNING 13A AND 36A MIXTURES FOR LOCAL AGENCY USE.

b. VMA CALCULATED USING Gsb OF THE COMBINED AGGREGATES

c. RATIO OF THE WEIGHT OF AGGREGATE PASSING THE NO. 200 SIEVE TO TOTAL ASPHALT BINDER CONTENT BY WEIGHT; INCLUDING FINES AND BINDER CONTRIBUTED BY RAP

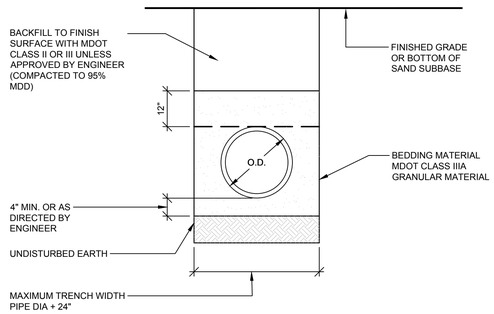
PROPERTY	MIX TYPE	
	13A, MOD	36A, MOD
	PERCENT PASSING INDICATED SIEVE OR PROPERTY LIMIT	
1 1/2 INCH		
1 INCH		
3/4 INCH	100	
1/2 INCH	75 - 95	100
3/8 INCH	60 - 90	92 - 100
NO. 4	45 - 80	65 - 90
NO. 8	30 - 65	55 - 75
NO. 16	20 - 50	
NO. 30	15 - 40	25 - 45
NO. 50	10 - 25	
NO. 100	5 - 15	
NO. 200	3 - 6	3 - 10
CRUSHED (min) % (MTM 117)	95	95
SOFT PARTICLE (max), % (d)	8.0	8.0
ANGULARITY INDEX (min) (e)	2.5	3.0
L.A. ABRASION % LOSS (max) (f)	40	40
SAND RATIO (max) (g)	50	50

d. THE SUM OF THE SHALE, SILTSTONE, STRCUTURALLY WEAK, AND CLAY-IRONSTONE PARTICLES SHALL NOT EXCEED 8.0 PERCENT FOR AGGREGATES USED IN TOP COURSE. THE SUM OF THE SHALE, SILTSTONE, STRUCTURALLY WEAK, AND CLAY-IRONSTONE PARTICLES SHALL NOT EXCEED 12.0 PERCENT FOR AGGREGATES USED IN BASE AND LEVELING COURSES.

e. THE FINE AGGREGATE ANGULARITY OF BLENDED AGGREGATES, DETERMINED BY MTM 118, MUST MEET THE MINIMUM REQUIREMENT. IN MIXTURE CONTAINING RAP, THE REQUIRED MINIMUM FINE AGGREGATE ANGULARITY MUST BE MET BY THE VIRGIN MATERIAL. NAA FINE AGGREGATE ANGULARITY MUST BE REPORTED FOR INFORMATION ONLY AND MUST INCLUDE THE FINE MATERIAL CONTRIBUTED BY RAP IF PRESENT IN MIXTURE.

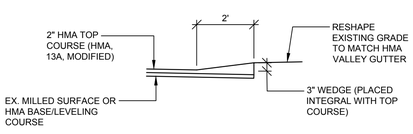
f. LOS ANGELES ABRASION MAXIMUM LOSS MUST BE MET FOR THE COMPOSITE MIXTURE, HOWEVER, EACH INDIVIDUAL AGGREGATE MUST BE LESS THAN 50.

g. SAND RATIO FOR 13A, MODIFIED, AND 36A, MODIFIED, NO MORE THAN 50% OF THE MATERIAL PASSING THE NO. 4 SIEVE IS ALLOWED TO PASS THE NO. 30 SIEVE.



WATER MAIN TRENCH DETAIL

SCALE: NONE



DETAIL - HMA VALLEY GUTTER

SCALE: NONE

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REVISIONS

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TYPICALS AND DETAILS

JOB No. 222353
03

SOIL EROSION & SEDIMENTATION CONTROL NOTES

1 ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH THE MICHIGAN SOIL EROSION AND SEDIMENTATION CONTROL ACT. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE COUNTY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM EGLE PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE COUNTY "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.

2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER, THESE COVER AREAS ACT AS SEDIMENT FILTERS.

3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.

4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.

5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

NUMBER IN CIRCLE REFERS TO NUMBERED DETAILS ON MDOT STANDARD PLAN R-96 SERIES, SOIL EROSION & SEDIMENTATION CONTROL MEASURES. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

(3P) DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL SURFACE, SALV, 3 INCH, MDOT SEEDING, MIXTURE TUF APPLIED AT A RATE OF 176 LB/ACRE, FERTILIZER, CHEMICAL NUTRIENT, CL A APPLIED AT A RATE OF 228 LB/ACRE; MULCH AT A RATE OF 2 TON/ACRE AND MULCH ANCHORING. (APPLIES TO ENTIRE PROJECT)

(7P) DENOTES RIPRAP, PLAIN. INSTALL RIPRAP, PLAIN AS DIRECTED BY THE ENGINEER IN THE FIELD. THE RIPRAP, PLAIN PAY ITEM SHALL INCLUDE A GEOTEXTILE UNDERLAYMENT.

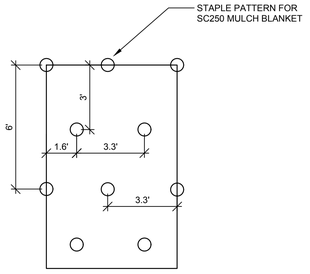
(8P) DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

(14T) DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 10' WIDE, 6" DEEP, AND CONSIST OF 2"-4" AGGREGATE

(26T) DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.

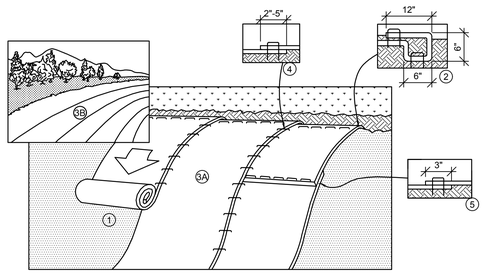
(29T) DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

(33 MB) DENOTES MULCH BLANKETS. MULCH BLANKET SHALL BE PROVIDED AT LOCATIONS SHOWN ON THE PLANS, AT SLOPES GREATER THAN 1:3, AREAS WITH CONCENTRATED FLOWS, AND AS DIRECTED BY THE ENGINEER IN THE FIELD, TO PREVENT RUNOFF AND EROSION.



1.15 STAPLES PER SQ. YD.

MULCH BLANKET STAPLE PATTERN
SCALE: NONE



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's) WITH TOPSOIL AND FERTILIZER PER RESTORATION AND SEEDING NOTES, AND AEP STANDARD SPECIFICATION SS-160102.

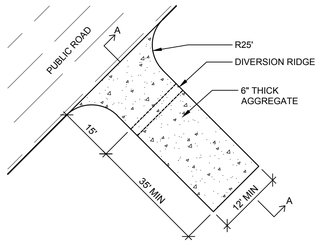
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH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

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

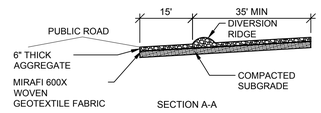
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" - 5" OVERLAP DEPENDING ON RECP's TYPE.

5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP's WIDTH. NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

MULCH BLANKET SLOPE PATTERN
SCALE: NONE

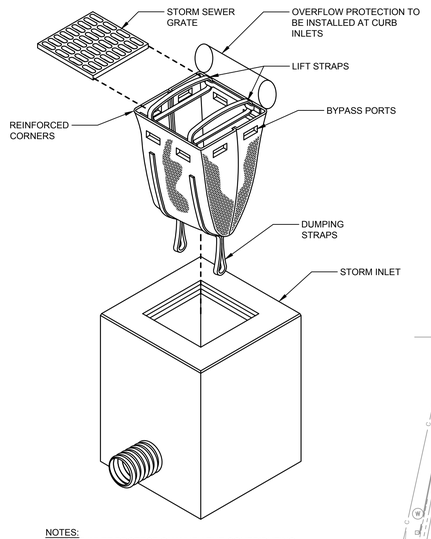


PLAN VIEW



SECTION A-A

TEMPORARY CONSTRUCTION ENTRANCE
SCALE: NONE

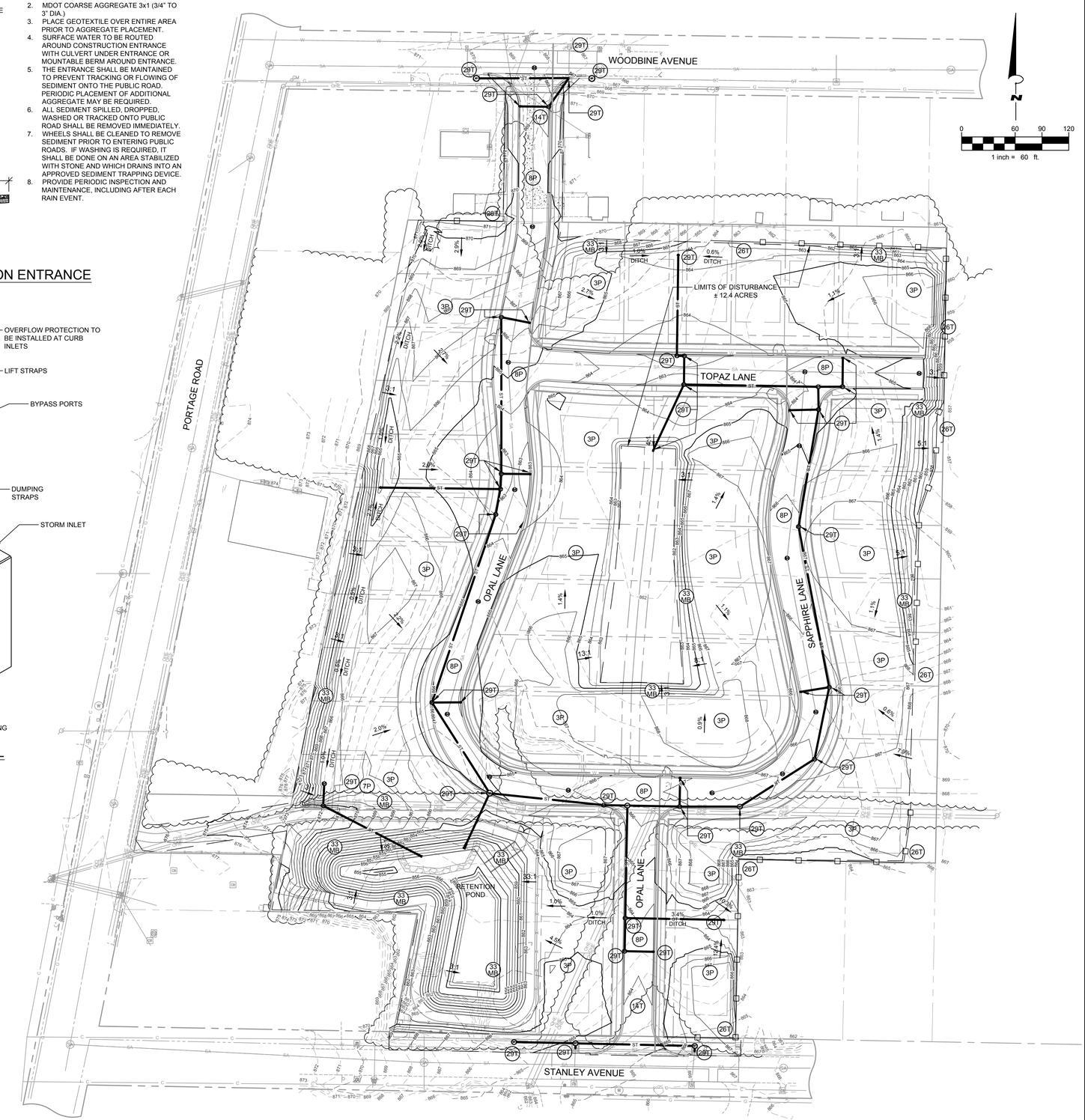


NOTES:
REMOVE INLET PROTECTION WHEN THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.

INLET PROTECTION DETAIL
SCALE: NONE

NOTES

1. UTILIZE EXISTING DRIVEWAY AND ADD STONE AS REQUIRED WHEN POSSIBLE.
2. MDOT COARSE AGGREGATE 3x1 (3/4" TO 3" DIA.)
3. PLACE GEOTEXTILE OVER ENTIRE AREA PRIOR TO AGGREGATE PLACEMENT.
4. SURFACE WATER TO BE ROUTED AROUND CONSTRUCTION ENTRANCE WITH CULVERT UNDER ENTRANCE OR MOUNTABLE BERM AROUND ENTRANCE.
5. THE ENTRANCE SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC ROAD. PERIODIC PLACEMENT OF ADDITIONAL AGGREGATE MAY BE REQUIRED.
6. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROAD SHALL BE REMOVED IMMEDIATELY.
7. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING PUBLIC ROADS. IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
8. PROVIDE PERIODIC INSPECTION AND MAINTENANCE, INCLUDING AFTER EACH RAIN EVENT.



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PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

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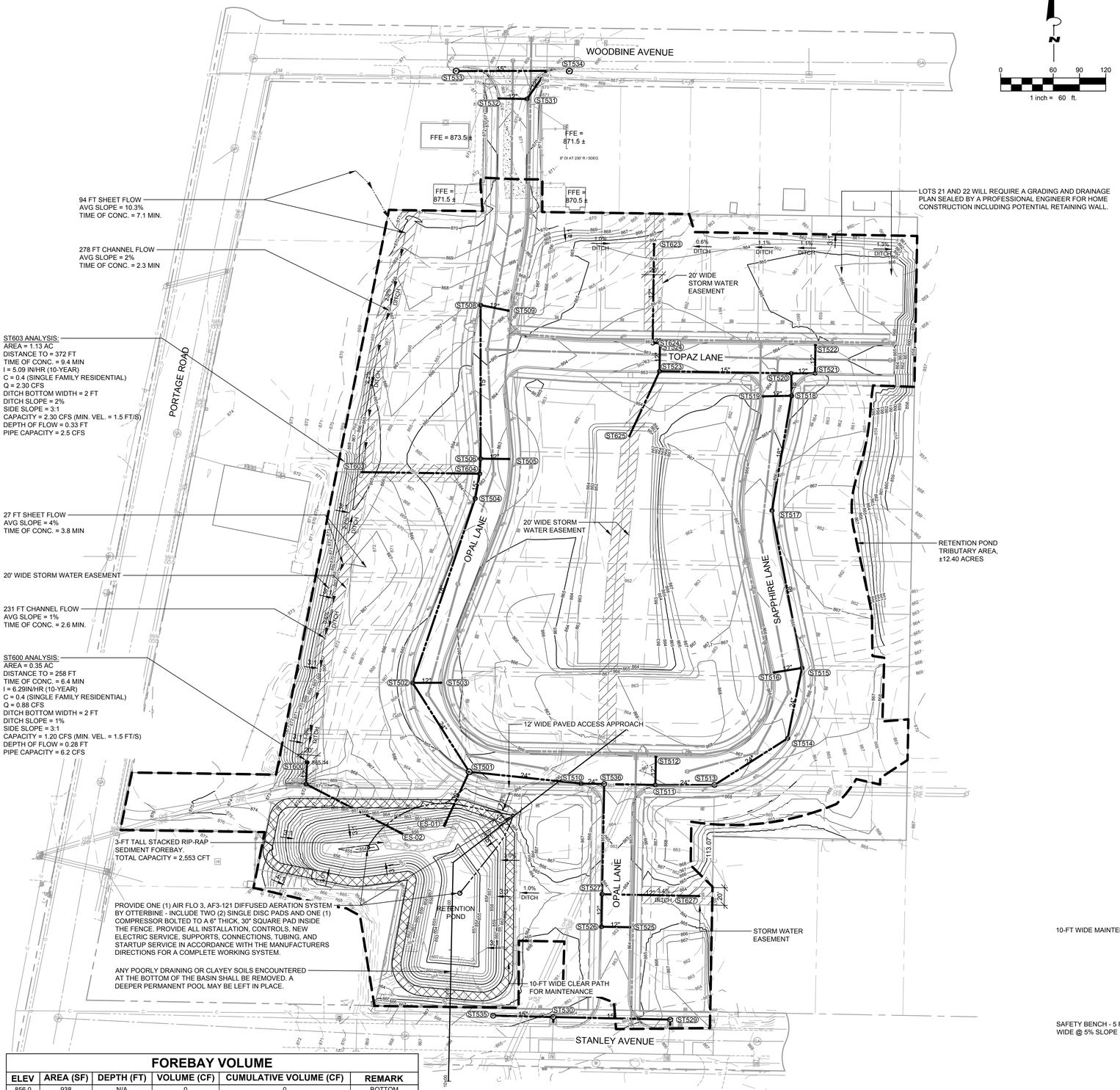
DATE: JANUARY, 2025

SCALE: 1" = 60'

SOIL EROSION AND SEDIMENTATION CONTROL PLAN

JOB No. 222353

04



STORM STRUCTURES

ST501 DR STRUCTURE, 72 INCH DIA COVER K 2.00 FT SUMP	RIM 864.81 INV. 856.04 - 24" E INV. 856.09 - 24" NW INV. 856.04 - 30" SW
ST502 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 863.96 INV. 857.31 - 18" N INV. 856.27 - 24" SE INV. 860.28 - 12" E
ST503 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 863.96 INV. 860.44 - 12" W
ST504 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 863.26 INV. 857.74 - 15" N INV. 857.74 - 18" S
ST505 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 862.75 INV. 858.75 - 12" W
ST506 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 862.75 INV. 858.25 - 15" N INV. 857.94 - 15" S INV. 858.59 - 12" E
ST508 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 866.32 INV. 862.16 - 12" E INV. 861.75 - 15" S
ST509 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 866.32 INV. 862.32 - 12" W
ST510 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 866.02 INV. 856.27 - 24" W INV. 856.27 - 24" E
ST511 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 866.87 INV. 856.41 - 24" W INV. 856.41 - 24" E INV. 862.21 - 12" N
ST512 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 866.87 INV. 862.37 - 12" S
ST513 DR STRUCTURE, 60 INCH DIA COVER K 2.00 FT SUMP	RIM 867.19 INV. 856.51 - 24" W INV. 856.51 - 24" NE
ST514 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 865.96 INV. 856.66 - 24" SW INV. 856.66 - 24" N
ST515 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 865.23 INV. 856.78 - 24" S INV. 856.78 - 18" N INV. 861.07 - 12" W

STORM STRUCTURES

ST516 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 865.23 INV. 861.23 - 12" E
ST517 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 866.20 INV. 857.33 - 18" S INV. 857.96 - 18" N
ST518 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 864.06 INV. 858.36 - 18" S INV. 858.36 - 18" N INV. 859.89 - 12" W
ST519 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 864.05 INV. 860.05 - 12" E
ST520 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 864.16 INV. 858.41 - 18" S INV. 858.50 - 15" W INV. 858.50 - 12" E
ST521 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 864.32 INV. 858.90 - 12" W INV. 860.16 - 12" N
ST522 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 864.32 INV. 860.32 - 12" S
ST523 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 862.76 INV. 859.03 - 12" SW INV. 859.03 - 15" E INV. 859.03 - 12" N
ST524 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 862.76 INV. 859.19 - 12" S INV. 859.75 - 12" W
ST525 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 863.57 INV. 859.57 - 12" W
ST526 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 863.57 INV. 859.41 - 12" N INV. 859.41 - 12" E
ST527 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 863.78 INV. 859.22 - 12" S INV. 859.72 - 12" E INV. 858.97 - 15" N
ST529 DR STRUCTURE, 60 INCH DIA COVER E 2.00 FT SUMP	RIM 864.63 INV. 861.62 - 12" S INV. 856.58 - 15" W
ST530 DR STRUCTURE, 60 INCH DIA COVER E 2.00 FT SUMP	RIM 863.27 INV. 856.25 - 15" E INV. 858.95 - 12" S INV. 857.19 - 15" W

STORM STRUCTURES

ST531 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 868.49 INV. 864.83 - 12" W INV. 864.83 - 12" NE
ST532 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 868.49 INV. 864.99 - 12" E
ST533 DR STRUCTURE, 72 INCH DIA COVER E 2.00 FT SUMP	RIM 869.04 INV. 859.89 - 15" E
ST534 DR STRUCTURE, 72 INCH DIA COVER E 2.00 FT SUMP	RIM 865.70 INV. 856.65 - 24" E INV. 856.65 - 24" W
ST535 DR STRUCTURE, 60 INCH DIA COVER E 2.00 FT SUMP	RIM 863.92 INV. 857.02 - 15" E
ST536 DR STRUCTURE, 60 INCH DIA COVER B 0.00 FT SUMP	RIM 866.12 INV. 856.32 - 24" W INV. 856.32 - 24" E INV. 858.65 - 15" S
ST600 DR STRUCTURE, 48 INCH DIA COVER E 0.00 FT SUMP	RIM 865.12 INV. 860.45 - 12" S
ST601 DR STRUCTURE, 48 INCH DIA COVER B 0.00 FT SUMP	RIM 869.86 INV. 859.57 - 12" N INV. 859.57 - 12" SE
ST603 DR STRUCTURE, 24 INCH DIA COVER E 0.00 FT SUMP	RIM 863.83 INV. 859.74 - 12" E
ST604 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 862.82 INV. 859.07 - 12" W INV. 857.86 - 15" N INV. 857.86 - 15" S
ST623 DR STRUCTURE, 24 INCH DIA COVER E 0.00 FT SUMP	RIM 863.34 INV. 860.15 - 12" S
ST624 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 862.76 INV. 859.78 - 12" N INV. 859.78 - 12" E
ST625 DR STRUCTURE, 24 INCH DIA COVER E 0.00 FT SUMP	RIM 861.36 INV. 859.31 - 12" NE
ST627 DR STRUCTURE, 24 INCH DIA COVER E 0.00 FT SUMP	RIM 862.45 INV. 860.08 - 12" W

END SECTIONS

ES-01 PROPOSED CONC END SECTION	INV. 855.94 - 30" NE
ES-02 PROPOSED CONC END SECTION	INV. 856.01 - 12" NW

STORM WATER RUNOFF CALCULATIONS

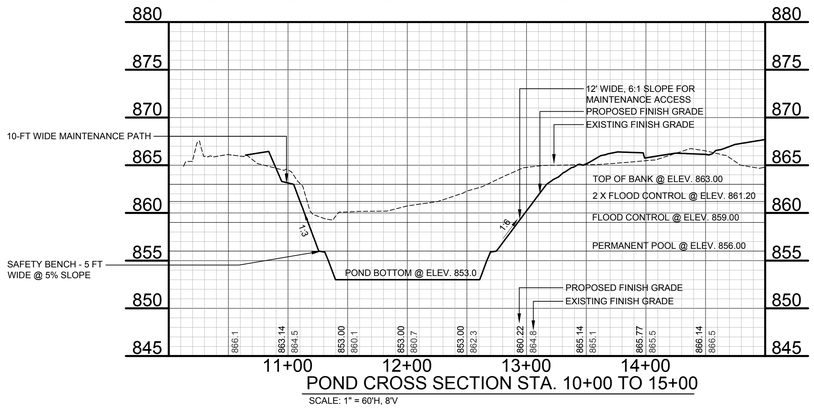
TOTAL CATCHMENT AREA	540,000	SFT	12.40	AC
SURFACE TYPE	AREA (SFT)	AREA (AC)	C	Rv
ROADWAY	80,654	1.85	0.9	0.98
CONCRETE	32,560	0.75	0.9	0.98
PITCHED ROOF	70,015	1.61	0.9	0.965
POND AREA	12,656	0.29	1.0	1.0
OPEN SPACE	344,115	7.90	0.2	0.035
COMPOSITE VALUE			0.46	0.38
	VOLUME (CFT)			
FLOOD CONTROL VOLUME (FCV) =	49,277	C*A*P*3,630		
FLOOD CONTROL CHECK - 3,630 CFT/ACRE	45,000	A*3,630		
REQUIRED FLOOD CONTROL (2X FCV) =	98,554			
PROPOSED POND VOLUME	91,555	CFT		
WATER QUALITY VOLUME Vwq	16,935	A*Rv*3,360		
TREATMENT VOLUME REQUIRED =	2,540	15% x Vwq		
TREATMENT VOLUME PROVIDED =	2,553	CFT		
POND INFILTRATION RATE =	1.04	IN/HR		
DMAX POND=	72(IR)/12 =	6.24	FT	
POND DRAWDOWN TIME =	34.62	HOURS		

POND VOLUME

ELEV	AREA (SF)	DEPTH (FT)	VOLUME (CF)	CUMULATIVE VOLUME (CF)	REMARK
853.0	4,223	N/A	N/A	N/A	WET
854.0	5,195	1.0	N/A	N/A	WET
855.0	6,255	1.0	N/A	N/A	WET
856.0	12,656	1.0	0	0	BOTTOM
857.0	14,865	1.0	13,761	13,761	
858.0	17,118	1.0	15,992	29,752	
859.0	19,415	1.0	18,267	48,019	FCV
860.0	21,757	1.0	20,586	68,605	
861.0	24,144	1.0	22,951	91,555	
862.0	26,575	1.0	25,360	116,915	
863.0	29,050	1.0	27,813	144,727	TOP

FOREBAY VOLUME

ELEV	AREA (SF)	DEPTH (FT)	VOLUME (CF)	CUMULATIVE VOLUME (CF)	REMARK
856.0	938	N/A	0	0	BOTTOM
857.0	1,270	1.0	1,104	1,104	
858.0	1,627	1.0	1,449	2,553	WQ VOL.
859.0	20,112	1.0	10,870	13,422	TOP



POND CROSS SECTION STA. 10+00 TO 15+00

SCALE: 1" = 60'H, 8'V

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PAUL D. SCHRAM
6201067420

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PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
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05 02/05/2025 PDS
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CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2

03 01/24/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1

02 01/02/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING

01 09/06/2024 GDH
PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

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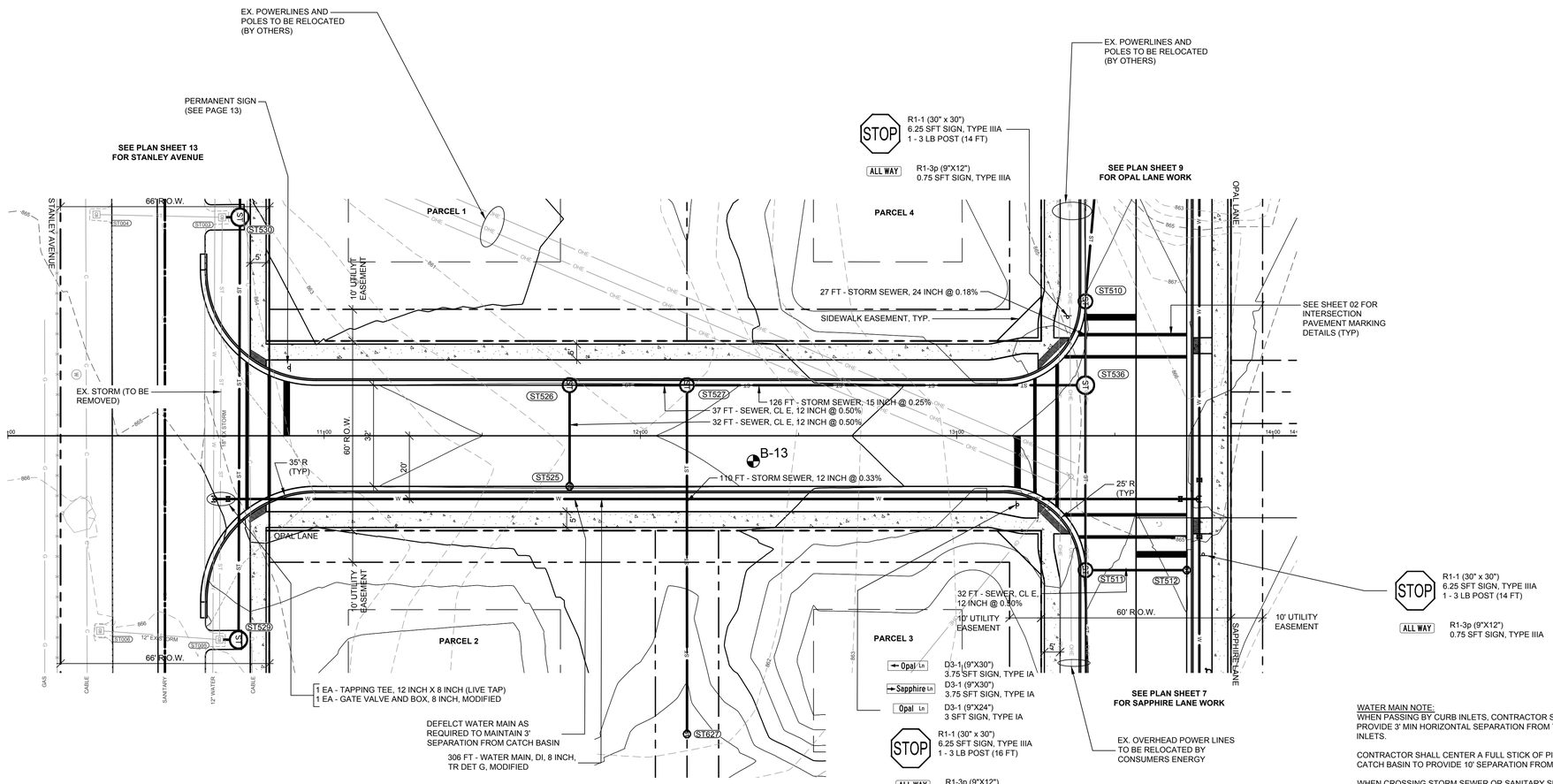
DATE: JANUARY, 2025

SCALE: AS NOTED

OVERALL DRAINAGE PLAN

JOB No. 222353

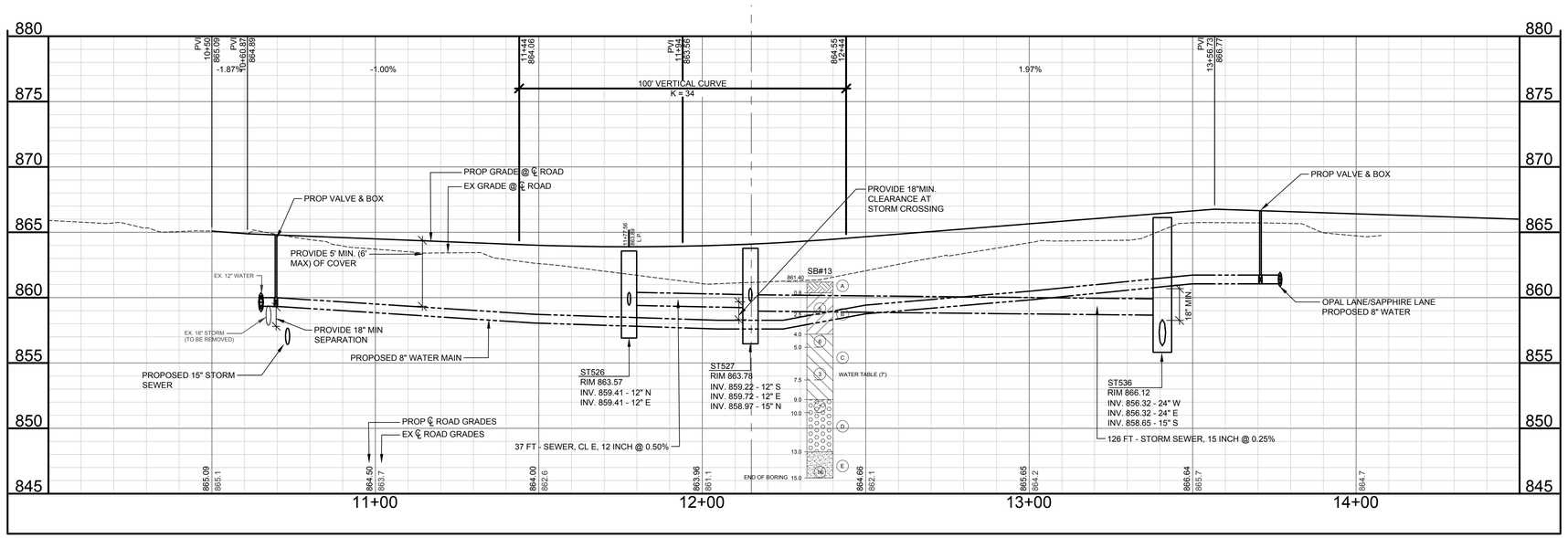
05



WATER MAIN NOTE:
WHEN PASSING BY CURB INLETS, CONTRACTOR SHALL PROVIDE 3' MIN HORIZONTAL SEPARATION FROM THE CURB INLETS.

CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CATCH BASIN TO PROVIDE 10' SEPARATION FROM JOINTS.

WHEN CROSSING STORM SEWER OR SANITARY SEWER CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CROSSING PIPE TO PROVIDE 10' SEPARATION FROM JOINTS WHILE MAINTAINING MIN 18" VERTICAL SEPARATION.



BORINGS

B-13	A 0 - 0.83'	TOPSOIL - DARK BROWN SANDY
	B 0.83 - 4'	SAND - SLIGHTLY COMPACT BROWN FINE TO MEDIUM WITH CLAY
	C 4 - 9'	SAND - LOOSE TO SLIGHTLY COMPACT BROWN FINE TO MEDIUM WITH A TRACE OF GRAVEL
	D 9 - 13'	SAND - SLIGHTLY COMPACT BROWN FINE TO COARSE WITH A TRACE OF GRAVEL
	E 13 - 15'	SAND - COMPACT BROWN FINE TO COARSE WITH A TRACE OF GRAVEL
	15'	END OF BORING WATER TABLE 7'

STORM STRUCTURES

ST525 DR STRUCTURE, 24 INCH DIA COVER K 2.0 FT SUMP	RIM 863.57 INV. 859.57 - 12" W
ST526 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 863.57 INV. 859.41 - 12" N INV. 859.41 - 12" E
ST527 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 863.78 INV. 859.22 - 12" S INV. 859.72 - 12" E INV. 858.97 - 15" N
ST536 DR STRUCTURE, 60 INCH DIA COVER B 0.0 FT SUMP	RIM 866.12 INV. 856.32 - 24" W INV. 856.32 - 24" E INV. 858.65 - 15" S
ST627 DR STRUCTURE, 24 INCH DIA COVER E 0.0 FT SUMP	RIM 862.45 INV. 860.08 - 12" W

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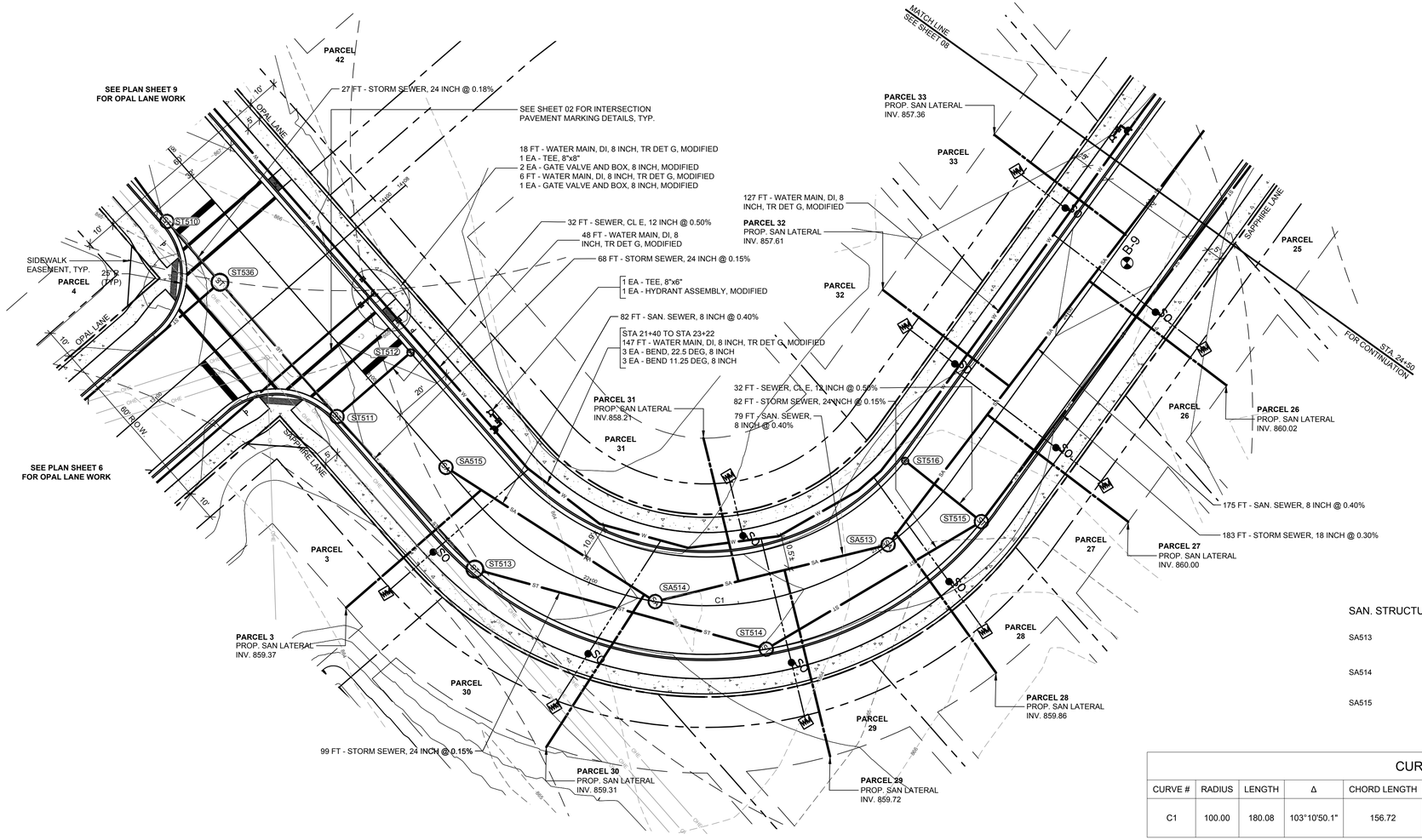


0 20' 30' 40'

STORM STRUCTURES

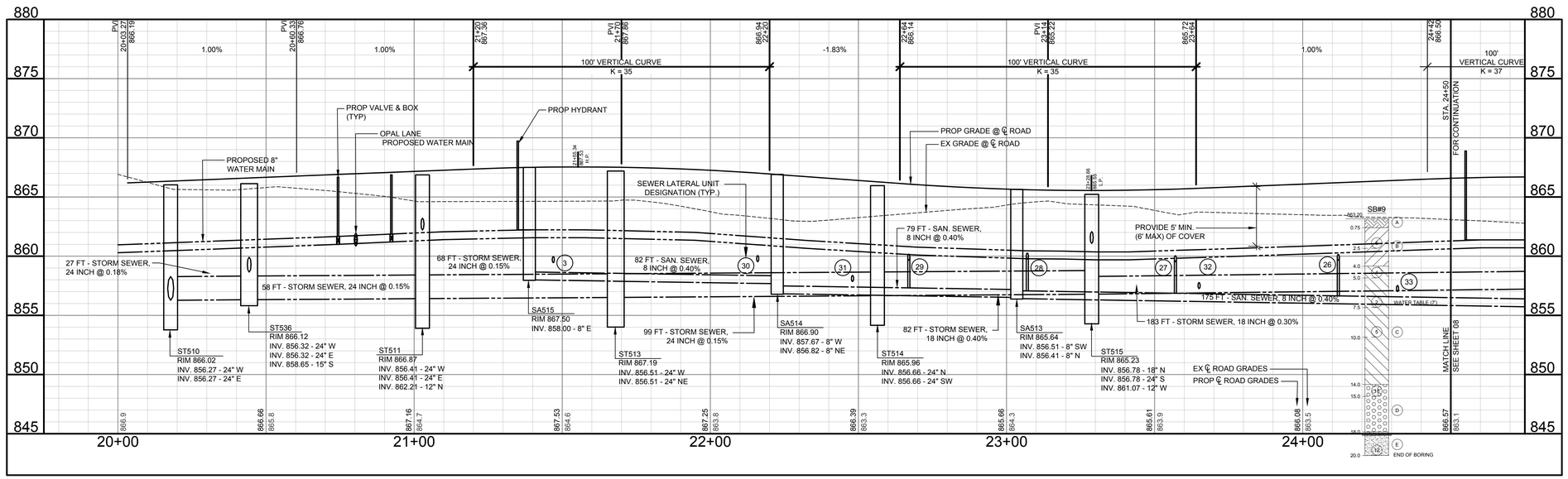
ST510 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 866.02 INV. 856.27 - 24" W INV. 856.27 - 24" E
ST511 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 866.87 INV. 856.41 - 24" W INV. 856.41 - 24" E INV. 862.21 - 12" N
ST512 DR STRUCTURE, 24 INCH DIA COVER K 2.0 FT SUMP	RIM 866.87 INV. 862.37 - 12" S
ST513 DR STRUCTURE, 60 INCH DIA COVER K 2.0 FT SUMP	RIM 867.19 INV. 856.51 - 24" W INV. 856.51 - 24" NE
ST514 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 865.96 INV. 856.66 - 24" SW INV. 856.66 - 24" N
ST515 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 865.23 INV. 856.78 - 24" S INV. 856.78 - 18" N INV. 861.07 - 12" W
ST516 DR STRUCTURE, 24 INCH DIA COVER K 2.0 FT SUMP	RIM 865.23 INV. 861.23 - 12" E
ST536 DR STRUCTURE, 60 INCH DIA COVER B 0.0 FT SUMP	RIM 866.12 INV. 856.32 - 24" W INV. 856.32 - 24" E INV. 858.65 - 15" S

SAN. STRUCTURES

SA513	RIM 865.64 INV. 856.51 - 8" SW INV. 856.41 - 8" N
SA514	RIM 866.90 INV. 856.82 - 8" NE INV. 857.67 - 8" W
SA515	RIM 867.50 INV. 858.00 - 8" E

CURVE TABLE

CURVE #	RADIUS	LENGTH	Δ	CHORD LENGTH	CHORD BEARING	P.C.	P.I.	P.T.
C1	100.00	180.08	103°10'50.1"	156.72	N39° 28' 41.58"E	STA. 21+53.67 N 248806.28 E 12798556.38	EXT. STA. 22+79.79 N 248803.93 E 12798682.48	STA. 23+33.75 N 248927.25 E 12798656.01



BORINGS

B-9
- A 0 - 0.75' TOPSOIL - DARK BROWN SANDY
- B 0.75 - 4' SAND - SLIGHTLY COMPACT BROWN FINE TO MEDIUM WITH A TRACE OF CLAY AND GRAVEL
- C 4 - 14' SAND - LOOSE TO SLIGHTLY COMPACT BROWN FINE TO MEDIUM
- D 14 - 18' SAND - COMPACT BROWN FINE
- E 18 - 20' SAND - COMPACT BROWN FINE TO MEDIUM

20' END OF BORING
WATER TABLE 7'

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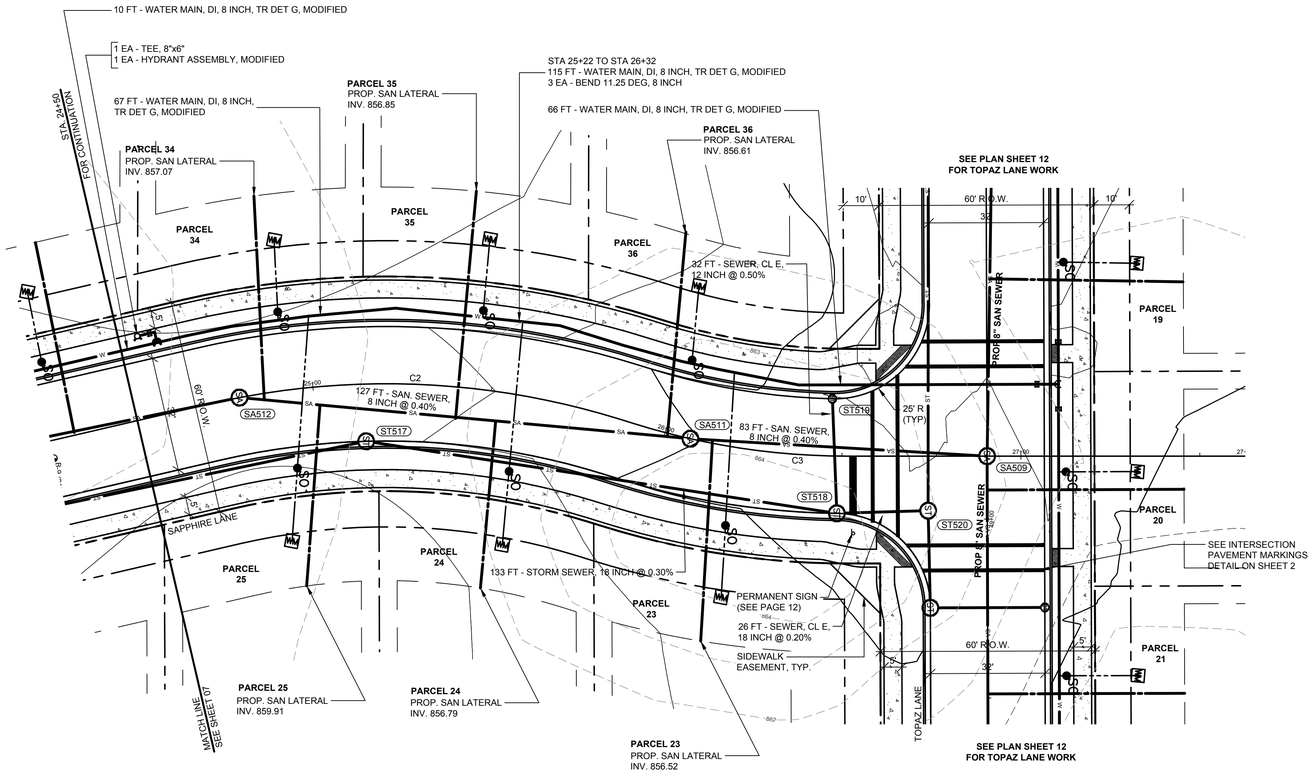
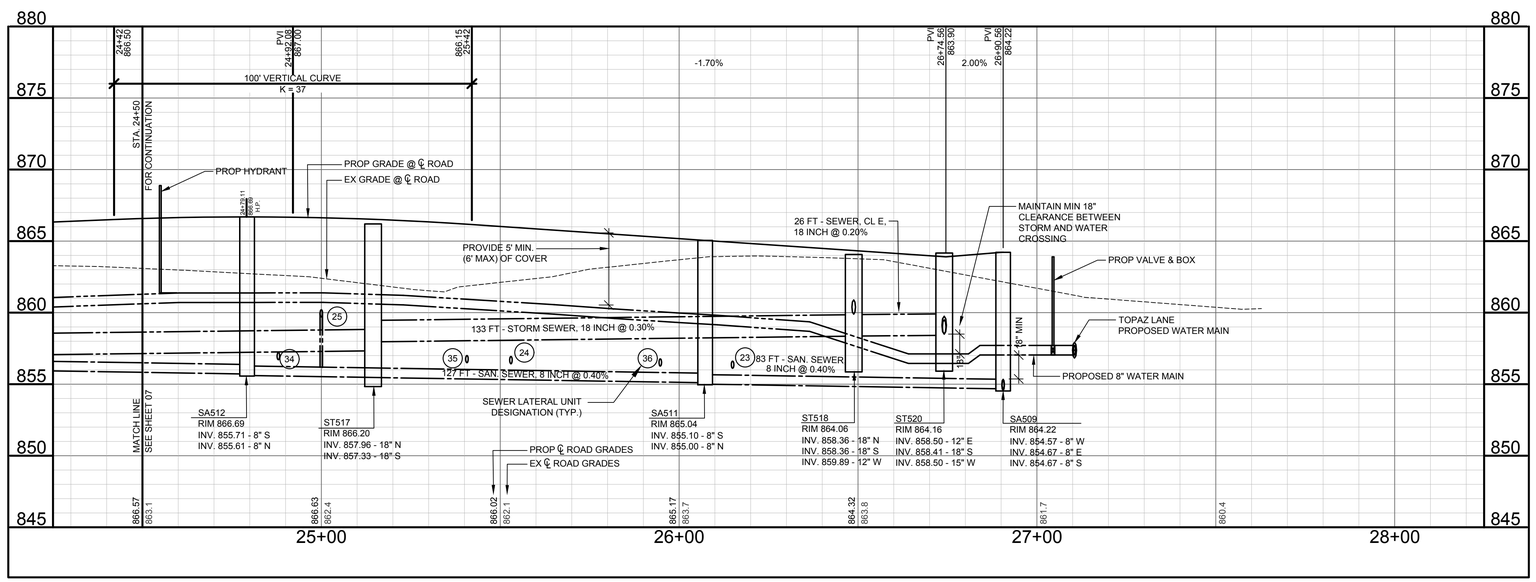
SCALE: 1" = 20'H; 5'V

PLAN & PROFILE SHEET
SAPPHIRE LANE
STA 20+00 TO STA 24+50

JOB No. 222353
07





WATER SERVICE TO PARCEL 23 SHALL BE PLACED OVER THE TOP OF THE STORM SEWER WITH 12" MIN CLEARANCE. WATER SERVICE SHALL BE INSULATED

WATER MAIN NOTE:
WHEN PASSING BY CURB INLETS, CONTRACTOR SHALL PROVIDE 3' MIN HORIZONTAL SEPARATION FROM THE CURB INLETS.

CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CATCH BASIN TO PROVIDE 10' SEPARATION FROM JOINTS.

WHEN CROSSING STORM SEWER OR SANITARY SEWER CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CROSSING PIPE TO PROVIDE 10' SEPARATION FROM JOINTS WHILE MAINTAINING MIN 18" VERTICAL SEPARATION.

0 20' 30' 40'

CURVE TABLE

CURVE #	RADIUS	LENGTH	Δ	CHORD LENGTH	CHORD BEARING	P.C.	P.I.	P.T.
C2	220.00	116.62	030°22'18"	115.26	N3° 04' 25.53"E	STA. 24+70.34 N 249060.79 E 12798627.36	EXT. STA. 25+30.05 N 249119.18 E 12798614.83	STA. 25+86.95 N 249175.89 E 12798633.54
C3	200.00	60.36	017°17'34"	60.13	N9° 36' 47.50"E	STA. 25+91.16 N 249179.88 E 12798634.85	EXT. STA. 26+21.57 N 249208.76 E 12798644.38	STA. 26+51.52 N 249239.17 E 12798644.90

STORM STRUCTURES

ST517 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 866.20 INV. 857.33 - 18" S INV. 857.96 - 18" N
ST518 DR STRUCTURE, 48 INCH DIA COVER K 2.0 FT SUMP	RIM 864.06 INV. 858.36 - 18" S INV. 858.36 - 18" N INV. 859.89 - 12" W
ST519 DR STRUCTURE, 24 INCH DIA COVER K 2.0 FT SUMP	RIM 864.05 INV. 860.05 - 12" E
ST520 DR STRUCTURE, 48 INCH DIA COVER B 2.0 FT SUMP	RIM 864.16 INV. 858.41 - 18" S INV. 858.50 - 15" W INV. 858.50 - 12" E

SAN. STRUCTURES

SA509	RIM 864.22 INV. 854.57 - 8" W INV. 854.67 - 8" E INV. 854.67 - 8" S
SA511	RIM 865.04 INV. 855.10 - 8" S INV. 855.00 - 8" N
SA512	RIM 866.69 INV. 855.71 - 8" S INV. 855.61 - 8" N

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PAUL D. SCHRAM
6201067420

PROJECT NAME:

STANWOOD CROSSINGS
9617 PORTAGE ROAD
PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002

05 02/05/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 3

04 01/30/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2

03 01/24/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1

02 01/02/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING

01 09/06/2024 GDH
PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

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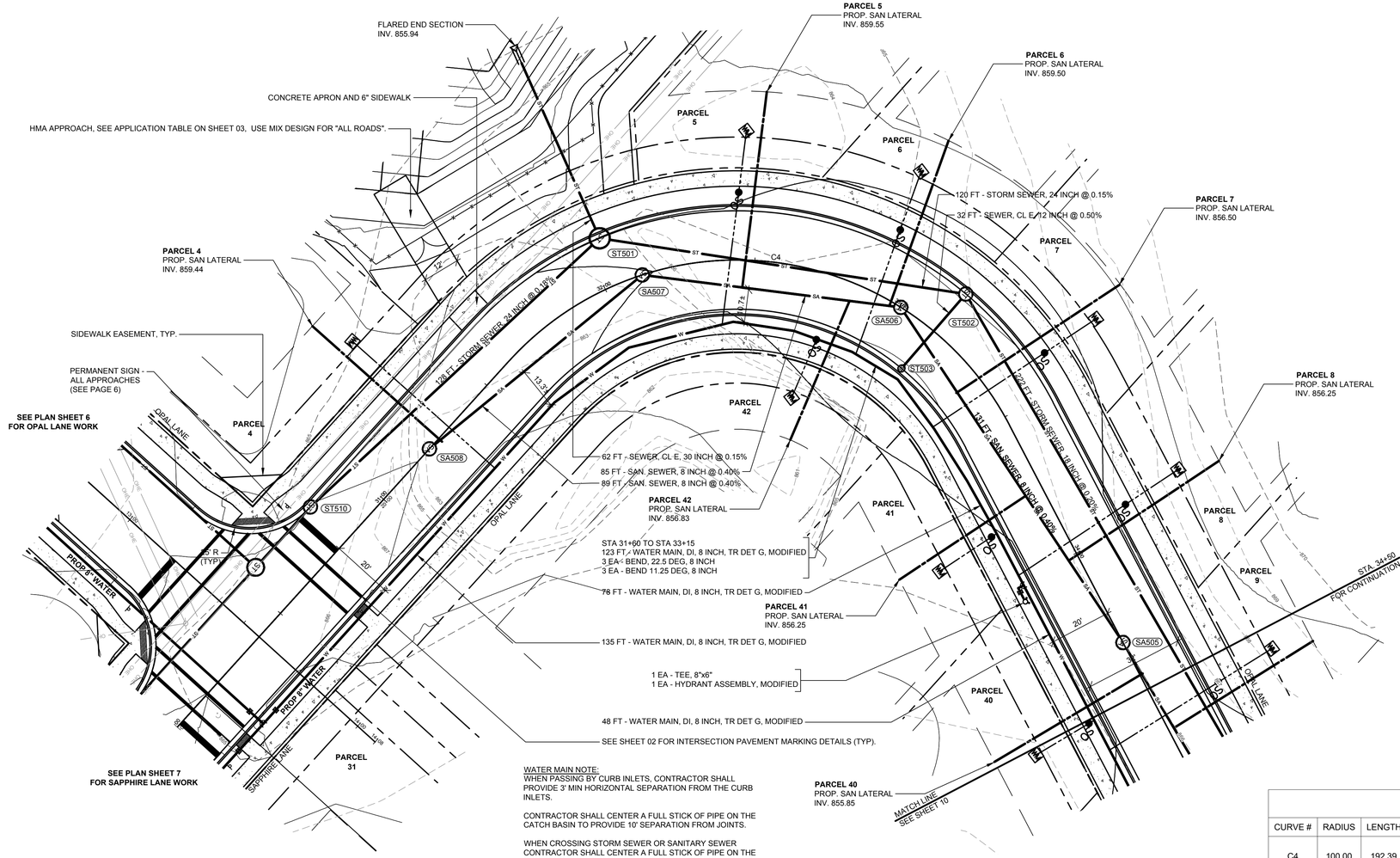
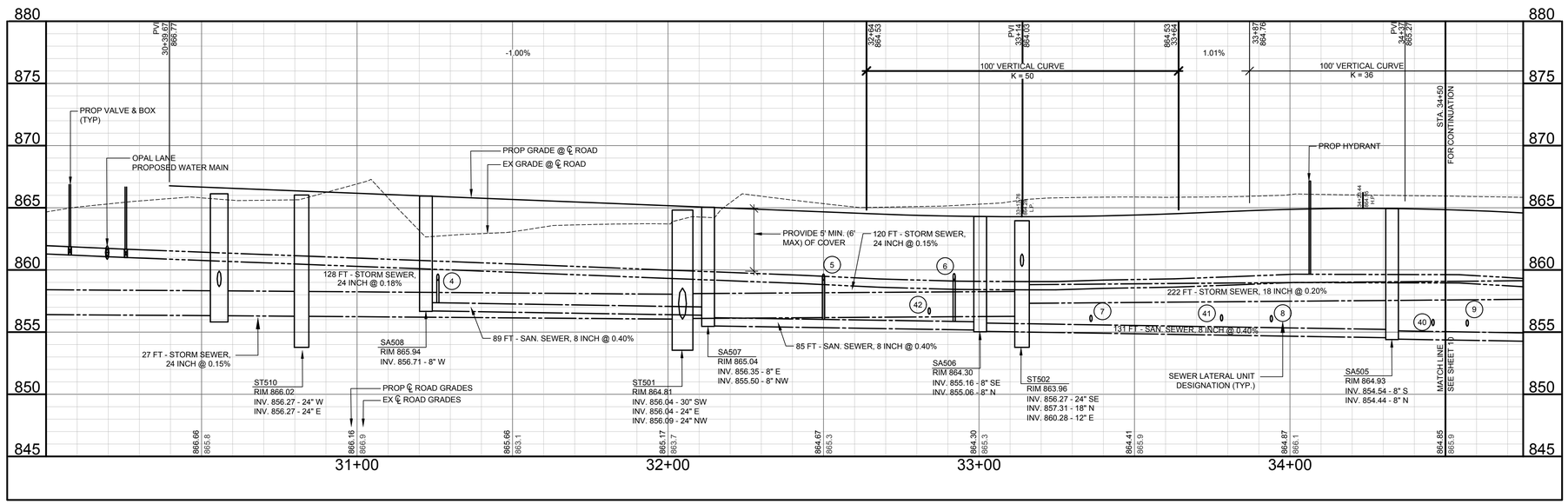
PLAN & PROFILE SHEET
SAPPHIRE LANE
STA 24+50 TO STA 28+00

JOB No. 222353
08





CURVE TABLE								
CURVE #	RADIUS	LENGTH	Δ	CHORD LENGTH	CHORD BEARING	P.C.	P.I.	P.T.
C4	100.00	192.39	110°13'43.1"	164.06	N33° 49' 01.84"W	STA. 31+60.69 N 248810.28 E 12798342.06	EXT. STA. 33+04.11 N 248812.96 E 12798198.66	STA. 33+53.08 N 248946.58 E 12798250.75

STORM STRUCTURES

ST501 DR STRUCTURE, 72 INCH DIA COVER K 2.00 FT SUMP	RIM 864.81 INV. 856.04 - 24" E INV. 856.09 - 24" NW INV. 856.04 - 30" SW
ST502 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 863.96 INV. 857.31 - 18" N INV. 856.27 - 24" SE INV. 860.28 - 12" E
ST503 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 863.96 INV. 860.44 - 12" W
ST510 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 866.02 INV. 856.27 - 24" W INV. 856.27 - 24" E

END SECTIONS

ES-01 PROPOSED CONC END SECTION	INV. 855.94 - 30" NE

SAN. STRUCTURES

SA505	RIM 864.93 INV. 854.54 - 8" S INV. 854.44 - 8" N
SA506	RIM 864.30 INV. 855.16 - 8" SE INV. 855.06 - 8" N
SA507	RIM 865.04 INV. 856.35 - 8" E INV. 855.50 - 8" NW
SA508	RIM 865.94 INV. 856.71 - 8" W

0 20' 30' 40'

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04 01/30/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2

03 01/24/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1

02 01/02/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING

01 09/06/2024 GDH
PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

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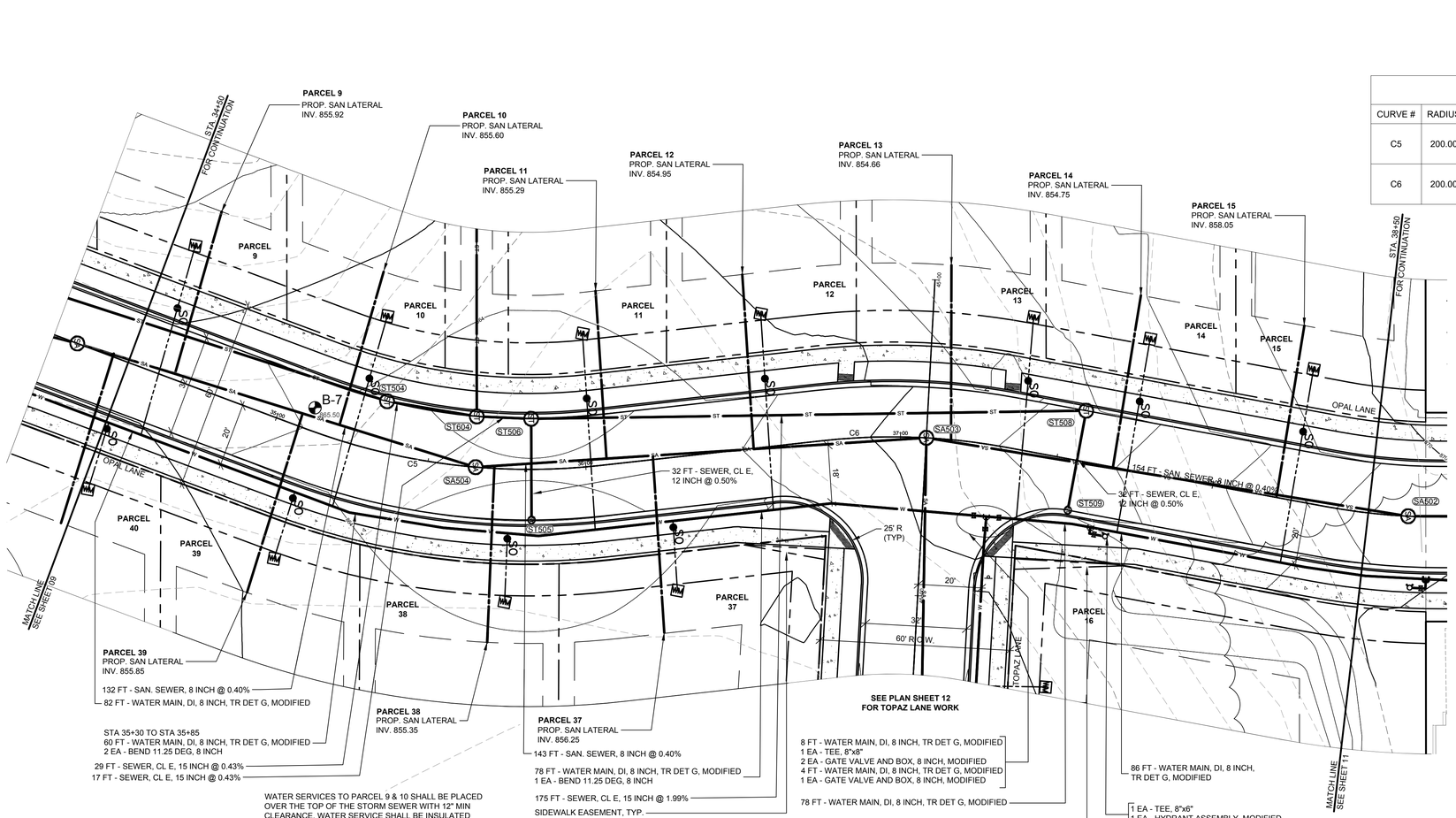
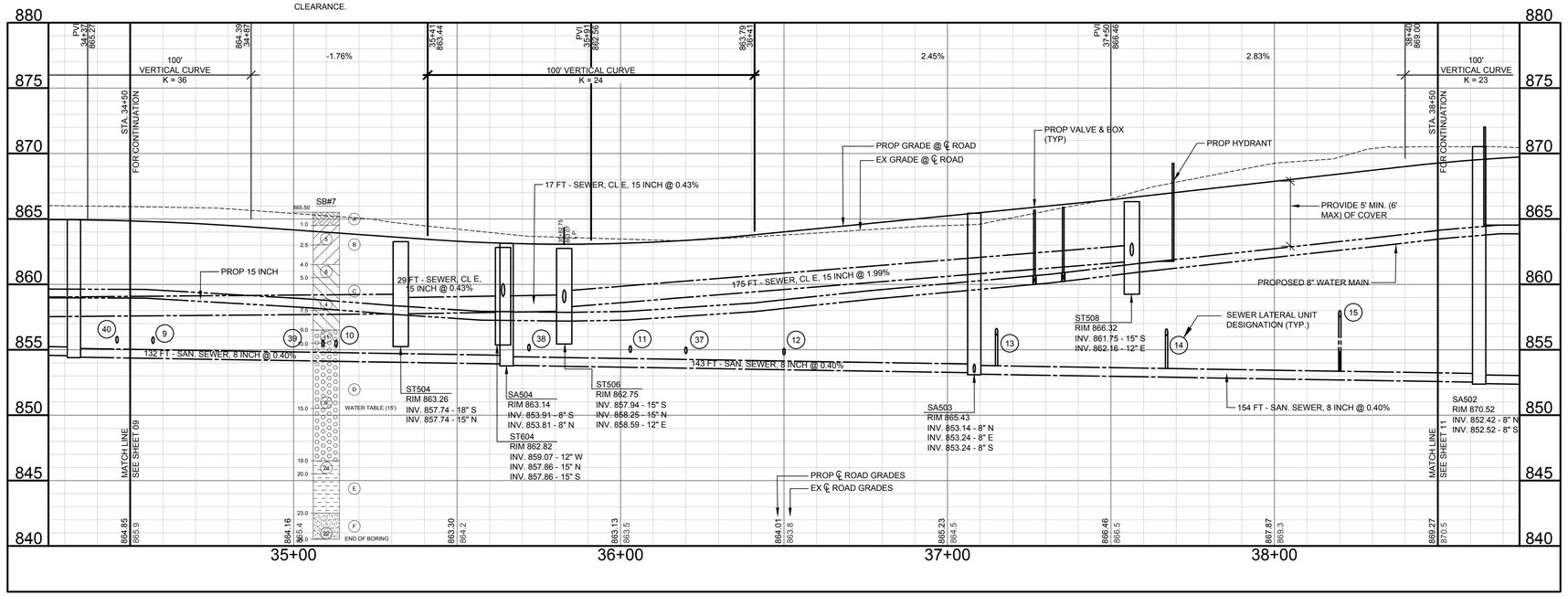
PLAN & PROFILE SHEET
OPAL LANE
STA 30+00 TO STA 34+50

JOB No. 222353
09



CURVE TABLE

CURVE #	RADIUS	LENGTH	Δ	CHORD LENGTH	CHORD BEARING	P.C.	P.I.	P.T.
C5	200.00	93.63	026°49'23.2"	92.78	N7° 53' 08.11"E	STA. 35+10.61 N 249093.36 E 12798307.97	EXT. STA. 35+58.30 N 249137.80 E 12798325.29	STA. 36+04.24 N 249185.26 E 12798320.70
C6	200.00	58.84	016°51'25.4"	58.63	N2° 54' 09.22"E	STA. 36+75.01 N 249255.70 E 12798313.88	EXT. STA. 37+04.65 N 249285.20 E 12798311.03	STA. 37+33.85 N 249314.26 E 12798316.85



WATER MAIN NOTE:
WHEN PASSING BY CURB INLETS, CONTRACTOR SHALL PROVIDE 3' MIN HORIZONTAL SEPARATION FROM THE CURB INLETS.

CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CATCH BASIN TO PROVIDE 10' SEPARATION FROM JOINTS.

WHEN CROSSING STORM SEWER OR SANITARY SEWER CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CROSSING PIPE TO PROVIDE 10' SEPARATION FROM JOINTS WHILE MAINTAINING MIN 18" VERTICAL SEPARATION.

STORM STRUCTURES

ST504 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 863.26 INV. 857.74 - 15" N INV. 857.74 - 18" S
ST505 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 862.75 INV. 858.75 - 12" W
ST506 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 862.75 INV. 858.25 - 15" N INV. 857.94 - 15" S INV. 858.59 - 12" E
ST508 DR STRUCTURE, 48 INCH DIA COVER K 2.00 FT SUMP	RIM 866.32 INV. 862.16 - 12" E INV. 861.75 - 15" S
ST509 DR STRUCTURE, 24 INCH DIA COVER K 2.00 FT SUMP	RIM 866.32 INV. 862.32 - 12" W

SAN. STRUCTURES

SA503	RIM 865.43 INV. 853.24 - 8" E INV. 853.24 - 8" S INV. 853.14 - 8" N
SA504	RIM 863.14 INV. 853.91 - 8" S INV. 853.81 - 8" N

BORINGS

B-7	A	0 - 1' TOPSOIL - DARK BROWN SANDY
	B	1 - 4' SAND - SLIGHTLY COMPACT BROWN FINE TO MEDIUM WITH
	C	4 - 9' CLAY AND A TRACE OF GRAVEL SAND - LOOSE TO SLIGHTLY COMPACT BROWN FINE TO MEDIUM
	D	9 - 19' SAND - COMPACT BROWN FINE TO MEDIUM
	E	19 - 23' SAND - VERY COMPACT BROWN FINE TO MEDIUM
	F	23 - 25' SAND - VERY COMPACT BROWN FINE TO COARSE WITH A TRACE OF GRAVEL
		300" END OF BORING WATER TABLE 15'

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PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002

05	02/05/2025	PDS CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 3
04	01/30/2025	PDS CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2
03	01/24/2025	PDS CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1
02	01/02/2025	PDS CONSTRUCTION PLAN REVIEW AND PERMITTING
01	09/06/2024	GDH PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

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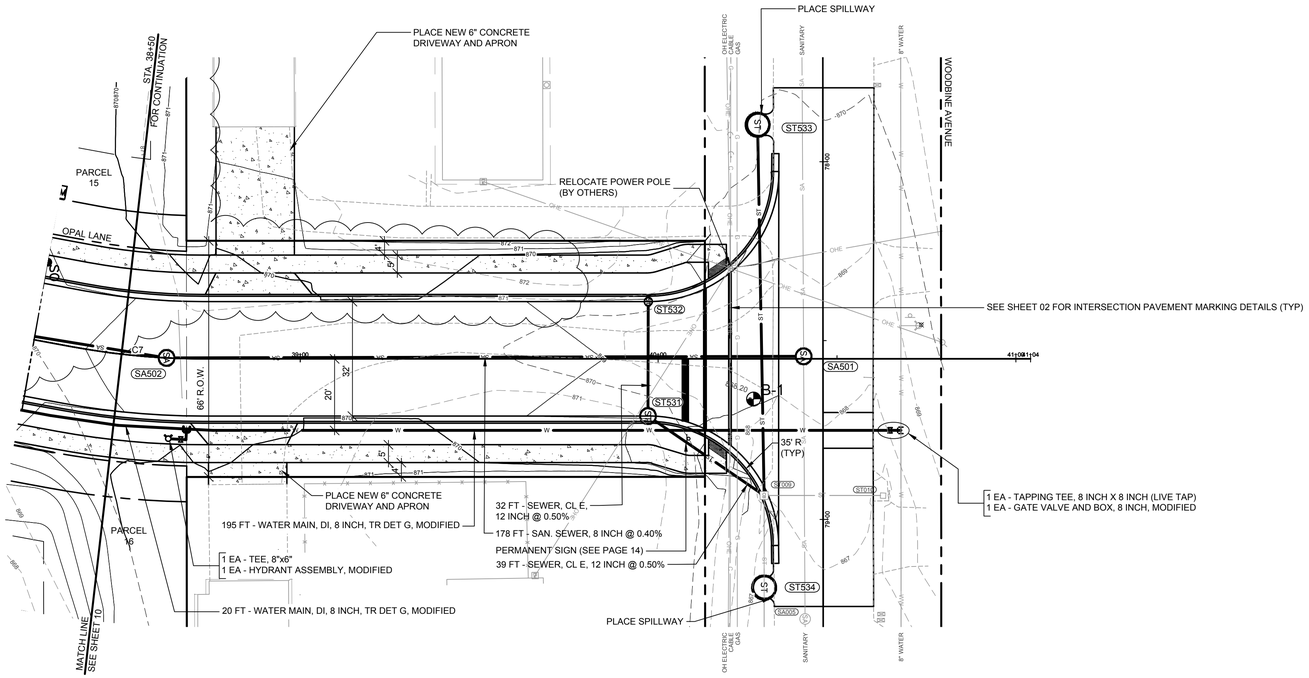
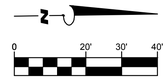
PLAN & PROFILE SHEET
OPAL LANE
STA 34+50 TO STA 38+50

JOB No. 222353
10





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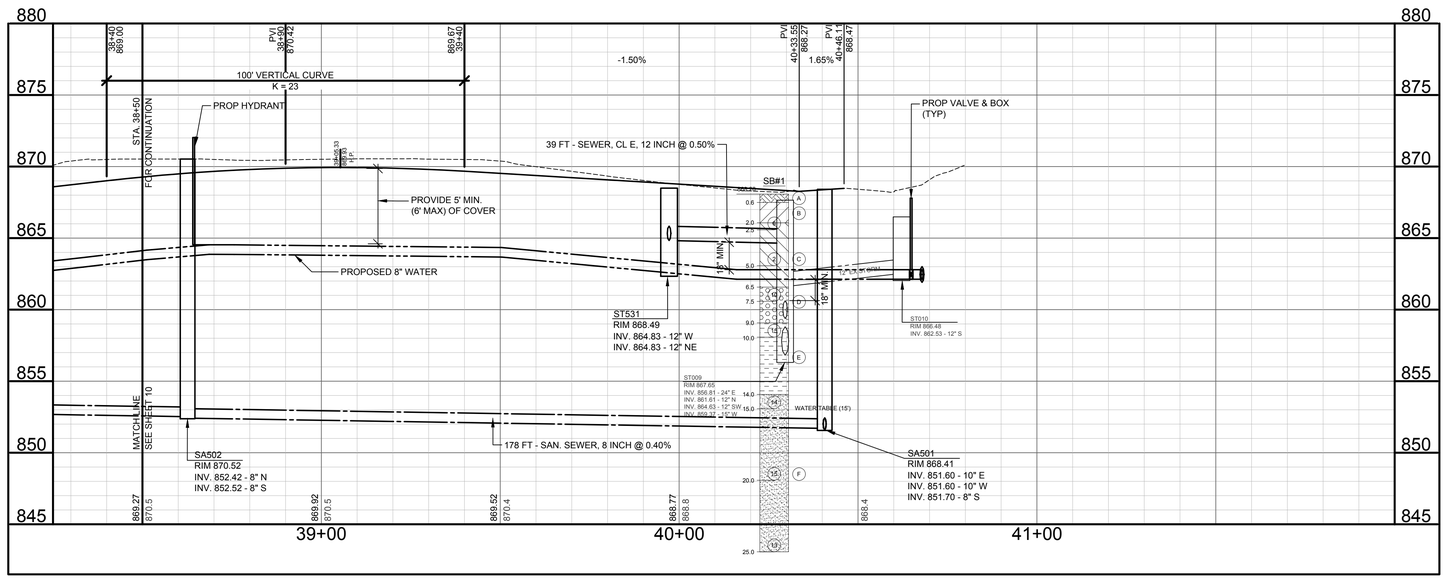
PORTAGE, MI 49002

CURVE TABLE								
CURVE #	RADIUS	LENGTH	Δ	CHORD LENGTH	CHORD BEARING	P.C.	P.I.	P.T.
C7	200.00	36.65	010°30'01"	36.60	N6° 04' 51.42"E	STA. 38+36.22 N 249414.63 E 12798336.96	EXT. STA. 38+54.60 N 249432.65 E 12798340.58	STA. 38+72.88 N 249451.03 E 12798340.84

WATER MAIN NOTE:
WHEN PASSING BY CURB INLETS, CONTRACTOR SHALL PROVIDE 3' MIN HORIZONTAL SEPARATION FROM THE CURB INLETS.

CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CATCH BASIN TO PROVIDE 10' SEPARATION FROM JOINTS.

WHEN CROSSING STORM SEWER OR SANITARY SEWER CONTRACTOR SHALL CENTER A FULL STICK OF PIPE ON THE CROSSING PIPE TO PROVIDE 10' SEPARATION FROM JOINTS WHILE MAINTAINING MIN 18" VERTICAL SEPARATION.



BORINGS

B-1
- (A) 0 - 0.58' TOPSOIL - DARK BROWN SANDY GRAVELLY
- (B) 0.58 - 2' SAND - DARK BROWN FINE TO MEDIUM, GRAVELLY
- (C) 2 - 6.5' SAND - LOOSE TO SLIGHLTY COMPACT BROWN FINE TO MEDIUM
- (D) 6.5 - 9' SAND - COMPACT BROWN FINE TO MEDIUM
- (E) 9 - 14' SAND - COMPACT BROWN FINE TO MEDIUM WITH TRACE OF GRAVEL
- (F) 14 - 25' SAND - COMPACT BROWN FINE TO MEDIUM

25' END OF BORING
WATER TABLE 15'

STRUCTURE, ADJ

ST009
EXISTING DR STRUCTURE
(REPLACE WITH COVER K)
RIM 867.65 (EX)
RIM 866.98± (PROP)
INV. 856.81 - 24" E
INV. 861.61 - 12" N
INV. 864.63 - 12" SW
INV. 859.37 - 15" W

STORM STRUCTURES

ST531
DR STRUCTURE, 48 INCH DIA
COVER K
2.00 FT SUMP
RIM 868.49
INV. 864.83 - 12" W
INV. 864.83 - 12" NE

ST532
DR STRUCTURE, 24 INCH DIA
COVER K
2.00 FT SUMP
RIM 868.49
INV. 864.99 - 12" E

ST533 LEACH BASIN
DR STRUCTURE, 72 INCH DIA
COVER E
2.00 FT SUMP
RIM 869.04
INV. 859.89 - 15" E

ST534 LEACH BASIN
DR STRUCTURE, 72 INCH DIA
COVER E
2.00 FT SUMP
RIM 865.70
INV. 856.65 - 24" E
INV. 856.65 - 24" W

SAN. STRUCTURES

SA501
RIM 868.41
INV. 851.60 - 10" W
INV. 851.70 - 8" S
INV. 851.60 - 10" E

SA502
RIM 870.52
INV. 852.52 - 8" S
INV. 852.42 - 8" N

REVISIONS		
05	02/05/2025	PDS
	CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 3	
04	01/30/2025	PDS
	CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2	
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01	09/06/2024	GDH
	PD REZONING AND CONDOMINIUM SUBDIVISION PLAN	

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PLAN & PROFILE SHEET
OPAL LANE
STA 38+50 TO STA 42+00

JOB No. 222353
11

Opal Ln D3-1 (9"X24")
3 SFT SIGN, TYPE IA

Topaz Ln D3-1 (9"X24")
3 SFT SIGN, TYPE IA

STOP R1-1 (30" x 30")
6.25 SFT SIGN, TYPE IIIA
1 - 3 LB POST (15 FT)

**SEE PLAN SHEET 10
FOR OPAL LANE WORK**

271 FT - WATER MAIN, DI, 8 INCH,
TR DET G, MODIFIED

18 FT - WATER MAIN, DI, 8 INCH, TR DET G, MODIFIED
1 EA - TEE, 8"x8"
2 EA - GATE VALVE AND BOX, 8 INCH, MODIFIED
6 FT - WATER MAIN, DI, 8 INCH, TR DET G, MODIFIED
1 EA - GATE VALVE AND BOX, 8 INCH, MODIFIED

145 FT - WATER MAIN, DI, 8 INCH,
TR DET G, MODIFIED

1 EA - REDUCER, 8"x6"
1 EA - HYDRANT ASSEMBLY, MODIFIED
1 EA - GATE VALVE AND BOX, 8 INCH, MODIFIED

AT END OF SIDEWALK PLACE 4"X6"
WOOD POST WITH 3"X9" YELLOW
REFLECTOR

PARCEL 16
PROP. SAN LATERAL
INV. 855.06

PARCEL 17
PROP. SAN LATERAL
INV. 855.58

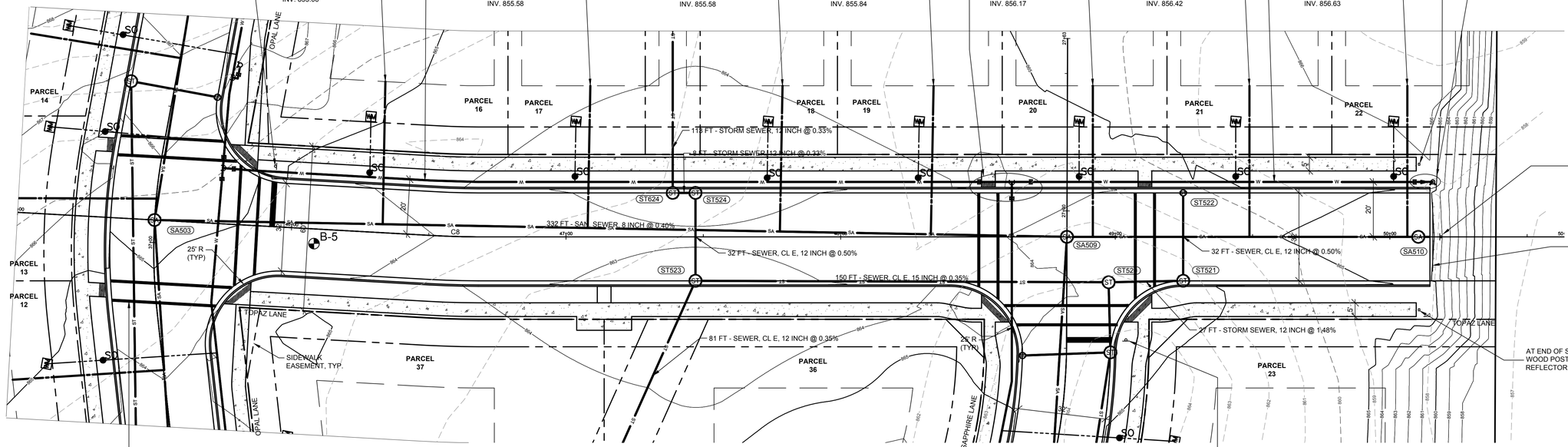
PARCEL 18
PROP. SAN LATERAL
INV. 855.58

PARCEL 19
PROP. SAN LATERAL
INV. 855.84

PARCEL 20
PROP. SAN LATERAL
INV. 856.17

PARCEL 21
PROP. SAN LATERAL
INV. 856.42

PARCEL 22
PROP. SAN LATERAL
INV. 856.63



ROAD ENDS
STREET WILL BE EXTENDED WITH FUTURE DEVELOPMENT

W14-2b (30" x 30")
6.25 SFT SIGN, TYPE IIIB
1 - 3 LB POST (15 FT)

R SERIES (18" x 30")
3.75 SFT SIGN, TYPE IIIB

OM4-3 (18" x 18")
2.25 SFT SIGN, TYPE IIIB

25 FT - GUARDRAIL, TYPE A
(8 FT POSTS)

AT END OF SIDEWALK PLACE 4"X6"
WOOD POST WITH 3"X9" YELLOW
REFLECTOR

**SEE PLAN SHEET 10
FOR OPAL LANE WORK**

SEE SHEET 02 FOR INTERSECTION PAVEMENT MARKING DETAILS (TYP)

**SEE PLAN SHEET 8
FOR SAPPHIRE LANE WORK**

Topaz Ln D3-1 (9"X24")
3 SFT SIGN, TYPE IA

Sapphire Ln D3-1 (9"X30")
3.75 SFT SIGN, TYPE IA

STOP R1-1 (30" x 30")
6.25 SFT SIGN, TYPE IIIA
1 - 3 LB POST (15 FT)

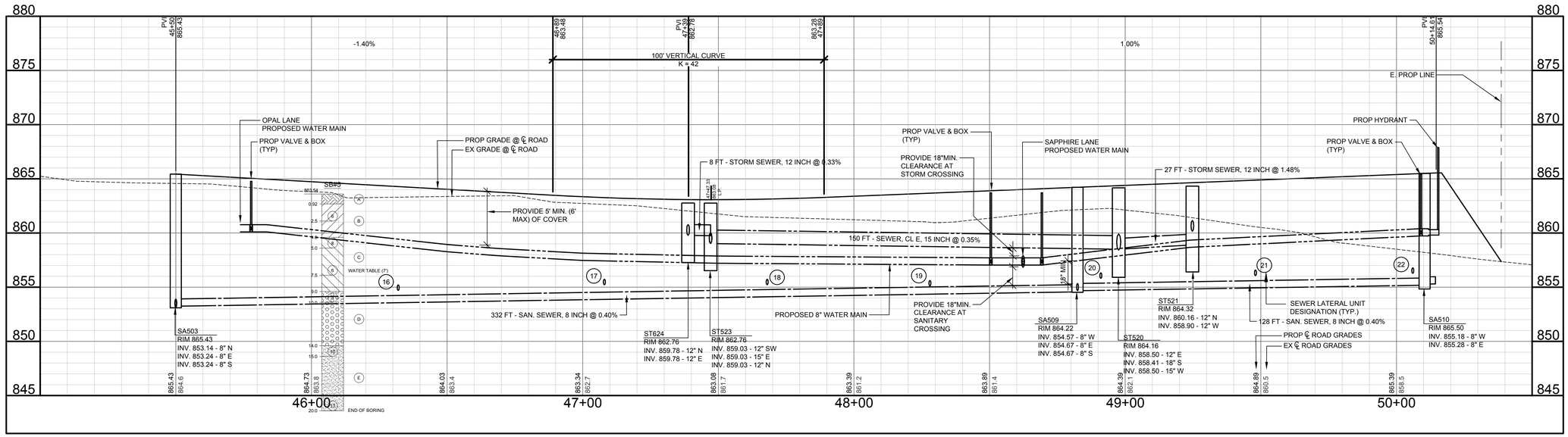
BORINGS

B-5
- A 0 - 0.92' TOPSOIL - DARK BROWN SANDY
- B 0.92 - 4' SAND - SLIGHTLY COMPACT BROWN FINE WITH A TRACE OF SILT
- C 4 - 9' SAND - SLIGHTLY COMPACT TO COMPACT BROWN FINE TO MEDIUM
- D 9 - 14' SAND - SLIGHTLY COMPACT BROWN FINE TO MEDIUM WITH A TRACE OF GRAVEL
- E 14 - 20' SAND - COMPACT BROWN FINE TO MEDIUM

20' END OF BORING
WATER TABLE 7'

CURVE TABLE

CURVE #	RADIUS	LENGTH	Δ	CHORD LENGTH	CHORD BEARING	P.C.	P.I.	P.T.
C8	300.00	16.76	003°12'06.2"	16.76	S87° 37' 13.91"E	STA. 46+51.31 N 249281.81 E 12798414.50	EXT. STA. 46+59.69 N 249281.23 E 12798422.86	STA. 46+68.07 N 249281.12 E 12798431.25



STORM STRUCTURES

ST520
DR STRUCTURE, 48 INCH DIA
COVER B
2.00 FT SUMP
RIM 864.16
INV. 858.41 - 18" S
INV. 858.50 - 15" W
INV. 858.50 - 12" E

ST521
DR STRUCTURE, 48 INCH DIA
COVER K
2.00 FT SUMP
RIM 864.32
INV. 858.90 - 12" W
INV. 860.16 - 12" N

ST522
DR STRUCTURE, 24 INCH DIA
COVER K
2.00 FT SUMP
RIM 864.32
INV. 860.32 - 12" S

ST523
DR STRUCTURE, 48 INCH DIA
COVER K
2.00 FT SUMP
RIM 862.76
INV. 859.03 - 12" SW
INV. 859.03 - 15" E
INV. 859.03 - 12" N

ST524
DR STRUCTURE, 48 INCH DIA
COVER K
2.00 FT SUMP
RIM 862.76
INV. 859.19 - 12" S
INV. 859.75 - 12" W

SAN. STRUCTURES

SA503
RIM 865.43
INV. 853.24 - 8" E
INV. 853.24 - 8" S
INV. 853.14 - 8" N

SA509
RIM 864.22
INV. 854.57 - 8" W
INV. 854.67 - 8" E
INV. 854.67 - 8" S

SA510
RIM 865.50
INV. 855.18 - 8" W
INV. 855.28 - 8" E

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PAUL D. SCHRAM
6201067420

PROJECT NAME:

STANWOOD CROSSINGS
9617 PORTAGE ROAD
PORTAGE, MI 49002

CITY OF PORTAGE
7719 SOUTH WESTNEDGE AVENUE
PORTAGE, MI 49002

05 02/05/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 3

04 01/30/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2

03 01/24/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1

02 01/02/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING

01 09/06/2024 GDH
PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

P:\Allegan\222353 Portage - Portage Road Residential Planned Development\05 Drawings\000 Acad\ACD222353-12.dwg 12/19/2025 9:54:05 AM

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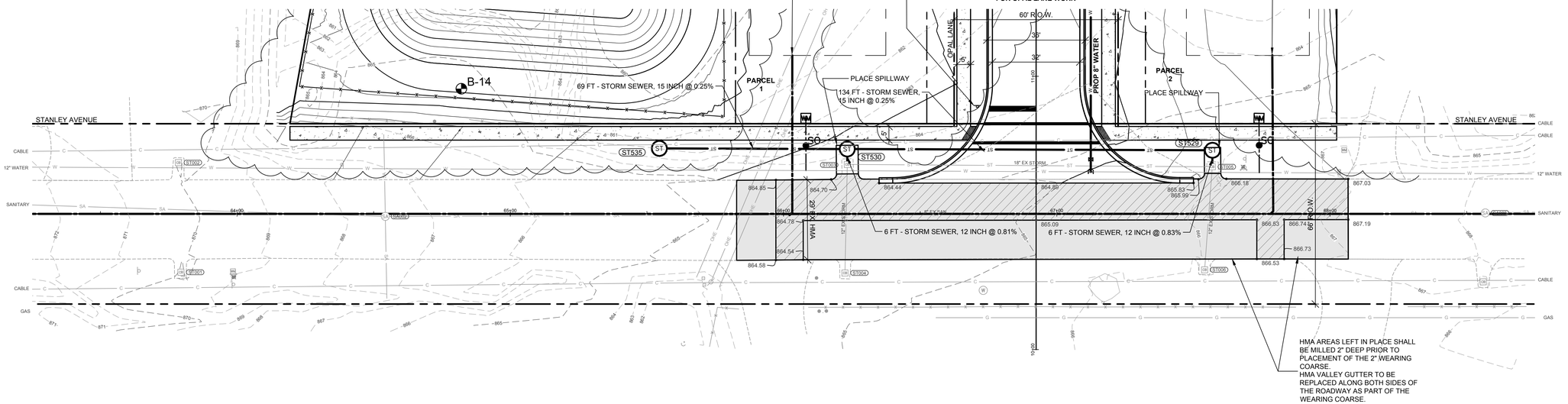
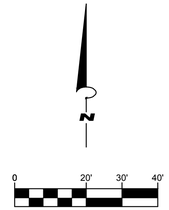
DATE: JUNE 2024
SCALE: 1"=20' H; 5' V

PLAN & PROFILE SHEET
TOPAZ LANE
STA 45+50 TO STA 50+50

JOB No. 222353

12





NOTES:

1. CONTRACTOR TO SAWCUT A CLEAN EDGE ON EXISTING PAVEMENT SHOULDER ON WOODBINE AVE PERPENDICULAR TO PROPOSED DRIVEWAY APPROACHES. DRIVEWAY APPROACH PAVEMENT TO BUTT UP TO SAWCUT LINE ON WOODBINE AVE.

2. FULL DEPTH PAVEMENT RESTORATION SHALL MATCH THE GREATER OF SD-165 FOR LOCAL STREETS OR THE EXISTING PAVEMENT SECTION. RESTORATION SHALL BE COMPLETED IN LIFTS IN ACCORDANCE WITH THE MAX/MIN PERMISSIBLE APPLICATION RATES FOR THE MIX. THE FULL WIDTH OF THE ROAD FROM THE EAST TO WEST LIMITS DISTURBANCE SHALL BE MILLED AND RESURFACED TO A DEPTH OF 2 INCHES. HMA MIX 13A, MODIFIED SHALL BE USED.

3. PAVEMENT PATCH DIMENSIONS ARE APPROXIMATE- FINAL EXCAVATION PATCH(ES) SHALL BE IN ACCORDANCE WITH SD-165.

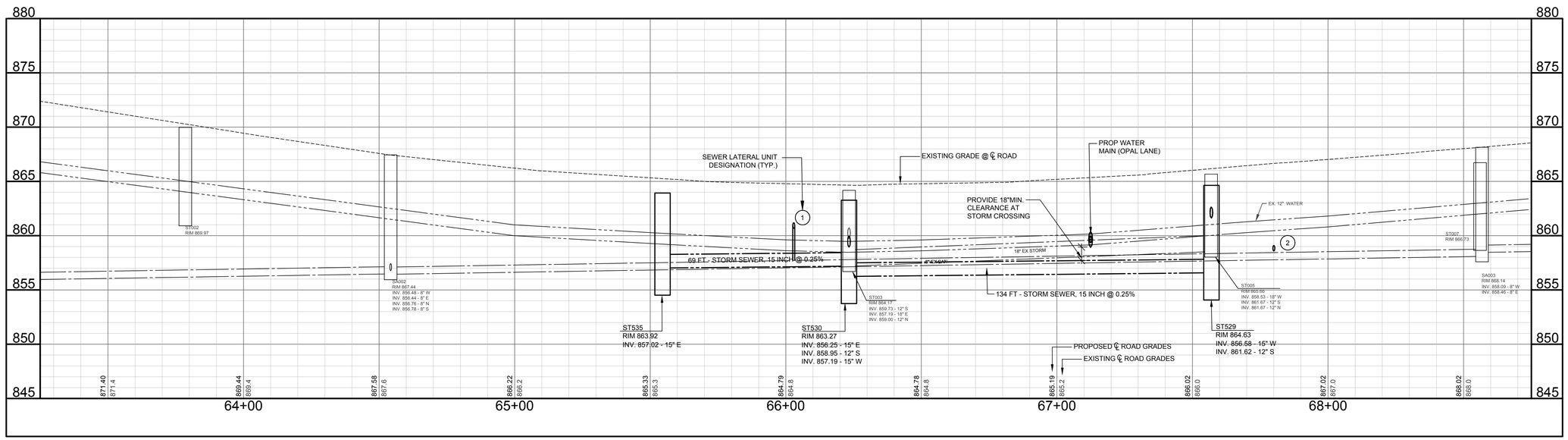
4. THE ROADWAY RESURFACING SHALL NOT BE COMPLETED UNTIL THE DRIVEWAYS TO PARCELS 1 & 2 AND THE CONSTRUCTION OF THE OPAL LANE APPROACH IS COMPLETED.

BORINGS

B-14	0 - 0.67'	TOPSOIL - DARK BROWN SANDY GRAVELLY
	0.67 - 6.5'	SAND - SLIGHTLY COMPACT BROWN FINE CLAYEY
	6.5 - 9'	SAND - LOOSE BROWN FINE TO MEDIUM
	9 - 13'	SAND - COMPACT BROWN FINE TO MEDIUM
	13 - 15'	SAND - COMPACT BROWN FINE TO MEDIUM WITH SILT
	15'	END OF BORING WATER TABLE 10'

STRUCTURE, ADJ

ST002 EXISTING DR STRUCTURE **(REPLACE WITH STANDARD)**	RIM 869.97 (EX) RIM 869.97± (PROP)	
ST003 EXISTING DR STRUCTURE **(REPLACE WITH STANDARD)**	RIM 864.17 (EX) RIM 864.17± (PROP) INV. 859.73 - 12" S INV. 857.19 - 18" E INV. 859.00 - 12" N	**BULKHEAD** **TAP**
ST005 EXISTING DR STRUCTURE **(REPLACE WITH STANDARD)**	RIM 865.66 (EX) RIM 865.66± (PROP) INV. 858.53 - 18" W INV. 861.67 - 12" S INV. 861.67 - 12" N	**BULKHEAD** **TAP**



STORM STRUCTURES

ST529 **LEACH BASIN** DR STRUCTURE, 60 INCH DIA COVER E 2.00 FT SUMP	RIM 864.63 INV. 861.62 - 12" S INV. 856.58 - 15" W	
ST530 **LEACH BASIN** DR STRUCTURE, 60 INCH DIA COVER E 2.00 FT SUMP	RIM 863.27 INV. 856.25 - 15" E INV. 858.95 - 12" S INV. 857.19 - 15" W	
ST535 **LEACH BASIN** DR STRUCTURE, 60 INCH DIA COVER E 2.00 FT SUMP	RIM 863.92 INV. 857.02 - 15" E	

STRUCTURE, ADJ

SA002 EXISTING SAN STRUCTURE **(REPLACE WITH STANDARD)**	RIM 867.44 (EX) RIM 867.44± (PROP) INV. 856.48 - 8" W INV. 856.44 - 8" E INV. 856.76 - 8" N INV. 856.78 - 8" S	
SA003 EXISTING SAN STRUCTURE **(REPLACE WITH STANDARD)**	RIM 868.14 (EX) RIM 868.14± (PROP) INV. 858.09 - 8" W INV. 858.46 - 8" E	

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01 09/06/2024 GDH
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REVISIONS

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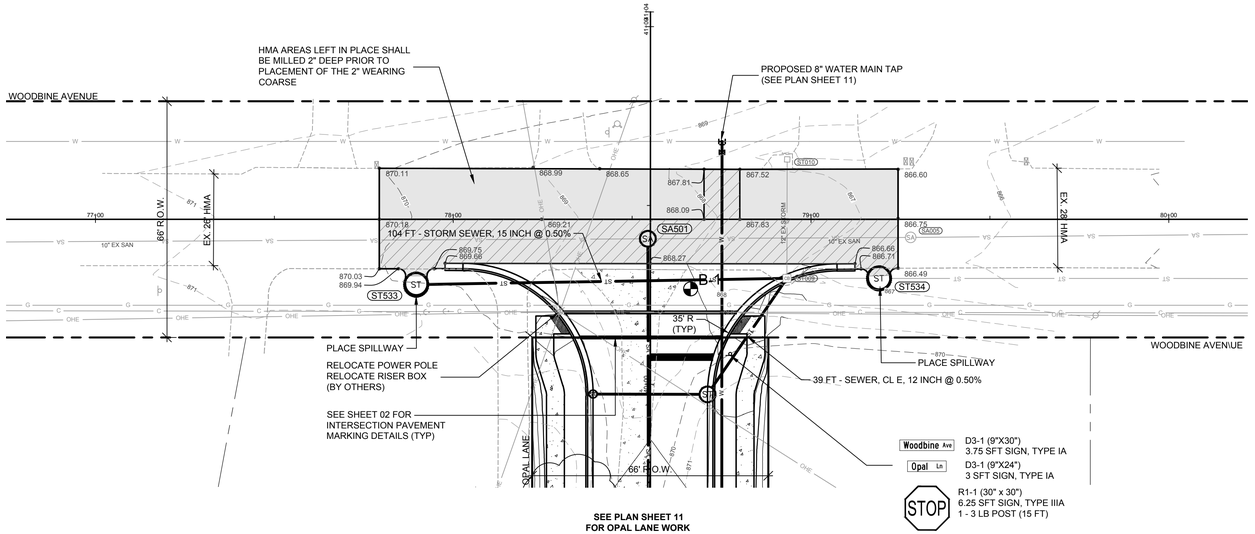
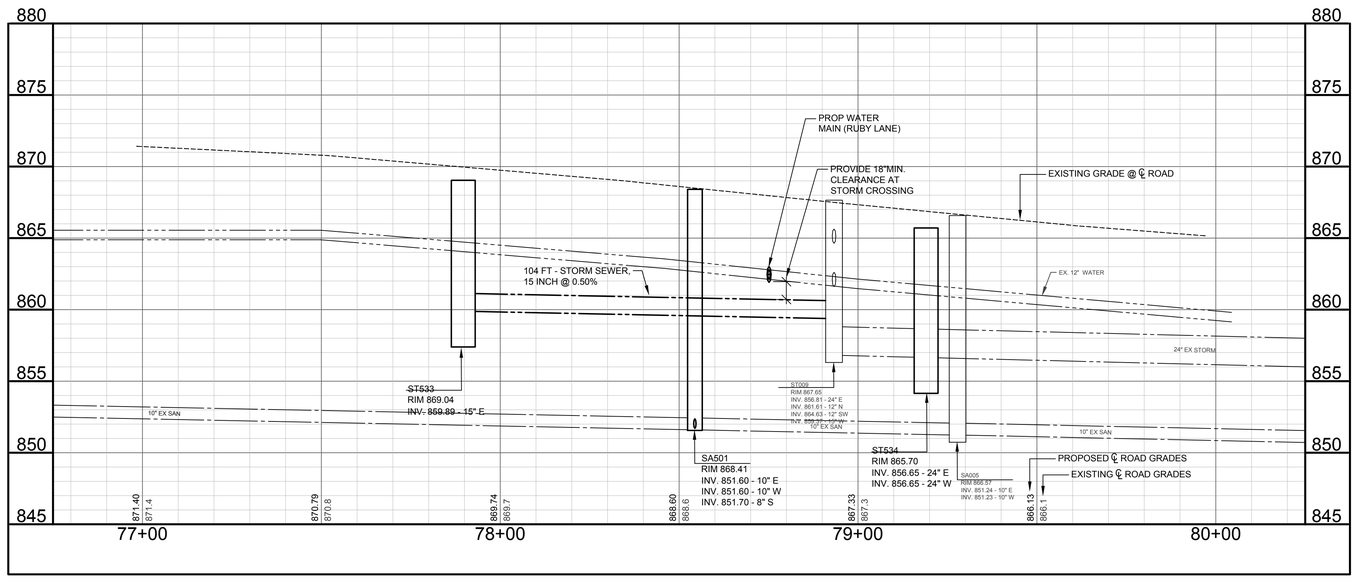
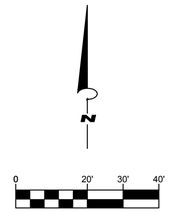
DATE: JUNE 2024
SCALE: 1"=20' H; 5' V

PLAN & PROFILE SHEET
STANLEY AVENUE
STA 63+50 TO STA 68+50

JOB No. 222353
13







NOTES:

1. CONTRACTOR TO SAWCUT A CLEAN EDGE ON EXISTING PAVEMENT SHOULDER ON WOODBINE AVE PERPENDICULAR TO PROPOSED DRIVEWAY APPROACHES. DRIVEWAY APPROACH PAVEMENT TO BUTT UP TO SAWCUT LINE ON WOODBINE AVE.

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3. PAVEMENT PATCH DIMENSIONS ARE APPROXIMATE- FINAL EXCAVATION PATCH(ES) SHALL BE IN ACCORDANCE WITH SD-165.

4. THE ROADWAY RESURFACING SHALL NOT BE COMPLETED UNTIL THE OPAL LANE APPROACH IS COMPLETED.

BORINGS

B-1	0 - 0.58'	TOPSOIL - DARK BROWN SANDY GRAVELLY
	0.58 - 2'	SAND - DARK BROWN FINE TO MEDIUM, GRAVELLY
	2 - 6.5'	SAND - LOOSE TO SLIGHLTY COMPACT BROWN FINE TO MEDIUM
	6.5 - 9'	SAND - COMPACT BROWN FINE TO MEDIUM
	9 - 14'	SAND - COMPACT BROWN FINE TO MEDIUM WITH TRACE OF GRAVEL
	14 - 25'	SAND - COMPACT BROWN FINE TO MEDIUM
	25'	END OF BORING WATER TABLE 15'

STORM STRUCTURES

ST533 **LEACH BASIN**
DR STRUCTURE, 72 INCH DIA — RIM 869.04
COVER E — INV. 859.89 - 15" E
2.00 FT SUMP

ST534 **LEACH BASIN**
DR STRUCTURE, 72 INCH DIA — RIM 865.70
COVER E — INV. 856.65 - 24" E
2.00 FT SUMP — INV. 856.65 - 24" W

SAN. STRUCTURES

SA501 — RIM 868.41
INV. 851.60 - 10" W
INV. 851.70 - 8" S
INV. 851.60 - 10" E

STRUCTURE, ADJ

SA005
EXISTING SAN STRUCTURE — RIM 866.57± (EX)
(REPLACE WITH STANDARD) — RIM 866.57± (PROP)
INV. 851.24 - 10" E
INV. 851.23 - 10" W

ST009
EXISTING DR STRUCTURE — RIM 867.65 (EX)
(REPLACE WITH COVER K) — RIM 866.98± (PROP)
INV. 856.81 - 24" E
INV. 861.61 - 12" N
INV. 864.63 - 12" SW
INV. 859.37 - 15" W

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01 09/06/2024 GDH
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REVISIONS

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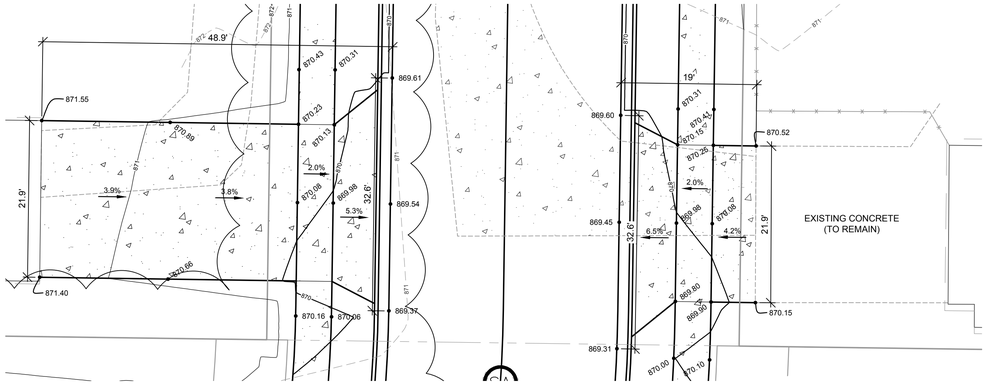
DATE: JUNE 2024
SCALE: 1"=20' H; 5' V

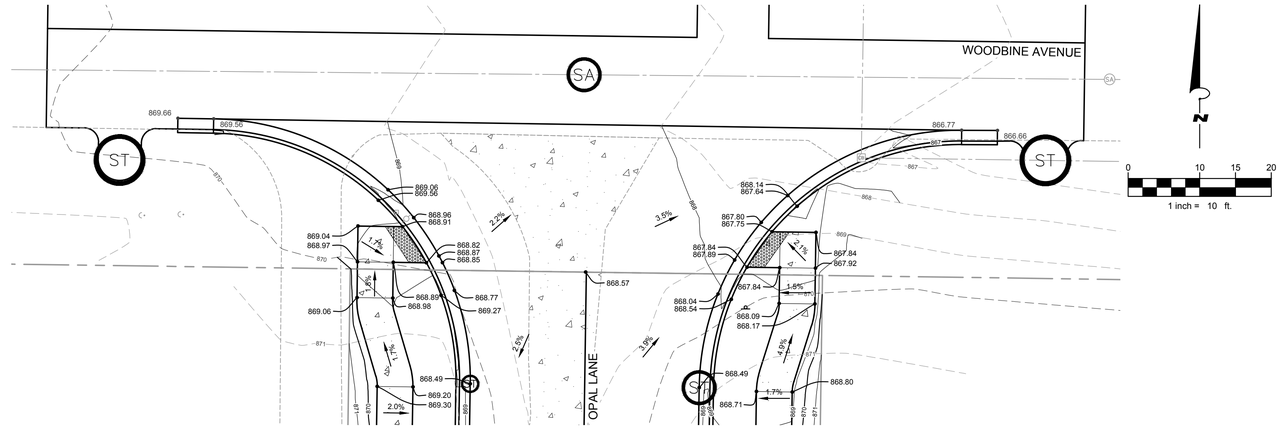
PLAN & PROFILE SHEET
WOODBINE AVENUE
STA 77+00 TO STA 80+00

JOB No. 222353
14



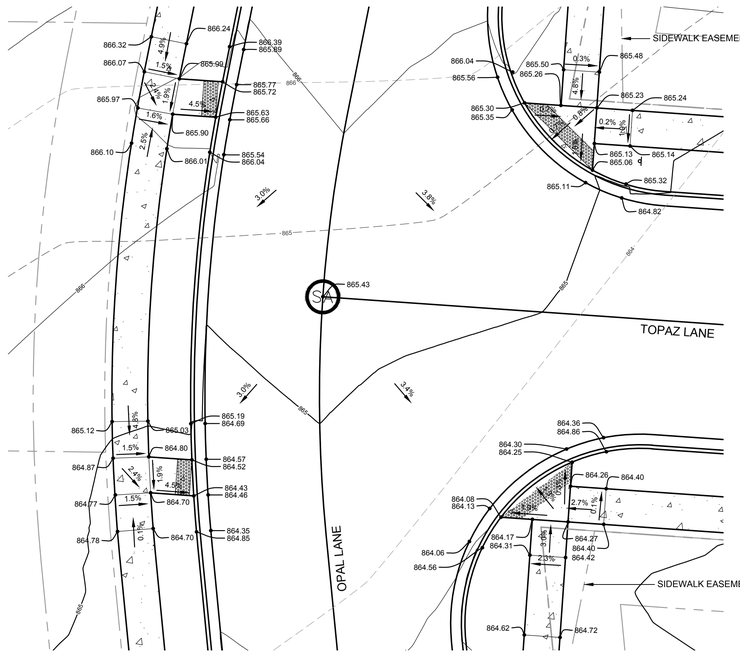
OPAL LANE RESIDENTIAL DRIVEWAY DETAILS

SCALE: 1" = 10'



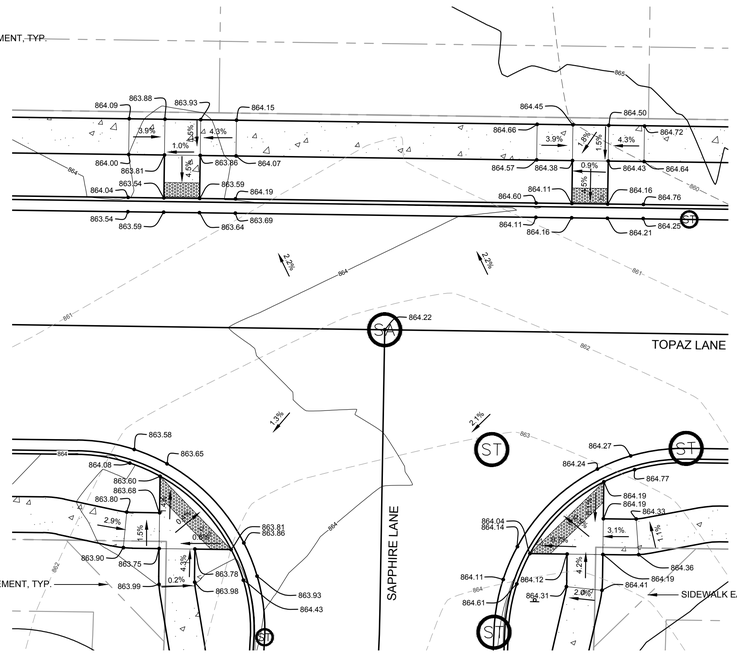
WOODBINE AVENUE AND OPAL LANE INTERSECTION

SCALE: 1" = 10'



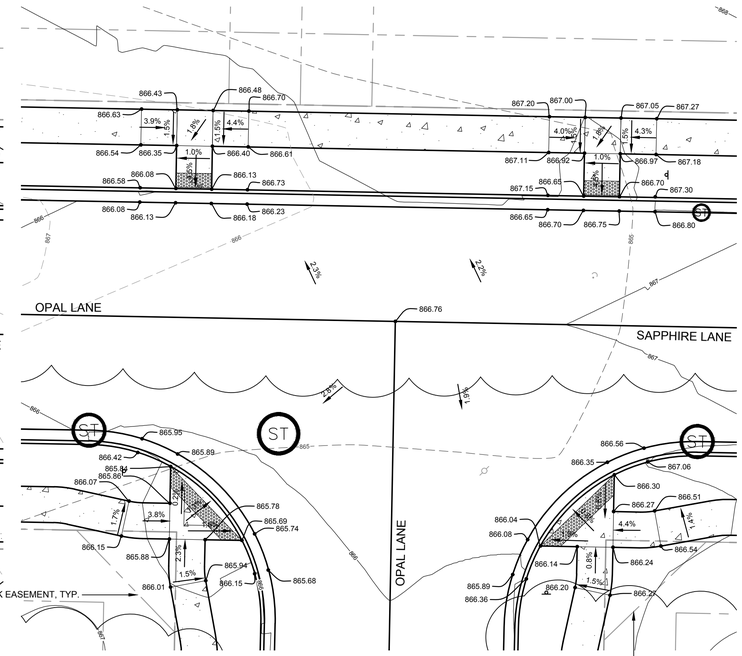
OPAL LANE AND TOPAZ LANE INTERSECTION

SCALE: 1" = 10'



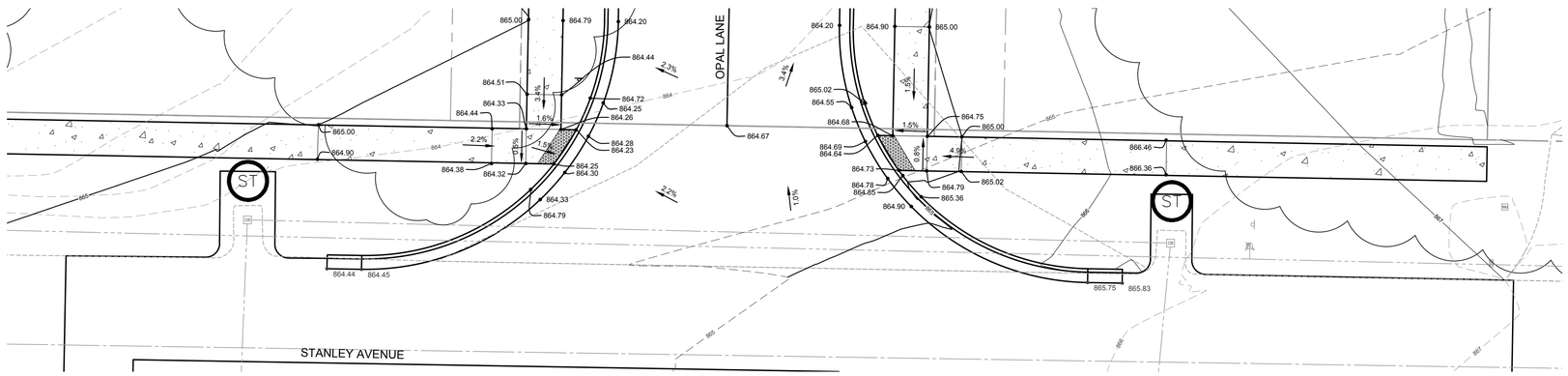
TOPAZ LANE AND SAPPHIRE LANE INTERSECTION

SCALE: 1" = 10'



OPAL LANE INTERSECTION

SCALE: 1" = 10'



STANLEY AVENUE AND OPAL LANE INTERSECTION

SCALE: 1" = 10'

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05	02/05/2025	PDS
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01	09/06/2024	GDH
	PD REZONING AND CONDOMINIUM SUBDIVISION PLAN	

REVISIONS

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DATE: JANUARY, 2025

SCALE: 1" = 10'

SIDEWALK RAMP DETAILS

JOB No. 222353

15

SOIL EROSION & SEDIMENTATION CONTROL NOTES

1 ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH THE MICHIGAN SOIL EROSION AND SEDIMENTATION CONTROL ACT. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE COUNTY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM EGLE PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE COUNTY "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.

2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER, THESE COVER AREAS ACT AS SEDIMENT FILTERS.

3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.

4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.

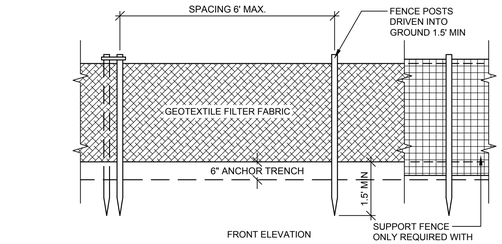
5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

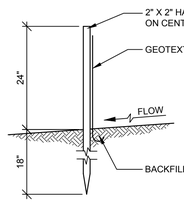
NUMBER IN CIRCLE REFERS TO NUMBERED DETAILS ON MDOT STANDARD PLAN R-96 SERIES, SOIL EROSION & SEDIMENTATION CONTROL MEASURES. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

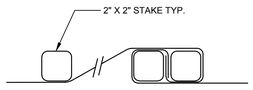
(3T) DENOTES TEMPORARY SEEDING. TEMPORARY SEEDING SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER IN THE FIELD AND SHALL INCLUDE CEREAL RYE SEED APPLIED AT A RATE OF 70 LB/ACRE AND MULCH.

(14T) DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 10' WIDE, 6" DEEP, AND CONSIST OF 2"-4" AGGREGATE

(26T) DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.





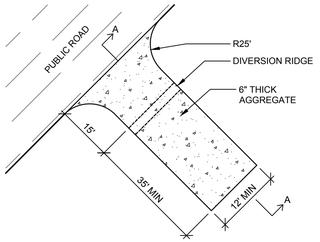


SEDIMENT CONTROL FENCE

SCALE: NONE

SILT FENCE NOTES

1. THE HEIGHT OF SILT FENCE SHALL NOT EXCEED 36 INCHES ABOVE GROUND.
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM OF A 6 INCH OVERLAP, AND SECURELY SEALED.
3. POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 18 INCHES).
4. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4-INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
5. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1-INCH LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2-INCHES.
6. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 6-INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH.
7. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
8. WHEN EXTRA STRENGTH FILTER FABRIC IS USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS.
9. THE TRENCH SHALL BE BACKFILLED AND SOIL COMPACTED OVER THE FILTER FABRIC.
10. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
11. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
12. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
13. SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED

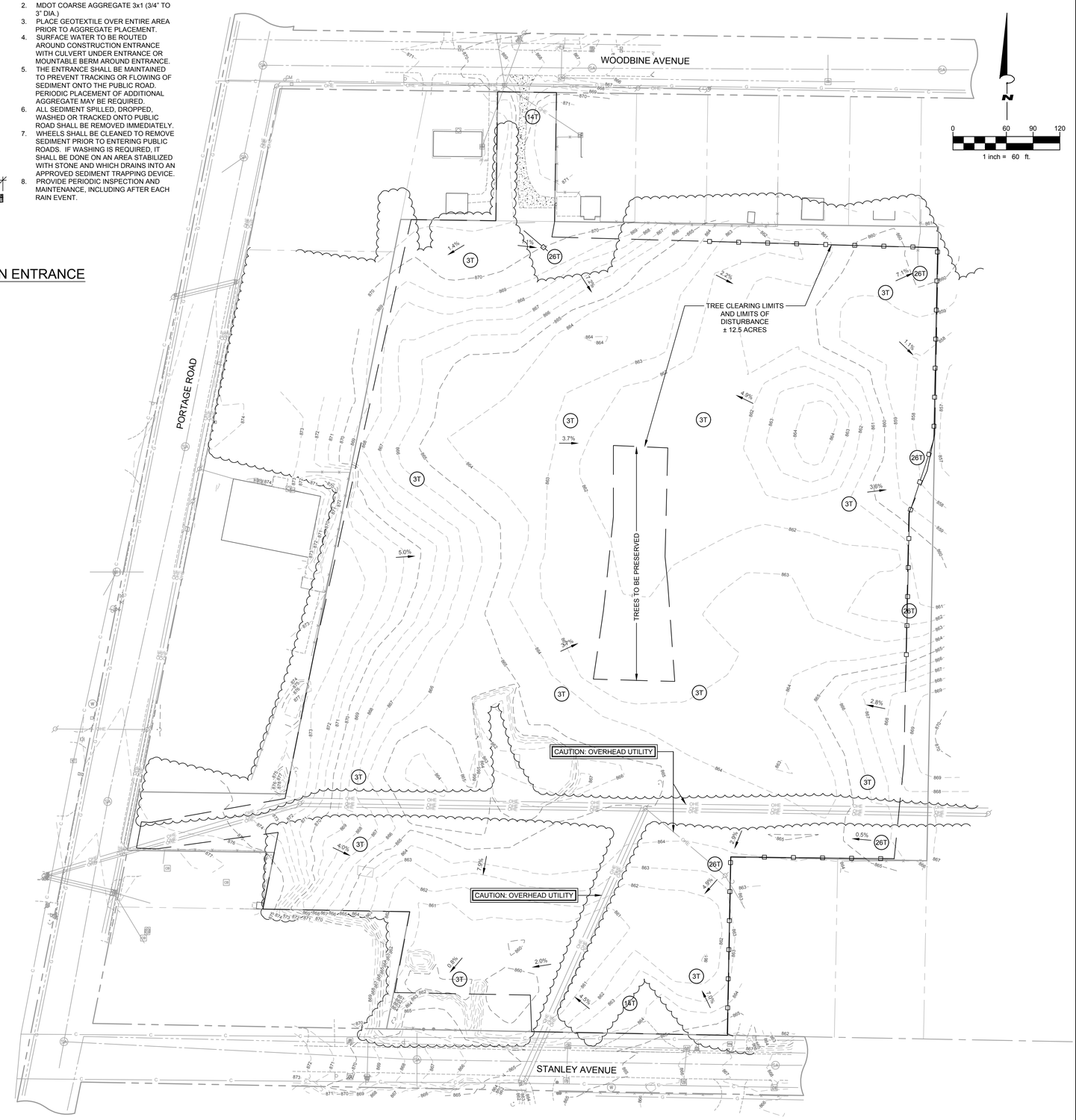


NOTES

1. UTILIZE EXISTING DRIVEWAY AND ADD STONE AS REQUIRED WHEN POSSIBLE.
2. MDOT COARSE AGGREGATE 3x1 (3/4" TO 3" DIA.)
3. PLACE GEOTEXTILE OVER ENTIRE AREA PRIOR TO AGGREGATE PLACEMENT.
4. SURFACE WATER TO BE ROUTED AROUND CONSTRUCTION ENTRANCE WITH CULVERT UNDER ENTRANCE OR MOUNTABLE BERM AROUND ENTRANCE.
5. THE ENTRANCE SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC ROAD. PERIODIC PLACEMENT OF ADDITIONAL AGGREGATE MAY BE REQUIRED.
6. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROAD SHALL BE REMOVED IMMEDIATELY.
7. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING PUBLIC ROADS. IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
8. PROVIDE PERIODIC INSPECTION AND MAINTENANCE, INCLUDING AFTER EACH RAIN EVENT.

TEMPORARY CONSTRUCTION ENTRANCE

SCALE: NONE



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CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 2

03 01/24/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING REV. 1

02 01/02/2025 PDS
CONSTRUCTION PLAN REVIEW AND PERMITTING

01 09/06/2024 GDH
PD REZONING AND CONDOMINIUM SUBDIVISION PLAN

REVISIONS

P:\Wayne\222353 Portage - Portage Road Residential Planned Unit Development\Drawings\Civil\Sheets\222353-TCP.dwg, 1/14/2025 2:39:09 PM
THE REPRODUCTION, COPYING OR OTHER USE OF THIS DRAWING WITHOUT WRITTEN CONSENT IS PROHIBITED.
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DATE: JANUARY, 2025
SCALE: 1" = 60'

TREE CLEARING SOIL EROSION AND SEDIMENTATION CONTROL PLAN

JOB No. 222353

16

COMMUNITY FEATURES:

42 NEW SINGLE FAMILY HOMES

TWO CAR ATTACHED GARAGES

CONCRETE CURBED STREETS

SIDEWALK ON BOTH SIDES OF THE STREET

PEDESTRIAN CONNECTION TO PORTAGE ROAD

STREET TREES

STREET LIGHTING

WIGHTMAN
it's all about people

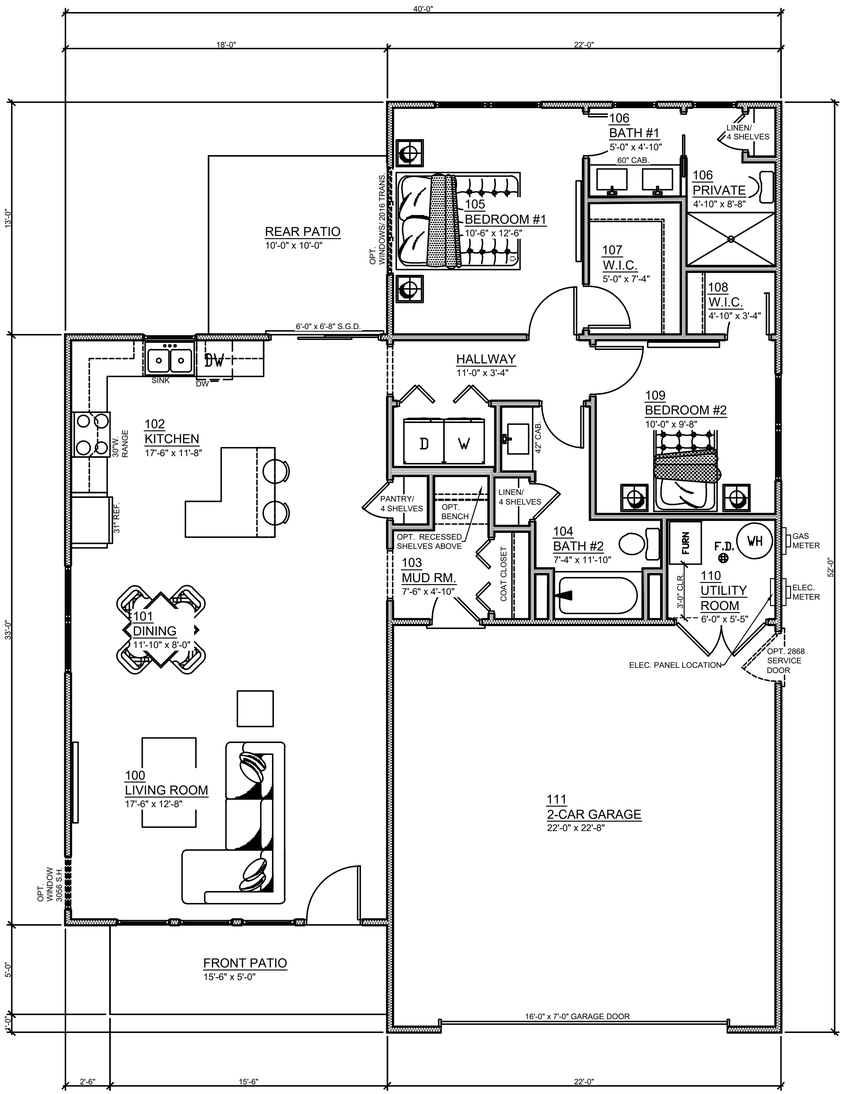
222353

STANWOOD CROSSINGS

CITY OF PORTAGE

CONCEPTUAL DRAWING

01/31/2025



MAIN LEVEL PLAN

SCALE 1/4"=1'-0"

MAIN LEVEL PLAN: 1,206 SF

A1

A2

A3

avb
BUILD SOMETHING BETTER.

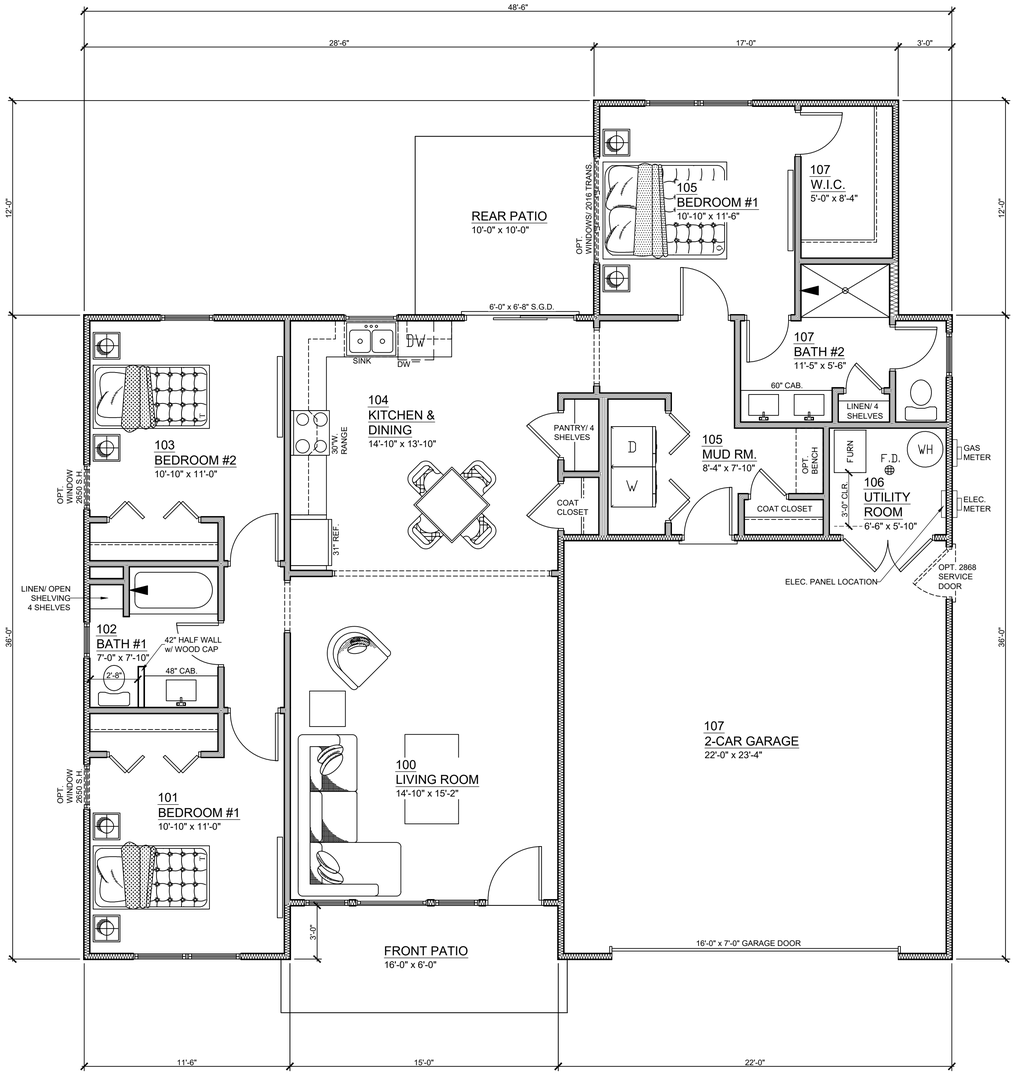
STANWOOD CROSSINGS

CONCEPTUAL HOUSING

CITY OF PORTAGE - WORKFORCE HOUSING

CONCEPTUAL DESIGN -- JULY 23, 2024

ABONMARCHE



N

MAIN LEVEL PLAN

SCALE 1/4"=1'-0"

MAIN LEVEL PLAN: 1,353 SF

B1

B2

B3

avb

BUILD SOMETHING BETTER.

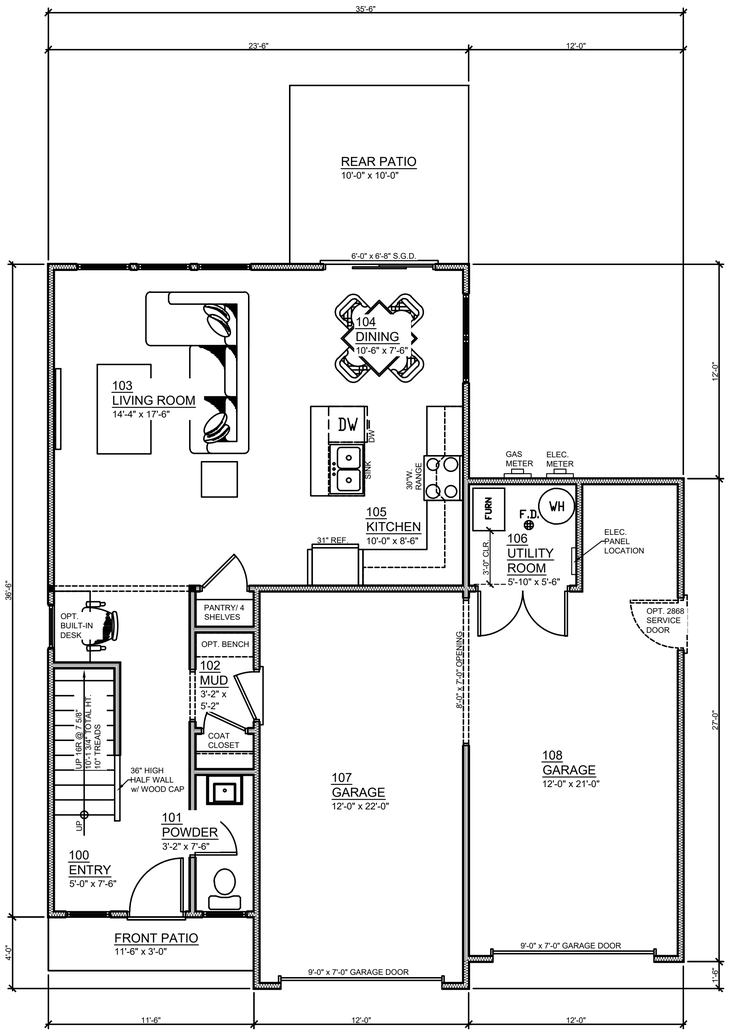
STANWOOD CROSSINGS

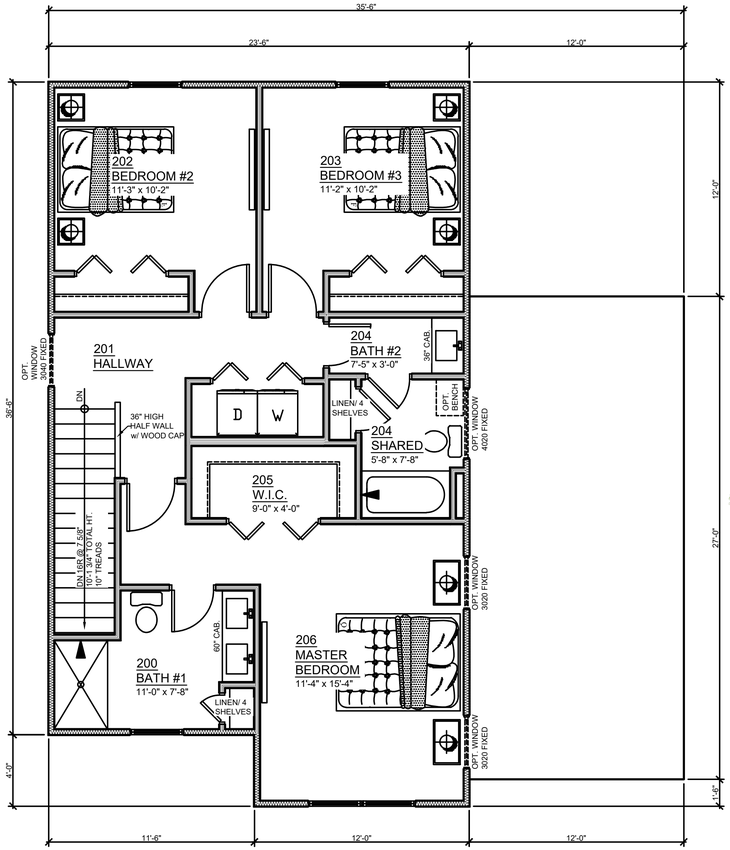
CONCEPTUAL HOUSING

CITY OF PORTAGE - WORKFORCE HOUSING

CONCEPTUAL DESIGN -- JULY 23, 2024

ABONMARCHE





N

MAIN LEVEL PLAN

SCALE 1/4"=1'-0"

N

UPPER LEVEL PLAN

SCALE 1/4"=1'-0"

MAIN LEVEL PLAN:	645 SF
UPPER LEVEL PLAN:	859 SF

C1

C2

C3

avb
BUILD SOMETHING BETTER.

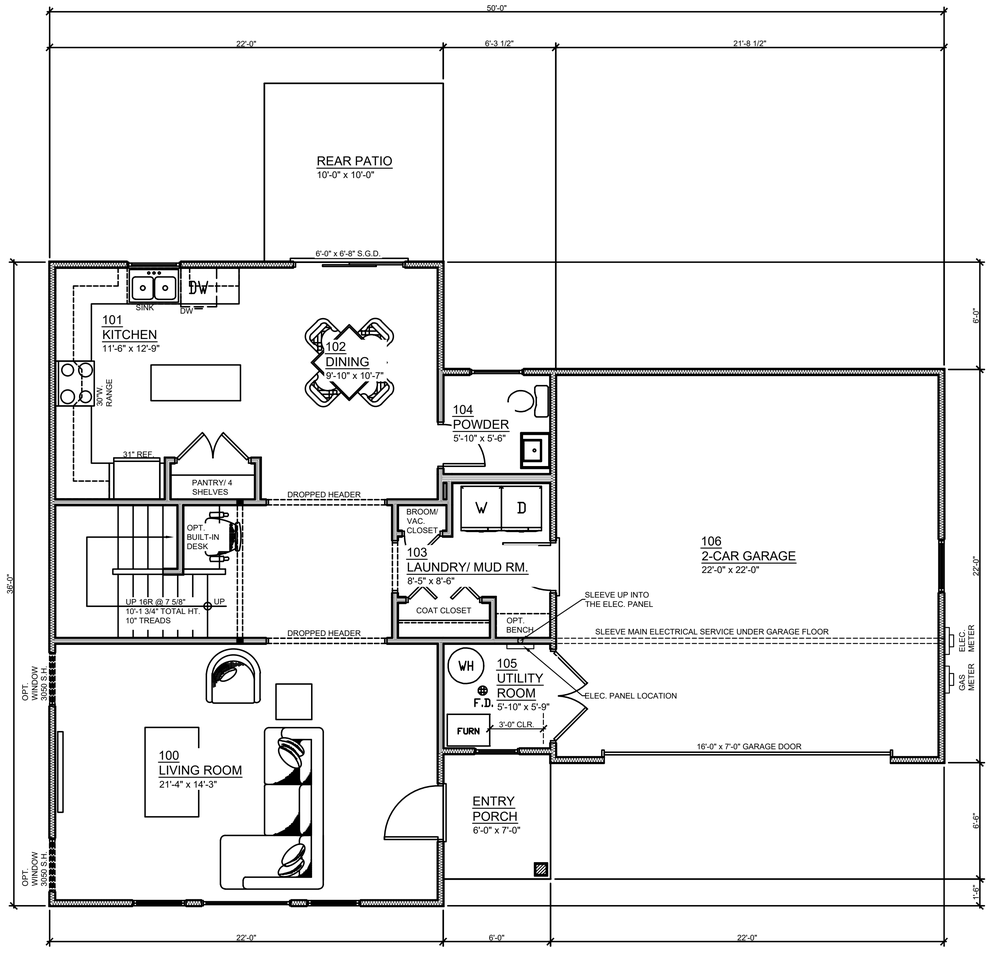
STANWOOD CROSSINGS

CONCEPTUAL HOUSING

CITY OF PORTAGE - WORKFORCE HOUSING

CONCEPTUAL DESIGN -- JULY 23, 2024

ABONMARCHE

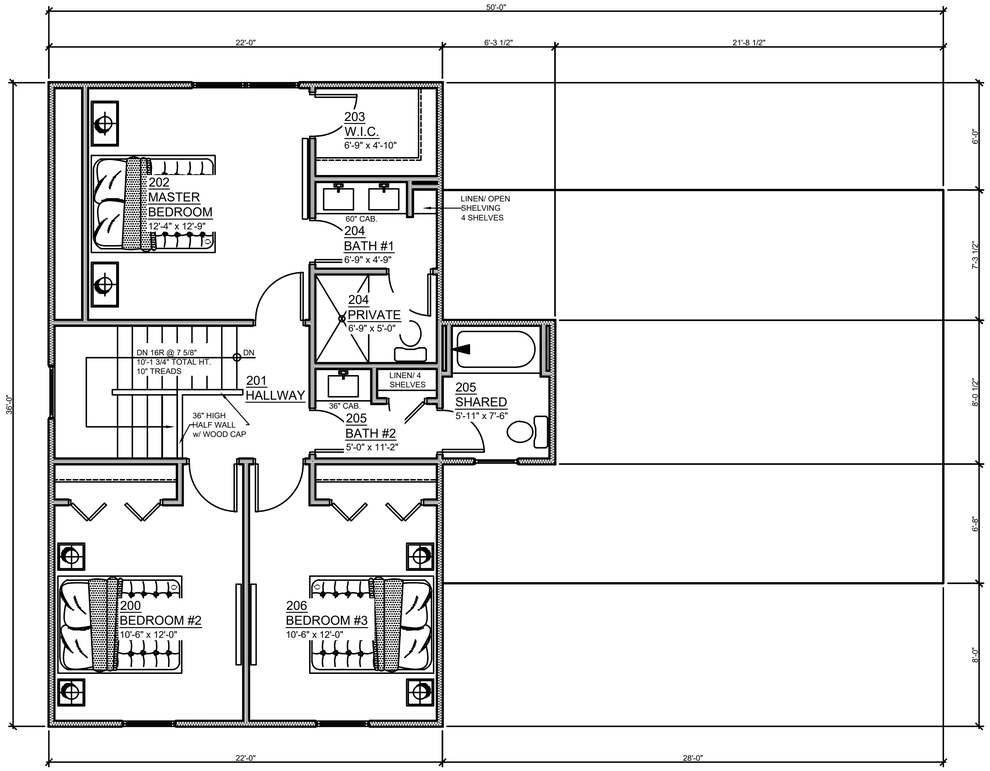


N

MAIN LEVEL PLAN

SCALE 1/4"=1'-0"

MAIN LEVEL PLAN: 888 SF
UPPER LEVEL PLAN: 752 SF



N

UPPER LEVEL PLAN

SCALE 1/4"=1'-0"

D1 D2 D3

avb
BUILD SOMETHING BETTER.

STANWOOD CROSSINGS

CONCEPTUAL HOUSING

CITY OF PORTAGE - WORKFORCE HOUSING

CONCEPTUAL DESIGN -- JULY 23, 2024

ABONMARCHE

From: JONNIE RICHARDS
To: Bigi Zhao
Subject: Fw: Stanwood Crossings Final PD Plan - Planning Commission Review
Date: Tuesday, February 4, 2025 11:46:12 AM

CAUTION: THIS EMAIL IS FROM AN EXTERNAL SENDER
Do not click on links or open attachments unless this is from a sender you know and trust.

From: JONNIE RICHARDS <medevac22@msn.com>
Sent: Tuesday, February 4, 2025 11:40 AM
To: Eric Feldt <feldte@portagemi.gov>; Peter Dame <damep@portagemi.gov>
Cc: patricia.randall@portagemi.gov <patricia.randall@portagemi.gov>; councilmemberjp@portagemi.gov <councilmemberjp@portagemi.gov>; chris.burns@portagemi.gov <chris.burns@portagemi.gov>; vic.ledbetter@portagemi.gov <vic.ledbetter@portagemi.gov>; nicole.miller@portagemi.gov <nicole.miller@portagemi.gov>; terry.urban@portagemi.gov <terry.urban@portagemi.gov>; Pat McGinnis <mcginnip@portagemi.gov>
Subject: Stanwood Crossings Final PD Plan - Planning Commission Review

Dear Mr. Feldt, Mr. Dame and Planning Commission Members,

The conceptual drawing issued at the public meeting at Lake View Park shows all the units with two car garages and two car (double width) driveways. I am the property owner of the parcel directly east of the entry road off of Woodbine Ave and have a recorded ingress/egress easement on that property to my existing two car garage/driveway. I am requesting that you condition your approval of the Final PD drawing with the following:

1. The drawings show a minimum 16' wide, and preferably a 22' wide curb cut and apron to match my existing driveway width.
2. In order to make my easement "whole " again, I am asking the City to extend the concrete or paving apron to my property line or existing driveway at no cost to me.
3. Require the City and Engineering firm to meet with me at the driveway to review the road elevations to ensure the safety and usability of the future driveway since it appears the road will be lowered.
4. Add a note to the drawings notifying any and all contractors of my easement and the requirements thereof. I intend to cooperate with the city and the contractors when it is impossible to keep the easement open, such as the very deep sewer and water line installations, and will move my vehicle and boat to the front of my house when necessary.

I would welcome the opportunity to meet with you at the site to review the situation. If you have any questions, please contact me at 269-808-7159. I appreciate any help you can give

me on this matter.

Jonnie S Richards
2016 Woodbine Ave
Portage, Michigan 49002

TO: Planning Commission **DATE:** February 6, 2025

FROM: Peter Dame, Chief Development Officer

SUBJECT: Haffner Machinery Alternative Screening, 8935 Portage Industrial Dr.

I. INTRODUCTION:

The applicant (Cornerstone Construction Management) is seeking Planning Commission approval for an alternative landscaping screening to buffer adjacent residential areas as part of an overall Site Plan Application for a new industrial development 'Haffner Machinery' proposed at 8935 Portage Industrial Drive.

The applicant filed a Site Plan consisting of a new single-story 36,000 square foot building, 49-space parking lot, stormwater basin, and other site improvements. See attached site plan drawing. This Plan is currently near the completion of the review. The proposed development is for 'Haffner Machinery' which fabricates various elements of windows and doors for a variety of applications and it operates nationally and globally. Once all review items are met, the Site Plan can be approved administratively.

While trying to meet all applicable Site Plan development standards, the applicant is unable to meet Sec 42-573(D) which requires an eight-foot tall landscaped berm near the rear property line where the property abuts adjacent residences. In lieu of the berm, the applicant is proposing two rows of 8' (approx.) tall evergreen trees and a 6' tall wood privacy fence along the rear property line. The zoning code allows an applicant to seek an alternative screening under Sec 42-573(F).

The applicant informed the three most adjacent residences about the proposed alternative screening. They all signed letters of support for the proposal.

II. BACKGROUND INFORMATION:

The following table summarizes existing conditions in this general area.

Existing Land Use/ Zoning	• The subject site is vacant and zoned I-1 Light Industrial District • North: Vacant; 8883 Portage Industrial Drive; I-1 Light Industrial District • South: J&J Lawn Landscaping Service; 8975 Portage Industrial Drive; I-1 Light Industrial District • West: Vacant; 8950 Portage Industrial Drive; I-2 Heavy Industrial District

	• East (Across Portage Industrial Drive): Several Single Family Detached Homes (8904, 8912, and 8918 Dolphin St.; R-1B Single Family Zoning District
Public Streets	The surrounding roadway network: Portage Industrial Drive. No trip counts provided on neighborhood roads.
Public Utilities	City sanitary sewer and water are available along Portage Industrial Drive.
Environment	The site is vacant; contains some mix of trees, bushes, and grasses.
Unique Conditions	There are no mapped wetlands, flood hazards, or identified historic structures on the site.

Neighborhood Conditions

Portage Industrial Drive is a short dead-end street serving industrial users within an industrial park. It is connected to W. Melody Street, which intercepts Shaver Road. Shaver Road in this general area is primarily industrial with a few large retailers. Portage Industrial Drive industrial park consist of industrial-zoned properties along both sides of the street. A few vacant parcels still exist, such as the subject parcel. Nearly all of the eastern parcels along Portage Industrial Drive abut single family residences to the further east. As these industrial parcel become developed, a variety of screening measures were required to lessen impacts toward these residences. The attached chart shows a short summary of approved screening by address. The required 8'tall landscaped berm has only been applied to one of these developments (8701 Portage Industrial Dr.), others used existing or proposed trees/fence for screening. In summary, there is a mix of screening methods used. Staff note that it is not clear if that berm was ever installed and it appears that only landscaping was installed. Staff has provided pictures of some of these rear yard areas of industrial parcels (See attachment).

Applicable Zoning Regulations

The following section of Chapter 42 apply and set forth applicable procedures and regulations:

- Landscaping Screening: Sec 42-537 Conflicting Land Use Screening.

Proposed Alternative Landscaping

On the site layout, there are a variety of proposed improvements located in the eastern half of the site, such as a the building, loading bay, dumpster, and stormwater basin. The proposed building is designed to be located 105' away from the rear property line (same as the R-1B residential zoning district), exceeding the required minimum 75' rear yard setback. This results in the building being located approx. 157' from the nearest house to the east along Dolphin Street. The proposed building has a design height of 26.5' tall and consists of metal siding with small upper story windows facing east (residential-facing). No doors or entrances are planned on the east side of the building. Two wall-mounted light fixtures are proposed on the east wall of building. The applicant's footcandle lighting

sheet indicates these lights having a footcandle intensity of 0.0 at or before (west) the proposed alternating rows of trees. A loading bay is located along the northside of the building near the back (east). Immediately east of the building will be a Fire-Department required paved driving lane ending at a hammerhead turn-around. A stormwater basin is shown stretching the full width (north-south) of the lot located east of the proposed building and parking lot. A 6' tall chainlink fence around the basin is required for safety purposes. And there is a proposed dumpster enclosure designed as a 6' tall wood fencing located in the NE corner of the parking lot over 105' away from the eastern property line.

The subject property, including those to the north and south, abut a residential neighborhood (zoned R-1B) and, therefore, a landscape buffer consisting of a fence and trees is required per Sec 42-537. Since the property is also located in an industrial park, the landscape buffer is increased to include an 8' tall earth berm per Sec 42-537(D) to provide additional buffering elements. This is the same requirement for the properties to the north and south. The required sloping of this berm could not fit in the applicant's site drawing while also incorporating all other site development needs because of the spatial needs of the berm slopes. Staff estimated that an 8' tall berm with a 3:1 side sloping along both sides to permit mowing would likely require a 50' wide area (approx.). Applying this to the site plan results in the slopes conflicting with the required stormwater basin and Fire-Department access driveway at the east end of the building. In lieu of the berm, the applicant is proposing two alternating rows of 8' tall Black Hills Spruce trees and a 6' tall wood fence, all located at grade and near the back property line. This proposed buffer would use 22' wide space (approx.). Spruce trees have an expected growth dimension of 15'-25' wide x 30'-60' tall, and a growth rate of 1/2' – 1' foot per year consisting of a pyramid shape, per Arbor Day Foundation.

III. ANALYSIS:

Under Sec 42-573(F), the Planning Commission may approve screening that satisfies the intent and purpose of the 'Conflicting Land Use Screening' subsection after considering the topography, land characteristics, proposal, and impacts to adjoining residential uses.

The proposed alternative landscape buffer is not equal to the required landscaped 8' tall berm since it is not elevated on a berm. Under the proposal, the proposed 25 spruce trees are expected to be planted at 8' tall (approx.) and, thus, taller than a typical pedestrian. Over time, they are expected to exceed the height of the proposed industrial building (over 26' tall).

Staff note that if this property was not located in an industrial park but still zoned Industrial (Sec.42-573.(C).), it would not require a berm but still require a 6' tall fence and some trees. The applicant's proposed buffer is exceeds that requirement.

Based on staff's research (see attached chart), there are no 8' tall berms existing between other industrial developments and abutting residences.

Staff asked the developer to communicate the proposal to the adjacent residences. The adjacent residences at 8912, 8918, and 8904 Dolphin Street have signed an acknowledgement letter of support for the propose alternative screening.

Staff supports the applicant's alternative screening method because it meets or exceeds existing buffers in the area, and will provide an immediate and long-term screening element. If approved, the site will require zoning inspections (standard procedure) to ensure the installation (or bond) of the proposed evergreen trees and fence prior to the issuance of a Certificate of Occupancy.

Site Plan Review Process

The proposed development requires Site Plan approval by City administration and Planning Commission approval of the alternative screening. This Site Plan is currently under review by the City's Development Review Team (DRT) who ensures all proposed development is consistent with the City's infrastructure, engineering, and other requirements including streets, sewers, water mains, storm water, parking, and others. DRT is comprised of representatives from the Department of Transportation and Utilities, Fire Department, Department of Parks and Recreation, Office of the City Assessor, and Department of Community Development. If Planning Commission approves the proposed alternative screening, the Site Plan review will continue and later approval by City administration. If denied, the applicant shall revise the Site Plan drawings to meet Sec 42-573.

Public Noticing Requirement

This request does require Planning Commission vote, but does not require a public hearing nor distribution of public notices. The applicant has communicated the proposal to adjacent residences, whom have provided support for the alternative screening proposal.

IV. RECOMMENDATION:

If no further request by the Planning Commission, staff recommends the proposed alternative landscape screening at 8935 Portage Industrial Drive, be approved.

Attachments:

1. Application
2. Project Narrative
3. Vicinity Map
4. Proposed Alternative Screening Drawing
5. Draft Site Plan
6. Draft Architectural Plans
7. Neighboring Residence Letters of Support

8. Neighboring Screening Site Pictures
9. Neighboring Screening Map, Chart

PORTAGE
A Natural Place to Move

DEVELOPMENT REVIEW APPLICATION

Department of Community Development
7900 South Westnedge Avenue – Portage, Michigan 49002 – (269) 329-4477

Applicant must complete all items in sections 1-9 (if applicable).

Please note: Separate applications must be submitted for Plumbing, Mechanical and Electrical Work Permits

No Work is to Start Prior to the Issuance of Building Permit

1) PROJECT INFORMATION

Project Description Haffner NA	Address 8935 Portage Industrial Drive

2) IDENTIFICATION (OWNER)

Name Haffner North America LLC		Address 1601 W Centre Ave STE 102, Portage	
City 1601 W Centre Ave STE 102, Portage	State MI	Zip 49024	Phone 1(888)423-3671

3) ARCHITECT OR ENGINEER

Name Mitten State Engineering	Address 10123 S M-43 STE E	City Delton
State MI	Zip 49046	Phone (269)364-5626
License Number	Expiration Date	Email tyler.cravens@mittenstateeng.com

4) BUILDING CONTRACTOR

Company name Cornerstone Construction Management	Address 450 W Centre Ave		City Portage
State MI	Zip 49024	Phone (269)321-0200	
Email gordon@cornerstonecm.com	Federal Employer ID 38-3199847		
Builder License Number N/A	Expiration Date		
Workers Comp Insurance Carrier Michigan Insurance Co	MESC Employer Number 123-1840		

5) TYPE OF DEVELOPMENT PROJECT

■ Site Plan ☐ Building Plan ☐ Final Plan in Planned Development

☐ Subdivision ☐ Condominium ☐ Land Division Requiring Public Improvements

☐ Landscape Plans ☐ Public Water Main ☐ Public Sanitary Sewer Main

☐ Other:_____

(Note: Please provide a Portable Document Format (PDF) of the plans for the project at time of document submittal. The submitted format shall be CD/DVD or USB. If a PDF is not submitted, an additional $25 fee plus $1 for each plan sheet after 20 sheets will apply.)

6) TYPE OF IMPROVEMENT

■ New Building ☐ Alteration ☐ Addition ☐ Repair ☐ Demolition ☐ Foundation Only

☐ Relocation ☐ Special Inspection ☐ Solar ☐ Other:_____

7) DESCRIPTION OF WORK

A) 36,000 SF Pre-engineered light industrial facility
*Page 2 Mechanical Section does not allow multiple answers. Air Conditioning: yes; Fire Suppression: yes; Hood System: no

B) Valuation of Project: $ 4,000,000

C) Any known soil and/or groundwater contamination? ☐ Yes ■ No

8) CHARACTERISTICS OF THE BUILDING

A) Water Meter Size

■ 5/8" ☐ ¾" ■ 1" ☐ 1 ½"

☐ Other_____ ■ Irrigation Size 1" ■ Fire Sprinkler Size 6"

B) Electric Service Size

☐ 200 AMP ☐ 400 AMP ☐ 600 AMP ■ 800 AMP ☐ 1000 AMP ☐ Other_____

C) Type of Mechanical

Air Conditioning? ■ Yes ☐ No Fire Suppression? ■ Yes ☐ No Hood System? ☐ Yes ■ No

9) CONSTRUCTION PLANS SUBMITTED

Required submittals for plan review:

- Plans shall be signed and sealed when required in accordance with State of Michigan Act No.299 of Public Acts of 1980.
- All plans shall be drawn on uniform sheets no greater than 30"X42".
- All plans shall be drawn to an architectural scale.
- All plans shall be clear, legible and accurate.
- Plans shall be stapled along the left margin.

Type of Plan Submitted:

☐ Building ☐ Electrical ☐ Plumbing ☐ Mechanical ☐ Energy

Building Code: Site plan, foundation plan, soil bearing capacity, floor plans, building elevations, building sections, framing plan, details, roof plan, roof finish schedule, roof live and dead loads.

Electric Code: Lighting layout, circuiting, switching, conductor and raceway sizes, wattage schedule, service location and riser diagram, load calculations, and appropriate plans showing standard symbols of all electrical equipment.

Plumbing Code: Site plan, floor plans, DWV riser diagrams and water distribution system and roof plan, Show direction of flow, pipe sizes, grade of horizontal piping, elevations, drainage fixture unit loading of both stacks and drains in the DWV system, supply fixture unit load for the water system, branch supplies serving more than one plumbing fixture, appliance or hose outlet, meter locations.

Mechanical Code: Plans indicating heating equipment, air conditioning equipment, ductwork material and layout, fire dampers, ventilation of rooms and areas, location of chimneys and vents, piping layouts, kitchen equipment layout, and combustion air. (Plans for fire suppression systems may be submitted after permit issuance, but are required prior to installation.)

Energy Code: Floor plans, building sections, details, average annual degree days, exterior envelope components materials, "U" values of elements, "R" values of insulating materials, size and type of apparatus and equipment, energy calculations.

Note: Additional plan review fee(s) required of all non-concurrent plan submittals

APPLICANT INFORMATION

Applicant is responsible for the payment of all fees and charges applicable to this application and must provide the following information:

Name Cornerstone Construction Management	Phone (269)321-0200
Address 450 W Centre Ave STE B	City Portage
State MI	Zip 49024

I hereby certify that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent, and I agree to conform to all applicable laws of the State of Michigan and ordinances of the City of Portage. All information submitted on the application is accurate to the best of my knowledge.

Signature of Applicant: _____ ***Date:*** 10/28/24

January 27th, 2025

Eric Feldt, AICP, CFM
City Senior Planner
Department of Community Development
City of Portage, MI
Ph: (269) 329-4471

RE: Site Plan – Haffner Machinery: 8935 Portage Industrial Drive

Dear Mr. Feldt,

I am writing to address how the proposed buffering plan will mitigate potential noise and visual impacts associated with the future industrial facility on neighboring residential areas.

The plan includes the installation of evergreen trees planted in a staggered pattern at 14-foot intervals on center, positioned approximately 7 to 8 feet from a 6-foot-high wooden screening fence that directly abuts the residential properties. At the time of planting, the trees will have a height of approximately 8 feet and a canopy spread of 15 feet, ensuring an immediate and effective visual barrier.

As the evergreen trees mature, their dense, year-round foliage will further enhance the visual screening, providing continuous coverage and significantly reducing the industrial facility's visibility. The staggered arrangement of the trees maximizes coverage, ensuring a natural, layered effect that is both functional and aesthetically pleasing.

In addition to visual screening, the combined presence of the wooden fence and the evergreen trees will act as an effective noise buffer. The wooden fence will serve as an initial physical barrier, while the trees' thick canopies and trunks will further dampen sound, minimizing noise transmission to the adjacent residential areas.

This dual buffer system has been carefully designed to prioritize the privacy, tranquility, and quality of life of the neighboring residents, ensuring that the future development integrates harmoniously with the surrounding community.

Please do not hesitate to contact me if you have any further questions or require additional information regarding this buffering plan.

Sincerely,

Mitten State Engineering, PLLC

Tyler Cravens, P.E.
10123 S M43, Suite A
Delton, MI 49046
(269) 364-5626

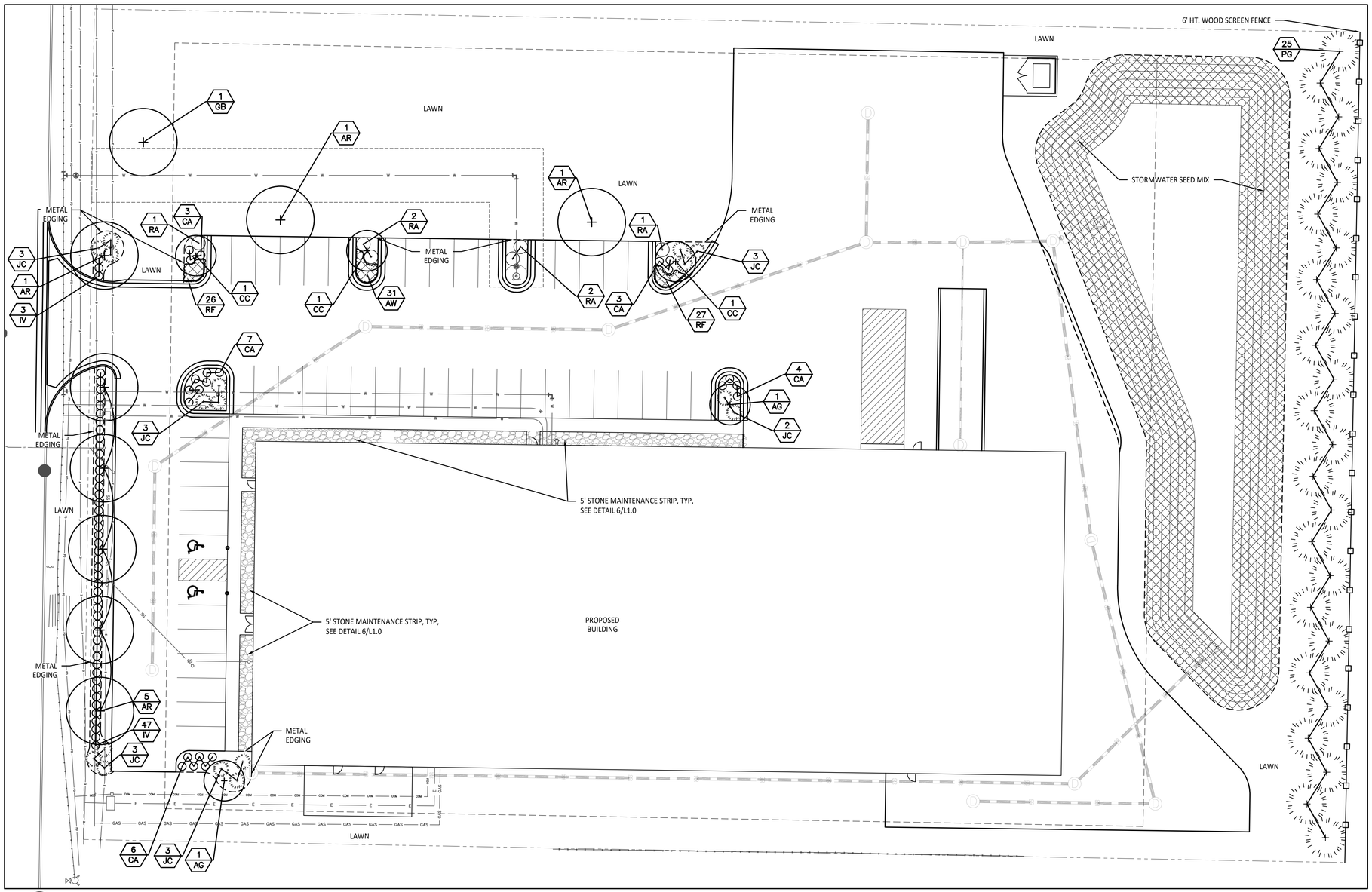
PORTAGE
A Natural Place to Move

Imagery Captured, March 2024

Vicinity Map
8935 Poprtage Industrial Drive

1 inch = 400 feet

Date: 1/21/2025



1 Landscape Plan
1" = 20'

LANDSCAPE NOTES:

1. SURVEY OF EXISTING CONDITIONS PROVIDED BY MITTEN STATE ENGINEERING.
2. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING WORK. 72 HOURS BEFORE YOU DIG CALL "MISS DIG" AT 1-800-482-7171. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
3. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE CONSTRUCTION MANAGER IMMEDIATELY FOR RESOLUTION.
4. IN AREAS OF NEW TURF PLACE 4" MINIMUM TOPSOIL, FINE GRADE & ESTABLISH TURF WITHIN SEED LIMIT LINES.
5. PLACE SHREDDED HARDWOOD MULCH TO A 3" DEPTH IN ALL TREE & SHRUB BEDS & TO A 2" DEPTH IN ALL GROUND COVER BEDS.
6. UNLESS OTHERWISE NOTED, TOPSOIL, FINE GRADE AND SEED ALL DISTURBED AREAS WITHIN THE SEEDING LIMIT SHOWN AND AREAS DISTURBED BY CONSTRUCTION.
7. REPAIR AND RESTORE ANY DAMAGE OUTSIDE OF LIMIT OF WORK LINE TO ORIGINAL CONDITION.
8. PROTECT ALL TREES AND EXISTING FEATURES TO REMAIN AS SPECIFIED.
9. ALL TOPSOIL AND EXCESS FILL MATERIAL SHALL BE STOCKPILED ON SITE SEPARATELY FOR LATER RE-USE. LOCATE STOCKPILES IN AREAS AS DIRECTED BY CONSTRUCTION MANAGER AND PROTECT FROM EFFECTS OF EROSION.
10. ALL NURSERY STOCK SHALL BE TRUE TO TYPE AND NAME. ALL STOCK SHALL BE FIRST CLASS QUALITY WITH WELL DEVELOPED BRANCH SYSTEMS AND VIGOROUS HEALTHY ROOT SYSTEMS. ALL STOCK SHALL BE WELL FORMED AND THE TRUNKS OF TREES SHALL BE UNIFORM AND STRAIGHT.
11. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR IRRIGATION SCHEDULING FOR THE ENTIRE MAINTENANCE PERIOD UNLESS OTHERWISE NOTED.
12. CONTRACTOR RESPONSIBLE TO LOCATE SITE LIGHTING SERVICES. CONTRACTOR RESPONSIBLE TO NOTIFY CONSTRUCTION MANAGER IF DAMAGE TO LIGHTING ELECTRICAL DISTRIBUTION OCCURS.
13. ALL AREAS OF TREE CLEARING SHALL BE STAKED FOR ARCHITECTS APPROVAL PRIOR TO CLEARING.
14. UNLESS OTHERWISE SPECIFIED, ALL PERENNIALS, GRASSES AND GROUNDCOVERS SHALL BE GROWN IN THEIR CONTAINER FOR ONE YEAR PRIOR TO INSTALLATION.

PROPOSED FEATURES LEGEND:

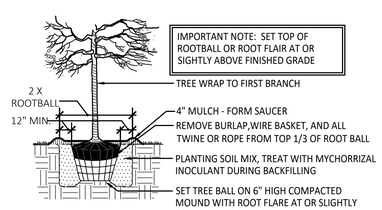
SYMBOL	DESCRIPTION	DETAIL
+	PROPOSED DECIDUOUS TREE	2 / L1.0
+	PROPOSED EVERGREEN TREE	7 / L1.0
	PROPOSED SHRUB	3/ L1.0
	PROPOSED GROUNDCOVER AND/OR PERENNIALS	5/ L1.0
	STONE MAINTENANCE STRIP	6/ L1.0
	PROPOSED BED LINE/ METAL EDGING	4 / L1.0
	PROPERTY LINE	
6 Bn	PLANT TAG- REFERS TO TYPE AND NUMBER OF PLANTINGS TO BE PROVIDED AND MAINTAINED BY CONTRACTOR.	

Perimeter Landscaping		
Unit	Req.	Provided
Tree	1/30LF = (199/30) 6.6	7
Shrub	36" ht screen	PROVIDED

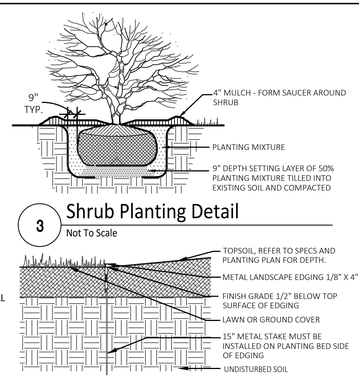
Interior Parking Lot - JUST PARKING AREA		
Total	1sf LS: 15sf PK	996
Tree	1/150sf	7

PLANT LIST:

	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	NOTES	QTY	NOTES
TREES	AG	Amelanchier x grandiflora 'Robin Hill'	Robin Hill Serviceberry	2.5" CAL.	B&B	15' O.C. MIN.	NATIVAR	2	
	GB	Ginkgo biloba	Ginkgo (Male)	2.5" CAL.	B&B	15' O.C. MIN.	NON-NATIVE	1	
	CC	Carpinus caroliniana	Hornbeam	2.5" CAL.	B&B	15' O.C. MIN.	NATIVAR	3	
	AR	Acer rubrum 'October Glory'	October Glory Red maple	2.5" CAL	B&B	15' O.C. MIN.	NATIVAR	8	
EVERGREEN TREES	PG	Picea glauca var. densata	Black Hills Spruce	8' HT.	B&B	14' O.C. MIN.	NATIVAR	25	10' - 13' HT. AT 5 YEARS
SHRUBS	IV	Ilex verticillata	Michigan Holly	#3	CONT.	PER PLANS	NATIVAR	50	36" HT. MIN.
	CA	Ceanothus americanus	New Jersey Tea	#3	CONT.	PER PLANS	NATIVAR	23	
	JC	Juniperus chinensis ' Sea Green'	Sea Green Juniper	#3	CONT.	PER PLANS	NON NATIVE	17	36" HT. MIN.
	RA	Rhus aromatica 'Gro-low'	Gro-Low Fragrant Sumac	#3	CONT.	PER PLANS	NATIVAR	6	
PERENNIALS	RF	Rudbeckia fulgida 'Little Goldstar'	Little Goldstar Orange Coneflower	#1	CONT.	18" O.C.	NATIVAR	31	
	AW	Aster 'Wood's Light Blue'	Woods Light Blue Aster	#1	CONT.	18" O.C.	NATIVAR	53	

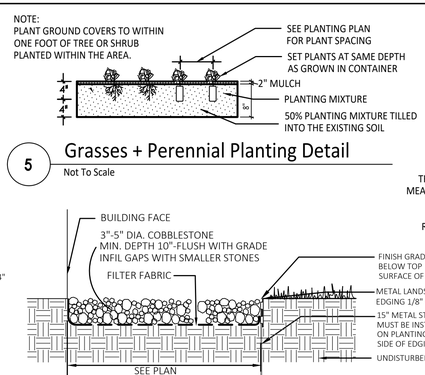


2 Deciduous Tree Planting Detail
Not To Scale



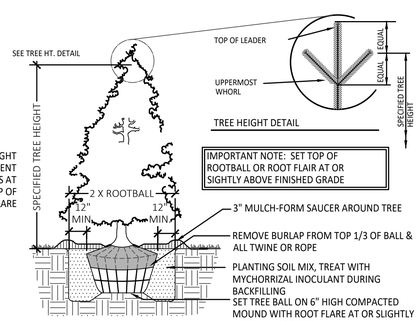
3 Shrub Planting Detail
Not To Scale

4 Metal Edging Detail
Not To Scale



5 Grasses + Perennial Planting Detail
Not To Scale

6 Stone Maintenance Strip Detail
Not To Scale



7 Evergreen Planting Detail
Not To Scale

OCBA LANDSCAPE ARCHITECTS
350 East Michigan Avenue Suite #415
Kalamazoo Michigan 49007
Phone (269) 381-3357
Fax (269) 381-2944

Landscape Architecture
Urban Planning
Parks & Recreation
Campus & Institutional Planning
Camp Planning & Design

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Issued For:	Date
SITE PLAN REVIEW	1–27–25

Project:

8935 Portage Industrial Drive

Portage, MI

Sheet Title

Landscape Plan

20 40 60
North
SCALE IN FEET

Job No. 22424

Sheet No. L1.0

PRELIMINARY ENGINEERING PLANS

HAFFNER NA

8935 PORTAGE INDUSTRIAL DRIVE

PORTAGE, MI 49024

PROJECT TEAM

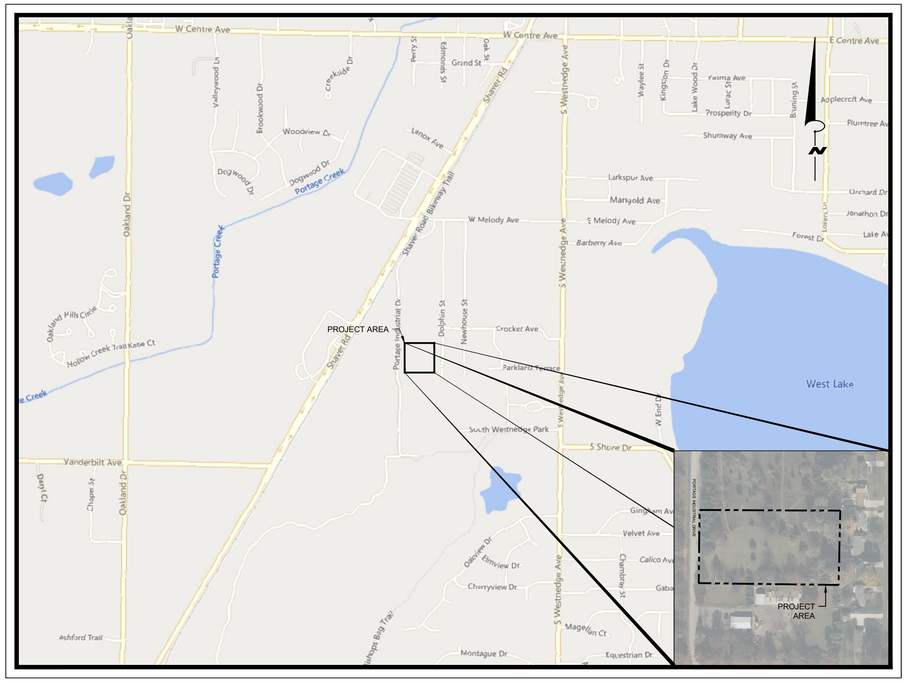
OWNER:	HAFFNER NORTH AMERICA LLC 1601 W CENTRE AVENUE STE 102 PORTAGE, MI 1 888 423 3671	ARCHITECT:	HOWARD L. OVERBECK ARCHITECTS 25377 ISLAND VIEW LANE STURGIS, MI 49091 (269) 377 3561 HOWARD L. OVERBECK	GEOTECHNICAL ENGINEER:	SOILS & STRUCTURES 6480 GRAND HAVEN ROAD MUSKEGON, MI 49441 (231) 760 6821 JON ERICKSON
CIVIL ENGINEER:	MITTEN STATE ENGINEERING 10123 S M-43, SUITE E DELTON, MI 49046 (269) 364 5626 TYLER CRAVENS	SURVEYOR:	42 NORTH SURVEYING 4601 134TH AVE STE H HAMILTON, MI 49419 (269) 836-4029 JOE MEHRTENS	LANDSCAPE ARCHITECT:	OCBA 141 E MICHIGAN AVE KALAMAZOO, MI 49007 (269) 381-3357 KATIE CHASE

UTILITY AND AGENCY CONTACTS

ELECTRIC:	CONSUMERS ENERGY 2500 E CORK ST, KALAMAZOO, MI 49001 (800) 477 5050	FIBER OPTIC:	CHARTER COMMUNICATION 3233 N BURDICK ST, KALAMAZOO, MI 49007 (269) 459 6676
GAS:	CONSUMERS ENERGY 2500 E CORK ST, KALAMAZOO, MI 49001 (800) 477 5050	WATER / SEWER:	PORTAGE CITY 7719 S WESTNEDGE AVE, PORTAGE, MI 49002 (269) 324 9235
TELEPHONE:	AT&T 5901 S WESTNENDGE AVE, PORTAGE, MI, 49002 (269) 385 3272	"MISS DIG"	811

PROJECT NOTES

1. THE "2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND "STANDARD PLANS" BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) ARE HEREBY INCORPORATED INTO THESE CONTRACT DOCUMENTS.
2. THE PLACING OF TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE DONE IN ACCORDANCE WITH THE 2011 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), AS AMENDED.
3. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND/OR PLANS PREPARED BY OTHERS. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POSTING ALL BONDS AND INSURANCE CERTIFICATES AND SUBMITTING TRAFFIC CONTROL PLANS FOR REVIEW AND APPROVAL WHICH MAY BE REQUIRED BY THE CITY AND/OR MDOT FOR THE CONSTRUCTION OF THIS PROJECT WITHIN THE ROAD RIGHT-OF-WAY. THE CONTRACTOR SHALL APPLY FOR THESE PERMITS UNLESS OTHERWISE NOTED.
6. IN ACCORDANCE WITH PUBLIC ACT 174 OF 2013, ALL CONTRACTORS SHALL CALL MISS DIG @ 811 OR 800-428-7171 FOR PROTECTION OF UNDERGROUND UTILITIES A MINIMUM OF THREE FULL WORKING DAYS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) PRIOR TO BEGINNING EACH EXCAVATUIN IN ANY AREA. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.



SOIL/GROUNDWATER CONTAMINATION

IF SOIL OR GROUNDWATER CONTAMINATION IS ENCOUNTERED OR SUSPECTED DURING CONSTRUCTION THE FOLLOWING STEPS SHALL BE FOLLOWED:

1. CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY OWNER AND/OR OWNER'S REPRESENTATIVE.
2. OWNER AND/OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE CITY.
3. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT THE TIME OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND/OR PLANS PREPARED BY OTHERS. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
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SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
C001	COVER SHEET
C100	EXISTING CONDITIONS AND DEMOLITION PLAN
C101	SITE PLAN
C102	GRADING PLAN
C103	UTILITY PLAN
C104	EROSION CONTROL PLAN
C105	EROSION CONTROL DETAILS
C106A	CONSTRUCTION DETAILS
C106B	CONSTRUCTION DETAILS
PH101	PHOTOMETRIC PLAN
L1.0	LANDSCAPE PLAN

No.	REVISIONS	DATE	BY
1	PER CITY OF PROTAGE REVIEW COMMENTS	01/10/2024	OSW

MITTEN STATE ENGINEERING

ADDRESS:
10123 S M43, SUITE A
DELTON, MI 49046

PHONE:
(269) 364-5626

SCALE: AS NOTED
DESIGNED BY: DMP
DRAWN BY: CRZ
CHECKED BY: TWC

- PRELIMINARY -
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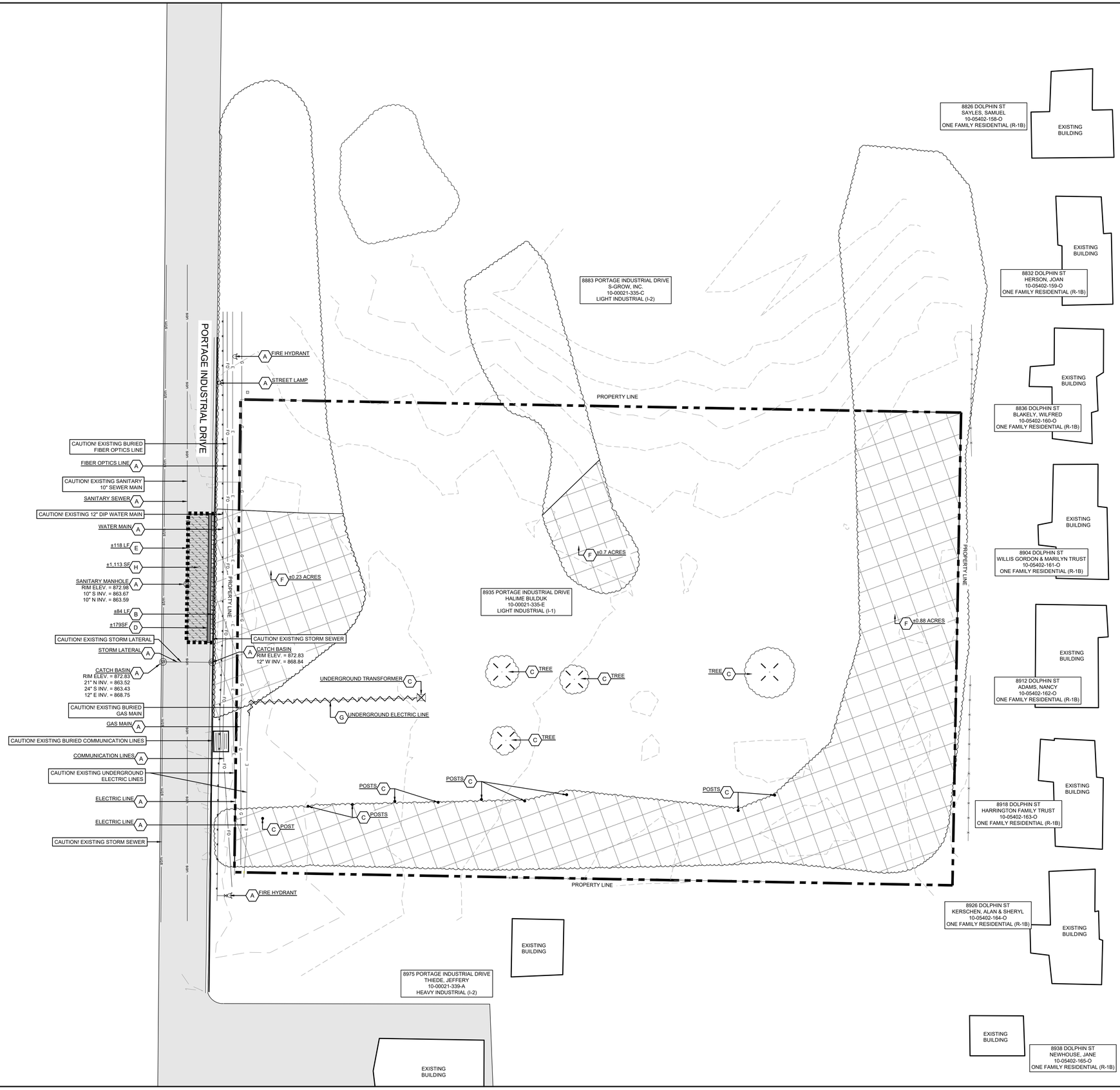
COVER SHEET

HAFFNER NA
PORTAGE, MI

ORIGINAL ISSUE:
10/14/2024

PROJECT NO.
24028

SHEET NUMBER
C001



DEMOLITION NOTES

1. THE CONTRACTOR SHALL OBTAIN A CITY OF PORTAGE RIGHT-OF-WAY (R.O.W) PERMIT FROM THE CITY TRAFFIC ENGINEER PRIOR TO THE START OF ANY WORK WITHIN THE CITY R.O.W.
2. ANY DEMOLITION WITHIN THE RIGHT-OF-WAY MUST BE COORDINATED WITH THE LOCAL JURISDICTION. FURTHERMORE, THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED TRAFFIC CONTROL IS IN PLACE PRIOR TO WORK WITHIN THE RIGHT-OF-WAY
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXISTING UTILITIES, PAVING, STRUCTURES, AND ANY OTHER EXISTING IMPROVEMENTS AS NOTED ON THE PLANS
4. THE CONTRACTOR SHALL DISPOSE OF ALL DEBRIS, TRASH, AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS. DISPOSAL OF SUCH ITEMS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS
5. ANY DAMAGE TO ADJACENT PROPERTIES SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL RECEIVE WRITTEN PERMISSION PRIOR TO ANY OFFSITE DISTURBANCE, UNLESS SPECIFICALLY MENTIONED ON THIS SHEET
6. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN. UTILITY LOCATIONS SHOWN ARE BASED OFF PREVIOUS RECORD DRAWINGS AND FIELD MEASUREMENTS WHERE APPLICABLE. THE INFORMATION IS NOT TO BE RELIED UPON AND MUST BE CONFIRMED BY THE UTILITY COMPANY. THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO THE EXCAVATION TO REQUEST FIELD LOCATING.
7. EROSION CONTROL BMP'S SHALL BE IN PLACE PRIOR TO ANY DEMOLITION WORK
8. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR ALL SUBSURFACE INFORMATION
9. ALL UTILITIES SHOWN THAT ARE NOT TO BE REMOVED DURING DEMOLITION SHALL BE PROTECTED. ANY DAMAGE TO SUCH UTILITIES OR STRUCTURES, SHALL BE REPAIRED OR REPLACED AT THE GENERAL CONTRACTORS EXPENSE.
10. THE CONTRACTOR SHALL USE WATER SPRINKLING, TEMPORARY ENCLOSURES, AND OTHER SUITABLE METHODS TO LIMIT DUST. SEE EROSION CONTROL SHEET FOR FURTHER EROSION CONTROL REQUIREMENTS.
11. THE CONTRACTOR SHALL COMPLETELY FILL ALL VOIDS RESULTING FROM DEMOLITION ACTIVITIES. MATERIAL SHALL BE IN ACCORDANCE WITH MDOT SPECIFICATIONS FOR BACKFILL. FILL MATERIALS SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 12 INCHES IN LOOSE DEPTH AND COMPACTED TO 95% OF MODIFIED PROCTOR DENSITY.
12. THE CONTRACTOR SHALL NOTIFY MISS DIG (800-482-7171) TO COORDINATE FIELD LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

DEMOLITION LEGEND

A	ITEM TO REMAIN, PROTECT DURING CONSTRUCTION
B	CURB AND GUTTER REMOVAL
C	ITEM TO BE REMOVED
D	FULL-DEPTH ASPHALT REMOVAL
E	SAWCUT LINE
F	WOODS CLEARING
G	UTILITY REMOVAL/RELOCATION
H	1.5" MILL AND RESURFACE

EXISTING UTILITY LEGEND

GAS	NATURAL GAS LINE
COM	COMMUNICATIONS LINE
E	UNDERGROUND ELECTRIC LINE
W	WATER LINE
SS	SANITARY SEWER LINE
SD	STORM SEWER LINE

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MITTEN STATE ENGINEERING
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PHONE:
(269) 364-5626

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EXISTING CONDITIONS AND DEMOLITION PLAN

HAFFNER NA
PORTAGE, MI

ORIGINAL ISSUE: 10/14/2024
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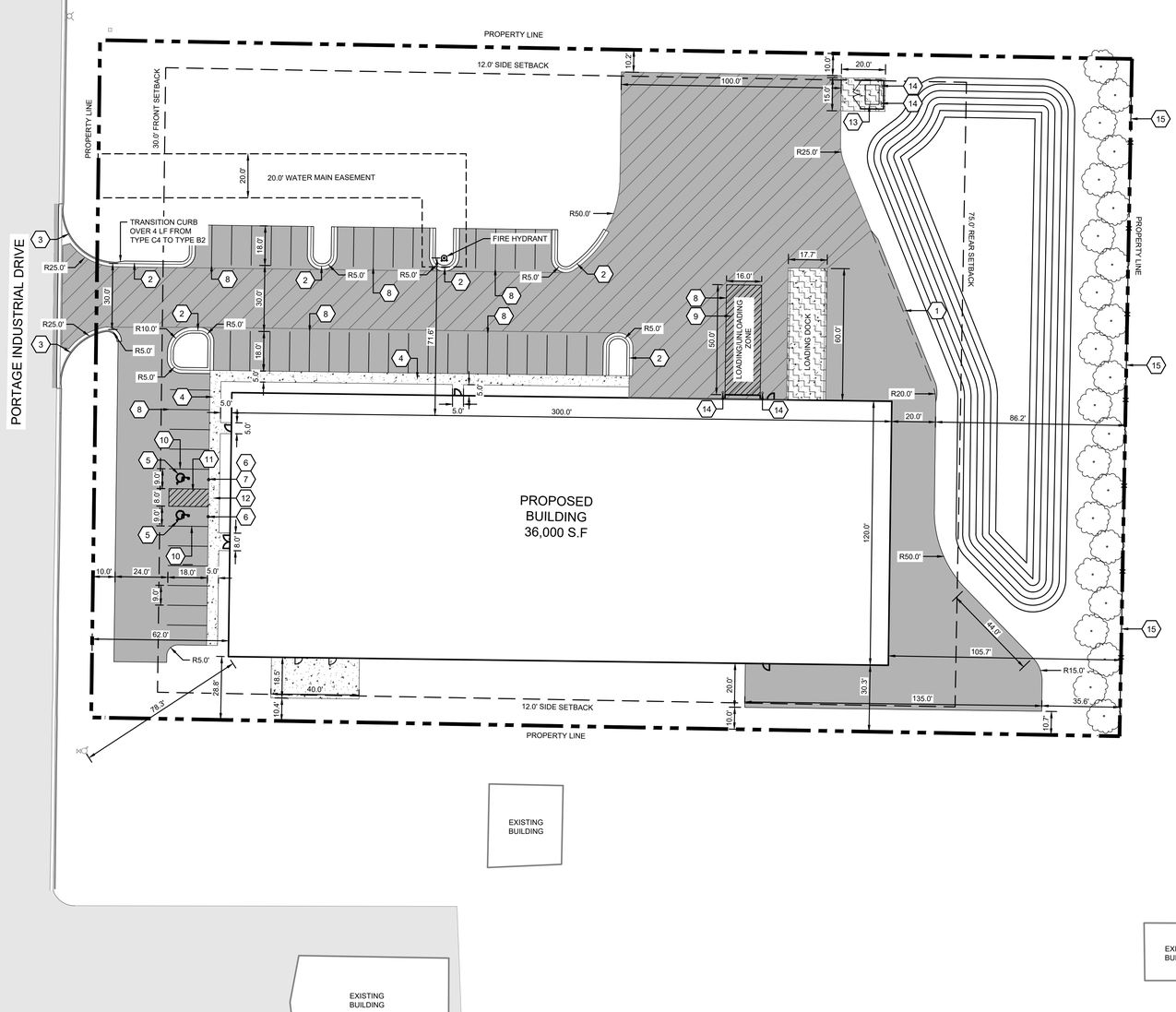
SHEET NUMBER
C100



0 30 45 60

1 inch = 30 ft.

SITE INFORMATION

ZONING:	LIGHT INDUSTRIAL (I-1)
SITE AREA:	3.31 ACRES (144,205 SF)
BUILDING AREA:	36,000 SF (24.9%)
NUMBER OF STORIES:	1
IMPERVIOUS COVERAGE:	81,813 SF (57%)
PROPOSED GREEN SPACE:	62,391 SF (43%)

BUILDING SETBACKS:

FRONT:	30 FT
SIDE:	12 FT
REAR:	75 FT

OFF-STREET PARKING REQUIREMENTS:

STANDARD PARKING SPACE: 9 FT X 18 FT

5 PARKING SPACES PLUS 1.5 PER EMPLOYEE
5 + (24 EMPLOYEES X 1.5) = 41 SPACES

TOTAL SPACES REQUIRED:	41 SPACES
TOTAL SPACES PROVIDED:	49 SPACES
ADA PARKING SPACES REQUIRED:	2
ADA PARKING SPACES PROVIDED:	2

PAVEMENT LEGEND

STANDARD DUTY CONCRETE PAVEMENT
SEE DETAILS

HEAVY DUTY CONCRETE PAVEMENT
SEE DETAILS

STANDARD DUTY PAVEMENT
1.5" HMA (165#/SYD) 5E1 TOP COURSE
1.5" HMA (165#/SYD) 4E1 LEVELING COURSE
8" AGGREGATE BASE, 22A
12" SUBBASE, CIP

HEAVY DUTY PAVEMENT
2" HMA (220#/SYD) 5E1 TOP COURSE
2" HMA (220#/SYD) 4E1 LEVELING COURSE
8" AGGREGATE BASE, 22A
12" SUBBASE, CIP

SITE GENERAL NOTES

1. DIMENSIONS REFER TO THE FACE OF CURB UNLESS OTHERWISE NOTED
2. CONTRACTOR TO FIELD VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON SITE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
3. BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING, UNLESS NOTED OTHERWISE.
4. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS TO VERIFY ALL BUILDING DIMENSIONS.

KEY NOTES

1. ASPHALT CURB (SEE DETAILS)
2. TYPE B2 CURB AND GUTTER (SEE DETAILS)
3. TYPE MDOT C4 CURB AND GUTTER (SEE DETAILS)
4. THICKENED EDGE CONCRETE SIDEWALK, TYP. (SEE DETAILS)
5. ACCESSIBLE PAVEMENT MARKINGS, TYP. (SEE DETAILS)
6. ACCESSIBLE PARKING SIGN, TYP. (MUTCD D9-6) (MICHIGAN ACT 182 AND 183)
7. ACCESSIBLE PARKING SIGN, TYP. (MUTCD R7-8P) (MICHIGAN ACT 182 AND 183)
8. 4" WIDE PAINTED SOLID YELLOW LINE, TYP.
9. 4" WIDE PAINTED SOLID YELLOW LINE AT 45 DEGREES, TYP.
10. 4" WIDE PAINTED SOLID BLUE LINE, TYP.
11. 4" WIDE PAINTED SOLID BLUE LINE AT 45 DEGREES, TYP.
12. ACCESSIBLE RAMP (SEE DETAILS)
13. REFUSE ENCLOSURE (SEE DETAILS)
14. CONCRETE BOLLARDS (SEE DETAILS)
15. 6' OPAQUE WOOD SCREEN FENCE

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SITE PLAN

HAFFNER NA
PORTAGE, MI

ORIGINAL ISSUE: 10/14/2024
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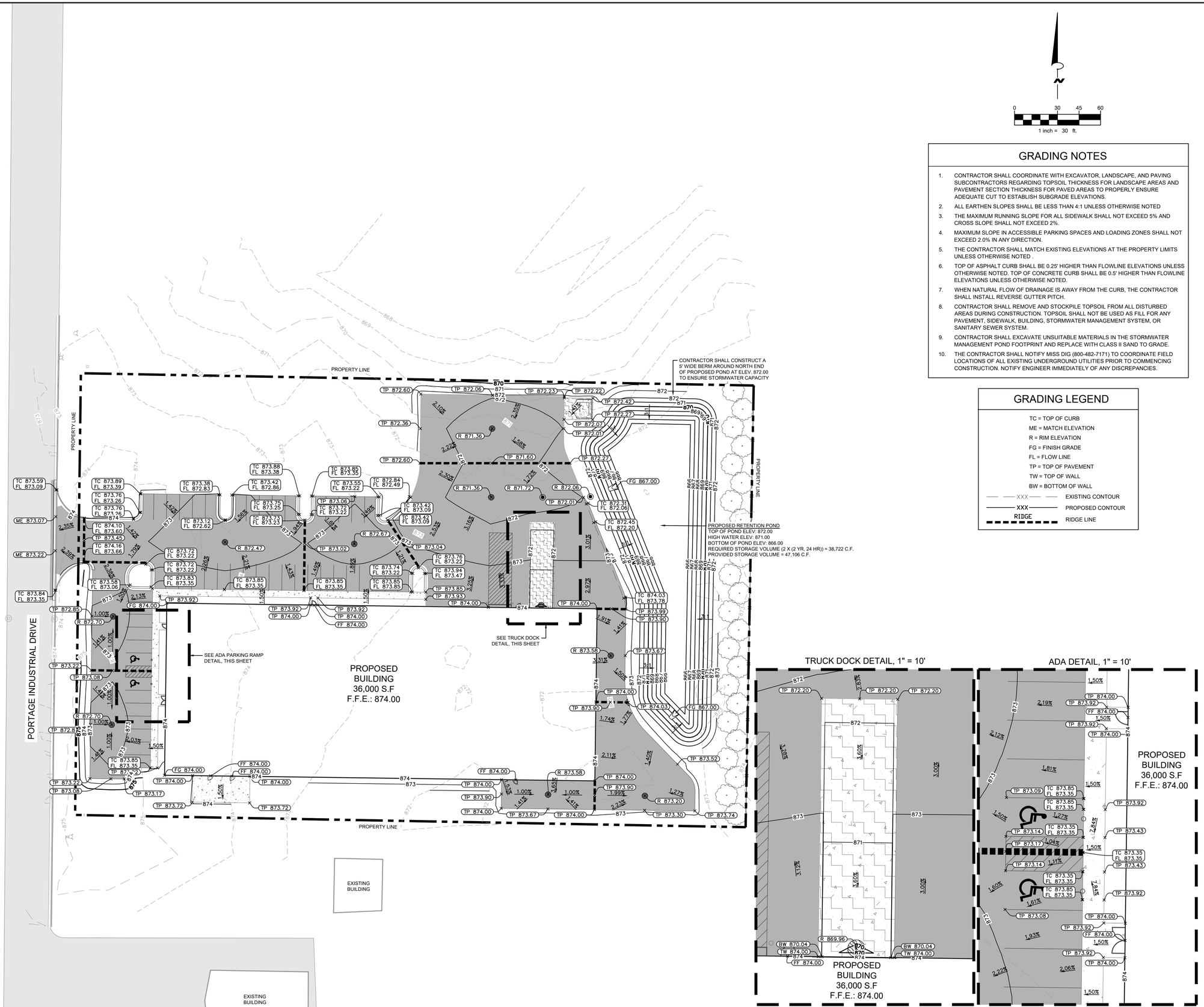
C101



0 30 45 60

1 inch = 30 ft.

GRADING NOTES

1. CONTRACTOR SHALL COORDINATE WITH EXCAVATOR, LANDSCAPE, AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
2. ALL EARTHEN SLOPES SHALL BE LESS THAN 4:1 UNLESS OTHERWISE NOTED
3. THE MAXIMUM RUNNING SLOPE FOR ALL SIDEWALK SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2%.
4. MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL NOT EXCEED 2.0% IN ANY DIRECTION.
5. THE CONTRACTOR SHALL MATCH EXISTING ELEVATIONS AT THE PROPERTY LIMITS UNLESS OTHERWISE NOTED .
6. TOP OF ASPHALT CURB SHALL BE 0.25' HIGHER THAN FLOWLINE ELEVATIONS UNLESS OTHERWISE NOTED. TOP OF CONCRETE CURB SHALL BE 0.5' HIGHER THAN FLOWLINE ELEVATIONS UNLESS OTHERWISE NOTED.
7. WHEN NATURAL FLOW OF DRAINAGE IS AWAY FROM THE CURB, THE CONTRACTOR SHALL INSTALL REVERSE GUTTER PITCH.
8. CONTRACTOR SHALL REMOVE AND STOCKPILE TOPSOIL FROM ALL DISTURBED AREAS DURING CONSTRUCTION. TOPSOIL SHALL NOT BE USED AS FILL FOR ANY PAVEMENT, SIDEWALK, BUILDING, STORMWATER MANAGEMENT SYSTEM, OR SANITARY SEWER SYSTEM.
9. CONTRACTOR SHALL EXCAVATE UNSUITABLE MATERIALS IN THE STORMWATER MANAGEMENT POND FOOTPRINT AND REPLACE WITH CLASS II SAND TO GRADE.
10. THE CONTRACTOR SHALL NOTIFY MISS DIG (800-482-7171) TO COORDINATE FIELD LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

GRADING LEGEND

TC = TOP OF CURB	
ME = MATCH ELEVATION	
R = RIM ELEVATION	
FG = FINISH GRADE	
FL = FLOW LINE	
TP = TOP OF PAVEMENT	
TW = TOP OF WALL	
BW = BOTTOM OF WALL	
XXX	EXISTING CONTOUR
XXX	PROPOSED CONTOUR
RIDGE	RIDGE LINE

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GRADING PLAN

HAFFNER NA
PORTAGE, MI

ORIGINAL ISSUE: 10/14/2024
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SHEET NUMBER C102

UTILITY KEYNOTE LEGEND

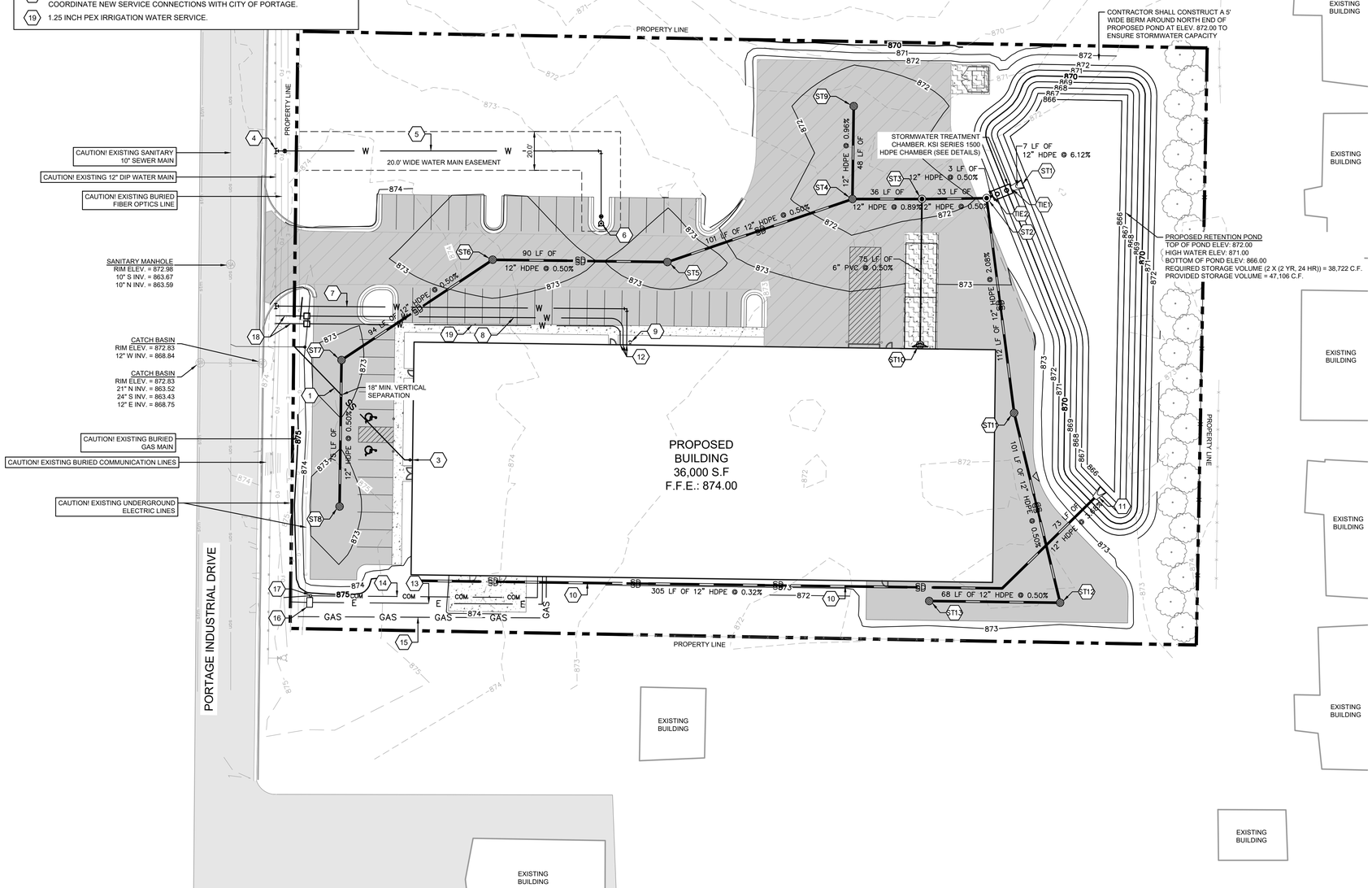
1. 6 INCH SANITARY SEWER SERVICE AT MIN. 1.25% SLOPE. INSTALL 6 INCH CLEANOUT W/WYE AT BUILDING, EACH BEND, AND EVERY 100'.
2. CONNECT TO EXISTING 6 INCH SEWER LATERAL STUB WITH 6" WYE AND CLEANOUT. CONTRACTOR TO FIELD VERIFY LOCATION, TYPE, AND SIZE. COORDINATE NEW SERVICE CONNECTION WITH CITY OF PORTAGE.
3. SANITARY SEWER SERVICE CONNECTION. COORDINATE WITH ARCH AND MEP PLANS. INV. ±870.00
4. CONNECT TO EXISTING 12 INCH DIP WATER MAIN WITH 8 INCH TAPPING SLEEVE AND VALVE. COORDINATE NEW SERVICE CONNECTION WITH CITY OF PORTAGE.
5. 8 INCH CLASS 52 DIP WATER MAIN.
6. PROPOSED FIRE HYDRANT ASSEMBLY.
7. 6 INCH CLASS 52 DIP FIRE SUPPRESSION WATER SERVICE CONNECTED WITH 6 INCH TAPPING SLEEVE AND VALVE. COORDINATE NEW SERVICE CONNECTION WITH CITY OF PORTAGE.
8. 1.25 INCH PEX DOMESTIC WATER SERVICE.
9. FIRE DEPARTMENT CONNECTION (FDC). COORDINATE NEW CONNECTION WITH CITY OF PORTAGE FIRE DEPARTMENT AND ARCH/MEP PLANS.
10. 12 INCH HDPE STORM LINE AT MIN. 0.32% SLOPE. CONNECT ALL ROOF DOWNSPOUTS. INSTALL 6 INCH CLEANOUT W/ WYE AT ALL BENDS. COORDINATE WITH ARCH PLANS.
11. OUTLET ROOF DOWNSPOUT LEAD TO PROPOSED RETENTION POND. INV. ±866.00
12. WATER SERVICE CONNECTIONS. COORDINATE WITH ARCH AND MEP PLANS.
13. ELECTRIC SERVICE. COORDINATE CONNECTION, SIZE, AND LOCATION WITH CONSUMERS ENERGY AND MEP/ARCH PLANS.
14. COMMUNICATION SERVICE. COORDINATE CONNECTION, SIZE, AND LOCATION WITH CHARTER AND MEP/ARCH PLANS.
15. GAS SERVICE. COORDINATE CONNECTION AND LOCATION WITH CONSUMERS GAS AND MEP/ARCH PLANS.
16. ELECTRIC TRANSFORMER. COORDINATE WITH CONSUMERS ENEGRY AND THE CITY OF PORTAGE.
17. COMMUNICATION RISER. COORDINATE WITH CHARTER AND THE CITY OF PORTAGE.
18. 1.25 INCH TYPE K COPPER WATER SERVICE. TAP INTO 12 INCH MAIN WITH CORPORATION STOP. CONNECT TO 1" FORD METER BOX WITHIN GREENSPACE. COORDINATE NEW SERVICE CONNECTIONS WITH CITY OF PORTAGE.
19. 1.25 INCH PEX IRRIGATION WATER SERVICE.

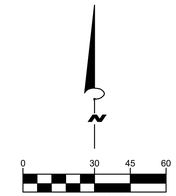
UTILITY NOTES

1. ALL REINFORCED CONCRETE PIPE SHALL BE CLASS IV.
2. ALL WATER LINES GREATER THAN 3 INCHES IN DIAMETER SHALL BE DUCTILE IRON PIPE, CLASS 52 AND SHALL MEET CITY OF PORTAGE SPECIFICATIONS
3. SANITARY SEWER LINES SHALL BE PVC MEETING ASTM D-3034 SDR 26 EXCEPT FOR SANITARY SEWER THAT CROSSES ABOVE WATER MAIN. THIS PIPE SHALL BE AWWA C900 (UNLESS CASING IS UTILIZED), PROVIDE 42" MINIMUM COVER, MINIMUM 18" VERTICAL SEPARATION, AND 10' HORIZONTAL SEPARATION BETWEEN PIPES. SANITARY SEWER SHALL MEET CITY OF PORTAGE SPECIFICATIONS
4. ALL WATER MAINS AND THEIR APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF PORTAGE SPECIFICATIONS AND AWWA STANDARD C600.
5. ALL WATER MAIN MUST BE POLY WRAPPED AND POLY WRAP SHALL CONFORM TO THE AWWA STANDARD C104.
6. ALL WATER MAIN JOINTS ON THIS PROJECT ARE TO BE RESTRAINED AS REQUIRED PER SECTION 207.1.2.7 OF THE CITY OF PORTAGE SPECIFICATIONS.
7. WATER MAIN FLUSHING SHALL PROVIDE A MINIMUM WATER VELOCITY OF 3.0 FEET PER SECOND IN ACCORDANCE WITH AWWA STANDARD C651.
8. ALL HYDRANTS SHALL HAVE AN AREA 36" CLEAR OF OBSTRUCTIONS SURROUNDING THE OUTLET NOZZLES AND OPERATING NUTS. THIS INCLUDES MINIMUM CLEARANCE FOR REQUIRED LANDSCAPING BUSHES AND TREES.
9. WATER VALVES SHALL BE PLACED A MINIMUM OF 5' FROM ANY SIDEWALK OR CURB.

9.1. SERVICE VALVE SHALL BE A MINIMUM OF 2' FROM ANY SIDEWALK OR CURB.

10. LANDSCAPING TREES SHALL NOT BE LOCATED WITHIN THE WATER MAIN EASEMENT AREA. THE FINAL PLACEMENT OF REQUIRED LANDSCAPING TREES WITHIN THE GREENSTRIP SHALL BE FIELD VERIFIED BY AND COORDINATED WITH THE CITY OF PORTAGE.
11. ANY DISRUPTIONS TO EXISTING SERVICE LINES FOR ADJACENT PROPERTIES SHALL BE COORDINATED WITH AFFECTED PROPERTY OWNERS
12. THE CONTRACTOR SHALL NOTIFY MISS DIG (800-482-7171) TO COORDINATE FIELD LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ORDERING MATERIALS OR COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
13. THE CONTRACTOR SHALL OBTAIN A RIGHT OF WAY PERMIT TO PERFORM THIS WORK.
14. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING PLANS FOR EXACT UTILITY CONNECTION LOCATIONS AT BUILDING.





UTILITY LEGEND

- GAS — PROPOSED NATURAL GAS LINE
- COM — PROPOSED COMMUNICATIONS LINE
- E — PROPOSED UNDERGROUND ELECTRIC LINE
- W — PROPOSED WATER LINE
- SS — PROPOSED SANITARY SEWER LINE
- PROPOSED STORM SEWER LINE
- PROPOSED OPEN LID STORM MANHOLE
- PROPOSED CLOSED LID STORM MANHOLE
- PROPOSED FLARED END SECTION

STRUCTURE TABLE

ST1 12" FLARED END SECTION	INV. 867.00 - 12" W
ST2 4' DIA MH EJ 1020 SOLID LID 2.0 FT SUMP	RIM 872.06 INV. 867.42 - 12" W INV. 867.42 - 12" S INV. 867.42 - 12" E
ST3 4' DIA MH EJ 1020 SOLID LID 2.0 FT SUMP	RIM 871.72 INV. 867.58 - 12" W INV. 867.58 - 6" S INV. 867.58 - 12" E
ST4 4' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 871.36 INV. 867.90 - 12" W INV. 867.90 - 12" N INV. 867.90 - 12" E
ST5 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 872.67 INV. 868.41 - 12" W INV. 868.40 - 12" E
ST6 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 872.47 INV. 868.86 - 12" SW INV. 868.86 - 12" E
ST7 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 872.70 INV. 869.32 - 12" S INV. 869.32 - 12" NE
ST8 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 872.70 INV. 869.70 - 12" N
ST9 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 871.36 INV. 868.36 - 12" S
ST10 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 869.96 INV. 867.96 - 6" N
ST11 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 873.58 INV. 869.73 - 12" S INV. 869.73 - 12" N
ST12 4' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 873.20 INV. 870.24 - 12" W INV. 870.24 - 12" N
ST13 2' DIA MH EJ 1020, TYPE M1 2.0 FT SUMP	RIM 873.58 INV. 870.58 - 12" E INV. 870.58 - 8" N
TIE1 CONNECT TO PROPOSED KSI STORMWWATER TREATMENT CHAMBER	INV. 867.40 - 12" E
TIE2 CONNECT TO PROPOSED KSI STORMWWATER TREATMENT CHAMBER	INV. 867.40 - 12" W

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MITTEN STATE ENGINEERING

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DELTON, MI 49046

PHONE:
(269) 364-5626

SCALE: AS NOTED | DESIGNED BY: DMP | DRAWN BY: CRZ | CHECKED BY: TWC

- PRELIMINARY -
NOT FOR CONSTRUCTION

UTILITY PLAN

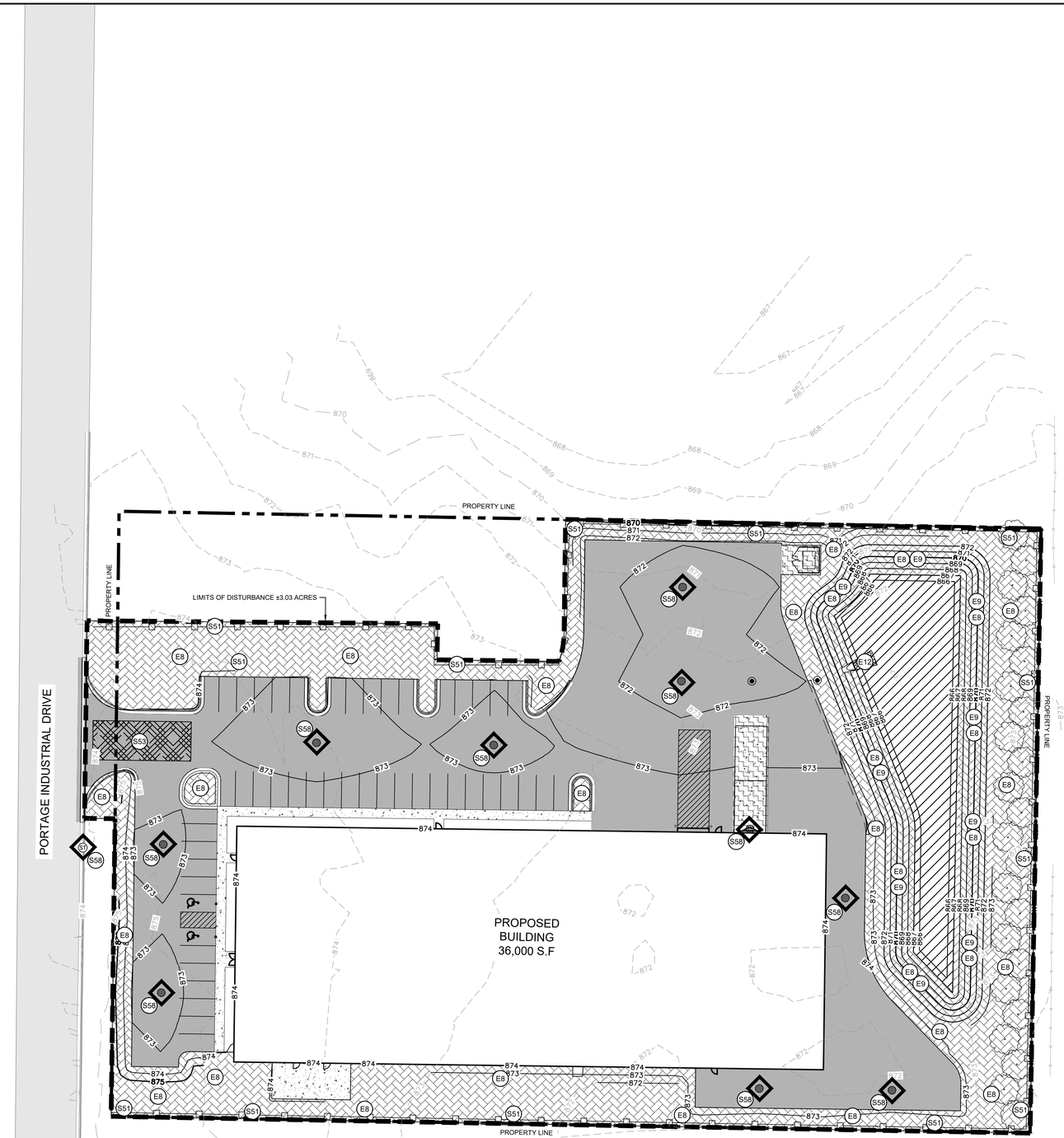
HAFFNER NA
PORTAGE, MI

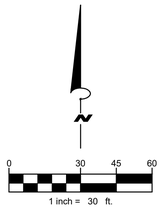
ORIGINAL ISSUE: 10/14/2024

PROJECT NO. 24028

SHEET NUMBER

C103





EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

SOIL EROSION & SEDIMENTATION CONTROL NOTES

1. ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH THE MICHIGAN SOIL EROSION AND SEDIMENTATION CONTROL ACT. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE COUNTY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM THE MDEQ PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE COUNTY "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.
2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER, THESE COVER AREAS ACT AS SEDIMENT FILTERS.
3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.
4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.
5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

(##) NUMBER IN CIRCLE REFERS TO NUMBERED DETAILS IN STATE OF MICHIGAN SOIL EROSION AND SEDIMENTATION CONTROL GUIDEBOOK. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

- (E8) DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. SEE DETAIL SHEET.
- (E9) DENOTES MULCH BLANKETS. MULCH BLANKET SHALL BE PROVIDED AT LOCATIONS SHOWN ON THE PLANS, AT SLOPES GREATER THAN 1:3, AREAS WITH CONCENTRATED FLOWS, AND AS DIRECTED BY THE ENGINEER IN THE FIELD, TO PREVENT RUNOFF AND EROSION.
- (E12) DENOTES RIPRAP. SEE DETAIL SHEET. (PERMANENT EROSION CONTROL MEASURE)
- (S53) DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. SEE DETAIL SHEET.
- (S51) DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION. SEE DETAIL SHEET.
- (S58) DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM. SEE DETAIL SHEET.

EROSION CONTROL LEGEND

- PERMANENT SEEDING. INSTALL MULCH BLANKET ON ALL SLOPES GREATER THAN 3:1
- TEMPORARY CONSTRUCTION ENTRANCE
- RIP-RAP
- NATIVE SEEDING (POND BOTTOM)
- INLET PROTECTION
- = EXISTING MAJOR CONTOUR
- = EXISTING MINOR CONTOUR
- = PROPOSED MAJOR CONTOUR
- = PROPOSED MINOR CONTOUR
- = SILT FENCE
- = LIMITS OF DISTURBANCE

CONSTRUCTION SEQUENCING

1. INSTALL SOIL EROSION MEASURES.
2. ESTABLISH STORM WATER MANAGEMENT BASIN.
3. ROUGH GRADING OF THE SITE.
4. BEGIN BUILDING CONSTRUCTION.
5. UTILITY CONNECTIONS AND SERVICES TO BUILDING.
6. FINAL GRADING OF THE SITE.
7. POUR CONCRETE SIDEWALK, HEAVY DUTY CONCRETE. AND CURB AND GUTTER.
8. PAVE SITE.
9. REMOVE TEMPORARY SOIL EROSION MEASURES AFTER VEGETATION HAS BEEN ESTABLISHED.

NEARBY WATER

NEAREST COUNTY DRAIN / RIVER / STREAM / LAKE IS AUSTIN LAKE CONSOLIDATED DRAIN. 2,500 FEET TO THE SOUTHEAST.

SOILS INFORMATION

BASED ON USDA INFORMATION, THE SITE CONSISTS OF OSHTEMO SANDY LOAM. SOIL HYDRAULIC GROUP A.

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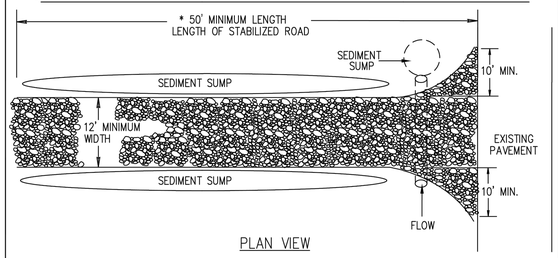
EROSION CONTROL PLAN

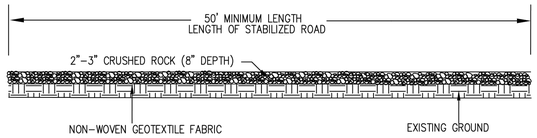
HAFFNER NA
PORTAGE, MI

ORIGINAL ISSUE: 10/14/2024
PROJECT NO. 24028
SHEET NUMBER
C104

S53 STABILIZED CONSTRUCTION ACCESS



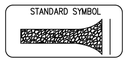
PLAN VIEW



PROFILE

NOTES:
1. Establish stabilized construction entrance prior to the initiation of site construction activities.
2. Care should be taken to prevent material movement into adjacent wetlands/waterbodies.
3. Care should be taken to maintain existing roadside drainage via culvert installation, with sediment sump placed downflow of culvert.

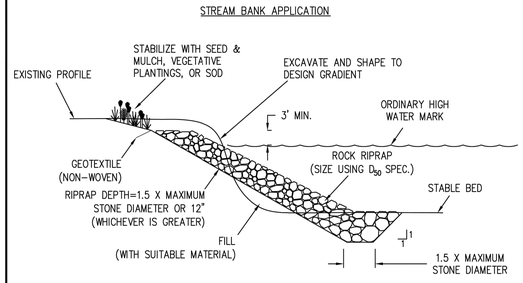
STANDARD SYMBOL



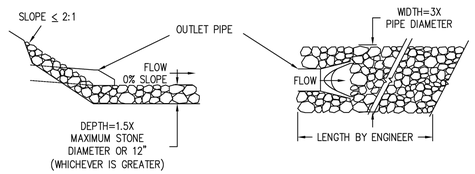
STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION

E12 RIPRAP

STREAM BANK APPLICATION



OUTLET POINT APPLICATION



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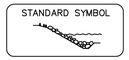
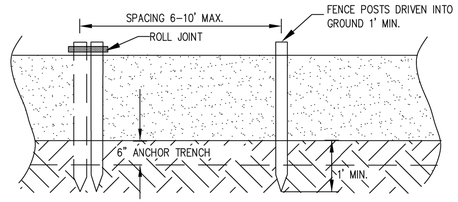
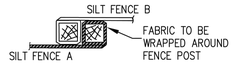


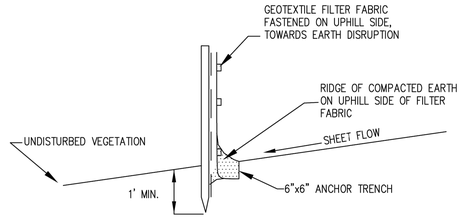
STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION

S51 SILT FENCE

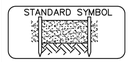




ROLL JOINTS



STANDARD SYMBOL



STATE OF MICHIGAN
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STATE FACILITIES ADMINISTRATION

STABILIZATION TYPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING			A			*	*					
DORMANT SEEDING	B										B	
TEMPORARY SEEDING			C				D					
SODDING			E **									
MULCHING	F											

A KENTUCKY BLUEGRASS 90 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 30 LBS/ACRE

B KENTUCKY BLUEGRASS 135 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 45 LBS/ACRE + 2 TONS STRAW MULCH/ACRE

C SPRING OATS 100 LBS/ACRE

D WHEAT OR CEREAL RYE 150 LBS/ACRE

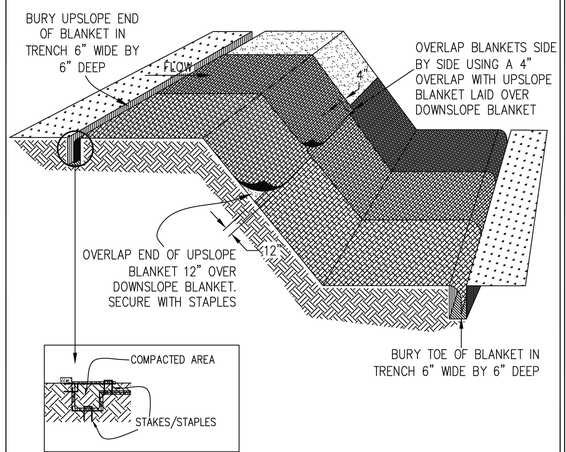
E SOD

F STRAW MULCH 2 TONS/ACRE

* WATERING NEEDED DURING JUNE AND JULY

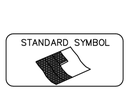
** WATERING NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD

E9 MULCH BLANKETS



NOTES:
1. PLACE MULCH BLANKET PARALLEL TO FLOW AND ANCHOR SECURELY.
2. WHEN BLANKETS ARE USED IN FLOWING DITCH, BLANKETS SHOULD NOT OVERLAP IN DITCH CENTER PARALLEL TO FLOW.
3. STAPLES INSTALLED/SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
4. WHERE POSSIBLE, CONSTRUCT WITH BIODEGRADABLE MATERIAL.

STANDARD SYMBOL



STATE OF MICHIGAN
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STATE FACILITIES ADMINISTRATION

E8 PERMANENT SEEDING

Planting Zones:	Lower Peninsula (South of T20N) Zone 1	Lower Peninsula (North of T20N) Zone 2	Upper Peninsula Zone 3
Seeding Window Permanent Seeding	4/15 – 10/10	5/1 – 10/1	5/1 – 9/20
Seeding Window Dormant Seeding*	11/15 – Freeze	11/01 – Freeze	11/01 – Freeze

Source: Adapted from MDOT Interim 2003 Standard Specifications for Construction

	Zone 1 Lower Peninsula (South of U.S. 10)	Zone 2 Lower Peninsula (North of U.S. 10)	Zone 3 Upper Peninsula
Seeding Dates (with Irrigation or Mulch)	4/1 – 8/1	5/1 – 9/20	5/1 – 9/10
Seeding Dates (w/o Irrigation or Mulch)	4/1 – 5/20 or 8/10 – 10/1	5/1 – 6/10 or 8/1 – 9/20	5/1 – 6/15 or 8/1 – 9/20
Dormant Seeding Dates*	11/1 – Freeze	10/25 – Freeze	10/25 – Freeze

Source: Adapted from USDA NRCS Technical Guide #342 (1999)

* Dormant seeding is for use in the late fall after the soil temperature remains consistently below 50°F, prior to the ground freezing. This practice is appropriate if construction on a site is completed in the fall but the seed was not planted prior to recommended seeding dates. No seed germination will take place until spring. A cool season annual grass may be added in an attempt to have some fall growth.

- Mulch must be used with dormant seed.
- Do not seed when the ground is frozen or snow covered.
- Do not use a dormant seed mix on grassed waterways.

STATE OF MICHIGAN
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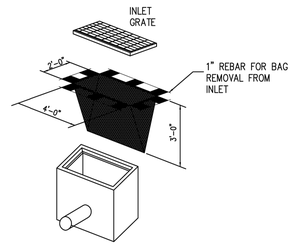
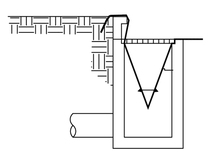
S58 INLET PROTECTION – FABRIC DROP



ISOMETRIC VIEW



INSTALLATION DETAIL

STANDARD SYMBOL

STATE OF MICHIGAN
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EROSION CONTROL DETAILS

HAFFNER NA
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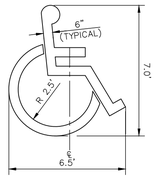
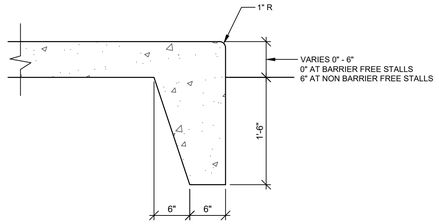
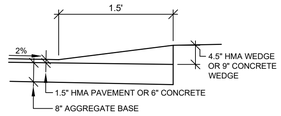


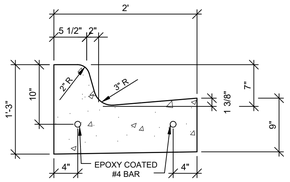
ACCESSIBLE PARKING SYMBOL
N.T.S.



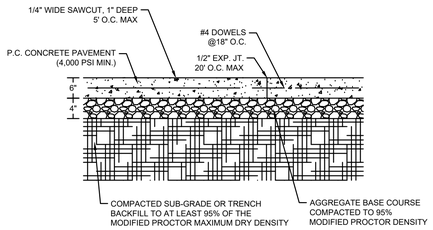
CURB & GUTTER - THICKENED SIDEWALK CURB



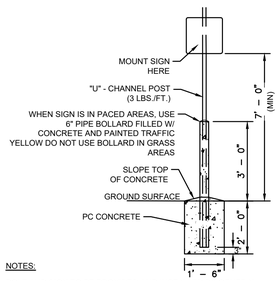
ASPHALT/CONCRETE WING CURB
SCALE: NONE



CURB & GUTTER - DETAIL C4



HEAVY DUTY
CONCRETE PAVEMENT SECTION
SCALE: NONE

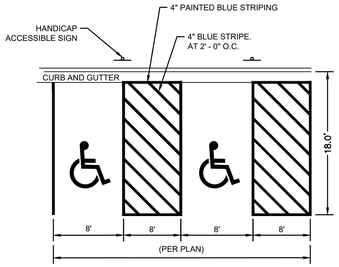


NOTES:

POLE AND SIGN TO BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR.

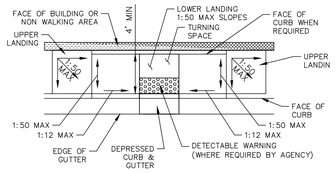
ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

STANDARD SIGN BASE
SCALE: NONE

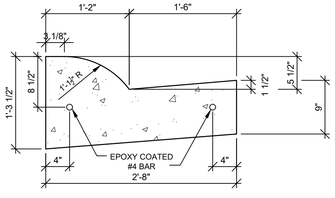


NOTE: REFER TO PLAN FOR
DETAILED LAYOUT AND DIMENSIONS

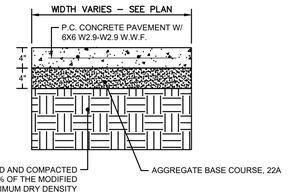
TYPICAL HANDICAP STRIPING
SCALE: NONE



PARALLEL MID-BLOCK CURB RAMP
N.T.S.



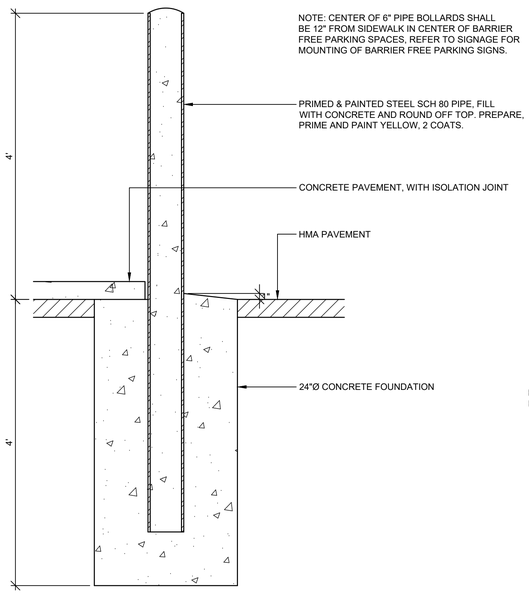
CURB & GUTTER - DETAIL B2



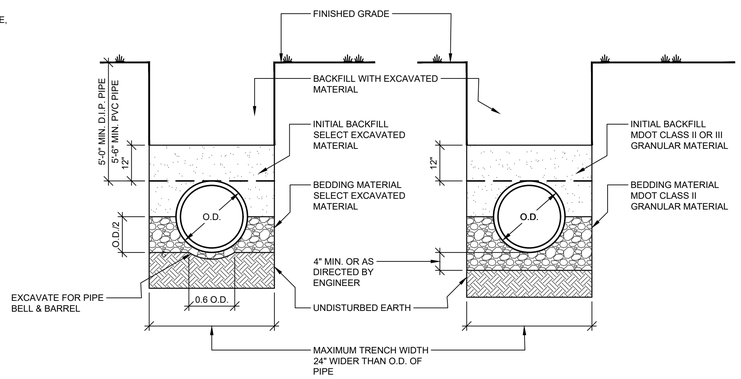
NOTES:

1. ALL SIDEWALK SHALL BE CONSTRUCTED WITH CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 14 DAYS.
2. PROVIDE 1/2" EXPANSION JOINTS AT 20', MAXIMUM, SPACING AND FILLED WITH PREMOLDED BITUMINOUS EXPANSION JOINT FILLER MATERIAL OR REDWOOD. EXPANSION JOINTS SHALL HAVE #4 DOWELS, LUBRICATED, 18" LONG, AT 12" CENTERS, 6" FROM EDGE.
3. PROVIDE 3/8" GROOVED CONTROL JOINTS AT 5' CENTERS.
4. WELDED WIRE FABRIC (6X6-6X6) SHALL BE INSTALLED THROUGH DRIVEWAYS AT 2" ABOVE SLAB BOTTOM.
5. PROVIDE 1/2" BITUMINOUS EXPANSION JOINT FILLER MATERIAL WHERE WALK ABUTS EXISTING IMPROVEMENTS AND AT ALL CHANGES IN GRADE.
6. USE 2-#4 REINFORCING BARS, 10' LONG OVER ALL UTILITY TRENCHES FOR NEW SIDEWALK AND CONNECTIONS TO EXISTING SIDEWALK.
7. AT DRIVE APPROACHES, SIDEWALK PCC AND BASE THICKNESS SHALL MATCH THAT OF THE DRIVE.

CONCRETE SIDEWALK
SCALE: NONE

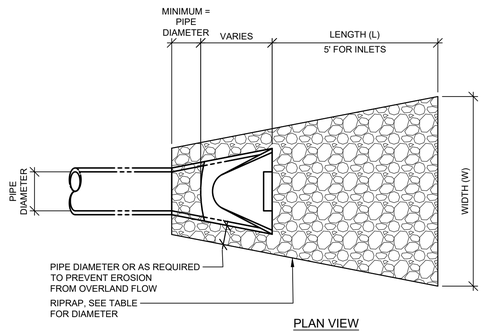


PIPE BOLLARD DETAIL
NO SCALE

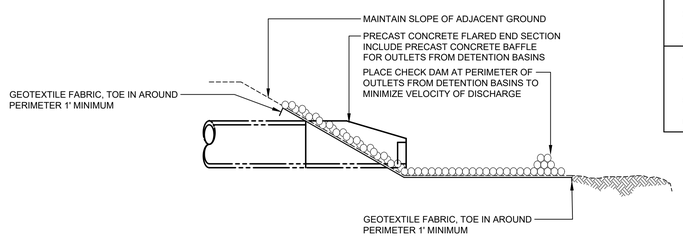


TRENCH DETAIL
IN SUITABLE SOIL

TRENCH DETAIL
IN UNSUITABLE SOIL



PLAN VIEW



SECTION VIEW

TYPICAL END SECTION DETAIL
SCALE: NONE

RIPRAP TABLE			
PIPE DIA	LENGTH (FT)	WIDTH (FT)	RIPRAP Ø (IN)
12" 15" 18"	5'	8'	8" - 16" (PLAIN)
24" 30" 36"	10'	14'	8" - 16" (PLAIN)
42" 48" 54" 60"	15'	20'	GREATER THAN 16" (HEAVY)

No.	REVISIONS	DATE	BY
1.	PER CITY OF PROTAGE REVIEW COMMENTS	01/10/2024	OSW

MITTEN STATE ENGINEERING
ADDRESS:
10123 S M43, SUITE A
DELTON, MI 49046
PHONE:
(269) 364-5626

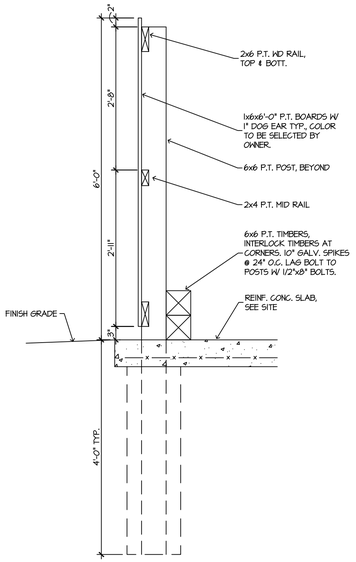
SCALE: AS NOTED
DESIGNED BY: DMP
DRAWN BY: CRZ
CHECKED BY: TWC

- PRELIMINARY - NOT FOR CONSTRUCTION

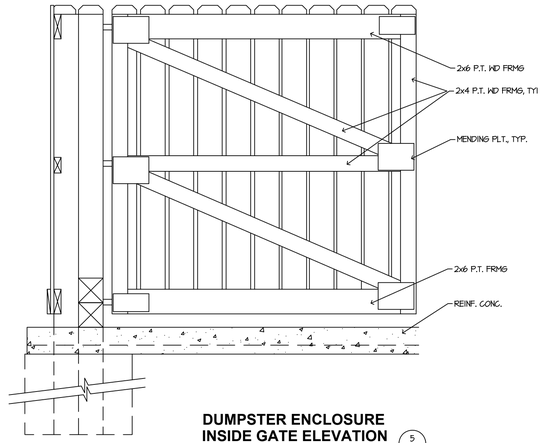
CONSTRUCTION DETAILS

HAFFNER NA
PORTAGE, MI

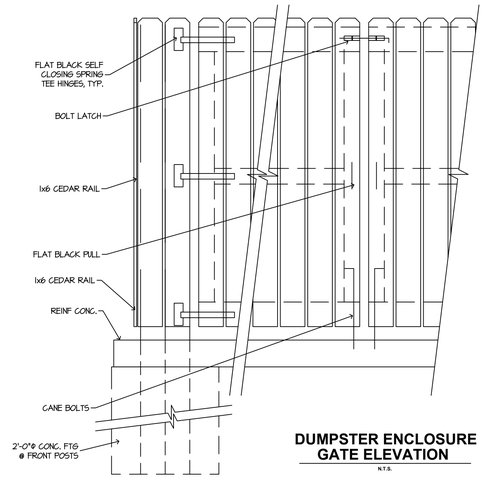
ORIGINAL ISSUE:
10/14/2024
PROJECT NO.
24028
SHEET NUMBER
C106A



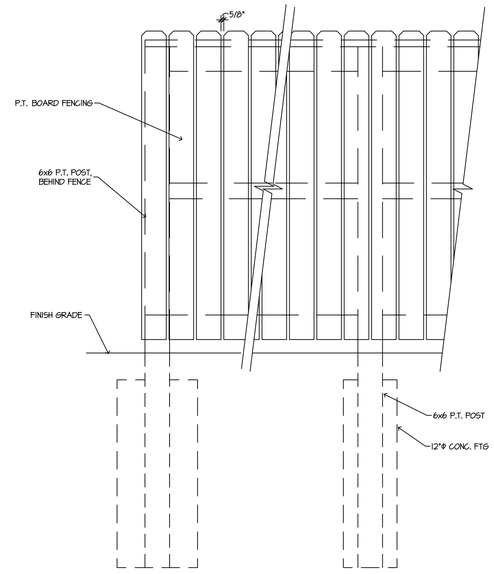
DUMPSTER ENCLOSURE BOLLARD SECTION (2)
N.T.S.



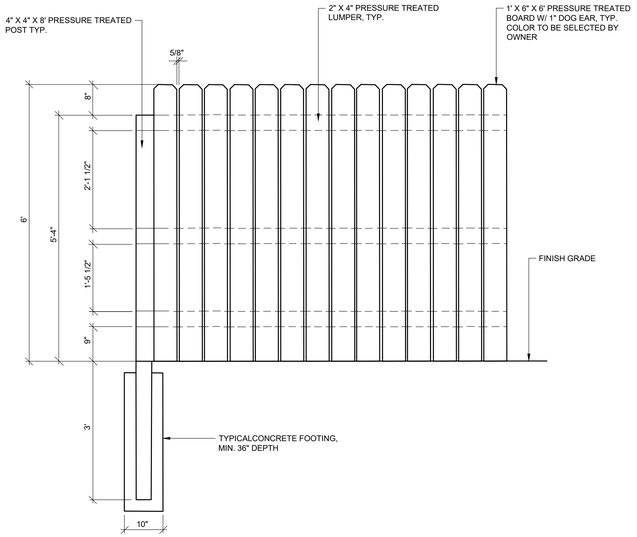
DUMPSTER ENCLOSURE INSIDE GATE ELEVATION (5)
N.T.S.



DUMPSTER ENCLOSURE GATE ELEVATION (4)
N.T.S.



DUMPSTER ENCLOSURE FENCE ELEVATION (3)
N.T.S.



WOOD SCREEN FENCE DETAIL
SCALE: 3/4" = 1'-0"

NOTES:

THE WOOD SCREEN FENCE FOR DUMPSTER ENCLOSURE SHALL BE CONSTRUCTED WITH FENCING MATERIALS SUCH THAT THE FINISHED OR 'FLUSH' SIDE OF THE FENCING FACES OUTWARD, TOWARD THE RESIDENTIAL AREA. ALL STRUCTURAL SUPPORTS, FRAMING, AND HARDWARE MUST BE LOCATED ON THE INTERIOR SIDE OF THE ENCLOSURE, ENSURING A VISUALLY APPEALING APPEARANCE FOR NEIGHBORING PROPERTIES.

No.	REVISIONS	DATE	BY
1.	PER CITY OF PROTAGE REVIEW COMMENTS	01/10/2024	OSW

MITTEN STATE ENGINEERING
ADDRESS:
10123 S M43, SUITE A
DELTON, MI 49046
PHONE:
(269) 364-5626

SCALE: AS NOTED
DESIGNED BY: DMP
DRAWN BY: CRZ
CHECKED BY: TWC

- PRELIMINARY -
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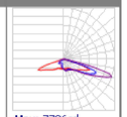
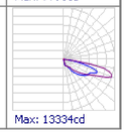
CONSTRUCTION DETAILS

HAFFNER NA
PORTAGE, MI

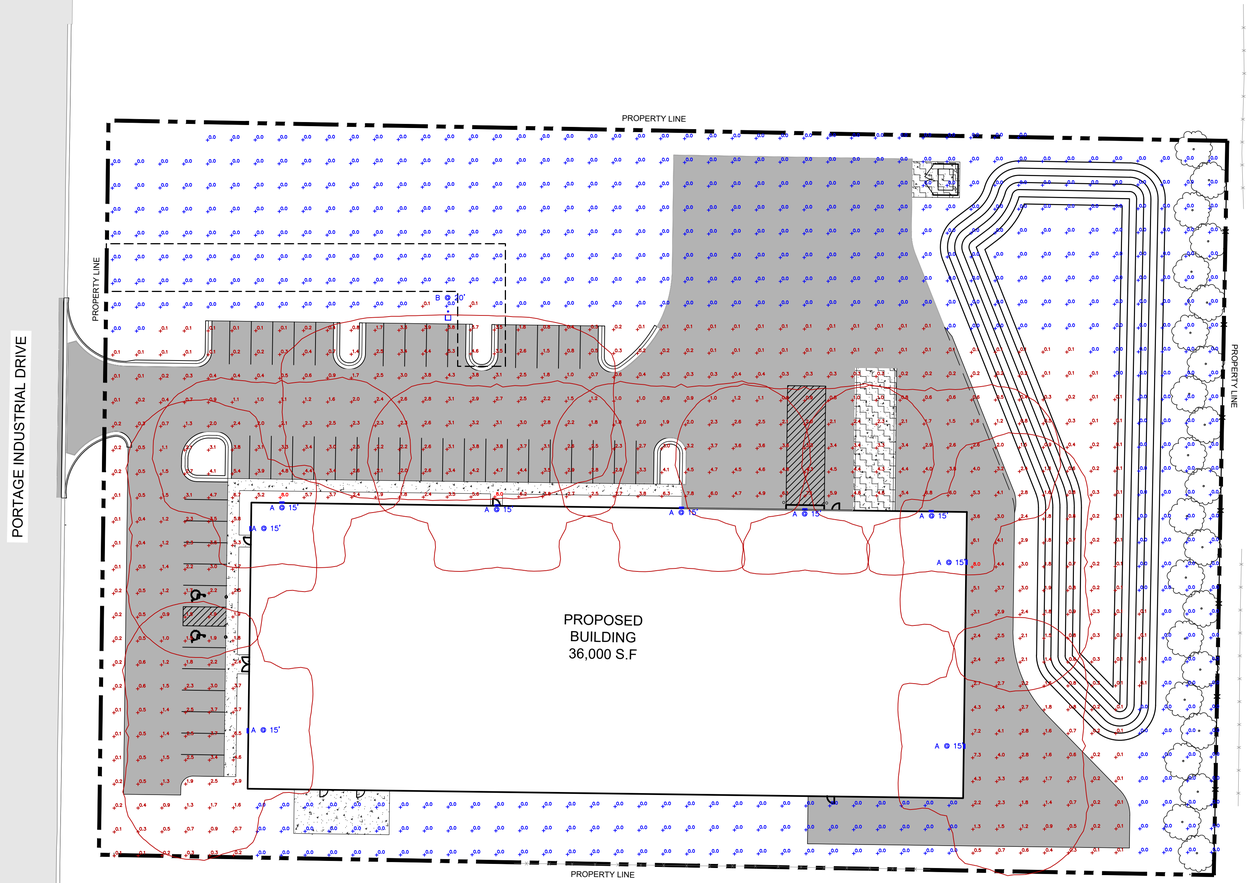
ORIGINAL ISSUE: 10/14/2024
PROJECT NO. 24028
SHEET NUMBER
C106B

Schedule

Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
▭	A		9	Lithonia Lighting	DSXW2 LED 30C 1000 40K T4M MVOLT	DSXW2 LED WITH 3 LIGHT ENGINES, 30 LED's, 1000mA DRIVER, 4000K LED, TYPE 4 MEDIUM OPTIC	1	11129	1	109	 Max: 7796cd
▫	B		1	Lithonia Lighting	DSX1 LED P6 40K 80CRI BLC4	D-Series Size 1 Area Luminaire P6 Performance Package 4000K CCT 80 CRI Type 4 Extreme Backlight Control	1	14158	1	165.25	 Max: 13334cd

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	0.9 fc	8.0 fc	0.0 fc	N/A	N/A



N

0 30 45 60

1 inch = 30 ft.

No.	REVISIONS	DATE	BY
1.	PER CITY OF PROTAGE REVIEW COMMENTS	01/10/2024	OSW

MITTEN STATE ENGINEERING

ADDRESS:
10123 S M43, SUITE A
DELTON, MI 49046

PHONE:
(269) 364-5626

SCALE: AS NOTED
DESIGNED BY: DMP
DRAWN BY: CRZ
CHECKED BY: TWC

- PRELIMINARY -
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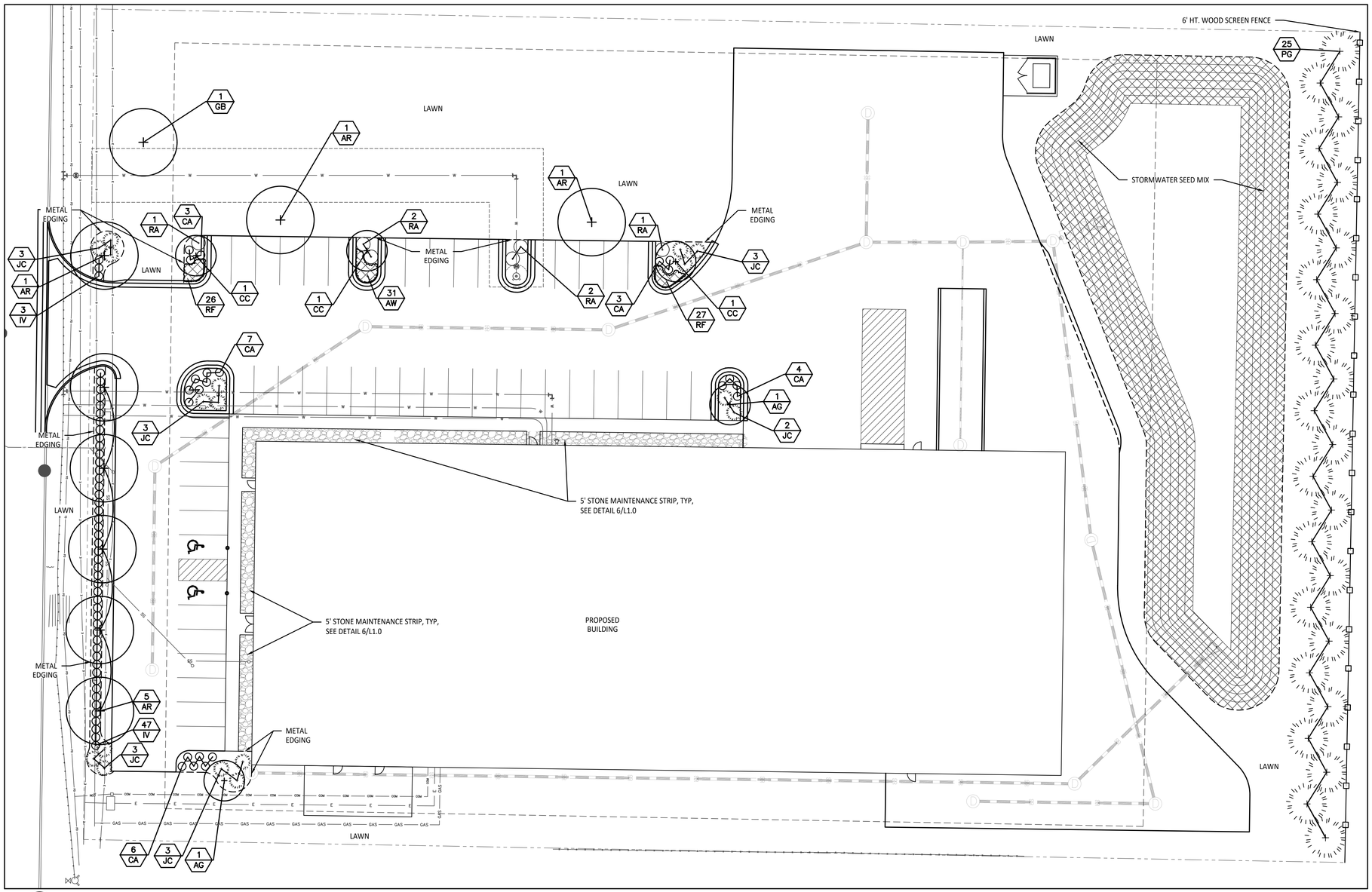
PHOTOMETRIC PLAN

HAFFNER NA
PORTAGE, MI

ORIGINAL ISSUE:
10/14/2024

PROJECT NO.
24028

SHEET NUMBER
PH101



1 Landscape Plan
1" = 20'

LANDSCAPE NOTES:

1. SURVEY OF EXISTING CONDITIONS PROVIDED BY MITTEN STATE ENGINEERING.
2. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING WORK. 72 HOURS BEFORE YOU DIG CALL "MISS DIG" AT 1-800-482-7171. ANY UTILITIES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
3. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE CONSTRUCTION MANAGER IMMEDIATELY FOR RESOLUTION.
4. IN AREAS OF NEW TURF PLACE 4" MINIMUM TOPSOIL, FINE GRADE & ESTABLISH TURF WITHIN SEED LIMIT LINES.
5. PLACE SHREDDED HARDWOOD MULCH TO A 3" DEPTH IN ALL TREE & SHRUB BEDS & TO A 2" DEPTH IN ALL GROUND COVER BEDS.
6. UNLESS OTHERWISE NOTED, TOPSOIL, FINE GRADE AND SEED ALL DISTURBED AREAS WITHIN THE SEEDING LIMIT SHOWN AND AREAS DISTURBED BY CONSTRUCTION.
7. REPAIR AND RESTORE ANY DAMAGE OUTSIDE OF LIMIT OF WORK LINE TO ORIGINAL CONDITION.
8. PROTECT ALL TREES AND EXISTING FEATURES TO REMAIN AS SPECIFIED.
9. ALL TOPSOIL AND EXCESS FILL MATERIAL SHALL BE STOCKPILED ON SITE SEPARATELY FOR LATER RE-USE. LOCATE STOCKPILES IN AREAS AS DIRECTED BY CONSTRUCTION MANAGER AND PROTECT FROM EFFECTS OF EROSION.
10. ALL NURSERY STOCK SHALL BE TRUE TO TYPE AND NAME. ALL STOCK SHALL BE FIRST CLASS QUALITY WITH WELL DEVELOPED BRANCH SYSTEMS AND VIGOROUS HEALTHY ROOT SYSTEMS. ALL STOCK SHALL BE WELL FORMED AND THE TRUNKS OF TREES SHALL BE UNIFORM AND STRAIGHT.
11. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR IRRIGATION SCHEDULING FOR THE ENTIRE MAINTENANCE PERIOD UNLESS OTHERWISE NOTED.
12. CONTRACTOR RESPONSIBLE TO LOCATE SITE LIGHTING SERVICES. CONTRACTOR RESPONSIBLE TO NOTIFY CONSTRUCTION MANAGER IF DAMAGE TO LIGHTING ELECTRICAL DISTRIBUTION OCCURS.
13. ALL AREAS OF TREE CLEARING SHALL BE STAKED FOR ARCHITECTS APPROVAL PRIOR TO CLEARING.
14. UNLESS OTHERWISE SPECIFIED, ALL PERENNIALS, GRASSES AND GROUNDCOVERS SHALL BE GROWN IN THEIR CONTAINER FOR ONE YEAR PRIOR TO INSTALLATION.

PROPOSED FEATURES LEGEND:

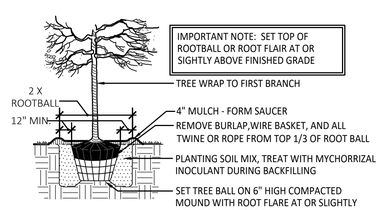
SYMBOL	DESCRIPTION	DETAIL
+	PROPOSED DECIDUOUS TREE	2 / L1.0
+	PROPOSED EVERGREEN TREE	7 / L1.0
	PROPOSED SHRUB	3/ L1.0
	PROPOSED GROUNDCOVER AND/OR PERENNIALS	5/ L1.0
	STONE MAINTENANCE STRIP	6/ L1.0
	PROPOSED BED LINE/ METAL EDGING	4 / L1.0
	PROPERTY LINE	
6 Bn	PLANT TAG- REFERS TO TYPE AND NUMBER OF PLANTINGS TO BE PROVIDED AND MAINTAINED BY CONTRACTOR.	

Perimeter Landscaping		
Unit	Req.	Provided
Tree	1/30LF = (199/30) 6.6	7
Shrub	36" ht screen	PROVIDED

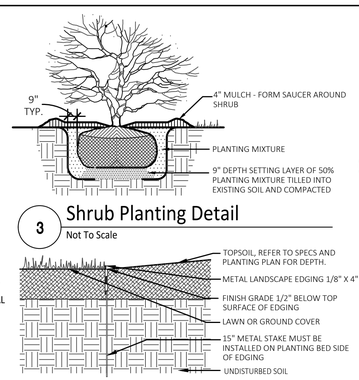
Interior Parking Lot - JUST PARKING AREA		
Total	1sf LS: 15sf PK	996
Tree	1/150sf	7

PLANT LIST:

	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	NOTES	QTY	NOTES
TREES	AG	Amelanchier x grandiflora 'Robin Hill'	Robin Hill Serviceberry	2.5" CAL.	B&B	15' O.C. MIN.	NATIVAR	2	
	GB	Ginkgo biloba	Ginkgo (Male)	2.5" CAL.	B&B	15' O.C. MIN.	NON-NATIVE	1	
	CC	Carpinus caroliniana	Hornbeam	2.5" CAL.	B&B	15' O.C. MIN.	NATIVAR	3	
	AR	Acer rubrum 'October Glory'	October Glory Red maple	2.5" CAL	B&B	15' O.C. MIN.	NATIVAR	8	
EVERGREEN TREES	PG	Picea glauca var. densata	Black Hills Spruce	8' HT.	B&B	14' O.C. MIN.	NATIVAR	25	
SHRUBS	IV	Ilex verticillata	Michigan Holly	#3	CONT.	PER PLANS	NATIVAR	50	36" HT. MIN.
	CA	Ceanothus americanus	New Jersey Tea	#3	CONT.	PER PLANS	NATIVAR	23	
	JC	Juniperus chinensis ' Sea Green'	Sea Green Juniper	#3	CONT.	PER PLANS	NON NATIVE	17	36" HT. MIN.
	RA	Rhus aromatica 'Gro-low'	Gro-Low Fragrant Sumac	#3	CONT.	PER PLANS	NATIVAR	6	
PERENNIALS	RF	Rudbeckia fulgida 'Little Goldstar'	Little Goldstar Orange Coneflower	#1	CONT.	18" O.C.	NATIVAR	31	
	AW	Aster 'Wood's Light Blue'	Woods Light Blue Aster	#1	CONT.	18" O.C.	NATIVAR	53	

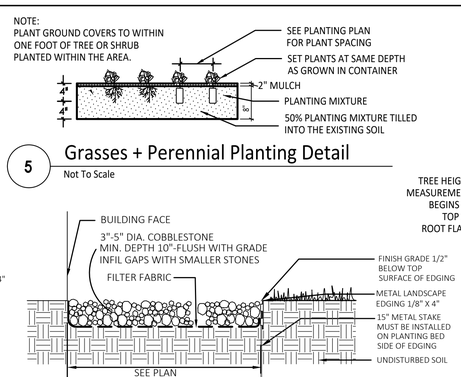


2 Deciduous Tree Planting Detail
Not To Scale



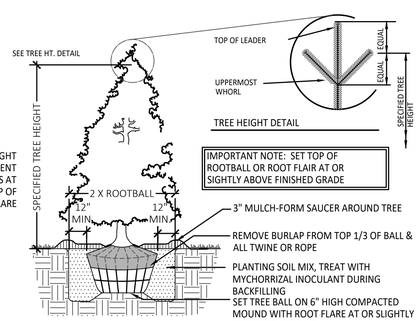
3 Shrub Planting Detail
Not To Scale

4 Metal Edging Detail
Not To Scale



5 Grasses + Perennial Planting Detail
Not To Scale

6 Stone Maintenance Strip Detail
Not To Scale



7 Evergreen Planting Detail
Not To Scale

OCBA LANDSCAPE ARCHITECTS
350 East Michigan Avenue Suite #415
Kalamazoo Michigan 49007
Phone (269) 381-3357
Fax (269) 381-2944

Landscape Architecture
Urban Planning
Parks & Recreation
Campus & Institutional Planning
Camp Planning & Design

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Issued For:	Date
SITE PLAN REVIEW	1-9-25

Project:

8935 Portage Industrial Drive

Portage, MI

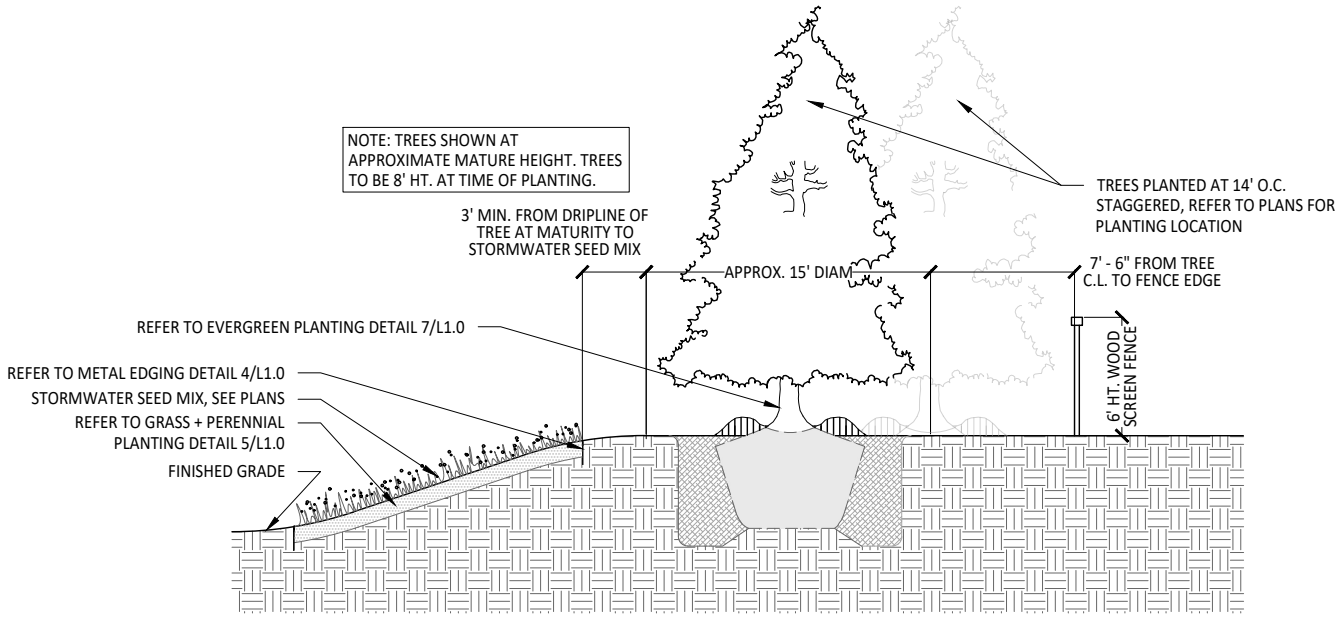
Sheet Title

Landscape Plan

20 40 60
North
SCALE IN FEET

Job No. 22424

Sheet No. L1.0



OCBA LANDSCAPE ARCHITECTS

SHEET TITLE:	RESIDENTIAL SCREENING SECTION
PROJECT:	8935 PORTAGE INDUSTRIAL DRIVE
DATE: 11.14.2024	SKETCH NO.: C1

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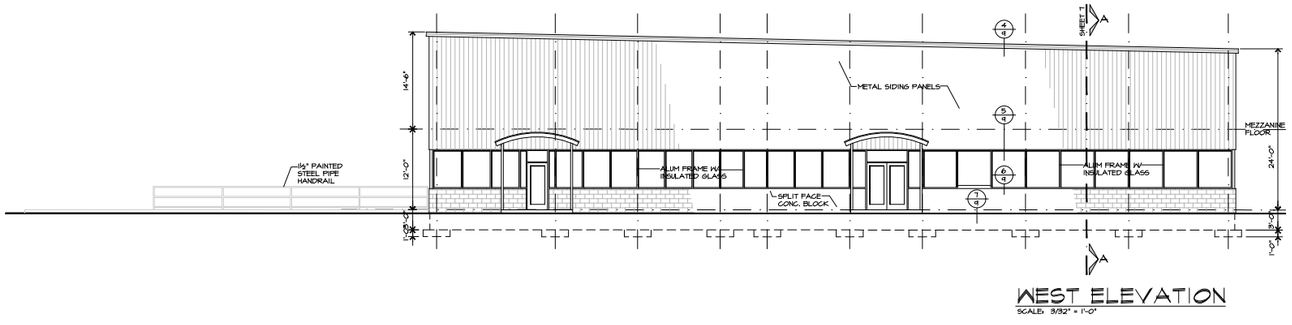
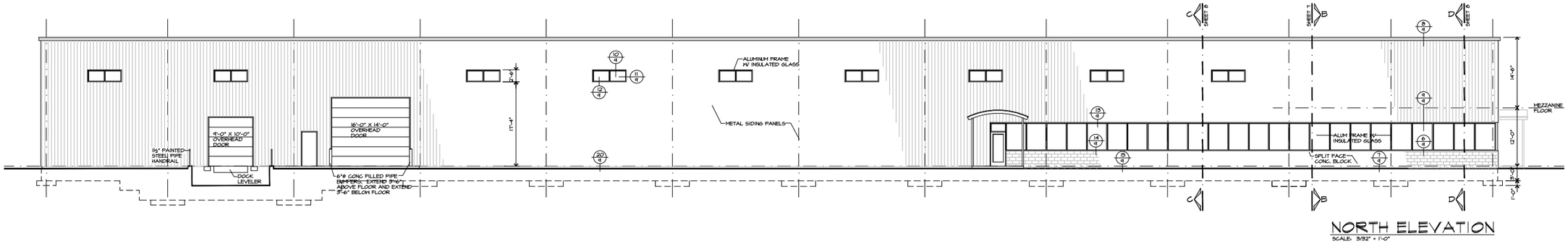
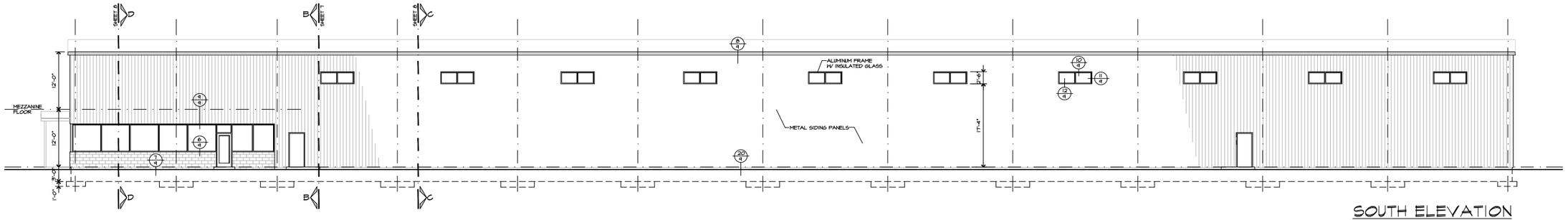
SCALE: 1"=10'



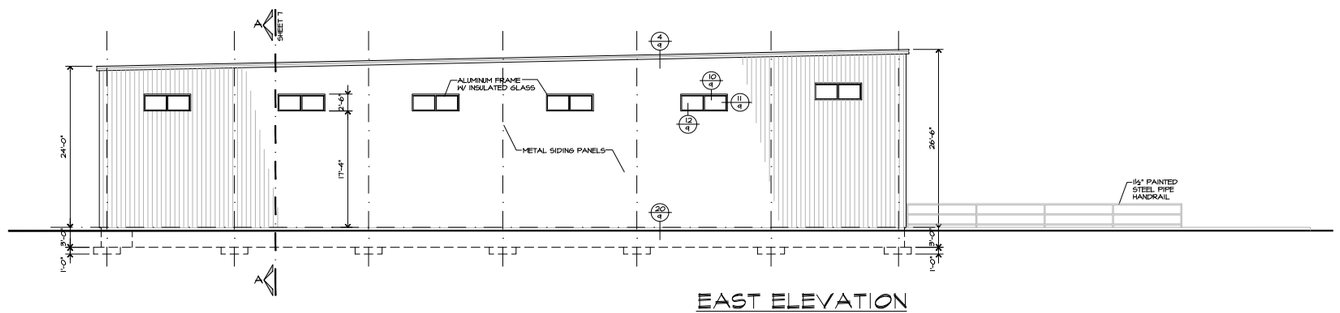
WEST ELEVATION
SCALE: 3/32" = 1'-0"



NORTH ELEVATION
SCALE: 3/32" = 1'-0"



SOUTH ELEVATION
SCALE: 3/32" = 1'-0"



EAST ELEVATION
SCALE: 3/32" = 1'-0"

Cornerstone
Construction ■ Management Inc.

NEW FACILITY FOR:
HAFFNER NA
8935 PORTAGE INDUSTRIAL DRIVE
PORTAGE, MICHIGAN

EXTERIOR ELEVATIONS

HOWARD L. OVERBEEK
ARCHITECT, P.C.

198 EAST CENTRE
PORTAGE, MICHIGAN

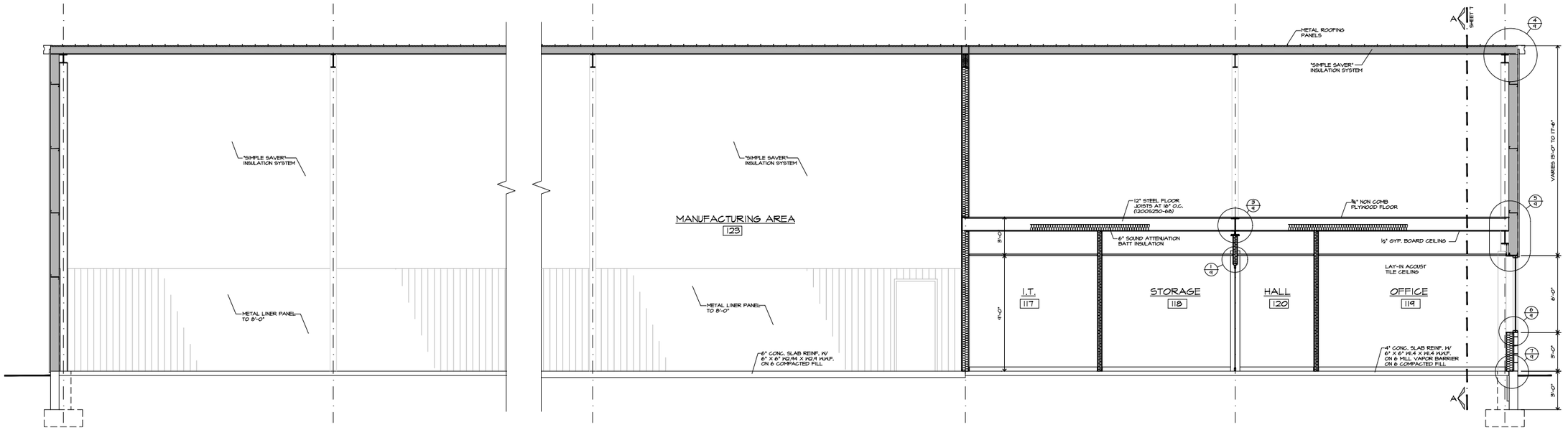
PHONE (616) 323-2422
FAX (616) 323-2440

PROJECT NO.
2327

DATE
10/16/24

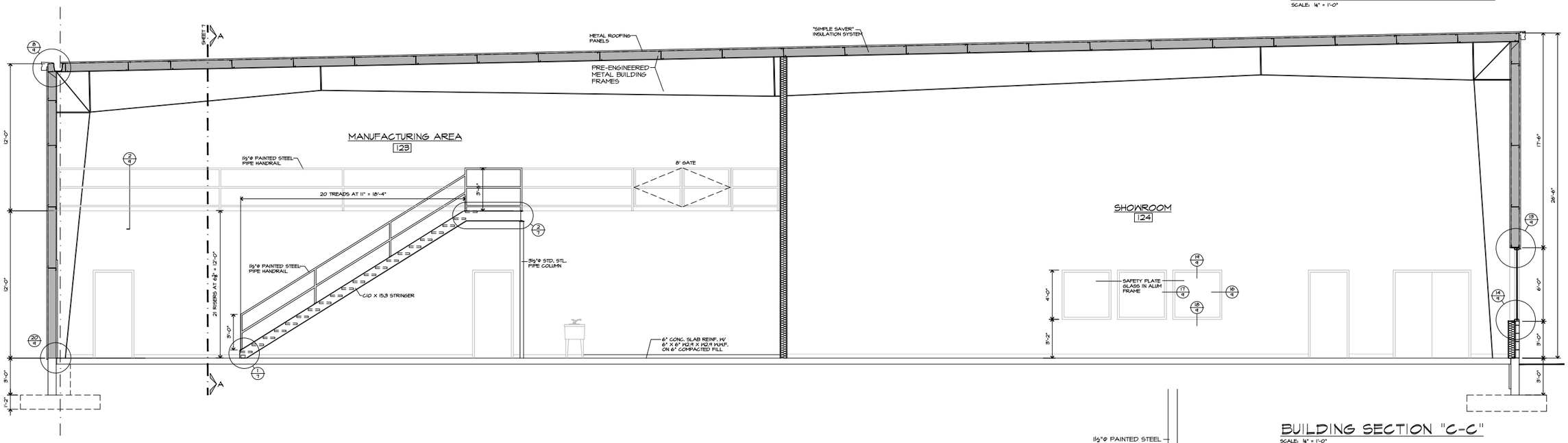
REVISION

SHEET
6



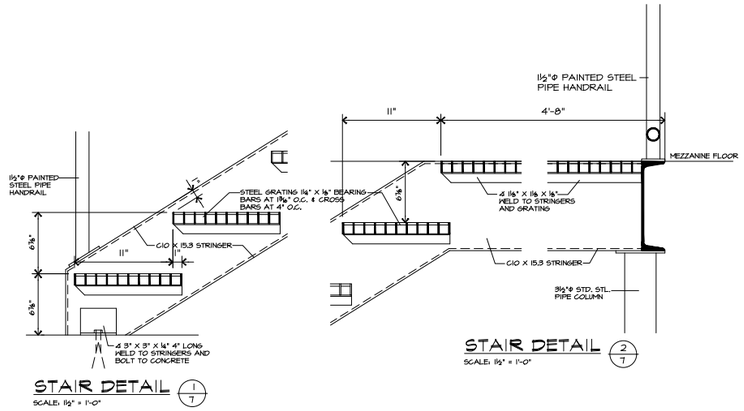
BUILDING SECTION "A-A"

SCALE: ¼" = 1'-0"



BUILDING SECTION "C-C"

SCALE: ¼" = 1'-0"



STAIR DETAIL 1/7

SCALE: 1½" = 1'-0"

STAIR DETAIL 2/7

SCALE: 1½" = 1'-0"

Cornerstone
Construction ■ Management Inc.

NEW FACILITY FOR:
HAFFNER NA
8935 PORTAGE INDUSTRIAL DRIVE
PORTAGE, MICHIGAN

EXTERIOR ELEVATIONS

HOWARD L. OVERBEEK ARCHITECT, P.C.

198 EAST CENTRE PORTAGE, MICHIGAN

PHONE (616) 323-2422
FAX (616) 323-2440

PROJECT NO.
2327

DATE
10/16/24

REVISION

SHEET
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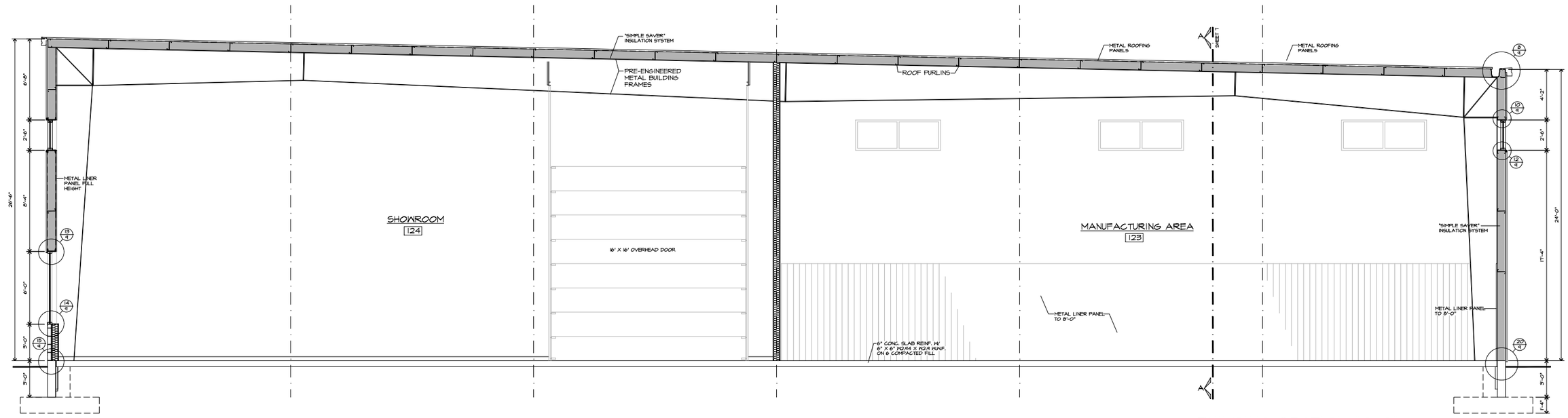
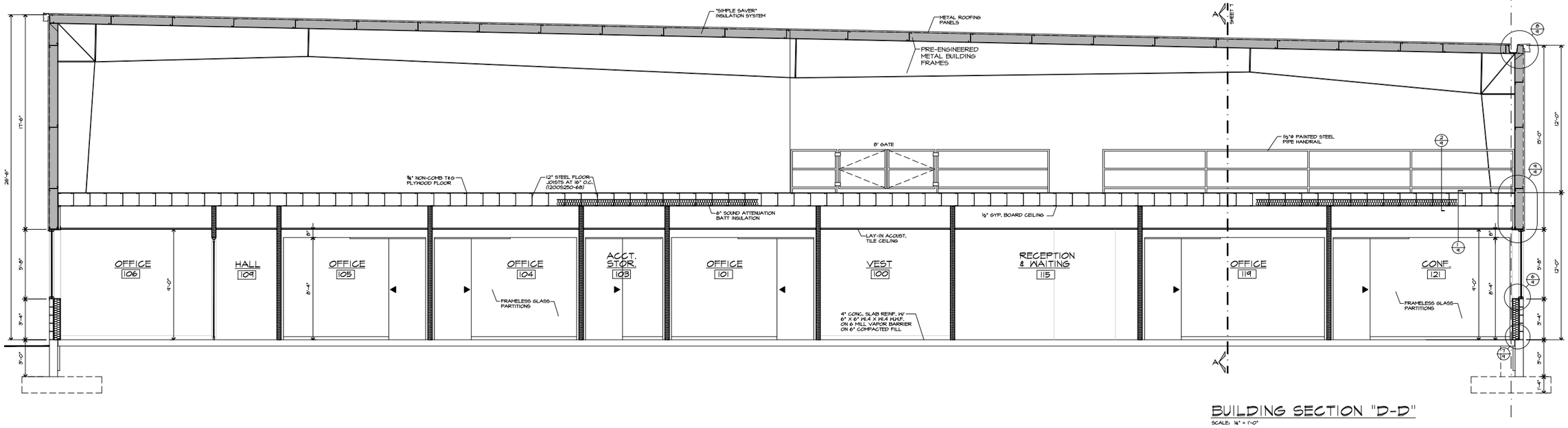


BUILDING SECTION "C-C"

SCALE: 1/4" = 1'-0"



BUILDING SECTION "D-D"

SCALE: 1/4" = 1'-0"

Cornerstone
Construction ■ Management Inc.

NEW FACILITY FOR:
HAFFNER NA
8935 PORTAGE INDUSTRIAL DRIVE
PORTAGE, MICHIGAN

EXTERIOR ELEVATIONS

HOWARD L. OVERBEEK
ARCHITECT, P.C.

198 EAST CENTRE
PORTAGE, MICHIGAN

PHONE (616) 323-2422
FAX (616) 323-2440

PROJECT NO.
2327

DATE
10/16/24

REVISION

SHEET
8

Dear Neighbor,

We hope this letter finds you well. We are writing to inform you about our proposed industrial development on the property located at 8935 Portage Industrial Drive, which is adjacent to your neighborhood. As part of this project, we are seeking a variance from the City regarding the landscape buffer between our development and the residential area.

The City ordinance requires a 50-foot-wide berm to act as a buffer between industrial and residential properties. However, we are requesting approval for an alternative solution: a double row of evergreen trees combined with a 6-foot-tall wooden screen fence. We believe this approach offers several advantages over a traditional berm:

1. **Enhanced Visual Appeal:** The evergreen trees provide year-round greenery and natural beauty, creating a more visually pleasing boundary compared to a large berm.
2. **Space Efficiency**: A berm would require significantly more land, while our proposed solution allows for better utilization of space without compromising the buffer's effectiveness.
3. **Potential Sound Mitigation:** Evergreen trees and the wooden fence may help reduce noise levels by acting as natural sound barriers, contributing to a quieter environment for residents.
4. **Faster Implementation:** The tree and fence combination can be installed more quickly than constructing a berm, minimizing disruption during the development process.
5. **Environmental Benefits:** Trees provide environmental benefits such as improved air quality and habitat for local wildlife.

We value your feedback and want to ensure that our plans align with the community's needs and preferences. If you have any concerns or would like to discuss this proposal further, please don't hesitate to contact us.

If you are not opposed to this requested variance, we would greatly appreciate your support. Please sign below to indicate your agreement:

Acknowledgment o Support or Proposed Variance

Name: NANCY ADAMS

Address: 8912 Dolphin

Signature: Nancy Adams

Date: 1/25/2025

Thank you for taking the time to consider this proposal. Your input is important to us, and we look forward to working together to ensure a positive outcome for everyone involved.

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If you are not opposed to this requested variance, we would greatly appreciate your support. Please sign below to indicate your agreement:

Acknowledgment o Support or Proposed Variance

Name: James Harrington

Address: 8918 DOLPHIN ST - Portage, Mi

Signature: James J. Harrington

Date: 01/25/2025

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If you are not opposed to this requested variance, we would greatly appreciate your support. Please sign below to indicate your agreement:

Acknowledgment of Support for Proposed Variance

Name: Gordon Willis

Address: 8904

Signature: Gordon J. Willis

Date: 1/25/25

Thank you for taking the time to consider this proposal. Your input is important to us, and we look forward to working together to ensure a positive outcome for everyone involved.

Site Pictures

January 23, 2025

Taken By City Staff

Figure 1: Looking east at wood fence screening on back of 8601 Portage Industrial Dr. Building in background is house at 8606 Dolphin St.

Figure 2: Looking east at a tree screening on back of 8661 Portage Industrial Dr. Building in background is house at 8630 Dolphin St.

Figure 3: Looking east at a double row of trees screening on back of 8785 Portage Industrial Dr. Homes behind trees (7828 and 8744 Dolphine St) are not visible.

Figure 4: Looking east past fence on back of 8975 Portage Industrial Dr. Home in background is located at 8938 Dolphin St.

Map No.	Address	Company Name	Year Built	Screening	Screening Type
1	8601, 8631 Portage Industrial Dr	Liberty Molds	1968, exp. '96	Yes	6' tall wood fence
2	8661 Portage Industrial Dr	Quality Air Heating & Cooling	2008	Yes	Mix of evergreen trees + fence
3	8701 Portage Industrial Dr	Granite Works	1995	Yes	Earthen berm 8' + rows of evergreen trees
4	8721 Portage Industrial Dr	Vandenberg Furniture Warehouse	2004	Yes	Preserve existing trees for screening
5	8785 Portage Industrial Dr	The Printed Event	1999	Yes	Double row blue spruce 8' tall
6	8975 Portage Industrial Dr	J&J Lawn Landscaping Services	1974	No	N/A