SUPERIOR CHARTER TOWNSHIP PLANNING COMMISSION
SUPERIOR TOWNSHIP HALL
3040 N. PROSPECT, SUPERIOR TOWNSHIP, MI 48198
AGENDA
April 22, 2026 - 7:00 PM

1. CALL TO ORDER
2. ROLL CALL
3. DETERMINATION OF QUORUM
4. ADOPTION OF AGENDA
5. APPROVAL OF MINUTES
   A. Approval of the March 25, 2026, Regular Meeting Minutes
6. CITIZEN PARTICIPATION
7. CORRESPONDENCE
8. PUBLIC HEARINGS, DELIBERATIONS AND ACTIONS
   A. STPC #26-01 Area Plan Petition and Rezoning – Timber Creek Flats (PC District)
   B. STPC #25-09 Area Plan Amendment – Clay Hill Farm and Market (PC District)
   C. Zoning Ordinance Amendment: Energy Systems and Facilities Regulations
9. REPORTS
   A. March Planning & Zoning Report to the Board of Trustees
10. OLD BUSINESS
    A. Zoning Ordinance Amendment: Security Cameras for Multiple-Family and Commercial Properties
11. NEW BUSINESS
12. POLIY DISCUSSION
13. ADJOURNMENT

Thomas Brennan III, Commission Secretary
Michelle Marin, Planning & Zoning Administrator
3040 N. Prospect, Ypsilanti, MI 48198
734-482-6099

SUPERIOR CHARTER TOWNSHIP

Planning Commission
Regular Meeting Minutes - DRAFT
March 25, 2026, 7:00 PM
Township Hall - 3040 North Prospect
Superior Township, MI 48198

1. CALL TO ORDER

Vice Chair Steele called the regular meeting to order at 7:00 p.m.

2. ROLL CALL

Present: Dr. Robert Steele, Vice Chair
Patrick McGill
Nahid Sanii-Yahyai
Curt Wolf
Thomas Brennan, Secretary

Absent: Jay Gardner, Chair
Brenda McKinney, Board Representative

Also Present: Planning Consultant – Michelle Marin, Carlisle Wortman Associates
Engineering Consultant – George Tsakoff and Mariah Cummings, OHM

3. DETERMINATION OF QUORUM

A quorum was present.

4. ADOPTION OF AGENDA

MOTION by Sanii-Yahyai, supported by Wolf, to adopt the March 25, 2026, agenda as amended.

Motion passed unanimously by voice vote.

5. APPROVAL OF MEETING MINUTES

MOTION by Brennan, supported by Sanii-Yahyai, to adopt the February 25, 2026, regular meeting minutes as amended.

Motion passed unanimously by voice vote.

6. CITIZEN PARTICIPATION

Julie Spellman of 1866 Golden Lane presented a statement of opposition to the Prospect Pointe South Development, submitted by the Lakeview Estates Condo Board and Residents and Prospect Park and Prospect Woods Homeowners Association Boards and Residents. Concerns include the applicant's disingenuous presentation to 4 members of the board, stormwater management deficiencies, safety and access, traffic capacity, incompatible housing, and landscaping issues.

Erik Mattila with Lakeview Estates expressed concerns with the detention basin and stormwater management systems.

Donna Russell of 8401 Lakeview Court expressed concerns about the scheduled maintenance needs of the retention basin referenced on the area plan.

Jan Olrich of 8304 Lakeview Drive described the existing function of Lakeview Drive which functions as a private road, despite being a public road. They indicated that the breakaway gate being removed is a concern, as the existing portion of Lakeview Drive is not constructed to support more traffic.

Tracey Melody of 1795 Sheffield expressed concerns about the extension of Lakeview Drive, specifically the lack of sidewalks and blind, sharp curve. She mentioned the width of Berkshire Drive cannot support driveways on the south side.

Susan Kellermier of Lakeview Estates expressed concerns regarding the increased traffic and mentions that the plan does not address this. She referenced the Geddes Road Corridor Study of 2005 and a traffic impact study from 2025 that indicates infrastructure improvements are required near Prospect and Geddes.

Nannette Perrine of 8083 Park Lane referenced the incompatible density/housing style.

Gayle Glazier-Sinkowski of spoke of the landscape barriers between the development and the surrounding communities. Gayle mentioned the impact to the natural resources of the area, particularly the mature trees. She expressed concerns of the Prospect Pointe South residents cutting through the Golden/Park Lane neighborhood.

Paula Dean of 1650 Golden Lane expressed concerns of the power grid's ability to support the proposed homes. She referenced recurring outages and infrastructure strain.

Lynne Rose of 1931 Sheffield Drive summarized the comments made by the preceding speakers.

Brooke Radcliff of 8413 Lakeview Court urged the neighbors in the room to engage in a letter writing combine to the CEO of M/I Homes.

Ed High of 1679 Golden Lane, closest to unit 6. Ed mentioned that the area near his yard floods during rains. He mentioned that the storm drain is inadequate and that the fire department indicated another drain is needed near his lot. He expressed that lots 5, 6, and 7 of the proposed development will be swamps during the rain. Ed also indicated that the traffic on Geddes and Prospect will be exacerbated by the development.

Kevin Pratt of 8364 Lakeview Drive discussed the narrow Lakeview Drive and indicated 2 entrances on Prospect should be required.

7. CORRESPONDANCE

MOTION by Brennan, supported by Wolf, to accept the correspondence from Ann Abor Township regarding the Master Plan Adoption and the 2005 Geddes Road Corridor Study.

Motion passed unanimously by voice vote.

8. PUBLIC HEARINGS, DELIBERATIONS AND ACTIONS

None.

9. REPORTS

Marin summarized the February Planning & Zoning Report to the Board.

Motion by Brennan, Support by McGill

10. OLD BUSINESS

A. STPC #25-05 Area Plan Petition and Rezoning – Prospect Pointe South (PC and R4 Districts)

Marin summarized the planners' report and the major changes since the last plan.

Commissioner Wolf grouped the concerns expressed by the public. Wolf indicated what regulations and rules apply to the different issues.

McGill asked about the previous area plan, including the number of units.

Tsakoff of OHM Advisors summarized the main items in the report, including water, stormwater retention, soil erosion, and traffic. He discussed the process of approval, including outside agency approvals. Retention basin provides extra redundancies with flooding, but ultimately the developer has to meet the Water Resources Commission standards. Certification is required prior to final site plan approval. He clarified points of his report that were misinterpreted by some members of the public. Tsakoff indicated that the new plan indicates 3 lanes on Prospect Road.

Steele mentioned the findings of the 2005 Geddes Road Corridor Study and how the major roads were projected to be much wider than what is currently in place.

Brad Botham of M/I Homes presented the evolution of the Prospect Pointe South project, including the new net density of 2.12 units/acre.

Steele asked the applicant about the location of the conservation easement and the clearing limits of the site.

The Commissioners discussed the different concerns expressed by the public, including traffic, safety, the housing type, etc. There was discussion of the County Road Commission approval process and the full site plan approval process, including future engineering details. Wolf emphasized that the Planning Commission does not have authority over the roads. The Commission is directing staff to communicate the concerns raised by the public regarding safety to the Washtenaw County Road Commission.

Motion by Wolf, Support by to adopt a resolution recommending approval to the Township Board of the rezoning and area plan petition for STPC 25-05, Prospect Pointe South.

WHEREAS, the applicant has submitted a petition for rezoning and area plan approval for STPC 25-05, Prospect Pointe South; and

WHEREAS, a public hearing was held on August 27, 2025, which was noticed in accordance with the Michigan Zoning Enabling Act, MCL 125.3101 *et seq*; and

WHEREAS, the Planning Commission has reviewed the application materials, including concept plans, supporting documentation, and public input; and

WHEREAS, the Planning Commission has considered goals and policies set forth in the Superior Township Master Plan; and

WHEREAS, the Planning Commission has considered the Area Plan petitions standards set forth in section 7.102.C of the Superior Township Zoning Ordinance; and

WHEREAS, the proposed rezoning and area plan are found to be consistent with the intent of the Master Plan and meet the standards set forth in Section 7.012.C of the Superior Township Zoning Ordinance; and

WHEREAS, the Planning Commission finds that the proposed development will not adversely impact public health, safety, and welfare, and that adequate infrastructure and services can be provided;

NOW, THEREFORE, BE IT RESOLVED that the Superior Township Planning Commission hereby recommends APPROVAL to the Township Board of the rezoning and area plan petition for STPC 25-05, Prospect Pointe South, subject to the following conditions:

1. Compliance with all applicable Township ordinances and regulations.
2. Submission of final engineering and construction plans for review and approval.
3. Provision of adequate utilities, drainage, and access as required by Township standards.
4. That the Township Board review the public input prior to making a decision.

Dr. Robert Steele: yes
Patrick McGill: yes
Nahid Sanii-Yahyai: yes
Curt Wolf: yes
Thomas Brennan: no

Motion passes by roll call vote.

11. NEW BUSINESS

None.

12. POLICY DISCUSSION

A. Zoning Ordinance Amendment: Energy Systems and Facilities Regulations

Marin summarized the proposed text amendment that would permit utility-scale energy systems. Projects of this scale are pre-empted from local control by PA 233, and developers have the option to either go to the MPSC for approval or to pursue local permitting if a municipality has adopted regulations. The

proposed regulations are not considered a Compatible Renewable Energy Ordinance but instead include additional regulations that developers may find "workable." The Planning Commission indicated that they would like to schedule a public hearing for the proposed text amendment at the next Planning Commission meeting.

B. Zoning Ordinance Amendment: Security Cameras for Multiple-Family and Commercial Properties

Marin summarized the proposed changes which would apply to new projects on multiple-family and commercial properties. The Planning Commissioners discussed the balance between privacy and security and indicated that they want to discuss this further prior to public hearing.

13. <u>ADJOURNMENT</u> – *next regularly scheduled meeting on April 22, 2026.*

MOTION by Brennan, supported by Sanii-Yahyai to adjourn the meeting.

Motion passed unanimously by voice vote.
The meeting was adjourned at 9:30 p.m.

Meeting Minutes Respectfully submitted,

Thomas Brennan III, Planning Commission Secretary
Michelle Marin, Recording Secretary
3040 N. Prospect, Ypsilanti, MI 48198, 734-482-6099

Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: April 15, 2026

Area Plan Review
For
Superior Township, Michigan

Applicant: SB Invest LP

Project Name: Timber Creek

Location: Macarthur Blvd and Wiard Road

Plan Date: February 20, 2026

Current Zoning: Area Plan PC, Planned Community

Action Requested: Area Plan Petition Approval-PC, Planned Community District

PROJECT DESCRIPTION

An application has been submitted for Area Plan amendment petition for a 260 unit, mixed residential development on 36 gross acres (26.83 net acres) on the south side of Macarthur Boulevard, just west of Wiard Road. The multiple family portion of the development includes a workforce attainable housing component. The 260-unit plan yields about 7.2 units per gross acre and 9.7 units per net acre. Access to the site is via two access points off Macarthur Boulevard.

The site is currently undeveloped and is controlled by an existing PC, Planned Community Area Plan. The site consists of woodlands, wetlands, and Bazley-Foster Drain. The applicant has arranged the site to develop around the wetlands and drain in order to maintain a significant amount of the existing natural features.

The site is currently undeveloped and is controlled by an existing PC, Planned Community Area Plan.

Benjamin R. Carlisle, *President* Douglas J. Lewan, *Executive Vice President* John L. Enos, *Vice President*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal*
Paul Montagno, *Principal,* Megan Masson-Minock, *Principal,* Laura Kreps, *Senior Associate*
Richard K. Carlisle, *Past President/Senior Principal*

Aerial Photograph



The Zoning and existing land uses for the subject site and surrounding parcels are identified in the following table:

Direction	Zoning	Existing Use
North	RC, Recreation Conservation District	Open Space, Maintenance Facility
South	C1, R4	Vacant, Church
East	R4, PSP	Open Space, Single Family Residential
West	PSP, R7	Township Park, Multiple Family

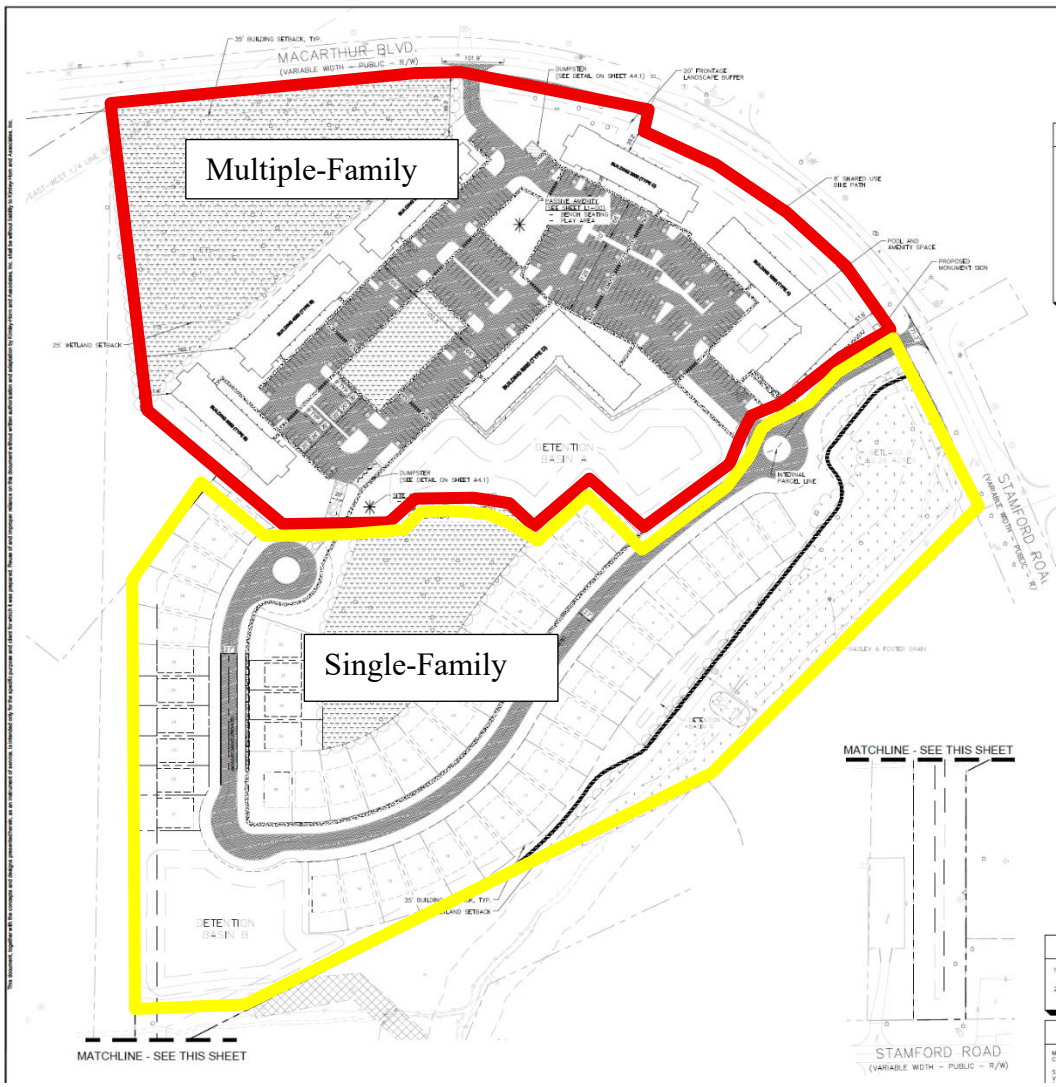
AREA PLAN

The mixed-residential portion includes a northern half of multiple family residential, and the southern portion of detached single-family residential. The unit and bedroom mix is as follows:

• Multifamily: 210 units ○ 2-Bedroom: 61 units ○ 3-Bedroom: 107 units ○ 4-Bedroom: 42 units	• Single-Family: 50 lots ○ 50 lots ○ 50’ x 120’ = 6,000 sq/ft

The concept plan reviewed by the Planning Commission in December included a mix of 46 townhome units. We found that the inclusion of the townhomes provided an additional housing component and broke up the massing of the overall development, especially as frontage McArthur Boulevard.

We encourage the reintroduction of the townhome units.



Overall layout

Timber Creek is organized as a mixed-density residential development with the multifamily component concentrated in the north/northwest portion of the site and the single-family lots arranged across the southern half. The project includes 210 attached rental units in 6 buildings plus 50 single-family lots. The apartment buildings are clustered with shared parking fields, while the detached lots are laid out along a curving neighborhood street system.

We have encouraged the applicant to orient the primary building frontage toward Macarthur Boulevard. However, the previous concept plan included townhomes along Macarthur that helped break up the building massing. The applicant should provide a visual representation showing how the building massing will appear from Macarthur Boulevard and, if necessary, revise the design to further break up the massing of the buildings fronting Macarthur. See the cover narrative and overall site plan, Sheet C2-200.

Circulation and access

The site is framed by Macarthur Boulevard along the east/northeast side and Stamford Road at the south edge. Internal circulation is organized around private drives, labeled Timber Creek Drive and Hickory Drive, with a main entry from Macarthur feeding into the development and a looped internal street network serving the single-family lots. A central feature is a roundabout that help organize traffic movement between the multifamily area and the southern neighborhood lots. The roundabout serves as both a traffic distribution/calming measure and also a nice, and unique design feature. See overall site plan, Sheet C2-200.

Open space and environmental structure

A major part of the layout is driven by preserved natural features. The narrative states that more than 33% of woodland areas are preserved, including a 1-acre interior tree preserve, and that approximately 5.5 acres of wetlands are preserved with no proposed impacts. These preserved areas create a strong open-space framework, especially through the west/central part of the site and along the eastern edge. See overall site plan, Sheet C2-200 and natural feature plan C1-01.

Natural Feature	Total Area	Encroached Area	Preserved Area	Percent Preserved
Trees/Woodland	27.04 acres	17.90 acres	9.14 acres	33.8%
Steep Slopes	4,287 sq.ft	0 sq.ft	4,287 sq.ft	100%
Wetlands	5.46 acres	0 acres	5.46 acres	100%

Trees and Woodlands

The site is heavily wooded. The tree survey inventoried approximately 1,960 trees. Species included Shagbark Hickory (328), Pignut Hickory (257), Red Oak (249), Bitternut Hickory (201), Basswood (150), Black Walnut (131), Silver Maple (118), White Oak (101), Cottonwood (83), and American Elm (76). Most of the trees were in fair condition.

We note that the approved plan would have required much more significant grading and less tree and natural feature preservation than the proposed plan.

Amenities and stormwater

The multifamily area includes the project's main amenity zone, which includes a pool, playground, fitness center, community room, barbecue stations, picnic tables, and shade structures. The applicant should confirm if the single-family homes have access to the multiple family amenities.

The landscape plan also shows pedestrian/open-space connections through the site. Detention basins are distributed throughout the development and are integrated into the open-space system rather than isolated at the edges. See overall site plan, Sheet C2-200, and overall landscape plan, Sheet L1-00.

Single Family

The applicant is proposing a single-family lot size of 6,000 sq.ft (50' x 120'). The most similar existing zoning district is R-4, which allows for a lot size of 7,200 sq.ft. We are supportive of modest reductions (e.g., smaller lots and setbacks) where they advance compatible, context-sensitive infill. We find that smaller lots are a desire in the current housing market. However, those reductions should remain in character with a correspondingly smaller building form. In practice, we often find that while lots become smaller, house size does not, which can introduce massing and scale inconsistencies relative to surrounding development. We note that elevations for the single-family were not provided.

The applicant should provide a diagram or 3-D model of building massing and setbacks to ensure that they are proportionate to lot size.

Items to be Addressed: *1). Add townhome units back to site plan or provide justification for their removal; 2). Provide visual massing of buildings along Macarthur or if necessary break up massing; 3). Confirm if single-family homes have access to multiple family amenities; 4). Provide elevations for single family homes; and 5). Provide a diagram or 3-D model of building massing and setbacks.*

DENSITY

In the identified urban service area there is a reference to up to eight (8) units per acre. The Township's existing higher-density development is concentrated within the urban service areas near this site. If the Township determines that a higher-density project is appropriate, this area would be the most suitable location. Using eight (8) units per acre as the underlying density allowance, the applicant is seeking a density bonus as set forth in Section 7.301.E Density Bonus for Exemplary Design Project. As set forth in Section 7.301.E, the maximum permitted dwelling unit density within a residential PC project, including permitted bonus dwelling units cannot exceed one hundred twenty percent (120%) of the planned maximum residential density for the subject land, as designated in the Growth Management Plan.

To calculate the density bonus, the residential PC project shall include a minimum of three (3) of the following elements or other elements, as accepted by the Township Board after recommendation from the Planning Commission:

a. *Provisions for a minimum of fifty percent (50%) of the gross land area of the development site to be permanently preserved as dedicated open space.*
b. *Dedicated open space areas abutting a primary road as defined in the master transportation plans of the Township, or state or county road authorities, which shall be designed to preserve the rural appearance of the site from the road right-of-way with a minimum depth of 150 feet.*
c. *On-site or off-site pedestrian walkways and access improvements substantially above the minimum required by this Ordinance.*
d. *Improvements to public facilities, access, or utilities above the minimum required by this Ordinance, other Township ordinances, or other governmental agencies with jurisdiction.*
e. *Provisions for new or improved recreation facilities substantially above the minimum required by this Ordinance.*
f. *An integrated mixture of housing types or lot sizes.*
g. *Rehabilitation and re-use of a blighted site, contamination removal or demolition of obsolete structures.*
h. *Innovations in motorist or pedestrian safety, energy efficient design, or other project design elements that would result in a material benefit to all or a significant portion of the ultimate users or residents of the project.*

Overall, we find that the applicant has effectively distributed density throughout the site through quality site planning, including the preservation of natural features, a well-designed layout, and the provision of a mix of housing options. The applicant is eligible for the proposed density, provided the Planning Commission determines that the requirements for the Density Bonus for an Exemplary Design Project have been satisfied.

Items to be Addressed: *Applicant should justify density bonus.*

WORKFORCE ATTAINABLE HOUSING COMPONENT

Timber Creek is proposed as workforce housing aimed at households in southern Superior Township that earn too much for deeply subsidized housing but still cannot afford homeownership. The narrative emphasizes larger rental units for working families who need more space than typical apartments provide.

All 210 units will be income-restricted under MSHDA's Low Income Housing Tax Credit program for at least 15 years. The affordability mix is:

- 21 units at 40% AMI.
- 166 units at 60% AMI
- 23 units at 70% AMI

This means about 90% of the units are targeted to households at 60–70% AMI. Anticipated average rents are approximately $1,500 for 2-bedroom, $1,750 for 3-bedroom, and $2,000 for 4-bedroom units.

The expected residents are described as teachers, healthcare workers, technicians, administrative staff, and other essential workers, especially those employed in nearby centers such as Ypsilanti, the Geddes corridor, and the Hyundai-Kia Technical Center.

The narrative also distinguishes Timber Creek from nearby affordable developments like Sycamore Meadows and Danbury Park Manor. Unlike those projects, Timber Creek would not use project-based Section 8 assistance and is intended for households with stable earned income rather than the deepest subsidy tiers. Residents would be responsible for paying their own rent.

Finally, the applicant requests a 4% Payment in Lieu of Taxes (PILOT) rent tax abatement, arguing that it is needed to support long-term project feasibility and allow better materials, landscaping, and amenities.

As part of its Area Plan consideration, the Planning Commission should consider the proposed workforce attainable housing component as part of its recommendation to the Township Board.

Items to be Addressed: *1). The Planning Commission should consider the proposed affordable housing component as part of its recommendation to the Township Board; and 2). Should the project include some internal building space for resident services?*

BUILDING DESIGN

Building design and architecture

The apartment buildings are planned as three-story, garden-style multifamily buildings organized around internal drives, parking courts, and a shared amenity core. The applicant proposes four (4) building types:

- Type A (Building 1000), which includes the leasing/clubhouse and amenity space;
- Type B (Buildings 3000, 4000, and 5000), which are standard residential buildings; and
- Type C (Building 2000), which includes a maintenance area.
- Type D (Building 6000), of which details were not provided.

Architecturally, the proposed elevations are more of a contemporary style with traditional residential cues: pitched/gabled roof forms, strong horizontal building length broken up by projecting entry elements, balconies/railings, and a base-middle-top façade composition.

It's not clear from the floor plans and architecture how Building A and Building B front elevation interact with McArthur Boulevard. Are there accessible doors or entrances facing Macarthur Boulevard? Are there design elements that make this appear and serve as a front elevation? How does the building relate to McArthur Boulevard?

Material use

The primary materials are:

- Brick at the lower portions and selected vertical accent areas
- Fiber-cement siding, panel, and trim.
- Asphalt shingles at the sloped roofs
- Vinyl windows
- Storefront windows at amenity/leasing areas
- Metal canopies
- Fabric awnings
- Metal railings at balconies and upper-level exterior spaces

That material selection gives the buildings a traditional and durable feel. The mix of brick and fiber-cement also presents the project as more residential than institutional.

Design Summary

The proposed architecture is a three-story suburban multifamily community with traditional residential massing and a contemporary material palette. The design incorporates brick + fiber-cement cladding, pitched roofs, balconies, and entry canopies/awnings to give the buildings a

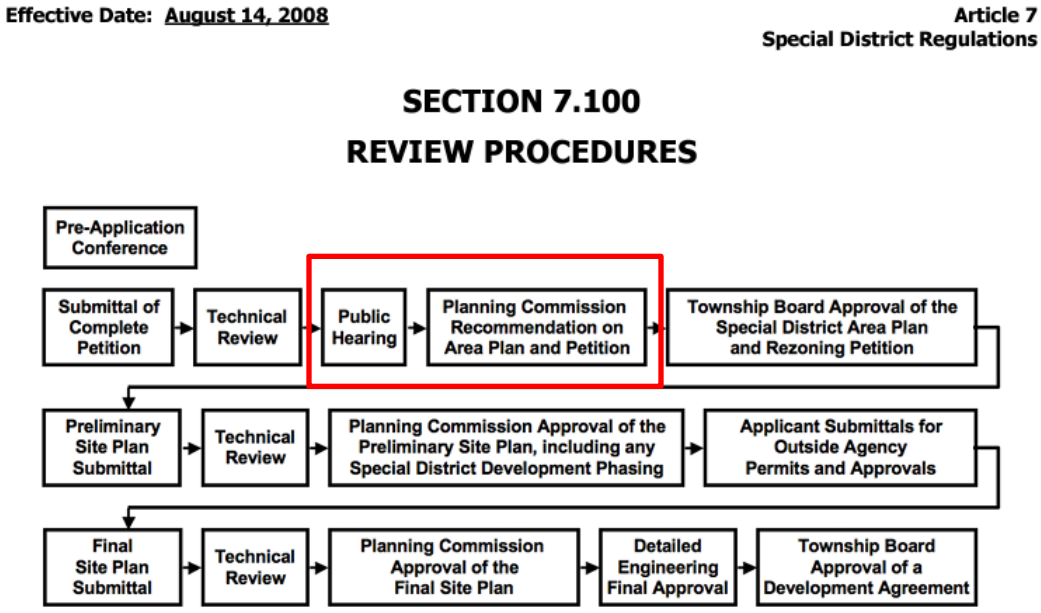
more residential character, while the site planning ties the apartment buildings to preserved open space and shared amenities.

The single-family portion is planned on the site, but its actual home architecture/material package is not detailed in this submittal

Items to be Addressed: *1).Provide details for Building Type D; 2). How do Building A and C interact to McArthur Boulevard?; and 3). Provide elevations for the proposed single-family homes.*

PROCESS

The Applicant is seeking an amendment to an existing Area Plan. The Planning Commission holds the public hearing and is the recommending body on the Area Plan. The Township Board has the ultimate authority or approval or denial upon the Area Plan.



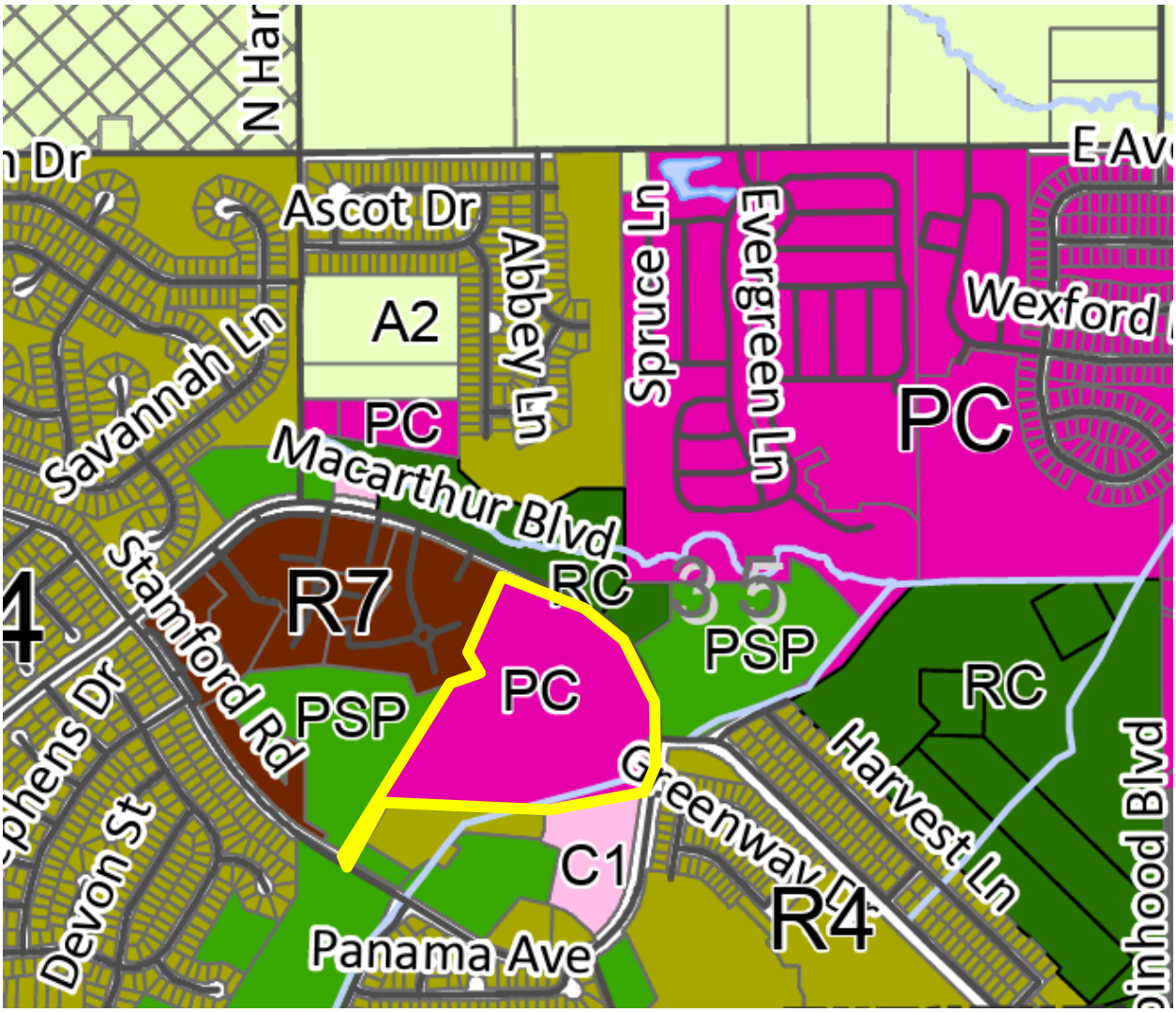
If the Area Plan is approved, the applicant will submit a preliminary site plan for technical review.

CURRENT ZONING

Surrounding Zoning

The site is currently zoned PC, Planned Community. The approved Planned Development allowed for the development of 101 single-family residential lots. See section below for more detail.

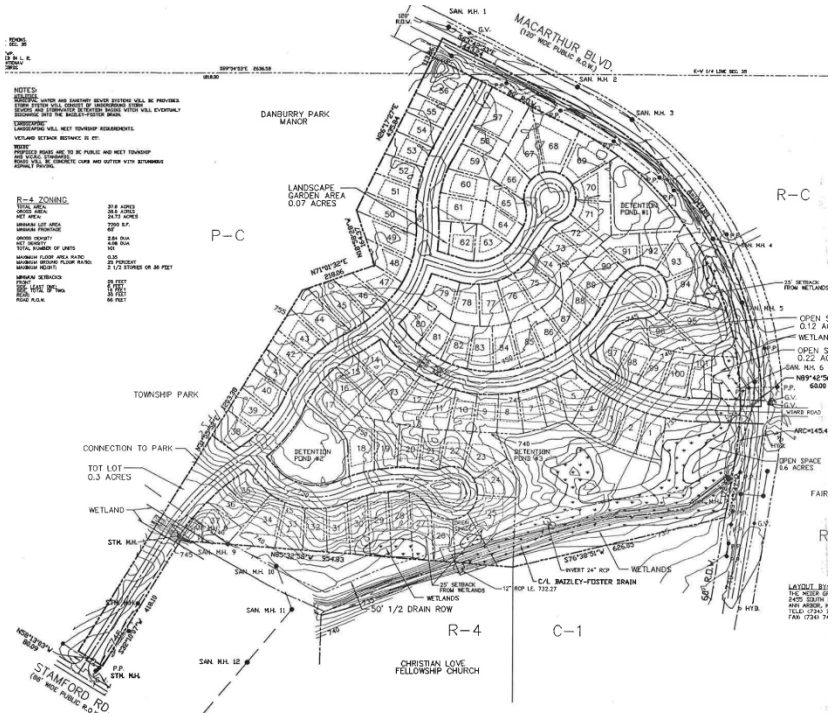
The site is adjacent to a mixture of various zoning districts including RC, PSP, R7, R4, and C1. The surrounding use includes vacant, community facilities, multiple family, and single family.



If the Planning Commission and Township Board find that the required standards have been met, rezoning the site to PC, Planned Community would not be inconsistent with zoning in the surrounding area.

Approved PC, Planned Community

A PC Area Plan was approved for this site around 2006. The Area Plan included a 101 single-family residential lots.



The approved 2006 Area Plan had less units but was more impactful to natural features including steep slopes, woodlands, and wetlands, and included less common open space. The applicant is seeking to amend the existing approved Area Plan to allow for more density with the offset benefit of greater natural resource and open preservation, providing more housing options, and providing workforce attainable housing.

MASTER PLAN

The site is located in the Geddes Road Urban Sub-area as described in the Plan (Page 6-9 through 6-10):

> *This area of about one mile by four and one-half miles contains about 65% of the Township population in a mix of single-family, multi-family, and manufactured housing. There is also a small commercial area along the southern border of Superior Township, adjacent to the northern edge of the City of Ypsilanti and Ypsilanti Township, and another small commercial area across from the Township Fire Hall on Harris near MacArthur. This sub-area also includes the majority of land designated as the Urban Service Area of the Township (see Map 6-3). Existing dwelling unit densities in some locations within the designated Urban Service Area range up to eight dwelling units per acre. Most of the undeveloped land is planned at a maximum density of approximately four dwelling units per acre to stay within available utility capacity, based on:*
>
> *(1) the amount of developable land in the Urban Service Area; and*
>
> *(2) the size and capacity of utility infrastructure and the main sewer interceptor pipe; and*
>
> *(3) anticipated flow rates and infiltration of groundwater into the system.*
>
> *Based on recent projected rates of growth and the current oversupply in new residential construction and vacant residential lots ready for development [See Table 4-1, Inventory*

of Approved but Un-built Residential Units (2009)], it is anticipated that existing undeveloped land designated for residential development within the Township's Urban Service Area (as shown on Maps 6-3 and 6-4)

- *is more than adequate to serve the future demand for urban residential development in the Township; and*
- *will not be fully developed or built out within the 20 year timeframe of this Plan (also referred to as "the planning period" of this Master Plan).*

The Future Land Use Plan (page 6-21) and Zoning Plan (page 7-3) identifies this area as a Mixture of Urban Residential Densities:

The urban area in orange south of Geddes Road is, and is expected to remain, a mixture of residential zoning classifications and densities. New residential development is expected at a density of four dwelling units per acre and is likely to occur via the Planned Community zoning classification (a form of planned unit development) where there are sensitive natural features, and via traditional subdivision or site condominium development designs in other areas.

Page 5-36 of the Master Plan notes that *"Land capacity shall be considered when determining the appropriate density of development. Land capacity considers soil suitability for septics, basements, slope, the presence of sensitive natural features, and other factors. The density shall be established at a level that will neither damage environmental features nor intrude upon agricultural lands."*

The Township's Master Plan is a comprehensive document that includes many other elements that should be considered these include community character/quality of life, impact/preservation of natural features, growth management, and housing and neighborhood design.

<u>Community Character/Quality of Life:</u>

A stated goal of the Master Plan is to maintain community character and enhance the quality of life. The Master Plan includes the following applicable statements regarding Community Character/Quality of Life:

- In Superior Township, largescale changes to the landscape have been minimized by the consensus decision of community leaders to permit only growth that meets standards of sustainability, maintenance of the natural resource base, and visual character.
- The most common landscape view in most of Superior Township continues to be a mix of woods, meadows, wetlands, and farm fields. This is because the center area of the Township remains largely undeveloped, and settlement still retains a rural character at all but the southern edge of the Township. The rural landscape does more than simply provide scenery, as the benefits of nature to citizen mental health are recognized as very important.

- As a result (of preservation efforts), wetlands, forests, farmland, and green spaces that comprise the scenic character and ecosystem of the Township have been permanently protected in a manner that protects the property rights of landowners.

Natural Features:

A stated goal of the Master Plan is the preservation and management of natural features and creation of new natural features. This includes protection and preservation of wetlands, surface water, ground water recharge, woodlands, upland brush, landmark trees, steep slopes, and viewsheds. The Master Plan identifies a number of land use and development techniques to protect these features.

Growth Management

The Master Plan encourages land uses that are best suited to the land and existing conditions, at a rate of growth that:

- Can be financially absorbed by the Township government;
- Restricts the potential for an urban sprawl development pattern;
- Takes into full account the inventory of existing improved lots and structures for the type of land use proposed;
- Protects the value and desirability of existing housing;
- Ensures adequate public funds are available to support necessary public services; and
- Prevents the oversupply of new housing units and/or vacant residential lots.

Housing and Neighborhood Design

The Master Plan encourages a variety of housing types, located within desirable residential settings, to ensure a maximum choice of dwelling units and a mix of population within the Township. The Master Plan also notes that new residential development shall be compatible in density and character with existing residences and neighborhoods in the immediate area.

As stated in the Master Plan, all residential development that occurs at a density of one dwelling unit or more per acre, and that consists of 20 net acres or greater, shall be developed under a planned community or similar zone, thereby providing its own open space and recreational facilities. These open spaces shall be located to help provide a natural vegetative roadside view and connected to greenspaces and greenway trails on adjacent parcels or developments.

Zoning Plan in Master Plan:

As stated in the Master Plan, the Special Zoning Districts provide considerable flexibility to the land developer to provide opportunities for development designs that respect both the natural environment and efficiency in the provision of infrastructure and public facilities and provide the Township with flexibility to ensure mitigation of negative impacts on adjoining properties. A wide

range of densities and lot sizes are provided, depending on the district and specific ordinance provisions. Most new development proposals in the Township are encouraged to use one of these special districts because of the design flexibility provided to the developer and the opportunity for the Township to help fashion a design that is compatible with adjoining properties.

Master Plan Summary Findings:

We find that the proposed Area Plan petition to rezone the property from PC, Planned Community (single-family residential) to PC, Planned Community is compatible with many elements of the Master Plan and the Growth Management Plan for the following reasons:

1. *The Master Plan envisions that the densest portion of development in the Township should occur in the urban service area, in part to protect the rural and agricultural nature of the remaining portions of the township.*
2. *A mixed-residential development including multiple-family residential is consistent with the type of use envisioned in the Mixture of Urban Residential Densities future land use plan.*
3. *The Master Plan encourages a variety of housing types, located within desirable residential settings, to ensure a maximum choice of dwelling units and a mix of population within the Township. The Area Plan provides a diverse type of housing.*
4. *As stated in the Master Plan, all residential development that occurs at a density of one dwelling unit or more per acre, and that consists of 20 net acres or greater, shall be developed under a planned community, thereby providing its own open space and recreational facilities.*
5. *The applicant has proposed to develop the site to protect the sites natural resources.*
6. *The applicant is applying for a special district as encouraged in the Master Plan for flexibility in site development to help fashion a design that is compatible with adjoining properties.*
7. *The applicant has attempted to design the site to preserve the site's most signifigant natural resources.*
8. *The proposed development and use of the site is consistent with the stated goals of Growth Management Plan.*
9. *The applicant is providing an attainable housing project that will provide a necessary need in the township.*

DISTRICT INTENT

Special Districts

As set forth in Section 7.001, the Authority to Establish Special Districts as defined in Article 2.0 (Zoning Districts), is established in accordance with Section 503 of the Michigan Zoning Enabling Act. These Special Districts are designed to accomplish the objectives of this Ordinance through a development review process intended to achieve integration of the proposed development project with the characteristics of the project area. These Special Districts are intended to permit flexibility in the regulation of land development; encourage innovation in land use and variety in design, layout, and type of structures constructed; achieve economy and efficiency in the development and use of land, natural resources, energy, and the provision of public services and facilities; encourage useful open space; and provide better housing, employment, and shopping opportunities particularly suited to the needs of the residents of the Township. The intent of these special districts is to:

- Provide for increased flexibility and encourage innovation in design and layout of land development, subject to proper administrative standards and procedures.
- Lessen the burden of traffic on streets and highways, and provide for an integrated system of sidewalks, pedestrian pathways, and other non-transportation facilities.
- Provide for a compatible mix of land uses in each Special District.
- Establish planning, review, and approval procedures that properly relate the type, design, and layout of development to the site and surrounding area.
- Encourage innovation in residential and nonresidential development so that greater opportunities for better housing, recreation, and shops conveniently located to each other may extend to all citizens and residents of Superior Township; and so that the growing demands of the Township's population may be met by a greater variety in type, design, and layout of buildings and by the conservation and more efficient use of open space ancillary to these buildings.

Planned Community District

The Township Zoning Ordinance has multiple "special districts", one of which is the PC, Planned Community District. The intent of the PC, Planned Community District is as follows:

The Planned Community (PC) Special District option encourages greater collaboration between the developer and the Township in the development process, and allows additional freedom for the developer to take an even more creative approach to land use and development than otherwise permitted under this Ordinance. The PC Special District option offers greater flexibility in the design of land development, maximizing the developer's ability to take advantage of natural topography, vegetation, watercourses, and other site features in designing the development.

PLANNED COMMUNITY DISTRICT REQUIREMENTS

As set forth in Section 7.301. A, to be eligible for approval as a Planned Community (PC) Special District, the petitioner shall demonstrate, to the Township Board's satisfaction after recommendation from the Planning Commission, that the petition and Area Plan are compatible with the following:

1. **Compatibility with the Special District intent.** The proposed development shall be consistent with the intent and scope of this Article and the intent and purposes of the specific Special District.

   CWA Finding: The PC, Planned Community District is intended to allow for greater collaboration to allow for a creative approach to land use and development. Through the PC, Planned Community District the township and the applicant are able to collaborate to better protect the sites natural features and reduce impact upon adjacent properties than could be accomplished through a by-right site plan or through a conventional subdivision development. The use of a Special District for this application is appropriate by allowing creative design to protect natural features, and mixing housing types to provide the township with more housing options.

2. **Compatibility with the Growth Management Plan.** The proposed development shall be compatible with the adopted Growth Management Plan.

   CWA Finding: We find that the proposed Area Plan petition to amend the zoning of the the property from PC, Planned Community (single-family residential) to PC, Planned Community is compatible with many elements of the Master Plan and the Growth Management Plan.

   In the identified urban service area there is a reference to up to eight (8) units per acre. The Township's existing higher-density development is concentrated within the urban service areas near this site. If the Township determines that a higher-density project is appropriate, this area would be the most suitable location. Using eight (8) units per acre as the underlying density allowance, the applicant is seeking a density bonus as set forth in Section 7.301.E Density Bonus for Exemplary Design Project. As set forth in Section 7.301.E, the maximum permitted dwelling unit density within a residential PC project, including permitted bonus dwelling units cannot exceed one hundred twenty percent (120%) of the planned maximum residential density for the subject land, as designated in the Growth Management Plan.

   Overall, we find that the applicant has effectively distributed density throughout the site through quality site planning, including the preservation of natural features, a well-designed layout, and the provision of a mix of housing options. The applicant is eligible for the proposed density, provided the Planning Commission determines that the requirements for the Density Bonus for an Exemplary Design Project have been satisfied.

3. **Availability and capacity of public services.** The proposed type and intensity of use shall not exceed the existing or planned capacity of existing public services and facilities, including police and fire protection, traffic capacity of the Township's public roads, drainage and stormwater management facilities, availability of water, and suitability for septic or capacity of existing or planned utility facilities.

   CWA Finding: Unknown at this time, particularly with regards to utilities. This will be studied and confirmed by the Township Engineer as part of the site plan review process.

4. **Sufficient land area for proposed uses.** The proposed Planned Community (PC) site shall include sufficient contiguous land area to comply with all applicable regulations of this Ordinance, to adequately serve the needs of all permitted uses in the PC project, and to ensure compatibility between uses and the surrounding area. Additional non-contiguous land areas within the Township may be included as part of the proposed open space dedications for a PC project.

   CWA Finding:

   A major part of the layout is driven by preserved natural features. The narrative states that more than 33% of woodland areas are preserved, including a 1-acre interior tree preserve, and that approximately 5.5 acres of wetlands are preserved with no proposed impacts. These preserved areas create a strong open-space framework, especially through the west/central part of the site and along the eastern edge. (See overall site plan, Sheet C2-200 and natural feature plan C1-01)

Natural Feature	Total Area	Encroached Area	Preserved Area	Percent Preserved
Trees/Woodland	27.04 acres	17.90 acres	9.14 acres	33.8%
Steep Slopes	4,287 sq.ft	0 sq.ft	4,287 sq.ft	100%
Wetlands	5.46 acres	0 acres	5,46 acres	100%

   As noted, we find that the applicant has appropriately blended in the proposed density with the overall preservation of the sites natural features.

5. **Additional eligibility criteria.** The petition and Area Plan shall be compatible with one (1) or more of the following additional criteria:
   a. Conservation of open space. Long-term conservation of open space, agricultural lands, or lands with significant natural features in the Township will be achieved in accordance with the adopted Growth Management Plan.
   b. Preservation of natural resources. Long-term conservation of natural resources will be achieved, where such resources of the Township would otherwise be destroyed or degraded by development as permitted by the underlying zoning district(s).

c. Public benefit. A recognizable and material benefit will be realized by both the future users of the development and the Township as a whole, where such benefit would otherwise be unachievable under the provisions of this Ordinance.
d. Economic impact. The proposed development shall not impede the continued use or development of surrounding properties for uses that are permitted in the Zoning Ordinance or planned in the adopted Growth Management Plan.

CWA Finding: The Area Plan is both conserving open space and preserving natural resources. Because the applicant is proposing an Area Plan, these areas are able to be conserved and protected in perpetuity, which may not be accomplished through a conventional subdivision development or as shown on the approved Area Plan for the site. However, again we note that the density should be discussed with the applicant.

STANDARDS

As set forth in Section 7.102.C, when reviewing an Area Plan petition, the Planning Commission shall determine and provide evidence in its report to the Township Board that the petition meets the following standards:

1. **Growth Management Plan policies.** The proposed development shall conform to the adopted Growth Management Plan.

   CWA Finding: The proposed Area Plan is compatible with the adopted Growth Management Plan and other provisions of the Township Master Plan. See Master Plan Findings for more details.

2. **Ordinance standards.** The proposed development shall conform to the intent, regulations, and standards of the proposed Special District and this Ordinance.

   CWA Finding: The proposed Area Plan is compatible with the ordinance standards. The PC, Planned Community District is intended to allow for greater collaboration to allow for a creative approach to land use and development. Through the PC, Planned Community District the township and the applicant are able to collaborate to better protect the sites natural features and reduce impact upon adjacent properties than could be accomplished through a by-right site plan or through a conventional subdivision development or as shown on the approved Area Plan for the site. The use of a Special District for this application is appropriate by allowing creative design to protect natural features, and mixing housing types to provide the township with more housing options

3. **Public facilities.** The proposed development shall be adequately served by public facilities and services, such as highways, streets, police and fire protection, drainage courses, water and sanitary sewer facilities, and refuse disposal, or that the persons or agencies responsible for the proposed development shall be able to provide, in a manner acceptable to the Township Board, such facilities and services.

CWA Finding: Unknown at this time, particularly with regards to utilities. This will be studied and confirmed by the Township Engineer as part of the site plan review process.

4. **Open space and recreation areas.** The common open space, any other common properties, individual properties, and all other elements of a Special District are so planned that they will achieve a unified open space and recreation area system, with open space and all other elements in appropriate locations, suitably related to each other, the site, and the surrounding land.

   The applicant provides a significant amount of open space in the form of natural feature preservation, internal trails, and sidewalks. The multifamily area includes the project's main amenity zone, which includes a pool, playground, fitness center, community room, barbecue stations, picnic tables, and shade structures. The applicant should confirm if the single-family homes have access to the multiple family amenities.

5. **Common areas and improvements.** The petitioner shall have made satisfactory provision to ensure that those areas shown on the plan for use by the public or by occupants of the development will be or have been irrevocably committed for that purpose. Provisions shall have been made to provide for the financing and maintenance of improvements shown on the plan for open space areas, and common use areas which are to be included within the development.

   CWA Finding: Currently the site is controlled by one entity. If approved, the multiple family portion will be controlled by one entity, and the single-family portion will be sold as individual lots controlled by a HOA. If approved, a future Development Agreement will be necessary to dictate the development of the site and maintenance and control of common areas and improvements.

6. **Location and layout.** The location of the proposed uses, layout of the site, and its relation to streets giving access to it, shall be such that traffic to, from, and within the site, and assembly of persons in connection therewith, will not be hazardous or inconvenient to the project or the neighborhood. In applying this standard, the Planning Commission shall consider, among other things, convenient routes for pedestrian traffic, particularly of children, relationship of the proposed project to main thoroughfares and street intersections, and the general character and intensity of the existing and potential development of the neighborhood.

   CWA Finding: The proposed Area Plan shows two points of access to the site. Onsite circulation appears sufficient for vehicular traffic. Traffic impacts will be reviewed by the Road Commission. The Planning Commission should confirm if additional internal pedestrian circulation is necessary.

7. **Compatibility of land uses.** The proposed use(s), mix of housing unit types and densities, or mix of residential and non-residential uses shall satisfy the intent of the proposed Special District, conform to applicable use standards and limitations, and be acceptable in terms of convenience, privacy, compatibility, and similar standards.

   CWA Finding: The Area Plan provides for a mix of housing types that satisfy the intent of the proposed Special District and the Master Plan. As part of the deliberation, the Planning Commission should discuss if they support the mix and type of housing product provided.

8. **Minimize adverse impacts.** That noise, odor, light, or other external effects from any source whatsoever, which is connected with the proposed use, will not adversely affect adjacent and neighboring lands and uses.

   CWA Finding: Through the Area Plan and site plan review, the Township can review and place reasonable conditions upon the application to ensure to minimize adverse impacts.

9. **Preservation of natural features.** The proposed development shall create a minimum disturbance to natural features and landforms.

   CWA Finding:

   A major part of the layout is driven by preserved natural features. The narrative states that more than 33% of woodland areas are preserved, including a 1-acre interior tree preserve, and that approximately 5.5 acres of wetlands are preserved with no proposed impacts. These preserved areas create a strong open-space framework, especially through the west/central part of the site and along the eastern edge. (See overall site plan, Sheet C2-200 and natural feature plan C1-01)

Natural Feature	Total Area	Encroached Area	Preserved Area	Percent Preserved
Trees/Woodland	27.04 acres	17.90 acres	9.14 acres	33.8%
Steep Slopes	4,287 sq.ft	0 sq.ft	4,287 sq.ft	100%
Wetlands	5.46 acres	0 acres	5,46 acres	100%

   As noted, we find that the applicant has appropriately blended in the proposed density with the overall preservation of the sites natural features.

10. **Streets.** Streets shall follow topography, be properly spaced, and be located and aligned in accordance with the intended function of each street. The property shall have adequate access to public streets. The plans shall provide for logical extensions of public streets and shall provide suitable street connections to adjacent parcels, where applicable.

CWA Finding: The proposed Area Plan shows two points of access to the site. Onsite circulation appears sufficient for vehicular traffic. Traffic impacts will be reviewed by the Road Commission.

11. **Pedestrian facilities.** Major pedestrian circulation shall be provided for within the site and shall interconnect all use areas, where applicable. The pedestrian system shall provide for logical extensions of pedestrian ways outside the site, and pedestrian connections to the site boundaries, where applicable.

CWA Finding: The Area Plan shows some sidewalks and an interconnected pedestrian trail within the site. The Planning Commission should confirm if additional internal pedestrian circulation is necessary.

RECOMMENDATION

Overall the Planning Commission and staff were very supportive of the project as part of the concept review. We find that proposed Area Plan is consistent with the Townships Master Plan and Growth Management Strategy. The applicant is providing a development that includes a diverse mix of housing types as envisioned in the "Mixture of Urban Residential Densities" area of the Future Land Use Plan, as well as workforce attainable housing. Overall, we find that the applicant has effectively distributed density throughout the site through quality site planning, including the preservation of natural features, a well-designed layout, and the provision of a mix of housing options.

Many of the items noted in our report can be addressed in the site plan review process, however there are a few key items the Planning Commission should discuss with the applicant:

1. Does the Planning Commission support the workforce housing component and proposed PILOT.
2. Overall site density and justification for density bonus.
3. Overall does the Planning Commission support the proposed housing mix and types?
    a. Should the applicant add townhome units back into the site plan?
    b. Provide visual massing of buildings along McArthur or if necessary, break up massing
4. Are there additional natural preservation techniques, or additional site amenities that should be incorporated.

We recommend that the Planning Commission hold a public hearing, discuss the noted questions in our report with the applicant, consider public testimony, and either:

A. Postpone action to allow the applicant to provide additional information; or
B. Direct staff to draft a resolution based on the discussion.

Benja R. Carlis

CARLISLE/WORTMAN ASSOC.,INC
Benjamin R. Carlisle, AICP, LEED AP
President

March 16, 2026

CHARTER TOWNSHIP OF SUPERIOR
3040 N. Prospect Road
Ypsilanti, MI 48198

Attention: **Angela Robinson, Township Clerk**

Regarding: **Timber Creek Flats**
Area Plan Review
OHM Job No. 0140-25-1010

Dear Ms. Robinson,

On behalf of the Township, we have reviewed the Area Plan submittal for the above referenced project, as provided to the Township by the Applicant on February 26, 2026. We understand that the application will be considered by the Planning Commission at their regular meeting on March 25, 2026, regarding Area Plan approval. It is noted that this review is for approval of the northern portion of the development only, which proposes 210 multifamily residential units. We understand the southern portion of the development will be covered under a separate site plan application. Therefore, we offer the following comments to the Planning Commission related to the site/civil engineering aspects of the area plan for their consideration during the decision process.

Plan Comments

1. Please provide the professional seal of the licensed individual preparing the plans on future submittals.

2. Please provide the area and dimensions of outdoor open space and recreation areas on the plans.

3. Proposed sidewalk should meet the existing bike path in the right-of-way at both entrances to the development.

4. It is unclear where the proposed storm sewer along the northwest and southwest area of the parking lot near Buildings 3000, 4000, and 5000 outlets. Please clarify or revise the storm sewer to provide an outlet for this section of storm sewer.

The following comments may be addressed in future site plan stages:

5. Provide cleanouts where sanitary leads are over 100 feet in length or where there is a bend.

6. In general, sanitary sewer leads should connect to the sanitary sewer main instead of a sanitary manhole.

7. The sanitary laterals to Building 2000 and Building 1000 should be revised to have a manhole at the upstream end of the sewer. Sanitary leads from the buildings should connect to the sanitary lateral and not the manhole.

8. Provide a storm manhole at the downstream end of the storm sewer that runs between units 45 and 46.

9. Proposed water main gate valves & wells should be included on future plan submittals to verify valve spacing and water main isolation.

OHM Advisors®
34000 PLYMOUTH ROAD
LIVONIA, MICHIGAN 48150
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10. Consideration should be made to moving the proposed water main and sanitary sewer out of the influence of the pavement in the northern portion of the project area.

11. In the parking area between Building 2000 and Building 3000, it appears that the proposed water main, storm sewer, and sanitary sewer do not meet the minimum required 10-foot horizontal separation. Review and revise the placement of the utilities in this area to meet the required separation.

12. Along Hickory Drive and Timber Creek Drive it appears that the proposed water main and catch basins do not meet the minimum required 10-foot horizontal separation. Consider adding bends or adjusting the alignment of the water main to meet the required separation.

Summary of Future Outside Agency Approvals

1. The site would be serviced by connecting to the Superior Township public sanitary sewer system at two locations to the existing 15" sanitary sewer in the Macarthur Boulevard Right-of-way (ROW). The proposed Area Plan includes a mix of unit types that results in the following population breakdown:

Multifamily Units:	2.1 people/unit x 210 units	= 441 people
Single Family Units	3.5 people/unit x 50 units	= 175 people
	TOTAL	= 616 people

   Future review and approval of proposed sanitary sewer by the Ypsilanti Community Utilities Authority (YCUA) would be required for Part 41 application if a site plan were to move forward. Future approval and permitting would be required from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) under Part 41. The proposed sanitary sewer layout and connections to the Superior Township sanitary sewer system will require a more detailed technical review of the facilities during preliminary site plan stage but the Township sewer system capacity appears to be adequate to support this density of development.

2. The site would be serviced by connecting to the existing Superior Township 12" public water main at two locations in the Macarthur Boulevard ROW. Future review and approval of proposed water main by YCUA would be required for PA 399 application if a site plan were to move forward. Future approval and permitting would be required from EGLE under PA 399 for water main construction. The proposed water main layout and connection to the Superior Township water system appears to be viable at the conceptual level, however, a more detailed technical review of the facilities would take place during final site plan stage to verify fire flow and internal water main sizing.

3. OHM received a Traffic Impact Study (TIS) with the Area Plan submittal in February that reviewed the impact of the proposed development. The TIS should be submitted to the Washtenaw County Road Commission (WCRC) for their review and approval. OHM will also provide a technical review of the TIS for Planning Commission consideration.

4. Please note that a more detailed technical review of the site engineering would take place during a potential future preliminary site plan stage. In reviewing this current Area Plan submittal at the conceptual level, we note that the proposed layout of the site is arranged to preserve many of the existing natural features on site. Based on the proposed layout of improvements, the Natural Features Plan (Sheet C1-01) notes that approximately 33.8% of the wooded areas will be preserved, 100% of the steep slopes will not be affected, and 100% of the wetlands will be preserved. Grading details would be reviewed at future stages of the project is a site plan were to move forward.

5. The stormwater management design must meet Washtenaw County Water Resources Commissioner (WCWRC) Standards and will need to be submitted to WCWRC for review during site plan review stage. The approval of the stormwater management design needs to be reasonably assured from the WCWRC prior to the Final Site Plan being presented to the Planning Commission.

6. The soil erosion and sedimentation control (SESC) measures on the site plan would need to meet the requirements of WCWRC and would require future review and approval from WCWRC. We would not anticipate an issue for the Applicant to obtain this permit in the future.

7. Work proposed in the Stamford Road and Macarthur Boulevard ROW would need to meet the requirements of the Washtenaw County Road Commission (WCRC). Future review and approval from WCRC would be required as they have jurisdiction within the public ROW of Stamford Road and Macarthur Boulevard and for determining necessity for deceleration or acceleration tapers (or other necessary improvements) based on anticipated traffic counts.

If you have any questions regarding our review, please do not hesitate to contact me at (734) 466-4518 or George Tsakoff at (734) 466-4439.

Sincerely,
OHM Advisors

_____
Mariah Cummings, PE
Project Engineer

cc: Emily Dabish Yahkind, Township Supervisor, via email
Bill Balmes, Building Official, via email
Ben Carlilse, CWA, Township Planner, via email
Michelle Marin, CWA, via email
George Tsakoff, OHM, via email

SPECIAL DISTRICT AREA PLAN

TIMBER CREEK

MACARTHUR BOULEVARD

SUPERIOR TOWNSHIP, MI 48198

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

LEGAL DESCRIPTION

THE LAND IS DESCRIBED AS FOLLOWS: SITUATED IN THE TOWNSHIP OF SUPERIOR, COUNTY OF WASHTENAW, STATE OF MICHIGAN

AN APPROXIMATE 19 ACRE PORTION OF THE FOLLOWING-DESCRIBED PARCEL, THE DESCRIPTION FOR WHICH IS FORTHCOMING:

BEGINNING 2711.79 FEET NORTH AND 1463.13 FEET OF THE SOUTHWEST CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST, TOWNSHIP OF SUPERIOR, WASHTENAW COUNTY, MICHIGAN; THENCE SOUTH 65 DEGREES 44 MINUTES EAST 441.05 FEET; THENCE 1049.90 FEET ON THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 940.00 FEET AND A CHORD BEARING SOUTH 33 DEGREES 44 MINUTES 15 SECONDS EAST 996.15 FEET; THENCE SOUTH 89 DEGREES 55 MINUTES 10 SECONDS WEST 60.03 FEET; THENCE 143.77 FEET ON THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 880.00 FEET AND A CHORD BEARING SOUTH 02 DEGREES 49 MINUTES 10 SECONDS WEST 143.63 FEET; THENCE SOUTH 07 DEGREES 30 MINUTES WEST 171.32 FEET; THENCE SOUTH 74 DEGREES 23 MINUTES

10 SECONDS WEST 628.85 FEET; THENCE NORTH 87 DEGREES 48 MINUTES 45 SECONDS WEST 951.56 FEET; THENCE SOUTH 29 DEGREES 54 MINUTES 20 SECONDS WEST 416.70 FEET; THENCE NORTHWESTERLY ON THE NORTH LINE OF STAMFORD ROAD TO A POINT BEING SOUTH 30 DEGREES 59 MINUTES WEST FROM THE POINT OF BEGINNING; THENCE NORTH 30 DEGREES 59 MINUTES EAST TO THE POINT OF BEGINNING, EXCEPT THAT PART LYING WESTERLY OF A LINE DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 35; THENCE SOUTH 01 DEGREES 47 MINUTES 15 SECONDS EAST 2151.17 FEET; THENCE SOUTH 82 DEGREES 21 MINUTES 05

SECONDS EAST 617.52 FEET; THENCE SOUTH 15 DEGREES 49 MINUTES 56 SECONDS WEST 60.00 FEET; THENCE SOUTH 73 DEGREES 03 MINUTES 55 SECONDS EAST 312.02 FEET; THENCE SOUTH 65 DEGREES 44 MINUTES 05 SECONDS EAST 417.20 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 24 DEGREES 15 MINUTES 55 SECONDS WEST 506.31 FEET; THENCE SOUTH 21 DEGREES EAST 164.63 FEET; THENCE SOUTH 69 DEGREES WEST 218.06 FEET; THENCE SOUTH 29 DEGREES 54 MINUTES 20 SECONDS WEST 1203.38 FEET TO THE POINT OF BEGINNING.



VICINITY MAP
NOT TO SCALE

SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MI

PROJECT DESIGN TEAM

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATES, INC.
3000 TOWN CENTER DRIVE, ST 2600
SOUTHFIELD, MICHIGAN 48075
CONTACT: JOHN ACKERMAN, P.L.A.
PHONE: (313) 548-7073

CIVIL ENGINEER
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3000 TOWN CENTER DRIVE, ST 2600
SOUTHFIELD, MICHIGAN 48075
CONTACT: MICHAEL HART, P.E.
PHONE: (313) 572-1627

SURVEY
MONUMENT ENGINEERING GROUP ASSOCIATION, INC.
298 VETERANS DRIVE
FOWLERVILLE, MICHIGAN 48836
CONTACT: MARC BUDZINSKI, P.S.
PHONE: (231) 335-4080

ARCHITECT
STUDIO TEN30
1030 16TH AVE. SOUTH, SUITE 500
NASHVILLE, TENNESSEE 37212
CONTACT: ZACH KAMERER
PHONE: (615) 636-6452

PROJECT NARRATIVE

ELMINGTON IS PLEASED TO PRESENT TIMBER CREEK, A 36.18 ACRE MIXED-DENSITY RESIDENTIAL COMMUNITY THAT COMPLEMENTS THE SURROUNDING RESIDENTIAL USES ALONG MACARTHUR BOULEVARD. TIMBER CREEK IS PROPOSED TO CONSIST OF 210 ATTACHED RENTAL UNITS IN 6 BUILDINGS ALONG THE NORTHERN PORTION OF THE PROPERTY AND 50 SINGLE FAMILY LOTS LOCATED ON THE SOUTHERN PORTION OF THE PROPERTY. NATURAL FEATURES PLAYED AN IMPORTANT ROLE IN THE LAYOUT OF THE OVERALL DEVELOPMENT WITH OVER 33% OF WOODLAND AREAS BEING PRESERVED, INCLUDING A 1-ACRE INTERIOR TREE PRESERVE AREA WITH BENCHES AND SHADE STRUCTURES FOR RESIDENTS TO ENJOY. APPROXIMATELY 5.5 ACRES OF WETLANDS EXIST ON THE PROPERTY AND ARE BEING PRESERVED IN THEIR ENTIRETY WITH NO WETLAND IMPACTS PROPOSED. MULTIPLE SITE AMENITIES ARE PROPOSED FOR THE USE OF THE RESIDENTS OF TIMBER CREEK, INCLUDING WALKING PATHS THROUGH PRESERVED GREEN SPACES ACROSS THE ENTIRE SITE WITH DIRECT ACCESS TO COMMUNITY PARK, A POOL, PLAYGROUND, FITNESS CENTER, COMMUNITY ROOM, AND A SHARED AMENITY AREA FOR USE BY ALL RESIDENTS OF TIMBER CREEK THAT WILL INCLUDE BARBEQUE STATIONS, PICNIC TABLES, AND SHADE STRUCTURES. MULTIFAMILY UNITS WILL INCLUDE 9-FOOT CEILINGS, GRANITE COUNTERTOPS, LVT FLOORING, CEILING FANS, AND STAINLESS-STEEL APPLIANCES. THE OVERALL SITE IS PROPOSED TO BE SERVICED BY PUBLIC WATER AND SEWER. STORMWATER MANAGEMENT IS PROPOSED WITH A SERIES OF DETENTION BASINS LOCATED THROUGHOUT THE DEVELOPMENT THAT WILL BE DESIGNED TO TOWNSHIP AND COUNTY STANDARDS. AFTER COMPLETION OF THE AREA PLAN ENTITLEMENT PROCESS WITH SUPERIOR TOWNSHIP, ELMINGTON WILL PROCEED WITH SITE PLANS FOR THE NORTHERN PORTION OF THE PROJECT AND A SEPARATE DEVELOPER WILL PROCEED WITH COMPLETION OF THE SINGLE FAMILY LOTS TO THE SOUTH ON A SEPARATE TIMELINE.

Sheet List Table

Sheet Number	Sheet Title
C0-00	COVER
C1-00	OVERALL EXISTING CONDITIONS PLAN
C1-01	NATURAL FEATURES PLAN
C2-00	OVERALL SITE PLAN
C3-00	OVERALL GRADING AND DRAINAGE PLAN
C4-00	OVERALL UTILITY PLAN
C4-01	FIRE PROTECTION PLAN
L1-00	OVERALL LANDSCAPE PLAN
L1-01	LANDSCAPE ENLARGEMENTS
L1-02	LANDSCAPE ENLARGEMENTS
L1-03	LANDSCAPE ENLARGEMENTS
L1-04	LANDSCAPE SCHEDULE

Additional Sheets by Others

Sheet Number	Sheet Title
A1.1	BLDG 1000 (TYPE A) - OVERALL FLOOR PLANS
A1.2	BLDG 1000 (TYPE A) - OVERALL FLOOR PLANS
A1.3	BLDG 1000 (TYPE A) - ELEVATIONS
A1.4	BLDG 1000 (TYPE A) - ELEVATIONS
A2.1	BLDG 2000, 3000, 4000, 5000 (TYPE B) - OVERALL FLOOR PLANS
A2.2	BLDG 2000, 3000, 4000, 5000 (TYPE B) - ELEVATIONS
A3.1	BLDG 6000 (TYPE C) - OVERALL FLOOR PLANS
A3.2	BLDG 6000 (TYPE C) - OVERALL FLOOR PLANS
A3.3	BLDG 6000 (TYPE C) - ELEVATIONS
A3.4	BLDG 6000 (TYPE C) - ELEVATIONS
A4.1	MONUMENT SIGN AND TRASH ENCLOSURE DETAILS

OWNER/DEVELOPER

ELMINGTON

ECG MACARTHUR FLATS LDHA LIMITED PARTNERSHIP
1030 16TH AVE. SOUTH, SUITE 500
NASHVILLE, TENNESSEE 37212
PHONE: (615) 636-6452
CONTACT: JAKE HYMES
(WITH SIGNED CONSENT OF OWNER)

PLANS PREPARED BY

Kimley»Horn
of Michigan, Inc.
3000 TOWN CENTER DRIVE, SUITE 2600,
SOUTHFIELD, MI 48075
Main: (313) 572-1560 | www.kimley-horn.com

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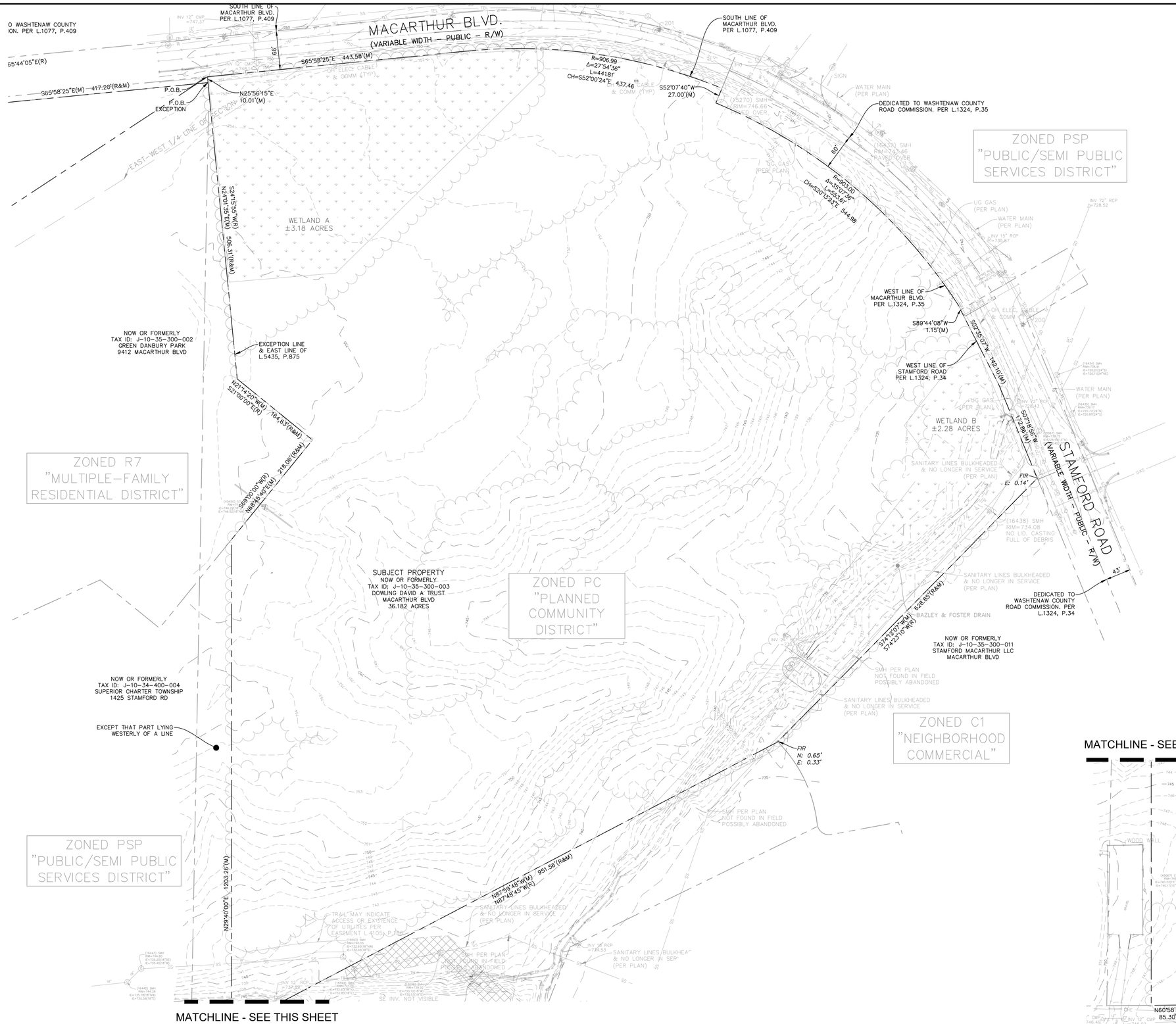
PLAN REVISIONS

REVISION NO.	DATE	REMARKS
	02/20/2026	SPECIAL DISTRICT AREA PLAN SUBMITTAL

FILE NUMBER	SHEET NUMBER	TOTAL SHEETS
268960001	C0-00	23

Drawing name: K:\DET_DS\268960001_elmington macarthur_superior twp_mi\2 Design\CADD\plansheets\C0.0 - TITLE SHEET.dwg C0.0 Feb 25, 2026 3:49pm by: Omar.Eter

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NORTH

GRAPHIC SCALE IN FEET
0 40' 80' 160'

EXISTING LEGEND

BOLLARD	MISC LID	YARD LIGHT	
CONTROL BENCHMARK	MONITOR WELL	SANITARY CLEANOUT	
ROW MONUMENT	GAS MARKER	SANITARY MANHOLE	
FLAG POLE	GAS METER	VENT PIPE	
MAIL BOX	GAS VALVE	STORM CURB INLET	
UTILITY POLE	AC UNIT	STORM INLET	
POST	AREA LIGHT	STORM ROOF DRAIN	
SOIL BORING	ELECTRICAL BOX	STORM DRAIN MANHOLE	
HANDICAP SYMBOL	ELECTRICAL HAND HOLE	STORM YARD DRAIN	
SIGN	ELECTRICAL METER	FIRE DEPT CONNECTION	
CABLE MANHOLE	ELECTRICAL MANHOLE	FIRE HYDRANT	
CABLE PEDESTAL	ELECTRICAL MARKER	IRRIGATION VALVE	
TELEPHONE PEDESTAL	ELECTRICAL TRANSFORMER	POST INDICATOR VALVE	
TELEPHONE HAND HOLE	GUY POLE/WIRE	WELL	
TELEPHONE MARKER	POWER POLE	WATER METER	
TELEPHONE MANHOLE	TRAFFIC SIGNAL POLE	WATER VALVE	
FIBER OPTIC MAKER	TRAFFIC MANHOLE	TREE / STUMP	
SWALE		TOE OF SLOPE	
FENCE LINE		TOP OF BANK	
SANITARY SEWER		UNDERGROUND FIBER OPTIC	
STORM DRAIN		OVERHEAD ELECTRICAL	
WATER LINE		UNDERGROUND GAS	
TREE LINE		UNDERGROUND TELEPHONE	

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TIMBER CREEK
SUPERIOR TOWNSHIP, MI

ELMINGTON

AREA PLAN

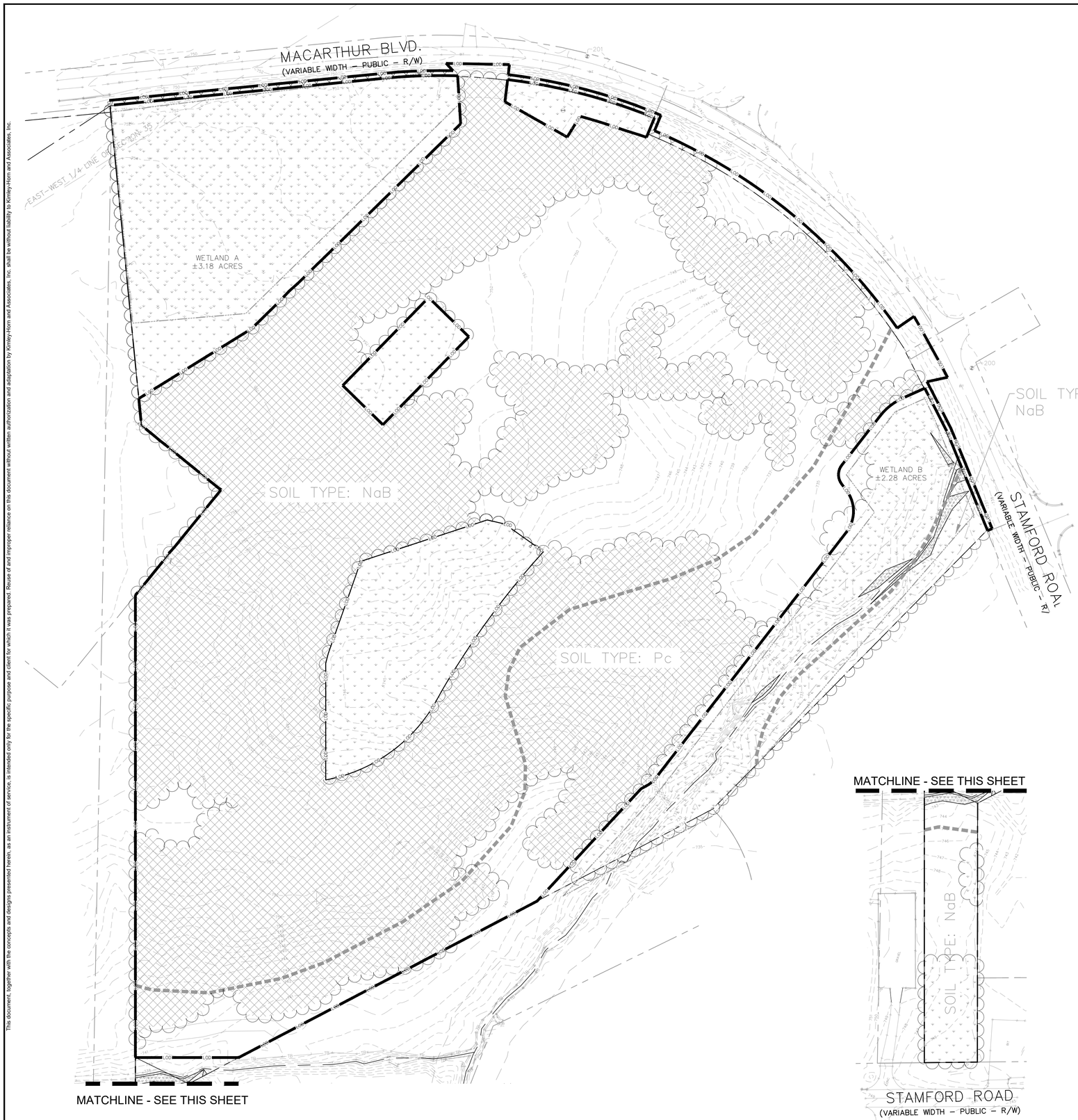
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DESIGNED BY:	MTH
DRAWN BY:	OKE
CHECKED BY:	JAA
DATE:	02/20/2026

KIMLEY-HORN PROJECT NO. 268960001

OVERALL EXISTING CONDITIONS PLAN

SHEET NUMBER
C1-00



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NATURAL FEATURES LEGEND

- WOODLAND REMOVAL
- WOODLAND PRESERVED
- STEEP SLOPE AREAS
- WETLANDS
- SOIL TYPE BOUNDARY
- CENTERLINE OF EXISTING DRAIN
- LIMITS OF DISTURBANCE (LOD)

FLOODPLAIN NOTE

BASED ON FEMA FIRM PANEL 0290E, THE SUBJECT PARCEL IS LOCATED OUTSIDE OF THE 100 YR FLOODPLAIN

	TOTAL AREA	ENCROACHED AREA	PRESERVED AREA	PERCENT PRESERVED
TREES/WOODED AREAS	27.04 AC	17.90 AC	9.14 AC	33.80 %

	TOTAL AREA	ENCROACHED AREA
STEEP SLOPES	4,287 SF	0 SF
WETLANDS	5.46 AC	0.00 AC

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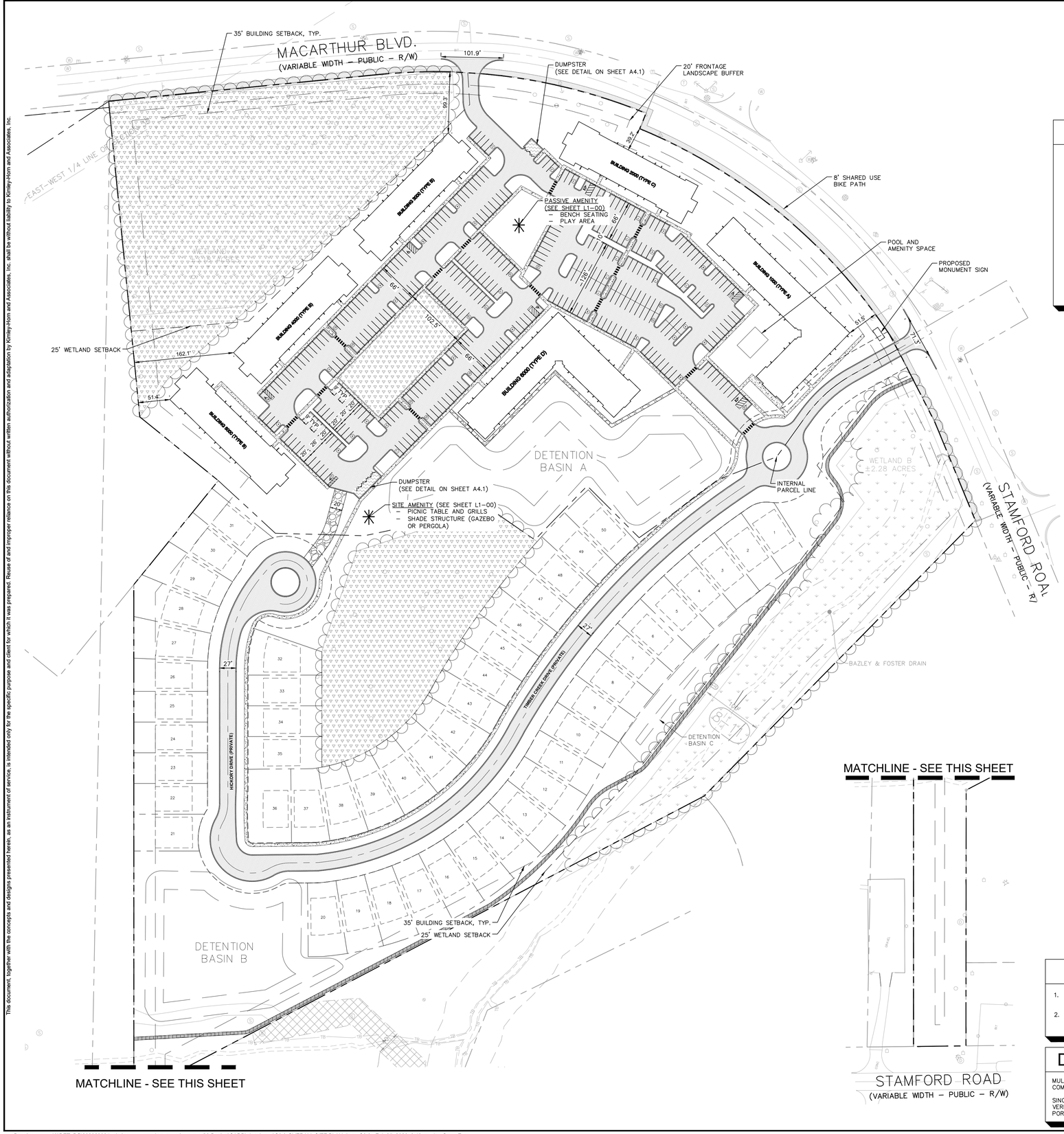
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KIMLEY-HORN PROJECT NO.	268960001

NATURAL FEATURES PLAN

SHEET NUMBER
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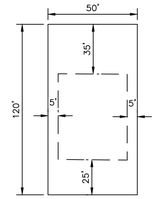
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GRAPHIC SCALE IN FEET
0 40' 80' 160'

PAVING LEGEND

- ASPHALT PAVEMENT
- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- WOODCHIP PATH
- GRAVEL DRIVE/WALK
- TREE PRESERVATION AREA



LOT DETAIL, TYP.

SITE DATA TABLE

SITE AREA INFORMATION	
TOTAL GROSS AREA	= 36.18 AC
MULTIFAMILY GROSS AREA	= 16.78 AC
SINGLE FAMILY GROSS AREA	= 19.40 AC
MULTIFAMILY EXCLUDED AREAS:	
EXISTING DRAIN EASEMENT	= 0 AC
PROPOSED PRIVATE ROAD EASEMENTS	= 0.33 AC
WETLAND AREAS	= 3.18 AC
TOTAL EXCLUDED AREA	= 3.51 AC
MULTIFAMILY NET AREA	= 16.78 AC – 3.51 AC = 13.27 AC
SINGLE FAMILY EXCLUDED AREAS:	
EXISTING DRAIN EASEMENT	= 1.88 AC
PROPOSED PRIVATE ROAD EASEMENTS	= 3.47 AC
WETLAND AREAS	= 2.20 AC
TOTAL EXCLUDED AREA	= 7.55 AC
SINGLE FAMILY NET AREA	= 19.40 AC – 7.55 AC = 11.85 AC
DWELLING UNITS & BUILDING INFORMATION	
MULTIFAMILY BUILDING TYPE A (BUILDING 1000)	
43 UNIT BUILDING	
BUILDING STORIES/HEIGHT	= 3 STORIES/47'–10"
BUILDING GROUND FLOOR AREA	= 21,356 GROSS SF
TOTAL BUILDING AREA	= 63,736 GROSS SF
UNIT TYPES, AREA, & QUANTITY PER BUILDING:	
2 BEDROOM UNITS	
UNIT B1	= 848 SF
UNIT B2	= 873 SF
UNIT B3	= 935 SF
TOTAL 2 BEDROOM UNITS	= 20 PER TYPE A
3 BEDROOM UNITS	
UNIT C1	= 1,088 SF
TOTAL 3 BEDROOM UNITS	= 20 PER TYPE A
4 BEDROOM UNITS	
UNIT D1	= 1,380 SF
TOTAL 4 BEDROOM UNITS	= 3 PER TYPE A
TOTAL TYPE A BUILDINGS	= 1 BUILDING
MULTIFAMILY BUILDING TYPE B (BUILDING 2000, 3000, 4000, 5000)	
30 UNIT BUILDING	
BUILDING STORIES/HEIGHT	= 3 STORIES/48'–1"
BUILDING GROUND FLOOR AREA	= 13,722 GROSS SF
TOTAL BUILDING AREA	= 41,166 GROSS SF
UNIT TYPES, AREA, & QUANTITY PER BUILDING:	
2 BEDROOM UNITS	
UNIT B1	= 848 SF
TOTAL 2 BEDROOM UNITS	= 6 PER TYPE B
3 BEDROOM UNITS	
UNIT C1	= 1,088 SF
UNIT C2	= 1,138 SF
TOTAL 3 BEDROOM UNITS	= 15 PER TYPE B
4 BEDROOM UNITS	
UNIT D2	= 1,295 SF
UNIT D3	= 1,230 SF
TOTAL 4 BEDROOM UNITS	= 9 PER TYPE B
TOTAL TYPE B BUILDINGS	= 4 BUILDINGS
MULTIFAMILY BUILDING TYPE C (BUILDING 6000)	
47 UNIT BUILDING	
BUILDING STORIES/HEIGHT	= 3 STORIES/47'–7"
BUILDING GROUND FLOOR AREA	= 20,657 GROSS SF
TOTAL BUILDING AREA	= 61,971 GROSS SF
UNIT TYPES, AREA, & QUANTITY PER BUILDING:	
2 BEDROOM UNITS	
UNIT B1	= 848 SF
UNIT B3	= 935 SF
TOTAL 2 BEDROOM UNITS	= 18 PER TYPE C
3 BEDROOM UNITS	
UNIT C1	= 1,088 SF
UNIT C3	= 1,207 SF
TOTAL 3 BEDROOM UNITS	= 26 PER TYPE C
4 BEDROOM UNITS	
UNIT D4	= 1,380 SF
TOTAL TYPE C BUILDINGS	= 1 BUILDING
MULIFAMILY UNIT SUMMARY	
TOTAL MULTIFAMILY 2 BEDROOM UNITS	= 61
TOTAL MULTIFAMILY 3 BEDROOM UNITS	= 107
TOTAL MULTIFAMILY 4 BEDROOM UNITS	= 42
TOTAL MULTIFAMILY UNITS	= 210
TOTAL SINGLE FAMILY LOTS	= 50 LOTS
LOT SIZE	= 50' X 120'
LOT AREA	= 6,000 SF MIN.
DEVELOPMENT DENSITY CALCULATIONS	
MULTIFAMILY	
GROSS UNIT DENSITY = TOTAL UNITS/GROSS AREA	= 210 UNITS/16.88 AC = 12.44 UNITS/AC
NET UNIT DENSITY = TOTAL UNITS/NET AREA	= 210 UNITS/13.37 AC = 15.71 UNITS/AC
MULTIFAMILY LOT COVERAGE CALCULATIONS	
GROUND FLOOR AREA:	
MULTIFAMILY BUILDING TYPE A (1 BUILDING X 21,356 SF)	= 21,356 SF
MULITFAMILY BUILDING TYPE B (4 BUILDINGS X 13,722 SF)	= 54,888 SF
MULTIFAMILY BUILDING TYPE C (1 BUILDING X 20,657 SF)	= 20,657 SF
TOTAL	= 96,901 SF
GFA LOT COVERAGE = 96,901 SF/578,041 SF NET AREA = 0.17	
FLOOR AREA RATIO:	
MULTIFAMILY BUILDING TYPE A (1 BUILDING X 63,736 SF)	= 63,736 SF
MULITFAMILY BUILDING TYPE B (4 BUILDINGS X 41,166 SF)	= 164,664 SF
MULTIFAMILY BUILDING TYPE C (1 BUILDING X 61,971 SF)	= 61,971 SF
TOTAL	= 290,371 SF
FAR LOT COVERAGE = 290,371 SF/578,041 SF NET AREA	= 0.50
PARKING CALCULATIONS FOR MULTIFAMILY BUILDINGS	
• 1.5 SPACES PER DWELLING UNIT WITH UP TO TWO BEDROOMS, AND 2 SPACES PER THREE–BEDROOM OR LARGER DWELLING UNIT	
• 61 2–BEDROOM UNITS * 1.5	= 92 SPACES
• 107 3–BEDROOM UNITS * 2	= 214 SPACES
• 42 4–BEDROOM UNITS * 2	= 84 SPACES
TOTAL REQUIRED PARKING SPACES	= 390 SPACES
TOTAL PROPOSED PARKING SPACES	= 393 SPACES

*LOADING AREAS TO BE WITHIN SURFACE PARKING LOTS

SITE NOTES

1. ALL DIMENSIONS REFER TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
2. BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.

DEVELOPMENT SCHEDULE

MULTIFAMILY UNITS WILL BE DEVELOPED IN ONE PHASE WITH ANTICIPATED COMPLETION IN FALL 2028

SINGLE FAMILY LOTS WILL BE DEVELOPED AT A FUTURE DATE, WHICH WILL BE VERIFIED AT THE TIME OF PRELIMINARY SITE PLAN SUBMITTAL FOR THIS PORTION OF THE DEVELOPMENT

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TIMBER CREEK
SUPERIOR TOWNSHIP, MI

ELMINGTON

AREA PLAN

No.									
					1	2	3	4	5

DESIGNED BY:	MTH
DRAWN BY:	OKE
CHECKED BY:	JAA
DATE:	02/20/2026
KIMLEY-HORN PROJECT NO.	268960001

OVERALL SITE PLAN

SHEET NUMBER
C2-00

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GRAPHIC SCALE IN FEET
0 40' 80' 160'

GRADING LEGEND

620	PROPOSED CONTOUR
620	EXISTING CONTOUR
LOD	LIMITS OF DISTURBANCE
	PROPOSED STORM SEWER
	PROPOSED STORM STRUCTURES
	PROPOSED SANITARY MANHOLE
	PROPOSED WATER STRUCTURES

GRADING NOTES

1. THERE ARE NO PROPOSED GRADING IMPACTS IN ANY WETLAND.
2. ALL GRADING ACTIVITIES SHALL REMAIN ON–SITE OR WITH THE MACARTHUR BOULEVARD AND STAMFORD ROAD R.O.W.

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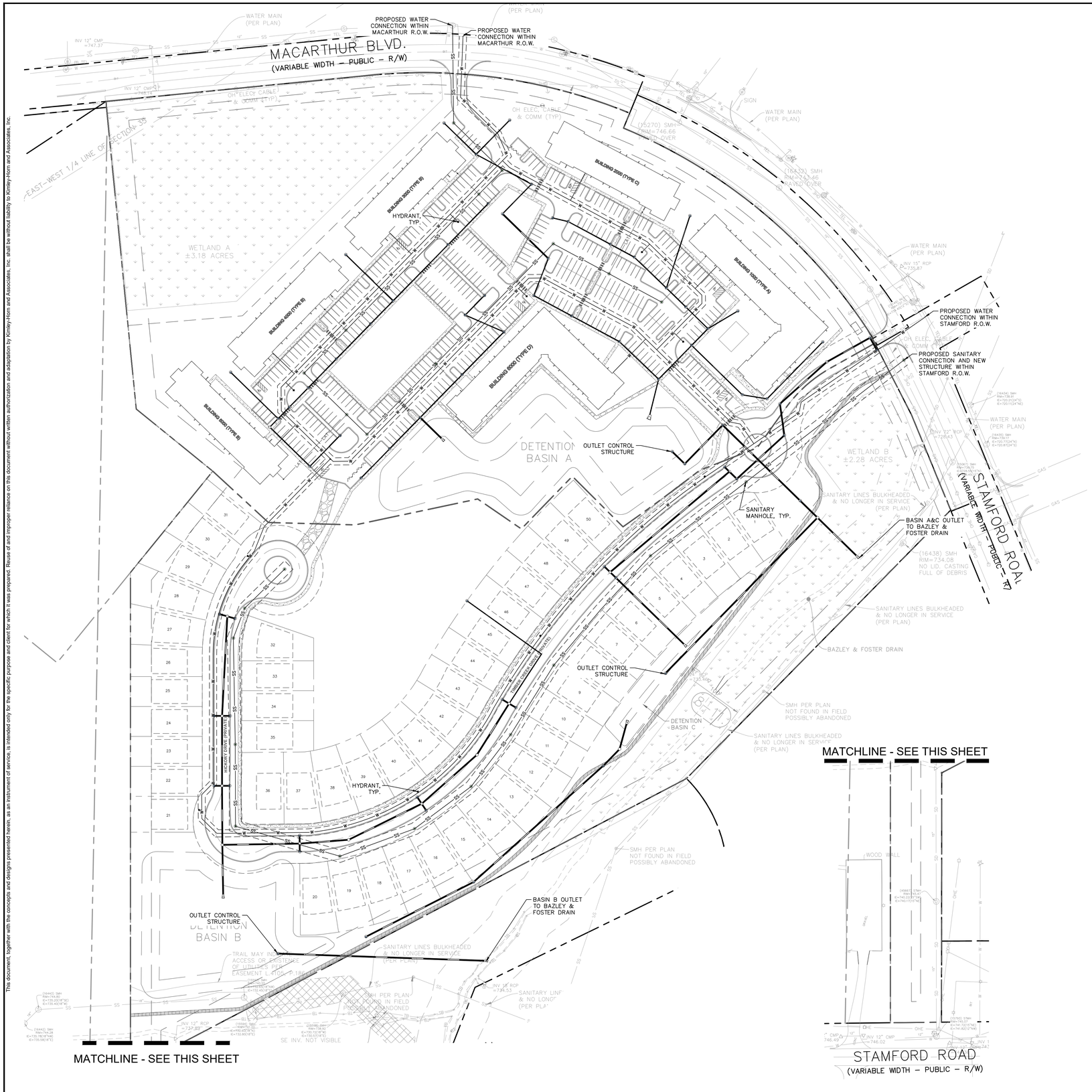
AREA PLAN

No.						1	2	3	4	5	6
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DATE:											02/20/2026

KIMLEY-HORN PROJECT NO.
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OVERALL GRADING AND DRAINAGE PLAN

SHEET NUMBER
C3-00



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GRAPHIC SCALE IN FEET
0 40' 80' 160'

UTILITY LEGEND

- PROPOSED SWALE
- PROPOSED STORM SEWER LINE
- PROPOSED STORM STRUCTURES
- PROPOSED SANITARY SEWER LINE
- PROPOSED SANITARY LATERAL LINE
- PROPOSED SANITARY MANHOLE
- PROPOSED WATER LINE
- PROPOSED WATER VALVE BOX, PIV, METER FIRE HYDRANT, FIRE DEPT CONN. & VAULT

EXISTING LEGEND

BOLLARD	MISC LID	YARD LIGHT
CONTROL BENCHMARK	MONITOR WELL	SANITARY CLEANOUT
ROW MONUMENT	GAS MARKER	SANITARY MANHOLE
FLAG POLE	GAS METER	VENT PIPE
MAIL BOX	GAS VALVE	STORM CURB INLET
UTILITY POLE	AC UNIT	STORM INLET
POST	AREA LIGHT	STORM ROOF DRAIN
SOIL BORING	ELECTRICAL BOX	STORM DRAIN MANHOLE
HANDICAP SYMBOL	ELECTRICAL HAND HOLE	STORM YARD DRAIN
SIGN	ELECTRICAL METER	FIRE DEPT CONNECTION
CABLE MANHOLE	ELECTRICAL MANHOLE	FIRE HYDRANT
CABLE PEDESTAL	ELECTRICAL MARKER	IRRIGATION VALVE
TELEPHONE PEDESTAL	ELECTRICAL TRANSFORMER	POST INDICATOR VALVE
TELEPHONE HAND HOLE	GUY POLE/WIRE	WELL
TELEPHONE MARKER	POWER POLE	WATER METER
TELEPHONE MANHOLE	TRAFFIC SIGNAL POLE	WATER VALVE
FIBER OPTIC MAKER	TRAFFIC MANHOLE	TREE / STUMP

SWALE		TOE OF SLOPE	TS
FENCE LINE	X	TOP OF BANK	TB
SANITARY SEWER	SS	UNDERGROUND FIBER OPTIC	FIB
STORM DRAIN	SD	OVERHEAD ELECTRICAL	OHE
WATER LINE	W	UNDERGROUND GAS	GAS
TREE LINE		UNDERGROUND TELEPHONE	TEL

GENERAL PLAN NOTES

REFER TO GENERAL NOTES SHEET FOR MORE INFORMATION INCLUDING THE FOLLOWING: (EXISTING LEGEND, BENCHMARK INFORMATION, AND SPECIFIC GENERAL PLAN NOTES.)

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AREA PLAN

No.									
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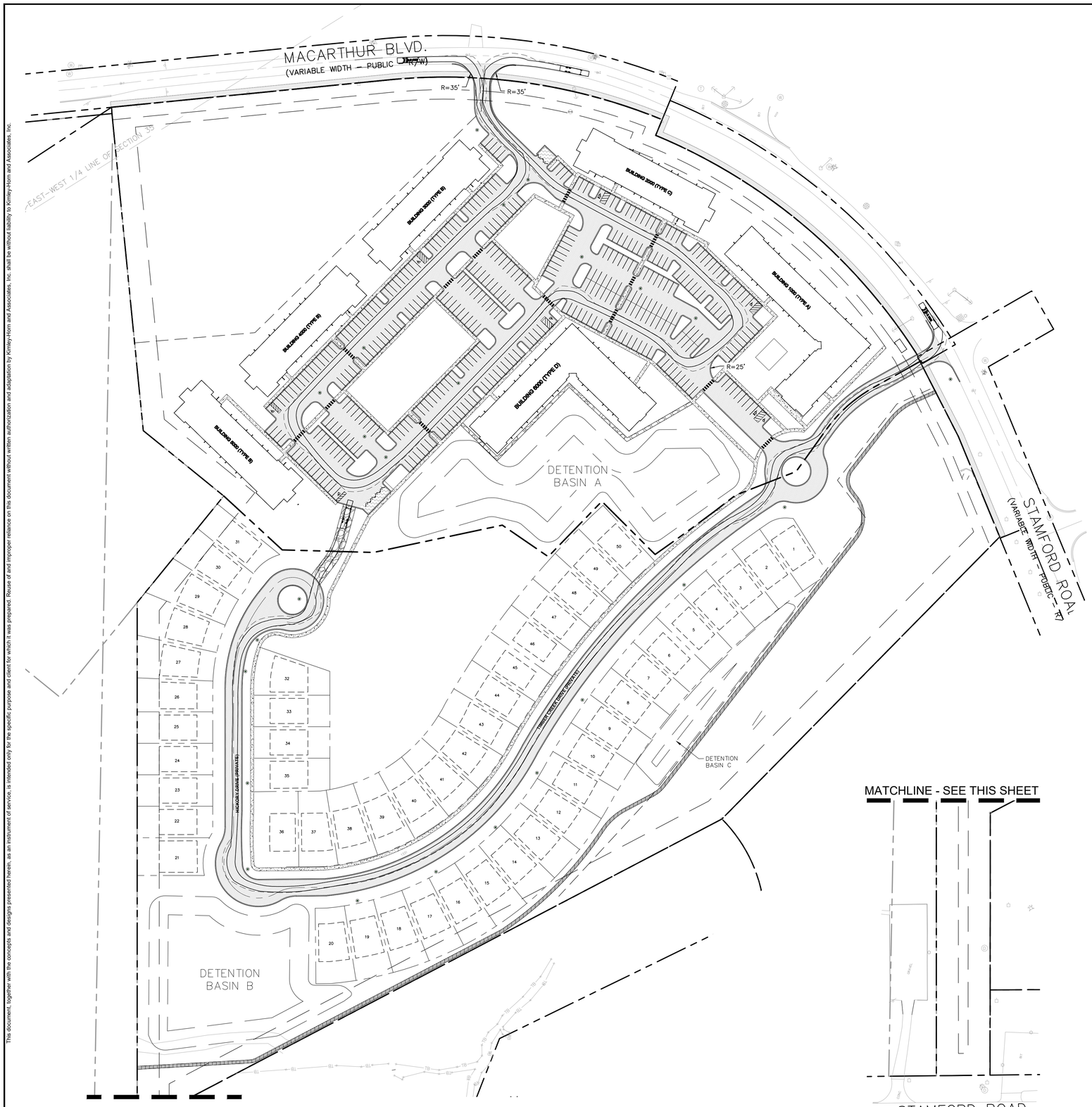
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CHECKED BY:	JAA
DATE:	02/20/2026
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OVERALL UTILITY PLAN

SHEET NUMBER
C4-00

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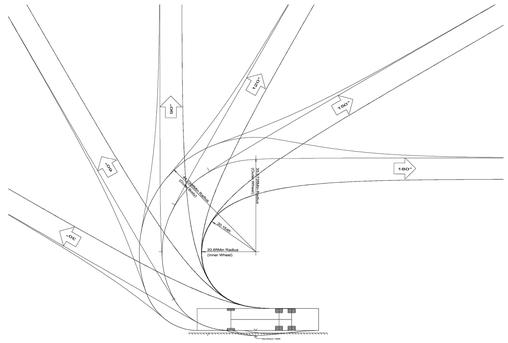
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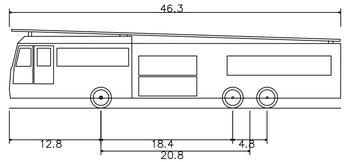


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NORTH

GRAPHIC SCALE IN FEET
0 40' 80' 160'





46' AERIAL FIRE APPARATUS

Overall Length	46.300ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	1.387ft
Track Width	8.300ft
Lock–to–lock time	6.00s
Max Wheel Angle	45.00°

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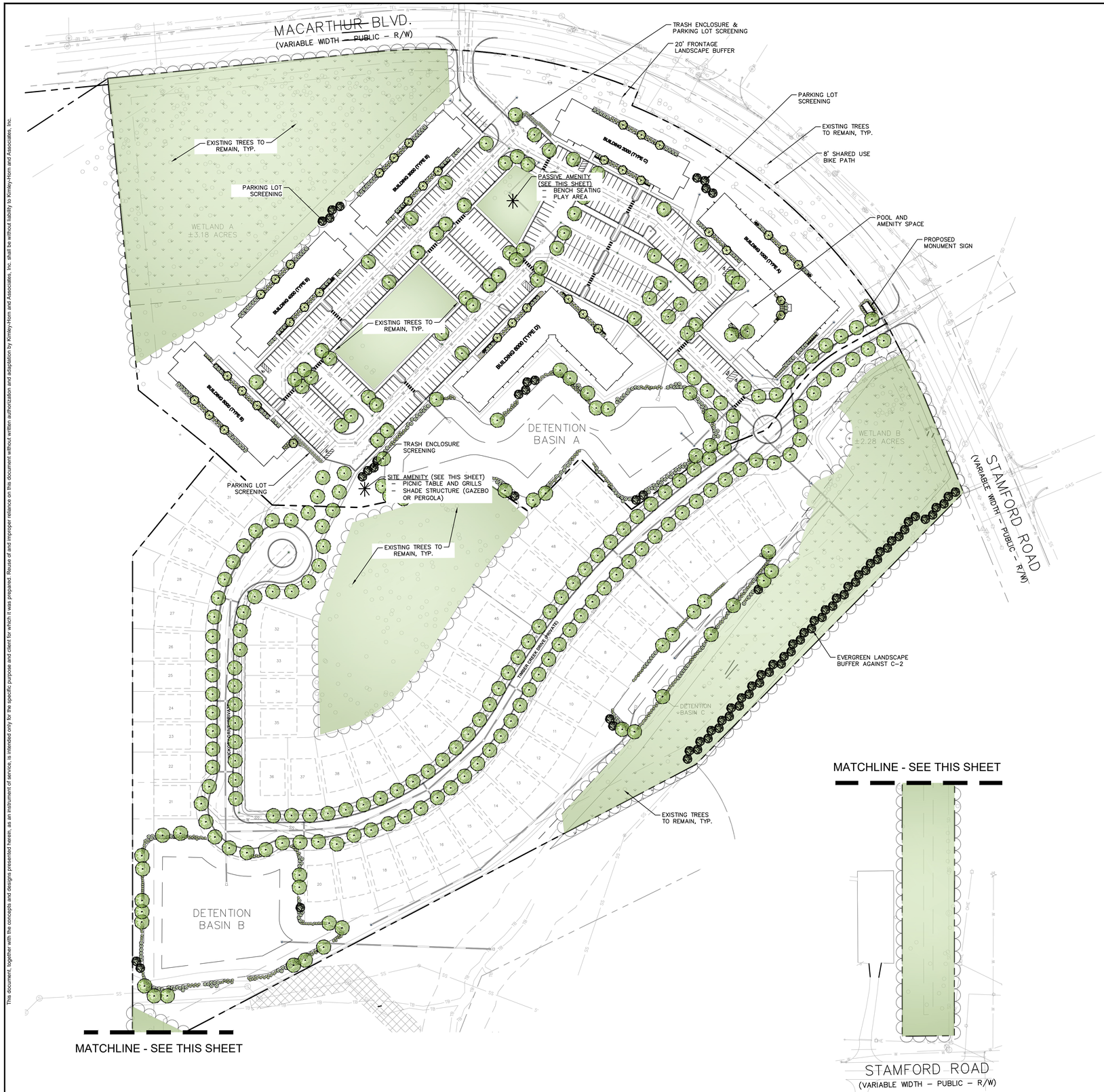
AREA PLAN

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FIRE PROTECTION PLAN

SHEET NUMBER
C4-01



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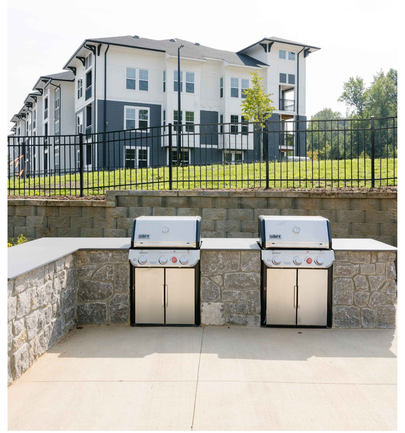
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EXAMPLE SITE AMENITIES









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AREA PLAN

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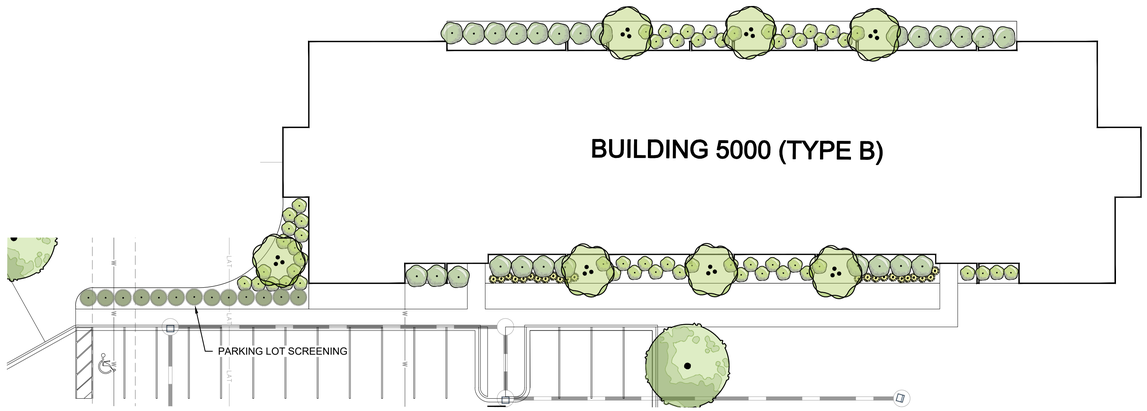
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OVERALL LANDSCAPE PLAN

SHEET NUMBER
L1-00

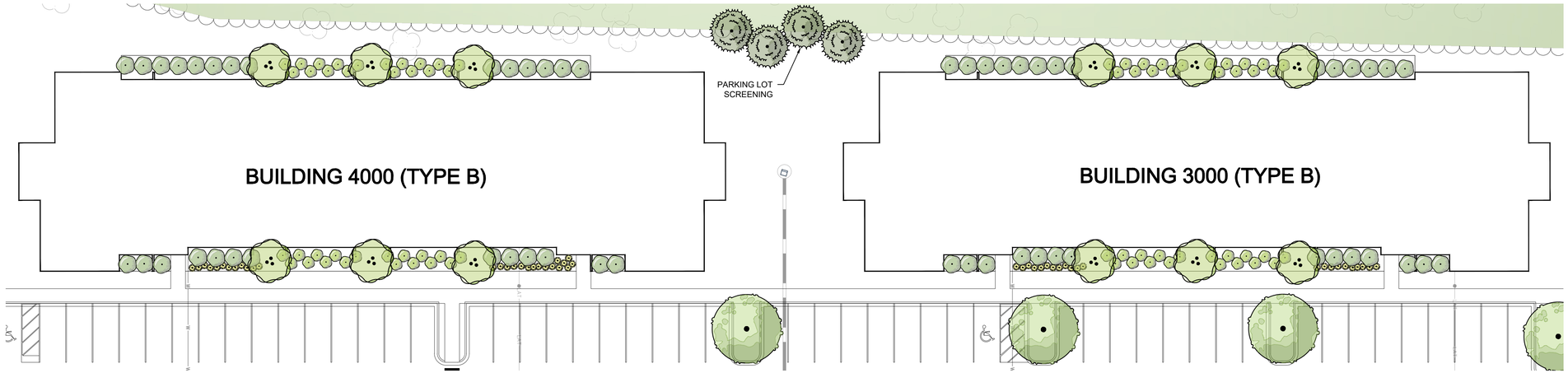
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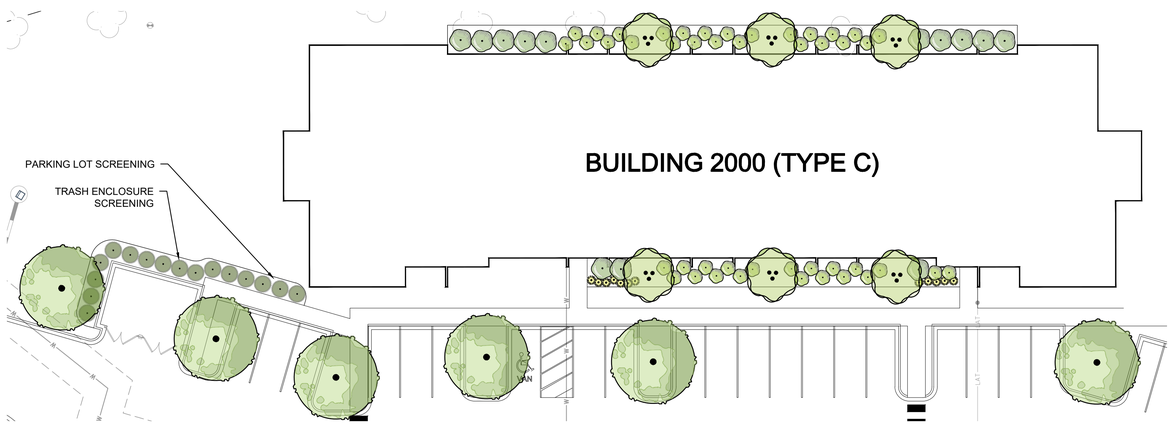
BUILDING 5000 PLANTING LAYOUT

SCALE: 1" = 20'



BUILDINGS 4000 & 3000 PLANTING LAYOUT

SCALE: 1" = 20'



BUILDING 2000 PLANTING LAYOUT

SCALE: 1" = 20'

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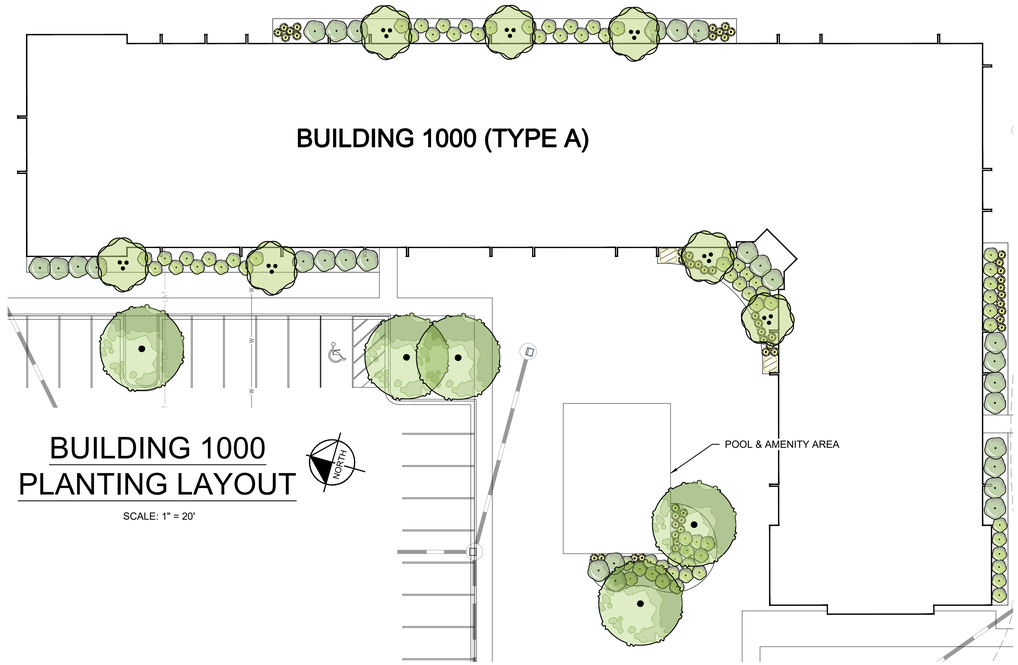
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CHECKED BY:	JAA
DATE:	02/20/2026
KIMLEY-HORN PROJECT NO. 268960001	

LANDSCAPE ENLARGEMENTS

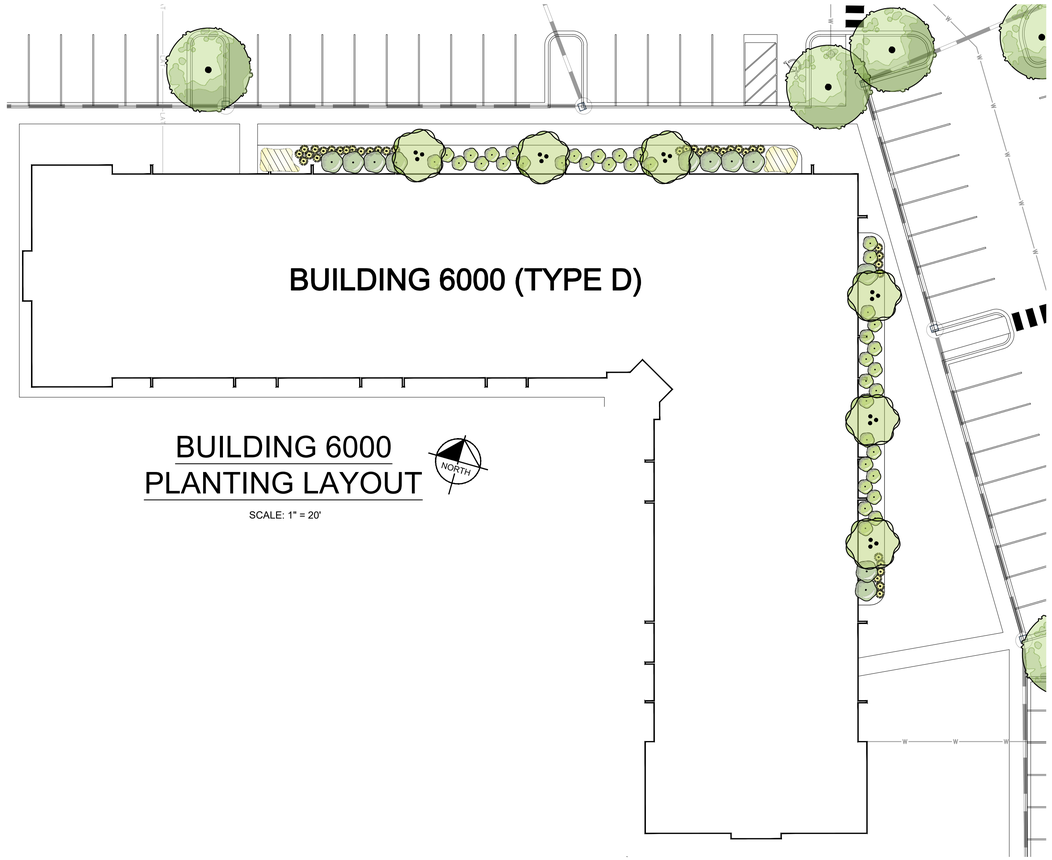
SHEET NUMBER
L1-01

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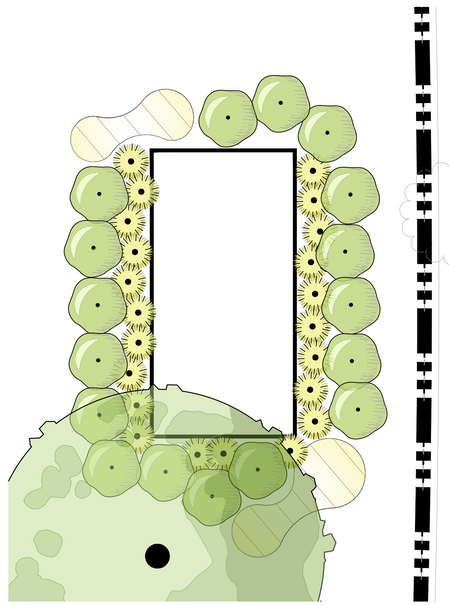
BUILDING 1000
PLANTING LAYOUT

SCALE: 1" = 20'



BUILDING 6000
PLANTING LAYOUT

SCALE: 1" = 20'



MONUMENT SIGN
PLANTING LAYOUT

SCALE: 1" = 5'

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Main: 313.572.1560 | www.kimley-horn.com
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TIMBER CREEK
SUPERIOR TOWNSHIP, MI

ELMINGTON

AREA PLAN

No.	---	---	---	---	1	2	3	4	5	6

DESIGNED BY:	MTH
DRAWN BY:	OKE
CHECKED BY:	JAA
DATE:	02/20/2026

KIMLEY-HORN PROJECT NO.
268960001

LANDSCAPE
ENLARGEMENTS

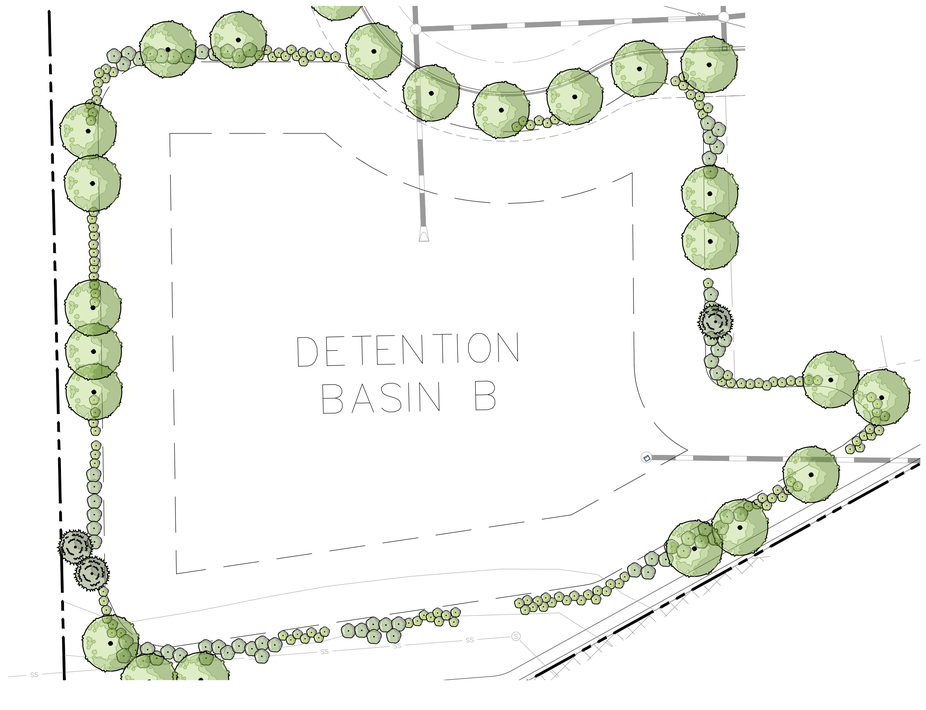
SHEET NUMBER
L1-02

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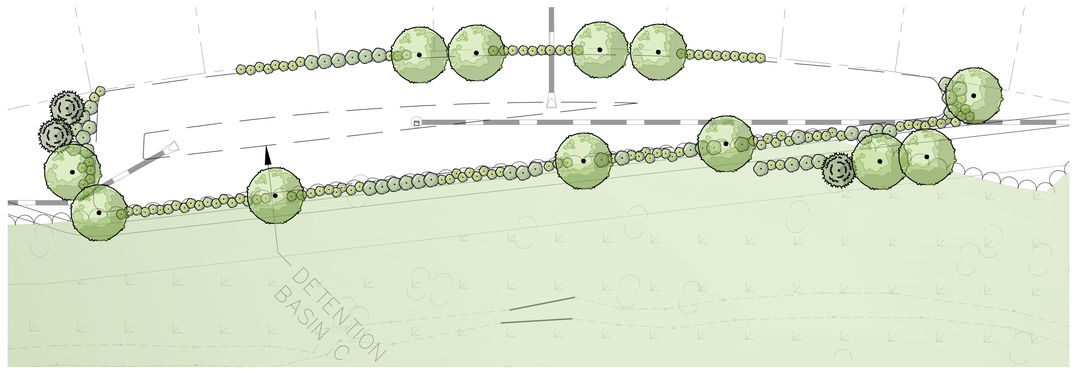
BASIN A PLANTING LAYOUT

SCALE: 1" = 30'



BASIN B PLANTING LAYOUT

SCALE: 1" = 30'



BASIN C PLANTING LAYOUT

SCALE: 1" = 30'

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TIMBER CREEK
SUPERIOR TOWNSHIP, MI

ELMINGTON

AREA PLAN

No.									
1	1	1	1	1	1	2	3	4	5	6

DESIGNED BY:	MTH
DRAWN BY:	OKE
CHECKED BY:	JAA
DATE:	02/20/2026
KIMLEY-HORN PROJECT NO. 268960001	

LANDSCAPE ENLARGEMENTS

SHEET NUMBER
L1-03

CONCEPT PLANT SCHEDULE

DECIDUOUS SHADE TREE — 257
2.5" CAL. MINIMUM
ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE
ACER SACCHARUM 'GREEN MOUNTAIN' / GREEN MOUNTAIN SUGAR MAPLE
ACER X FREEMANII 'AUTUMN BLAZE' / AUTUMN BLAZE MAPLE
CELTIS OCCIDENTALIS / COMMON HACKBERRY
GINKGO BILOBA 'AUTUMN GOLD' / AUTUMN GOLD MAIDENHAIR TREE
GLEDITSIA TRIACANTHOS F. INERMIS / THORNLESS HONEY LOCUST
LIQUIDAMBAR STYRACIFLUA / SWEET GUM
NYSSA SYLVATICA / TUPELO
PLATANUS X ACERIFOLIA / LONDON PLANE TREE
QUERCUS BICOLOR / SWAMP WHITE OAK
QUERCUS MACROCARPA / BURR OAK
QUERCUS RUBRUM / RED OAK
TAXODIUM DISTICHUM / BALD CYPRESS
TILIA AMERICANA 'BOULEVARD' / LITTLELEAF LINDEN
ULMUS X 'FRONTIER' / FRONTIER ELM

EVERGREEN TREE — 75
6` HT. MINIMUM
PICEA ABIES / NORWAY SPRUCE
PINUS FLEXILIS 'VANDERWOLF'S PYRAMID' / VANDERWOLF'S PYRAMID LIMBER PINE
PINUS STROBUS / WHITE PINE
PSUEDOTSUGA MENZIESII / DOUGLAS FIR
TSUGA CANADENSIS / EASTERN HEMLOCK

DECIDUOUS ORNAMENTAL TREE — 38
2" CAL. OR 6` HT. MINIMUM
AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE APPLE SERVICEBERRY
CERCIS CANADENSIS / EASTERN REDBUD
CORNUS FLORIDA 'APPALACHIAN SPRING' / APPALACHIAN SPRING DOGWOOD
MAGNOLIA X 'GALAXY' / GALAXY MAGNOLIA
MALUS X 'PRAIRIFIRE' / PRAIRIFIRE CRABAPPLE

LARGE DECIDUOUS SHRUB — 367
30" HT. OR 24" SPREAD MINIMUM
PHYSOCARPUS OPULIFOLIUS 'SEWARD' / SUMMER WINE® NINEBARK
RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC
VIBURNUM DENTATUM 'BLUE MUFFIN' / BLUE MUFFIN ARROWWOOD VIBURNUM

SMALL DECIDUOUS SHRUB — 706
30" HT. OR 24" SPREAD MINIMUM
ARONIA MELANOCARPA 'IROQUOIS BEAUTY' TM / IROQUOIS BEAUTY BLACK CHOKEBERRY
CEANOTHUS AMERICANUS / NEW JERSEY TEA
CORNUS SANGUINEA 'CATO' / ARCTIC SUN® BLOODTWIG DOGWOOD
DIERVILLA LONICERA / BUSH HONEYSUCKLE
FORSYTHIA X INTERMEDIA 'NIMBUS' / SHOW OFF® SUGAR BABY® DWARF FORSYTHIA
HYDRANGEA PANICULATA 'JANE' / LITTLE LIME® PANICLE HYDRANGEA
SPIRAEA BETULIFOLIA 'TOR GOLD' / GLOW GIRL® BIRCHLEAF SPIREA
WEIGELA FLORIDA 'BRAMWELL' / FINE WINE® WEIGELA

EVERGREEN SHRUB — 29
30" HT. OR 24" SPREAD MINIMUM
JUNIPERUS CHINENSIS 'FAIRVIEW' / FAIRVIEW JUNIPER
JUNIPERUS CHINENSIS 'SEA GREEN' / SEA GREEN JUNIPER
TAXUS X MEDIA 'TAUNTONII' / TAUNTON'S ANGLO-JAPANESE YEW

ORNAMENTAL GRASS — 195
1 GAL. MINIMUM
ANDROPOGON GERARDII 'BLACKHAWKS' / BLACKHAWKS BIG BLUESTEM
CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS
PANICUM VIRGATUM 'HEAVY METAL' / HEAVY METAL SWITCH GRASS
SPOROBOLUS HETEROLEPIS / PRAIRIE DROPSEED

PERENNIALS

WOODLAND PRESERVATION AREA

SUPERIOR TOWNSHIP, MI - LANDSCAPE CODE REQUIREMENTS

ZONING ORDINANCE (SPRING 2026 DRAFT)	REQUIRED	PROPOSED
SEC. 12.03 D - SCREENING BETWEEN LAND USES		
UPON ANY IMPROVEMENT FOR WHICH A SITE PLAN IS REQUIRED, A LANDSCAPE BUFFER SHALL BE CONSTRUCTED TO CREATE A VISUAL SCREEN AT LEAST SIX (6) FEET IN HEIGHT ALONG ALL ADJOINING BOUNDARIES BETWEEN EITHER A CONFLICTING NONRESIDENTIAL OR CONFLICTING RESIDENTIAL LAND USE AND RESIDENTIALLY ZONED OR USED PROPERTY	**6' HEIGHT LANDSCAPE BUFFER REQUIRED ALONG C-2 ZONING**	**6' HEIGHT EVERGREEN LANDSCAPE BUFFER PROVIDED ALONG C-2 ZONING**
SEC. 12.03 E - GREENBELTS		
UPON ANY IMPROVEMENT FOR WHICH A SITE PLAN IS REQUIRED, A GREENBELT SHALL BE PROVIDED ALONG THE FRONTAGE OF ALL PUBLIC OR PRIVATE STREETS THE GREENBELT SHALL BE LANDSCAPED WITH A MINIMUM OF ONE (1) TREE FOR EVERY THIRTY (3) LINEAL FEET, OR FRACTION THEREOF, OF FRONTAGE ABUTTING A PUBLIC ROAD RIGHT-OF-WAY. NONORNAMENTAL DECIDUOUS TREES WITHIN A GREENBELT SHALL BE A MINIMUM CALIPER OF THREE (3) INCHES OR GREATER. EVERGREEN TREES WITHIN A GREENBELT SHALL BE A MINIMUM OF EIGHT (8) FEET	MACARTHUR BOULEVARD: 1,782 LF 1,782 LF / 30 = 59.4 **60 TREES REQUIRED ALONG MACARTHUR BOULEVARD** **1 TREE EVERY 30 LINEAL FEET REQUIRED ALONG SINGLE-FAMILY PRIVATE ROADS**	**80 EXISTING TREES TO REMAIN ALONG MACARTHUR BOULEVARD TO MEET REQUIREMENT** **1 TREE EVERY 30 LINEAL FEET PROVIDED ALONG SINGLE-FAMILY PRIVATE ROADS**
SEC. 14.10 F - PARKING LOT LANDSCAPING AND PERIMETER SCREENING		
PERIMETER SCREENING: PARKING LOTS SHALL BE SCREENED FROM ALL ABUTTING RURAL USES, RESIDENTIAL USES, RESIDENTIAL ZONING DISTRICTS, AND ROAD RIGHT-OF-WAY	**PARKING LOT SCREENING REQUIRED**	**PARKING LOT SCREENING PROVIDED**
LANDSCAPING WITHIN PARKING LOTS: A MINIMUM OF ONE (1) DECIDUOUS SHADE OR ORNAMENTAL TREE SHALL BE PROVIDED FOR EACH PLANTING ISLAND. SHRUBS AND LIVE GROUNDCOVER PLANTINGS SHALL BE USED TO COVER THE REMAINING AREAS OF THE ISLAND	**ONE DECIDUOUS OR ORNAMENTAL TREE PER PLANTING ISLAND REQUIRED**	**ISLAND PLANTINGS PROVIDED**
SEC. 14.10 I - DETENTION AND RENTENTION BASIN SCREENING		
ONE (1) DECIDUOUS SHADE OR EVERGREEN TREE AND TEN (10) SHRUBS SHALL BE PLANTED FOR EVERY FIFTY (50) LINEAL FEET OF POND PERIMETER AS MEASURED ALONG THE TOP OF THE BANK ELEVATION	DETENTION BASIN A: 1,423 LF 1,423 LF / 50 = 28.46 28.46 * 10 = 284.6 **28 TREES, 285 SHRUBS REQUIRED ALONG DETENTION BASIN A** DETENTION BASIN B: 1,021 LF 1,021 LF / 50 = 20.42 20.42 * 10 = 204.2 **20 TREES, 204 SHRUBS REQUIRED ALONG DETENTION BASIN B** DETENTION BASIN C:773 LF 773 LF / 50 = 15.46 15.46 * 10 = 154.6 **15 TREES, 155 SHRUBS REQUIRED ALONG DETENTION BASIN C**	**28 TREES, 285 SHRUBS PROVIDED ALONG DETENTION BASIN A** **20 TREES, 204 SHRUBS PROVIDED ALONG DETENTION BASIN B** **15 TREES, 155 SHRUNS PROVIDED ALONG DETENTION BASIN C**
93 LANDMARK TREES REMOVED, 74 LANDMARK TREES PRESERVED		

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TIMBER CREEK
SUPERIOR TOWNSHIP, MI

ELMINGTON

AREA PLAN

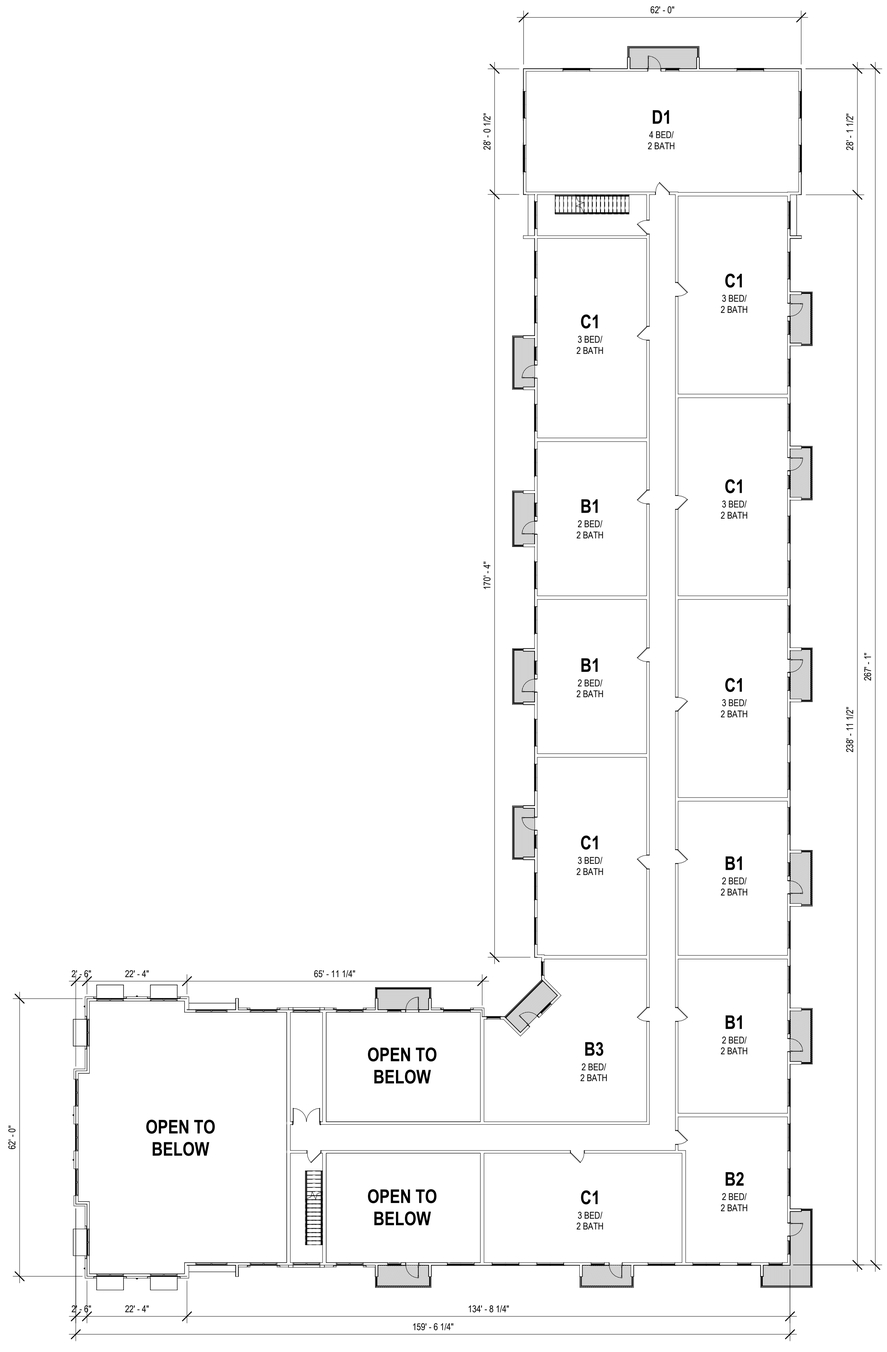
No.									
1	1	1	1	1	1	2	3	4	5	6

DESIGNED BY: MTH
DRAWN BY: OKE
CHECKED BY: JAA
DATE: 02/20/2026
KIMLEY-HORN PROJECT NO. 268960001

LANDSCAPE SCHEDULE

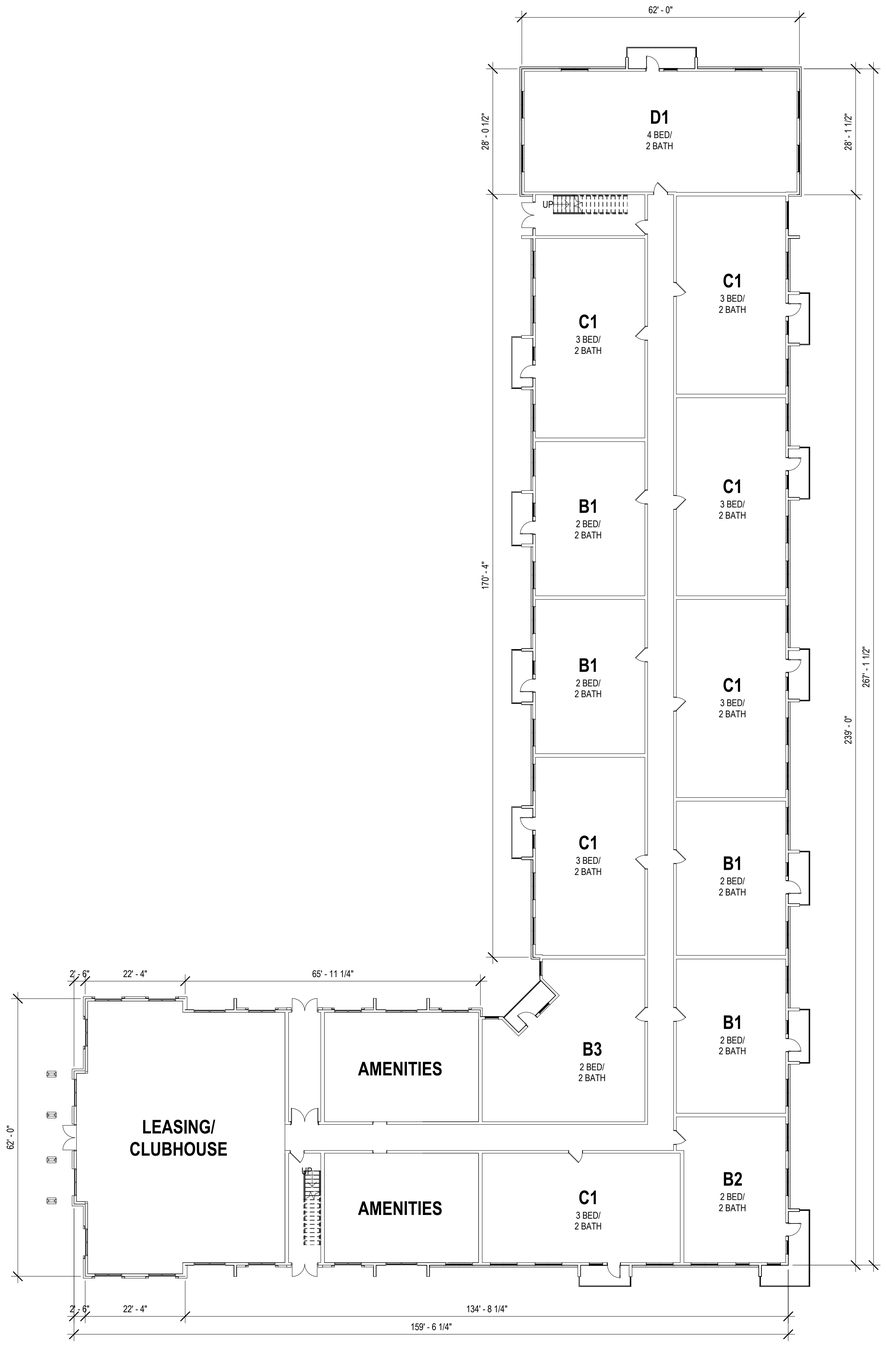
SHEET NUMBER
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2 A1.1 BLDG 1000 (TYPE A) - LEVEL 2

1/16" = 1'-0"



1 A1.1 BLDG 1000 (TYPE A) - LEVEL 1

1/16" = 1'-0"

ARCHITECT

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Consultant 3 Title
Consultant 3
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Contact Info 3

Consultant 4 Title
Consultant 4
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City State Zip 4
Contact Info 4

Consultant 5 Title
Consultant 5
Address 5
City State Zip 5
Contact Info 5

Consultant 6 Title
Consultant 6
Address 6
City State Zip 6
Contact Info 6

SEAL

PROJECT REVISIONS

ISSUED: 02/23/2026 AREA PLAN SUBMISSION
REVISED:

#	DATE	DESCRIPTION

TIMBER CREEK APARTMENTS

ADDRESS: SUPERIOR TOWNSHIP, MI

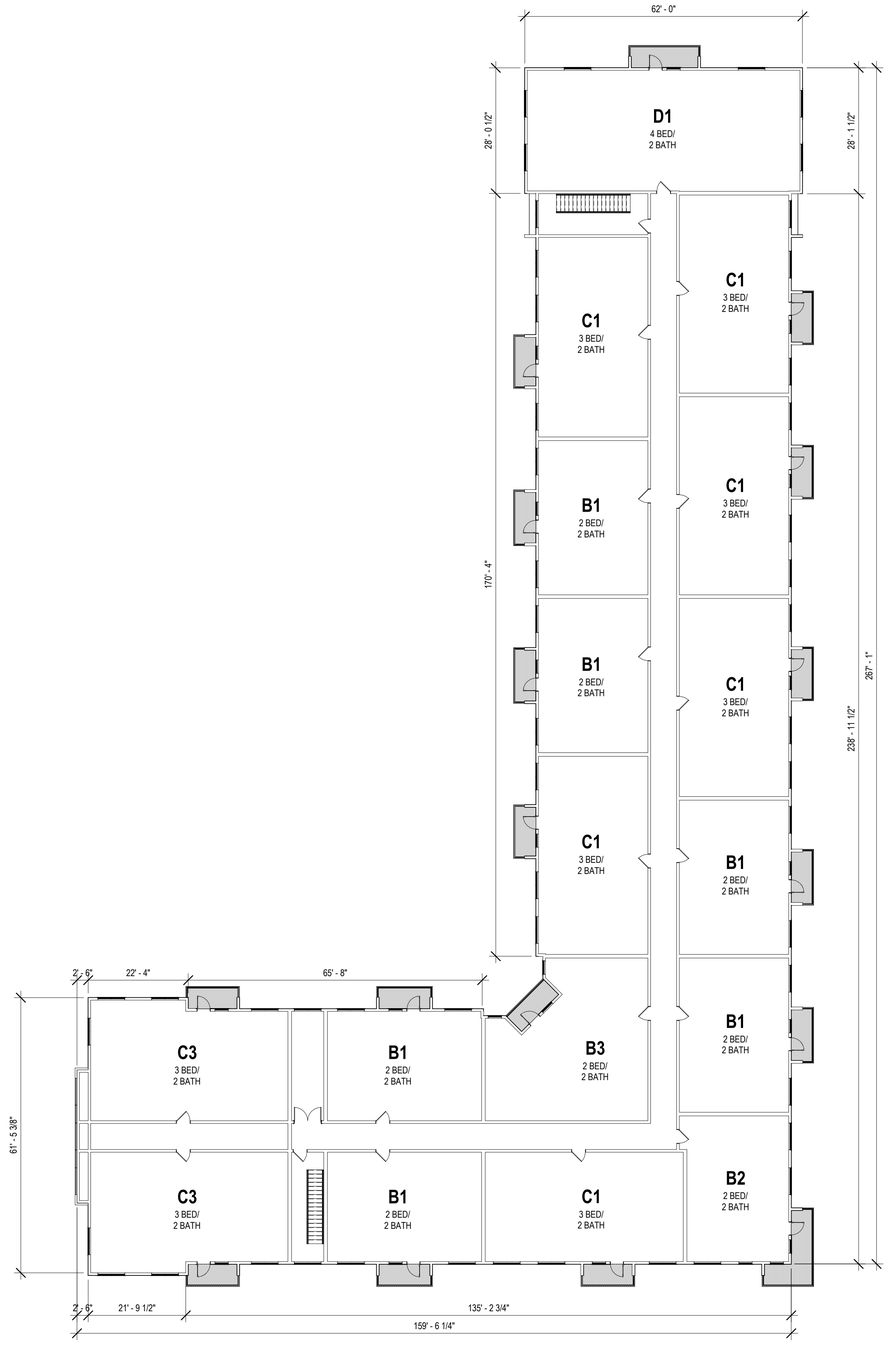
PROJECT NO: 25001
DRAWN BY: Author | CHECKED BY: Checker
SHEET SIZE: 24" x 36"

BLDG 1000 (TYPE A) - OVERALL FLOOR PLANS

A1.1

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1 / A1.2 BLDG 1000 (TYPE A) - LEVEL 3
1/16" = 1'-0"

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Address 3
City State Zip 3
Contact Info 3

Consultant 4 Title
Consultant 4
Address 4
City State Zip 4
Contact Info 4

Consultant 5 Title
Consultant 5
Address 5
City State Zip 5
Contact Info 5

Consultant 6 Title
Consultant 6
Address 6
City State Zip 6
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BLDG 1000 (TYPE A) - OVERALL FLOOR PLANS

A1.2

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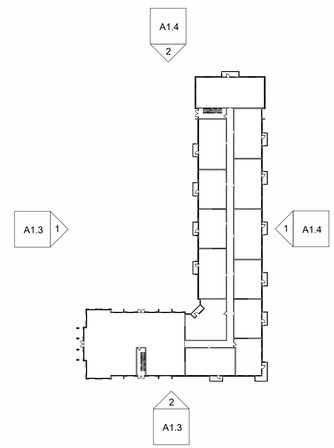
1 A1.3 BLDG. A - WEST ELEVATION

3/32" = 1'-0"



2 A1.3 BLDG A - SOUTH ELEVATION

3/32" = 1'-0"



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Contact Info 3

Consultant 4 Title
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City State Zip 4
Contact Info 4

Consultant 5 Title
Consultant 5
Address 5
City State Zip 5
Contact Info 5

Consultant 6 Title
Consultant 6
Address 6
City State Zip 6
Contact Info 6

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ISSUED: 02/23/2026 AREA PLAN SUBMISSION

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TIMBER CREEK APARTMENTS

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PROJECT NO: 25001

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SHEET SIZE: 24" x 36"

BLDG 1000 (TYPE A) - ELEVATIONS

A1.3

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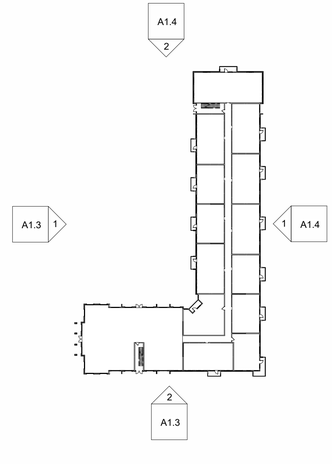
1 A1.4 BLDG A - EAST ELEVATION

3/32" = 1'-0"



2 A1.4 BLDG A - NORTH ELEVATION

3/32" = 1'-0"



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Consultant 3 Title
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Address 3
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Contact Info 3

Consultant 4 Title
Consultant 4
Address 4
City State Zip 4
Contact Info 4

Consultant 5 Title
Consultant 5
Address 5
City State Zip 5
Contact Info 5

Consultant 6 Title
Consultant 6
Address 6
City State Zip 6
Contact Info 6

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PROJECT REVISIONS

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REVISED:

#	DATE	DESCRIPTION

TIMBER CREEK APARTMENTS

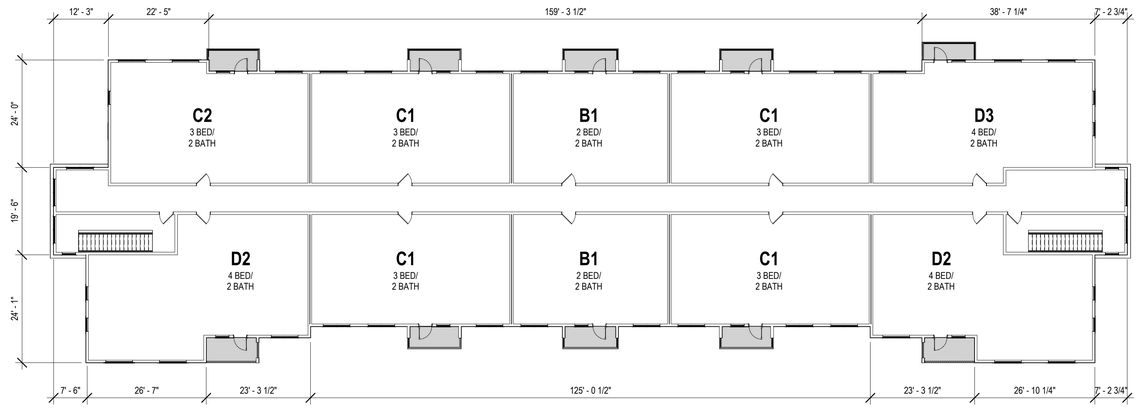
ADDRESS: SUPERIOR TOWNSHIP, MI

PROJECT NO: 25001
DRAWN BY: Author | CHECKED BY: Checker
SHEET SIZE: 24" x 36"

BLDG 1000 (TYPE A) - ELEVATIONS

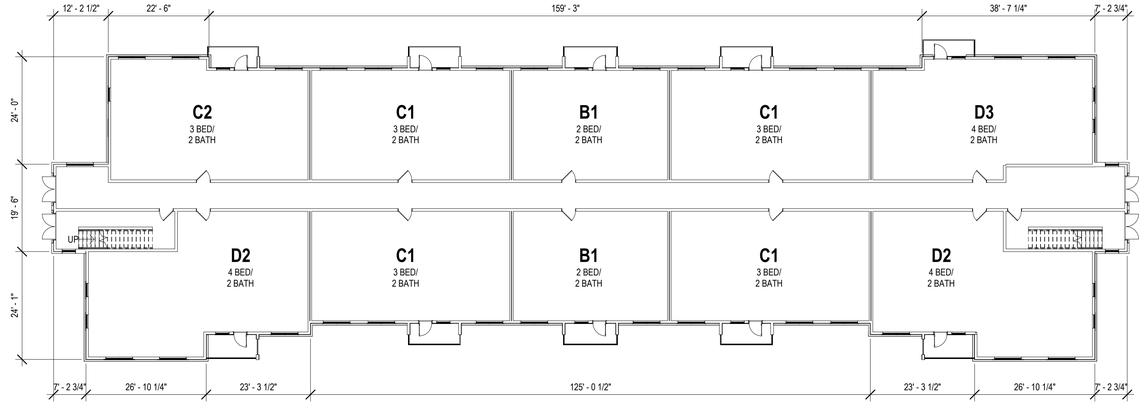
A1.4

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2 A2.1 BLDG 2000, 3000, 4000, 5000 (TYPE B) - LEVEL 2 & 3

1/16" = 1'-0"



1 A2.1 BLDG 2000, 3000, 4000, 5000 (TYPE B) - LEVEL 1

1/16" = 1'-0"

2/20/2026 11:01:19 AM

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Contact Info 2

Consultant 3 Title
Consultant 3
Address 3
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Contact Info 3

Consultant 4 Title
Consultant 4
Address 4
City State Zip 4
Contact Info 4

Consultant 5 Title
Consultant 5
Address 5
City State Zip 5
Contact Info 5

Consultant 6 Title
Consultant 6
Address 6
City State Zip 6
Contact Info 6

SEAL

PROJECT REVISIONS

ISSUED: 02/23/2026 AREA PLAN SUBMISSION
REVISED:

#	DATE	DESCRIPTION

TIMBER CREEK APARTMENTS

ADDRESS: SUPERIOR TOWNSHIP, MI

PROJECT NO: 25001
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SHEET SIZE: 24" x 36"

BLDG 2000, 3000, 4000, 5000 (TYPE B) - OVERALL FLOOR PLANS

A2.1

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1 A2.2 BLDG TYPE "B" - FRONT ELEVATION
3/32" = 1'-0"



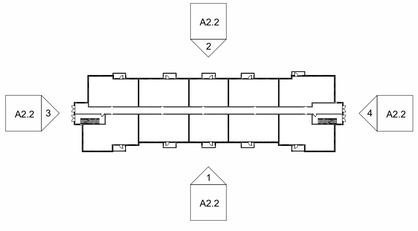
2 A2.2 BLDG TYPE "B" - REAR ELEVATION
3/32" = 1'-0"



3 A2.2 BLDG TYPE "B" - SIDE ELEVATION
3/32" = 1'-0"



4 A2.2 BLDG TYPE "B" - SIDE ELEVATION
3/32" = 1'-0"



2/20/2026 11:33:38 AM

ARCHITECT

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Contact Info 1

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Address 2
City State Zip 2
Contact Info 2

Consultant 3 Title
Consultant 3
Address 3
City State Zip 3
Contact Info 3

Consultant 4 Title
Consultant 4
Address 4
City State Zip 4
Contact Info 4

Consultant 5 Title
Consultant 5
Address 5
City State Zip 5
Contact Info 5

Consultant 6 Title
Consultant 6
Address 6
City State Zip 6
Contact Info 6

SEAL

PROJECT REVISIONS

ISSUED: 02/23/2026 AREA PLAN SUBMISSION
REVISED:

#	DATE	DESCRIPTION

TIMBER CREEK APARTMENTS

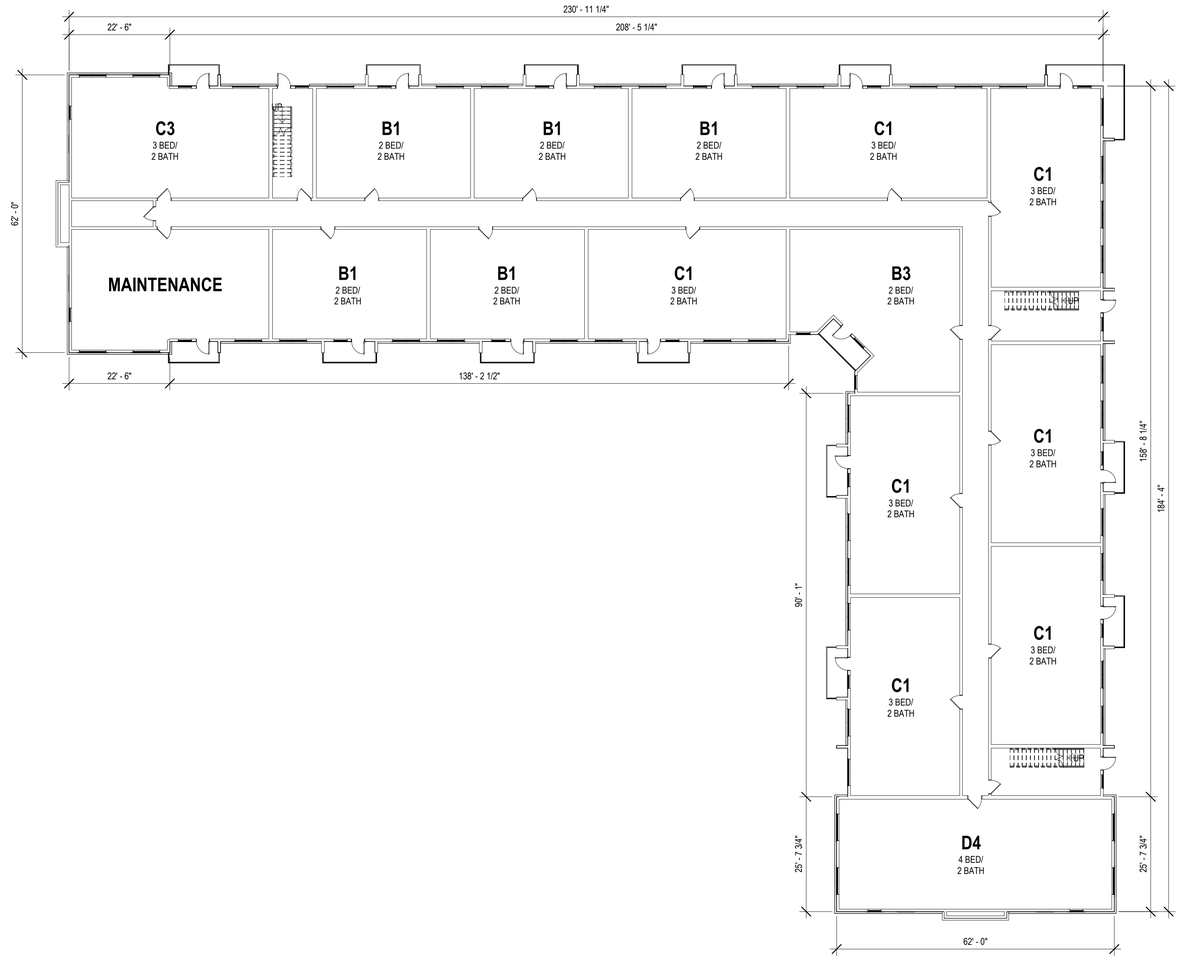
ADDRESS: SUPERIOR TOWNSHIP, MI

PROJECT NO: 25001
DRAWN BY: Author | CHECKED BY: Checker
SHEET SIZE: 24" x 36"

BLDG 2000, 3000, 4000, 5000 (TYPE B) - ELEVATIONS

A2.2

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1 A3.1 BLDG 6000 (TYPE C) - LEVEL 1

1/16" = 1'-0"

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PROJECT REVISIONS

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ADDRESS: SUPERIOR TOWNSHIP, MI

PROJECT NO: 25001

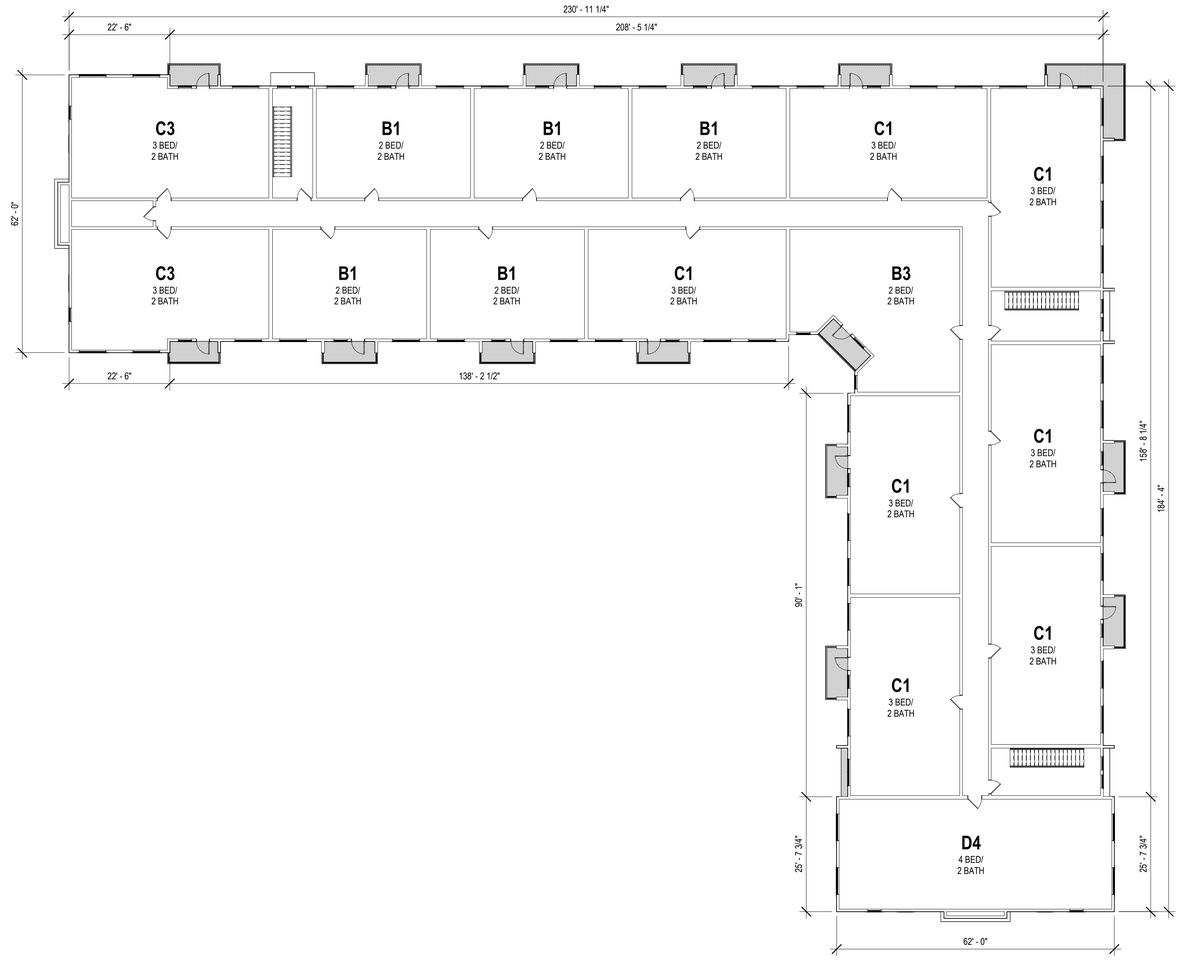
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1 / A3.2 BLDG 6000 (TYPE C) - LEVEL 2 & 3

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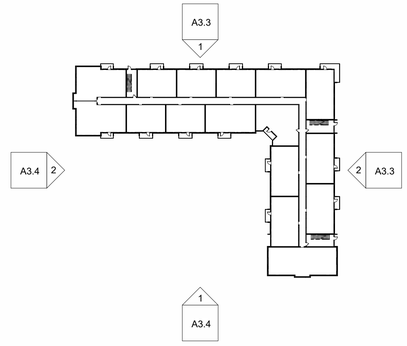
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2 A3.3 BLDG C - EAST ELEVATION

3/32" = 1'-0"



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BLDG 6000 (TYPE C) - ELEVATIONS

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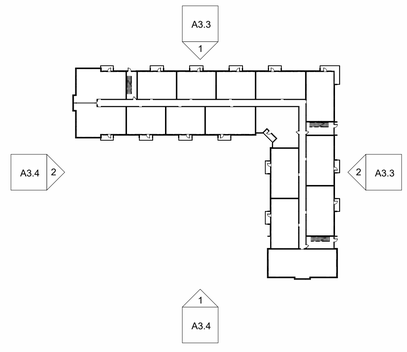
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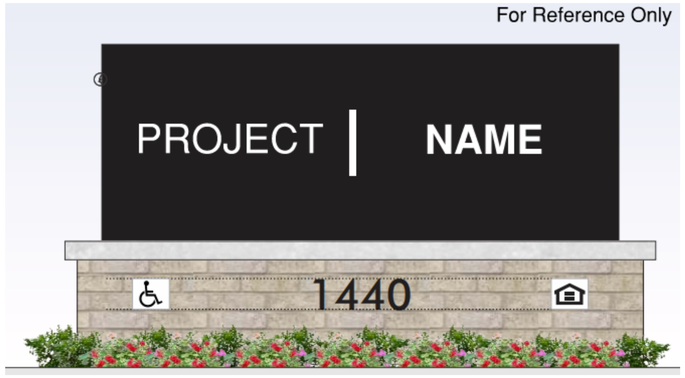
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BLDG 6000 (TYPE C) - ELEVATIONS

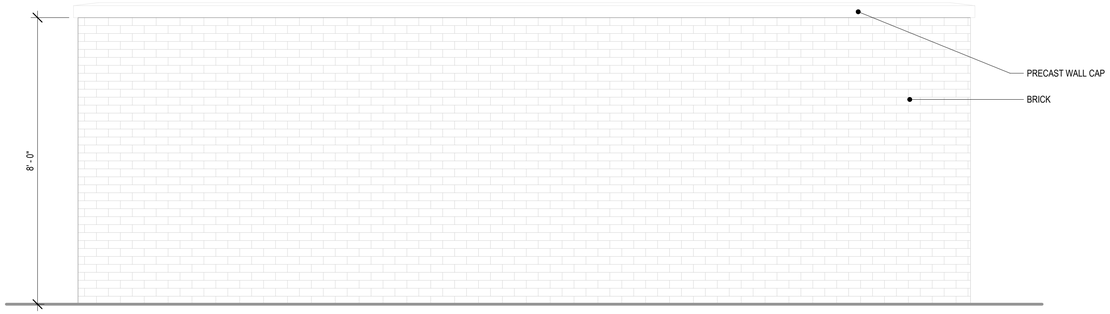
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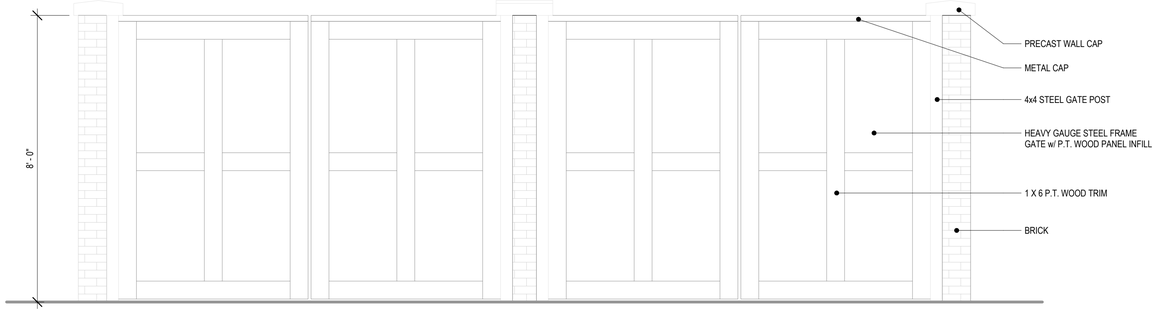
NOTE:
DUMPSTER LOCATION DETAILS AND FINISHES WILL BE APPLIED TO MATCH ALL DUMPSTER LOCATIONS ON THE DEVELOPEMENT



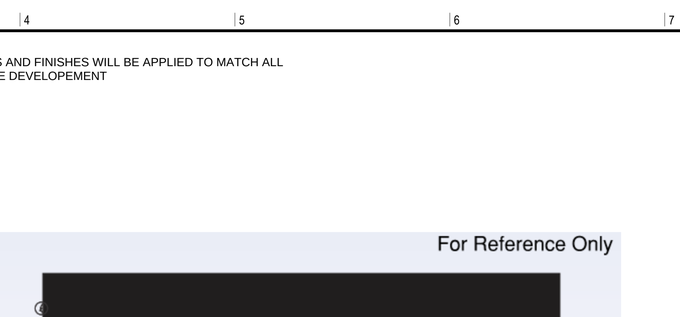
Monument Sign



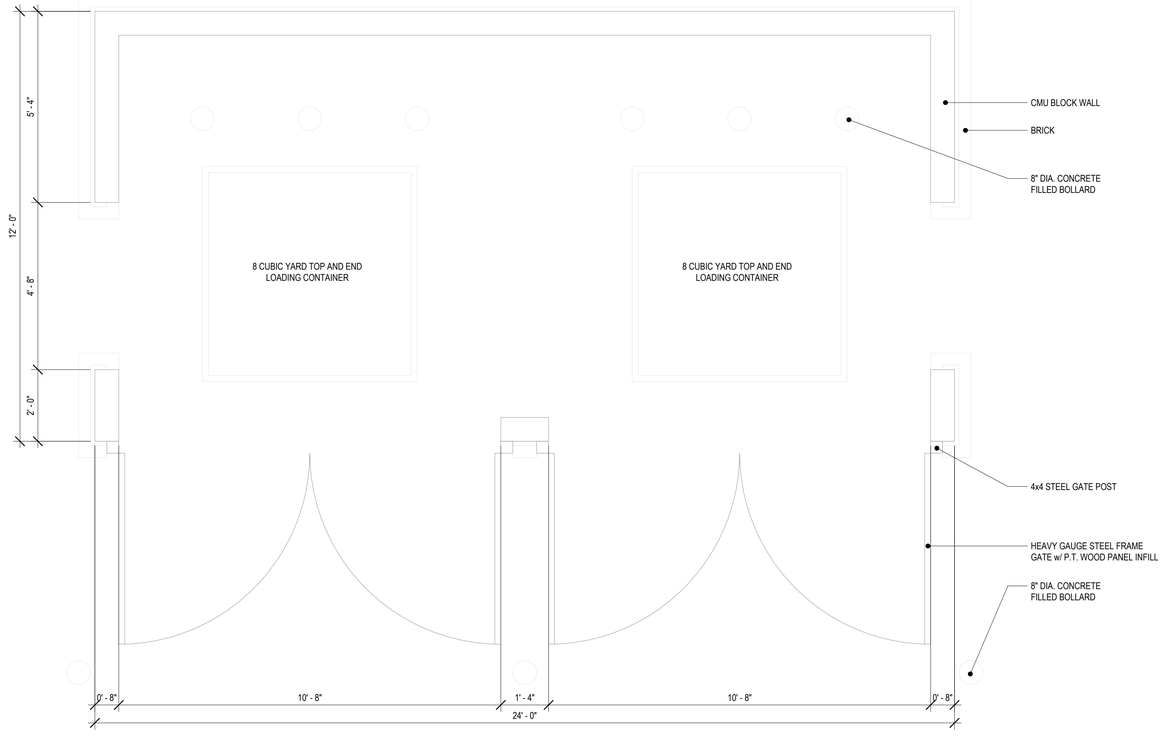
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2 A4.1 TRASH ENCLOSURE - FRONT ELEVATION
1/2" = 1'-0"



4 A4.1 TRASH ENCLOSURE - SIDE ELEVATION
1/2" = 1'-0"



1 A4.1 TRASH ENCLOSURE PLAN
1/2" = 1'-0"

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PROJECT REVISIONS

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REVISED:

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MONUMENT SIGN AND TRASH ENCLOSURE DETAILS

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Affordability Narrative – Timber Creek

Purpose

Housing costs have risen significantly in Washtenaw County in recent years, making homeownership unattainable for many working families in the region. This is particularly true for those living in the southern portion of Superior Township, where median incomes are lower than in other parts of the Township.

Timber Creek is designed to serve these households: working families who cannot a**ff**ord to purchase a home, but who need larger **fl**oor plans than most rental housing provides.

Income Restrictions & Anticipated Rents

All units at Timber Creek will be income-restricted under MSHDA's Low Income Housing Tax Credit program. This means that household income must fall below certain limits tied to Washtenaw County's Area Median Income (AMI), and rents are capped so that residents do not spend more than 1/3 of their income on housing. These restrictions will be in place for at least 15 years.

Timber Creek will include the following income tiers:

- 21 units at 40% AMI
    - 11 two-bedroom units
    - 5 three-bedroom units
    - 5 four-bedroom units
- 166 units at 60% AMI
    - 42 two-bedroom units
    - 92 three-bedroom units
    - 32 four-bedroom units
- 23 units at 70% AMI
    - 8 two-bedroom units
    - 10 three-bedroom units
    - 5 four-bedroom units

Anticipated Rents

We currently anticipate average rents of approximately:

- $1,500 for two-bedroom units
- $1,750 for three-bedroom units
- $2,000 for four-bedroom units

Resident Profile

We expect that Timber Creek residents will primarily be teachers, healthcare workers, technicians, administrative staff, and other essential members of the Township's workforce. We anticipate that they will work in the nearby employment centers in Ypsilanti and along the Geddes corridor, including the Hyundai-Kia Technical Center. Many workers in these areas will have incomes from $70,000 to $90,000 per year, placing them squarely within the income tiers described above.

Distinction from Neighboring Properties

Timber Creek is structured differently from nearby existing affordable housing properties in the area, including Sycamore Meadows and Danbury Park Manor. Every unit at those properties receives project-based Section 8 assistance, meaning rents are subsidized through a federal funding contract. Those properties also serve households in lower income tiers, generally in the 30% AMI range and only up to 50% AMI.

In contrast, Timber Creek is designed as workforce housing for households with stable earned income, rather than a deeply subsidized housing project. The development will not use any project-based Section 8 assistance, and residents will be responsible for their own monthly rent obligations. In addition, 90% of the units at Timber Creek will serve residents at the 60-70% AMI range.

Tax Abatement Request

We request a 4% shelter rent payment in lieu of taxes (PILOT) pursuant to the provisions of the State Housing Development Authority Act.

This abatement will ensure the project's long-term financial feasibility while allowing us to incorporate higher quality exterior materials, more extensive landscaping, and more shared amenities that will benefit residents and the Township for decades to come.

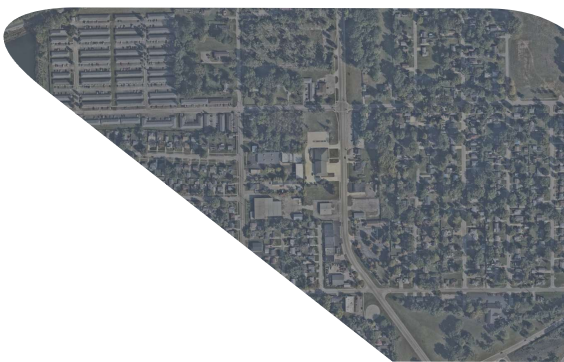
MACARTHUR RESIDENTIAL

Traffic Impact Study

Superior Township, Michigan

February 2026



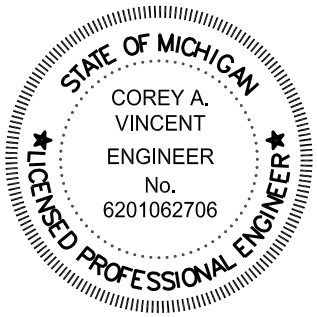


Prepared for:

Elmington

Kimley»Horn
of Michigan, Inc.

I certify that this Traffic Impact Analysis report has been prepared by me or under my immediate supervision and that I have experience and training in the field of traffic and transportation engineering.



Corey Vincent, P.E., PTOE
Michigan Licensed Professional Engineer 6201062706
Kimley-Horn and Associates of Michigan, Inc.

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EXECUTIVE SUMMARY

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained by Elmington to perform a traffic impact study for a proposed residential development on the northwest quadrant of the intersection of MacArthur Boulevard/Stamford Road & Wiard Boulevard in Superior Township, Michigan. The proposed development will include construction of 210 units of multifamily housing and 51 units of single-family housing. The existing site is currently undeveloped. The conceptual site plan is provided in the appendix.

Access to the proposed development would be provided via two full-access driveways along MacArthur Boulevard. One access is located approximately 1,200 feet north of Wiard Boulevard and one aligned opposite Wiard Boulevard. The proposed development is expected to be completed in 2028.

As part of this study, the existing roadway network was analyzed to determine the current operations at the study intersections. To assess the site's potential impact on the area roadway network, site generated trips were established and added to the existing traffic volumes.

Based on Kimley-Horn's review of the proposed site plan and evaluation of existing and future conditions, the study intersections are projected to operate similar to existing conditions with minor increases in delay. The majority of movements maintained the same level of service as existing conditions with all movements expected to operate at LOS B or better during both peak hours. The projected 95th percentile queue lengths are expected to not block adjacent intersections and access points along the respective roadways. The following improvements are recommended based on the projected Future (2028) Build conditions:

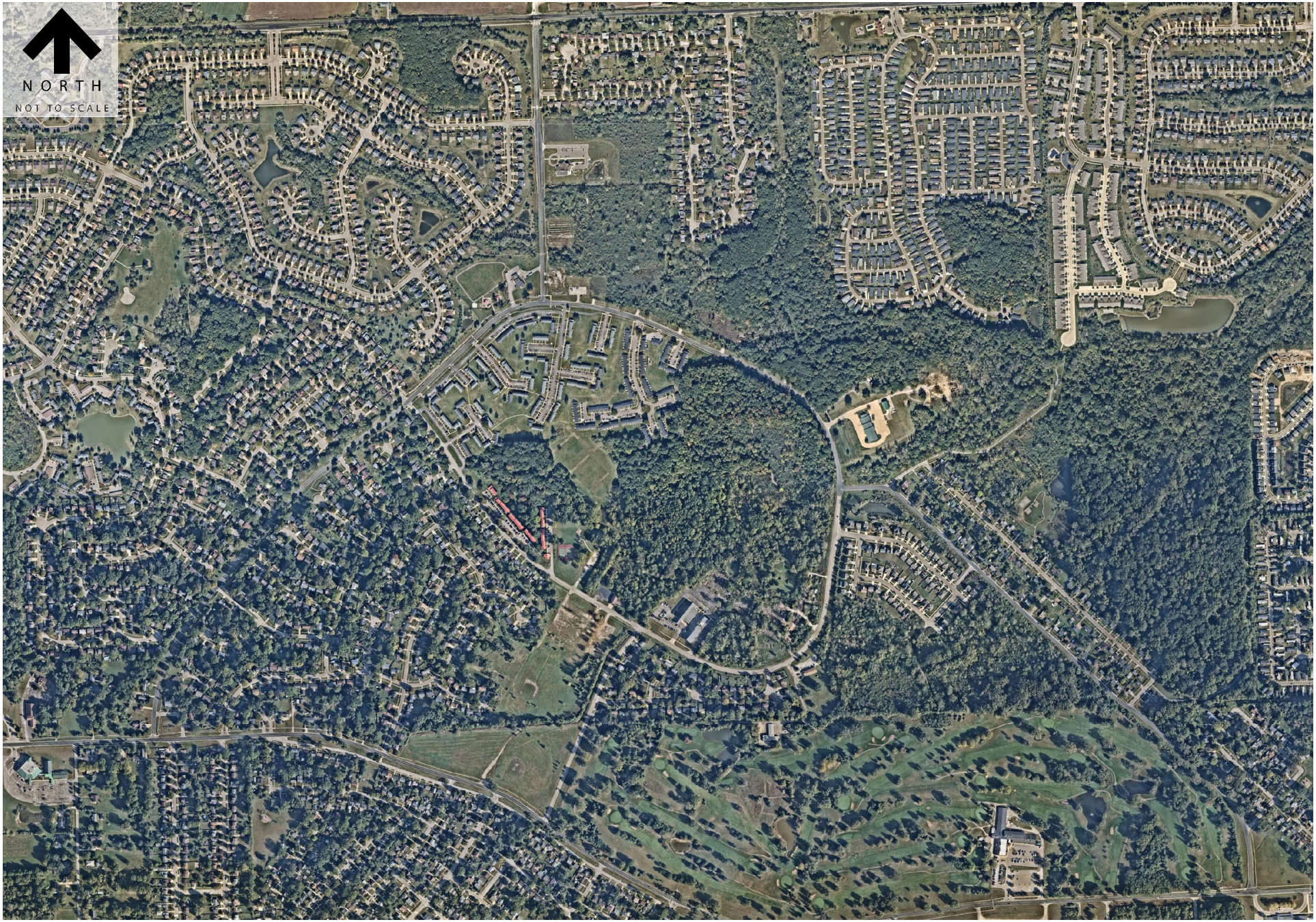
- Construct the proposed N. Site Access as a full access driveway with one ingress and one egress lane.
- Construct the proposed E. Site Access as a full access driveway with one ingress and one egress lane.

1. INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained by Elmington to perform a traffic impact study for a proposed residential development on the northwest quadrant of the intersection of MacArthur Boulevard/Stamford Road & Wiard Boulevard in Superior Township, Michigan. The proposed development will include construction of 210 units of multifamily housing and 51 units of single-family housing. The existing site is currently undeveloped. The proposed development is expected to be completed in 2028. The conceptual site plan is provided in the appendix.

Access to the proposed development would be provided via two-full access driveways along MacArthur Boulevard. One access is located approximately 1,200 feet north of Wiard Boulevard and one aligned opposite Wiard Boulevard. An aerial view of the study location and surrounding area roadway network is presented in **Exhibit 1**.

As part of this study, the existing roadway network was analyzed to determine the current operations at the study intersections. Site trip generation characteristics were established for the development and added to projected background traffic volumes to assess the site's potential impact on the area roadway network. This report presents and documents data collection, summarizes the evaluation of the existing and projected future traffic conditions on the surrounding roadways, and identified recommendations to address the potential impact of site-generated traffic on the adjacent roadway network.



Kimley»Horn
of Michigan, Inc.

EXHIBIT 1
SITE LOCATION MAP

2. EXISTING CONDITIONS

Kimley-Horn conducted a review of the subject site including existing lane uses in the surrounding area, the adjacent street system, current traffic volumes and operation conditions, lane configurations and traffic conditions at nearby intersections, and other key roadway characteristics. This section of the report details information on the existing conditions obtained through aerial imagery and publicly available map information.

Area Land Uses & Connectivity

Located near the intersection of MacArthur Boulevard/Stamford Road & Wiard Boulevard in Superior Township, Michigan, the subject site is currently undeveloped. The site is bound by residential developments to the west, MacArthur Boulevard to the north and east, and a church and vacant land to the south. The developments in the surrounding area are generally composed of residential uses.

Local connectivity is provided to the north by N. Harris Road, to the south by MacArthur Boulevard and Dawn Avenue, to the east by Wiard Boulevard, and to the west by Stamford Road.

Existing Roadway Characteristics

The following information documents key roadway characteristics within the study area's existing roadway network.

MacArthur Boulevard is a northeast-southwest roadway that runs north of the site, under the jurisdiction of the Washtenaw County Road Commission (WCRC). The Michigan Department of Transportation (MDOT) classifies the study section of MacArthur Boulevard as a Local Road. Throughout the study area, MacArthur Boulevard provides a two-lane section with one lane of travel in each direction. A speed limit of 35 miles per hour (MPH) is posted on MacArthur Boulevard throughout the study area.

Stamford Road is a northwest-southeast roadway that runs south of the site, under the jurisdiction of WCRC. MDOT classifies the study section of Stamford Road as a Local Road. Throughout the study area, Stamford Road provides a two-lane section with one lane of travel in each direction. A speed limit of 25 mph is posted on Stamford Road throughout the study area.

Wiard Boulevard is a northwest-southeast roadway that runs east of the site, under the jurisdiction of WCRC. MDOT classifies the study section of Wiard Boulevard as a Local Road. Throughout the study area, Wiard Boulevard provides a two-lane section with one lane of travel in each direction. A speed limit of 35 mph is posted on Wiard Boulevard throughout the study area.

N. Harris Road is a north-south roadway that runs west of the site, under the jurisdiction of WCRC. MDOT classifies the study section of N. Harris Road as a Local Road. Throughout the study area, N. Harris Road provides a two-lane section with one lane of travel in each direction. There is no posted speed limit along N. Harris Road; therefore, a *prima facie* speed limit of 25 mph was assumed.

Dawn Avenue is a north-south roadway that runs south of the site, under the jurisdiction of WCRC. MDOT classifies the study section of Dawn Avenue as a Local Road. Throughout the study area, Dawn Avenue provides a two-lane section with one lane of travel in each direction. A speed limit of 25 mph is posted on Dawn Avenue throughout the study area.

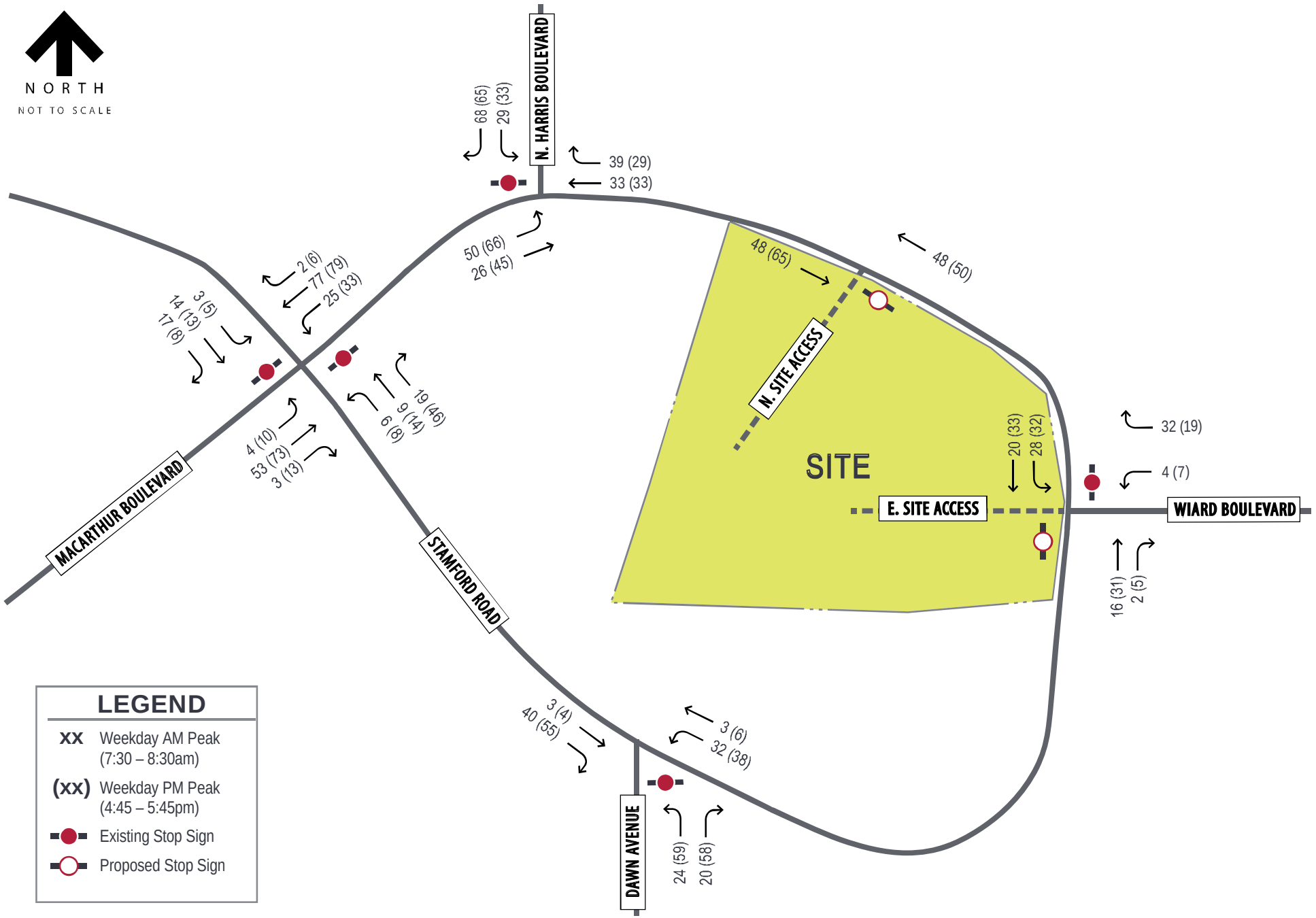
Traffic Count Data

Turning movement count data was collected on Wednesday, January 7, 2026, at the following study intersections:

- MacArthur Boulevard & Stamford Road
- MacArthur Boulevard & N. Harris Road
- MacArthur Boulevard/Stamford Road & Wiard Boulevard
- Stamford Road & Dawn Avenue

These counts were conducted on a typical weekday AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. These count periods were selected to capture the peak travel periods in the area and represent the peak periods of the proposed development.

The traffic data revealed that peak traffic conditions generally occur within the study area from 7:30 to 8:30 AM and 4:45 to 5:45 PM during a typical weekday. To present a more conservative analysis, individual intersection peak hour data was utilized instead of the overall peak hour for the study area. Due to the developments and access points between the study intersections, dummy-node intersections were utilized for volume balancing purposes to account for sink/source traffic between the intersections. The existing traffic volumes are presented in **Exhibit 2**. A summary of the traffic count data is provided in the appendix.



Kimley»Horn of Michigan, Inc.

EXHIBIT 2

EXISTING (2026) TRAFFIC VOLUMES

Existing Capacity Analysis

Capacity analyses were conducted to assess existing operating conditions at the study intersections during the weekday morning and evening peak hours. The capacity of an intersection quantifies its ability to accommodate traffic volumes and is expressed in terms of level of service (LOS), measures in average delay per vehicle. LOS grades range from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest oversaturated conditions).

The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 2.1**.

Table 2.1. Level of Service Grading Descriptions[1]

Level of Service	Description
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	High control delay; average travel speed no more than 33 percent of free flow speed.
F	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

[1]Highway Capacity Manual, 7th Edition.

The range of control delay for each rating (as detailed in the HCM) is shown in **Table 2.2**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, note that higher delays are tolerated for the corresponding LOS ratings.

Table 2.2. Level of Service Grading Criteria

Level of Service[1]	Average Control Delay (s/veh) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F[2]	> 50	> 80

[1]Highway Capacity Manual, 7th Edition

[2]All movements with a Volume to Capacity (v/C) ratio greater than 1 receive a rating of LOS F.

Based on these standards, capacity results were identified for the study intersections under existing conditions. The results of capacity analysis for existing conditions are summarized in **Table 2.3**. In this table, the operation on each approach is quantified according to the average delay per vehicle

and the corresponding level of service. The capacity analysis results for the study intersections are based on HCM 7th Edition reports. Copies of the Synchro reports are provided in the appendix.

Table 2.3. Existing (2026) Levels of Service

Intersection	AM Peak Hour			PM Peak Hour		
	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)
MacArthur Boulevard & Stamford Road △						
Eastbound	10.0	A	47	10.8	B	45
Westbound	9.9	A	62	10.3	B	58
Northbound (Left)	7.4	A	6	7.4	A	11
Southbound (Left)	7.4	A	14	7.5	A	17
MacArthur Boulevard & N. Harris Road △						
Eastbound (Left)	7.5	A	27	7.5	A	23
Southbound	9.8	A	64	9.8	A	58
MacArthur Boulevard/Stamford Road & Wiard Boulevard △						
Westbound	8.8	A	49	8.9	A	45
Southbound (Left)	7.5	A	-	7.5	A	13
Stamford Road & Dawn Avenue △						
Westbound (Left)	7.6	A	15	7.4	A	22
Northbound	9.1	A	44	9.8	A	54

△ – Minor-Leg Stop-Controlled Intersection

As shown above, the existing study intersection approaches and movements currently operate acceptably, at LOS D or better, during the weekday AM and PM peak hours. SimTraffic network simulations were utilized to further evaluate the study network. The simulations provide dynamic evaluations of the network, modeling each vehicle's arrival and movement through the network. For the purposes of this study, the simulations evaluated the one-hour peak period for each study scenario following the calibration setting outlined in MDOT's *Electronic Traffic Control Device Guidelines*.

Review of SimTraffic network simulations indicate that vehicles were observed to find adequate gaps within the through traffic without experiencing significant delays or queueing.

3. DEVELOPMENT CHARACTERISTICS

This section of the report outlines the proposed site plan, summarizes site-specific traffic characteristics, and develops future traffic projections for analysis.

Development Characteristics

The proposed development would include 210 units of multifamily housing and 51 units of single-family housing. Access to the proposed development would be provided via two full access driveways along MacArthur Boulevard. One access is located approximately 1,200 feet north of Wiard Boulevard and one aligned opposite Wiard Boulevard. A copy of the site plan is provided in the appendix.

Trip Generation

In order to calculate trips generated by the proposed site, data was referenced from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition. Trip generation rates for the ITE Land Use Code (LUC) corresponding to the proposed use are shown in **Table 3.1**. A copy of the ITE data is provided in the appendix.

Table 3.1. ITE Trip Generation Data

ITE Land Use	Unit	Weekday Daily	AM Peak Hour	PM Peak Hour
Multifamily Housing (Low-Rise) (LUC 220)	Per Dwelling Unit	T = 5.63(X) + 120.45 50% in/50% out	T = 0.35(X) + 12.93 24% in/ 76% out	T = 0.48(X) + 7.35 62% in/ 38% out
Single-Family Detached Housing (LUC 210)	Per Dwelling Unit	Ln(T) = 0.92Ln(X) + 2.68 50% in/50% out	Ln(T) = 0.91Ln(X) + 0.12 25% in/75% out	Ln(T) = 0.94Ln(X) + 0.27 63% in/37% out

T = Number of Trips
X = Number of Units

Using the empirical trip generation data, site-generated trips were calculated as summarized in **Table 3.2**.

Table 3.2 Site-Generated Traffic Projections

Land Use	Size	Daily	Weekday Midday Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Multifamily Housing (Low-Rise) (LUC 220)	210 Dwelling Units	1,303	21	65	86	67	41	108
Single-Family Detached Housing (LUC 210)	51 Dwelling Units	543	10	30	40	33	20	53
Total New Site Trips		1,846	31	95	126	100	61	161

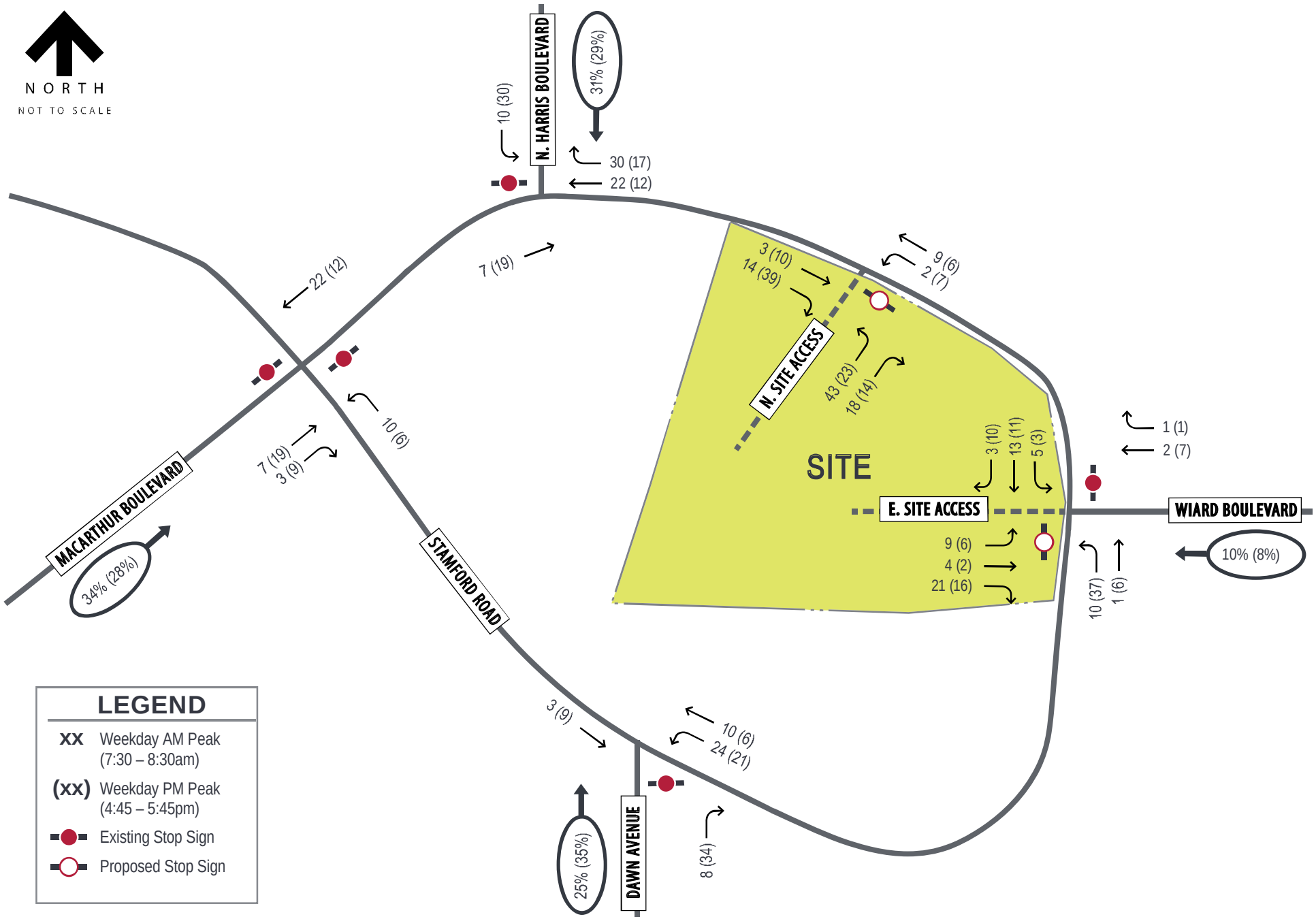
Directional Distribution

The estimated distribution of site-generated traffic on the surrounding roadway network as it approaches and departs the site is a function of several variables, such as the nature of surrounding land uses, prevailing traffic volumes/patterns, characteristics of the street system, and the ease with which motorists can travel over various sections of that system. The anticipated directional distribution estimates for the generated site trips are outlined in **Table 3.3**.

Table 3.3. Estimated Trip Distribution

Traveling to/from	Estimated Trip Distribution	
	AM	PM
East on Saginaw Highway (M-43)	33%	36%
West on Saginaw Highway (M-43)	36%	33%
North on Elmwood Road	14%	13%
South on Elmwood Road	17%	18%
Total	100%	

Based on the directional distribution assumptions in conjunction with the estimated trip generation, the site trip assignment is illustrated in **Exhibit 3**.



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EXHIBIT 3

SITE TRIP ASSIGNMENT

4. FUTURE CONDITIONS

Construction of the proposed development was assumed to be completed in Year 2028; and therefore, Opening Year 2028 traffic projections were developed and used for the analysis of future traffic conditions.

Background Traffic Volumes

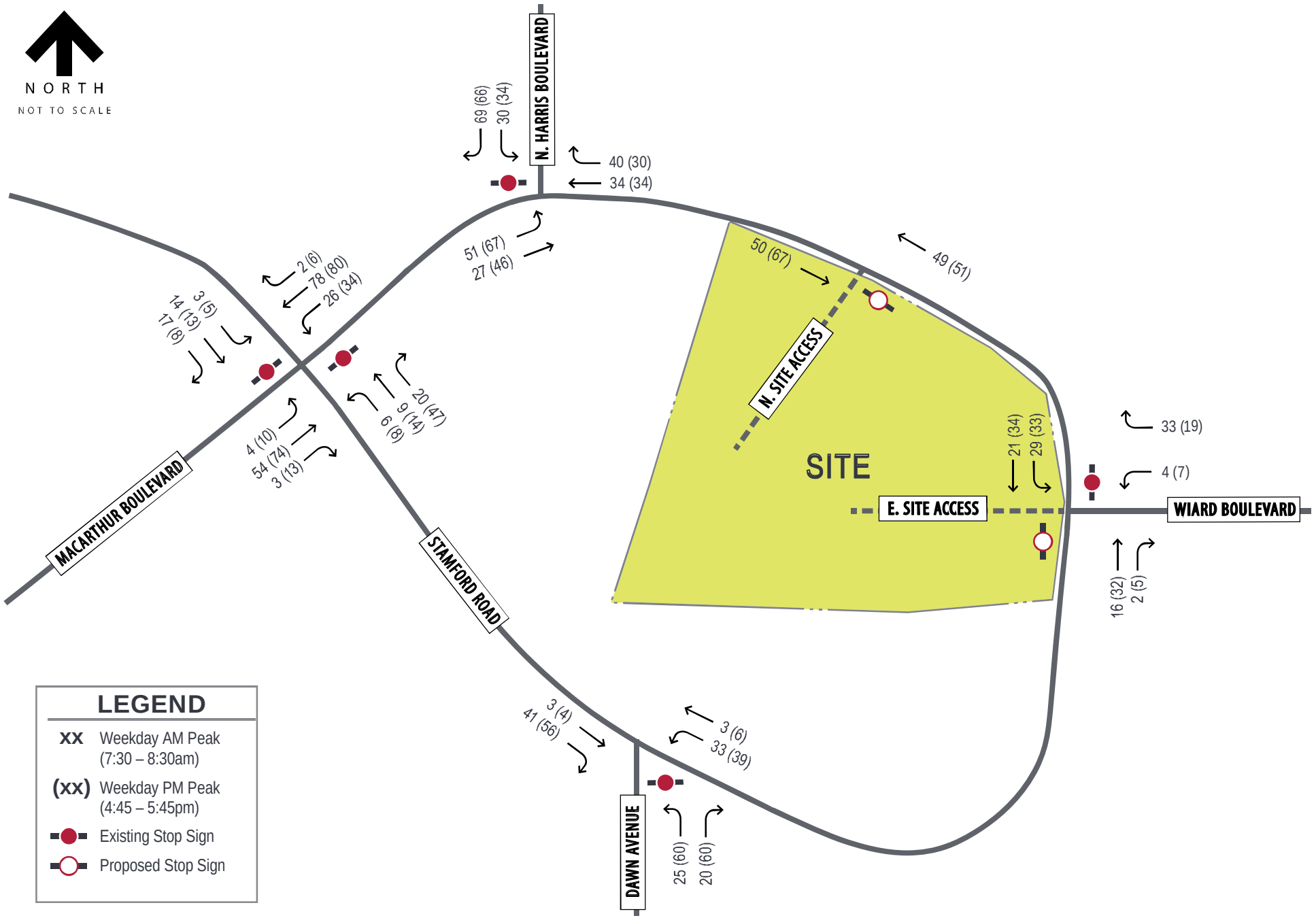
Background traffic growth was estimated using growth estimates provided by the Washtenaw Area Transportation Study (WATS). WATS does not have a specific growth rate along MacArthur Boulevard however, the surrounding area ranges from 0.5% to 1.5%. A growth rate of 1.0% was applied for two years based on existing traffic counts collected in 2026 and an opening year of 2028 to provide a conservative analysis. Future (2028) No-Build traffic projections reflective of background traffic growth are presented in **Exhibit 4**.

Opening Year (2028) Conditions

Build traffic projections for Opening Year 2028 were calculated by adding the total site-generated trips (Exhibit 3) to the background traffic projections (Exhibit 4). Build traffic projections for the Future (2028) Build scenario are illustrated in **Exhibit 5**.

Future Geometry

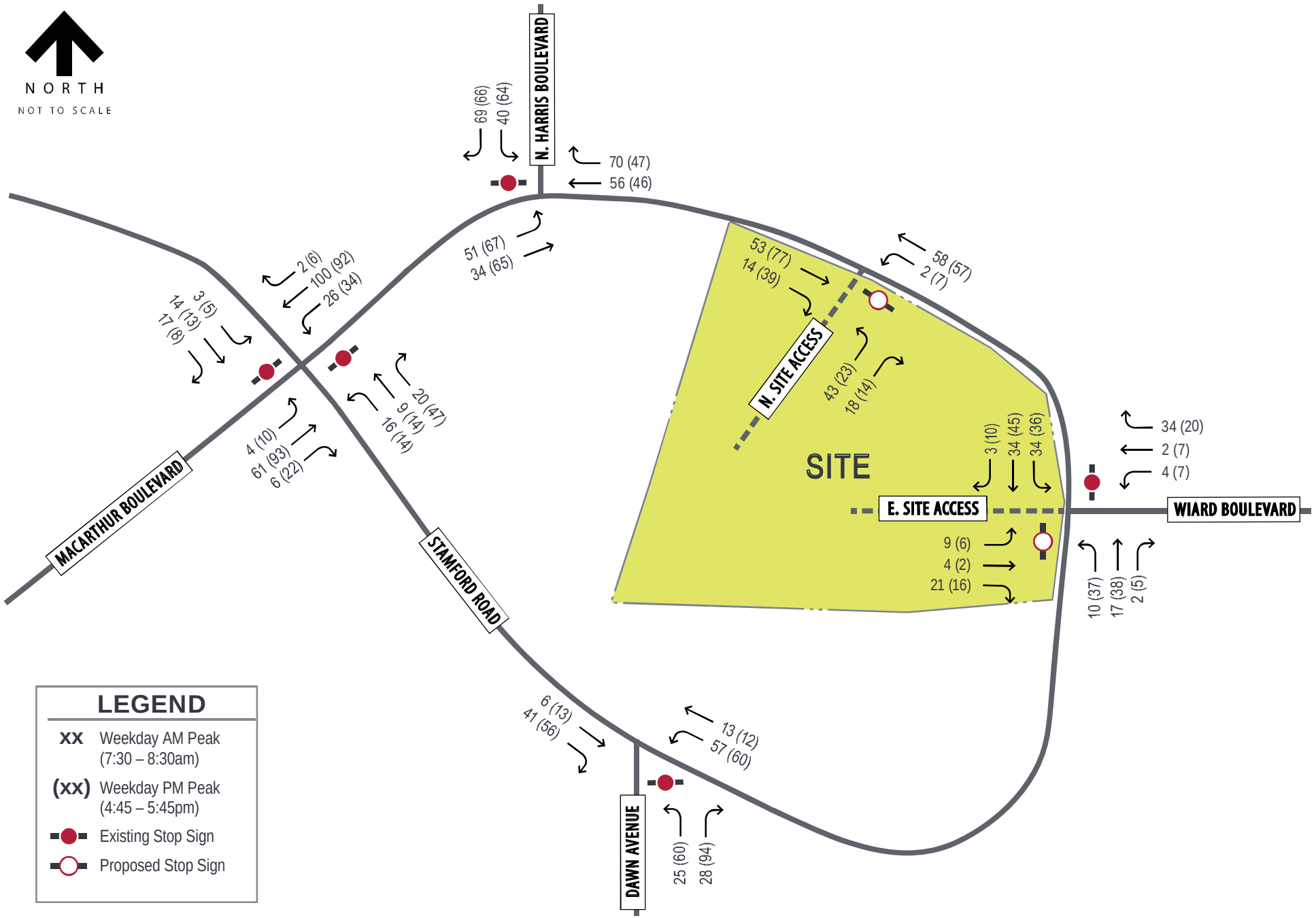
A turn lane evaluation was completed for dedicated turns lanes on MacArthur Boulevard at the proposed site driveways. WCRC utilizes the turn lane guidance found in the MDOT Geometric Design Guidance Sections 1.1.4 and 1.1.5. Based on the projected future traffic volumes dedicated turn lanes are not warranted along MacArthur Boulevard at either proposed site driveway. Therefore, dedicated turn lanes were not included in the analysis of build conditions. Copies of the turn lane warranting charts are provided in the Appendix



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EXHIBIT 4

OPENING YEAR (2028) NO-BUILD TRAFFIC VOLUMES



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EXHIBIT 5

OPENING YEAR (2028) BUILD TRAFFIC VOLUMES

Opening Year (2028) No-Build Capacity Analysis

Based on the traffic projections, capacity results were identified for the study intersections under Opening Year (2028) No-Build conditions.

Based on the traffic projections, capacity results were identified for the study intersections under Opening Year (2028) No-Build conditions. The results of the capacity analysis are summarized in **Table 4.1**. Similar to the analysis of existing conditions, the results for all study intersections were reported in HCM 7th Edition. Copies of the Synchro reports are provided in the appendix.

Table 4.1. Opening Year (2028) No-Build Levels of Service

Intersection	AM Peak Hour			PM Peak Hour		
	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)
MacArthur Boulevard & Stamford Road △						
Eastbound	10.0	A	47	10.9	B	44
Westbound	9.9	A	65	10.3	B	61
Northbound (Left)	7.5	A	6	7.5	A	6
Southbound (Left)	7.4	A	18	7.5	A	17
MacArthur Boulevard & N. Harris Road △						
Eastbound (Left)	7.6	A	26	7.5	A	18
Southbound	9.8	A	66	9.8	A	59
MacArthur Boulevard/Stamford Road & Wiard Boulevard △						
Westbound	8.8	A	48	8.9	A	42
Southbound (Left)	7.5	A	7	7.5	A	15
Stamford Road & Dawn Avenue △						
Westbound (Left)	7.6	A	19	7.5	A	18
Northbound	9.1	A	48	9.8	A	60

△ – Minor-Leg Stop-Controlled Intersection

With the addition of background traffic, the study area intersections and approaches are expected to operate with minor increases in delay compared to existing conditions. However, all intersections, approaches, and individual movements are expected to operate at the same LOS across both peak hours. Additionally, review of SimTraffic network simulations indicate similar observations as those made under existing conditions.

Opening Year (2028) Build Capacity Analysis

Based on the traffic projections, capacity results were identified for the study intersections under Future 2028 Build conditions. The results of the capacity analysis are summarized in **Table 4.2**. Similar to the analysis of existing and no-build conditions, the results for all study intersections were reported in HCM 7th Edition. Copies of the Synchro reports are provided in the appendix.

Table 4.2. Opening Year (2028) Build Levels of Service

Intersection	AM Peak Hour			PM Peak Hour		
	Delay (s/veh)	LOS	Queue (ft)	Delay (s/veh)	LOS	Queue (ft)
MacArthur Boulevard & Stamford Road △						
Eastbound	10.2	B	52	11.2	B	44
Westbound	10.6	B	61	10.9	B	61
Northbound (Left)	7.5	A	10	7.5	A	14
Southbound (Left)	7.4	A	16	7.6	A	22
MacArthur Boulevard & N. Harris Road △						
Eastbound (Left)	7.7	A	32	7.6	A	29
Southbound	10.5	B	62	10.8	B	64
MacArthur Boulevard/Stamford Road & Wiard Boulevard/E. Site Access △						
Eastbound	9.4	A	45	9.5	A	41
Westbound	9.0	A	52	9.8	A	45
Northbound (Left)	7.3	A	-	7.4	A	13
Southbound (Left)	7.5	A	7	7.5	A	14
Stamford Road & Dawn Avenue △						
Westbound (Left)	7.6	A	28	7.5	A	22
Northbound	9.4	A	46	10.3	B	60
MacArthur Boulevard & N. Site Access △						
Westbound (Left)	7.4	A	6	7.6	A	5
Northbound	9.6	A	41	9.8	A	36

△ – Minor-Leg Stop-Controlled Intersection

With the addition of site-generated traffic, the majority of study area intersections and approaches are expected to operate similar to existing and no-build conditions. The majority of movements maintained the same LOS as existing and no-build conditions with all movements expected to operate at LOS B or better during both peak hours.

Review of SimTraffic network simulations indicate that vehicles were able to find adequate gaps within the through traffic without experiencing significant delays or queueing. The 95th percentile queues are expected to be 64 feet or less, two to three vehicles, at each intersection. These queue lengths are projected to not block adjacent intersections or access points along the respective roadways.

Crash Analysis

Kimley-Horn obtained crash data from the Michigan Traffic Crash Facts (MTCF) database for the most recent available three years (2022-2024) for the study intersections. There were a total of 4 crashes throughout the study intersections with all of them being angle crashes. The crashes included one no injury crash, one possible injury crash, and two suspected minor injury crashes. A summary of crash severity and crash type is provided in **Table 4.3** and **Table 4.4**, respectively.

Table 4.3. Intersection Crash Severity Summary (2022-2024)

Intersection	No Injury (O)	Possible Injury (C)	Suspected Minor Injury (B)	Suspected Serious Injury (A)	Total
MacArthur Boulevard & Stamford Road	0	0	2	0	2
MacArthur Boulevard & N. Harris Road	0	0	0	0	0
MacArthur Boulevard/Stamford Road & Wiard Boulevard	0	1	0	0	1
Stamford Road & Dawn Avenue	1	0	0	0	1
Total	1	1	2	0	4

Table 4.4. Intersection Crash Type Summary (2022-2024)

Intersection	Angle	Total
MacArthur Boulevard & Stamford Road	2	2
MacArthur Boulevard & N. Harris Road	0	0
MacArthur Boulevard/Stamford Road & Wiard Boulevard	1	1
Stamford Road & Dawn Avenue	1	1
Total	4	4

5. RECOMMENDATIONS & CONCLUSIONS

Based on Kimley-Horn's review of the proposed site plan and evaluation of existing and future traffic conditions, the study intersections are expected to adequately accommodate the proposed development with the following recommendations:

- Construct the proposed N. Site Access as a full access driveway with one ingress and one egress lane.
- Construct the proposed E. Site Drive as a full access driveway with one ingress and one egress lane.

Regardless of the final configuration of the intersection geometrics, several additional items should be taken into consideration when preparing site and roadway improvement plans for the subject redevelopment. As the site design progresses, care should be taken with landscaping, signage, and monumentation at the site access locations to ensure that adequate horizontal sight distance is provided from the new stop bars. If alterations to the site plan or land use should occur, changes to the analysis provided within this traffic impact study may be needed.

APPENDIX

Conceptual Site Plan

Traffic Count Data

Existing (2026) Capacity Reports

Data from ITE Trip Generation, 12th Edition

Future (2028) No-Build Capacity Reports

Future (2028) Build Capacity Reports

Turn Lane Warrants

CONCEPTUAL SITE PLAN


MACARTHUR BLVD
WETLANDS/
TREE PRESERVE AREA
WETLANDS
SETBACK
BUILDING 3000
TYPE B
BUILDING 4000
TYPE B
BUILDING 5000
TYPE B
TRASH
ENCLOSURE
PASSIVE
AMENITY
SPACE
TREE
PRESERVE
AREA
BUILDING 2000
TYPE C
LANDSCAPE
BUFFER
BUILDING 6000
TYPE D
BUILDING 1000
TYPE A
POOL AMENITY COURTYARD
ACCESSIBLE
COMMUNITY
SPACE
STORM
WATER
51 LOTS
14
12
4
LOTS: 50'x120'
LOTS: 50'x120'
21
WIARD BLVD
STORM WATER
N
SITE PLAN

TRAFFIC COUNT DATA

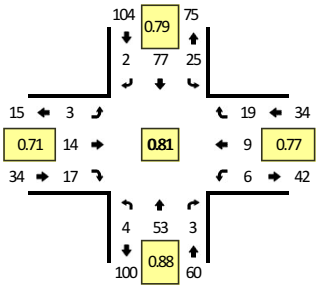
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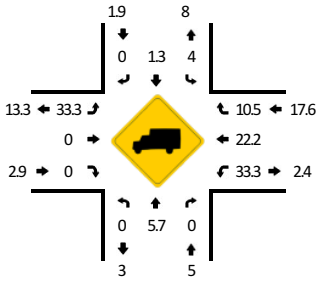
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CITY/STATE: Washtenaw County, MI

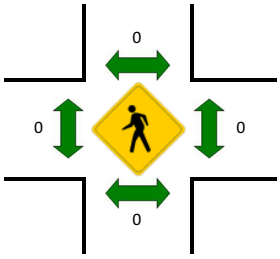
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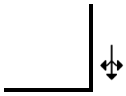
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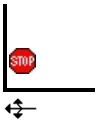


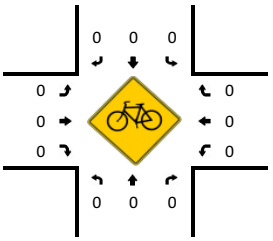


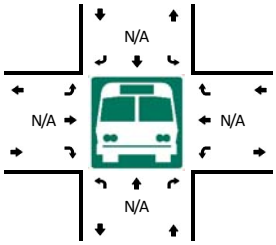
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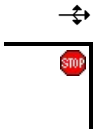


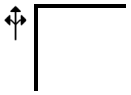


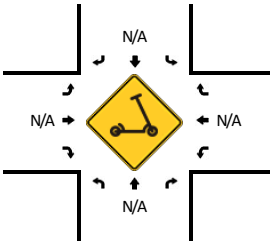












15-Min Count Period Beginning At	MacArthur Blvd (Northbound)				MacArthur Blvd (Southbound)				Stamford Rd (Eastbound)				Stamford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	1	0	2	8	2	0	0	3	2	0	3	0	4	0	29	
7:15 AM	1	10	2	0	3	15	1	0	1	2	2	0	2	3	5	0	47	
7:30 AM	0	11	0	0	4	19	0	0	2	5	3	0	1	4	4	0	53	
7:45 AM	2	13	1	0	9	23	1	0	1	3	8	0	3	2	6	0	72	201
8:00 AM	2	12	2	0	5	23	0	0	0	5	1	0	0	1	5	0	56	228
8:15 AM	0	17	0	0	7	12	1	0	0	1	5	0	2	2	4	0	51	232
8:30 AM	1	9	0	0	7	14	0	0	0	2	1	0	2	1	3	0	40	219
8:45 AM	2	17	1	0	4	14	0	0	3	1	2	0	4	0	5	0	53	200

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	52	4	0	36	92	4	0	4	12	32	0	12	8	24	0	288
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	4		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

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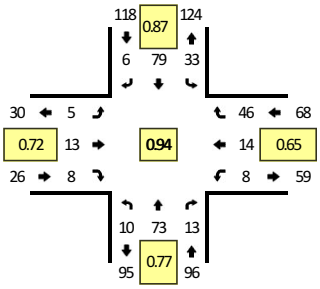
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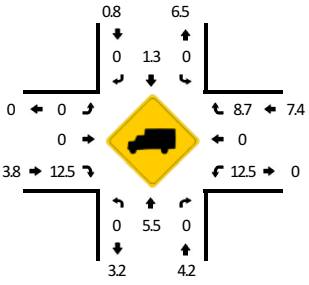
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CITY/STATE: Washtenaw County, MI

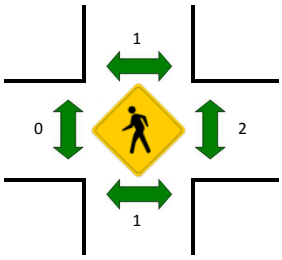
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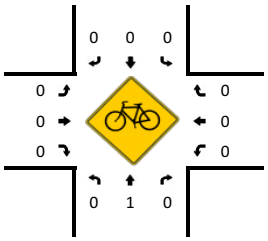


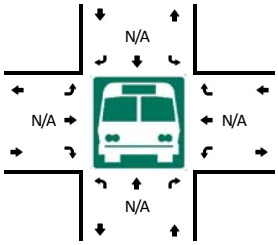




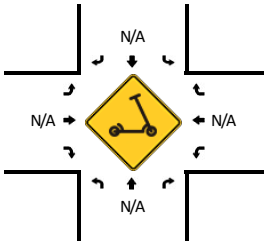












15-Min Count Period Beginning At	MacArthur Blvd (Northbound)				MacArthur Blvd (Southbound)				Stamford Rd (Eastbound)				Stamford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	20	3	0	7	14	1	0	0	3	1	0	4	0	9	0	64	
4:15 PM	5	9	4	0	5	27	2	0	1	3	0	0	3	7	16	0	82	
4:30 PM	1	18	2	0	7	19	2	0	3	2	4	0	4	1	16	0	79	
4:45 PM	3	20	3	0	13	17	1	0	0	4	2	0	1	4	9	0	77	302
5:00 PM	1	26	4	0	8	16	1	0	1	4	2	0	0	2	5	0	70	308
5:15 PM	4	25	2	0	4	12	2	0	1	2	1	0	2	7	8	0	70	296
5:30 PM	1	22	4	0	13	17	1	0	0	3	2	0	2	6	11	0	82	299
5:45 PM	6	17	3	0	6	18	1	0	1	2	2	0	3	1	11	0	71	293

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	36	16	0	20	108	8	0	4	12	0	0	12	28	64	0	328
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	4		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

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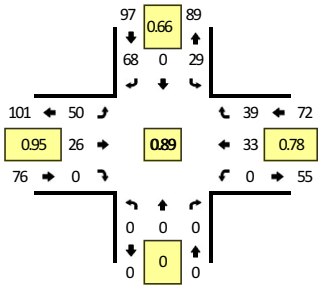
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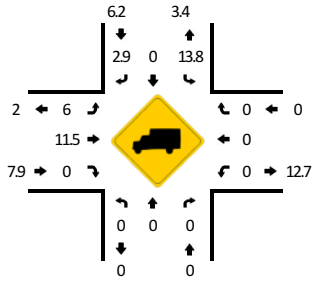
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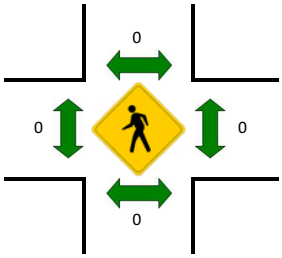
LOCATION: N Harris Rd -- MacArthur Blvd
CITY/STATE: Ypsilanti, MI

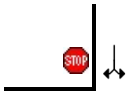
QC JOB #: 17396303
DATE: Wed, Jan 7 2026

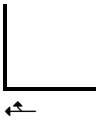
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

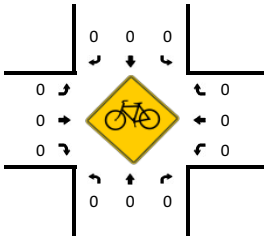


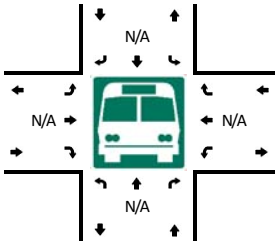


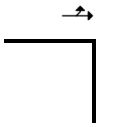




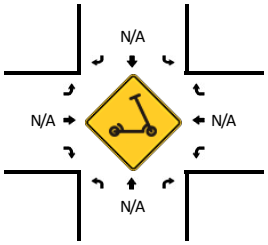












15-Min Count Period Beginning At	N Harris Rd (Northbound)				N Harris Rd (Southbound)				MacArthur Blvd (Eastbound)				MacArthur Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	5	0	6	3	0	0	0	8	9	0	31	
7:15 AM	0	0	0	0	3	0	11	0	11	4	0	0	0	6	8	0	43	
7:30 AM	0	0	0	0	5	0	12	0	13	7	0	0	0	7	9	0	53	
7:45 AM	0	0	0	0	7	0	20	0	14	4	0	0	0	9	14	0	68	195
8:00 AM	0	0	0	0	14	0	23	0	12	7	0	0	0	7	6	0	69	233
8:15 AM	0	0	0	0	3	0	13	0	11	8	0	0	0	10	10	0	55	245
8:30 AM	0	0	0	0	3	0	16	0	4	7	0	0	0	5	6	0	41	233
8:45 AM	0	0	0	0	1	0	11	0	15	2	0	0	0	4	8	0	41	206

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	56	0	92	0	48	28	0	0	0	28	24	0	276
Heavy Trucks	0	0	0		8	0	0		4	4	0		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/12/2026 5:42 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

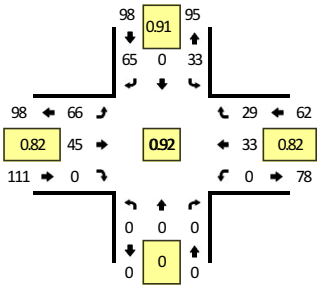
Type of peak hour being reported: Intersection Peak

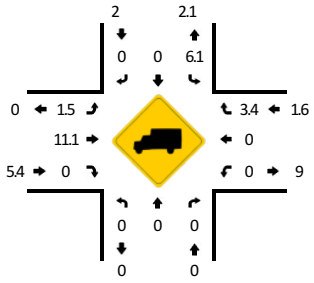
Method for determining peak hour: Total Entering Volume

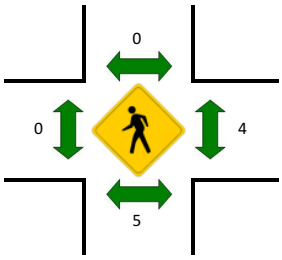
LOCATION: N Harris Rd -- MacArthur Blvd
CITY/STATE: Ypsilanti, MI

QC JOB #: 17396304
DATE: Wed, Jan 7 2026

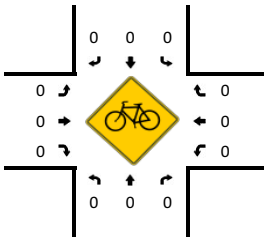
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

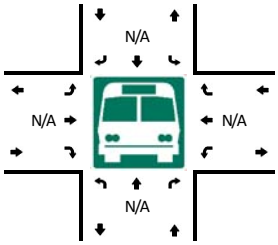




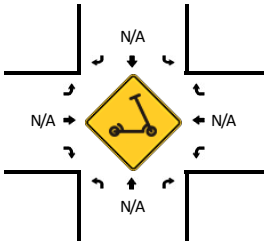












15-Min Count Period Beginning At	N Harris Rd (Northbound)				N Harris Rd (Southbound)				MacArthur Blvd (Eastbound)				MacArthur Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	12	0	11	0	13	12	0	0	0	8	8	0	64	
4:15 PM	0	0	0	0	9	0	17	0	12	8	0	0	0	11	3	0	60	
4:30 PM	0	0	0	0	9	0	17	0	23	8	0	0	0	5	3	0	65	
4:45 PM	0	0	0	0	7	0	20	0	12	11	0	0	0	11	8	0	69	258
5:00 PM	0	0	0	0	7	0	17	0	17	7	0	0	0	6	6	0	60	254
5:15 PM	0	0	0	0	10	0	12	0	19	15	0	0	0	6	6	0	68	262
5:30 PM	0	0	0	0	9	0	16	0	18	12	0	0	0	10	9	0	74	271
5:45 PM	0	0	0	0	3	0	13	0	15	11	0	0	0	8	7	0	57	259

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	36	0	64	0	72	48	0	0	0	40	36	0	296
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/12/2026 5:42 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

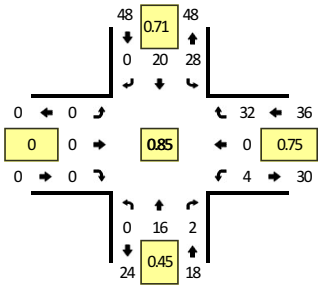
Type of peak hour being reported: Intersection Peak

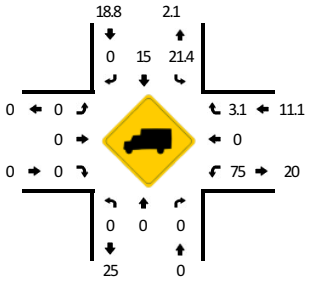
Method for determining peak hour: Total Entering Volume

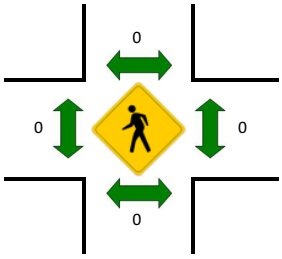
LOCATION: Stamford Rd -- Wiard Blvd
CITY/STATE: Washtenaw County, MI

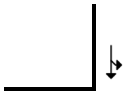
QC JOB #: 17396305
DATE: Wed, Jan 7 2026

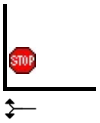
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

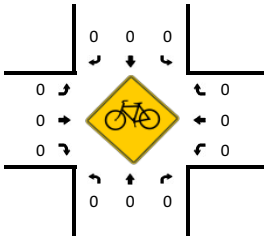


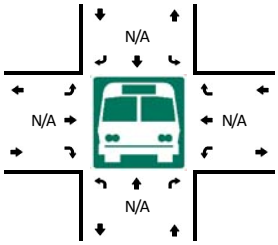




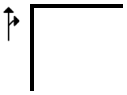


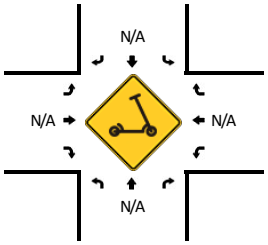












15-Min Count Period Beginning At	Stamford Rd (Northbound)				Stamford Rd (Southbound)				Wiard Blvd (Eastbound)				Wiard Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	0	0	3	3	0	0	0	0	0	0	2	0	7	0	19	
7:15 AM	0	10	1	0	2	3	0	0	0	0	0	0	1	0	3	0	20	
7:30 AM	0	4	0	0	3	1	0	0	0	0	0	0	2	0	4	0	14	
7:45 AM	0	10	0	0	2	7	0	0	0	0	0	0	0	0	6	0	25	78
8:00 AM	0	3	1	0	7	5	0	0	0	0	0	0	3	0	5	0	24	83
8:15 AM	0	3	0	0	7	3	0	0	0	0	0	0	0	0	10	0	23	86
8:30 AM	0	0	1	0	12	5	0	0	0	0	0	0	1	0	11	0	30	102
8:45 AM	0	3	1	0	3	1	0	0	0	0	0	0	1	0	3	0	12	89

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	48	20	0	0	0	0	0	0	4	0	44	0	120
Heavy Trucks	0	0	0		8	0	0		0	0	0		4	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/12/2026 5:42 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

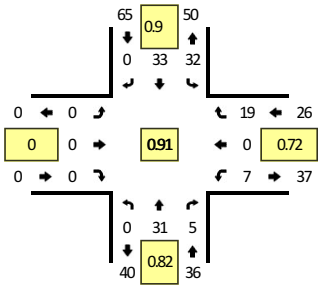
Type of peak hour being reported: Intersection Peak

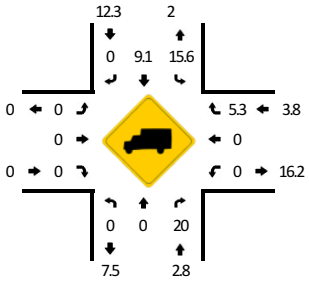
Method for determining peak hour: Total Entering Volume

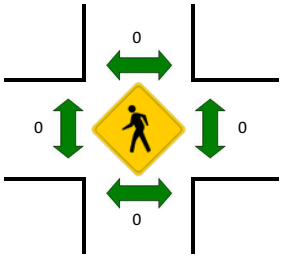
LOCATION: Stamford Rd -- Wiard Blvd
CITY/STATE: Washtenaw County, MI

QC JOB #: 17396306
DATE: Wed, Jan 7 2026

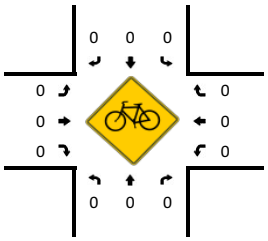
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

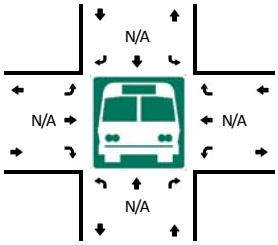




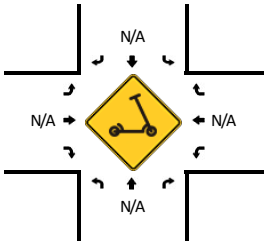












15-Min Count Period Beginning At	Stamford Rd (Northbound)				Stamford Rd (Southbound)				Wiard Blvd (Eastbound)				Wiard Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	5	0	0	8	10	0	0	0	0	0	0	0	0	4	0	27	
4:15 PM	0	10	1	0	9	9	0	0	0	0	0	0	2	0	4	0	35	
4:30 PM	0	9	2	0	7	7	0	0	0	0	0	0	1	0	5	0	31	
4:45 PM	0	3	2	0	7	9	0	0	0	0	0	0	3	0	6	0	30	123
5:00 PM	0	9	0	0	9	8	0	0	0	0	0	0	1	0	4	0	31	127
5:15 PM	0	8	0	0	7	10	0	0	0	0	0	0	0	0	8	0	33	125
5:30 PM	0	6	2	0	7	11	0	0	0	0	0	0	2	0	4	0	32	126
5:45 PM	0	7	0	0	6	5	0	0	0	0	0	0	0	0	7	0	25	121

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	40	4	0	36	36	0	0	0	0	0	0	8	0	16	0	140
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/12/2026 5:42 AM

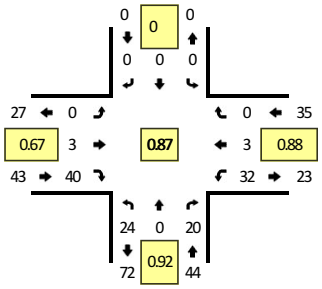
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

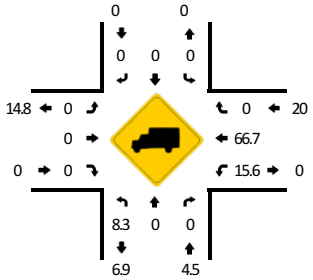
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

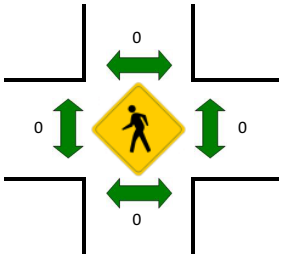
LOCATION: Dawn Ave -- Stamford Rd
CITY/STATE: Washtenaw County, MI

QC JOB #: 17396307
DATE: Wed, Jan 7 2026

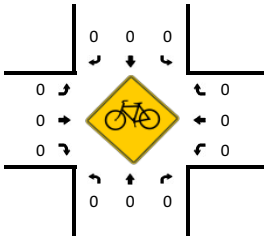
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

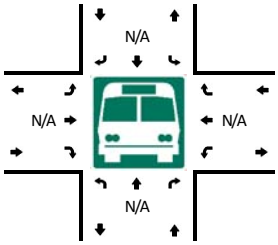




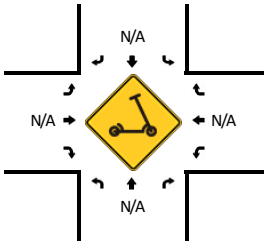












15-Min Count Period Beginning At	Dawn Ave (Northbound)				Dawn Ave (Southbound)				Stamford Rd (Eastbound)				Stamford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	0	2	0	0	0	0	0	0	1	6	0	6	0	0	0	18	
7:15 AM	6	0	4	0	0	0	0	0	0	1	6	0	7	0	0	0	24	
7:30 AM	9	0	2	0	0	0	0	0	0	0	12	0	8	0	0	0	31	
7:45 AM	4	0	8	0	0	0	0	0	0	2	7	0	7	1	0	0	29	102
8:00 AM	6	0	3	0	0	0	0	0	0	1	15	0	9	1	0	0	35	119
8:15 AM	5	0	7	0	0	0	0	0	0	0	6	0	8	1	0	0	27	122
8:30 AM	6	0	3	0	0	0	0	0	0	2	9	0	7	0	0	0	27	118
8:45 AM	8	0	4	0	0	0	0	0	0	0	3	0	6	0	0	0	21	110

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	12	0	0	0	0	0	0	4	60	0	36	4	0	0	140
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/12/2026 5:42 AM

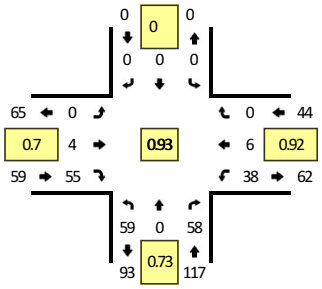
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

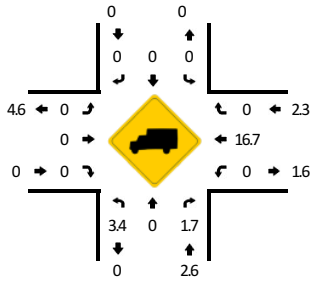
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

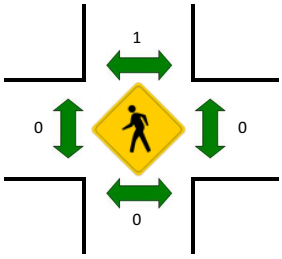
LOCATION: Dawn Ave -- Stamford Rd
CITY/STATE: Washtenaw County, MI

QC JOB #: 17396308
DATE: Wed, Jan 7 2026

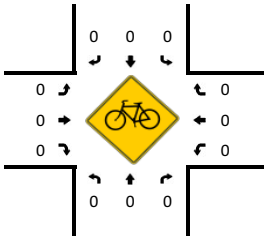
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

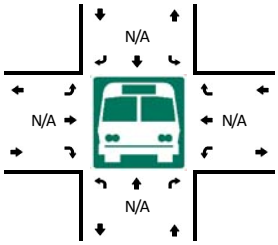




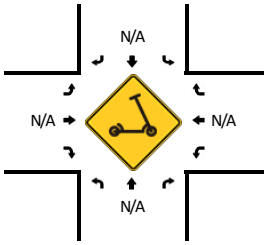












15-Min Count Period Beginning At	Dawn Ave (Northbound)				Dawn Ave (Southbound)				Stamford Rd (Eastbound)				Stamford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	0	8	0	0	0	0	0	0	0	11	0	9	1	0	0	41	
4:15 PM	24	0	16	0	0	0	0	0	0	0	9	0	7	3	0	0	59	
4:30 PM	13	0	14	0	0	0	0	0	0	2	9	0	11	1	0	0	50	
4:45 PM	13	0	12	0	0	0	0	0	0	1	20	0	9	2	0	0	57	207
5:00 PM	9	0	16	0	0	0	0	0	0	1	17	0	11	0	0	0	54	220
5:15 PM	16	0	8	0	0	0	0	0	0	0	7	0	13	1	0	0	45	206
5:30 PM	17	0	13	0	0	0	0	0	0	1	10	0	9	1	0	0	51	207
5:45 PM	9	0	10	0	0	0	0	0	0	0	5	0	7	2	0	0	33	183

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	0	64	0	0	0	0	0	0	0	36	0	28	12	0	0	236
Heavy Trucks	4	0	4		0	0	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/12/2026 5:42 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

EXISTING (2026) CAPACITY REPORTS

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	14	17	6	9	19	4	53	3	25	77	2
Future Vol, veh/h	3	14	17	6	9	19	4	53	3	25	77	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	77	77	77	88	88	88	79	79	79
Heavy Vehicles, %	3	3	3	18	18	18	5	5	5	2	2	2
Mvmt Flow	4	20	24	8	12	25	5	60	3	32	97	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	237	235	99	242	234	62	100	0	0	64	0	0
Stage 1	162	162	-	71	71	-	-	-	-	-	-	-
Stage 2	75	73	-	171	163	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.28	6.68	6.38	4.15	-	-	4.12	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.28	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.28	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.662	4.162	3.462	2.245	-	-	2.218	-	-
Pot Cap-1 Maneuver	715	664	954	680	639	960	1474	-	-	1539	-	-
Stage 1	838	762	-	900	805	-	-	-	-	-	-	-
Stage 2	932	832	-	795	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	667	647	954	627	623	960	1474	-	-	1539	-	-
Mov Cap-2 Maneuver	667	647	-	627	623	-	-	-	-	-	-	-
Stage 1	819	745	-	897	803	-	-	-	-	-	-	-
Stage 2	892	830	-	738	718	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.96	9.92	0.5	1.78
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	119	-	-	774	776	431	-	-
HCM Lane V/C Ratio	0.003	-	-	0.062	0.057	0.021	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	10	9.9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	26	33	39	29	68
Future Vol, veh/h	50	26	33	39	29	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	78	78	66	66
Heavy Vehicles, %	8	8	0	0	6	6
Mvmt Flow	53	27	42	50	44	103

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	92	0	-	0	200	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	133	-
Critical Hdwy	4.18	-	-	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	2.272	-	-	-	3.554	3.354
Pot Cap-1 Maneuver	1465	-	-	-	780	985
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1465	-	-	-	751	985
Mov Cap-2 Maneuver	-	-	-	-	751	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.97	0	9.77
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1184	-	-	-	901
HCM Lane V/C Ratio	0.036	-	-	-	0.163
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	32	16	2	28	20
Future Vol, veh/h	4	32	16	2	28	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	60	60	71	71
Heavy Vehicles, %	11	11	0	0	19	19
Mvmt Flow	5	43	27	3	39	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	135	28	0	0	30	0
Stage 1	28	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.51	6.31	-	-	4.29	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.399	-	-	2.371	-
Pot Cap-1 Maneuver	837	1021	-	-	1480	-
Stage 1	971	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	815	1021	-	-	1480	-
Mov Cap-2 Maneuver	815	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.81	0	4.37
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1050	-
HCM Lane V/C Ratio	-	-	0.048	0.027	-
HCM Ctrl Dly (s/v)	-	-	8.8	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	40	32	3	24	20
Future Vol, veh/h	3	40	32	3	24	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	88	88	92	92
Heavy Vehicles, %	0	0	20	20	5	5
Mvmt Flow	4	60	36	3	26	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	110	34
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	-	-	4.3	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.38	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1431	-	879	1030
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1431	-	857	1030
Mov Cap-2 Maneuver	-	-	-	-	857	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	915	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	6.93	9.09
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	928	-	-	1428	-
HCM Lane V/C Ratio	0.052	-	-	0.025	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection: 1: MacArthur Boulevard & Stamford Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	63	12	29
Average Queue (ft)	22	26	0	2
95th Queue (ft)	47	62	6	14
Link Distance (ft)	554	1077	898	632
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: MacArthur Boulevard & N. Harris Road

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	47	74
Average Queue (ft)	5	37
95th Queue (ft)	27	64
Link Distance (ft)	563	595
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Stamford Road/MacArthur Boulevard & Wiard Boulevard

Movement	WB
Directions Served	LR
Maximum Queue (ft)	60
Average Queue (ft)	22
95th Queue (ft)	49
Link Distance (ft)	383
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Dawn Avenue & Stamford Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	35	56
Average Queue (ft)	0	2	21
95th Queue (ft)	3	15	44
Link Distance (ft)	1283	1144	829
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	13	8	8	14	46	10	73	13	33	79	6
Future Vol, veh/h	5	13	8	8	14	46	10	73	13	33	79	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	65	65	65	77	77	77	87	87	87
Heavy Vehicles, %	4	4	4	7	7	7	4	4	4	1	1	1
Mvmt Flow	7	18	11	12	22	71	13	95	17	38	91	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	302	308	94	305	303	103	98	0	0	112	0	0
Stage 1	170	170	-	129	129	-	-	-	-	-	-	-
Stage 2	132	138	-	176	174	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.17	6.57	6.27	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.563	4.063	3.363	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	647	603	957	638	602	938	1483	-	-	1484	-	-
Stage 1	827	754	-	863	780	-	-	-	-	-	-	-
Stage 2	867	779	-	815	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	556	581	957	589	580	938	1483	-	-	1484	-	-
Mov Cap-2 Maneuver	556	581	-	589	580	-	-	-	-	-	-	-
Stage 1	805	734	-	854	772	-	-	-	-	-	-	-
Stage 2	772	772	-	764	726	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.82	10.3	0.78	2.09
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	182	-	-	654	784	496	-	-
HCM Lane V/C Ratio	0.009	-	-	0.055	0.133	0.026	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	10.8	10.3	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	45	33	29	33	65
Future Vol, veh/h	66	45	33	29	33	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	91	91
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	80	55	40	35	36	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	76	0	-	0	274	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	4.15	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.245	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1505	-	-	-	716	1008
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1505	-	-	-	676	1008
Mov Cap-2 Maneuver	-	-	-	-	676	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.48	0	9.75
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1070	-	-	-	865
HCM Lane V/C Ratio	0.053	-	-	-	0.124
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	19	31	5	32	33
Future Vol, veh/h	7	19	31	5	32	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	82	82	90	90
Heavy Vehicles, %	4	4	3	3	12	12
Mvmt Flow	10	26	38	6	36	37

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	149	41	0	0	44	0
Stage 1	41	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.22	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.308	-
Pot Cap-1 Maneuver	839	1025	-	-	1502	-
Stage 1	976	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	818	1025	-	-	1502	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.9	0	3.67
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	959	886	-
HCM Lane V/C Ratio	-	-	0.038	0.024	-
HCM Ctrl Dly (s/v)	-	-	8.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	55	38	6	59	58
Future Vol, veh/h	4	55	38	6	59	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	92	92	73	73
Heavy Vehicles, %	0	0	2	2	3	3
Mvmt Flow	6	79	41	7	81	79

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	84	0	134	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1512	-	857	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	932	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	834	1022
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	906	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	6.43	9.75
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	917	-	-	1507	-
HCM Lane V/C Ratio	0.175	-	-	0.027	-
HCM Ctrl Dly (s/v)	9.8	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection: 1: MacArthur Boulevard & Stamford Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	68	18	30
Average Queue (ft)	20	32	1	3
95th Queue (ft)	45	58	11	17
Link Distance (ft)	554	1077	898	632
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: MacArthur Boulevard & N. Harris Road

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	36	67
Average Queue (ft)	4	35
95th Queue (ft)	23	58
Link Distance (ft)	563	595
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Stamford Road/MacArthur Boulevard & Wiard Boulevard

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	56	22
Average Queue (ft)	18	1
95th Queue (ft)	45	13
Link Distance (ft)	383	1148
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Dawn Avenue & Stamford Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	45	64
Average Queue (ft)	0	3	32
95th Queue (ft)	3	22	54
Link Distance (ft)	1283	1144	829
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

DATA FROM THE ITE TRIP GENERATION, 12TH EDITION

Land Use: 210
Single-Family Detached Housing

Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates, based on a small sample of sites, are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 215), and higher than those for senior adult housing—single-family (Land Use 251). (Source 1008)

Additional Data

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alabama, Arizona, British Columbia (CAN), California, Delaware, Illinois, Kentucky, Massachusetts, Minnesota, Montana, New Jersey, New York, North Carolina, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, and West Virginia.

Source Numbers

356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079, 1204, 1221, 1225, 1236, 1251, 1265, 1267

Single-Family Detached Housing
(210)

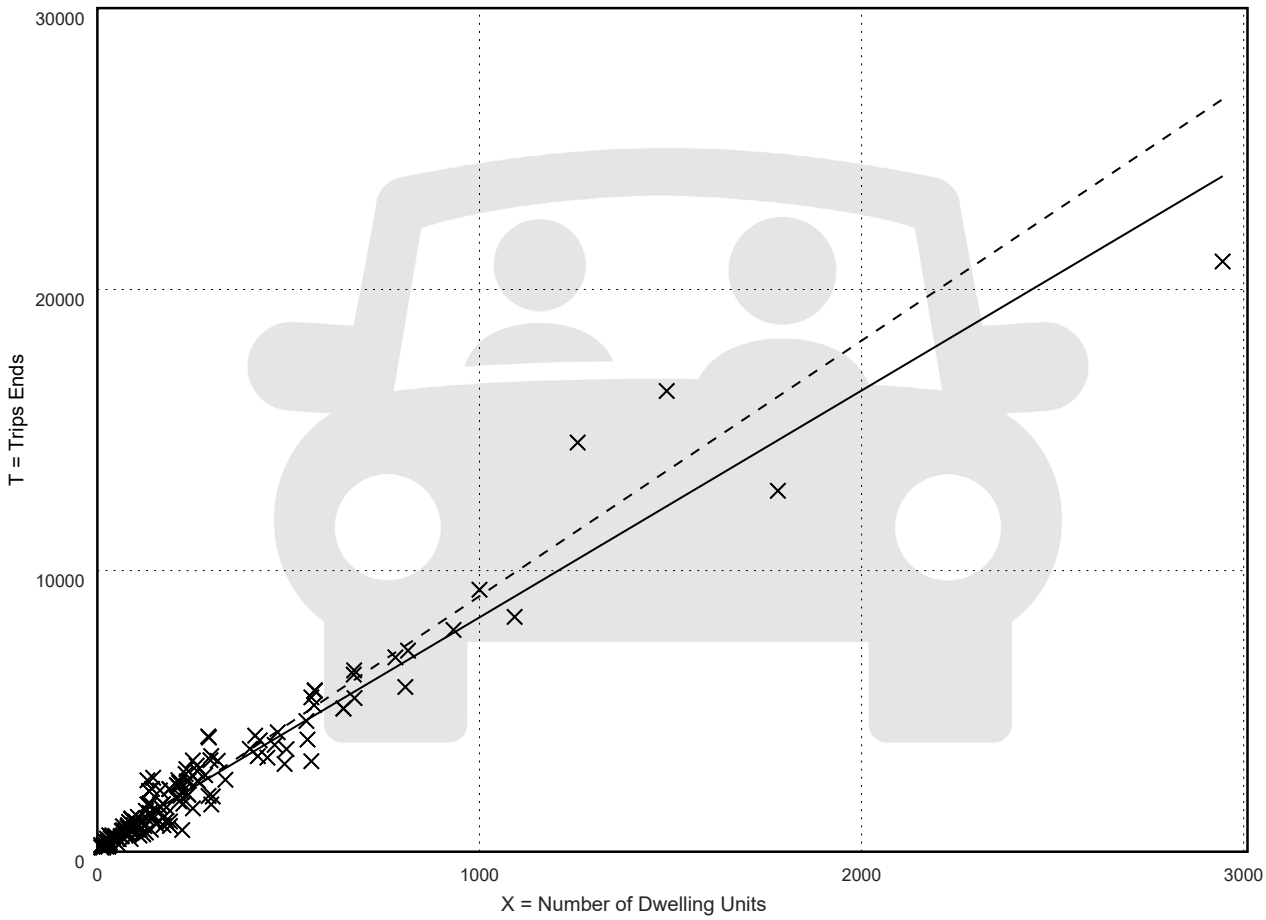
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 155
Avg. Num. of Dwelling Units: 261
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.09	3.47 - 23.80	2.29

Data Plot and Equation



Fitted Curve Equation: T = 8.07(X) + 265.45

R^2= 0.94

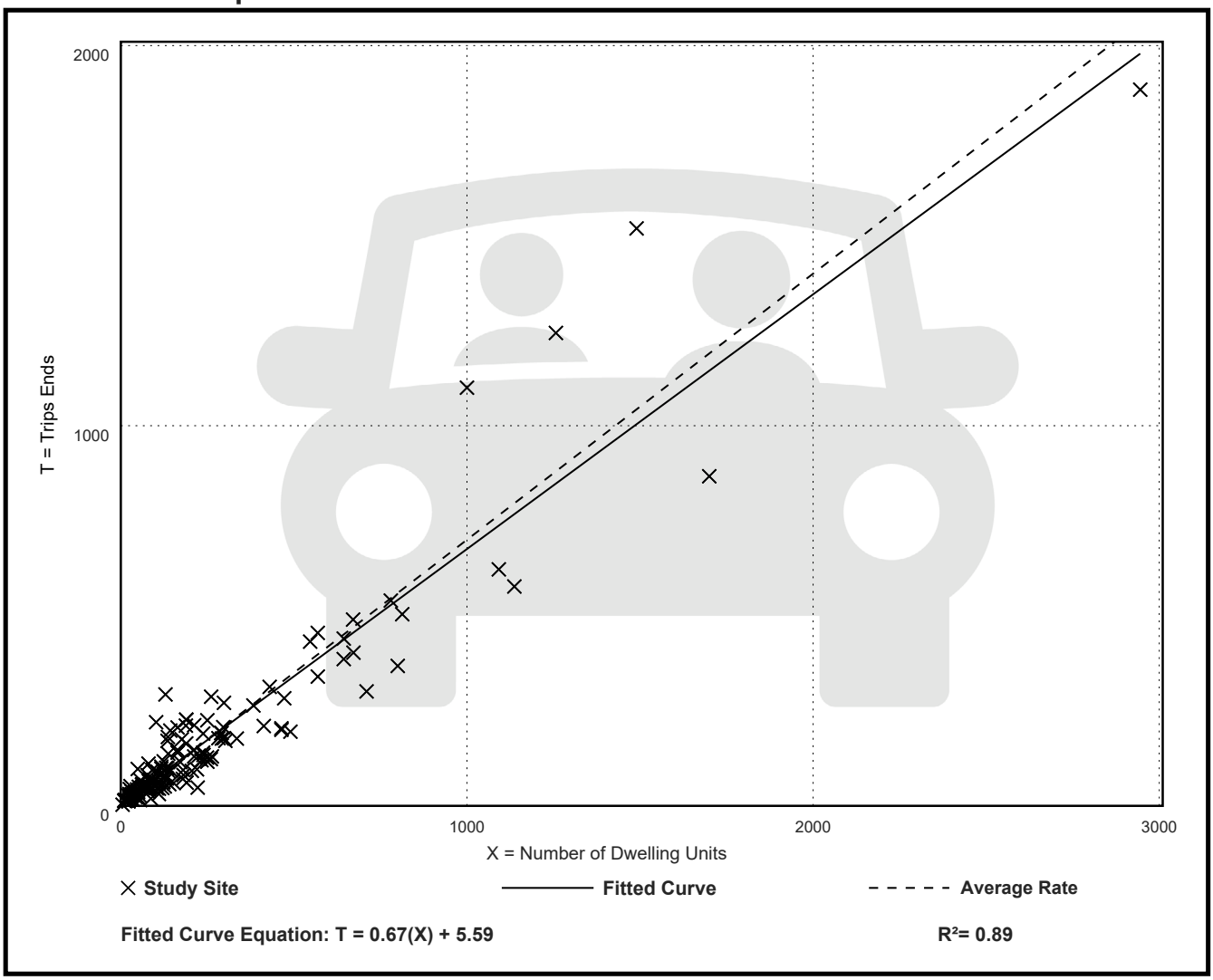
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	153
Avg. Num. of Dwelling Units:	239
Directional Distribution:	27% entering, 73% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.22 - 2.27	0.26

Data Plot and Equation



Fitted Curve Equation: T = 0.67(X) + 5.59

R^2= 0.89

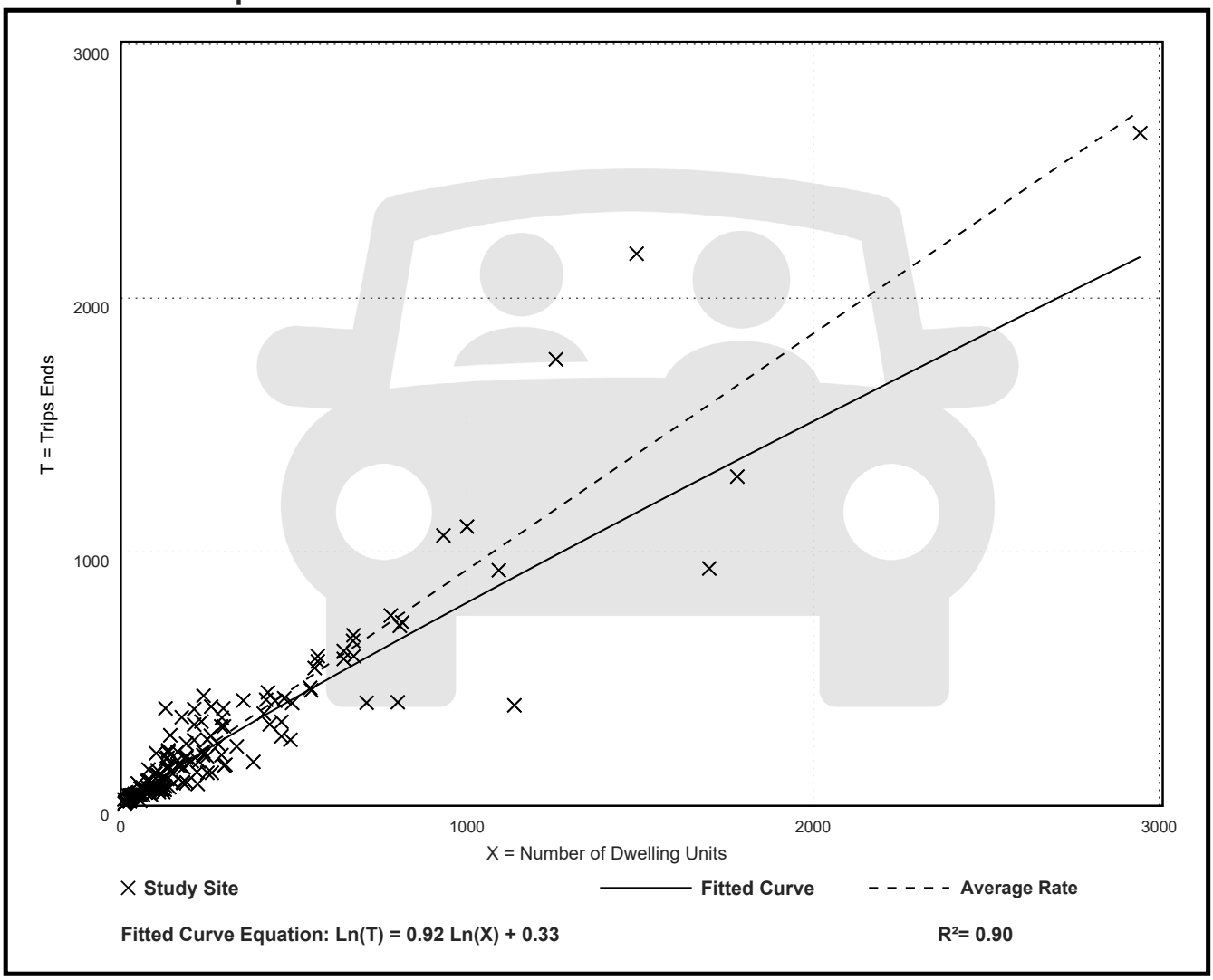
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	166
Avg. Num. of Dwelling Units:	266
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.93	0.35 - 2.98	0.33

Data Plot and Equation



Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing is a residential building with two or three floors (levels) of residences. Various configurations fit this description, including the following:

- Walk-up apartment or multiplex—access to the individual dwelling units is typically internal to the structure and provided through a shared entry, stairway, and hallway.
- Mansion apartment with several dwelling units within what appears from the outside to be a single-family dwelling unit.
- Stacked townhouse designed to match the external appearance of a townhouse, but which has dwelling units that share both floors and walls and with access through a central entry and stairway.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there was an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Arizona, British Columbia (CAN), California, Delaware, Florida, Illinois, Maine, Massachusetts, Minnesota, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, and Washington.

Source Numbers

357, 390, 412, 525, 530, 579, 583, 638, 864, 866, 896, 901, 903, 904, 936, 939, 944, 946, 947, 948, 963, 964, 966, 967, 1012, 1013, 1014, 1036, 1047, 1056, 1071, 1076, 1219, 1236, 1265, 1267

Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

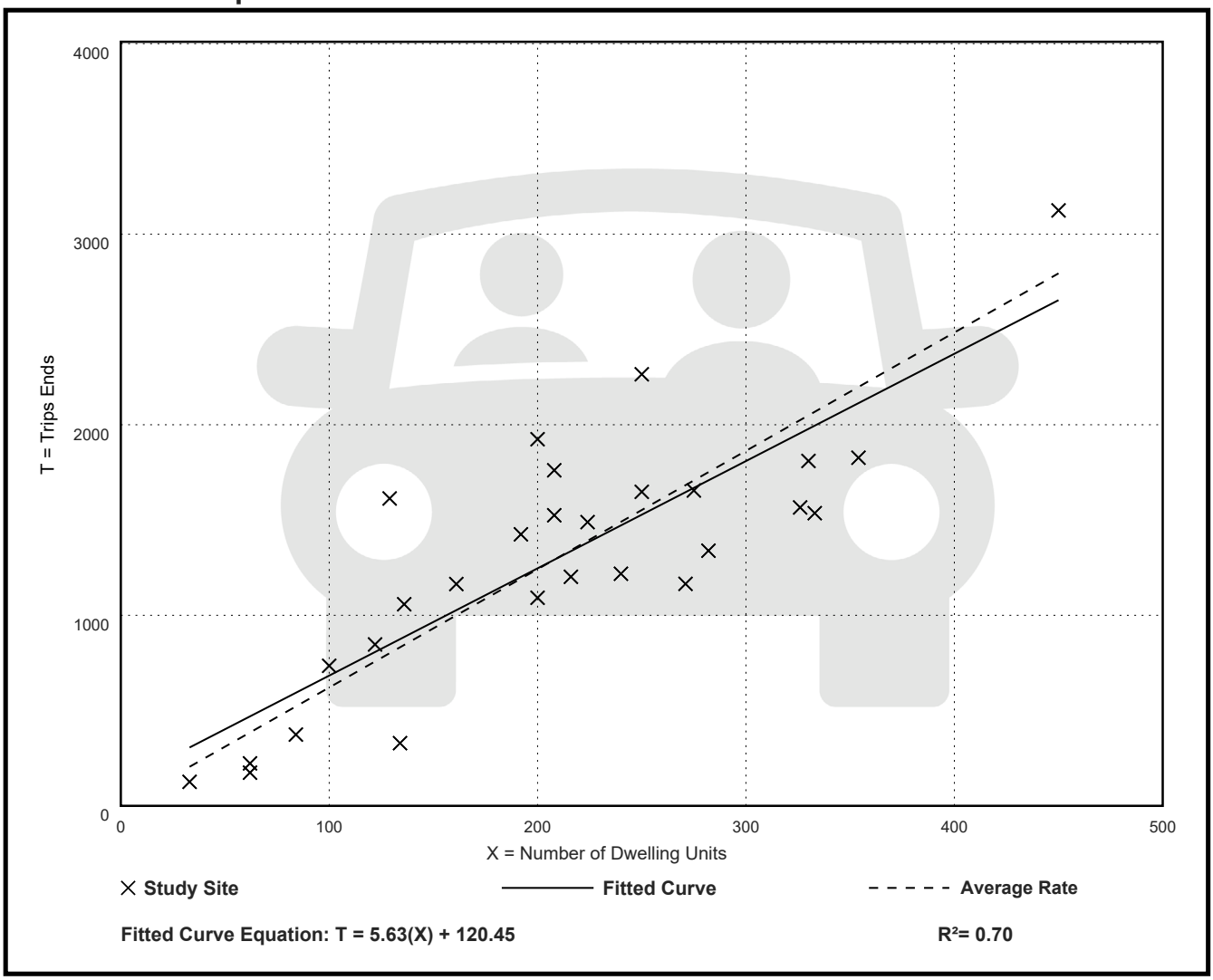
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 28
Avg. Num. of Dwelling Units: 208
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.21	2.46 - 12.50	1.87

Data Plot and Equation



Fitted Curve Equation: T = 5.63(X) + 120.45

R^2= 0.70

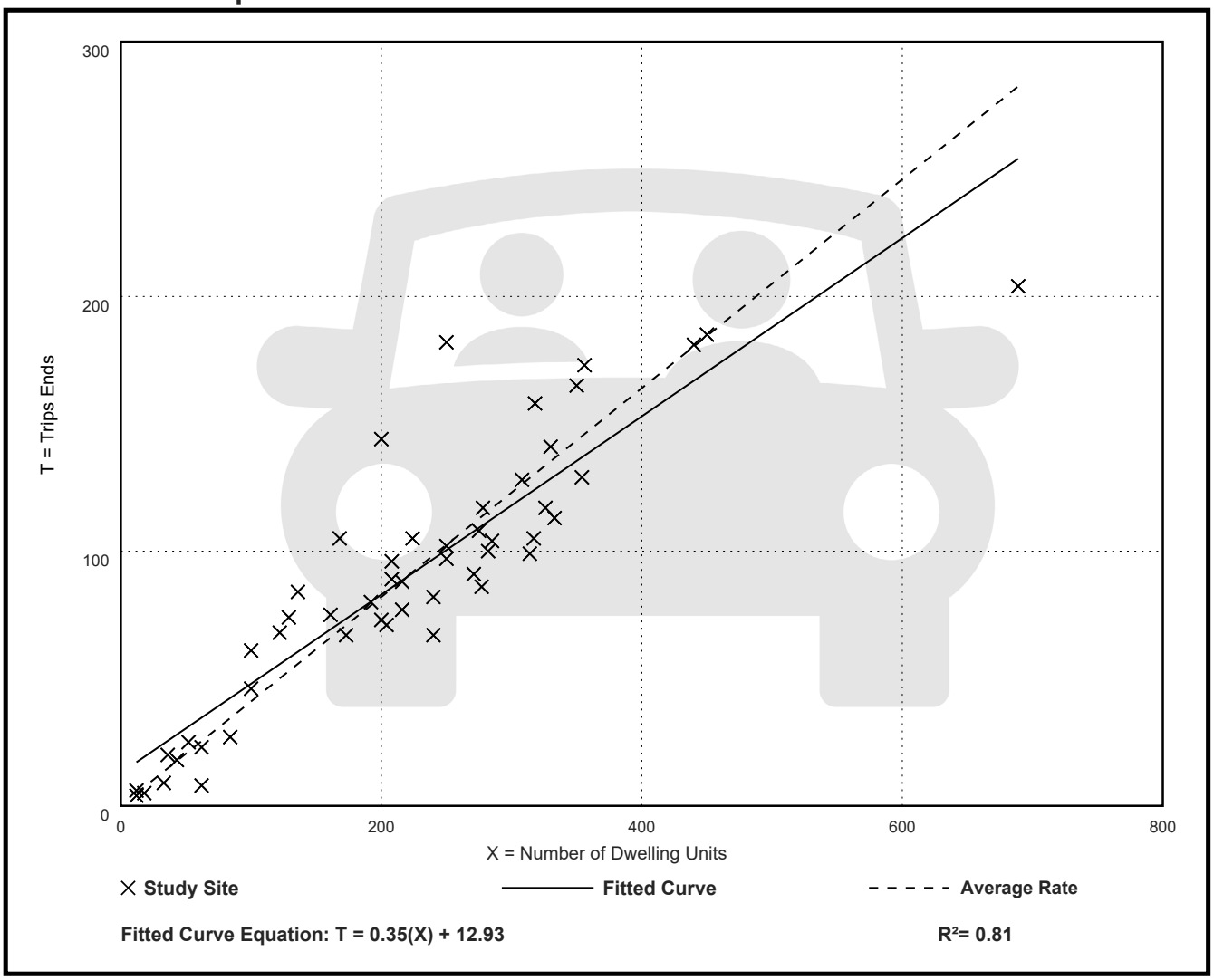
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. Num. of Dwelling Units:	219
Directional Distribution:	24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.41	0.13 - 0.73	0.10

Data Plot and Equation



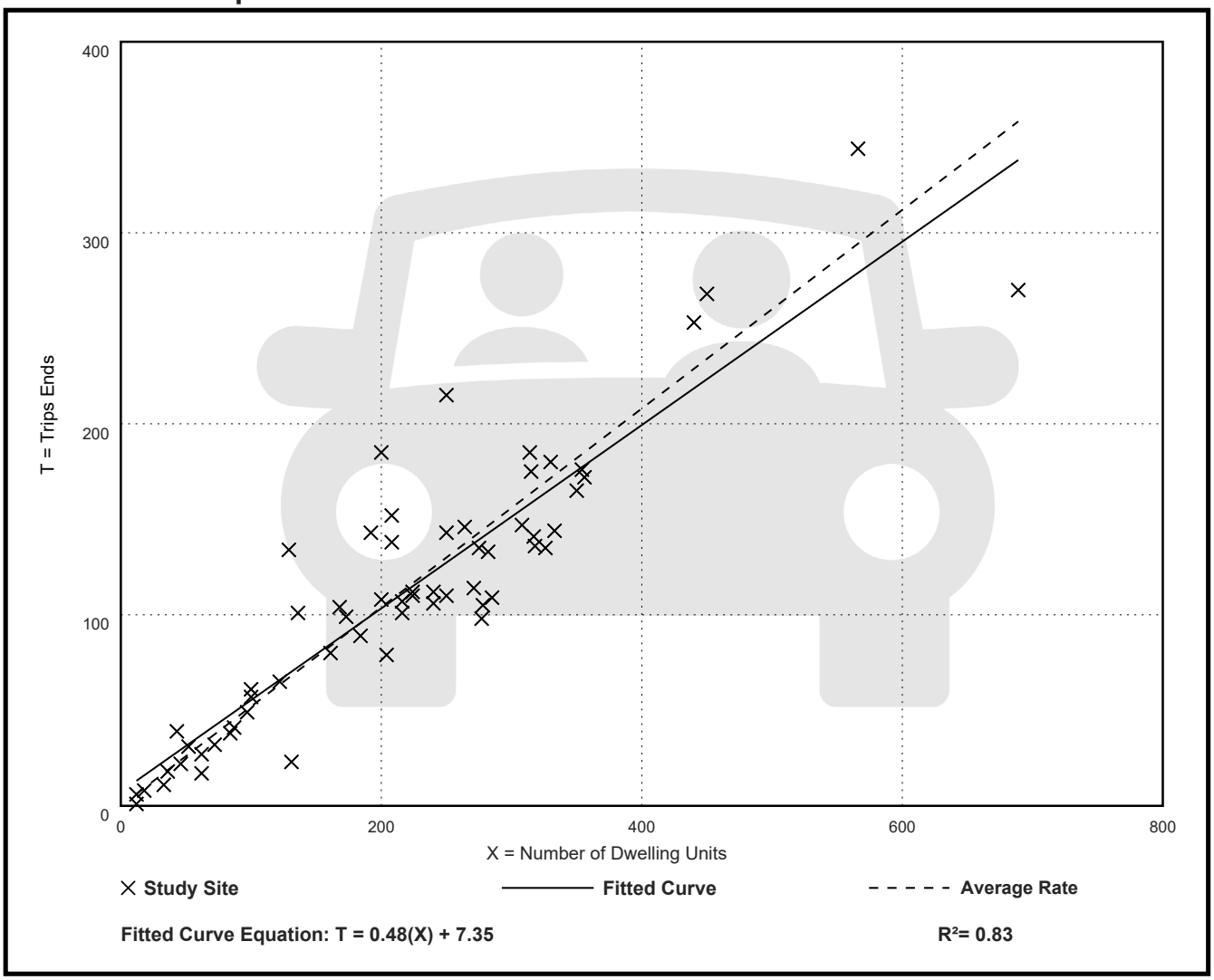
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	61
Avg. Num. of Dwelling Units:	215
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.52	0.08 - 1.04	0.13

Data Plot and Equation



Fitted Curve Equation: T = 0.48(X) + 7.35

R^2= 0.83

FUTURE (2028) NO-BUILD CAPACITY REPORTS

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	14	17	6	9	20	4	54	3	26	78	2
Future Vol, veh/h	3	14	17	6	9	20	4	54	3	26	78	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	77	77	77	88	88	88	79	79	79
Heavy Vehicles, %	3	3	3	18	18	18	5	5	5	2	2	2
Mvmt Flow	4	20	24	8	12	26	5	61	3	33	99	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	242	240	100	247	239	63	101	0	0	65	0	0
Stage 1	166	166	-	72	72	-	-	-	-	-	-	-
Stage 2	76	74	-	174	167	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.28	6.68	6.38	4.15	-	-	4.12	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.28	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.28	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.662	4.162	3.462	2.245	-	-	2.218	-	-
Pot Cap-1 Maneuver	710	660	953	675	635	958	1472	-	-	1537	-	-
Stage 1	834	759	-	899	805	-	-	-	-	-	-	-
Stage 2	930	832	-	791	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	660	643	953	622	619	958	1472	-	-	1537	-	-
Mov Cap-2 Maneuver	660	643	-	622	619	-	-	-	-	-	-	-
Stage 1	815	742	-	896	802	-	-	-	-	-	-	-
Stage 2	889	829	-	734	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.99	9.92	0.49	1.81
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	117	-	-	770	777	439	-	-
HCM Lane V/C Ratio	0.003	-	-	0.062	0.059	0.021	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	10	9.9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	27	34	40	30	69
Future Vol, veh/h	51	27	34	40	30	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	78	78	66	66
Heavy Vehicles, %	8	8	0	0	6	6
Mvmt Flow	54	28	44	51	45	105

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	95	0	-	0	205	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	4.18	-	-	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	2.272	-	-	-	3.554	3.354
Pot Cap-1 Maneuver	1462	-	-	-	774	983
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	746	983
Mov Cap-2 Maneuver	-	-	-	-	746	-
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.94	0	9.82
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1177	-	-	-	896
HCM Lane V/C Ratio	0.037	-	-	-	0.167
HCM Ctrl Dly (s/v)	7.6	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	33	16	2	29	21
Future Vol, veh/h	4	33	16	2	29	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	60	60	71	71
Heavy Vehicles, %	11	11	0	0	19	19
Mvmt Flow	5	44	27	3	41	30

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	140	28	0	0	30	0
Stage 1	28	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.51	6.31	-	-	4.29	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.399	-	-	2.371	-
Pot Cap-1 Maneuver	833	1021	-	-	1480	-
Stage 1	971	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	809	1021	-	-	1480	-
Mov Cap-2 Maneuver	809	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.81	0	4.35
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1044	-
HCM Lane V/C Ratio	-	-	0.05	0.028	-
HCM Ctrl Dly (s/v)	-	-	8.8	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	41	33	3	25	20
Future Vol, veh/h	3	41	33	3	25	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	88	88	92	92
Heavy Vehicles, %	0	0	20	20	5	5
Mvmt Flow	4	61	38	3	27	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	66	0	113	35
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	78	-
Critical Hdwy	-	-	4.3	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.38	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1429	-	876	1029
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1429	-	853	1029
Mov Cap-2 Maneuver	-	-	-	-	853	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	6.95	9.12
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	923	-	-	1426	-
HCM Lane V/C Ratio	0.053	-	-	0.026	-
HCM Ctrl Dly (s/v)	9.1	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection: 1: MacArthur Boulevard & Stamford Road

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	50	76	38
Average Queue (ft)	21	28	3
95th Queue (ft)	47	65	18
Link Distance (ft)	554	1077	632
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: MacArthur Boulevard & N. Harris Road

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	42	82
Average Queue (ft)	5	37
95th Queue (ft)	26	66
Link Distance (ft)	563	595
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Stamford Road/MacArthur Boulevard & Wiard Boulevard

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	56	17
Average Queue (ft)	21	1
95th Queue (ft)	48	7
Link Distance (ft)	383	1148
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Dawn Avenue & Stamford Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	42	64
Average Queue (ft)	2	22
95th Queue (ft)	19	48
Link Distance (ft)	1144	829
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	13	8	8	14	47	10	74	13	34	80	6
Future Vol, veh/h	5	13	8	8	14	47	10	74	13	34	80	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	65	65	65	77	77	77	87	87	87
Heavy Vehicles, %	4	4	4	7	7	7	4	4	4	1	1	1
Mvmt Flow	7	18	11	12	22	72	13	96	17	39	92	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	306	313	95	310	308	105	99	0	0	113	0	0
Stage 1	174	174	-	131	131	-	-	-	-	-	-	-
Stage 2	133	139	-	179	177	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.17	6.57	6.27	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.563	4.063	3.363	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	642	599	956	633	598	937	1482	-	-	1483	-	-
Stage 1	824	751	-	861	779	-	-	-	-	-	-	-
Stage 2	866	778	-	811	743	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	550	577	956	584	576	937	1482	-	-	1483	-	-
Mov Cap-2 Maneuver	550	577	-	584	576	-	-	-	-	-	-	-
Stage 1	801	731	-	853	771	-	-	-	-	-	-	-
Stage 2	769	771	-	760	723	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.86	10.32	0.77	2.12
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	180	-	-	650	783	503	-	-
HCM Lane V/C Ratio	0.009	-	-	0.056	0.136	0.026	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	10.9	10.3	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	46	34	30	34	66
Future Vol, veh/h	67	46	34	30	34	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	91	91
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	82	56	41	37	37	73

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	78	0	-	0	279	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	4.15	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.245	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1502	-	-	-	711	1006
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1502	-	-	-	671	1006
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.47	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1067	-	-	-	860
HCM Lane V/C Ratio	0.054	-	-	-	0.128
HCM Ctrl Dly (s/v)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	19	32	5	33	34
Future Vol, veh/h	7	19	32	5	33	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	72	72	82	82	90	90
Heavy Vehicles, %	4	4	3	3	12	12
Mvmt Flow	10	26	39	6	37	38

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	153	42	0	0	45	0
Stage 1	42	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.22	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.308	-
Pot Cap-1 Maneuver	834	1023	-	-	1501	-
Stage 1	975	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	813	1023	-	-	1501	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	886	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.91	0	3.67
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	956	887	-
HCM Lane V/C Ratio	-	-	0.038	0.024	-
HCM Ctrl Dly (s/v)	-	-	8.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	56	39	6	60	60
Future Vol, veh/h	4	56	39	6	60	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	92	92	73	73
Heavy Vehicles, %	0	0	2	2	3	3
Mvmt Flow	6	80	42	7	82	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	86	0	137	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1511	-	854	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1511	-	830	1021
Mov Cap-2 Maneuver	-	-	-	-	830	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	904	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	6.46	9.79
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	916	-	-	1505	-
HCM Lane V/C Ratio	0.18	-	-	0.028	-
HCM Ctrl Dly (s/v)	9.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection: 1: MacArthur Boulevard & Stamford Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	38	73	12	30
Average Queue (ft)	18	33	0	3
95th Queue (ft)	44	61	6	17
Link Distance (ft)	554	1077	898	632
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: MacArthur Boulevard & N. Harris Road

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	30	67
Average Queue (ft)	3	36
95th Queue (ft)	18	59
Link Distance (ft)	563	595
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Stamford Road/MacArthur Boulevard & Wiard Boulevard

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	50	34
Average Queue (ft)	16	2
95th Queue (ft)	42	15
Link Distance (ft)	383	1148
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Dawn Avenue & Stamford Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	9	36	78
Average Queue (ft)	0	3	34
95th Queue (ft)	4	18	60
Link Distance (ft)	1283	1144	829
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

FUTURE (2028) BUILD CAPACITY REPORTS

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	14	17	16	9	20	4	61	6	26	100	2
Future Vol, veh/h	3	14	17	16	9	20	4	61	6	26	100	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	77	77	77	88	88	88	79	79	79
Heavy Vehicles, %	3	3	3	18	18	18	5	5	5	2	2	2
Mvmt Flow	4	20	24	21	12	26	5	69	7	33	127	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	278	279	128	284	277	73	129	0	0	76	0	0
Stage 1	194	194	-	82	82	-	-	-	-	-	-	-
Stage 2	84	85	-	202	195	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.28	6.68	6.38	4.15	-	-	4.12	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.28	5.68	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.28	5.68	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.662	4.162	3.462	2.245	-	-	2.218	-	-
Pot Cap-1 Maneuver	672	627	920	637	605	946	1438	-	-	1523	-	-
Stage 1	806	738	-	888	797	-	-	-	-	-	-	-
Stage 2	921	822	-	764	710	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	624	611	920	585	589	946	1438	-	-	1523	-	-
Mov Cap-2 Maneuver	624	611	-	585	589	-	-	-	-	-	-	-
Stage 1	787	721	-	885	794	-	-	-	-	-	-	-
Stage 2	880	820	-	707	694	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.23	10.56	0.42	1.51
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	100	-	-	736	706	364	-	-
HCM Lane V/C Ratio	0.003	-	-	0.065	0.083	0.022	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	10.2	10.6	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	51	34	56	70	40	69
Future Vol, veh/h	51	34	56	70	40	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	78	78	66	66
Heavy Vehicles, %	8	8	0	0	6	6
Mvmt Flow	54	36	72	90	61	105

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	162	0	-	0	260	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	4.18	-	-	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	2.272	-	-	-	3.554	3.354
Pot Cap-1 Maneuver	1382	-	-	-	720	925
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	874	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1382	-	-	-	692	925
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	4.63	0	10.47
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1080	-	-	-	823
HCM Lane V/C Ratio	0.039	-	-	-	0.201
HCM Ctrl Dly (s/v)	7.7	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	4	21	4	2	34	10	17	2	34	34	3
Future Vol, veh/h	9	4	21	4	2	34	10	17	2	34	34	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	75	75	75	60	60	60	71	71	71
Heavy Vehicles, %	2	2	2	11	11	11	0	0	0	19	19	19
Mvmt Flow	10	4	23	5	3	45	17	28	3	48	48	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	209	211	50	209	211	30	52	0	0	32	0	0
Stage 1	146	146	-	63	63	-	-	-	-	-	-	-
Stage 2	63	65	-	146	148	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.21	6.61	6.31	4.1	-	-	4.29	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.21	5.61	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.21	5.61	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.599	4.099	3.399	2.2	-	-	2.371	-	-
Pot Cap-1 Maneuver	749	686	1018	729	670	1019	1567	-	-	1477	-	-
Stage 1	857	776	-	925	825	-	-	-	-	-	-	-
Stage 2	948	841	-	836	758	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	681	656	1018	677	641	1019	1567	-	-	1477	-	-
Mov Cap-2 Maneuver	681	656	-	677	641	-	-	-	-	-	-	-
Stage 1	828	750	-	915	816	-	-	-	-	-	-	-
Stage 2	893	832	-	785	733	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.42	9.04	2.52	3.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	608	-	-	851	944	848	-	-
HCM Lane V/C Ratio	0.011	-	-	0.043	0.057	0.032	-	-
HCM Ctrl Dly (s/v)	7.3	0	-	9.4	9	7.5	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	41	57	13	25	28
Future Vol, veh/h	6	41	57	13	25	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	88	88	92	92
Heavy Vehicles, %	0	0	20	20	5	5
Mvmt Flow	9	61	65	15	27	30

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	70	0	184	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	144	-
Critical Hdwy	-	-	4.3	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.38	-	3.545	3.345
Pot Cap-1 Maneuver	-	-	1424	-	799	1023
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	876	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	762	1023
Mov Cap-2 Maneuver	-	-	-	-	762	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	6.23	9.37
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	881	-	-	1412	-
HCM Lane V/C Ratio	0.065	-	-	0.046	-
HCM Ctrl Dly (s/v)	9.4	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	14	2	58	43	18
Future Vol, veh/h	53	14	2	58	43	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	75	75	92	92
Heavy Vehicles, %	10	10	2	2	2	2
Mvmt Flow	88	23	3	77	47	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	112	0	183	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	83	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1478	-	807	956
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	941	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1478	-	805	956
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.25	9.63
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	844	-	-	60	-
HCM Lane V/C Ratio	0.079	-	-	0.002	-
HCM Ctrl Dly (s/v)	9.6	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection: 1: MacArthur Boulevard & Stamford Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	67	74	22	34
Average Queue (ft)	23	28	1	2
95th Queue (ft)	52	61	10	16
Link Distance (ft)	554	1077	898	632
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: MacArthur Boulevard & N. Harris Road

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	49	4	77
Average Queue (ft)	7	0	38
95th Queue (ft)	32	3	62
Link Distance (ft)	563	677	595
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Stamford Road/MacArthur Boulevard & E. Site Access/Wiard Boulevard

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	44	60	16
Average Queue (ft)	22	22	1
95th Queue (ft)	45	52	7
Link Distance (ft)	617	482	1149
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Dawn Avenue & Stamford Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	53	53
Average Queue (ft)	5	23
95th Queue (ft)	28	46
Link Distance (ft)	1144	829
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: N. Site Access & MacArthur Boulevard

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	12	46
Average Queue (ft)	0	23
95th Queue (ft)	6	41
Link Distance (ft)	1149	402
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	13	8	14	14	47	10	93	22	34	92	6
Future Vol, veh/h	5	13	8	14	14	47	10	93	22	34	92	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	65	65	65	77	77	77	87	87	87
Heavy Vehicles, %	4	4	4	7	7	7	4	4	4	1	1	1
Mvmt Flow	7	18	11	22	22	72	13	121	29	39	106	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	345	363	109	354	352	135	113	0	0	149	0	0
Stage 1	187	187	-	161	161	-	-	-	-	-	-	-
Stage 2	158	175	-	193	191	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.17	6.57	6.27	4.14	-	-	4.11	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.563	4.063	3.363	2.236	-	-	2.209	-	-
Pot Cap-1 Maneuver	606	562	939	592	565	901	1464	-	-	1438	-	-
Stage 1	810	741	-	829	755	-	-	-	-	-	-	-
Stage 2	840	750	-	797	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	515	540	939	544	543	901	1464	-	-	1438	-	-
Mov Cap-2 Maneuver	515	540	-	544	543	-	-	-	-	-	-	-
Stage 1	786	720	-	821	748	-	-	-	-	-	-	-
Stage 2	743	743	-	746	712	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	11.22	10.92	0.6	1.95
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	139	-	-	615	723	458	-	-
HCM Lane V/C Ratio	0.009	-	-	0.059	0.16	0.027	-	-
HCM Ctrl Dly (s/v)	7.5	0	-	11.2	10.9	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	65	46	47	64	66
Future Vol, veh/h	67	65	46	47	64	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	91	91
Heavy Vehicles, %	5	5	2	2	2	2
Mvmt Flow	82	79	56	57	70	73

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	113	0	-	0	327	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	4.15	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.245	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1457	-	-	-	667	974
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1457	-	-	-	628	974
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	798	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.87	0	10.77
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	914	-	-	-	766
HCM Lane V/C Ratio	0.056	-	-	-	0.186
HCM Ctrl Dly (s/v)	7.6	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	2	16	7	7	20	37	38	5	36	45	10
Future Vol, veh/h	6	2	16	7	7	20	37	38	5	36	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	72	72	72	82	82	82	90	90	90
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	12	12	12
Mvmt Flow	7	2	17	10	10	28	45	46	6	40	50	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	277	278	56	271	281	49	61	0	0	52	0	0
Stage 1	136	136	-	140	140	-	-	-	-	-	-	-
Stage 2	141	143	-	131	141	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.14	6.54	6.24	4.13	-	-	4.22	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.536	4.036	3.336	2.227	-	-	2.308	-	-
Pot Cap-1 Maneuver	675	630	1011	678	624	1013	1536	-	-	1492	-	-
Stage 1	868	784	-	859	777	-	-	-	-	-	-	-
Stage 2	861	779	-	868	776	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	610	594	1011	626	589	1013	1536	-	-	1492	-	-
Mov Cap-2 Maneuver	610	594	-	626	589	-	-	-	-	-	-	-
Stage 1	844	762	-	833	754	-	-	-	-	-	-	-
Stage 2	802	755	-	827	755	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.5	9.82	3.43	2.96
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	814	-	-	827	794	687	-	-
HCM Lane V/C Ratio	0.029	-	-	0.032	0.059	0.027	-	-
HCM Ctrl Dly (s/v)	7.4	0	-	9.5	9.8	7.5	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	13	56	60	12	60	94
Future Vol, veh/h	13	56	60	12	60	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	92	92	73	73
Heavy Vehicles, %	0	0	2	2	3	3
Mvmt Flow	19	80	65	13	82	129

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	99	0	202	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1494	-	784	1004
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1494	-	750	1004
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	842	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	6.27	10.32
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	887	-	-	1484	-
HCM Lane V/C Ratio	0.238	-	-	0.044	-
HCM Ctrl Dly (s/v)	10.3	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	39	7	57	23	14
Future Vol, veh/h	77	39	7	57	23	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	78	78	92	92
Heavy Vehicles, %	9	9	0	0	2	2
Mvmt Flow	118	60	9	73	25	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	178	0	239	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	91	-
Critical Hdwy	-	-	4.1	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.2	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1410	-	749	898
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	933	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1410	-	744	898
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	926	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.83	9.77
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	796	-	-	197	-
HCM Lane V/C Ratio	0.051	-	-	0.006	-
HCM Ctrl Dly (s/v)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection: 1: MacArthur Boulevard & Stamford Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	73	33	39
Average Queue (ft)	19	35	2	4
95th Queue (ft)	44	61	14	22
Link Distance (ft)	554	1077	898	632
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: MacArthur Boulevard & N. Harris Road

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	44	76
Average Queue (ft)	6	40
95th Queue (ft)	29	64
Link Distance (ft)	563	595
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Stamford Road/MacArthur Boulevard & E. Site Access/Wiard Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	49	25	27
Average Queue (ft)	17	19	2	2
95th Queue (ft)	41	45	13	14
Link Distance (ft)	617	482	1349	1149
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Dawn Avenue & Stamford Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	36	71
Average Queue (ft)	4	38
95th Queue (ft)	22	60
Link Distance (ft)	1144	829
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: N. Site Access & MacArthur Boulevard

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	10	33
Average Queue (ft)	0	17
95th Queue (ft)	5	36
Link Distance (ft)	1149	402
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

TURN LANE WARRANT

MacArthur Boulevard and N. Site Access

AM Peak Hour
LT: 2 - 3%

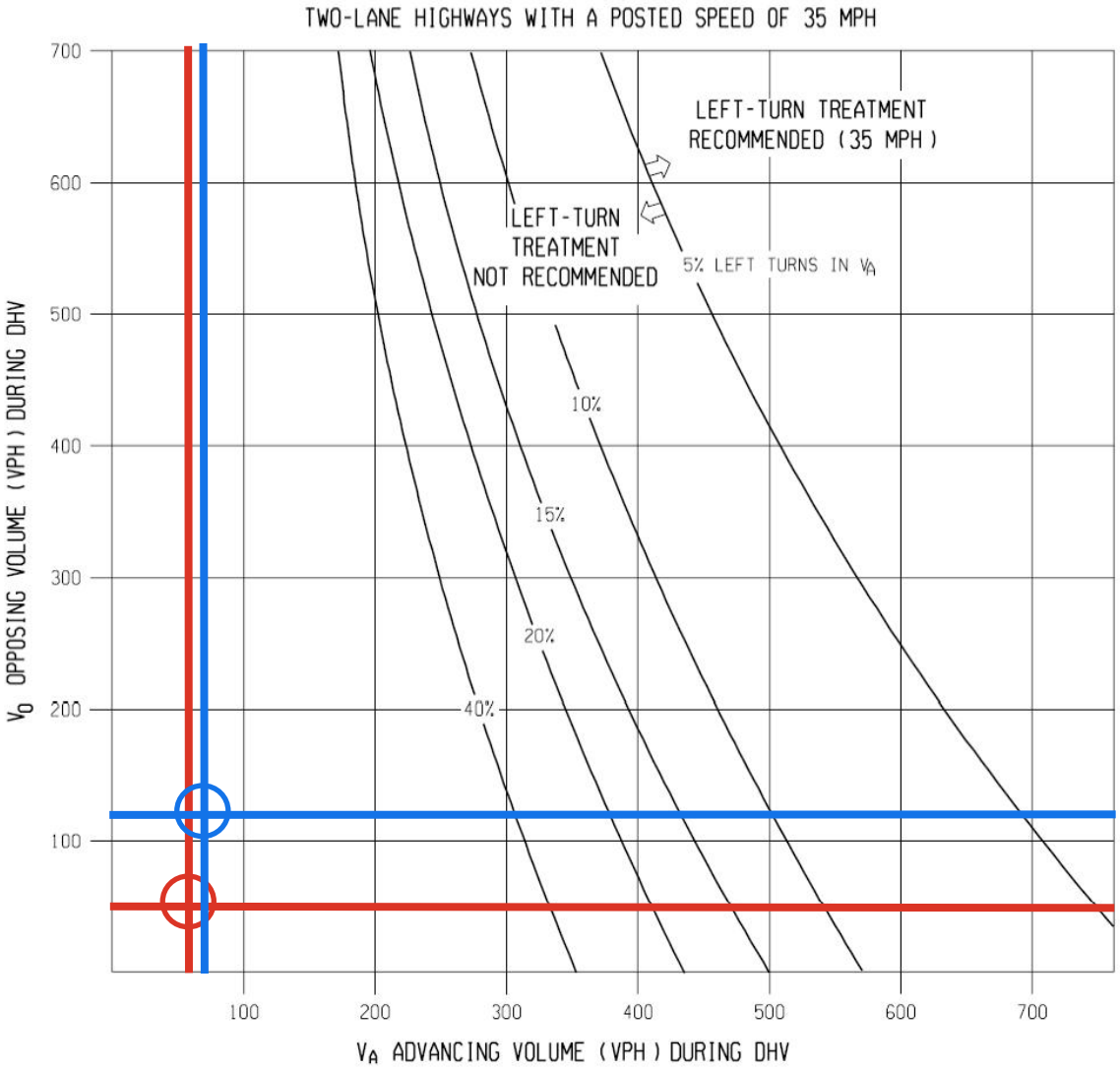
PM Peak Hour
LT: 7 - 11%

AM Vo: 67

PM Vo: 116

AM Va: 60

PM Va: 64



Left-Turn Lane NOT Warranted

Instructions:

1. The family of curves represent the percentage of left turns in advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is recommended. If the point is to the left of the line, then a left-turn is not recommended based on traffic volumes.

Example: Speed = 35mph
Advancing volume during DHV = 400 vph
Opposing volume during DHV = 400 vph
Percentage of left-turns in advancing volume = 7%

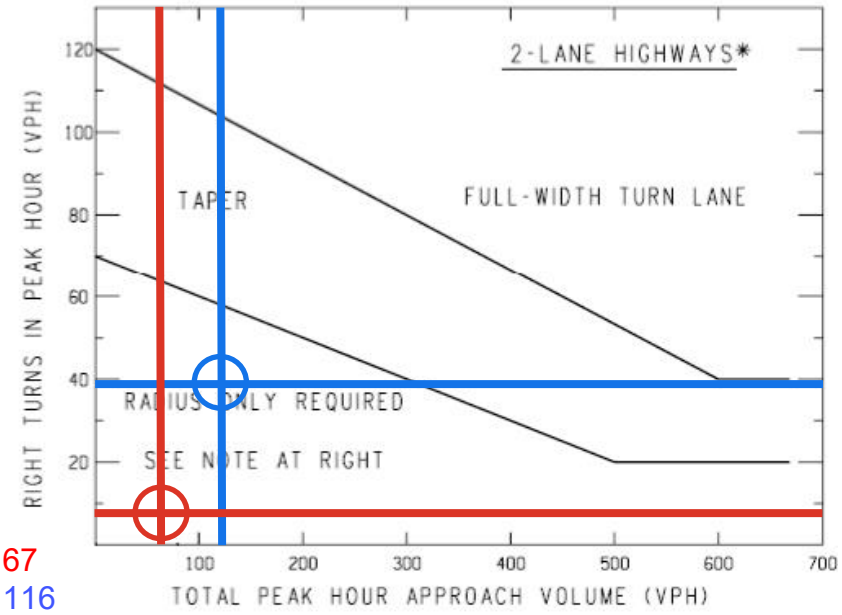
Problem: Determine if left-turn lane is recommended

Solution: Figure indicates that the intersection of 400 vph and 400 vph is located to the left of the 7% curve (estimated); thus a left-turn lane is not recommended based on volumes.

MacArthur Boulevard & N. Site Access

AM Peak Hour
RT: 14

PM Peak Hour
RT: 39

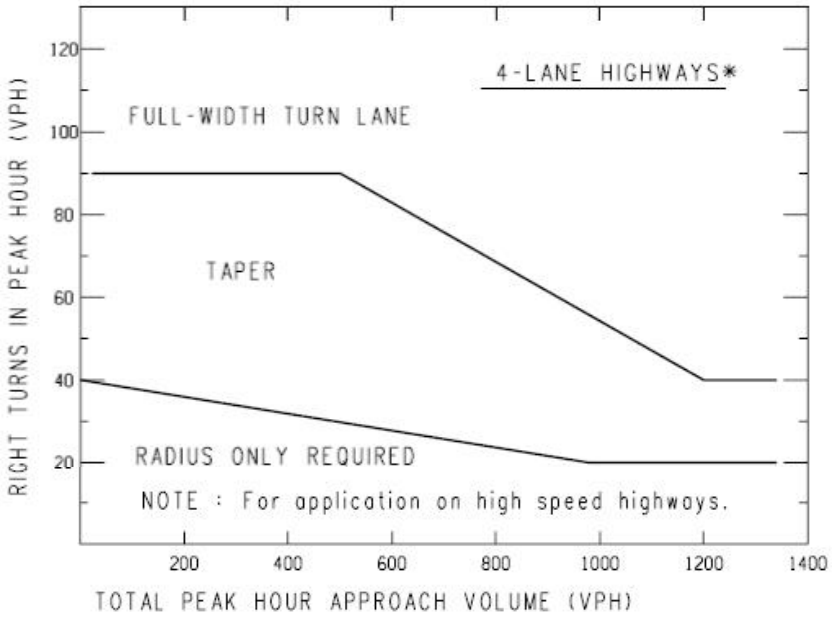


AM Peak Hour: 67
PM Peak Hour: 116

NOTE: For posted speeds at or under 45 mph, peak hour right turns greater than 40 vph, and total peak hour approach less than 300 vph, adjust right turn volumes.

Adjust peak hour Right turns = Peak hour Right turns – 20

Right-Turn Lane NOT Warranted



*If a center left-turn lane exists (ie 3 or 5 lane roadway), subtract the number of left turns in approach volume form the total approach volume to get an adjusted total approach volume.

Sample Problem: The Design Speed is 55 mph. The Peak Hour Approach Volume is 300 vph. The Number of Right Turns in the Peak Hous is 100 vph. Determine if a right turn lane is recommended.

Solution: Figure indicates that the intersection of 300 vph and 100 vph is located above the upper trend line; thus, a right-turn lane may be recommended.

MacArthur Boulevard and E. Site Access

AM Peak Hour
LT: 10 - 34%

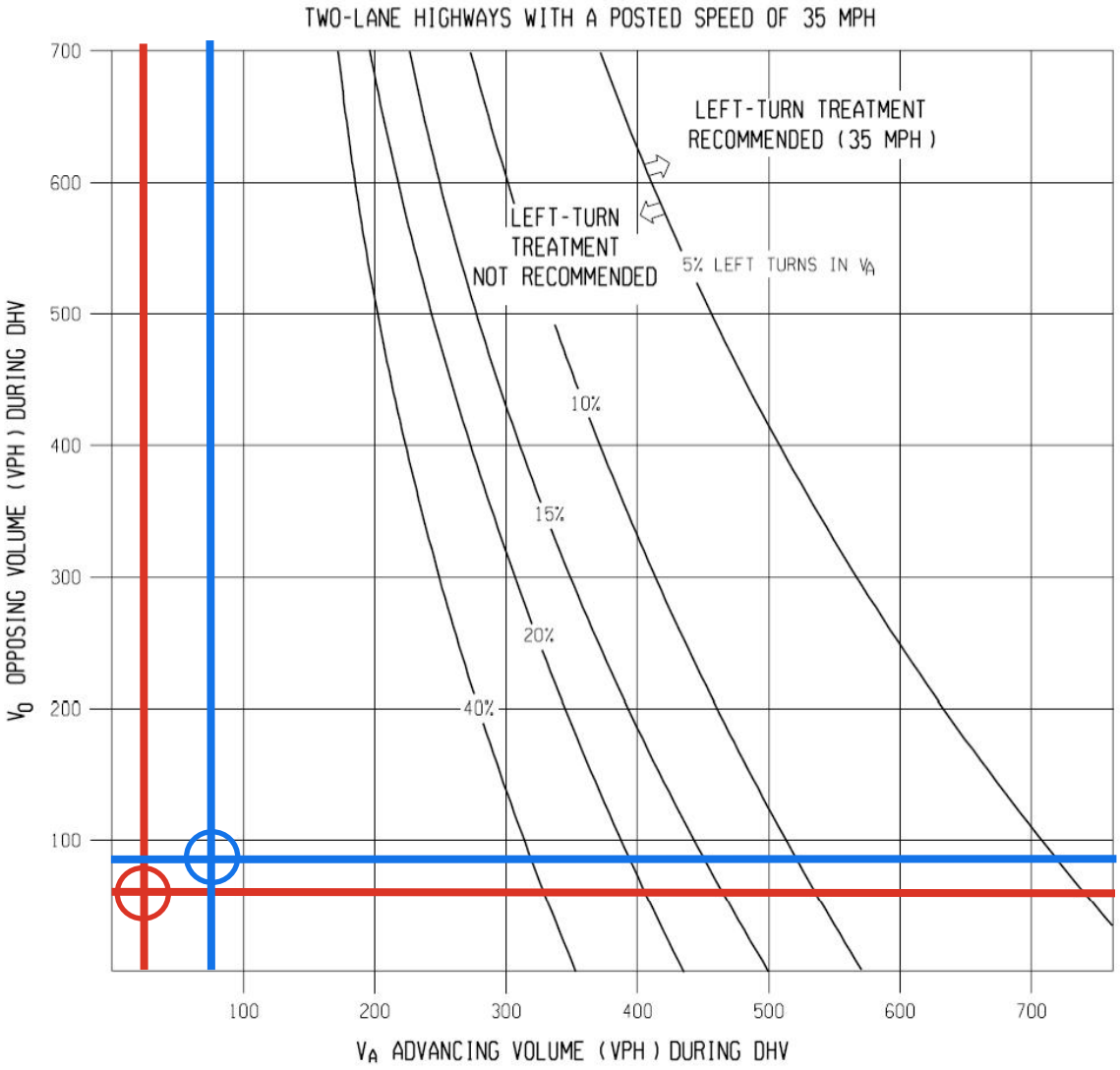
PM Peak Hour
LT: 37 - 46%

AM Vo: 71

PM Vo: 91

AM Va: 29

PM Va: 80



Left-Turn Lane NOT Warranted

Instructions:

1. The family of curves represent the percentage of left turns in advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of 5, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the line in #1. If the point is to the right of the line, then a left-turn lane is recommended. If the point is to the left of the line, then a left-turn is not recommended based on traffic volumes.

Example: Speed = 35mph
Advancing volume during DHV = 400 vph
Opposing volume during DHV = 400 vph
Percentage of left-turns in advancing volume = 7%

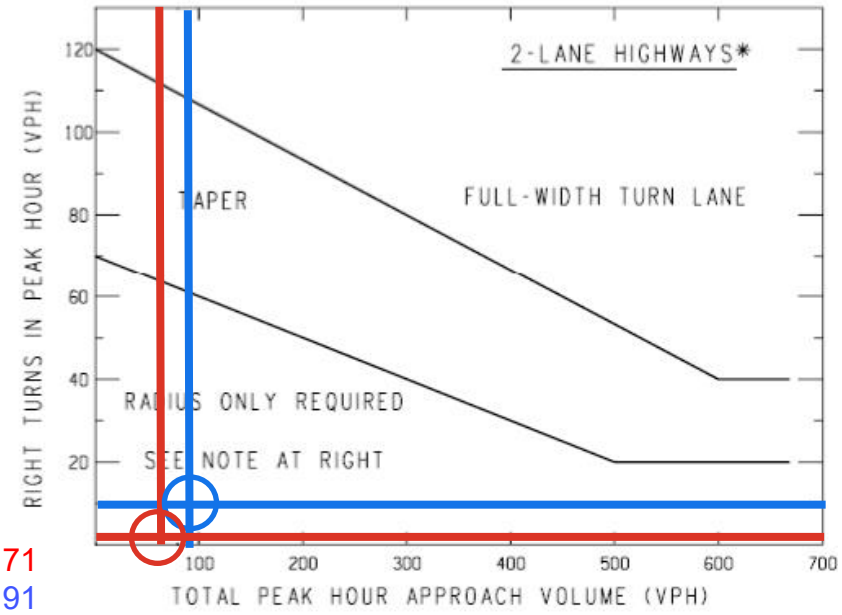
Problem: Determine if left-turn lane is recommended

Solution: Figure indicates that the intersection of 400 vph and 400 vph is located to the left of the 7% curve (estimated); thus a left-turn lane is not recommended based on volumes.

MacArthur Boulevard & E. Site Access

AM Peak Hour
RT: 3

PM Peak Hour
RT: 10

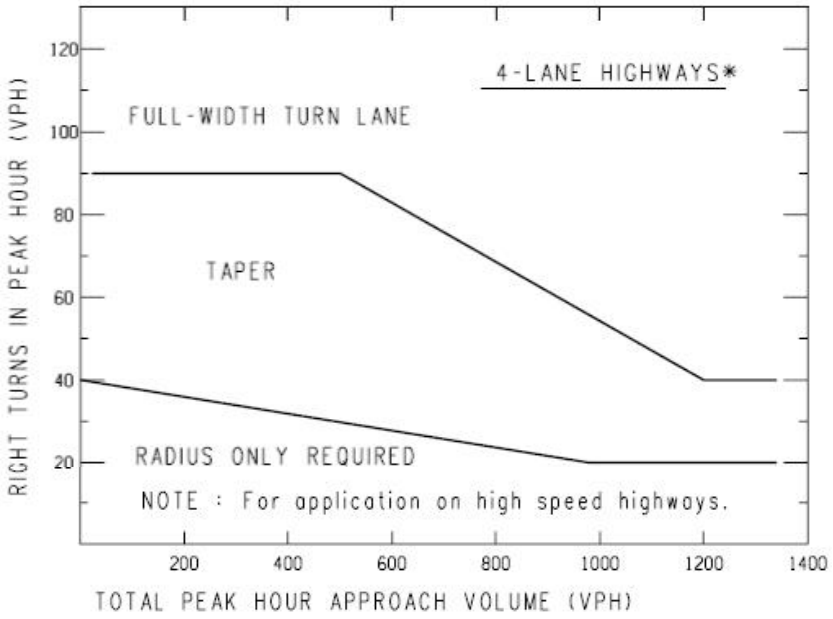


AM Peak Hour: 71
PM Peak Hour: 91

NOTE: For posted speeds at or under 45 mph, peak hour right turns greater than 40 vph, and total peak hour approach less than 300 vph, adjust right turn volumes.

Adjust peak hour Right turns = Peak hour Right turns – 20

Right-Turn Lane NOT Warranted



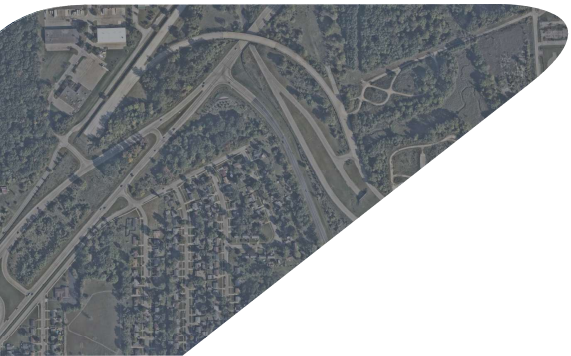
*If a center left-turn lane exists (ie 3 or 5 lane roadway), subtract the number of left turns in approach volume form the total approach volume to get an adjusted total approach volume.

Sample Problem: The Design Speed is 55 mph. The Peak Hour Approach Volume is 300 vph. The Number of Right Turns in the Peak Hous is 100 vph. Determine if a right turn lane is recommended.

Solution: Figure indicates that the intersection of 300 vph and 100 vph is located above the upper trend line; thus, a right-turn lane may be recommended.







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Peter M. Lundgren
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MI-4374A

Tree Survey

Project No./Name: 25-079 Date: 2/18/2026

Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
1	Juglans nigra	Black Walnut	11	FAIR		
2	Acer negundo	Box Elder	13	FAIR		
3	Acer negundo	Box Elder	11	POOR		
4	Populus deltoides	Cottonwood	38	FAIR		Landmark
5	Juglans nigra	Black Walnut	8	FAIR		
6	Acer negundo	Box Elder	8	POOR		
7	Juglans nigra	Black Walnut	12	FAIR		
8	Acer negundo	Box Elder	12	FAIR	TWIN	
9	Acer negundo	Box Elder	8	FAIR		
10	Acer negundo	Box Elder	8	POOR		
11	Populus deltoides	Cottonwood	26	FAIR		Landmark
12	Populus deltoides	Cottonwood	17	FAIR		
13	Acer saccharinum	Silver Maple	8	FAIR		
14	Populus deltoides	Cottonwood	14	FAIR		
15	Populus deltoides	Cottonwood	16	FAIR		
16	Populus deltoides	Cottonwood	15	FAIR		
17	Populus deltoides	Cottonwood	16	FAIR		
18	Populus deltoides	Cottonwood	8	FAIR		
19	Populus deltoides	Cottonwood	13	FAIR		
20	Populus deltoides	Cottonwood	13	FAIR		
21	Populus deltoides	Cottonwood	15	FAIR		
22	Populus deltoides	Cottonwood	18	FAIR		
23	Populus deltoides	Cottonwood	18	FAIR		
24	Populus deltoides	Cottonwood	20	FAIR		
25	Populus deltoides	Cottonwood	23	FAIR		
26	Populus deltoides	Cottonwood	18	FAIR		
27	Acer saccharum	Sugar Maple	12	FAIR		
28	Populus deltoides	Cottonwood	15	FAIR		
29	Acer saccharum	Sugar Maple	11	FAIR		
30	Populus deltoides	Cottonwood	16	FAIR	TWIN	
31	Populus deltoides	Cottonwood	13	FAIR		
32	Populus deltoides	Cottonwood	18	FAIR		
33	Populus deltoides	Cottonwood	18	FAIR	TWIN	
34	Ulmus americana	American Elm	11	FAIR		
35	Populus deltoides	Cottonwood	20	FAIR		
36	Populus deltoides	Cottonwood	35	FAIR		Landmark

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
37	Populus deltoides	Cottonwood	30	FAIR		Landmark
38	Populus deltoides	Cottonwood	14	FAIR	TWIN	
39	Populus deltoides	Cottonwood	17	FAIR		
40	Populus deltoides	Cottonwood	25	FAIR		Landmark
41	Acer saccharinum	Silver Maple	10	FAIR	TWIN	
42	Populus deltoides	Cottonwood	14	FAIR		
43	Populus deltoides	Cottonwood	11	FAIR		
44	Populus deltoides	Cottonwood	18	FAIR		
45	Populus deltoides	Cottonwood	18	FAIR		
46	Salix babylonica	Weeping Willow	10	FAIR		
47	Salix babylonica	Weeping Willow	17	FAIR		
48	Populus tremuloides	Quaking Aspen	13	FAIR		
49	Quercus alba	White Oak	18	FAIR	TWIN	Landmark
50	Tilia americana	Basswood	14	FAIR	TWIN	
51	Quercus macrocarpa	Bur Oak	14	FAIR		
52	Quercus macrocarpa	Bur Oak	24	FAIR		Landmark
53	Tilia americana	Basswood	12	POOR		
54	Robinia pseudoacacia	Black Locust	11	FAIR		
55	Tilia americana	Basswood	12	POOR		
56	Tilia americana	Basswood	12	FAIR		
57	Carya glabra	Pignut Hickory	8	FAIR		
58	Quercus rubra	Red Oak	11	FAIR		
59	Tilia americana	Basswood	11	FAIR		
60	Tilia americana	Basswood	9	FAIR		
61	Quercus rubra	Red Oak	11	FAIR		
62	Tilia americana	Basswood	9	FAIR		
63	Tilia americana	Basswood	13	FAIR		
64	Tilia americana	Basswood	10	POOR		
65	Tilia americana	Basswood	11	POOR		
66	Tilia americana	Basswood	14	FAIR		
67	Tilia americana	Basswood	9	FAIR		
68	Tilia americana	Basswood	19	FAIR		
69	Tilia americana	Basswood	8	FAIR		
70	Tilia americana	Basswood	11	POOR		
71	Carya cordiformis	Bitternut Hickory	10	FAIR		
72	Tilia americana	Basswood	8	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
73	Tilia americana	Basswood	10	FAIR	TWIN	
74	Tilia americana	Basswood	11	POOR		
75	Tilia americana	Basswood	14	FAIR		
76	Tilia americana	Basswood	14	FAIR		
77	Tilia americana	Basswood	9	FAIR		
78	Tilia americana	Basswood	11	FAIR		
79	Tilia americana	Basswood	16	FAIR	TWIN	
80	Tilia americana	Basswood	11	FAIR		
81	Juglans nigra	Black Walnut	13	FAIR		
82	Tilia americana	Basswood	13	FAIR		
83	Tilia americana	Basswood	12	FAIR		
84	Populus deltoides	Cottonwood	22	FAIR		
85	Carya glabra	Pignut Hickory	8	POOR		
86	Carya glabra	Pignut Hickory	9	FAIR	TWIN	
87	Quercus alba	White Oak	22	FAIR		Landmark
88	Ulmus americana	American Elm	8	FAIR		
89	Quercus alba	White Oak	13	FAIR	TWIN	
90	Quercus alba	White Oak	14	FAIR	TWIN	
91	Quercus alba	White Oak	24	FAIR		Landmark
92	Quercus alba	White Oak	14	FAIR		
93	Tilia americana	Basswood	12	FAIR		
94	Carya glabra	Pignut Hickory	8	FAIR		
95	Tilia americana	Basswood	18	FAIR	QUAD	
96	Tilia americana	Basswood	10	FAIR		
97	Quercus rubra	Red Oak	17	FAIR	TRIPLE	Landmark
98	Tilia americana	Basswood	8	FAIR		
100	Quercus alba	White Oak	14	FAIR		
101	Tilia americana	Basswood	11	FAIR		
102	Tilia americana	Basswood	11	FAIR		
103	Tilia americana	Basswood	9	FAIR		
104	Tilia americana	Basswood	9	FAIR		
105	Carya glabra	Pignut Hickory	9	FAIR		
106	Quercus rubra	Red Oak	15	FAIR		
107	Carya ovata	Shagbark Hickory	15	FAIR		
108	Tilia americana	Basswood	20	FAIR		
109	Carya glabra	Pignut Hickory	8	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
110	Quercus rubra	Red Oak	14	FAIR		
111	Carya glabra	Pignut Hickory	10	FAIR		
112	Quercus rubra	Red Oak	15	FAIR		
113	Carya glabra	Pignut Hickory	8	FAIR		
114	Carya glabra	Pignut Hickory	11	FAIR		
115	Quercus rubra	Red Oak	17	FAIR		Landmark
116	Carya glabra	Pignut Hickory	8	FAIR		
117	Quercus rubra	Red Oak	20	FAIR		Landmark
118	Carya glabra	Pignut Hickory	13	FAIR		
119	Carya glabra	Pignut Hickory	10	FAIR		
120	Carya glabra	Pignut Hickory	14	FAIR		
121	Quercus rubra	Red Oak	16	FAIR		Landmark
122	Quercus rubra	Red Oak	11	FAIR		
123	Carya glabra	Pignut Hickory	13	FAIR	TWIN	
124	Carya ovata	Shagbark Hickory	11	FAIR		
125	Quercus rubra	Red Oak	9	FAIR		
126	Carya glabra	Pignut Hickory	9	FAIR		
127	Tilia americana	Basswood	12	FAIR	TWIN	
128	Juglans nigra	Black Walnut	14	FAIR		
129	Juglans nigra	Black Walnut	10	FAIR		
130	Tilia americana	Basswood	12	FAIR		
131	Tilia americana	Basswood	12	FAIR	TWIN	
132	Tilia americana	Basswood	8	FAIR		
133	Tilia americana	Basswood	16	FAIR		
134	Juglans nigra	Black Walnut	10	FAIR		
135	Tilia americana	Basswood	10	FAIR		
136	Carya glabra	Pignut Hickory	11	FAIR		
137	Tilia americana	Basswood	10	FAIR		
138	Quercus rubra	Red Oak	19	FAIR		Landmark
139	Juglans nigra	Black Walnut	14	FAIR		
140	Quercus rubra	Red Oak	16	FAIR		Landmark
141	Quercus rubra	Red Oak	9	FAIR		
142	Quercus rubra	Red Oak	15	FAIR		
143	Tilia americana	Basswood	10	FAIR	TRIPLE	
144	Juglans nigra	Black Walnut	12	POOR		
145	Ulmus pumila	Siberian Elm	9	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
146	Carya glabra	Pignut Hickory	13	FAIR		
147	Quercus rubra	Red Oak	36	FAIR		Landmark
148	Tilia americana	Basswood	12	FAIR		
149	Carya glabra	Pignut Hickory	15	FAIR		
150	Ulmus americana	American Elm	8	POOR		
151	Tilia americana	Basswood	16	FAIR		
152	Juglans nigra	Black Walnut	11	FAIR	TWIN	
153	Tilia americana	Basswood	11	FAIR	TWIN	
154	Quercus alba	White Oak	21	POOR		Landmark
155	Quercus alba	White Oak	14	FAIR	TWIN	
156	Quercus rubra	Red Oak	16	FAIR		Landmark
157	Tilia americana	Basswood	15	FAIR		
158	Carya glabra	Pignut Hickory	12	FAIR		
159	Juglans nigra	Black Walnut	14	FAIR		
160	Quercus alba	White Oak	12	FAIR		
161	Carya glabra	Pignut Hickory	8	FAIR		
162	Tilia americana	Basswood	12	FAIR		
163	Quercus rubra	Red Oak	16	FAIR	TWIN	Landmark
164	Quercus rubra	Red Oak	14	FAIR		
165	Quercus rubra	Red Oak	14	FAIR		
166	Quercus rubra	Red Oak	16	FAIR	TRIPLE	Landmark
167	Quercus alba	White Oak	11	FAIR		
168	Quercus alba	White Oak	13	FAIR		
169	Quercus alba	White Oak	15	FAIR		
170	Quercus rubra	Red Oak	16	FAIR		Landmark
171	Quercus alba	White Oak	8	FAIR		
172	Carya glabra	Pignut Hickory	13	FAIR		
173	Carya glabra	Pignut Hickory	12	FAIR		
174	Quercus alba	White Oak	14	FAIR	TWIN	
175	Ulmus americana	American Elm	8	POOR		
176	Carya glabra	Pignut Hickory	8	FAIR		
177	Quercus rubra	Red Oak	13	FAIR		
178	Carya glabra	Pignut Hickory	11	FAIR		
179	Quercus rubra	Red Oak	18	FAIR		Landmark
180	Carya ovata	Shagbark Hickory	12	FAIR	TRIPLE	
181	Carya glabra	Pignut Hickory	12	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
182	Carya ovata	Shagbark Hickory	8	FAIR		
183	Carya glabra	Pignut Hickory	12	FAIR		
184	Carya ovata	Shagbark Hickory	9	FAIR		
185	Quercus rubra	Red Oak	8	FAIR		
186	Quercus alba	White Oak	35	POOR		Landmark
187	Carya glabra	Pignut Hickory	8	FAIR		
188	Quercus alba	White Oak	15	FAIR		
189	Quercus rubra	Red Oak	16	FAIR		Landmark
190	Quercus rubra	Red Oak	18	FAIR		Landmark
191	Quercus rubra	Red Oak	14	FAIR		
192	Carya glabra	Pignut Hickory	12	FAIR		
193	Juglans nigra	Black Walnut	19	FAIR		Landmark
194	Carya glabra	Pignut Hickory	17	FAIR		Landmark
195	Populus deltoides	Cottonwood	26	FAIR		Landmark
196	Quercus rubra	Red Oak	11	FAIR		
197	Quercus alba	White Oak	25	POOR		Landmark
198	Carya ovata	Shagbark Hickory	15	FAIR		
199	Carya glabra	Pignut Hickory	18	GOOD		Landmark
200	Carya glabra	Pignut Hickory	18	FAIR		Landmark
201	Quercus alba	White Oak	28	FAIR	TWIN	Landmark
202	Acer saccharum	Sugar Maple	12	FAIR		
203	Quercus alba	White Oak	12	FAIR		
204	Quercus alba	White Oak	12	FAIR		
205	Quercus rubra	Red Oak	15	FAIR	TWIN	
206	Carya glabra	Pignut Hickory	12	FAIR		
207	Quercus alba	White Oak	10	FAIR		
208	Quercus rubra	Red Oak	13	FAIR	TWIN	
209	Juglans nigra	Black Walnut	9	FAIR		
210	Tilia americana	Basswood	21	FAIR	CLUSTER	
211	Tilia americana	Basswood	11	FAIR		
212	Acer saccharinum	Silver Maple	13	FAIR		
213	Prunus serotina	Black Cherry	11	POOR		
214	Carya glabra	Pignut Hickory	10	FAIR		
215	Carya glabra	Pignut Hickory	22	GOOD		Landmark
216	Ulmus americana	American Elm	8	FAIR		
217	Juglans nigra	Black Walnut	11	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
218	Prunus serotina	Black Cherry	9	POOR	TWIN	
219	Populus tremuloides	Quaking Aspen	17	FAIR		
220	Juglans nigra	Black Walnut	8	FAIR		
221	Carya glabra	Pignut Hickory	11	FAIR		
222	Carya glabra	Pignut Hickory	14	FAIR		
223	Carya ovata	Shagbark Hickory	13	FAIR		
224	Carya ovata	Shagbark Hickory	20	FAIR		
225	Prunus serotina	Black Cherry	10	POOR		
226	Ulmus pumila	Siberian Elm	8	FAIR		
227	Juglans nigra	Black Walnut	11	FAIR		
228	Juglans nigra	Black Walnut	14	FAIR		
229	Populus tremuloides	Quaking Aspen	14	FAIR		
230	Populus tremuloides	Quaking Aspen	15	FAIR		
231	Juglans nigra	Black Walnut	10	FAIR		
232	Juglans nigra	Black Walnut	9	FAIR		
233	Ulmus americana	American Elm	10	FAIR		
234	Carya glabra	Pignut Hickory	18	FAIR		Landmark
235	Tilia americana	Basswood	9	FAIR	TWIN	
236	Tilia americana	Basswood	16	FAIR		
237	Carya ovata	Shagbark Hickory	14	FAIR	TWIN	
238	Quercus rubra	Red Oak	19	FAIR	TRIPLE	Landmark
239	Acer saccharinum	Silver Maple	11	FAIR		
240	Quercus rubra	Red Oak	13	FAIR		
241	Ulmus americana	American Elm	8	FAIR		
242	Carya glabra	Pignut Hickory	10	FAIR		
243	Quercus rubra	Red Oak	25	FAIR		Landmark
244	Quercus rubra	Red Oak	12	FAIR	TWIN	
245	Carya glabra	Pignut Hickory	16	FAIR		Landmark
246	Tilia americana	Basswood	15	FAIR		
247	Carya ovata	Shagbark Hickory	8	FAIR		
248	Tilia americana	Basswood	16	FAIR		
249	Carya glabra	Pignut Hickory	21	FAIR		Landmark
250	Carya ovata	Shagbark Hickory	8	FAIR		
251	Carya ovata	Shagbark Hickory	8	FAIR		
252	Carya ovata	Shagbark Hickory	12	FAIR		
253	Carya glabra	Pignut Hickory	28	FAIR		Landmark

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
254	Carya ovata	Shagbark Hickory	9	FAIR		
255	Carya glabra	Pignut Hickory	13	FAIR		
256	Tilia americana	Basswood	12	FAIR	TWIN	
257	Tilia americana	Basswood	13	FAIR		
258	Carya glabra	Pignut Hickory	18	GOOD		Landmark
259	Carya glabra	Pignut Hickory	12	FAIR		
260	Quercus rubra	Red Oak	9	FAIR		
261	Carya glabra	Pignut Hickory	22	GOOD		Landmark
262	Quercus rubra	Red Oak	16	FAIR		Landmark
263	Acer saccharinum	Silver Maple	8	POOR		
264	Quercus rubra	Red Oak	9	FAIR		
265	Carya glabra	Pignut Hickory	13	FAIR		
266	Robinia pseudoacacia	Black Locust	10	FAIR		
267	Carya ovata	Shagbark Hickory	8	FAIR		
268	Carya glabra	Pignut Hickory	16	FAIR		Landmark
269	Carya ovata	Shagbark Hickory	11	FAIR		
270	Carya glabra	Pignut Hickory	8	POOR		
271	Carya glabra	Pignut Hickory	11	FAIR		
272	Carya ovata	Shagbark Hickory	14	FAIR	TWIN	
273	Carya glabra	Pignut Hickory	10	FAIR		
274	Carya ovata	Shagbark Hickory	17	FAIR		
275	Carya ovata	Shagbark Hickory	17	FAIR		
276	Carya ovata	Shagbark Hickory	15	FAIR		
277	Quercus rubra	Red Oak	12	FAIR		
278	Quercus rubra	Red Oak	11	FAIR		
279	Quercus rubra	Red Oak	11	FAIR	TWIN	
280	Carya ovata	Shagbark Hickory	14	FAIR		
281	Carya glabra	Pignut Hickory	16	FAIR		Landmark
282	Carya glabra	Pignut Hickory	15	FAIR		
283	Carya glabra	Pignut Hickory	14	FAIR		
284	Carya ovata	Shagbark Hickory	11	FAIR		
285	Carya glabra	Pignut Hickory	11	FAIR		
286	Carya ovata	Shagbark Hickory	15	FAIR		
287	Tilia americana	Basswood	10	FAIR		
288	Tilia americana	Basswood	10	FAIR		
289	Quercus rubra	Red Oak	13	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
290	Quercus macrocarpa	Bur Oak	24	FAIR		Landmark
291	Quercus alba	White Oak	22	POOR		Landmark
292	Carya ovata	Shagbark Hickory	19	GOOD		
293	Ulmus americana	American Elm	7	FAIR		
294	Carya ovata	Shagbark Hickory	15	FAIR		
295	Ulmus pumila	Siberian Elm	10	FAIR	TRIPLE	
296	Quercus rubra	Red Oak	9	FAIR		
297	Carya ovata	Shagbark Hickory	12	FAIR		
298	Quercus alba	White Oak	15	FAIR		
299	Quercus rubra	Red Oak	14	FAIR		
300	Carya glabra	Pignut Hickory	15	FAIR		
301	Carya glabra	Pignut Hickory	11	FAIR		
302	Carya glabra	Pignut Hickory	10	POOR		
303	Carya glabra	Pignut Hickory	19	FAIR		Landmark
304	Carya ovata	Shagbark Hickory	9	FAIR		
305	Carya glabra	Pignut Hickory	11	FAIR		
306	Carya ovata	Shagbark Hickory	10	FAIR	TWIN	
307	Carya ovata	Shagbark Hickory	8	FAIR		
308	Carya glabra	Pignut Hickory	10	FAIR		
309	Carya ovata	Shagbark Hickory	11	FAIR	TWIN	
310	Tilia americana	Basswood	12	FAIR		
311	Carya ovata	Shagbark Hickory	10	FAIR		
312	Carya glabra	Pignut Hickory	8	FAIR		
313	Carya ovata	Shagbark Hickory	16	FAIR		
314	Quercus rubra	Red Oak	14	FAIR		
315	Carya glabra	Pignut Hickory	17	FAIR		Landmark
316	Carya ovata	Shagbark Hickory	11	FAIR		
317	Carya ovata	Shagbark Hickory	12	FAIR		
318	Carya ovata	Shagbark Hickory	8	FAIR		
319	Carya ovata	Shagbark Hickory	12	FAIR		
320	Carya ovata	Shagbark Hickory	13	FAIR		
321	Carya ovata	Shagbark Hickory	13	FAIR		
322	Carya ovata	Shagbark Hickory	16	FAIR		
323	Carya ovata	Shagbark Hickory	15	FAIR		
324	Carya glabra	Pignut Hickory	16	FAIR		Landmark
325	Quercus rubra	Red Oak	8	FAIR	TWIN	

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
326	Carya glabra	Pignut Hickory	12	FAIR		
327	Carya ovata	Shagbark Hickory	10	FAIR		
328	Carya glabra	Pignut Hickory	21	FAIR		Landmark
329	Carya ovata	Shagbark Hickory	9	POOR		
330	Carya glabra	Pignut Hickory	12	FAIR		
331	Carya glabra	Pignut Hickory	15	FAIR		
332	Carya glabra	Pignut Hickory	14	FAIR		
333	Carya glabra	Pignut Hickory	15	FAIR		
334	Carya glabra	Pignut Hickory	13	FAIR		
335	Carya glabra	Pignut Hickory	16	FAIR		Landmark
336	Carya ovata	Shagbark Hickory	9	FAIR	TWIN	
337	Quercus rubra	Red Oak	9	FAIR		
338	Carya glabra	Pignut Hickory	15	FAIR		
339	Quercus macrocarpa	Bur Oak	21	FAIR		Landmark
340	Carya ovata	Shagbark Hickory	17	FAIR		
341	Quercus rubra	Red Oak	7	FAIR		
342	Carya ovata	Shagbark Hickory	14	FAIR		
343	Carya glabra	Pignut Hickory	14	FAIR		
344	Carya ovata	Shagbark Hickory	6	FAIR		
345	Quercus macrocarpa	Bur Oak	8	FAIR		
346	Robinia pseudoacacia	Black Locust	10	FAIR		
347	Quercus macrocarpa	Bur Oak	12	FAIR		
348	Carya glabra	Pignut Hickory	8	FAIR		
349	Quercus macrocarpa	Bur Oak	16	FAIR		Landmark
350	Quercus macrocarpa	Bur Oak	14	FAIR		
351	Quercus rubra	Red Oak	12	FAIR		
352	Robinia pseudoacacia	Black Locust	8	FAIR		
353	Quercus macrocarpa	Bur Oak	11	FAIR		
354	Quercus macrocarpa	Bur Oak	11	FAIR		
355	Quercus macrocarpa	Bur Oak	11	FAIR		
356	Acer saccharinum	Silver Maple	12	FAIR		
357	Carya glabra	Pignut Hickory	13	FAIR		
358	Quercus macrocarpa	Bur Oak	7	FAIR		
359	Quercus rubra	Red Oak	13	FAIR		
360	Quercus rubra	Red Oak	10	FAIR		
361	Carya glabra	Pignut Hickory	12	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
362	Carya glabra	Pignut Hickory	12	FAIR		
363	Carya ovata	Shagbark Hickory	11	FAIR		
364	Carya ovata	Shagbark Hickory	12	FAIR		
365	Carya ovata	Shagbark Hickory	14	FAIR		
366	Carya glabra	Pignut Hickory	11	FAIR	TWIN	
367	Carya ovata	Shagbark Hickory	12	FAIR		
368	Quercus rubra	Red Oak	12	FAIR	TRIPLE	
369	Carya ovata	Shagbark Hickory	16	FAIR		
370	Tilia americana	Basswood	13	FAIR		
371	Quercus rubra	Red Oak	20	FAIR		Landmark
372	Carya glabra	Pignut Hickory	13	FAIR		
373	Carya glabra	Pignut Hickory	14	FAIR		
374	Carya ovata	Shagbark Hickory	10	FAIR		
375	Robinia pseudoacacia	Black Locust	14	FAIR	TWIN	
376	Carya glabra	Pignut Hickory	11	FAIR		
377	Tilia americana	Basswood	12	FAIR	TWIN	
378	Carya ovata	Shagbark Hickory	9	FAIR		
379	Carya glabra	Pignut Hickory	13	FAIR	TWIN	
380	Carya ovata	Shagbark Hickory	15	FAIR		
381	Tilia americana	Basswood	9	POOR		
382	Carya ovata	Shagbark Hickory	18	FAIR		
383	Carya glabra	Pignut Hickory	11	FAIR		
384	Carya glabra	Pignut Hickory	12	FAIR		
385	Carya glabra	Pignut Hickory	15	FAIR		
386	Carya glabra	Pignut Hickory	18	FAIR	TWIN	Landmark
387	Carya ovata	Shagbark Hickory	12	FAIR	TWIN	
388	Carya ovata	Shagbark Hickory	12	POOR		
389	Quercus rubra	Red Oak	17	FAIR		Landmark
390	Quercus rubra	Red Oak	17	FAIR	TWIN	Landmark
391	Carya ovata	Shagbark Hickory	12	FAIR		
392	Carya glabra	Pignut Hickory	8	FAIR		
393	Carya glabra	Pignut Hickory	14	FAIR		
394	Carya ovata	Shagbark Hickory	14	FAIR		
395	Robinia pseudoacacia	Black Locust	12	FAIR		
396	Robinia pseudoacacia	Black Locust	11	FAIR		
397	Carya ovata	Shagbark Hickory	13	FAIR		

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398	Carya ovata	Shagbark Hickory	8	FAIR		
399	Carya ovata	Shagbark Hickory	15	FAIR		
400	Carya glabra	Pignut Hickory	15	FAIR		
401	Carya ovata	Shagbark Hickory	12	FAIR		
402	Carya ovata	Shagbark Hickory	12	FAIR		
403	Tilia americana	Basswood	15	FAIR		
404	Carya ovata	Shagbark Hickory	17	FAIR		
405	Carya glabra	Pignut Hickory	19	FAIR	TWIN	Landmark
406	Carya glabra	Pignut Hickory	13	FAIR	TWIN	
407	Carya ovata	Shagbark Hickory	11	FAIR		
408	Carya ovata	Shagbark Hickory	11	FAIR		
409	Carya ovata	Shagbark Hickory	9	FAIR		
410	Carya ovata	Shagbark Hickory	13	FAIR		
411	Carya ovata	Shagbark Hickory	14	FAIR		
412	Carya ovata	Shagbark Hickory	14	FAIR		
413	Carya ovata	Shagbark Hickory	13	FAIR		
414	Carya ovata	Shagbark Hickory	11	FAIR		
415	Carya ovata	Shagbark Hickory	11	FAIR		
416	Carya glabra	Pignut Hickory	11	FAIR		
417	Tilia americana	Basswood	11	FAIR		
418	Carya ovata	Shagbark Hickory	11	FAIR		
419	Carya ovata	Shagbark Hickory	14	FAIR		
420	Carya glabra	Pignut Hickory	10	FAIR	TWIN	
421	Carya ovata	Shagbark Hickory	15	FAIR	TWIN	
422	Carya ovata	Shagbark Hickory	16	FAIR		
423	Carya glabra	Pignut Hickory	16	FAIR	TWIN	Landmark
424	Carya ovata	Shagbark Hickory	13	FAIR		
425	Acer saccharinum	Silver Maple	13	FAIR		
426	Carya glabra	Pignut Hickory	12	FAIR		
427	Quercus alba	White Oak	14	FAIR		
428	Quercus rubra	Red Oak	15	FAIR		
429	Carya glabra	Pignut Hickory	13	FAIR		
430	Quercus alba	White Oak	10	FAIR	TWIN	
431	Carya glabra	Pignut Hickory	17	FAIR		Landmark
432	Carya glabra	Pignut Hickory	7	FAIR		
433	Carya ovata	Shagbark Hickory	7	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
434	Carya ovata	Shagbark Hickory	8	FAIR		
435	Quercus macrocarpa	Bur Oak	8	FAIR		
436	Quercus macrocarpa	Bur Oak	10	FAIR		
437	Quercus macrocarpa	Bur Oak	10	FAIR		
438	Tilia americana	Basswood	11	FAIR		
439	Acer saccharinum	Silver Maple	16	POOR		Landmark
440	Carya ovata	Shagbark Hickory	10	FAIR		
441	Carya ovata	Shagbark Hickory	14	FAIR		
442	Carya ovata	Shagbark Hickory	9	FAIR		
443	Carya glabra	Pignut Hickory	15	FAIR		
444	Carya glabra	Pignut Hickory	11	FAIR		
445	Carya glabra	Pignut Hickory	8	FAIR		
446	Quercus rubra	Red Oak	12	FAIR		
447	Quercus rubra	Red Oak	11	FAIR		
448	Quercus rubra	Red Oak	12	FAIR		
449	Carya ovata	Shagbark Hickory	15	FAIR		
450	Quercus rubra	Red Oak	7	POOR		
451	Quercus rubra	Red Oak	7	FAIR		
452	Carya ovata	Shagbark Hickory	6	FAIR		
453	Tilia americana	Basswood	7	POOR		
454	Quercus rubra	Red Oak	12	FAIR		
455	Carya ovata	Shagbark Hickory	6	FAIR		
456	Quercus alba	White Oak	17	FAIR		Landmark
457	Quercus rubra	Red Oak	7	FAIR		
458	Quercus rubra	Red Oak	12	FAIR		
459	Acer saccharinum	Silver Maple	11	FAIR		
460	Tilia americana	Basswood	11	FAIR		
461	Quercus rubra	Red Oak	9	FAIR		
462	Quercus macrocarpa	Bur Oak	16	FAIR		Landmark
463	Carya glabra	Pignut Hickory	7	FAIR		
464	Carya glabra	Pignut Hickory	11	FAIR		
465	Quercus rubra	Red Oak	9	FAIR		
466	Quercus rubra	Red Oak	11	FAIR		
467	Carya ovata	Shagbark Hickory	12	FAIR		
468	Carya ovata	Shagbark Hickory	24	FAIR		Landmark
469	Quercus macrocarpa	Bur Oak	18	FAIR		Landmark

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
470	Carya ovata	Shagbark Hickory	14	FAIR		
471	Carya ovata	Shagbark Hickory	13	FAIR		
472	Carya ovata	Shagbark Hickory	8	FAIR		
473	Carya ovata	Shagbark Hickory	16	FAIR		
474	Carya ovata	Shagbark Hickory	12	FAIR		
475	Carya ovata	Shagbark Hickory	14	POOR		
476	Carya ovata	Shagbark Hickory	8	FAIR		
477	Carya ovata	Shagbark Hickory	15	FAIR		
478	Carya ovata	Shagbark Hickory	8	FAIR		
479	Carya glabra	Pignut Hickory	12	FAIR		
480	Carya ovata	Shagbark Hickory	11	FAIR		
481	Carya ovata	Shagbark Hickory	14	FAIR		
482	Carya ovata	Shagbark Hickory	11	FAIR		
483	Tilia americana	Basswood	9	FAIR		
484	Carya glabra	Pignut Hickory	19	FAIR		Landmark
485	Carya glabra	Pignut Hickory	8	FAIR		
486	Tilia americana	Basswood	8	FAIR		
487	Quercus alba	White Oak	13	POOR	TWIN	
488	Tilia americana	Basswood	8	FAIR		
489	Carya ovata	Shagbark Hickory	15	FAIR		
490	Acer Rubrum	Red Maple	10	FAIR		
491	Quercus macrocarpa	Bur Oak	10	FAIR		
492	Quercus macrocarpa	Bur Oak	10	FAIR		
493	Carya ovata	Shagbark Hickory	17	FAIR		
494	Carya ovata	Shagbark Hickory	10	FAIR		
495	Carya ovata	Shagbark Hickory	9	FAIR		
496	Carya ovata	Shagbark Hickory	11	FAIR		
497	Carya ovata	Shagbark Hickory	10	FAIR		
498	Carya ovata	Shagbark Hickory	10	FAIR		
499	Ulmus americana	American Elm	8	FAIR		
500	Carya ovata	Shagbark Hickory	13	POOR	TWIN	
501	Populus deltoides	Cottonwood	25	FAIR		Landmark
503	Tilia americana	Basswood	14	FAIR		
504	Populus deltoides	Cottonwood	11	FAIR		
505	Populus deltoides	Cottonwood	18	FAIR		
506	Populus deltoides	Cottonwood	16	FAIR	TWIN	

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
507	Populus deltoides	Cottonwood	15	FAIR		
508	Populus deltoides	Cottonwood	26	FAIR		Landmark
509	Populus deltoides	Cottonwood	23	FAIR		
510	Populus deltoides	Cottonwood	10	FAIR		
511	Populus deltoides	Cottonwood	13	FAIR		
512	Populus deltoides	Cottonwood	14	FAIR		
513	Populus deltoides	Cottonwood	20	FAIR		
514	Ulmus americana	American Elm	11	FAIR		
515	Populus deltoides	Cottonwood	32	FAIR	TRIPLE	Landmark
516	Juglans nigra	Black Walnut	12	FAIR		
517	Juglans nigra	Black Walnut	13	FAIR		
518	Populus tremuloides	Quaking Aspen	13	FAIR		
519	Populus tremuloides	Quaking Aspen	12	FAIR		
520	Acer saccharum	Sugar Maple	10	FAIR		
521	Populus deltoides	Cottonwood	15	FAIR		
522	Populus deltoides	Cottonwood	17	FAIR		
523	Populus deltoides	Cottonwood	10	FAIR		
524	Populus deltoides	Cottonwood	18	FAIR		
525	Ulmus americana	American Elm	11	FAIR		
526	Populus deltoides	Cottonwood	17	FAIR		
527	Populus deltoides	Cottonwood	10	FAIR		
528	Populus deltoides	Cottonwood	18	FAIR		
529	Populus deltoides	Cottonwood	25	FAIR		Landmark
530	Populus deltoides	Cottonwood	11	FAIR		
531	Populus deltoides	Cottonwood	25	FAIR		Landmark
532	Juglans nigra	Black Walnut	21	FAIR		Landmark
533	Juglans nigra	Black Walnut	13	FAIR		
534	Ulmus pumila	Siberian Elm	8	FAIR		
535	Juglans nigra	Black Walnut	19	FAIR		Landmark
536	Acer negundo	Box Elder	15	POOR		
537	Juglans nigra	Black Walnut	8	FAIR		
538	Juglans nigra	Black Walnut	10	FAIR		
539	Juglans nigra	Black Walnut	12	FAIR		
540	Populus tremuloides	Quaking Aspen	13	FAIR		
541	Populus tremuloides	Quaking Aspen	16	FAIR		
542	Populus tremuloides	Quaking Aspen	12	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
543	Populus tremuloides	Quaking Aspen	10	POOR		
544	Populus tremuloides	Quaking Aspen	17	FAIR		
545	Populus tremuloides	Quaking Aspen	13	FAIR		
546	Populus tremuloides	Quaking Aspen	13	FAIR		
548	Populus tremuloides	Quaking Aspen	18	FAIR		
549	Populus tremuloides	Quaking Aspen	17	FAIR		
550	Populus tremuloides	Quaking Aspen	17	FAIR		
551	Juglans nigra	Black Walnut	16	FAIR		
552	Ulmus americana	American Elm	8	FAIR		
554	Prunus serotina	Black Cherry	11	POOR	TWIN	
555	Populus tremuloides	Quaking Aspen	17	FAIR		
556	Ulmus americana	American Elm	15	FAIR		
557	Juglans nigra	Black Walnut	18	FAIR		Landmark
558	Celtis occidentalis	Northern Hackberry	14	FAIR		
559	Juglans nigra	Black Walnut	10	FAIR		
560	Populus deltoides	Cottonwood	15	FAIR	TWIN	
561	Juglans nigra	Black Walnut	8	FAIR		
562	Carya cordiformis	Bitternut Hickory	10	POOR		
563	Carya cordiformis	Bitternut Hickory	10	FAIR		
564	Juglans nigra	Black Walnut	10	FAIR		
565	Acer negundo	Box Elder	16	POOR	TWIN	
566	Populus deltoides	Cottonwood	19	FAIR	TWIN	
567	Acer negundo	Box Elder	10	POOR		
568	Acer negundo	Box Elder	12	POOR		
570	Carya cordiformis	Bitternut Hickory	14	FAIR		
571	Carya cordiformis	Bitternut Hickory	10	FAIR		
572	Carya cordiformis	Bitternut Hickory	10	FAIR		
573	Carya cordiformis	Bitternut Hickory	11	FAIR		
574	Carya cordiformis	Bitternut Hickory	12	FAIR		
575	Carya cordiformis	Bitternut Hickory	11	FAIR		
576	Carya cordiformis	Bitternut Hickory	15	FAIR		
577	Populus deltoides	Cottonwood	22	FAIR		
578	Populus deltoides	Cottonwood	19	FAIR		
579	Carya cordiformis	Bitternut Hickory	8	FAIR		
580	Carya cordiformis	Bitternut Hickory	23	FAIR		
581	Carya cordiformis	Bitternut Hickory	15	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
582	Carya cordiformis	Bitternut Hickory	10	FAIR		
583	Carya cordiformis	Bitternut Hickory	12	FAIR		
584	Populus deltoides	Cottonwood	16	FAIR		
585	Carya cordiformis	Bitternut Hickory	13	FAIR	TWIN	
586	Carya cordiformis	Bitternut Hickory	14	FAIR		
587	Carya cordiformis	Bitternut Hickory	11	FAIR		
588	Populus deltoides	Cottonwood	21	FAIR		
589	Carya cordiformis	Bitternut Hickory	13	FAIR		
590	Carya cordiformis	Bitternut Hickory	12	FAIR		
591	Carya cordiformis	Bitternut Hickory	10	FAIR		
592	Carya cordiformis	Bitternut Hickory	9	FAIR		
593	Carya cordiformis	Bitternut Hickory	12	FAIR		
594	Carya cordiformis	Bitternut Hickory	13	FAIR		
595	Carya cordiformis	Bitternut Hickory	8	FAIR		
596	Carya cordiformis	Bitternut Hickory	9	FAIR		
597	Carya cordiformis	Bitternut Hickory	8	FAIR		
598	Carya cordiformis	Bitternut Hickory	10	FAIR		
599	Carya cordiformis	Bitternut Hickory	8	FAIR		
600	Carya cordiformis	Bitternut Hickory	8	FAIR		
601	Carya glabra	Pignut Hickory	11	FAIR		
602	Carya glabra	Pignut Hickory	10	FAIR		
603	Acer saccharinum	Silver Maple	11	FAIR		
604	Populus tremuloides	Quaking Aspen	8	FAIR		
605	Populus tremuloides	Quaking Aspen	15	FAIR		
606	Populus tremuloides	Quaking Aspen	15	FAIR		
607	Ulmus americana	American Elm	8	FAIR		
608	Populus tremuloides	Quaking Aspen	12	FAIR		
609	Populus tremuloides	Quaking Aspen	13	FAIR		
610	Populus tremuloides	Quaking Aspen	15	FAIR		
611	Populus tremuloides	Quaking Aspen	10	FAIR		
612	Populus tremuloides	Quaking Aspen	15	FAIR		
613	Populus tremuloides	Quaking Aspen	8	FAIR		
614	Populus tremuloides	Quaking Aspen	14	FAIR		
615	Ulmus americana	American Elm	8	FAIR		
616	Juglans nigra	Black Walnut	14	FAIR		
617	Juglans nigra	Black Walnut	12	FAIR		

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618	Juglans nigra	Black Walnut	13	FAIR		
619	Juglans nigra	Black Walnut	13	FAIR		
620	Juglans nigra	Black Walnut	10	FAIR		
622	Juglans nigra	Black Walnut	14	FAIR		
623	Juglans nigra	Black Walnut	10	FAIR		
624	Juglans nigra	Black Walnut	11	FAIR		
625	Juglans nigra	Black Walnut	16	FAIR		
626	Juglans nigra	Black Walnut	11	FAIR		
627	Juglans nigra	Black Walnut	11	FAIR		
628	Juglans nigra	Black Walnut	10	FAIR		
629	Juglans nigra	Black Walnut	11	FAIR		
630	Ulmus americana	American Elm	13	FAIR		
631	Acer saccharinum	Silver Maple	12	FAIR		
632	Populus tremuloides	Quaking Aspen	19	FAIR		
633	Acer saccharinum	Silver Maple	15	FAIR		
634	Ulmus americana	American Elm	8	FAIR		
635	Ulmus americana	American Elm	11	FAIR		
636	Prunus serotina	Black Cherry	9	FAIR		
637	Acer saccharinum	Silver Maple	10	FAIR	TRIPLE	
638	Juglans nigra	Black Walnut	11	FAIR		
639	Juglans nigra	Black Walnut	9	FAIR		
640	Carya glabra	Pignut Hickory	11	POOR		
641	Juglans nigra	Black Walnut	11	FAIR		
642	Carya cordiformis	Bitternut Hickory	10	FAIR		
643	Carya cordiformis	Bitternut Hickory	11	FAIR		
644	Carya cordiformis	Bitternut Hickory	14	FAIR	TRIPLE	
645	Carya cordiformis	Bitternut Hickory	8	FAIR		
646	Ulmus americana	American Elm	10	POOR		
647	Populus tremuloides	Quaking Aspen	12	FAIR		
648	Juglans nigra	Black Walnut	9	FAIR		
649	Juglans nigra	Black Walnut	18	FAIR	CLUSTER	Landmark
650	Quercus macrocarpa	Bur Oak	20	GOOD		Landmark
651	Ulmus pumila	Siberian Elm	10	FAIR	TWIN	
652	Carya ovata	Shagbark Hickory	11	FAIR		
653	Carya glabra	Pignut Hickory	8	FAIR		
654	Carya ovata	Shagbark Hickory	8	FAIR		

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655	Acer saccharinum	Silver Maple	14	FAIR	TRIPLE	
656	Populus tremuloides	Quaking Aspen	11	FAIR		
657	Carya ovata	Shagbark Hickory	8	FAIR		
658	Carya ovata	Shagbark Hickory	9	FAIR		
659	Carya glabra	Pignut Hickory	12	FAIR		
660	Carya ovata	Shagbark Hickory	8	FAIR		
661	Carya glabra	Pignut Hickory	10	FAIR	TRIPLE	
662	Carya glabra	Pignut Hickory	8	FAIR	TWIN	
663	Carya ovata	Shagbark Hickory	30	FAIR		Landmark
664	Carya ovata	Shagbark Hickory	13	FAIR		
665	Carya glabra	Pignut Hickory	13	FAIR		
666	Carya ovata	Shagbark Hickory	12	FAIR		
667	Carya ovata	Shagbark Hickory	8	FAIR	TWIN	
668	Quercus rubra	Red Oak	13	FAIR		
669	Carya glabra	Pignut Hickory	10	FAIR		
670	Carya ovata	Shagbark Hickory	8	FAIR		
671	Carya ovata	Shagbark Hickory	13	FAIR		
672	Carya ovata	Shagbark Hickory	12	FAIR		
673	Carya ovata	Shagbark Hickory	9	FAIR		
674	Acer saccharinum	Silver Maple	9	FAIR		
675	Acer saccharinum	Silver Maple	11	FAIR		
676	Acer saccharinum	Silver Maple	14	FAIR	CLUSTER	
677	Ulmus americana	American Elm	9	FAIR		
678	Juglans nigra	Black Walnut	11	FAIR		
679	Juglans nigra	Black Walnut	11	FAIR		
680	Ulmus americana	American Elm	11	FAIR		
681	Carya ovata	Shagbark Hickory	10	FAIR		
682	Carya glabra	Pignut Hickory	11	FAIR		
683	Quercus rubra	Red Oak	12	FAIR	TWIN	
684	Carya glabra	Pignut Hickory	11	FAIR		
685	Carya ovata	Shagbark Hickory	13	FAIR		
686	Carya glabra	Pignut Hickory	13	FAIR		
687	Carya ovata	Shagbark Hickory	14	FAIR		
688	Quercus rubra	Red Oak	11	FAIR		
689	Carya glabra	Pignut Hickory	15	FAIR		
690	Carya ovata	Shagbark Hickory	16	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
691	Acer saccharinum	Silver Maple	16	FAIR		Landmark
692	Carya glabra	Pignut Hickory	10	FAIR		
693	Carya cordiformis	Bitternut Hickory	8	FAIR		
694	Tilia americana	Basswood	13	FAIR		
695	Quercus alba	White Oak	11	FAIR		
696	Carya glabra	Pignut Hickory	11	FAIR		
697	Carya glabra	Pignut Hickory	8	FAIR		
698	Quercus rubra	Red Oak	19	FAIR		Landmark
699	Carya glabra	Pignut Hickory	12	FAIR		
700	Acer saccharinum	Silver Maple	9	FAIR		
701	Carya ovata	Shagbark Hickory	13	FAIR		
702	Carya ovata	Shagbark Hickory	16	FAIR		
703	Carya ovata	Shagbark Hickory	17	FAIR	TWIN	
704	Acer saccharinum	Silver Maple	7	FAIR		
705	Carya glabra	Pignut Hickory	13	FAIR		
706	Carya glabra	Pignut Hickory	15	FAIR		
707	Tilia americana	Basswood	10	FAIR	TWIN	
708	Carya glabra	Pignut Hickory	11	FAIR		
709	Robinia pseudoacacia	Black Locust	14	FAIR		
710	Robinia pseudoacacia	Black Locust	11	FAIR		
711	Quercus rubra	Red Oak	13	FAIR		
712	Acer saccharinum	Silver Maple	14	FAIR		
713	Quercus rubra	Red Oak	17	FAIR		Landmark
714	Quercus rubra	Red Oak	10	FAIR		
715	Quercus rubra	Red Oak	12	FAIR		
716	Quercus rubra	Red Oak	17	FAIR		Landmark
717	Ulmus americana	American Elm	7	FAIR		
718	Quercus rubra	Red Oak	13	FAIR		
719	Tilia americana	Basswood	7	FAIR		
720	Tilia americana	Basswood	8	FAIR		
721	Quercus rubra	Red Oak	8	FAIR		
722	Carya glabra	Pignut Hickory	15	FAIR		
723	Quercus alba	White Oak	18	POOR		Landmark
724	Quercus rubra	Red Oak	12	FAIR		
725	Ulmus americana	American Elm	7	FAIR		
726	Quercus alba	White Oak	12	FAIR		

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727	Quercus alba	White Oak	22	FAIR		Landmark
728	Tilia americana	Basswood	7	FAIR		
729	Quercus rubra	Red Oak	16	FAIR		Landmark
730	Carya glabra	Pignut Hickory	13	FAIR		
731	Quercus rubra	Red Oak	11	FAIR		
732	Quercus rubra	Red Oak	17	POOR		Landmark
733	Tilia americana	Basswood	11	FAIR		
734	Quercus rubra	Red Oak	11	FAIR		
735	Quercus rubra	Red Oak	13	FAIR		
736	Quercus rubra	Red Oak	10	FAIR		
737	Quercus rubra	Red Oak	11	FAIR		
738	Quercus rubra	Red Oak	14	FAIR		
739	Quercus rubra	Red Oak	14	FAIR		
740	Quercus rubra	Red Oak	12	FAIR		
741	Quercus rubra	Red Oak	9	FAIR		
742	Quercus rubra	Red Oak	17	FAIR		Landmark
743	Ulmus americana	American Elm	8	FAIR		
744	Carya glabra	Pignut Hickory	16	FAIR		Landmark
745	Carya glabra	Pignut Hickory	17	FAIR		Landmark
746	Quercus rubra	Red Oak	14	FAIR		
747	Quercus rubra	Red Oak	10	FAIR		
748	Quercus rubra	Red Oak	8	FAIR		
749	Tilia americana	Basswood	9	FAIR		
750	Carya glabra	Pignut Hickory	19	GOOD		Landmark
751	Quercus rubra	Red Oak	9	FAIR		
752	Quercus rubra	Red Oak	7	FAIR		
753	Quercus rubra	Red Oak	10	FAIR		
754	Quercus rubra	Red Oak	14	FAIR		
755	Quercus rubra	Red Oak	14	FAIR		
756	Acer saccharinum	Silver Maple	13	FAIR		
757	Quercus rubra	Red Oak	18	FAIR	TWIN	Landmark
758	Acer saccharinum	Silver Maple	15	FAIR	TRIPLE	
759	Acer saccharinum	Silver Maple	12	FAIR	QUAD	
760	Acer saccharinum	Silver Maple	12	FAIR	TWIN	
761	Acer saccharinum	Silver Maple	20	FAIR		Landmark
762	Juglans nigra	Black Walnut	13	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
763	Acer saccharinum	Silver Maple	11	FAIR	QUAD	
764	Acer saccharinum	Silver Maple	12	FAIR	TWIN	
765	Acer saccharinum	Silver Maple	11	FAIR	CLUSTER	
766	Acer saccharinum	Silver Maple	12	FAIR	TWIN	
767	Carya glabra	Pignut Hickory	13	FAIR		
768	Carya glabra	Pignut Hickory	16	FAIR		Landmark
769	Quercus rubra	Red Oak	15	FAIR		
770	Populus deltoides	Cottonwood	25	FAIR	TWIN	Landmark
771	Acer saccharinum	Silver Maple	11	FAIR	TWIN	
772	Acer saccharinum	Silver Maple	11	FAIR		
773	Acer saccharinum	Silver Maple	12	FAIR		
774	Juglans nigra	Black Walnut	14	FAIR		
775	Tilia americana	Basswood	13	FAIR		
776	Carya glabra	Pignut Hickory	11	FAIR	TWIN	
777	Acer saccharinum	Silver Maple	15	FAIR		
778	Tilia americana	Basswood	14	FAIR		
779	Carya cordiformis	Bitternut Hickory	10	FAIR		
780	Tilia americana	Basswood	12	POOR	TWIN	
781	Quercus rubra	Red Oak	18	FAIR		Landmark
782	Carya ovata	Shagbark Hickory	16	FAIR		
783	Carya cordiformis	Bitternut Hickory	14	FAIR	TWIN	
784	Carya cordiformis	Bitternut Hickory	12	FAIR		
784	Quercus rubra	Red Oak	21	FAIR	TWIN	Landmark
785	Carya cordiformis	Bitternut Hickory	11	FAIR		
786	Carya cordiformis	Bitternut Hickory	15	FAIR		
787	Quercus rubra	Red Oak	17	FAIR	TWIN	Landmark
788	Tilia americana	Basswood	20	FAIR	QUAD	
789	Quercus rubra	Red Oak	14	FAIR		
790	Quercus rubra	Red Oak	17	FAIR		Landmark
791	Quercus alba	White Oak	16	POOR	TWIN	Landmark
792	Carya cordiformis	Bitternut Hickory	12	FAIR		
793	Quercus rubra	Red Oak	19	FAIR	TWIN	Landmark
795	Carya cordiformis	Bitternut Hickory	12	FAIR		
796	Carya ovata	Shagbark Hickory	15	FAIR		
797	Carya ovata	Shagbark Hickory	16	FAIR	TWIN	
798	Quercus alba	White Oak	17	FAIR		Landmark

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799	Quercus alba	White Oak	15	FAIR		
800	Prunus serotina	Black Cherry	12	POOR		
801	Quercus rubra	Red Oak	8	FAIR		
802	Quercus rubra	Red Oak	10	FAIR		
803	Quercus rubra	Red Oak	11	FAIR		
804	Quercus alba	White Oak	19	FAIR		Landmark
805	Carya ovata	Shagbark Hickory	13	FAIR		
806	Carya ovata	Shagbark Hickory	18	FAIR		
807	Carya ovata	Shagbark Hickory	10	FAIR		
808	Carya ovata	Shagbark Hickory	12	FAIR		
809	Quercus rubra	Red Oak	11	FAIR	TWIN	
810	Quercus rubra	Red Oak	13	FAIR		
811	Carya glabra	Pignut Hickory	9	FAIR		
812	Carya ovata	Shagbark Hickory	8	FAIR		
813	Acer saccharinum	Silver Maple	14	FAIR	QUAD	
814	Acer saccharum	Sugar Maple	14	FAIR		
815	Acer saccharinum	Silver Maple	8	FAIR		
816	Carya glabra	Pignut Hickory	8	FAIR		
817	Carya glabra	Pignut Hickory	9	FAIR		
818	Quercus macrocarpa	Bur Oak	9	FAIR	TWIN	
819	Quercus rubra	Red Oak	11	FAIR		
820	Carya ovata	Shagbark Hickory	11	FAIR		
821	Robinia pseudoacacia	Black Locust	8	FAIR		
822	Carya ovata	Shagbark Hickory	15	FAIR		
823	Carya ovata	Shagbark Hickory	16	FAIR		
824	Carya ovata	Shagbark Hickory	19	FAIR	TWIN	
825	Carya ovata	Shagbark Hickory	9	FAIR		
826	Ulmus americana	American Elm	8	FAIR		
827	Carya glabra	Pignut Hickory	9	FAIR		
828	Carya ovata	Shagbark Hickory	11	FAIR		
829	Acer saccharinum	Silver Maple	15	FAIR		
831	Acer saccharinum	Silver Maple	11	FAIR		
832	Acer saccharinum	Silver Maple	15	FAIR		
833	Acer saccharinum	Silver Maple	10	FAIR	TWIN	
834	Acer saccharum	Sugar Maple	8	FAIR		
835	Acer saccharinum	Silver Maple	11	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
836	Acer saccharinum	Silver Maple	9	FAIR	TWIN	
837	Acer saccharinum	Silver Maple	9	FAIR		
838	Acer saccharinum	Silver Maple	15	FAIR		
839	Acer saccharinum	Silver Maple	11	FAIR	TWIN	
840	Quercus rubra	Red Oak	8	FAIR		
841	Acer saccharinum	Silver Maple	8	FAIR		
843	Acer saccharinum	Silver Maple	14	FAIR		
844	Carya glabra	Pignut Hickory	12	FAIR		
845	Acer saccharinum	Silver Maple	10	FAIR		
846	Carya ovata	Shagbark Hickory	8	FAIR		
847	Carya ovata	Shagbark Hickory	9	FAIR		
848	Carya ovata	Shagbark Hickory	9	FAIR		
849	Carya ovata	Shagbark Hickory	9	FAIR		
850	Ulmus americana	American Elm	9	FAIR		
851	Tilia americana	Basswood	11	FAIR	QUAD	
852	Carya ovata	Shagbark Hickory	11	FAIR		
853	Carya ovata	Shagbark Hickory	9	FAIR		
854	Carya ovata	Shagbark Hickory	8	FAIR		
856	Carya cordiformis	Bitternut Hickory	12	FAIR		
857	Carya ovata	Shagbark Hickory	9	FAIR		
858	Carya glabra	Pignut Hickory	9	FAIR		
859	Quercus rubra	Red Oak	22	POOR		Landmark
860	Carya ovata	Shagbark Hickory	20	FAIR		
861	Acer saccharinum	Silver Maple	8	FAIR		
862	Quercus alba	White Oak	12	FAIR		
863	Quercus alba	White Oak	14	FAIR		
864	Ulmus americana	American Elm	10	POOR		
865	Acer saccharinum	Silver Maple	12	FAIR		
866	Carya ovata	Shagbark Hickory	9	FAIR		
867	Quercus rubra	Red Oak	10	FAIR		
868	Carya glabra	Pignut Hickory	14	FAIR		
869	Ulmus americana	American Elm	10	FAIR		
870	Carya ovata	Shagbark Hickory	9	FAIR		
871	Carya ovata	Shagbark Hickory	18	FAIR	TRIPLE	
872	Carya ovata	Shagbark Hickory	11	FAIR		
873	Juglans nigra	Black Walnut	11	FAIR		

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874	Carya glabra	Pignut Hickory	16	FAIR		Landmark
875	Carya glabra	Pignut Hickory	16	FAIR		Landmark
876	Carya glabra	Pignut Hickory	12	FAIR	TWIN	
877	Carya ovata	Shagbark Hickory	15	POOR		
878	Carya ovata	Shagbark Hickory	15	FAIR		
879	Quercus alba	White Oak	25	FAIR		Landmark
880	Carya glabra	Pignut Hickory	15	FAIR	TWIN	
881	Quercus alba	White Oak	29	FAIR		Landmark
882	Acer saccharinum	Silver Maple	17	FAIR		Landmark
883	Carya glabra	Pignut Hickory	9	FAIR		
884	Acer saccharinum	Silver Maple	17	FAIR		Landmark
885	Carya glabra	Pignut Hickory	16	FAIR		Landmark
886	Carya ovata	Shagbark Hickory	16	FAIR		
887	Quercus rubra	Red Oak	15	FAIR		
888	Acer saccharinum	Silver Maple	12	FAIR		
889	Quercus rubra	Red Oak	12	FAIR		
890	Carya glabra	Pignut Hickory	16	FAIR		Landmark
891	Tilia americana	Basswood	12	FAIR		
892	Quercus rubra	Red Oak	11	POOR		
893	Quercus rubra	Red Oak	14	FAIR		
894	Acer saccharinum	Silver Maple	14	FAIR	TWIN	
895	Carya glabra	Pignut Hickory	16	POOR	TWIN	Landmark
896	Acer saccharinum	Silver Maple	12	POOR		
897	Carya ovata	Shagbark Hickory	14	FAIR		
898	Carya ovata	Shagbark Hickory	13	FAIR		
899	Carya ovata	Shagbark Hickory	11	FAIR		
900	Carya ovata	Shagbark Hickory	17	FAIR	TWIN	
901	Prunus serotina	Black Cherry	9	FAIR		
902	Quercus macrocarpa	Bur Oak	11	FAIR		
903	Quercus macrocarpa	Bur Oak	6	FAIR		
904	Quercus macrocarpa	Bur Oak	6	FAIR		
905	Quercus rubra	Red Oak	6	FAIR		
906	Quercus rubra	Red Oak	6	FAIR		
907	Carya glabra	Pignut Hickory	15	FAIR		
908	Quercus rubra	Red Oak	10	FAIR		
909	Carya glabra	Pignut Hickory	18	GOOD		Landmark

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910	Carya ovata	Shagbark Hickory	16	FAIR		
911	Quercus alba	White Oak	28	GOOD		Landmark
912	Quercus rubra	Red Oak	10	FAIR		
913	Ulmus americana	American Elm	6	FAIR		
914	Carya glabra	Pignut Hickory	15	GOOD		
915	Carya glabra	Pignut Hickory	11	FAIR		
916	Carya ovata	Shagbark Hickory	11	FAIR		
917	Quercus rubra	Red Oak	9	FAIR		
918	Carya glabra	Pignut Hickory	10	FAIR		
919	Carya glabra	Pignut Hickory	13	FAIR		
920	Carya glabra	Pignut Hickory	14	FAIR		
921	Carya glabra	Pignut Hickory	14	FAIR		
922	Carya ovata	Shagbark Hickory	14	FAIR		
923	Tilia americana	Basswood	10	FAIR		
924	Carya ovata	Shagbark Hickory	15	FAIR		
925	Carya ovata	Shagbark Hickory	10	FAIR		
926	Carya ovata	Shagbark Hickory	9	FAIR		
927	Tilia americana	Basswood	10	POOR	TWIN	
928	Tilia americana	Basswood	11	FAIR		
929	Carya ovata	Shagbark Hickory	13	FAIR		
930	Quercus alba	White Oak	25	FAIR		Landmark
931	Carya glabra	Pignut Hickory	14	GOOD		
932	Carya ovata	Shagbark Hickory	17	GOOD		
933	Carya ovata	Shagbark Hickory	16	FAIR	TWIN	
934	Carya ovata	Shagbark Hickory	13	FAIR		
935	Carya glabra	Pignut Hickory	12	FAIR		
936	Quercus rubra	Red Oak	11	FAIR		
937	Quercus rubra	Red Oak	9	FAIR		
938	Quercus rubra	Red Oak	12	FAIR		
939	Carya glabra	Pignut Hickory	8	FAIR		
940	Carya glabra	Pignut Hickory	9	FAIR		
941	Carya ovata	Shagbark Hickory	8	FAIR		
942	Carya glabra	Pignut Hickory	12	FAIR		
943	Quercus rubra	Red Oak	14	FAIR		
944	Quercus rubra	Red Oak	10	FAIR		
945	Carya ovata	Shagbark Hickory	10	FAIR	TWIN	

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946	Carya ovata	Shagbark Hickory	9	FAIR		
947	Carya ovata	Shagbark Hickory	10	FAIR		
948	Carya glabra	Pignut Hickory	14	FAIR		
949	Quercus alba	White Oak	26	FAIR		Landmark
950	Carya ovata	Shagbark Hickory	13	FAIR		
951	Carya ovata	Shagbark Hickory	11	FAIR		
952	Carya ovata	Shagbark Hickory	7	FAIR		
953	Carya ovata	Shagbark Hickory	11	FAIR	TWIN	
954	Carya ovata	Shagbark Hickory	16	FAIR		
955	Carya glabra	Pignut Hickory	18	FAIR	TWIN	Landmark
956	Carya glabra	Pignut Hickory	18	FAIR		Landmark
957	Carya ovata	Shagbark Hickory	14	FAIR		
958	Carya ovata	Shagbark Hickory	12	FAIR		
959	Carya ovata	Shagbark Hickory	12	FAIR		
960	Carya ovata	Shagbark Hickory	13	FAIR		
961	Carya ovata	Shagbark Hickory	14	FAIR	TWIN	
962	Carya ovata	Shagbark Hickory	9	FAIR	TWIN	
963	Carya ovata	Shagbark Hickory	8	FAIR	TWIN	
964	Acer saccharinum	Silver Maple	12	FAIR	TWIN	
965	Ulmus americana	American Elm	10	FAIR		
966	Carya ovata	Shagbark Hickory	8	FAIR		
967	Acer saccharinum	Silver Maple	12	FAIR	TRIPLE	
969	Acer saccharinum	Silver Maple	9	FAIR		
970	Acer saccharinum	Silver Maple	16	FAIR	CLUSTER	Landmark
971	Acer saccharinum	Silver Maple	18	FAIR	CLUSTER	Landmark
972	Acer saccharinum	Silver Maple	16	FAIR	CLUSTER	Landmark
973	Quercus rubra	Red Oak	10	FAIR		
974	Acer saccharinum	Silver Maple	17	FAIR	TRIPLE	Landmark
975	Acer saccharinum	Silver Maple	10	FAIR		
977	Populus tremuloides	Quaking Aspen	15	FAIR		
978	Acer saccharinum	Silver Maple	17	FAIR		Landmark
979	Quercus rubra	Red Oak	9	FAIR		
980	Acer saccharinum	Silver Maple	14	FAIR	CLUSTER	
981	Acer saccharinum	Silver Maple	12	FAIR	TRIPLE	
982	Acer saccharinum	Silver Maple	12	FAIR	TWIN	
983	Quercus rubra	Red Oak	10	FAIR		

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984	Acer saccharinum	Silver Maple	8	FAIR	CLUSTER	
985	Populus tremuloides	Quaking Aspen	14	GOOD		
986	Carya glabra	Pignut Hickory	11	FAIR		
987	Acer saccharum	Sugar Maple	11	FAIR		
988	Carya ovata	Shagbark Hickory	8	FAIR		
989	Carya ovata	Shagbark Hickory	9	FAIR		
990	Carya glabra	Pignut Hickory	12	FAIR		
991	Quercus rubra	Red Oak	10	FAIR	TWIN	
992	Quercus rubra	Red Oak	20	FAIR	TWIN	Landmark
993	Robinia pseudoacacia	Black Locust	12	FAIR		
994	Quercus rubra	Red Oak	14	FAIR	QUAD	
995	Quercus rubra	Red Oak	11	FAIR	TWIN	
996	Carya ovata	Shagbark Hickory	15	FAIR	TWIN	
997	Quercus alba	White Oak	14	FAIR		
1001	Carya cordiformis	Bitternut Hickory	8	FAIR		
1002	Juglans nigra	Black Walnut	11	FAIR		
1003	Juglans nigra	Black Walnut	12	FAIR		
1004	Juglans nigra	Black Walnut	12	FAIR		
1005	Juglans nigra	Black Walnut	9	FAIR		
1006	Juglans nigra	Black Walnut	8	FAIR		
1007	Populus deltoides	Cottonwood	27	FAIR		Landmark
1008	Platanus occidentalis	Sycamore	10	FAIR		
1009	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
1010	Quercus alba	White Oak	10	FAIR		
1011	Quercus alba	White Oak	11	FAIR		
1012	Quercus alba	White Oak	8	FAIR		
1013	Quercus alba	White Oak	10	FAIR		
1014	Quercus alba	White Oak	9	FAIR		
1015	Juglans nigra	Black Walnut	14	FAIR		
1016	Platanus occidentalis	Sycamore	14	FAIR		
1017	Ulmus americana	American Elm	10	FAIR		
1018	Quercus alba	White Oak	12	FAIR		
1019	Carya glabra	Pignut Hickory	10	FAIR		
1020	Carya cordiformis	Bitternut Hickory	8			
1021	Ulmus americana	American Elm	10	POOR		
1022	Carya cordiformis	Bitternut Hickory	8	FAIR		

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1023	Carya glabra	Pignut Hickory	8	FAIR		
1024	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
1025	Carya cordiformis	Bitternut Hickory	10	FAIR		
1026	Carya glabra	Pignut Hickory	8	FAIR		
1027	Quercus rubra	Red Oak	21	FAIR		Landmark
1028	Carya glabra	Pignut Hickory	8	FAIR		
1029	Carya ovata	Shagbark Hickory	11	FAIR		
1030	Carya glabra	Pignut Hickory	9	FAIR		
1031	Quercus rubra	Red Oak	13	FAIR		
1032	Ulmus americana	American Elm	12	FAIR		
1033	Fraxinus pennsylvanica	Green Ash	12	POOR		
1034	Fraxinus pennsylvanica	Green Ash	12	POOR		
1035	Fraxinus pennsylvanica	Green Ash	9	FAIR		
1036	Carya cordiformis	Bitternut Hickory	10	FAIR		
1037	Fraxinus pennsylvanica	Green Ash	10	FAIR		
1038	Carya cordiformis	Bitternut Hickory	14	FAIR		
1039	Quercus rubra	Red Oak	10	FAIR		
1040	Acer saccharum	Sugar Maple	9	FAIR		
1041	Carya cordiformis	Bitternut Hickory	9	FAIR		
1042	Carya glabra	Pignut Hickory	9	FAIR		
1043	Carya ovata	Shagbark Hickory	9	FAIR		
1044	Carya ovata	Shagbark Hickory	12	FAIR	TWIN	
1045	Carya ovata	Shagbark Hickory	10	FAIR	TWIN	
1046	Quercus alba	White Oak	9	FAIR		
1047	Quercus rubra	Red Oak	9	FAIR		
1048	Quercus rubra	Red Oak	12	POOR		
1049	Quercus rubra	Red Oak	15	FAIR		
1050	Acer saccharinum	Silver Maple	11	FAIR	TWIN	
1051	Carya glabra	Pignut Hickory	12	FAIR		
1052	Carya glabra	Pignut Hickory	8	FAIR		
1053	Quercus rubra	Red Oak	17	FAIR		Landmark
1054	Acer saccharum	Sugar Maple	8	FAIR		
1055	Carya glabra	Pignut Hickory	8	FAIR		
1056	Carya glabra	Pignut Hickory	9	FAIR		
1057	Carya cordiformis	Bitternut Hickory	9	FAIR	TWIN	
1058	Carya cordiformis	Bitternut Hickory	9	FAIR		

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1059	Carya ovata	Shagbark Hickory	9	FAIR		
1060	Carya glabra	Pignut Hickory	8	FAIR		
1061	Quercus rubra	Red Oak	14	FAIR		
1062	Carya ovata	Shagbark Hickory	11	FAIR		
1063	Carya ovata	Shagbark Hickory	8	FAIR		
1064	Carya glabra	Pignut Hickory	8	FAIR		
1065	Ulmus americana	American Elm	11	FAIR		
1066	Tilia americana	Basswood	11	FAIR	TWIN	
1067	Quercus rubra	Red Oak	15	FAIR		
1068	Quercus alba	White Oak	10	FAIR		
1069	Quercus alba	White Oak	12	FAIR		
1070	Quercus alba	White Oak	14	FAIR		
1071	Quercus alba	White Oak	17	FAIR	TWIN	Landmark
1072	Quercus alba	White Oak	8	FAIR		
1073	Quercus alba	White Oak	16	FAIR		Landmark
1074	Quercus alba	White Oak	15	FAIR		
1075	Quercus alba	White Oak	10	FAIR		
1076	Quercus alba	White Oak	9	FAIR		
1077	Acer saccharinum	Silver Maple	10	FAIR	TWIN	
1078	Carya cordiformis	Bitternut Hickory	10	FAIR		
1079	Populus deltoides	Cottonwood	32	POOR		Landmark
1080	Carya cordiformis	Bitternut Hickory	10	FAIR		
1081	Prunus serotina	Black Cherry	12	POOR		
1082	Ulmus americana	American Elm	14	FAIR		
1083	Populus deltoides	Cottonwood	20	FAIR	TWIN	
1084	Carya cordiformis	Bitternut Hickory	8	FAIR		
1085	Populus deltoides	Cottonwood	16	POOR		
1086	Ulmus americana	American Elm	11	FAIR		
1087	Quercus macrocarpa	Bur Oak	12	FAIR		
1088	Quercus macrocarpa	Bur Oak	13	FAIR		
1089	Carya cordiformis	Bitternut Hickory	14	FAIR		
1090	Prunus serotina	Black Cherry	8	FAIR		
1091	Quercus macrocarpa	Bur Oak	14	FAIR		
1092	Carya cordiformis	Bitternut Hickory	15	FAIR		
1093	Carya cordiformis	Bitternut Hickory	10	FAIR		
1094	Acer negundo	Box Elder	14	FAIR		

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1095	Quercus macrocarpa	Bur Oak	13	FAIR		
1096	Quercus macrocarpa	Bur Oak	11	FAIR		
1097	Quercus macrocarpa	Bur Oak	10	FAIR		
1098	Juglans nigra	Black Walnut	10	FAIR		
1100	Quercus macrocarpa	Bur Oak	16	FAIR		Landmark
1101	Juglans nigra	Black Walnut	14	FAIR		
1102	Juglans nigra	Black Walnut	8	FAIR		
1103	Prunus serotina	Black Cherry	16	FAIR	TWIN	
1104	Juglans nigra	Black Walnut	19	FAIR		Landmark
1105	Prunus serotina	Black Cherry	16	POOR		
1106	Juglans nigra	Black Walnut	11	FAIR		
1107	Carya cordiformis	Bitternut Hickory	11	FAIR		
1108	Ulmus rubra	Slippery Elm	18	POOR		
1109	Salix nigra	Black Willow	25	POOR		Landmark
1110	Quercus alba	White Oak	8	POOR		
1111	Carya cordiformis	Bitternut Hickory	10	POOR		
1111	Acer platanoides	Norway Maple	10	POOR		
1112	Salix nigra	Black Willow	24	POOR	TWIN	Landmark
1113	Tilia americana	Basswood	8	FAIR		
1114	Juglans nigra	Black Walnut	17	FAIR		
1115	Juglans nigra	Black Walnut	15	FAIR		
1116	Juglans nigra	Black Walnut	14	FAIR		
1117	Juglans nigra	Black Walnut	9	FAIR		
1118	Crataegus pruinosa	Hawthorn	8	FAIR	TRIPLE	
1119	Juglans nigra	Black Walnut	12	FAIR		
1120	Juglans nigra	Black Walnut	17	FAIR		
1121	Juglans nigra	Black Walnut	10	FAIR		
1122	Platanus occidentalis	Sycamore	17	FAIR		
1123	Juglans nigra	Black Walnut	10	FAIR		
1124	Juglans nigra	Black Walnut	10	FAIR		
1125	Juglans nigra	Black Walnut	11	FAIR		
1126	Platanus occidentalis	Sycamore	23	FAIR		Landmark
1127	Platanus occidentalis	Sycamore	17	FAIR	TWIN	
1128	Juglans nigra	Black Walnut	10	FAIR		
1129	Juglans nigra	Black Walnut	8	FAIR		
1130	Juglans nigra	Black Walnut	10	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
1131	Juglans nigra	Black Walnut	8	FAIR		
1132	Juglans nigra	Black Walnut	11	FAIR		
1134	Populus deltoides	Cottonwood	25	FAIR		Landmark
1135	Morus alba	White Mulberry	18	FAIR	QUAD	
1136	Juglans nigra	Black Walnut	13	FAIR		
1137	Juglans nigra	Black Walnut	8	FAIR		
1138	Juglans nigra	Black Walnut	11	FAIR		
1139	Juglans nigra	Black Walnut	8	FAIR		
1140	Juglans nigra	Black Walnut	18	FAIR		Landmark
1141	Juglans nigra	Black Walnut	8	FAIR		
1142	Ulmus americana	American Elm	9	FAIR		
1143	Ulmus americana	American Elm	12	FAIR		
1144	Ulmus americana	American Elm	9	FAIR		
1145	Quercus alba	White Oak	11	FAIR		
1146	Fagus sylvatica	Common Beech	9	FAIR		
1147	Ulmus americana	American Elm	8	FAIR		
1148	Fraxinus pennsylvanica	Green Ash	13	FAIR		
1149	Populus tremuloides	Quaking Aspen	10	FAIR	TRIPLE	
1150	Fraxinus pennsylvanica	Green Ash	9	FAIR		
1151	Carya cordiformis	Bitternut Hickory	8	FAIR		
1152	Carya cordiformis	Bitternut Hickory	9	FAIR		
1153	Prunus serotina	Black Cherry	10	POOR		
1154	Quercus alba	White Oak	14	FAIR	TWIN	
1155	Populus deltoides	Cottonwood	26	FAIR		Landmark
1156	Prunus serotina	Black Cherry	9	FAIR		
1157	Acer saccharinum	Silver Maple	13	FAIR		
1158	Carya cordiformis	Bitternut Hickory	8	FAIR		
1159	Acer saccharum	Sugar Maple	9	FAIR		
1160	Ulmus americana	American Elm	11	FAIR		
1161	Ulmus americana	American Elm	9	FAIR		
1162	Populus deltoides	Cottonwood	16	FAIR		
1163	Populus deltoides	Cottonwood	20	FAIR		
1164	Ulmus americana	American Elm	9	FAIR	TWIN	
1165	Celtis occidentalis	Northern Hackberry	12	FAIR		
1166	Ulmus americana	American Elm	9	FAIR		
1167	Juglans nigra	Black Walnut	9	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
1168	Acer negundo	Box Elder	13	FAIR		
1169	Acer negundo	Box Elder	14	POOR		
1170	Acer negundo	Box Elder	10	POOR		
1171	Acer negundo	Box Elder	8	FAIR		
1172	Populus deltoides	Cottonwood	24	FAIR		Landmark
1173	Acer negundo	Box Elder	10	FAIR		
1174	Acer negundo	Box Elder	12	FAIR		
1175	Acer negundo	Box Elder	9	FAIR		
1176	Celtis occidentalis	Northern Hackberry	14	FAIR		
1177	Acer negundo	Box Elder	10	FAIR		
1178	Acer negundo	Box Elder	10	FAIR		
1179	Celtis occidentalis	Northern Hackberry	16	FAIR		
1180	Quercus alba	White Oak	10	FAIR		
1181	Populus deltoides	Cottonwood	20	FAIR		
1182	Populus deltoides	Cottonwood	12	FAIR	TWIN	
1184	Acer negundo	Box Elder	15	FAIR		
1185	Acer negundo	Box Elder	11	FAIR		
1186	Acer negundo	Box Elder	13	FAIR		
1187	Juglans nigra	Black Walnut	12	FAIR		
1188	Juglans nigra	Black Walnut	12	POOR		
1189	Quercus alba	White Oak	15	FAIR		
1190	Juglans nigra	Black Walnut	11	FAIR		
1191	Acer negundo	Box Elder	9	FAIR		
1192	Carya cordiformis	Bitternut Hickory	9	FAIR		
1193	Acer negundo	Box Elder	8	FAIR		
1194	Acer negundo	Box Elder	9	FAIR		
1195	Juglans nigra	Black Walnut	11	FAIR		
1196	Populus tremuloides	Quaking Aspen	9	FAIR		
1197	Acer saccharum	Sugar Maple	20	FAIR		Landmark
1198	Quercus alba	White Oak	32	POOR		Landmark
1199	Acer negundo	Box Elder	14	POOR		
1200	Acer negundo	Box Elder	8	FAIR		
1301	Populus tremuloides	Quaking Aspen	13	FAIR		
1302	Populus tremuloides	Quaking Aspen	12	FAIR		
1303	Prunus serotina	Black Cherry	12	FAIR		
1304	Prunus serotina	Black Cherry	9	FAIR		

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1305	Prunus serotina	Black Cherry	11	FAIR		
1306	Prunus serotina	Black Cherry	10	POOR		
1307	Quercus rubra	Red Oak	15	FAIR		
1308	Carya glabra	Pignut Hickory	12	FAIR		
1309	Quercus alba	White Oak	13	FAIR		
1310	Carya ovata	Shagbark Hickory	11	FAIR		
1311	Carya ovata	Shagbark Hickory	8	FAIR		
1312	Quercus rubra	Red Oak	14	FAIR		
1313	Carya ovata	Shagbark Hickory	8	FAIR		
1314	Carya cordiformis	Bitternut Hickory	12	FAIR		
1315	Carya ovata	Shagbark Hickory	8	FAIR		
1316	Quercus rubra	Red Oak	17	FAIR		Landmark
1317	Carya ovata	Shagbark Hickory	12	FAIR		
1318	Carya cordiformis	Bitternut Hickory	9	FAIR		
1319	Carya cordiformis	Bitternut Hickory	9	FAIR	TWIN	
1320	Carya glabra	Pignut Hickory	10	FAIR		
1321	Carya glabra	Pignut Hickory	10	FAIR		
1322	Carya cordiformis	Bitternut Hickory	8	FAIR		
1323	Carya glabra	Pignut Hickory	8	FAIR		
1324	Carya ovata	Shagbark Hickory	12	FAIR		
1325	Carya glabra	Pignut Hickory	9	FAIR		
1326	Carya ovata	Shagbark Hickory	9	FAIR		
1327	Carya glabra	Pignut Hickory	13	FAIR		
1328	Carya glabra	Pignut Hickory	14	FAIR		
1329	Carya ovata	Shagbark Hickory	10	FAIR		
1330	Carya ovata	Shagbark Hickory	12	FAIR		
1331	Acer saccharinum	Silver Maple	11	FAIR	TWIN	
1332	Carya cordiformis	Bitternut Hickory	13	FAIR		
1333	Acer saccharum	Sugar Maple	14	FAIR		
1334	Quercus rubra	Red Oak	19	FAIR		Landmark
1335	Carya glabra	Pignut Hickory	12	FAIR		
1336	Carya ovata	Shagbark Hickory	14	FAIR		
1337	Carya ovata	Shagbark Hickory	10	FAIR		
1338	Carya cordiformis	Bitternut Hickory	12	FAIR		
1339	Fraxinus pennsylvanica	Green Ash	13	FAIR		
1340	Populus deltoides	Cottonwood	21	FAIR		

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1342	Carya glabra	Pignut Hickory	13	FAIR		
1343	Quercus alba	White Oak	15	FAIR		
1344	Carya ovata	Shagbark Hickory	10	FAIR		
3001	Carya ovata	Shagbark Hickory	15	FAIR		
3002	Quercus alba	White Oak	16	FAIR		Landmark
3003	Tilia americana	Basswood	12	FAIR		
3004	Tilia americana	Basswood	15	FAIR		
3005	Tilia americana	Basswood	13	FAIR		
3006	Tilia americana	Basswood	12	FAIR		
3007	Tilia americana	Basswood	12	FAIR		
3008	Tilia americana	Basswood	12	FAIR	TWIN	
3009	Quercus rubra	Red Oak	19	FAIR	TRIPLE	Landmark
3010	Carya cordiformis	Bitternut Hickory	14	FAIR		
3011	Carya cordiformis	Bitternut Hickory	13	FAIR		
3012	Tilia americana	Basswood	11	FAIR	TWIN	
3013	Tilia americana	Basswood	11	FAIR	TWIN	
3014	Malus domestica	Apple	10	POOR		
3015	Tilia americana	Basswood	12	FAIR	TWIN	
3016	Quercus rubra	Red Oak	11	POOR		
3017	Tilia americana	Basswood	11	FAIR		
3018	Carya cordiformis	Bitternut Hickory	10	FAIR		
3019	Carya cordiformis	Bitternut Hickory	13	FAIR		
3020	Carya cordiformis	Bitternut Hickory	10	FAIR	TWIN	
3021	Carya cordiformis	Bitternut Hickory	13	FAIR		
3022	Carya glabra	Pignut Hickory	13	FAIR		
3023	Fagus sylvatica	Common Beech	37	POOR		Landmark
3024	Carya glabra	Pignut Hickory	10	FAIR		
3025	Carya cordiformis	Bitternut Hickory	14	FAIR		
3026	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3027	Carya cordiformis	Bitternut Hickory	18	FAIR	TRIPLE	
3028	Carya cordiformis	Bitternut Hickory	11	FAIR		
3029	Populus deltoides	Cottonwood	11	POOR		
3030	Tilia americana	Basswood	14	FAIR		
3031	Carya cordiformis	Bitternut Hickory	14	FAIR		
3032	Carya cordiformis	Bitternut Hickory	14	FAIR		
3033	Carya cordiformis	Bitternut Hickory	12	FAIR		

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3034	Carya cordiformis	Bitternut Hickory	15	FAIR		
3035	Acer saccharum	Sugar Maple	10	FAIR		
3036	Acer saccharum	Sugar Maple	11	FAIR		
3037	Quercus rubra	Red Oak	14	FAIR		
3038	Quercus rubra	Red Oak	12	FAIR		
3039	Quercus alba	White Oak	14	FAIR		
3040	Quercus rubra	Red Oak	16	FAIR		Landmark
3041	Quercus rubra	Red Oak	19	FAIR		Landmark
3042	Quercus rubra	Red Oak	14	FAIR		
3043	Quercus rubra	Red Oak	16	FAIR	TRIPLE	Landmark
3044	Carya cordiformis	Bitternut Hickory	11	FAIR	TWIN	
3045	Quercus rubra	Red Oak	25	FAIR		Landmark
3046	Acer saccharum	Sugar Maple	14	FAIR	TWIN	
3047	Acer saccharum	Sugar Maple	11	FAIR		
3048	Carya glabra	Pignut Hickory	10	FAIR		
3049	Carya cordiformis	Bitternut Hickory	11	FAIR		
3050	Carya cordiformis	Bitternut Hickory	14	FAIR		
3051	Carya glabra	Pignut Hickory	11	FAIR		
3052	Carya ovata	Shagbark Hickory	13	FAIR		
3053	Carya glabra	Pignut Hickory	9	FAIR		
3054	Quercus alba	White Oak	15	FAIR	TWIN	
3055	Carya ovata	Shagbark Hickory	12	FAIR		
3056	Quercus rubra	Red Oak	17	FAIR		Landmark
3057	Quercus rubra	Red Oak	12	FAIR		
3058	Quercus rubra	Red Oak	18	FAIR		Landmark
3059	Quercus rubra	Red Oak	12	FAIR	TWIN	
3060	Acer saccharum	Sugar Maple	13	FAIR		
3061	Carya cordiformis	Bitternut Hickory	9	FAIR		
3062	Quercus rubra	Red Oak	13	FAIR		
3063	Quercus alba	White Oak	13	FAIR		
3064	Carya glabra	Pignut Hickory	9	FAIR		
3065	Quercus rubra	Red Oak	15	FAIR		
3066	Juglans nigra	Black Walnut	11	FAIR		
3067	Juglans nigra	Black Walnut	12	FAIR		
3068	Carya cordiformis	Bitternut Hickory	14	FAIR		
3069	Carya cordiformis	Bitternut Hickory	15	FAIR		

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3070	Carya cordiformis	Bitternut Hickory	10	FAIR		
3071	Fraxinus pennsylvanica	Green Ash	12	FAIR		
3072	Quercus macrocarpa	Bur Oak	14	FAIR		
3073	Carya cordiformis	Bitternut Hickory	13	FAIR		
3074	Fraxinus pennsylvanica	Green Ash	11	FAIR		
3075	Quercus alba	White Oak	12	POOR		
3076	Fraxinus pennsylvanica	Green Ash	11	FAIR		
3077	Fraxinus pennsylvanica	Green Ash	13	FAIR		
3078	Celtis occidentalis	Northern Hackberry	13	FAIR		
3079	Quercus rubra	Red Oak	11	FAIR		
3081	Acer Rubrum	Red Maple	14	FAIR		
3082	Carya cordiformis	Bitternut Hickory	11	FAIR		
3083	Quercus alba	White Oak	13	FAIR		
3084	Quercus rubra	Red Oak	16	FAIR	TRIPLE	Landmark
3085	Carya cordiformis	Bitternut Hickory	12	FAIR		
3086	Carya cordiformis	Bitternut Hickory	10	FAIR		
3087	Carya cordiformis	Bitternut Hickory	11	FAIR	TWIN	
3088	Carya glabra	Pignut Hickory	11	FAIR		
3089	Quercus rubra	Red Oak	14	FAIR		
3090	Malus domestica	Apple	12	FAIR		
3091	Quercus rubra	Red Oak	18	FAIR		Landmark
3092	Tilia americana	Basswood	13	FAIR		
3093	Tilia americana	Basswood	11	FAIR	TRIPLE	
3094	Tilia americana	Basswood	13	FAIR	TWIN	
3095	Juglans nigra	Black Walnut	20	FAIR		Landmark
3096	Quercus alba	White Oak	12	FAIR		
3097	Carya cordiformis	Bitternut Hickory	15	FAIR		
3098	Carya cordiformis	Bitternut Hickory	12	FAIR		
3099	Quercus rubra	Red Oak	19	FAIR		Landmark
3100	Quercus rubra	Red Oak	19	FAIR	TRIPLE	Landmark
3101	Quercus macrocarpa	Bur Oak	16	FAIR		Landmark
3102	Carya ovata	Shagbark Hickory	15	FAIR		
3103	Carya ovata	Shagbark Hickory	9	FAIR		
3104	Quercus alba	White Oak	19	POOR		Landmark
3105	Carya ovata	Shagbark Hickory	15	FAIR		
3106	Carya ovata	Shagbark Hickory	15	FAIR		

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3107	Quercus macrocarpa	Bur Oak	16	FAIR		Landmark
3108	Quercus rubra	Red Oak	15	FAIR		
3109	Quercus rubra	Red Oak	9	FAIR		
3110	Quercus rubra	Red Oak	9	FAIR		
3111	Carya glabra	Pignut Hickory	9	FAIR		
3112	Quercus rubra	Red Oak	11	FAIR		
3113	Quercus rubra	Red Oak	9	FAIR		
3114	Quercus rubra	Red Oak	13	FAIR		
3115	Quercus rubra	Red Oak	16	FAIR		Landmark
3116	Quercus rubra	Red Oak	8	FAIR		
3117	Carya ovata	Shagbark Hickory	15	FAIR		
3118	Quercus rubra	Red Oak	13	FAIR		
3119	Tilia americana	Basswood	10	FAIR		
3120	Carya ovata	Shagbark Hickory	18	FAIR		
3121	Carya ovata	Shagbark Hickory	10	FAIR		
3122	Quercus rubra	Red Oak	17	FAIR		Landmark
3123	Carya glabra	Pignut Hickory	18	FAIR		Landmark
3124	Quercus rubra	Red Oak	10	FAIR		
3125	Populus deltoides	Cottonwood	21	FAIR		
3126	Acer saccharinum	Silver Maple	18	FAIR		Landmark
3127	Ulmus pumila	Siberian Elm	9	FAIR		
3128	Carya ovata	Shagbark Hickory	12	FAIR	TWIN	
3129	Carya ovata	Shagbark Hickory	13	FAIR		
3130	Carya ovata	Shagbark Hickory	14	FAIR		
3131	Carya glabra	Pignut Hickory	14	FAIR		
3132	Carya glabra	Pignut Hickory	20	FAIR	TWIN	Landmark
3133	Carya ovata	Shagbark Hickory	14	FAIR		
3134	Tilia americana	Basswood	12	FAIR		
3135	Quercus rubra	Red Oak	12	FAIR		
3136	Carya ovata	Shagbark Hickory	18	FAIR		
3137	Carya ovata	Shagbark Hickory	16	FAIR		
3138	Ulmus americana	American Elm	12	FAIR		
3139	Carya ovata	Shagbark Hickory	19	FAIR		
3140	Acer saccharum	Sugar Maple	10	FAIR		
3141	Acer saccharum	Sugar Maple	14	FAIR		
3142	Carya ovata	Shagbark Hickory	18	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3143	Quercus alba	White Oak	17	FAIR		Landmark
3144	Acer saccharum	Sugar Maple	10	FAIR		
3145	Carya glabra	Pignut Hickory	10	POOR		
3146	Quercus rubra	Red Oak	9	FAIR		
3147	Tilia americana	Basswood	9	FAIR		
3148	Tilia americana	Basswood	11	FAIR		
3149	Tilia americana	Basswood	12	FAIR		
3150	Tilia americana	Basswood	13	FAIR		
3151	Tilia americana	Basswood	16	FAIR	TWIN	
3152	Tilia americana	Basswood	14	FAIR		
3153	Tilia americana	Basswood	14	FAIR		
3154	Tilia americana	Basswood	11	FAIR	TWIN	
3155	Populus deltoides	Cottonwood	12	FAIR		
3156	Tilia americana	Basswood	9	FAIR		
3157	Tilia americana	Basswood	14	FAIR		
3158	Tilia americana	Basswood	13	FAIR		
3159	Acer saccharum	Sugar Maple	11	FAIR		
3160	Acer saccharum	Sugar Maple	14	FAIR		
3161	Juglans nigra	Black Walnut	12	FAIR		
3162	Juglans nigra	Black Walnut	11	FAIR		
3163	Juglans nigra	Black Walnut	16	FAIR		
3164	Carya cordiformis	Bitternut Hickory	9	FAIR		
3165	Carya cordiformis	Bitternut Hickory	15	FAIR		
3166	Carya cordiformis	Bitternut Hickory	12	FAIR		
3167	Carya cordiformis	Bitternut Hickory	9	FAIR		
3168	Carya cordiformis	Bitternut Hickory	9	FAIR		
3169	Carya cordiformis	Bitternut Hickory	10	FAIR		
3170	Carya cordiformis	Bitternut Hickory	10	FAIR		
3171	Carya cordiformis	Bitternut Hickory	10	FAIR		
3171	Carya cordiformis	Bitternut Hickory	11	FAIR		
3172	Carya cordiformis	Bitternut Hickory	11	FAIR		
3173	Carya cordiformis	Bitternut Hickory	11	FAIR		
3174	Carya cordiformis	Bitternut Hickory	9	FAIR		
3175	Carya cordiformis	Bitternut Hickory	11	FAIR		
3176	Carya cordiformis	Bitternut Hickory	13	FAIR	TWIN	
3177	Carya cordiformis	Bitternut Hickory	11	FAIR	TWIN	

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3178	Juglans nigra	Black Walnut	10	FAIR		
3179	Juglans nigra	Black Walnut	13	FAIR		
3180	Juglans nigra	Black Walnut	14	FAIR	TWIN	
3181	Juglans nigra	Black Walnut	15	FAIR	TWIN	
3182	Juglans nigra	Black Walnut	13	FAIR	TWIN	
3183	Quercus rubra	Red Oak	9	FAIR		
3184	Acer saccharum	Sugar Maple	13	FAIR		
3185	Ulmus americana	American Elm	14	FAIR		
3186	Tilia americana	Basswood	13	FAIR	TRIPLE	
3187	Carya glabra	Pignut Hickory	13	FAIR		
3188	Carya cordiformis	Bitternut Hickory	9	FAIR		
3189	Carya glabra	Pignut Hickory	13	FAIR		
3190	Carya glabra	Pignut Hickory	12	FAIR		
3191	Prunus serotina	Black Cherry	11	FAIR	TWIN	
3192	Carya cordiformis	Bitternut Hickory	13	FAIR		
3193	Carya cordiformis	Bitternut Hickory	11	FAIR		
3194	Carya cordiformis	Bitternut Hickory	11	FAIR		
3195	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3196	Carya cordiformis	Bitternut Hickory	15	FAIR		
3197	Carya cordiformis	Bitternut Hickory	12	FAIR		
3198	Juglans nigra	Black Walnut	14	FAIR		
3199	Carya cordiformis	Bitternut Hickory	13	FAIR	TWIN	
3200	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3201	Populus deltoides	Cottonwood	23	FAIR		
3202	Populus tremuloides	Quaking Aspen	17	FAIR		
3203	Carya ovata	Shagbark Hickory	12	FAIR		
3204	Carya ovata	Shagbark Hickory	11	FAIR		
3205	Carya cordiformis	Bitternut Hickory	10	FAIR	TWIN	
3206	Carya cordiformis	Bitternut Hickory	11	FAIR		
3207	Carya ovata	Shagbark Hickory	10	FAIR		
3208	Carya glabra	Pignut Hickory	11	FAIR		
3209	Quercus rubra	Red Oak	13	FAIR		
3210	Quercus rubra	Red Oak	17	FAIR	TWIN	Landmark
3211	Populus deltoides	Cottonwood	13	FAIR		
3212	Carya glabra	Pignut Hickory	11	FAIR		
3213	Carya ovata	Shagbark Hickory	12	FAIR	TWIN	

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3214	Carya cordiformis	Bitternut Hickory	8	POOR		
3215	Carya ovata	Shagbark Hickory	10	FAIR		
3216	Quercus rubra	Red Oak	13	FAIR		
3217	Carya ovata	Shagbark Hickory	12	FAIR		
3218	Carya glabra	Pignut Hickory	10	FAIR		
3219	Carya ovata	Shagbark Hickory	13	FAIR		
3220	Quercus alba	White Oak	26	FAIR		Landmark
3221	Carya glabra	Pignut Hickory	11	FAIR		
3222	Acer saccharinum	Silver Maple	10	FAIR		
3223	Robinia pseudoacacia	Black Locust	10	FAIR		
3224	Carya glabra	Pignut Hickory	10	FAIR		
3225	Quercus alba	White Oak	21	FAIR		Landmark
3226	Quercus rubra	Red Oak	13	FAIR		
3227	Acer saccharum	Sugar Maple	11	FAIR		
3228	Carya cordiformis	Bitternut Hickory	11	FAIR		
3229	Ulmus rubra	Slippery Elm	23	FAIR		
3230	Tilia americana	Basswood	13	FAIR	TWIN	
3231	Carya cordiformis	Bitternut Hickory	14	FAIR	TWIN	
3232	Carya cordiformis	Bitternut Hickory	13	FAIR		
3233	Tilia americana	Basswood	10	FAIR		
3234	Tilia americana	Basswood	9	FAIR		
3235	Tilia americana	Basswood	12	FAIR	TWIN	
3236	Tilia americana	Basswood	11	FAIR		
3237	Ulmus americana	American Elm	8	FAIR		
3238	Carya glabra	Pignut Hickory	11	FAIR		
3239	Tilia americana	Basswood	13	FAIR		
3240	Juglans nigra	Black Walnut	14	FAIR		
3241	Carya cordiformis	Bitternut Hickory	13	FAIR		
3242	Juglans nigra	Black Walnut	13	FAIR		
3243	Ulmus americana	American Elm	8	POOR		
3243	Quercus alba	White Oak	8	POOR		
3244	Carya glabra	Pignut Hickory	9	FAIR		
3245	Carya cordiformis	Bitternut Hickory	13	FAIR		
3246	Tilia americana	Basswood	16	FAIR		
3247	Juglans nigra	Black Walnut	14	FAIR		
3248	Tilia americana	Basswood	17	FAIR	TRIPLE	

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3249	Carya cordiformis	Bitternut Hickory	8	FAIR		
3250	Acer saccharum	Sugar Maple	13	FAIR		
3251	Acer saccharum	Sugar Maple	8	FAIR		
3252	Ostrya virginiana	Hop Hornbeam	8	FAIR		
3253	Tilia americana	Basswood	13	FAIR	TWIN	
3254	Robinia pseudoacacia	Black Locust	8	FAIR		
3255	Carya cordiformis	Bitternut Hickory	14	FAIR		
3256	Quercus alba	White Oak	10	FAIR	TWIN	
3257	Quercus alba	White Oak	10	FAIR	TWIN	
3258	Carya cordiformis	Bitternut Hickory	8	FAIR		
3259	Tilia americana	Basswood	10	FAIR		
3260	Tilia americana	Basswood	8	FAIR		
3261	Carya ovata	Shagbark Hickory	17	FAIR		
3262	Tilia americana	Basswood	14	FAIR	TWIN	
3263	Ulmus americana	American Elm	8	FAIR		
3264	Carya cordiformis	Bitternut Hickory	13	FAIR		
3265	Carya cordiformis	Bitternut Hickory	12	FAIR		
3266	Carya cordiformis	Bitternut Hickory	8	FAIR		
3267	Prunus serotina	Black Cherry	8	FAIR		
3268	Robinia pseudoacacia	Black Locust	9	FAIR		
3269	Carya glabra	Pignut Hickory	8	FAIR		
3270	Carya glabra	Pignut Hickory	8	FAIR		
3271	Carya cordiformis	Bitternut Hickory	12	FAIR		
3272	Carya cordiformis	Bitternut Hickory	12	FAIR		
3273	Populus deltoides	Cottonwood	25	FAIR		Landmark
3274	Carya cordiformis	Bitternut Hickory	11	FAIR		
3275	Acer saccharinum	Silver Maple	10	FAIR		
3276	Prunus serotina	Black Cherry	9	FAIR		
3277	Tilia americana	Basswood	9	FAIR		
3278	Carya cordiformis	Bitternut Hickory	19	FAIR		
3279	Tilia americana	Basswood	12	FAIR		
3280	Tilia americana	Basswood	8	FAIR		
3281	Tilia americana	Basswood	10	FAIR		
3282	Tilia americana	Basswood	15	FAIR		
3283	Ulmus rubra	Slippery Elm	17	FAIR		
3284	Acer saccharinum	Silver Maple	8	POOR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3285	Ulmus americana	American Elm	8	FAIR		
3286	Tilia americana	Basswood	13	FAIR		
3287	Carya ovata	Shagbark Hickory	15	FAIR		
3288	Carya glabra	Pignut Hickory	15	FAIR		
3289	Carya glabra	Pignut Hickory	17	FAIR		Landmark
3290	Ulmus americana	American Elm	11	FAIR		
3291	Carya ovata	Shagbark Hickory	14	FAIR		
3292	Quercus rubra	Red Oak	11	FAIR		
3293	Carya ovata	Shagbark Hickory	16	FAIR		
3294	Tilia americana	Basswood	9	FAIR	TWIN	
3296	Tilia americana	Basswood	9	FAIR		
3297	Tilia americana	Basswood	16	FAIR	TWIN	
3298	Carya ovata	Shagbark Hickory	16	FAIR		
3299	Quercus rubra	Red Oak	22	POOR		Landmark
3300	Carya glabra	Pignut Hickory	14	FAIR		
3301	Quercus rubra	Red Oak	14	POOR		
3302	Quercus rubra	Red Oak	16	FAIR		Landmark
3303	Quercus rubra	Red Oak	12	FAIR		
3304	Carya glabra	Pignut Hickory	12	FAIR		
3305	Quercus rubra	Red Oak	13	FAIR		
3306	Quercus rubra	Red Oak	14	FAIR		
3307	Quercus rubra	Red Oak	17	FAIR		Landmark
3308	Quercus rubra	Red Oak	14	FAIR		
3309	Quercus rubra	Red Oak	15	FAIR		
3310	Quercus rubra	Red Oak	15	FAIR		
3311	Quercus rubra	Red Oak	17	FAIR		Landmark
3312	Carya glabra	Pignut Hickory	14	FAIR		
3313	Carya ovata	Shagbark Hickory	11	FAIR		
3314	Quercus rubra	Red Oak	14	FAIR		
3315	Quercus rubra	Red Oak	13	FAIR		
3316	Carya glabra	Pignut Hickory	12	FAIR		
3317	Carya ovata	Shagbark Hickory	13	FAIR		
3318	Carya ovata	Shagbark Hickory	13	FAIR		
3319	Carya ovata	Shagbark Hickory	14	FAIR		
3320	Carya ovata	Shagbark Hickory	14	FAIR		
3321	Carya cordiformis	Bitternut Hickory	12	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3321	Carya cordiformis	Bitternut Hickory	14	FAIR		
3322	Carya cordiformis	Bitternut Hickory	15	FAIR	TWIN	
3323	Carya ovata	Shagbark Hickory	13	FAIR		
3324	Carya ovata	Shagbark Hickory	10	FAIR		
3325	Carya ovata	Shagbark Hickory	8	FAIR		
3326	Ulmus rubra	Slippery Elm	8	POOR		
3327	Carya ovata	Shagbark Hickory	10	FAIR		
3328	Carya ovata	Shagbark Hickory	9	FAIR		
3329	Carya ovata	Shagbark Hickory	9	FAIR		
3330	Carya ovata	Shagbark Hickory	9	FAIR		
3331	Carya ovata	Shagbark Hickory	8	FAIR		
3332	Carya glabra	Pignut Hickory	10	FAIR		
3333	Carya ovata	Shagbark Hickory	9	FAIR	TWIN	
3334	Acer negundo	Box Elder	17	FAIR		
3335	Carya ovata	Shagbark Hickory	8	FAIR	TWIN	
3336	Carya glabra	Pignut Hickory	10	FAIR		
3337	Carya ovata	Shagbark Hickory	10	FAIR		
3338	Tilia americana	Basswood	14	FAIR		
3339	Juglans nigra	Black Walnut	9	FAIR		
3340	Prunus serotina	Black Cherry	17	POOR		
3341	Carya glabra	Pignut Hickory	10	FAIR		
3342	Morus alba	White Mulberry	20	FAIR		
3343	Carya cordiformis	Bitternut Hickory	10	FAIR		
3344	Quercus rubra	Red Oak	10	FAIR		
3345	Populus deltoides	Cottonwood	12	POOR		
3346	Carya cordiformis	Bitternut Hickory	11	FAIR		
3347	Quercus rubra	Red Oak	21	FAIR		Landmark
3348	Carya ovata	Shagbark Hickory	10	FAIR		
3349	Carya cordiformis	Bitternut Hickory	10	FAIR	TWIN	
3350	Quercus macrocarpa	Bur Oak	9	POOR		
3351	Quercus alba	White Oak	14	FAIR		
3352	Carya glabra	Pignut Hickory	14	FAIR		
3353	Carya ovata	Shagbark Hickory	9	FAIR		
3354	Acer saccharum	Sugar Maple	16	FAIR		Landmark
3355	Carya ovata	Shagbark Hickory	8	FAIR		
3356	Carya cordiformis	Bitternut Hickory	9	FAIR		

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3357	Carya ovata	Shagbark Hickory	8	FAIR		
3358	Carya ovata	Shagbark Hickory	9	FAIR	TWIN	
3359	Carya ovata	Shagbark Hickory	10	FAIR	TWIN	
3360	Carya ovata	Shagbark Hickory	10	FAIR		
3361	Carya cordiformis	Bitternut Hickory	12	FAIR		
3362	Acer saccharinum	Silver Maple	10	FAIR		
3363	Acer negundo	Box Elder	18	POOR		
3364	Carya ovata	Shagbark Hickory	11	FAIR		
3365	Carya ovata	Shagbark Hickory	14	FAIR		
3366	Quercus rubra	Red Oak	17	FAIR		Landmark
3367	Quercus alba	White Oak	11	FAIR		
3368	Carya ovata	Shagbark Hickory	8	FAIR		
3369	Quercus alba	White Oak	10	FAIR		
3370	Carya cordiformis	Bitternut Hickory	9	FAIR		
3371	Carya cordiformis	Bitternut Hickory	9	FAIR		
3372	Ulmus americana	American Elm	8	FAIR		
3373	Prunus serotina	Black Cherry	10	FAIR		
3374	Ulmus americana	American Elm	8	FAIR		
3375	Ulmus americana	American Elm	9	FAIR		
3376	Carya glabra	Pignut Hickory	10	FAIR		
3377	Prunus serotina	Black Cherry	10	POOR		
3378	Ulmus americana	American Elm	20	GOOD		Landmark
3379	Juglans nigra	Black Walnut	13	FAIR		
3380	Acer negundo	Box Elder	18	FAIR		
3381	Juglans nigra	Black Walnut	10	FAIR	TWIN	
3382	Quercus alba	White Oak	9	FAIR		
3383	Quercus macrocarpa	Bur Oak	11	FAIR		
3384	Quercus macrocarpa	Bur Oak	8	FAIR		
3385	Quercus macrocarpa	Bur Oak	9	FAIR		
3386	Quercus macrocarpa	Bur Oak	9	FAIR		
3387	Quercus macrocarpa	Bur Oak	12	FAIR		
3388	Quercus macrocarpa	Bur Oak	14	FAIR		
3389	Quercus macrocarpa	Bur Oak	9	FAIR		
3390	Quercus macrocarpa	Bur Oak	12	FAIR		
3391	Ulmus americana	American Elm	12	FAIR		
3392	Quercus macrocarpa	Bur Oak	8	POOR		

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3393	Quercus macrocarpa	Bur Oak	8	POOR		
3394	Quercus macrocarpa	Bur Oak	10	POOR		
3395	Ulmus americana	American Elm	12	FAIR		
3396	Quercus macrocarpa	Bur Oak	9	FAIR		
3397	Carya ovata	Shagbark Hickory	8	FAIR		
3398	Acer saccharinum	Silver Maple	9	FAIR		
3399	Ulmus americana	American Elm	8	FAIR		
3400	Carya glabra	Pignut Hickory	11	FAIR		
3401	Carya cordiformis	Bitternut Hickory	12	FAIR		
3402	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3403	Carya cordiformis	Bitternut Hickory	13	FAIR		
3404	Carya cordiformis	Bitternut Hickory	11	POOR		
3405	Carya cordiformis	Bitternut Hickory	11	FAIR		
3406	Tilia americana	Basswood	10	FAIR	TWIN	
3407	Ulmus americana	American Elm	9	FAIR		
3408	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3409	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3410	Carya cordiformis	Bitternut Hickory	8	FAIR		
3411	Carya cordiformis	Bitternut Hickory	13	FAIR	TWIN	
3412	Carya cordiformis	Bitternut Hickory	8	FAIR		
3413	Carya cordiformis	Bitternut Hickory	9	FAIR		
3414	Carya cordiformis	Bitternut Hickory	11	FAIR		
3415	Carya cordiformis	Bitternut Hickory	12	FAIR		
3416	Juglans nigra	Black Walnut	13	FAIR	TWIN	
3417	Carya cordiformis	Bitternut Hickory	8	FAIR		
3418	Carya ovata	Shagbark Hickory	9	FAIR		
3419	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3420	Carya cordiformis	Bitternut Hickory	14	FAIR		
3421	Carya cordiformis	Bitternut Hickory	8	FAIR		
3422	Acer saccharinum	Silver Maple	10	FAIR		
3423	Acer saccharum	Sugar Maple	9	FAIR		
3424	Acer saccharum	Sugar Maple	13	FAIR		
3425	Carya glabra	Pignut Hickory	12	FAIR		
3426	Carya glabra	Pignut Hickory	13	FAIR		
3427	Carya glabra	Pignut Hickory	14	FAIR		
3428	Carya glabra	Pignut Hickory	12	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3429	Carya cordiformis	Bitternut Hickory	12	FAIR		
3430	Prunus serotina	Black Cherry	8	POOR		
3431	Carya glabra	Pignut Hickory	9	FAIR		
3432	Carya cordiformis	Bitternut Hickory	16	FAIR		
3433	Acer saccharum	Sugar Maple	19	FAIR		Landmark
3434	Prunus serotina	Black Cherry	10	POOR		
3435	Carya cordiformis	Bitternut Hickory	9	FAIR		
3436	Acer saccharum	Sugar Maple	12	FAIR		
3437	Acer saccharinum	Silver Maple	8	FAIR		
3438	Acer saccharinum	Silver Maple	10	FAIR		
3439	Prunus serotina	Black Cherry	10	FAIR		
3440	Acer saccharum	Sugar Maple	9	FAIR		
3441	Carya cordiformis	Bitternut Hickory	10	FAIR		
3442	Prunus serotina	Black Cherry	14	POOR		
3443	Acer saccharinum	Silver Maple	9	FAIR	TWIN	
3444	Ulmus americana	American Elm	8	FAIR		
3445	Acer saccharinum	Silver Maple	10	FAIR		
3446	Acer saccharinum	Silver Maple	10	FAIR		
3447	Acer saccharinum	Silver Maple	9	FAIR	TWIN	
3448	Quercus rubra	Red Oak	13	FAIR		
3449	Quercus rubra	Red Oak	15	FAIR	TWIN	
3450	Quercus rubra	Red Oak	13	FAIR		
3451	Carya ovata	Shagbark Hickory	9	FAIR		
3452	Carya ovata	Shagbark Hickory	9	FAIR		
3453	Carya glabra	Pignut Hickory	9	FAIR		
3454	Quercus rubra	Red Oak	14	FAIR		
3455	Carya ovata	Shagbark Hickory	8	FAIR		
3456	Carya ovata	Shagbark Hickory	8	FAIR		
3457	Quercus alba	White Oak	15	FAIR		
3458	Carya ovata	Shagbark Hickory	17	FAIR		
3459	Juglans nigra	Black Walnut	20	FAIR	TWIN	Landmark
3460	Juglans nigra	Black Walnut	23	FAIR		Landmark
3461	Quercus macrocarpa	Bur Oak	14	FAIR		
3462	Quercus macrocarpa	Bur Oak	10	FAIR		
3463	Quercus macrocarpa	Bur Oak	9	FAIR		
3464	Carya glabra	Pignut Hickory	15	FAIR		

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3465	Carya glabra	Pignut Hickory	9	FAIR		
3466	Quercus macrocarpa	Bur Oak	9	FAIR		
3467	Juglans nigra	Black Walnut	10	POOR		
3468	Juglans nigra	Black Walnut	11	POOR		
3469	Carya ovata	Shagbark Hickory	11	FAIR		
3470	Quercus alba	White Oak	13	FAIR		
3471	Carya ovata	Shagbark Hickory	9	FAIR		
3472	Carya ovata	Shagbark Hickory	15	FAIR		
3473	Populus deltoides	Cottonwood	14	FAIR		
3474	Acer saccharum	Sugar Maple	8	FAIR		
3475	Carya glabra	Pignut Hickory	10	FAIR		
3476	Carya glabra	Pignut Hickory	8	FAIR		
3477	Populus tremuloides	Quaking Aspen	8	FAIR		
3478	Robinia pseudoacacia	Black Locust	14	FAIR		
3479	Carya glabra	Pignut Hickory	11	FAIR		
3480	Carya glabra	Pignut Hickory	11	FAIR		
3481	Carya glabra	Pignut Hickory	10	FAIR		
3482	Populus tremuloides	Quaking Aspen	13	FAIR		
3483	Populus tremuloides	Quaking Aspen	16	FAIR	TWIN	
3484	Quercus rubra	Red Oak	12	FAIR		
3485	Populus tremuloides	Quaking Aspen	8	FAIR		
3486	Quercus rubra	Red Oak	13	FAIR	TWIN	
3487	Carya ovata	Shagbark Hickory	9	FAIR		
3488	Carya ovata	Shagbark Hickory	10	FAIR		
3489	Carya glabra	Pignut Hickory	9	FAIR		
3490	Carya glabra	Pignut Hickory	8	FAIR		
3491	Carya glabra	Pignut Hickory	9	FAIR		
3492	Carya cordiformis	Bitternut Hickory	9	FAIR		
3493	Carya glabra	Pignut Hickory	9	FAIR		
3494	Juglans nigra	Black Walnut	8	FAIR		
3495	Quercus rubra	Red Oak	17	FAIR		Landmark
3496	Quercus rubra	Red Oak	13	FAIR		
3497	Quercus rubra	Red Oak	12	FAIR		
3498	Juglans nigra	Black Walnut	12	FAIR		
3499	Carya ovata	Shagbark Hickory	11	FAIR	TWIN	
3500	Carya cordiformis	Bitternut Hickory	11	FAIR		

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3501	Carya glabra	Pignut Hickory	16	FAIR		Landmark
3502	Ulmus americana	American Elm	8	FAIR		
3503	Quercus rubra	Red Oak	8	FAIR		
3504	Acer saccharinum	Silver Maple	17	FAIR		Landmark
3505	Carya ovata	Shagbark Hickory	14	FAIR	TWIN	
3506	Carya glabra	Pignut Hickory	15	FAIR		
3507	Carya glabra	Pignut Hickory	8	FAIR		
3508	Carya ovata	Shagbark Hickory	10	FAIR		
3509	Ulmus americana	American Elm	8	FAIR		
3510	Carya ovata	Shagbark Hickory	13	FAIR		
3511	Carya ovata	Shagbark Hickory	13	FAIR		
3512	Carya ovata	Shagbark Hickory	9	FAIR		
3513	Quercus rubra	Red Oak	9	FAIR		
3514	Quercus macrocarpa	Bur Oak	17	FAIR		Landmark
3515	Quercus macrocarpa	Bur Oak	9	FAIR		
3516	Carya ovata	Shagbark Hickory	14	FAIR		
3517	Carya ovata	Shagbark Hickory	11	FAIR		
3518	Quercus alba	White Oak	18	FAIR		Landmark
3519	Acer saccharinum	Silver Maple	8	FAIR		
3520	Quercus rubra	Red Oak	14	FAIR		
3521	Carya ovata	Shagbark Hickory	16	FAIR		
3522	Carya glabra	Pignut Hickory	12	FAIR		
3523	Tilia americana	Basswood	9	FAIR		
3524	Quercus rubra	Red Oak	16	FAIR		Landmark
3525	Acer saccharinum	Silver Maple	10	FAIR		
3526	Acer saccharinum	Silver Maple	8	FAIR	TWIN	
3527	Acer saccharinum	Silver Maple	9	FAIR		
3528	Acer Rubrum	Red Maple	10	FAIR		
3529	Acer Rubrum	Red Maple	10	FAIR		
3530	Quercus rubra	Red Oak	25	FAIR		Landmark
3531	Acer saccharinum	Silver Maple	8	FAIR		
3532	Acer saccharinum	Silver Maple	13	FAIR		
3533	Acer saccharinum	Silver Maple	10	FAIR		
3534	Carya ovata	Shagbark Hickory	13	FAIR		
3535	Quercus alba	White Oak	16	FAIR		Landmark
3536	Quercus macrocarpa	Bur Oak	11	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3537	Acer saccharinum	Silver Maple	9	FAIR		
3538	Acer saccharinum	Silver Maple	8	FAIR		
3539	Carya ovata	Shagbark Hickory	14	POOR	TWIN	
3540	Acer saccharinum	Silver Maple	11	FAIR		
3541	Acer saccharinum	Silver Maple	12	POOR		
3542	Acer saccharinum	Silver Maple	10	FAIR		
3543	Carya ovata	Shagbark Hickory	17	FAIR		
3544	Quercus rubra	Red Oak	8	FAIR		
3545	Quercus macrocarpa	Bur Oak	11	FAIR		
3546	Quercus alba	White Oak	8	FAIR		
3547	Quercus macrocarpa	Bur Oak	14	FAIR	QUAD	
3548	Carya ovata	Shagbark Hickory	16	FAIR		
3549	Acer saccharinum	Silver Maple	9	FAIR		
3550	Carya ovata	Shagbark Hickory	9	FAIR		
3551	Acer saccharinum	Silver Maple	13	FAIR		
3552	Robinia pseudoacacia	Black Locust	9	FAIR		
3553	Quercus rubra	Red Oak	10	FAIR		
3554	Quercus rubra	Red Oak	15	FAIR		
3555	Carya ovata	Shagbark Hickory	8	FAIR		
3556	Quercus rubra	Red Oak	8	FAIR		
3557	Carya ovata	Shagbark Hickory	15	FAIR	TWIN	
3558	Quercus rubra	Red Oak	21	FAIR		Landmark
3559	Quercus alba	White Oak	32	FAIR		Landmark
3560	Quercus alba	White Oak	9	FAIR		
3561	Acer saccharinum	Silver Maple	9	FAIR		
3562	Carya ovata	Shagbark Hickory	14	FAIR		
3563	Carya ovata	Shagbark Hickory	16	FAIR	TWIN	
3564	Carya glabra	Pignut Hickory	16	FAIR		Landmark
3565	Carya ovata	Shagbark Hickory	11	FAIR		
3566	Carya ovata	Shagbark Hickory	17	FAIR		
3567	Carya glabra	Pignut Hickory	15	FAIR	TWIN	
3568	Carya glabra	Pignut Hickory	13	FAIR		
3569	Ulmus americana	American Elm	8	FAIR		
3570	Ulmus americana	American Elm	8	FAIR		
3571	Carya ovata	Shagbark Hickory	14	FAIR		
3572	Carya ovata	Shagbark Hickory	20	GOOD		

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3573	Quercus rubra	Red Oak	21	FAIR		Landmark
3574	Quercus macrocarpa	Bur Oak	27	FAIR	TWIN	Landmark
3575	Carya ovata	Shagbark Hickory	13	FAIR		
3576	Carya ovata	Shagbark Hickory	12	FAIR		
3577	Ulmus americana	American Elm	8	FAIR		
3578	Quercus rubra	Red Oak	24	FAIR		Landmark
3579	Quercus alba	White Oak	18	FAIR	TWIN	Landmark
3580	Quercus alba	White Oak	22	FAIR		Landmark
3581	Carya ovata	Shagbark Hickory	15	FAIR		
3582	Quercus alba	White Oak	25	GOOD		Landmark
3583	Populus tremuloides	Quaking Aspen	8	FAIR		
3584	Quercus rubra	Red Oak	22	POOR	TWIN	Landmark
3585	Carya ovata	Shagbark Hickory	12	FAIR		
3586	Acer Rubrum	Red Maple	9	FAIR		
3587	Acer saccharinum	Silver Maple	10	FAIR		
3588	Acer saccharinum	Silver Maple	9	FAIR		
3589	Quercus rubra	Red Oak	8	FAIR		
3590	Quercus rubra	Red Oak	28	POOR		Landmark
3591	Carya ovata	Shagbark Hickory	16	FAIR	TWIN	
3592	Carya ovata	Shagbark Hickory	13	FAIR		
3593	Carya ovata	Shagbark Hickory	17	GOOD		
3594	Quercus rubra	Red Oak	10	FAIR		
3595	Carya glabra	Pignut Hickory	14	FAIR		
3596	Ulmus americana	American Elm	9	FAIR		
3597	Quercus rubra	Red Oak	13	FAIR		
3598	Quercus rubra	Red Oak	13	FAIR		
3599	Acer saccharinum	Silver Maple	18	POOR		Landmark
3600	Acer saccharinum	Silver Maple	14	FAIR		
3601	Quercus rubra	Red Oak	8	FAIR		
3602	Carya ovata	Shagbark Hickory	15	FAIR	TWIN	
3603	Quercus alba	White Oak	14	FAIR		
3604	Carya ovata	Shagbark Hickory	15	FAIR		
3605	Carya ovata	Shagbark Hickory	21	FAIR	TWIN	
3606	Carya ovata	Shagbark Hickory	13	FAIR		
3607	Quercus rubra	Red Oak	8	POOR		
3608	Quercus rubra	Red Oak	9	POOR		

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3609	Carya ovata	Shagbark Hickory	15	FAIR	TWIN	
3610	Tilia americana	Basswood	14	FAIR		
3611	Acer saccharinum	Silver Maple	8	FAIR		
3612	Carya ovata	Shagbark Hickory	14	FAIR	TWIN	
3613	Carya ovata	Shagbark Hickory	19	FAIR	TWIN	
3614	Ulmus americana	American Elm	9	FAIR		
3615	Carya ovata	Shagbark Hickory	15	FAIR		
3616	Quercus alba	White Oak	20	POOR	TWIN	Landmark
3617	Ulmus americana	American Elm	11	POOR		
3618	Ulmus americana	American Elm	10	FAIR		
3619	Acer saccharinum	Silver Maple	15	FAIR		
3620	Ulmus americana	American Elm	8	FAIR		
3621	Acer saccharinum	Silver Maple	8	FAIR		
3622	Carya cordiformis	Bitternut Hickory	9	FAIR		
3623	Ulmus americana	American Elm	8	FAIR		
3624	Carya glabra	Pignut Hickory	14	FAIR	TWIN	
3625	Carya cordiformis	Bitternut Hickory	10	FAIR		
3626	Carya glabra	Pignut Hickory	8	FAIR		
3627	Carya cordiformis	Bitternut Hickory	12	FAIR	TWIN	
3628	Carya ovata	Shagbark Hickory	13	FAIR		
3629	Carya glabra	Pignut Hickory	8	FAIR	TWIN	
3630	Carya cordiformis	Bitternut Hickory	12	FAIR		
3631	Carya cordiformis	Bitternut Hickory	15	FAIR		
3632	Carya cordiformis	Bitternut Hickory	12	FAIR		
3633	Juglans nigra	Black Walnut	13	FAIR		
3634	Juglans nigra	Black Walnut	17	FAIR		
3635	Quercus rubra	Red Oak	15	FAIR		
3636	Carya cordiformis	Bitternut Hickory	9	FAIR		
3637	Carya cordiformis	Bitternut Hickory	10	FAIR		
3638	Quercus alba	White Oak	8	FAIR		
3639	Tilia americana	Basswood	17	FAIR		
3640	Ulmus americana	American Elm	8	FAIR		
3640	Prunus serotina	Black Cherry	13	FAIR		
3642	Carya cordiformis	Bitternut Hickory	10	FAIR		
3643	Carya cordiformis	Bitternut Hickory	10	FAIR		
3644	Carya cordiformis	Bitternut Hickory	9	FAIR	TWIN	

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3645	Carya cordiformis	Bitternut Hickory	11	FAIR	TWIN	
3646	Quercus rubra	Red Oak	11	POOR		
3647	Quercus rubra	Red Oak	19	FAIR		Landmark
3648	Carya ovata	Shagbark Hickory	15	FAIR		
3649	Carya ovata	Shagbark Hickory	8	FAIR		
3650	Carya ovata	Shagbark Hickory	8	FAIR		
3651	Carya cordiformis	Bitternut Hickory	8	FAIR		
3652	Carya glabra	Pignut Hickory	14	FAIR		
3653	Carya ovata	Shagbark Hickory	9	FAIR		
3654	Carya ovata	Shagbark Hickory	10	FAIR		
3655	Carya cordiformis	Bitternut Hickory	8	FAIR		
3656	Prunus serotina	Black Cherry	8	POOR		
3657	Carya cordiformis	Bitternut Hickory	11	FAIR		
3658	Carya cordiformis	Bitternut Hickory	8	FAIR		
3659	Carya ovata	Shagbark Hickory	8	FAIR		
3660	Carya glabra	Pignut Hickory	11	FAIR	TWIN	
3661	Acer saccharum	Sugar Maple	13	POOR	TRIPLE	
3662	Carya glabra	Pignut Hickory	9	FAIR		
3663	Carya ovata	Shagbark Hickory	12	FAIR		
3664	Carya glabra	Pignut Hickory	8	FAIR		
3665	Carya ovata	Shagbark Hickory	9	FAIR		
3666	Carya ovata	Shagbark Hickory	8	FAIR		
3667	Prunus serotina	Black Cherry	8	FAIR		
3801	Juglans nigra	Black Walnut	8	POOR		
3802	Populus deltoides	Cottonwood	19	FAIR		
3803	Quercus macrocarpa	Bur Oak	13	FAIR	TWIN	
3804	Quercus macrocarpa	Bur Oak	8	FAIR		
3805	Quercus rubra	Red Oak	13	FAIR		
3806	Juglans nigra	Black Walnut	11	FAIR		
3807	Quercus alba	White Oak	13	FAIR		
3808	Quercus rubra	Red Oak	16	POOR		Landmark
3809	Juglans nigra	Black Walnut	8	FAIR		
3810	Quercus rubra	Red Oak	18	FAIR		Landmark
3811	Juglans nigra	Black Walnut	8	FAIR		
3812	Ulmus americana	American Elm	10	FAIR		
3813	Prunus serotina	Black Cherry	10	FAIR		

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Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
3815	Robinia pseudoacacia	Black Locust	10	FAIR	TWIN	
3816	Juglans nigra	Black Walnut	8	FAIR		
3817	Robinia pseudoacacia	Black Locust	14	FAIR		
3818	Acer saccharinum	Silver Maple	12	FAIR	CLUSTER	
3819	Juglans nigra	Black Walnut	13	FAIR		
3820	Juglans nigra	Black Walnut	10	FAIR		
3821	Ulmus americana	American Elm	9	FAIR		
3822	Juglans nigra	Black Walnut	10	FAIR		
3823	Juglans nigra	Black Walnut	10	FAIR		
3824	Juglans nigra	Black Walnut	11	FAIR		
3825	Juglans nigra	Black Walnut	11	FAIR		
3826	Ulmus americana	American Elm	8	FAIR		
3827	Acer saccharinum	Silver Maple	12	FAIR	TWIN	
3828	Prunus serotina	Black Cherry	13	FAIR		
3829	Juglans nigra	Black Walnut	8	FAIR		
3830	Ulmus americana	American Elm	10	FAIR		
3831	Quercus rubra	Red Oak	8	FAIR		
3832	Acer saccharinum	Silver Maple	12	FAIR		
3833	Acer saccharinum	Silver Maple	13	FAIR	CLUSTER	
3834	Populus tremuloides	Quaking Aspen	12	FAIR		
3835	Acer saccharinum	Silver Maple	8	FAIR		
3836	Acer saccharinum	Silver Maple	11	FAIR		
3837	Acer saccharinum	Silver Maple	18	FAIR	TRIPLE	Landmark
3838	Quercus rubra	Red Oak	10	FAIR		
3839	Quercus alba	White Oak	8	FAIR		
3840	Acer saccharinum	Silver Maple	11	FAIR	TWIN	
3841	Acer saccharinum	Silver Maple	14	FAIR	CLUSTER	
701094	Carya cordiformis	Bitternut Hickory	10	FAIR		
740371	Prunus serotina	Black Cherry	8	POOR		
740382	Carya cordiformis	Bitternut Hickory	9	FAIR	TWIN	
740400	Ulmus pumila	Siberian Elm	8	FAIR		
740801	Tilia americana	Basswood	10	FAIR	TWIN	
740899	Carya cordiformis	Bitternut Hickory	9	FAIR		
740909	Carya cordiformis	Bitternut Hickory	8	FAIR		
740994	Carya glabra	Pignut Hickory	8	FAIR		
741095	Quercus rubra	Red Oak	9	FAIR		

Monument Engineering Group Associates, Inc.
298 Veterans Drive, Fowlerville, MI
(517) 223-3512
www.monumentengineering.com

Peter M. Lundgren
ISA Certified Arborist®
MI-4374A

Tree Survey

Project No./Name: 25-079 Date: 2/18/2026

Tag No.	Scientific Name	Common Name	D.B.H.	Condition	Notes	Landmark Status
741096	Prunus serotina	Black Cherry	8	FAIR		
741097	Carya ovata	Shagbark Hickory	9	FAIR		
741098	Acer saccharinum	Silver Maple	10	POOR		
741099	Tilia americana	Basswood	9	FAIR		
741100	Tilia americana	Basswood	8	FAIR	TWIN	
741587	Carya cordiformis	Bitternut Hickory	10	FAIR		
741588	Tilia americana	Basswood	11	FAIR		
741589	Carya cordiformis	Bitternut Hickory	10	FAIR		
741590	Quercus rubra	Red Oak	9	FAIR		
741591	Quercus rubra	Red Oak	10	FAIR		
741592	Quercus rubra	Red Oak	10	FAIR		
741593	Tilia americana	Basswood	8	FAIR		
741594	Quercus rubra	Red Oak	10	FAIR	TWIN	
741595	Tilia americana	Basswood	10	FAIR		
741596	Tilia americana	Basswood	9	FAIR		
741597	Prunus serotina	Black Cherry	9	POOR		
741598	Carya cordiformis	Bitternut Hickory	10	FAIR		
741800	Carya cordiformis	Bitternut Hickory	9	FAIR		
741899	Carya cordiformis	Bitternut Hickory	8	FAIR		
741911	Carya cordiformis	Bitternut Hickory	9	FAIR		

LEGAL DESCRIPTION (AS PROVIDED)

(PER TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: 81-25947400-SCM, EFFECTIVE DATE: MARCH 20, 2025)

EXHIBIT A DESCRIPTION:

THE LAND IS DESCRIBED AS FOLLOWS: SITUATED IN THE TOWNSHIP OF SUPERIOR, COUNTY OF WASHTENAW, STATE OF MICHIGAN

AN APPROXIMATE 19 ACRE PORTION OF THE FOLLOWING-DESCRIBED PARCEL, THE DESCRIPTION FOR WHICH IS FORTHCOMING:

BEGINNING 2711.79 FEET NORTH AND 1463.13 FEET OF THE SOUTHWEST CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST, TOWNSHIP OF SUPERIOR, WASHTENAW COUNTY, MICHIGAN; THENCE SOUTH 65 DEGREES 44 MINUTES EAST 441.05 FEET; THENCE 1049.90 FEET ON THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 940.00 FEET AND A CHORD BEARING SOUTH 33 DEGREES 44 MINUTES 15 SECONDS EAST 996.15 FEET; THENCE SOUTH 89 DEGREES 55 MINUTES 10 SECONDS WEST 60.03 FEET; THENCE 143.77 FEET ON THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 880.00 FEET AND A CHORD BEARING SOUTH 02 DEGREES 49 MINUTES 10 SECONDS WEST 143.63 FEET; THENCE SOUTH 07 DEGREES 30 MINUTES WEST 171.32 FEET; THENCE SOUTH 74 DEGREES 23 MINUTES 10 SECONDS WEST 628.85 FEET; THENCE NORTH 87 DEGREES 48 MINUTES 45 SECONDS WEST 951.56 FEET; THENCE SOUTH 29 DEGREES 54 MINUTES 20 SECONDS WEST 416.70 FEET; THENCE NORTHWESTERLY ON THE NORTH LINE OF STAMFORD ROAD TO A POINT BEING SOUTH 30 DEGREES 59 MINUTES WEST FROM THE POINT OF BEGINNING; THENCE NORTH 30 DEGREES 59 MINUTES EAST TO THE POINT OF BEGINNING, EXCEPT THAT PART LYING WESTERLY OF A LINE DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 35; THENCE SOUTH 01 DEGREES 47 MINUTES 15 SECONDS EAST 2151.17 FEET; THENCE SOUTH 82 DEGREES 21 MINUTES 05 SECONDS EAST 617.52 FEET; THENCE SOUTH 15 DEGREES 49 MINUTES 56 SECONDS WEST 60.00 FEET; THENCE SOUTH 73 DEGREES 03 MINUTES 55 SECONDS EAST 312.02 FEET; THENCE SOUTH 65 DEGREES 44 MINUTES 05 SECONDS EAST 417.20 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 24 DEGREES 15 MINUTES 55 SECONDS WEST 506.31 FEET; THENCE SOUTH 21 DEGREES EAST 164.63 FEET; THENCE SOUTH 69 DEGREES WEST 218.06 FEET; THENCE SOUTH 29 DEGREES 54 MINUTES 20 SECONDS WEST 1203.38 FEET TO THE POINT OF BEGINNING.

NOTE: SCHEDULE A OF THIS COMMITMENT WILL BE REVISED UPON RECEIPT BY THE COMPANY OF THE DESCRIPTION TO BE INSURED.

BEARING REFERENCE

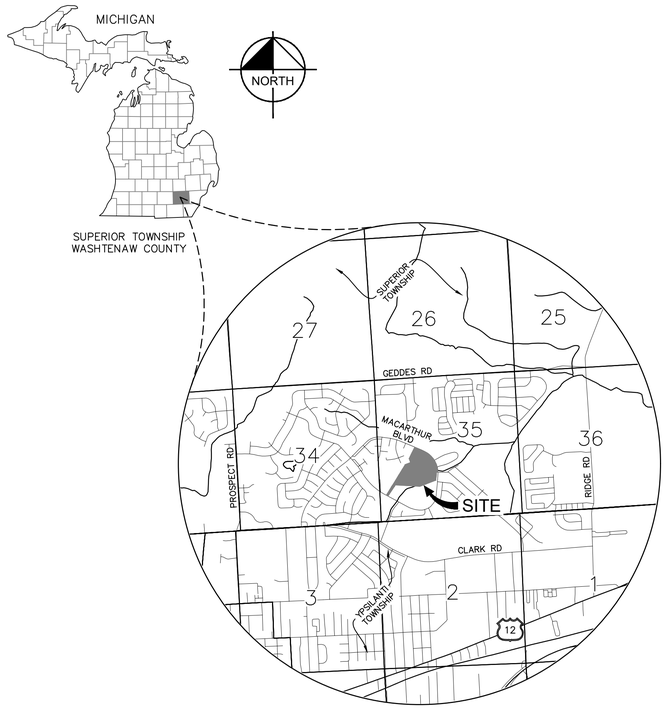
BEARINGS ARE BASED ON PROJECT COORDINATE SYSTEM:
MICHIGAN STATE PLANE COORDINATE SYSTEM, NAD83 (CONUS) (MOL) (GRS80), SOUTH ZONE 2113, INTERNATIONAL FEET, GRID.

SCHEDULE B-SECTION II EXCEPTIONS

TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY
TITLE COMMITMENT NO: 81-25947400-SCM
EFFECTIVE DATE: MARCH 20, 2025

EXCEPTIONS:

8. Release of Right of Way to the County of Washtenaw for drain purposes recorded in Liber 526, Page 340, Washtenaw County Records. (PLOTTED AND SHOWN HEREIN)
9. Release of Right of Way to the County of Washtenaw for drain purposes recorded in Liber 526, Page 350, Washtenaw County Records. (PLOTTED AND SHOWN HEREIN)
10. Release of Right of Way to the County of Washtenaw for drain purposes recorded in Liber 526, Page 352, Washtenaw County Records. (PLOTTED AND SHOWN HEREIN)
11. Terms, conditions and provisions contained in Final Order of Determination recorded in Liber 5148, Page 353, Washtenaw County Records. (PLOTTED AND SHOWN HEREIN)



LOCATION MAP

SHEET INDEX

1. ALT-1 = ALTA COVER
2. ALT-2 = ALTA SURVEY
3. ALT-3 = ALTA DETAIL
4. ALT-4 = ALTA DETAIL
5. ALT-5 = ALTA DETAIL
6. ALT-6 = ALTA DETAIL
7. ALT-7 = ALTA DETAIL

MISCELLANEOUS NOTES

1. THERE IS DIRECT ACCESS TO THE SUBJECT PROPERTY VIA MACARTHUR BLVD., A PUBLIC RIGHT-OF-WAY.
2. THE PROPERTY SURVEYED AND SHOWN HEREON IS THE SAME PROPERTY DESCRIBED IN EXHIBIT A OF TITLE AGENCY: CHICAGO TITLE INSURANCE COMPANY, TITLE COMMITMENT NO: 81-25947400-SCM, EFFECTIVE DATE: MARCH 20, 2025.

SURVEYOR'S OBSERVATIONS

AT THE TIME OF THIS SURVEY THE FOLLOWING OBSERVATIONS WERE MADE. NO DOCUMENTATION WAS PROVIDED OR FOUND ADDRESSING THESE OBSERVATIONS. OTHER FEATURES, APPARENT USES, AND/OR IMPROVEMENTS MAY EXIST IN ADDITION TO THOSE NOTED BELOW.

THE FOLLOWING OBSERVATIONS WERE MADE AT THE TIME OF SURVEY:

1. TRAIL OVER SUBJECT PARCEL MAY INDICATE ACCESS OR EXISTENCE OF UTILITIES
2. OFF SITE UTILITY EASEMENT MAY BE INDICATIVE OF UTILITIES CROSSING SITE, SEE OBSERVATION #1
3. SUBJECT PARCEL DESCRIPTION (WITH EXCEPTION OF THE LINE DEFINING THE EXCEPTED AREA) HAS SIGNIFICANT ISSUES. THE NORTH, EAST AND SOUTH BOUNDARY LINES ARE BASED ON RECORDED DESCRIPTIONS OF ADJOINING PARCELS AND ROAD DEDICATIONS. IT IS RECOMMENDED THAT AN "AS-SURVEYED" DESCRIPTION BE PREPARED.
4. THE MACARTHUR BLVD AND STAMFORD RD RIGHT OF WAYS ARE BASED ON DEDICATIONS TO THE WASHTENAW COUNTY ROAD COMMISSION IN THE EARLY 1970'S. ADDITIONAL RIGHT-OF-WAY MAY HAVE SINCE BEEN GIVEN TO THE ROAD COMMISSION OR THE LOCAL MUNICIPALITY BASED ON ADJOINING PARCEL DESCRIPTIONS.
5. DRAIN OVER SITE. NO EASEMENT.
6. STORM LINE AND STRUCTURES OVER SITE. NO EASEMENT.
7. STORM MANHOLE ON SITE, NOT IN EASEMENT.
8. GUY ANCHOR ON SITE, NO EASEMENT.
9. 2 GUY ANCHORS ON SITE, NO EASEMENT.

UTILITY/REFERENCE INFO

WM:	SUPERIOR TOWNSHIP
PHONE:	734-480-5500
RECEIVED:	NO RESPONSE
SAN:	SUPERIOR TOWNSHIP
PHONE:	734-480-5500
RECEIVED:	NO RESPONSE
WM:	YPSILANTI COMMUNITY UTILITIES AUTHORITY
PHONE:	734-544-7316
RECEIVED:	05/02/2025
SAN:	YPSILANTI COMMUNITY UTILITIES AUTHORITY
PHONE:	734-544-7316
RECEIVED:	05/02/2025
PHONE:	AT&T
PHONE:	616-881-2268
RECEIVED:	05/13/2025
CABLE:	COMCAST
PHONE:	855-962-8525
RECEIVED:	05/01/2025
ELEC:	DTE
PHONE:	313-407-5364
RECEIVED:	05/12/2025
GAS:	DTE
PHONE:	313-294-3463
RECEIVED:	05/12/2025
FIBER:	MCI/VERIZON
PHONE:	800-624-9675
RECEIVED:	05/02/2025

UTILITY NOTES

1. ALL UTILITIES SHOWN ARE BASED ON;
   A. SURVEYED MEASUREMENTS
   B. MISS DIG MARKINGS LOCATED AT TIME OF SURVEY, OR;
   C. UTILITY MAPS PROVIDED TO THE SURVEYOR AT THE TIME OF THE SURVEY.
2. THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CERTIFICATION

TO:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS.

THE FIELD WORK WAS COMPLETED ON MAY 13, 2025.

02/12/2026
MARC E. BUDZINSKI, PS — DATE OF PLAT OR MAP:
PROFESSIONAL SURVEYOR
NO. 4001053492

THIS SURVEY PLAT WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS, OR ENTITY NAMED IN THE CERTIFICATION HEREON. SAID CERTIFICATION DOES NOT EXTEND TO ANY UNNAMED THIRD PERSON WITHOUT AN EXPRESS RECERTIFICATION BY THE SURVEYOR NAMING SAID THIRD PERSON.

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www.missdig.org

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THIS SURVEY PREPARED FOR:

Kimley»Horn
KIMLEY-HORN OF MICHIGAN, INC.

1000 TOWN CENTER, SUITE 1900,
SOUTHFIELD, MI 48075
PHONE: 313-572-1560
WWW.KIMLEY-HORN.COM

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PART OF THE SW 1/4, SEC. 35, T.02S., R.07E,
SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MI

PLAN SUBMITTALS/REVISIONS	DATE

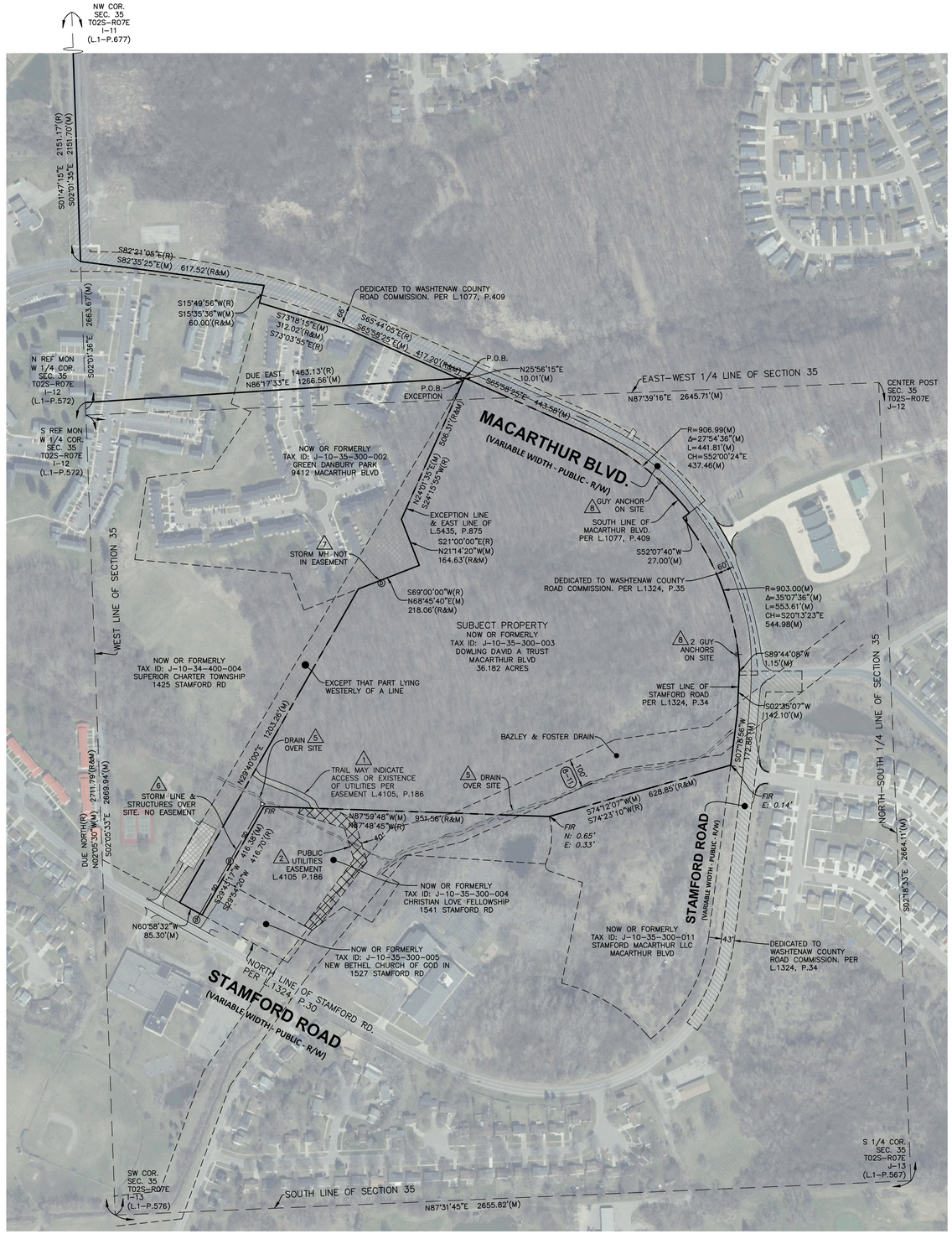
ORIGINAL ISSUE DATE: 02/12/2026

PROJECT NO: 25-073

SCALE: N/A
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-1



NORTH

EXISTING LEGEND

- BOLLARD
- CONTROL BENCHMARK
- CONTROL POINT
- SECTION CORNER
- FOUND MONUMENT
- FOUND MAG NAIL
- SET IRON ROD
- FOUND IRON PIPE
- FOUND IRON ROD
- ROW MONUMENT
- FLAG POLE
- MAIL BOX
- UTILITY POLE
- POST
- SOIL BORING
- WETLAND FLAG
- HANDICAP SYMBOL
- LEFT/RIGHT TURN ARROW
- SIGN
- CABLE MANHOLE
- CABLE PEDESTAL
- SATELLITE DISH
- CALL BOX
- TELEPHONE PEDESTAL
- TELEPHONE HAND HOLE
- TELEPHONE MARKER
- TELEPHONE MANHOLE
- FIBER OPTIC MAKER
- ACCESS COVER
- FUEL TANK LID
- MISC LID
- MONITOR WELL
- GAS MARKER
- GAS METER
- GAS VALVE
- OIL MARKER
- AC UNIT
- AREA LIGHT
- CROSSWALK SIGNAL
- DUCT BANK
- ELECTRICAL BOX
- ELECTRICAL HAND HOLE
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- ELECTRICAL TRANSFORMER
- ELECTRICAL VAULT
- GUY POLE/WIRE
- POWER POLE
- PEDESTRIAN PUSHBUTTON
- TRAFFIC SIGNAL POLE
- TRAFFIC MANHOLE
- YARD LIGHT
- SANITARY CLEANOUT
- SANITARY MANHOLE
- VENT PIPE
- STEAM MANHOLE
- STORM CLEANOUT
- STORM CURB INLET
- STORM INLET
- STORM ROOF DRAIN
- STORM DRAIN MANHOLE
- STORM YARD DRAIN
- FIRE DEPT CONNECTION
- FIRE HYDRANT
- IRRIGATION VALVE
- POST INDICATOR VALVE
- WELL
- WATER METER
- WATER MANHOLE
- WATER VALVE
- TREE / STUMP

- BUILDING
- SWALE
- FENCE LINE
- SANITARY SEWER
- STORM DRAIN
- WATER LINE
- TREE LINE
- TOE OF SLOPE
- TOP OF BANK
- UNDERGROUND FIBER OPTIC
- UNDERGROUND CABLE
- OVERHEAD CABLE
- UNDERGROUND TELEPHONE
- UNDERGROUND FUEL
- UNDERGROUND GAS
- OVERHEAD ELECTRICAL

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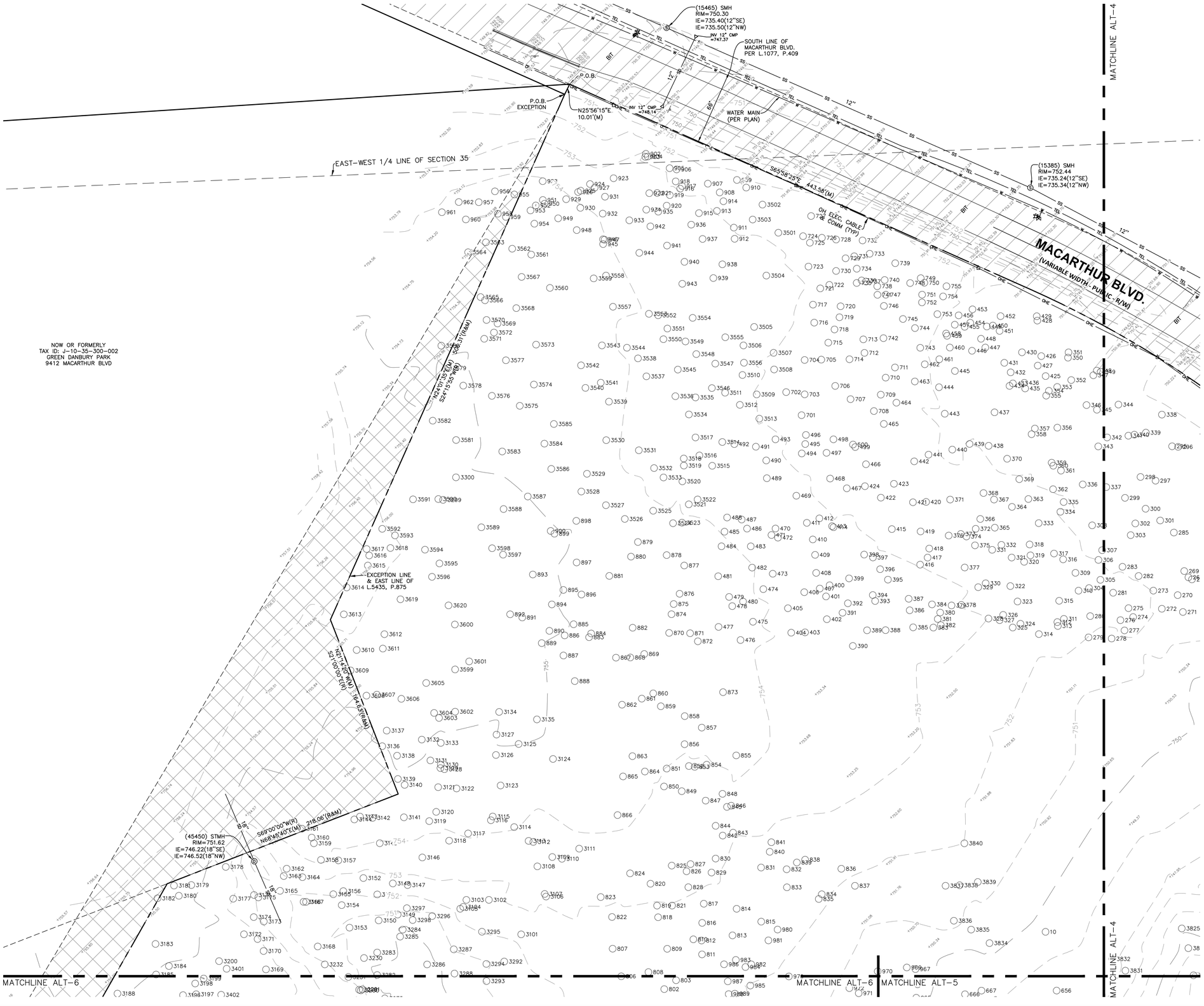
ORIGINAL ISSUE DATE: 02/12/2026

PROJECT NO: 25–073

SCALE: 1" = 200'
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-2

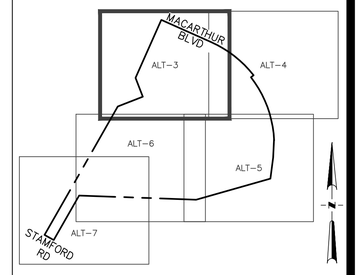


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SHEET KEY



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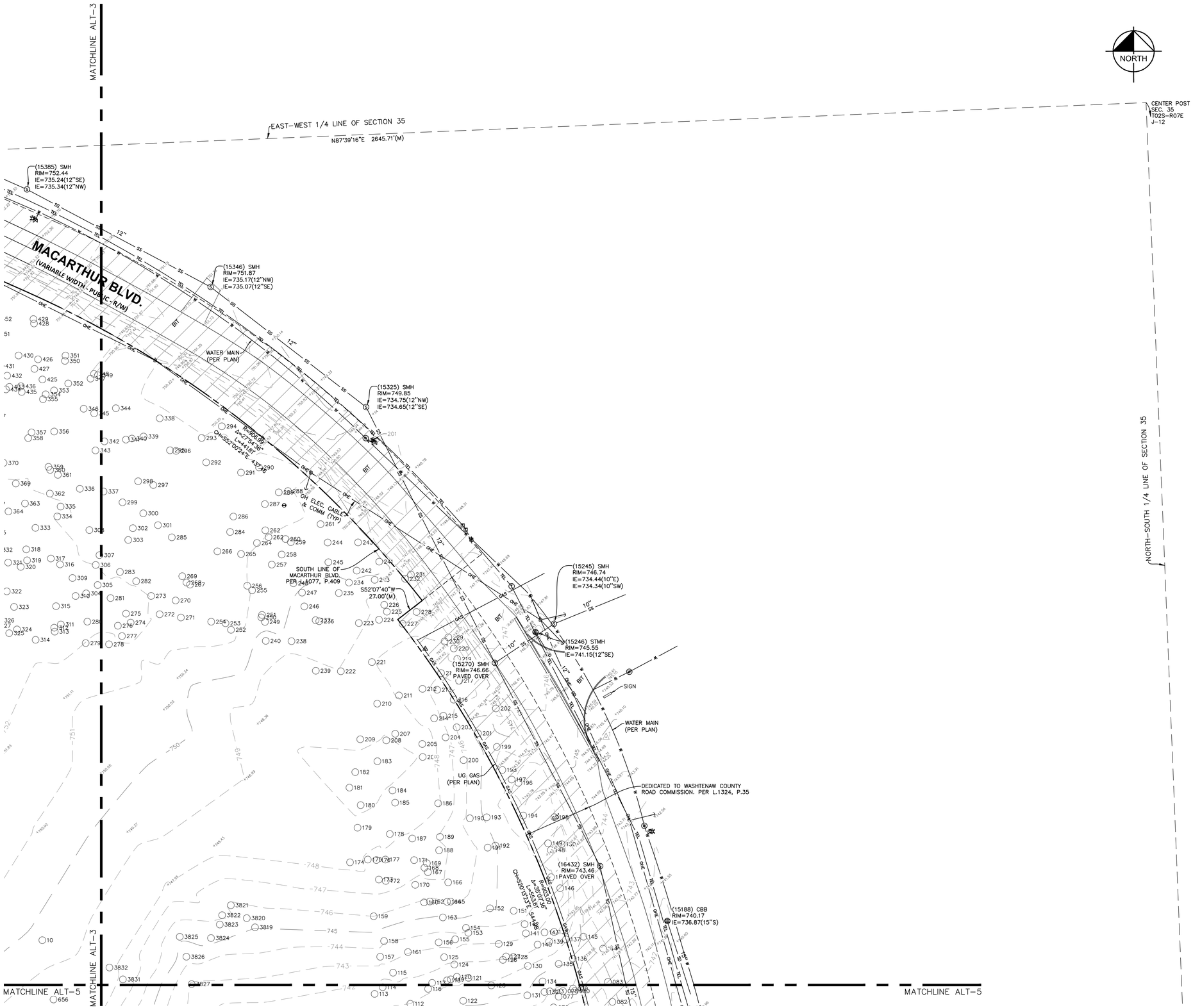
PROJECT NO: 25-073

SCALE: 1" = 200'
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-3

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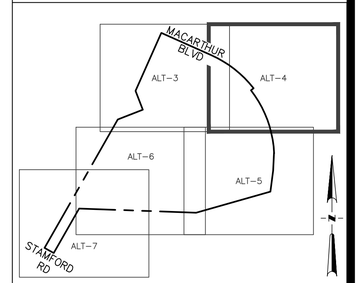


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- ELECTRICAL TRANSFORMER
- ELECTRICAL VAULT
- GUY POLE/WIRE
- POWER POLE
- PEDESTRIAN PUSHBUTTON
- TRAFFIC SIGNAL POLE
- TRAFFIC MANHOLE
- YARD LIGHT
- SANITARY CLEANOUT
- SANITARY MANHOLE
- VENT PIPE
- STEAM MANHOLE
- STORM CLEANOUT
- STORM CURB INLET
- STORM INLET
- STORM ROOF DRAIN
- STORM DRAIN MANHOLE
- STORM YARD DRAIN
- FIRE DEPT CONNECTION
- FIRE HYDRANT
- IRRIGATION VALVE
- POST INDICATOR VALVE
- WELL
- WATER METER
- WATER MANHOLE
- WATER VALVE
- TREE / STUMP

- BUILDING
- SWALE
- FENCE LINE
- SANITARY SEWER
- STORM DRAIN
- WATER LINE
- TREE LINE
- TOE OF SLOPE
- TOP OF BANK
- UNDERGROUND FIBER OPTIC
- UNDERGROUND CABLE
- OVERHEAD CABLE
- UNDERGROUND TELEPHONE
- UNDERGROUND FUEL
- UNDERGROUND GAS
- OVERHEAD ELECTRICAL

SHEET KEY



SHEET INDEX

1. ALT-1 = ALTA COVER
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4. ALT-4 = ALTA DETAIL
5. ALT-5 = ALTA DETAIL
6. ALT-6 = ALTA DETAIL
7. ALT-7 = ALTA DETAIL

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MEGA Engineering Group Associates, Inc. Monument

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MICHIGAN 48836
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1000 TOWN CENTER, SUITE 1900,
SOUTHFIELD, MI 48075
PHONE: 313-572-1560
WWW.KIMLEY-HORN.COM

ALTA/NSPS LAND TITLE SURVEY

KH MACARTHUR SUPERIOR TOWNSHIP
PART OF THE SW 1/4, SEC. 35, T.02S., R.07E,
SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MI

DATE	PLAN SUBMITTALS/REVISIONS

ORIGINAL ISSUE DATE: 02/12/2026

PROJECT NO: 25-073

SCALE: 1" = 200'
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-4

MATCHLINE ALT-3 | MATCHLINE ALT-6 | MATCHLINE ALT-3 | MATCHLINE ALT-4 | MATCHLINE ALT-4

MATCHLINE ALT-6

MACARTHUR BLVD
(VARIABLE WIDTH - PUBLIC - R/W)

STAMFORD ROAD
(VARIABLE WIDTH - PUBLIC - R/W)

WEST LINE OF MACARTHUR BLVD PER L.1324, P.35

WEST LINE OF STAMFORD ROAD PER L.1324, P.34

S89°44'08"W 1.15'(M)

S0°36'07"W 1742.10'(M)

S74°12'07"W(M) 628.85'(R&M)
S74°23'10"W(R)

UG GAS (PER PLAN)

OH ELEC, CABLE & COMM (TYP)

WATER MAIN (PER PLAN)

(15157) SMH
RIM=739.69
IE=732.39(15"S)
IE=732.49(15"N)

(15149) INLS
RIM=737.70
IE=734.40(12"S)

(16434) SMH
RIM=738.91
IE=720.21(24"S)
IE=720.11(24"NE)

(16435) SMH
RIM=739.17
IE=720.77(24"N)
IE=720.87(24"S)

(15067) SMH
RIM=738.75
IE=728.55(15"N)
IE=728.45(15"NE)

(16438) SMH
RIM=734.08
NO LID. CASTING
FULL OF DEBRIS

(16437) SMH
RIM=743.25
IE=720.75(24"N)
IE=720.85(24"S)

INV 15" RCP
=735.87

INV 72" RCP
=728.52

INV 72" RCP
=728.43

INV 24" RCP
=733.46

BAZLEY & FOSTER DRAIN

SANITARY LINES BULKHEADED & NO LONGER IN SERVICE (PER PLAN)

SMH PER PLAN
NOT FOUND IN FIELD
POSSIBLY ABANDONED

FIR
N: 0.65'
E: 0.33'

FIR
E: 0.14'

DEDICATED TO WASHTENAW COUNTY ROAD COMMISSION. PER L.1324, P.34

43'

NOW OR FORMERLY
TAX ID: J-10-35-300-011
STAMFORD MACARTHUR LLC
MACARTHUR BLVD

100'

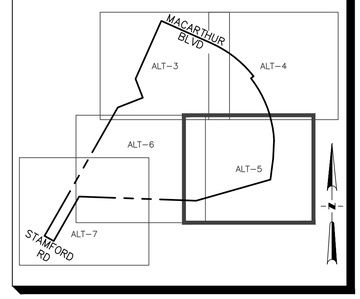
NORTH

EXISTING LEGEND

- BOLLARD
- CONTROL BENCHMARK
- CONTROL POINT
- SECTION CORNER
- FOUND MONUMENT
- FOUND MAG NAIL
- SET IRON ROD
- FOUND IRON PIPE
- FOUND IRON ROD
- ROW MONUMENT
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- MAIL BOX
- UTILITY POLE
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- WETLAND FLAG
- HANDICAP SYMBOL
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- SIGN
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- TELEPHONE HAND HOLE
- TELEPHONE MARKER
- TELEPHONE MANHOLE
- FIBER OPTIC MAKER
- ACCESS COVER
- FUEL TANK LID
- MISC LID
- MONITOR WELL
- GAS MARKER
- GAS METER
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KH MACARTHUR SUPERIOR TOWNSHIP
PART OF THE SW 1/4, SEC. 35, T.02S., R.07E,
SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MI

PLAN SUBMITTALS/REVISIONS	DATE

ORIGINAL ISSUE DATE: 02/12/2026

PROJECT NO: 25-073

SCALE: 1" = 200'
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-5

FILE:P:\Projects\2025\25-073 KH MacArthur Superior Twp\Dwg\Survey\25-073_ALTA_KH.dwg PLOT DATE:2/12/2026 1:31 PM

MATCHLINE ALT-3

MATCHLINE ALT-5

MATCHLINE ALT-7

NOW OR FORMERLY
TAX ID: J-10-34-400-004
SUPERIOR CHARTER TOWNSHIP
1425 STAMFORD RD

EXCEPT THAT PART LYING WESTERLY OF A LINE

SUBJECT PROPERTY
NOW OR FORMERLY
TAX ID: J-10-35-300-003
DOWLING DAVID A TRUST
MACARTHUR BLVD
36.182 ACRES

N29°40'06"E 1203.28'(M)

TRAIL MAY INDICATE ACCESS OR EXISTENCE OF UTILITIES PER EASEMENT L.4105, P.186

(15593) SMH
RIM=740.55
IE=732.65(18"NW)
IE=732.45(18"S)

INV 12" RCP
=737.89

(15594) SMH
RIM=741.20
IE=732.60(18"N)
IE=732.80(18"E)

FIR

N87°59'48"W(M) 951.56'(R&M)
N87°48'45"W(R)

SANITARY LINES BULKHEADED & NO LONGER IN SERVICE (PER PLAN)

SMH PER PLAN NOT FOUND IN FIELD POSSIBLY ABANDONED

BAZLEY & FOSTER DRAIN

(15598) SMH
RIM=738.92
IE=730.72(18"W)
IE=730.57(18"E)
SE INV. NOT VISIBLE

NOW OR FORMERLY
TAX ID: J-10-35-300-004
CHRISTIAN LOVE FELLOWSHIP
1541 STAMFORD RD

PUBLIC UTILITIES EASEMENT L.4105 P.186

FIR
N: 0.65'
E: 0.33'

SMH PER PLAN NOT FOUND IN FIELD POSSIBLY ABANDONED

SANITARY LINES BULKHEADED & NO LONGER IN SERVICE (PER PLAN)

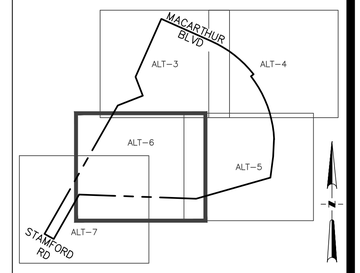
INV 18 RCP
=734.53

EXISTING LEGEND

- BOLLARD
- CONTROL BENCHMARK
- CONTROL POINT
- SECTION CORNER
- FOUND MONUMENT
- FOUND MAG NAIL
- SET IRON ROD
- FOUND IRON PIPE
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- ACCESS COVER
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- MISC LID
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- UNDERGROUND TELEPHONE
- UNDERGROUND FUEL
- UNDERGROUND GAS
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SHEET KEY



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7. ALT-7 = ALTA DETAIL

NORTH

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ALTA/NSPS LAND TITLE SURVEY

KH MACARTHUR SUPERIOR TOWNSHIP
PART OF THE SW 1/4, SEC. 35, T.02S., R.07E,
SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MI

DATE	PLAN SUBMITTALS/REVISIONS

ORIGINAL ISSUE DATE: 02/12/2026

PROJECT NO: 25-073

SCALE: 1" = 200'
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-6

FILE:P:\Projects\2025\25-073 KH MacArthur Superior Twp\Dwg\Survey\25-073_ALTA_KH.dwg PLOT DATE:2/12/2026 1:31 PM

MATCHLINE ALT-6

(16443) SMH
RIM=744.80
IE=735.20(18"SE)
IE=735.40(18"W)

(16442) SMH
RIM=744.28
IE=735.78(18"NW)
IE=735.58(18"E)

N29°40'00"E 1263.35'(M)

TRAIL MAY INDICATE ACCESS OR EXISTENCE OF UTILITIES PER EASEMENT L.4105, P.186

(15593) SMH
RIM=740.55
IE=732.65(18"NW)
IE=732.45(18"S)

INV 12" RCP =737.89

(15594) SMH
RIM=741.20
IE=732.60(18"N)
IE=732.80(18"E)

N87°59'48"W(M) 951.56'(R&M)
N87°48'45"W(R)

SANITARY LINES BULKHEADED & NO LONGER IN SERVICE (PER PLAN)

SMH PER PLAN NOT FOUND IN FIELD POSSIBLY ABANDONED

(15598) SMH
RIM=738.92
IE=730.72(18"W)
IE=730.57(18"E)
SE INV. NOT VISIBLE

SANITARY LINES BULKHEADED & NO LONGER IN SERVICE (PER PLAN)

INV 18 RCP =734.53

SMH PER PLAN NOT FOUND IN FIELD POSSIBLY ABANDONED

BAILEY & FOSTER DRAIN

NOW OR FORMERLY
TAX ID: J-10-35-300-004
CHRISTIAN LOVE FELLOWSHIP
1541 STAMFORD RD

PUBLIC UTILITIES EASEMENT L.4105 P.186

WOOD WALL

GRAVEL

(45667) STMH
RIM=745.47
IE=740.22(15"SW)
IE=740.17(15"NE)

S29°40'00"W 405.38'(M)
S29°54'20"W 418.10'(R)

INV 12" CMP =746.49

INV 12" CMP =746.02

N60°58'32"W (R&C 351'M)

(15793) STMH
RIM=745.07
IE=741.72(15"NE)
IE=741.82(12"NW)

INV 12" CMP =744.36

INV 12" CMP =743.70

NOW OR FORMERLY
TAX ID: J-10-35-300-005
NEW BETHEL CHURCH OF GOD IN
1527 STAMFORD RD

STAMFORD ROAD
(VARIABLE WIDTH - PUBLIC - R/W)

NORTH LINE OF STAMFORD RD. PER L.1324, P.30

MATCHLINE ALT-6

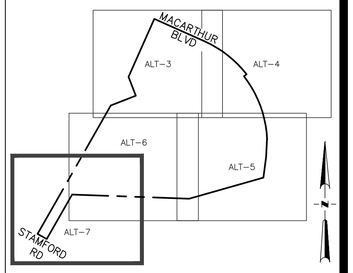
NORTH

EXISTING LEGEND

- BOLLARD
- CONTROL BENCHMARK
- CONTROL POINT
- SECTION CORNER
- FOUND MONUMENT
- FOUND MAG NAIL
- SET IRON ROD
- FOUND IRON PIPE
- FOUND IRON ROD
- ROW MONUMENT
- FLAG POLE
- MAIL BOX
- UTILITY POLE
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- FIBER OPTIC MAKER
- ACCESS COVER
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DATE	PLAN SUBMITTALS/REVISIONS

ORIGINAL ISSUE DATE: 02/12/2026

PROJECT NO: 25-073

SCALE: 1" = 200'
0 1/2" 1"

FIELD: MJ, JM, RZ, MD
DRAWN BY: CSD
DESIGN BY: N/A
CHECK BY: MB, PL

ALT-7

FILE:P:\Projects\2025\25-073 KH MacArthur Superior Twp\Dwg\Survey\25-073_ALTA_KH.dwg PLOT DATE:2/12/2026 1:31 PM

Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: April 7, 2026

Area Plan Amendment Review
For
Superior Township, Michigan

Applicant: Willow Run Acres

Project Name: Clay Hill Farm Market

Location: 1850 Harris Road and 9051 Macarthur Blvd (J-10-35-200-003, 004 and 009)

Plan Date: March 11, 2026

Current Zoning: PC, Planned Community

Action Requested: Amendment to Area Plan Petition Approval

PROJECT DESCRIPTION

An application has been submitted by Willow Run Acres for an amendment to the approved Area Plan in the PC, Planned Community District. The applicant provided a full site plan for use as the area plan, which illustrates the proposed layout of a community garden and educational center, including composting and vermiculture sheds, hoop house, multi-purpose building, sheds, detention basin, parking area, and gardens throughout. The property is owned by the Township and Willow Run Acres was issued a 15 year lease.

The applicant previously received area plan approval from the Board of Trustees on October 16, 2023, which was extended on June 16, 2025. Following this extension, the applicant submitted a site plan for consideration by the Planning Commission. The site plan substantially deviated from the approved area plan. As such, an area plan amendment is required.

Willow Run Acres has conducted work on the property that was previously approved under "Phase 1" of the area plan, as indicated on the following page.

Benjamin R. Carlisle, *President* John L. Enos, *Vice President*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal* Brent Strong, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* Craig Strong, *Principal* Douglas J. Lewan, *Principal*
Richard K. Carlisle, *Past President/Senior Principal* R. Donald Wortman, *Past Principal*

Phase 1:

- J-10-35-200-009 (Harris Road)
    - Remove vegetation and plant crops, orchard, vineyard
    - Install a fence
    - Add a 12' x 12' shed (dirt floor)
    - Water spigot from well
    - Store a food cart on wheels
- J-10-35-200-003 (MacArthur Blvd West Parcel)
    - Install a well, which will include a pipeline to the Harris Road property
    - Pump House
- J-10-35-200-004 (MacArthur Blvd East Parcel)
    - Remove vegetation at eastern most border and plant a u-pick garden

Following site plan submittal for the Phase 2 structures and uses, it was determined that the project scope has decreased substantially from the structures and uses indicated in the Area Plan resolution of approval. The amended area plan petition includes the following structures and uses in Phase 2:

Phase 2:

- J-10-35-200-003 (MacArthur Blvd West Parcel)
    - Raised beds for community garden
- J-10-35-200-009 (Harris Road)
    - Hoop House
    - Three composting sheds, one with solar array
    - Picnic tables with solar panels
    - Fencing, gardens, and gravel footpaths throughout project area
    - Farm bot

- J-10-35-200-004 (MacArthur Blvd East Parcel)
    - Multi-purpose building, including bathroom and kitchenette
    - 2 Sheds
    - Hoophouse
    - Hydroponic farm
    - Cider press
    - Beehive station
    - Driveway off of MacArthur Blvd, with gated parking area
    - Fencing, gardens, and gravel footpaths throughout project area
    - Detention basin

Features that were included in the original Area Plan approval which do not appear in the amended Area Plan application are listed below.

- Observational Tower
- Alpaca and fainting goat for children's entertainment and education
- Changes to the site layout

Aerial Photograph



The Zoning and existing land uses for the subject site and surrounding parcels are identified in the following table:

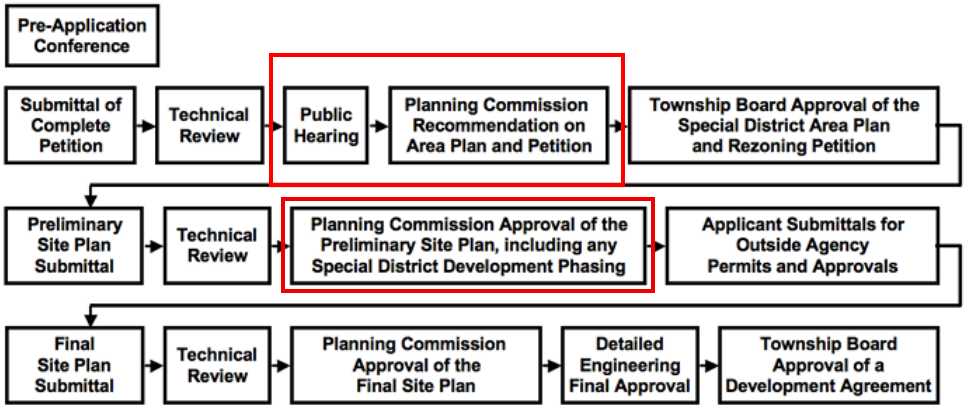
Direction	Zoning	Existing Use
North	A2 – Agriculture District	Vacant
South	R7	Multiple Family Residential
East	RC, and PD	Vacant
West	PSP and R4	Park, Stormwater, Single Family Residential

PROCESS

The Area Plan amendment procedure reflects the general Area Plan procedure outlined in 7.100. At this point in the process, the applicant is seeking approval of the Area Plan which area already zoned PC, Planned Community. The Planning Commission holds the public hearing and is the recommending body on the Area Plan. The Township Board has ultimate authority or approval or denial upon the Area Plan. Per our recommendation, the applicant will concurrently be seeking site plan approval to meet time constraints to receive project funding. Any site plan approval must be conditioned upon the Township Board of Trustees issuing approval of the Area Plan amendment.

SECTION 7.100

REVIEW PROCEDURES



MASTER PLAN

The site is located in the Geddes Road Urban Sub-area of the Township Growth Management Plan. As described in the Plan (Page 6-9 through 6-10):

> *This area of about one mile by four and one-half miles contains about 65% of the Township population in a mix of single-family, multi-family, and manufactured housing. There is also a small commercial area along the southern border of Superior Township, adjacent to the northern edge of the City of Ypsilanti and Ypsilanti Township, and another small commercial area across from the Township Fire Hall on Harris near MacArthur. This sub-area also includes the majority of land designated as the Urban Service Area of the Township (see Map 6-3).*
>
> *Existing dwelling unit densities in some locations within the designated Urban Service Area range up to eight dwelling units per acre. Most of the undeveloped land is planned at a maximum density of approximately four dwelling units per acre to stay within available utility capacity, based on:*
>
> 1) *the amount of developable land in the Urban Service Area; and*
> 2) *the size and capacity of utility infrastructure and the main sewer interceptor pipe;*
> 3) *anticipated flow rates and infiltration of groundwater into the system.*
>
> *Housing ranges in age from many decades old to new construction and also varies in size from small apartment units to large homes. This subarea is very important to the Township as it provides a variety of housing types in a range of densities with public*

sewer and water service. This option is not available elsewhere in the Township. The Township will continue to focus on improvements in this area. Among the most immediate of these improvements will be stabilizing and strengthening existing residential neighborhoods. This will be accomplished through:

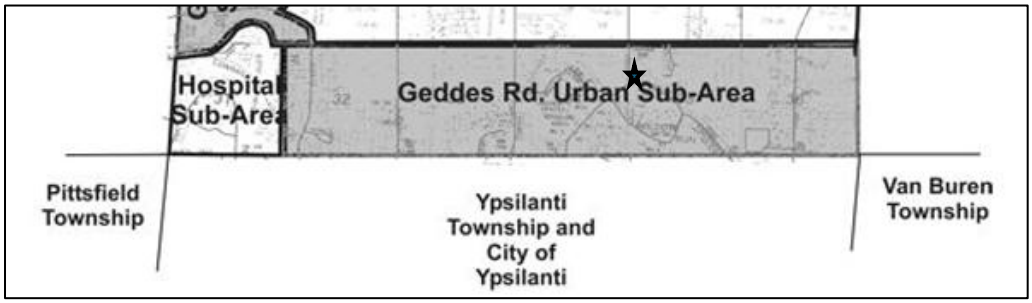
- *enforcement of property maintenance and building codes;*
- *support for resident-led initiatives to form or reactivate neighborhood groups or homeowners associations; and*
- *encouragement of public and private sector projects to remove blighted structures, rehabilitate older dwellings, and construct new infill dwellings on vacant lots.*

In addition, the Township expects that stalled or partially completed housing developments in this sub-area, which have already received preliminary or final approval from the Township, will be completed before development of additional urban residential lots may be approved.

The Township will also focus on further installation of sidewalks and paved bicycle/pedestrian pathways in those developed parts of the subarea that do not have them, and requiring all new development in the sub-area to put in sidewalks or an acceptable pedestrian/bike trail system.

The Future Land Use Plan (page 6-20) identifies this area as a Mixture of Urban Residential Development. The principal purpose of the Mixture of Urban Residential Development is to promote new residential development is expected at a density of four dwelling units per acre and is likely to occur via the Planned Community zoning classification (a form of planned unit development) where there are sensitive natural features, and via traditional subdivision or site condominium development designs in other areas.

The corresponding Zoning Plan (page 7-3) designates the area as Urban Residential Development.



The principal purpose of the Urban Residential District designation is to provide for a range of residential dwelling types at urban densities within individual zones tailored for that specific use. Densities range from two (2) to eight (8) dwelling units per acre. The bulk of land zoned into one of these districts is located in the designated Urban Service Area south of Geddes Road.

The Township's Master Plan is a comprehensive document that includes many other elements that should be considered these include community character/quality of life,

impact/preservation of natural features, growth management, and housing and neighborhood design. These other elements should be considered by the Planning Commission.

PREVIOUS PLANNING COMMISSION REVIEW

The Planning Commission previously recommended approval of the Clay Hill Farm Area Plan and Rezoning on June 28, 2023. The proposed Area Plan amendment includes a reduction in the project scope in Phase 2. The scope of work in Phase 2 requires site plan review and approval by the Planning Commission. As part of the review of the Area Plan, the Planning Commission may recommend any conditions they deem necessary to meet the required standards of the PC, Planned Community district.

DISTRICT INTENT

Special Districts

As set forth in Section 7.001, the Authority to Establish Special Districts as defined in Article 2.0 (Zoning Districts), is established in accordance with Section 503 of the Michigan Zoning Enabling Act. These Special Districts are designed to accomplish the objectives of this Ordinance through a development review process intended to achieve integration of the proposed development project with the characteristics of the project area. These Special Districts are intended to permit flexibility in the regulation of land development; encourage innovation in land use and variety in design, layout, and type of structures constructed; achieve economy and efficiency in the development and use of land, natural resources, energy, and the provision of public services and facilities; encourage useful open space; and provide better housing, employment, and shopping opportunities particularly suited to the needs of the residents of the Township. The intent of these special districts is to:

- Provide for increased flexibility and encourage innovation in design and layout of land development, subject to proper administrative standards and procedures.
- Lessen the burden of traffic on streets and highways, and provide for an integrated system of sidewalks, pedestrian pathways, and other non-transportation facilities.
- Provide for a compatible mix of land uses in each Special District.
- Establish planning, review, and approval procedures that properly relate the type, design, and layout of development to the site and surrounding area.
- Encourage innovation in residential and nonresidential development so that greater opportunities for better housing, recreation, and shops conveniently located to each other may extend to all citizens and residents of Superior Township; and so that the growing demands of the Township's population may be met by a greater variety in type, design, and layout of buildings and by the conservation and more efficient use of open space ancillary to these buildings.

Planned Community District

The Township Zoning Ordinance has multiple "special districts", one of which is the PC, Planned Community District. The intent of the PC, Planned Community District is as follows:

The Planned Community (PC) Special District option encourages greater collaboration between the developer and the Township in the development process, and allows additional freedom for the developer to take an even more creative approach to land use and development than otherwise permitted under this Ordinance. The PC Special District option offers greater flexibility in the design of land development, maximizing the developer's ability to take advantage of natural topography, vegetation, watercourses, and other site features in designing the development.

STANDARDS

As set forth in Section 7.102.C, when reviewing an Area Plan amendment petition, the Planning Commission shall determine and provide evidence in its report to the Township Board that the petition meets the following standards:

1. **Growth Management Plan policies.** The proposed development shall conform to the adopted Growth Management Plan.

2. **Ordinance standards.** The proposed development shall conform to the intent, regulations, and standards of the proposed Special District and this Ordinance.

3. **Public facilities.** The proposed development shall be adequately served by public facilities and services, such as highways, streets, police and fire protection, drainage courses, water and sanitary sewer facilities, and refuse disposal, or that the persons or agencies responsible for the proposed development shall be able to provide, in a manner acceptable to the Township Board, such facilities and services.

4. **Open space and recreation areas.** The common open space, any other common properties, individual properties, and all other elements of a Special District are so planned that they will achieve a unified open space and recreation area system, with open space and all other elements in appropriate locations, suitably related to each other, the site, and the surrounding land.

5. **Common areas and improvements.** The petitioner shall have made satisfactory provision to ensure that those areas shown on the plan for use by the public or by occupants of the development will be or have been irrevocably committed for that purpose. Provisions shall have been made to provide for the financing and maintenance of improvements shown on the plan for open space areas, and common use areas which are to be included within the development.

6. **Location and layout.** The location of the proposed uses, layout of the site, and its relation to streets giving access to it, shall be such that traffic to, from, and within the site, and assembly of persons in connection therewith, will not be hazardous or inconvenient to the project or the neighborhood. In applying this standard, the Planning Commission shall consider, among other things, convenient routes for pedestrian traffic, particularly of children, relationship of the proposed project to main thoroughfares and street intersections, and the general character and intensity of the existing and potential development of the neighborhood.

7. **Compatibility of land uses.** The proposed use(s), mix of housing unit types and densities, or mix of residential and non-residential uses shall satisfy the intent of the proposed Special District, conform to applicable use standards and limitations, and be acceptable in terms of convenience, privacy, compatibility, and similar standards.

8. **Minimize adverse impacts.** That noise, odor, light, or other external effects from any source whatsoever, which is connected with the proposed use, will not adversely affect adjacent and neighboring lands and uses.

9. **Preservation of natural features.** The proposed development shall create a minimum disturbance to natural features and landforms.

10. **Streets.** Streets shall follow topography, be properly spaced, and be located and aligned in accordance with the intended function of each street. The property shall have adequate access to public streets. The plans shall provide for logical extensions of public streets and shall provide suitable street connections to adjacent parcels, where applicable.

11. **Pedestrian facilities.** Major pedestrian circulation shall be provided for within the site and shall interconnect all use areas, where applicable. The pedestrian system shall provide for logical extensions of pedestrian ways outside the site, and pedestrian connections to the site boundaries, where applicable.

SUMMARY

We recommend that the Planning Commission consider the area plan amendment and have drafted a Resolution of Approval.

Benjamin R. Carlisle

CARLISLE/WORTMAN ASSOC.,INC
Benjamin R. Carlisle, AICP, LEED AP
President

CARLISLE/WORTMAN ASSOC., INC.
Michelle Marin, AICP
Associate Planner

cc: Emily Dabish Yahkind, Township Supervisor
Angela Robinson, Township Clerk
Dan Kimball, Fire Marshall
George Tsakof, Township Engineer
Mariah Cummings, Township Engineer

April 2, 2026

CHARTER TOWNSHIP OF SUPERIOR
3040 N. Prospect Road
Ypsilanti, MI 48198

Attention: **Emily Dabish Yahkind, Township Supervisor**

Regarding: **Clay Hill Farm Market**
Combined Amended Area Plan and Preliminary Site Plan Review
OHM Job No. 0140-23-1050

Dear Dabish Yahkind,

On behalf of the Township, we have reviewed the Amended Area Plan and Preliminary Site Plan submittal for the above referenced project, dated March 11, 2026. We understand that the application will be considered by the Planning Commission at their regular meeting on April 22nd regarding Amended Area Plan and Preliminary Site Plan approval. Therefore, we offer the following comments to the Planning Commission related to the site/civil engineering aspects of the area plan/site plan for their consideration during the decision process.

General

1. We note that the plan set does not include any information regarding proposed work on the northern Harris Road parcel (ID J-10-35-200-009), and therefore we are unable to review proposed improvements on that parcel for compliance with Township standards.

2. We note that proposed improvements such as beehives and farm crops are shown outside the property boundaries on the north and east sides of the parcel. Please state the intention of the proposed work located outside the property boundaries.

3. The Township Zoning Ordinance requires the gross and net land area to be listed on the plans.

4. Delineation of required setback areas and transition strips required by the Township Zoning Ordinance should be shown on the plans.

5. It is noted on the topographic survey sheets that easements of record will not be shown on the plans "until an updated title policy has been furnished to the surveyor by the owner." Future plan submittals should show all existing easements on the subject parcels.

6. The plans should include information regarding the removal, alteration, or preservation of existing features on the subject parcels. It appears that some callout notes regarding removals are included on the plans but are either incomplete or incorrect:

    a. The callout note for existing gravel driveway removal off Harris Road is pointing to existing asphalt drive approaches. Additionally, the adjacent gravel circle driveway appears to partially remain on the site plan. The callout note and plans should be updated to accurately reflect the pavement and gravel removals.

b. It is unclear if the existing culverts under the drive approaches off Harris Road are being replaced. Removal without replacement would likely inhibit drainage in the existing ditch line.

c. It appears that the existing asphalt parking lot will remain in place and a portion will be removed and replaced to install a proposed catch basin. The limits of pavement replacement should be shown on the plans, and a typical cross section detail should be included.

d. The plans should also indicate removal, alteration, or preservation of existing features on the site such as basketball pole foundations, light pole base/foundations, electric meter boxes, signs, trees/woods, etc. This is typically shown on a separate demolition plan sheet.

7. The plans should include information regarding general areas of intended filling or cutting of grades.

8. The plans should include the location of any proposed outdoor waste receptacle enclosures.

9. The dimensions, materials, and typical vertical sections of the proposed retaining wall should be included in the plans.

10. The typical cross section, materials, and height of proposed gates and fences should be included in the plans. It also appears that a gate is proposed at the parking lot entrance but is not labeled.

11. The limits of existing wetlands should be shown on the plans. Any proposed work located within a regulated wetland would require a permit from the Michigan Department of Environment, Great Lakes, and Energy (EGLE). We recommend that an environmental consultant assess wetland impact further for the applicant.

12. It is noted on Sheet C6 Grading & SESC Plan that an area of contaminated soil will be removed. A Due Care Plan for managing contaminated soils may be required by EGLE for this site and should be included at the final site plan submittal stage. We recommend that the applicant engage the services of an environmental engineer to assist with oversight of handling and disposal of contaminated soil and navigating EGLE requirements in this regard.

13. The grading plan will be reviewed in detail at the Final Site Plan stage.

Pavement / Parking Areas

14. Parking calculations should be included in the plan submission to verify minimum required parking is provided.

15. The Township Zoning Ordinance requires parking spaces in the proposed layout to be a minimum of 9 feet wide, 20 feet long, and have a 20-foot-wide maneuvering aisle. The plan does not appear to meet the required parking space length.

Utilities

16. On Sheet C3 Utility Plan, please adjust the overlapping callout notes at the farm market & educational center regarding proposed utilities.

17. Existing sanitary manholes, water valves & wells, and fire hydrants should be shown on the utility plan sheet.

18. The slope of proposed storm sewers listed in callout notes on Sheet C3 Utility Plan should match those shown in the storm sewer profiles.

Outside Agency Approvals

19. The stormwater management design will need to meet Washtenaw County Water Resources Commissioner (WCWRC) Standards. We understand that the plans have been submitted to WCWRC for review and approval, and a drain use application has been submitted for the proposed stormwater discharge to the Geddes Ridge Sub drain. The approval of the stormwater management design needs to be reasonably assured from the WCWRC prior to the Final Site Plan being presented to the Planning Commission.

20. The soil erosion and sedimentation control (SESC) measures on the site plan would need to meet the requirements of WCWRC and would require future review and approval from WCWRC. A copy of their approval letter will be required or must be reasonably assured prior to Final Site Plan approval.

21. Any work proposed in the Harris Road and/or Macarthur Blvd. Right-of-way (ROW) would need to meet the requirements of the Washtenaw County Road Commission (WCRC). A copy of their approval letter will be required or must be reasonably assured prior to Final Site Plan approval.

If you have any questions regarding our review, please do not hesitate to contact me at (734) 466-4439.

Sincerely,
OHM Advisors

_____
George Tsakoff, PE
Principal

cc: Angela Robinson, Township Clerk (via e-mail)
Bill Balmes, Building Department (via e-mail)
Ben Carlisle, CWA, Township Planner (via email)
Michelle Marin, CWA, Township Planner
Mariah Cummings, OHM Advisors
file

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

811

Know what's **below.**
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CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

CONTACT INFORMATION:

OWNER

EMILY DABISH YAHKIND
edy@superior-twp.org
(734) 482-6099
3040 N. PROSPECT RD.
SUPERIOR TOWNSHIP, MI 48198

DEVELOPER

TC COLLINS
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willowrunacres@gmail.com
111 SOUTH WALLACE BLVD.
YPSILANTI, MI 48197

ENGINEER

MICHELLE THOMPSON, P.E.
mjwoods@mtu.edu

ANDREW O'CONNOR
(248) 921-4885
oconnora153@gmail.com

1031 33RD ST.
DENVER, CO 80205

Community Engineering Corps

NATALIE CELMO, P.E.
(412) 477-4792
natalie.celmo@ewb-usa.org
1031 33RD ST.
DENVER, CO 80205

ARCHITECT

STEVEN EGGLESTON
(970) 846-2147
solstudio@earthlink.net
24723 LEHIGH ST.
DEARBORN HEIGHTS, MI 48128

SITE PLAN
CLAY HILL COMMUNITY FARM & GARDEN

NORTHWEST 1/4 OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR CHARTER TOWNSHIP, WASHTENAW COUNTY

SHEET INDEX:

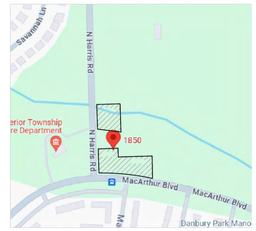
C1 COVER
C2 SITE PLAN
C3 UTILITY PLAN
C4 DRAINAGE PLAN
C5 STORM PROFILES
C6 GRADING & SESC PLAN
C7 DETENTION BASIN & STORM DETAILS
C8 DETENTION BASIN CALCULATIONS
C9 LANDSCAPING PLAN

REFERENCES:

TOPOGRAPHIC SURVEY

CHARTER TOWNSHIP OF SUPERIOR STANDARD STORM SEWER DETAILS





LOCATION MAP
NOT TO SCALE

PUBLIC UTILITIES CONTACT

The existing utilities listed below and shown on these plans represent the best information available as obtained from surveys. This information does not relieve the contractor of the responsibility to be satisfied as to its accuracy and the location of existing utilities.

NAME OF OWNER	TYPE OF UTILITY
SUPERIOR TOWNSHIP (UTILITIES) 3040 NORTH PROSPECT SUPERIOR TOWNSHIP, MI 48198 (CORNER OF CLARK AND PROSPECT ROADS)' PHONE: 734-482-6099 FAX: 734-482-3842 UTILITYDEPT@SUPERIOR-TWP.ORG	Municipal
SUPERIOR TOWNSHIP (WASHTENAW) POTABLE WATER Phone: 7344805500	Municipal
SUPERIOR TOWNSHIP (WASHTENAW) SANITARY SEWER Phone: 7344805500	Municipal
COMCAST CABLE TV Phone: 8559628525 Email:	Telecom
DTE Energy/ Electric 101 S Washington Square, Lansing, MI 48933 Phone: 800-477-4747 www.dteenergy.com	Electric
CONSUMERS ENERGY GAS 530 W Willow St, Lansing, MI 48906 Phone: 800-477-5050 www.consumersenergy.com	Gas
Great Lakes GPR (Private Locator) 1230 N Maple Rd, Ann Arbor, MI 48103 Phone: (734)474-4591 Phone: (734)780-6849 Ann Arbor, MI (248)704-3879 www.greatlakesgpr.com	Utilities

PROPERTY (LEGAL) DESCRIPTION:

OWNER NAME (ASSESSOR): SUPERIOR CHARTER TOWNSHIP

1850 HARRIS RD:
OLD SID - J 10-035-006-05 SU 35-5A-1C COM AT NW CORNER SEC 5, TH S 1-47-15 E 2151.7 FT TO POB,
TH S 87-56-30 E 196.7 FT, TH N 4-40 E 60 FT, TH N 1-47-15 W 213.57 FT, TH S 88-12-45 W 203.0 FT,
TH SOUTH TO POB PART OF NW 1/4 SEC 35 T2S R7E 1.0 AC

OWNER NAME: GEDDES RDG SUB DRAINAGE DIST, % WASH COUNTY DRAIN COMM
HARRIS RD:
TRF 07/22/96 W.D. L3325 P924 FROM 1035200007 07/22/96 SU 35-5A-1A-1A
COM AT NW COR SEC 35, TH S 01-47-15 E 1520.09 FT ALNGC/L HARRIS RD TO POB,
TH N 88-27-45 E 233.00 FT, TH S 01-47-15 E 236.11 FT, TH N 82-44-06 W 235.95 FT,
TH N 01-47-15 W 200.00 FT TO POB. PT OF NW 1/4 SEC 35, T2S-R7E. 1.17 AC.

9045 MACARTHUR BLVD # 905157:
TRF 07/31/96 OLD SID - J 10-035-006-10 SU 35-5A-2 COM AT NW COR OF SEC,
TH S 1DEG 47' 15" E 2151.7 FT, TH S 87 DEG 56' 30" E 196.7 FT, TH N 4 DEG 40' E 60 FT TO POB,
TH N 1 DEG 47' 15" W140 FT, TH N 88 DEG 12' 45" E 280 FT, TH S 1 DEG 47' 15" E 189.93 FT,
TH NWLY 284.61 FT ON ARC OF CURV-RADIUS 2230 FT-CHORD N 81 DEG 40' 36" W 284.42 FT
TO POB PART NW 1/4 SEC 35 T2S R7E. 1.06 AC.

MACARTHUR BLVD:
OLD SID - J 10-035-006-03 SU 35-5A-1B COM AT NW CORNER SEC 35, TH S 01-47-15 E 1720.08 FT
TO POB, TH S 82-44-06 E 980.20 FT, TH S 01-47-15 E 73.0 FT, TH S 50-29-40 E 192.75 FT,
TH S 71-15-58 E 365.01 FT, TH N 60-44-02 E 295.0 FT, TH N 87-44-02 E 270.0 FT, TH S 02-15-58 E 588.16 FT,
TH S 35-48-55 W 249.56 FT TO C/L MACARTHUR BLVD, TH 189.44FT ALONG ARC OF CURVE,RAD. 940.0 FT,
CHORD N 59-57-45 W 189.11 FT, TH N 65-44-05 W 861.11 FT, TH 465.32 FT ALONG ARC OF CURVE, RAD. 2170.0 FT,
CHORDN71-52-40 W 464.44 FT, TH N 11-58-33 E 60.0 FT TO N LINE OF MACARTHUR BLVD, TH N 01-47-15 W 189.93 FT,
TH S 88-12-45 W 280.0 FT, TH N 01-47-15 W 73.57FT, TH S 88-12-45 W 203.0 FT TH N 01-47-15 W 171.62 FT TO POB.
PART NW 1/4 SEC 35 T2S R7E 19.89 AC

STATE OF MICHIGAN
MICHELLE J. THOMPSON
License No. 6201310001
LICENSED PROFESSIONAL ENGINEER
12/19/2025

DATE	REVISION
12/19/2025	
3/11/2026	

Community Engineering Corps

ENGINEERS WITHOUT BORDERS USA DETROIT

CHAPTER NAME: EWB USA DETROIT
LOCATION: DETROIT, MI
CONTACT: CHAPTER@EWB-DETROIT.ORG

REIC: MICHELLE THOMPSON, P.E.	12/14/2025	
PROJECT LEAD: ANDREW O'CONNOR		
PROJECT LEAD:		
DRAWN BY: ANDREW O'CONNOR		
ROLE	CHECK DONE	

SECTION 35	CLAY HILL COMMUNITY FARM & GARDEN
TOWN 2 SOUTH, RANGE 7 EAST	WILLOW RUN ACRES 111 SOUTH WALLACE BOULEVARD YPSILANTI, MI 48197
SUPERIOR CHARTER TOWNSHIP	COVER
WASHTENAW COUNTY, MICHIGAN	

SCALE
0 20 40
1" = 40 FEET

SHEET NO.: C1

SHEET 1 OF 9

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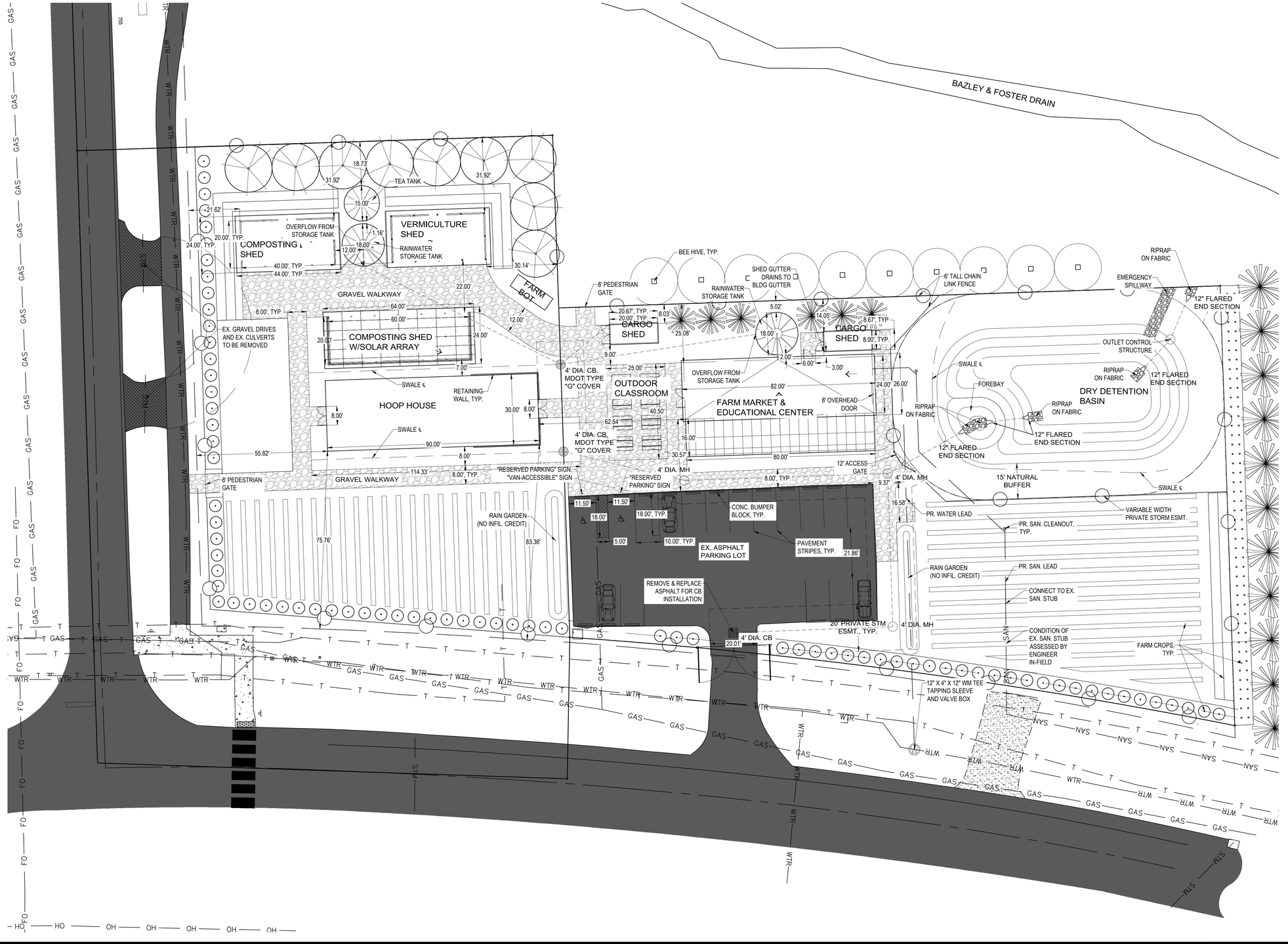
811

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LEGEND

- PROPERTY LINE
- PROPOSED GRAVEL
- PROPOSED STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LEAD
- PROPOSED SANITARY CLEANOUT
- PROPOSED SANITARY LEAD
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER MAIN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING ASPHALT
- PROPOSED CONTOURS (1000)
- EXISTING CONTOURS (1000)



STATE OF MICHIGAN
MICHELLE J. THOMPSON
License No. 6201310001
PROFESSIONAL ENGINEER
12/19/2025

DATE	REVISION
12/19/2025	
3/11/2026	

Community Engineering Corps

ENGINEERS WITHOUT BORDERS USA DETROIT

CHAPTER NAME: EWB USA DETROIT
LOCATION: DETROIT, MI
CONTACT: CHAPTER@EWB-DETROIT.ORG

REIC: MICHELLE THOMPSON, P.E.	12/14/2025	
PROJECT LEAD: ANDREW O'CONNOR		
PROJECT LEAD:		
DRAWN BY: ANDREW O'CONNOR		
ROLE	CHECK DONE	

SECTION 35
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR CHARTER TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

CLAY HILL COMMUNITY FARM & GARDEN
CLIENT: CLAY HILL COMMUNITY FARM & GARDEN
1850 NORTH HARRIS ROAD
SUPERIOR CHARTER TOWNSHIP, MI 48198

SITE PLAN

SCALE
0 10 20
1" = 20 FEET

SHEET NO.: C2

SHEET 2 OF 9

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

811

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Call before you dig.

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DRAINAGE NARRATIVE:

CONTRIBUTING AREA TO DETENTION BASIN = 0.63 ACRES

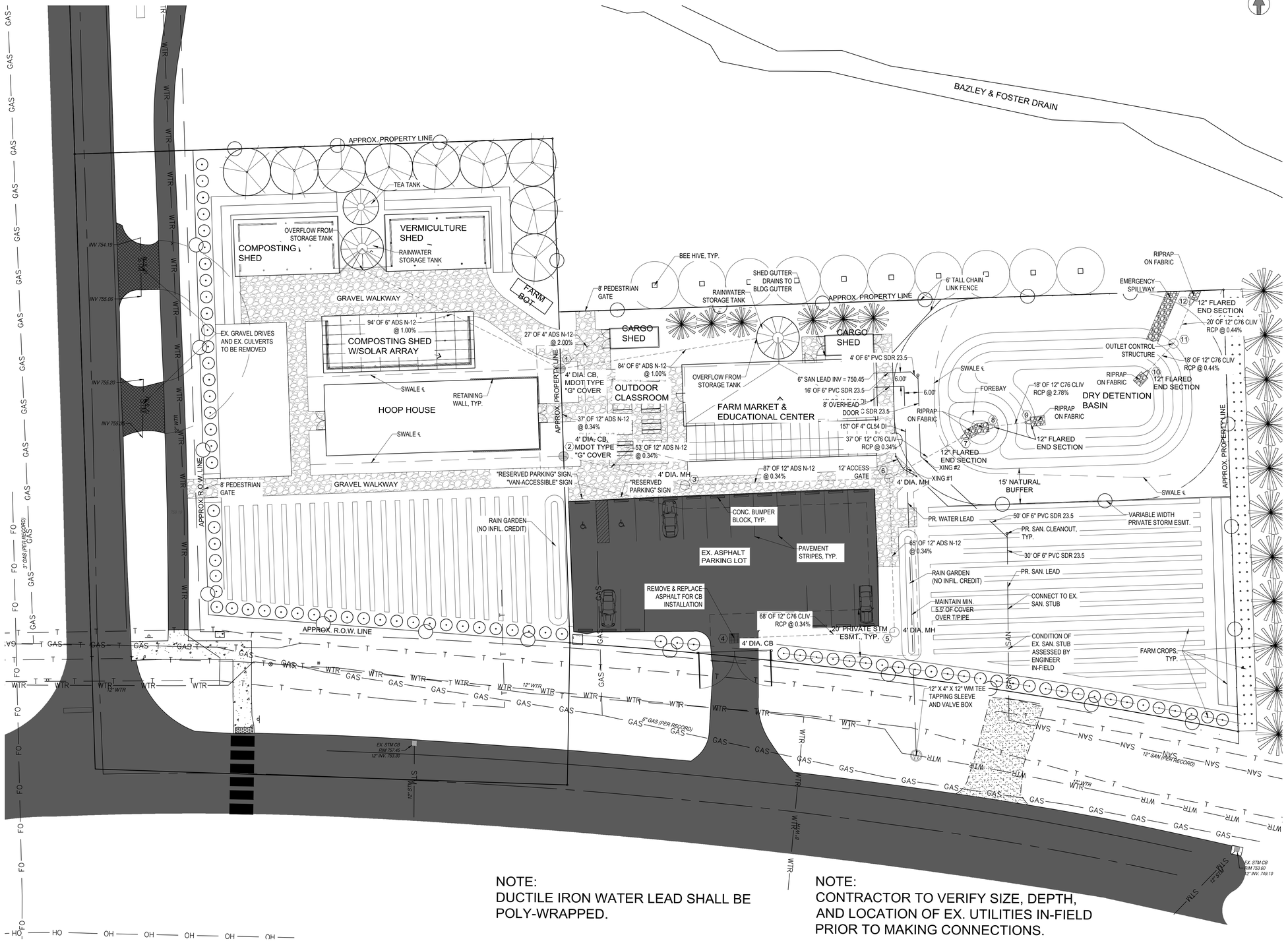
THE ON-SITE STORMWATER CONSISTS OF FOUR DRAINAGE AREAS. THESE AREAS ARE PROPOSED TO BE COLLECTED IN AN UNDERGROUND STORM SEWER COLLECTION SYSTEM WHICH OUTLETS INTO A DETENTION BASIN. THE ULTIMATE OUTLET OF THE STORM SEWER COLLECTION SYSTEM AND THE DETENTION BASIN IS THE BAZLEY AND FOSTER COUNTY DRAIN.

THE CALCULATIONS FOR THE DETENTION REQUIREMENTS WERE COMPLETED IN ACCORDANCE WITH THE WASHTENAW COUNTY WATER RESOURCES COMMISSION PROCEDURES AND DESIGN STANDARDS FOR STORMWATER MANAGEMENT.

NOTE:
ALL STORM CATCH BASINS AND MANHOLES ARE LOW-HEAD STRUCTURES.

LEGEND

- PROPERTY LINE
- PROPOSED GRAVEL
- PROPOSED STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LEAD
- PROPOSED SANITARY CLEANOUT
- PROPOSED SANITARY LEAD
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER MAIN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING ASPHALT
- PROPOSED CONTOURS
- EXISTING CONTOURS



NOTE:
DUCTILE IRON WATER LEAD SHALL BE POLY-WRAPPED.

NOTE:
CONTRACTOR TO VERIFY SIZE, DEPTH, AND LOCATION OF EX. UTILITIES IN-FIELD PRIOR TO MAKING CONNECTIONS.

STATE OF MICHIGAN
MICHELLE J. THOMPSON
License No. 6201310001
PROFESSIONAL ENGINEER
12/19/2025

DATE	REVISION
12/19/2025	
3/11/2026	

Community Engineering Corps

ENGINEERS WITHOUT BORDERS USA DETROIT

CHAPTER NAME: EWB USA DETROIT
LOCATION: DETROIT, MI
CONTACT: CHAPTER@EWB-DETROIT.ORG

ROLE		CHECK DONE
REIC: MICHELLE THOMPSON, P.E.	12/14/2025	
PROJECT LEAD: ANDREW O'CONNOR		
PROJECT LEAD:		
DRAWN BY: ANDREW O'CONNOR		

SECTION 35
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR CHARTER TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

CLAY HILL COMMUNITY FARM & GARDEN
CLIENT: CLAY HILL COMMUNITY FARM & GARDEN
1850 NORTH HARRIS ROAD
SUPERIOR CHARTER TOWNSHIP, MI 48198

UTILITY PLAN

SCALE
0 10 20
1" = 20 FEET

SHEET NO.: C3

SHEET 3 OF 9

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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DRAINAGE NARRATIVE:

CONTRIBUTING AREA TO DETENTION BASIN = 0.63 ACRES

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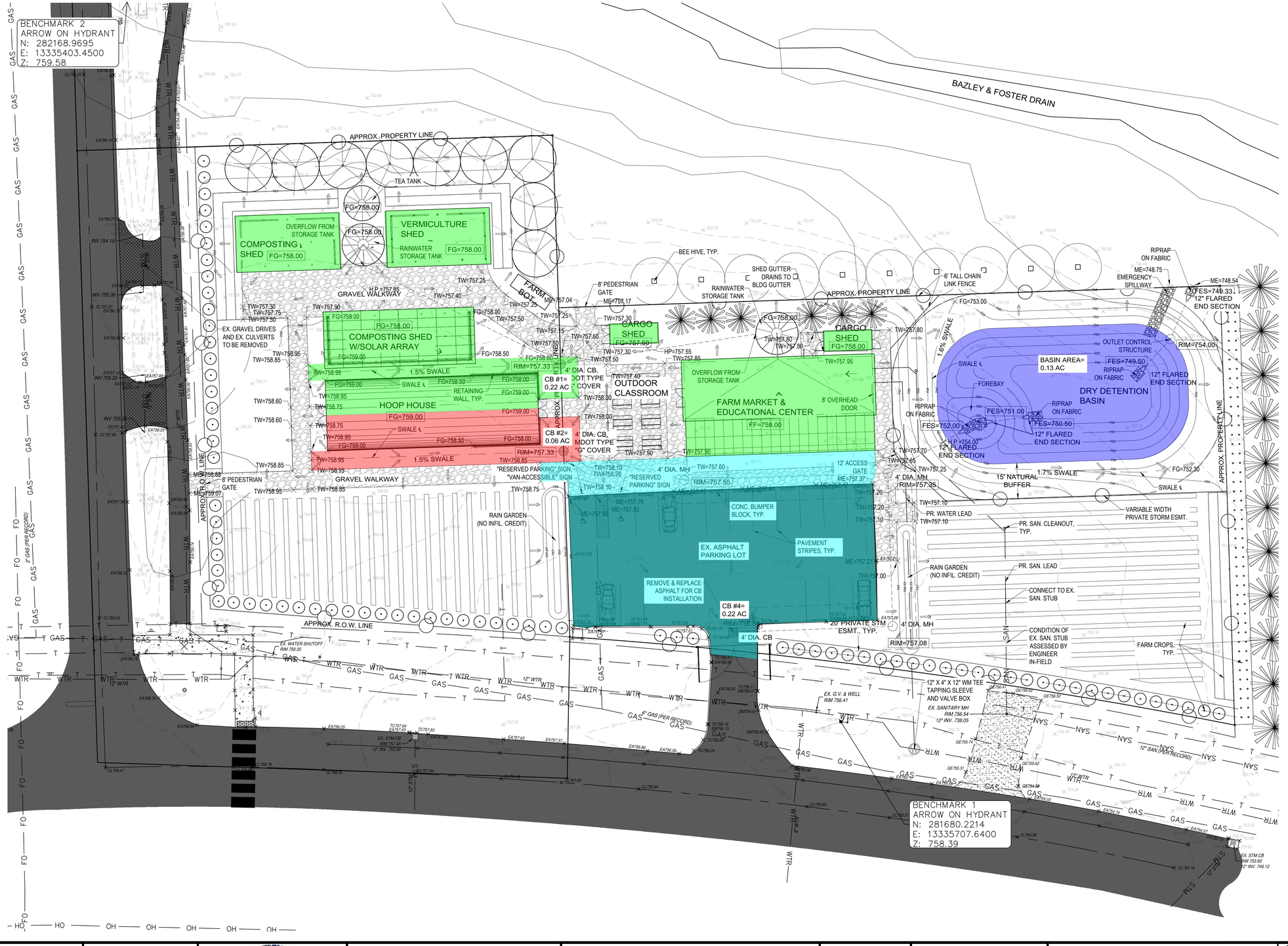
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LABEL LEGEND

TC	TOP OF CURB
GU	GUTTER
TP	TOP OF PAVEMENT
FG	FINISHED GRADE
FF	FINISHED FLOOR
FES	FLARED END SECTION
ME	MATCH EXISTING
PR	PROPOSED
H.P.	HIGH POINT

LEGEND

- PROPERTY LINE
- PROPOSED GRAVEL
- PROPOSED STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LEAD
- PROPOSED SANITARY CLEANOUT
- PROPOSED SANITARY LEAD
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER MAIN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING ASPHALT
- 1000 PROPOSED CONTOURS
- 1000 EXISTING CONTOURS



BENCHMARKS:
(NAVD88 DATUM)

BENCHMARK 1
ARROW ON EX. WATER HYDRANT
ELEV. = 758.39

BENCHMARK 2
ARROW ON EX. WATER HYDRANT
ELEV.= 759.58

STATE OF MICHIGAN
MICHELLE J. THOMPSON
License No. 6201310001
LICENSED PROFESSIONAL ENGINEER
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DATE	REVISION
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Community Engineering Corps

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DRAWN BY: ANDREW O'CONNOR		
ROLE	CHECK DONE	

SECTION 35	CLAY HILL COMMUNITY FARM & GARDEN
TOWN 2 SOUTH, RANGE 7 EAST	CLIENT: CLAY HILL COMMUNITY FARM & GARDEN 1850 NORTH HARRIS ROAD SUPERIOR CHARTER TOWNSHIP, MI 48198
SUPERIOR CHARTER TOWNSHIP	DRAINAGE PLAN
WASHTENAW COUNTY, MICHIGAN	

SCALE
0 10 20
1" = 20 FEET

SHEET NO.: C4

SHEET 4 OF 9

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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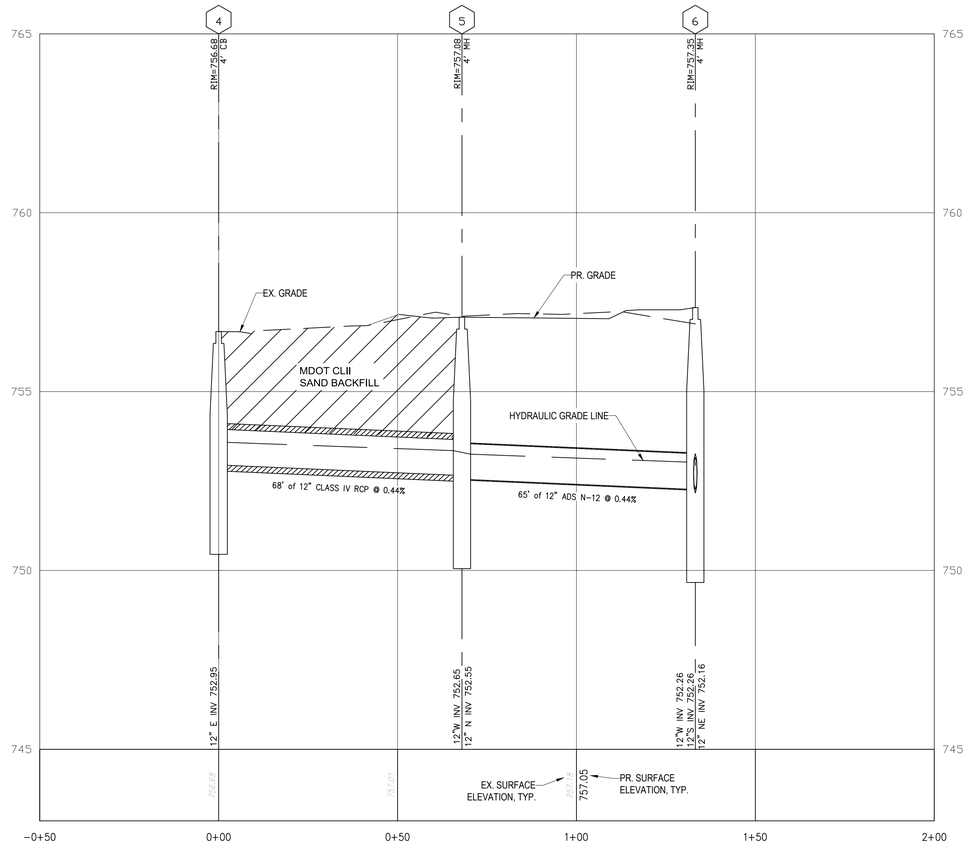
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				I = 175 / (T + 25)																						
				Clay Hill																						
											PIPE MATERIAL	PIPE			UPST	DWNST			V	VFULL		UPST	DWNST		UPST	DWNST		UPST
FROM	TO	C-Wtd	AREA	TOTAL	A*C	TOTAL	T	I	Q=CIA	QFULL	PIPE		LENGTH	HG	FALL	HG	HG	T to	AVG	mannings	PIPE	INV	INV	UPST	RIM	RIM	UPST	DWNST	RIM TO
MH	MH		Ac	AREA		A*C	min	in/hr	cfs	cfs	dia		ft	SLOPE	in HG	ELEV	ELEV	DS MH	fps	fps	SLOPE	ELEV	ELEV	RIM	TO INV	TO INV	CVR	CVR	HG
1	2	0.90	0.22	0.22	0.20	0.20	15.00	4.38	0.87	2.36	12	ADS N-12	37.00	0.06%	0.02	754.04	753.88	0.56	1.10	3.01	0.44%	753.24	753.08	757.33	4.09	4.25	2.92	3.08	3.29
2	3	0.74	0.06	0.28	0.04	0.24	15.56	4.31	1.06	2.36	12	ADS N-12	53.00	0.09%	0.05	753.78	753.55	0.66	1.35	3.01	0.44%	752.98	752.75	757.33	4.35	4.80	3.18	3.64	3.55
3	6	0.00	0.00	0.28	0.00	0.24	16.21	4.25	1.06	2.36	12	ADS N-12	87.00	0.09%	0.08	753.45	753.06	1.08	1.35	3.01	0.44%	752.65	752.26	757.55	4.90	5.09	3.74	3.92	4.10
6	7	0.00	0.00	0.50	0.00	0.44	17.29	4.14	1.92	2.36	12	CLIV RCP	37.00	0.29%	0.11	752.96	752.80	0.25	2.45	3.01	0.44%	752.15	752.00	757.35	5.19		4.02		4.39
							17.54									752.80						752.00							
4	5	0.90	0.22	0.22	0.20	0.20	15.00	4.38	0.87	2.36	12	CLIV RCP	68.00	0.06%	0.04	753.75	753.45	1.03	1.10	3.01	0.44%	752.95	752.65	756.68	3.73	4.43	2.57	3.26	2.93
5	6	0.00	0.00	0.22	0.00	0.20	16.03	4.27	0.87	2.36	12	ADS N-12	65.00	0.06%	0.04	753.35	753.06	0.98	1.10	3.01	0.44%	752.55	752.26	757.08	4.53	5.09	3.36	3.92	3.73
																752.96						752.15		757.35					

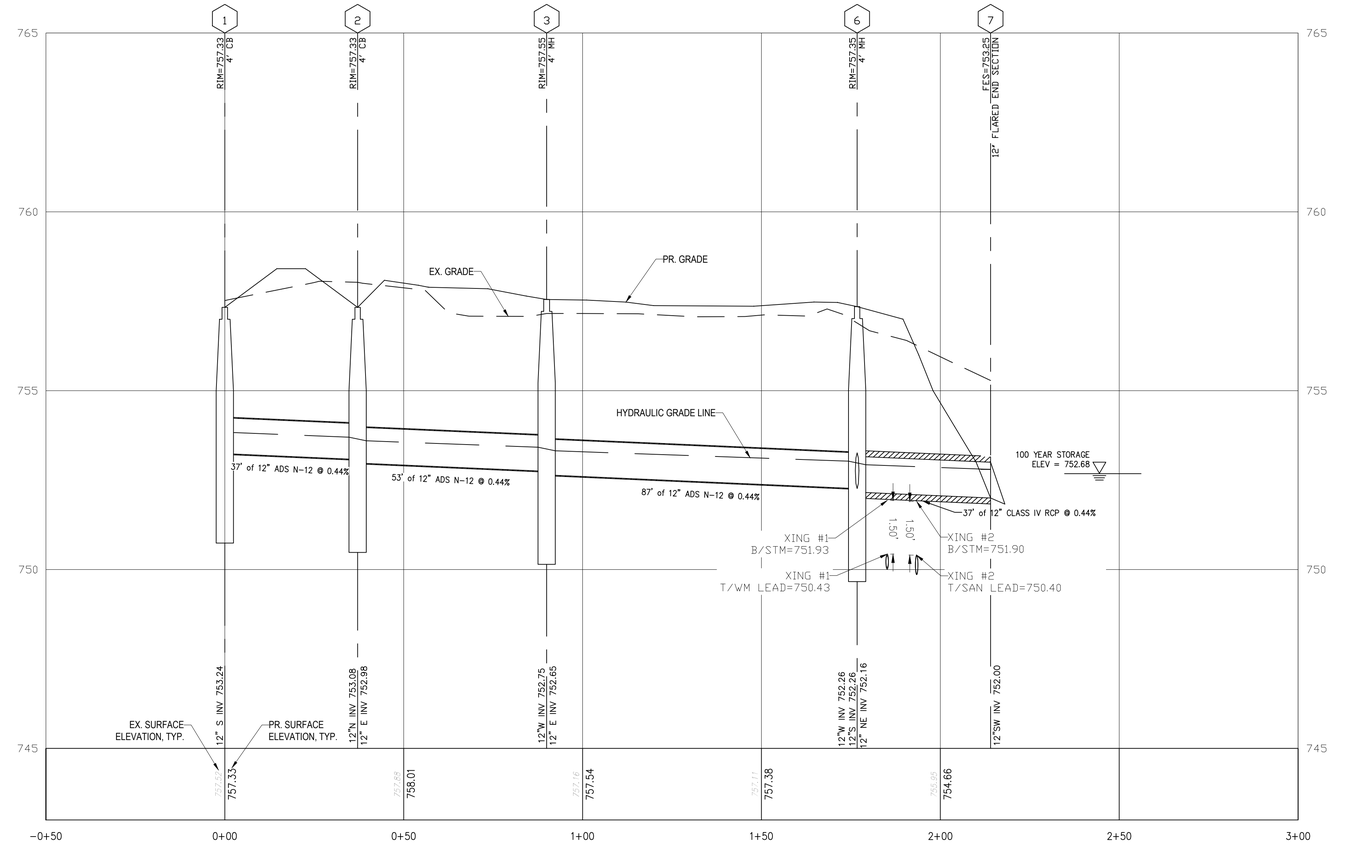
NOTE:
ALL STORM CATCH BASINS AND MANHOLES ARE LOW-HEAD STRUCTURES.

STM STR 4 TO STM STR 6



SCALE:
1" = 20' HORIZ.
1" = 2' VERT.

STM STR 1 TO STM STR 6



SCALE:
1" = 20' HORIZ.
1" = 2' VERT.

BENCHMARKS:
(NAVD88 DATUM)

BENCHMARK 1
ARROW ON EX. WATER HYDRANT
ELEV. = 758.39

BENCHMARK 2
ARROW ON EX. WATER HYDRANT
ELEV.= 759.58

STATE OF MICHIGAN
MICHELLE J. THOMPSON
License No. 6201310001
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DATE	REVISION
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Community Engineering Corps

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PROJECT LEAD:	
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ROLE	CHECK DONE

SECTION 35	CLAY HILL COMMUNITY FARM & GARDEN
TOWN 2 SOUTH, RANGE 7 EAST	CLIENT: CLAY HILL COMMUNITY FARM & GARDEN 1850 NORTH HARRIS ROAD SUPERIOR CHARTER TOWNSHIP, MI 48198
SUPERIOR CHARTER TOWNSHIP	STORM PROFILES
WASHTENAW COUNTY, MICHIGAN	

SCALE
0 - -
AS NOTED

SHEET NO.:
C5

SHEET 5 OF 9

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811

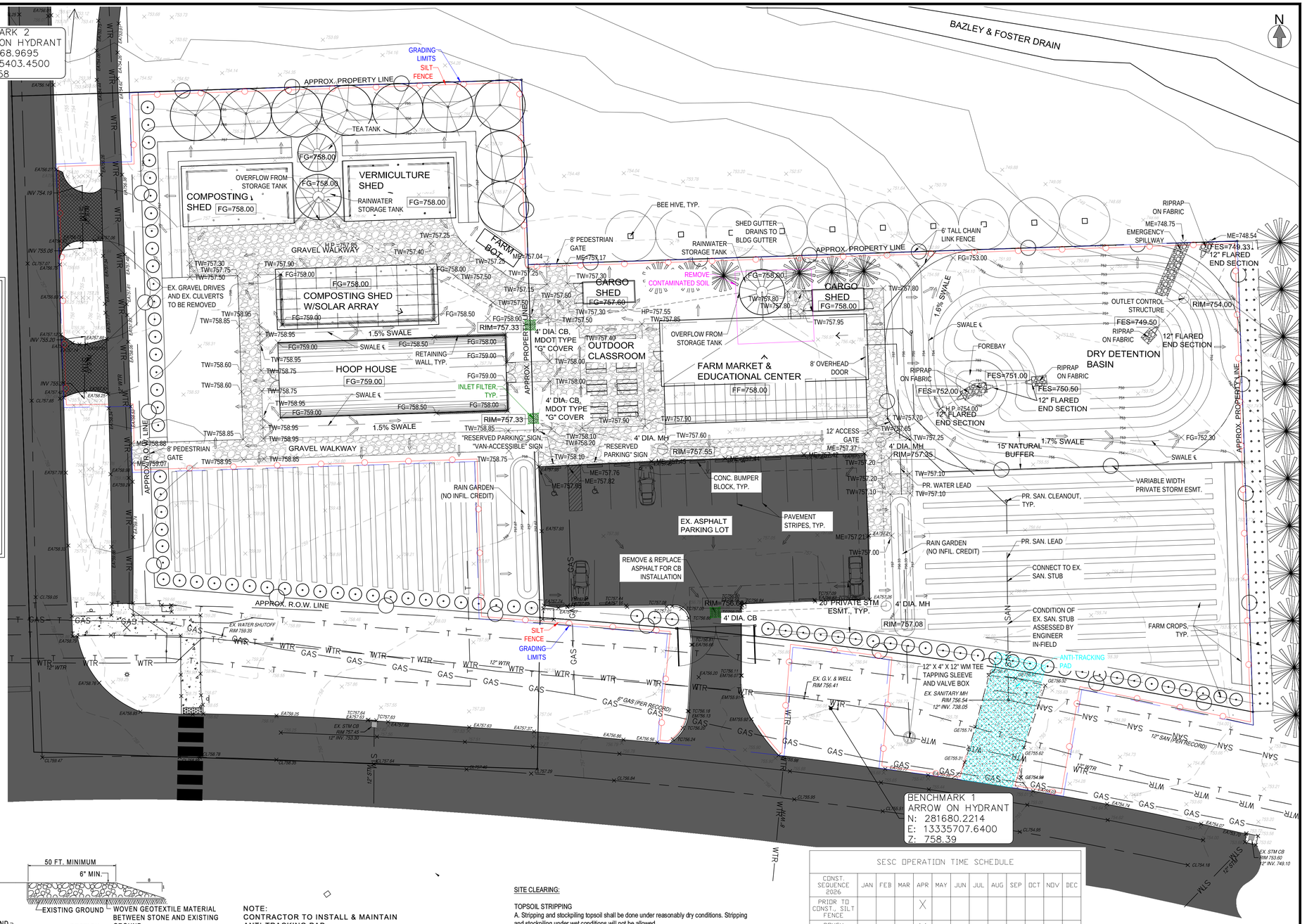
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SEQUENCE OF CONSTRUCTION FOR SOIL EROSION CONTROL:

1. INSTALL SILT FENCE, INLET FILTERS, AND ANTI-TRACKING PAD AS SHOWN ON THE SOIL EROSION CONTROL PLAN.
2. STRIP AND STOCKPILE TOPSOIL.
3. CONSTRUCT DETENTION BASIN AND INSTALL STORM SEWER PIPE, STRUCTURES, AND SOIL STABILIZATION WITHIN SEDIMENT BASIN.
4. MASS GRADING OF ENTIRE SITE TO BE COMPLETED.
5. INSTALL SANITARY LEAD AND WATER LEAD.
6. COMPLETE STORM SEWER INSTALLATION; IMMEDIATELY INSTALL GEOTEXTILE FILTERS ON ALL CATCH BASINS AND INLETS. (TEMPORARY)
7. COMPLETE INSTALLATION OF PUBLIC UTILITIES (ELECTRIC, ETC.).
8. REPAIR AND/OR REPLACE ALL LOW POINT CATCH BASIN FILTERS AS NEEDED. (TEMPORARY)
9. FINISH GRADE, REDISTRIBUTE TOPSOIL, AND ESTABLISH VEGETATION ON ALL DISTURBED GROUND AREAS. COMPLETE LANDSCAPING. ALL AREAS BETWEEN SIDEWALKS AND ROADS NEED TO BE PERMANENTLY STABILIZED.
10. CLEAN PAVEMENT AND STORM SEWERS OF ALL SEDIMENT.
11. REMOVE TEMPORARY SOIL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED.
12. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL SOIL EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED.
13. WASHTENAW COUNTY OR ITS AGENT SHALL INSPECT ALL SOIL EROSION CONTROL MEASURES. UPON THEIR DIRECTION, ADDITIONAL MEASURES SHALL BE CONSTRUCTED OR MAINTENANCE WORK SHALL BE PERFORMED TO ASSURE PROPER SOIL EROSION AND SEDIMENTATION CONTROL. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONCE ENTIRE SITE IS FULLY STABILIZED.
14. DUST MUST BE CONTROLLED AT ALL TIMES.
15. ALL MUD TRACKED ON PUBLIC ROADS AND INTERIOR ROADS SHALL BE REMOVED DAILY.

BENCHMARK 2
ARROW ON HYDRANT
N: 282168.9695
E: 13335403.4500
Z: 759.58

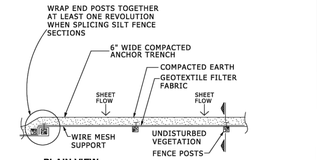


LEGEND

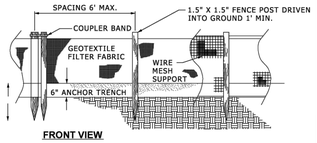
- PROPERTY LINE
- PROPOSED GRAVEL
- PROPOSED STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LEAD
- PROPOSED SANITARY CLEANOUT
- PROPOSED SANITARY LEAD
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER
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- EXISTING WATER VALVE
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- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING ASPHALT
- 1000 PROPOSED CONTOURS
- 1000 EXISTING CONTOURS

LABEL LEGEND

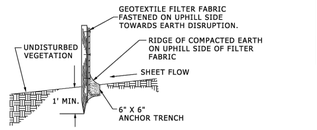
TC	TOP OF CURB
GU	GUTTER
TP	TOP OF PAVEMENT
FG	FINISHED GRADE
FF	FINISHED FLOOR
FES	FLARED END SECTION
ME	MATCH EXISTING
PR	PROPOSED
H.P.	HIGH POINT



PLAIN VIEW



FRONT VIEW



SECTION A-A

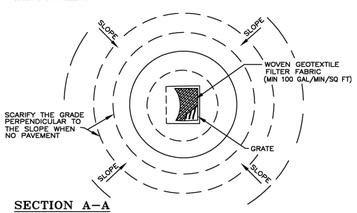
MATERIAL REQUIREMENTS

WOVEN GEOTEXTILE FABRIC WIDTH (IN)	MIN. HARDWOOD POST LENGTH (IN)	MIN. GRAB TENSILE (LBS) (ASTM D 4632)	MIN. TRAPEZOIDAL TEAR STRENGTH (LBS) (ASTM D 4533)	MIN. PERMITTIVITY (SEC) (ASTM D 4491)	MAX. APPARENT OPENING SIZE (MM) (ASTM D 4751)
24	36	100	45	0.1	0.6

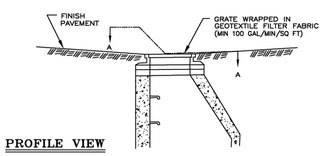
SILT FENCE
NO SCALE

NOTE: EROSION EELS ARE AN ACCEPTABLE ALTERNATIVE.

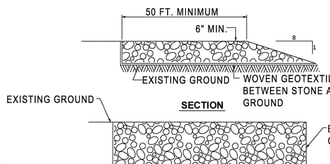
LOW POINT INLET FILTER (SI-2)
ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.



SECTION A-A



PROFILE VIEW



ANTI-TRACKING PAD
NO SCALE

NOTE:
CONTRACTOR TO INSTALL & MAINTAIN ANTI-TRACKING PAD.

WHEN AGGREGATE BECOMES SATURATED WITH FINES, CONTRACTOR TO SCARIFY AND RELAY AGGREGATE.

ANTI-TRACKING PAD DOES NOT RELIEVE CONTRACTOR FROM SWEEPING AND CLEANING ADJACENT WALKS AND ROADS.

CRUSHED/BROKEN CONCRETE IS TO BE REMOVED AND LEGALLY DISPOSED OF OFF U-M PROPERTY UPON PROJECT COMPLETION.

STATE OF MICHIGAN
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SITE CLEARING:

TOPSOIL STRIPPING

A. Stripping and stockpiling topsoil shall be done under reasonably dry conditions. Stripping and stockpiling under wet conditions will not be allowed.

B. Contractor shall strip available topsoil to its full depth from within the Contract limits, excluding areas in close proximity to trees designated to remain, unless otherwise specified or directed by the Project Representative.

C. Contractor shall stockpile topsoil in a storage pile in an area shown on the Drawings or as directed by the Project Representative. Storage pile shall be shaped to freely drain surface water during and after stockpiling operations. Excess topsoil shall be hauled by the Contractor and stockpiled on the Owner's property as directed by the Project Representative. The stockpile shall be protected from soil and sediment erosion as required elsewhere in these Specifications.

SESC OPERATION TIME SCHEDULE

CONST. SEQUENCE 2026	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PRIOR TO CONST., SILT FENCE				X								
ROUGH GRADE				X								
STORM FACILITIES				X								
FOUNDATION/ BLDG. CONST.					X	X	X					
SITE CONST.					X	X	X					
PERM. CONTROL MEASURES								X				
FINISH GRADING								X				
LANDSCAPING									X			

BENCHMARKS:
(NAVD88 DATUM)

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ELEV. = 758.39

BENCHMARK 2
ARROW ON EX. WATER HYDRANT
ELEV.= 759.58

DATE	REVISION
12/19/2025	
3/11/2026	

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PROJECT LEAD: ANDREW O'CONNOR	
PROJECT LEAD:	
DRAWN BY: ANDREW O'CONNOR	
ROLE	CHECK DONE

SECTION 35
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR CHARTER TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

CLAY HILL COMMUNITY FARM & GARDEN

CLIENT: CLAY HILL COMMUNITY FARM & GARDEN
1850 NORTH HARRIS ROAD
SUPERIOR CHARTER TOWNSHIP, MI 48198

GRADING & SESC PLAN

SCALE
0 10 20
1" = 20 FEET

SHEET NO.: C6

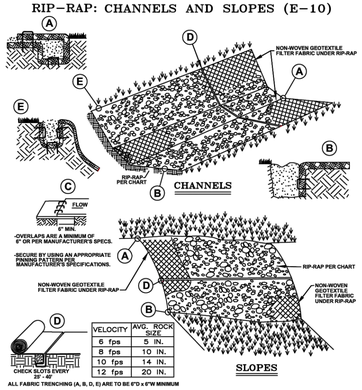
SHEET 6 OF 9

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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

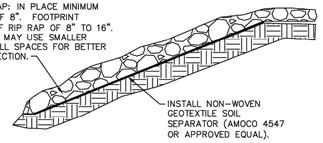


VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

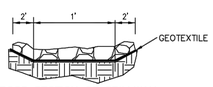
ALL FABRIC TRENCHING (A, B, D, E) ARE TO BE 6"D x 6"W MINIMUM

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

PLAIN RIP RAP: IN PLACE MINIMUM THICKNESS OF 8". FOOTPRINT DIMENSION OF RIP RAP OF 8" TO 16". CONTRACTOR MAY USE SMALLER PIECES TO FILL SPACES FOR BETTER SLOPE PROTECTION.



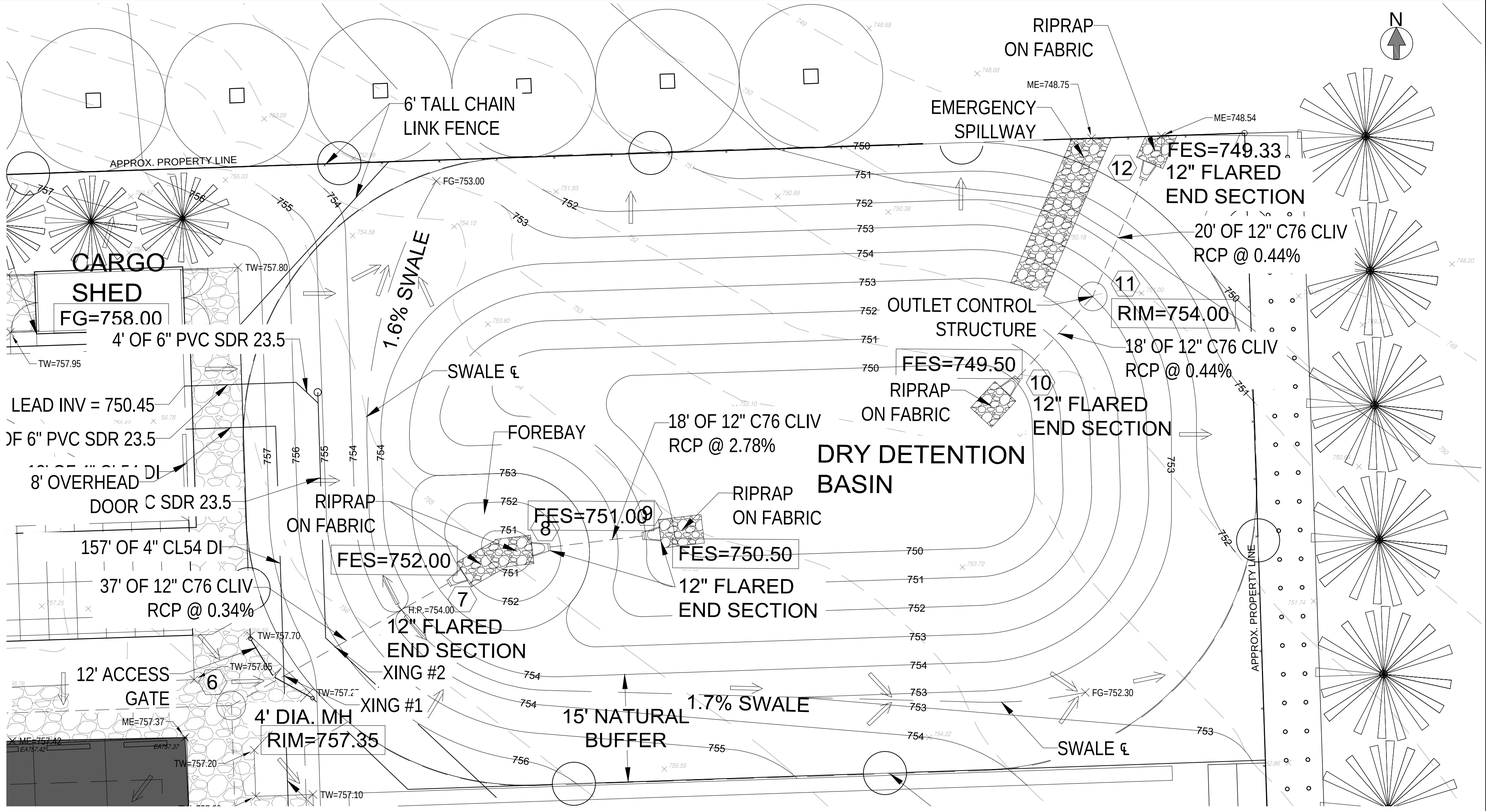
LONGITUDINAL SECTION OF SPILLWAY



CROSS SECTION OF SPILLWAY

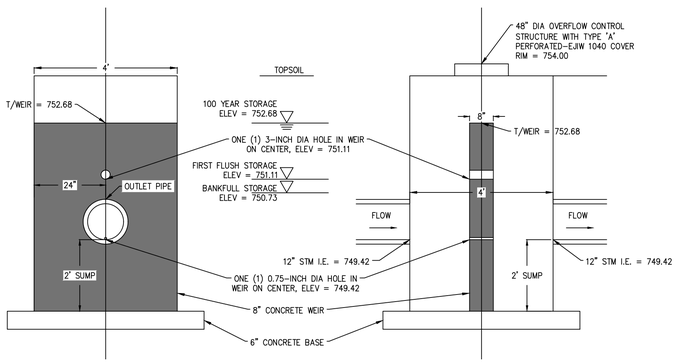
EMERGENCY OVERFLOW DETAIL

NOT TO SCALE



LEGEND

- PROPERTY LINE
- PROPOSED GRAVEL
- PROPOSED STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LEAD
- PROPOSED SANITARY CLEANOUT
- PROPOSED SANITARY LEAD
- EXISTING STORM STRUCTURE
- STM STM EXISTING STORM SEWER
- EXISTING HYDRANT
- EXISTING WATER VALVE
- WTR WTR EXISTING WATER MAIN
- EXISTING SANITARY MANHOLE
- SAN SAN EXISTING SANITARY SEWER
- OH OH EXISTING OVERHEAD ELECTRIC
- EXISTING ASPHALT
- 1000 PROPOSED CONTOURS
- 1000 EXISTING CONTOURS



DETENTION BASIN OUTLET CONTROL STRUCTURE

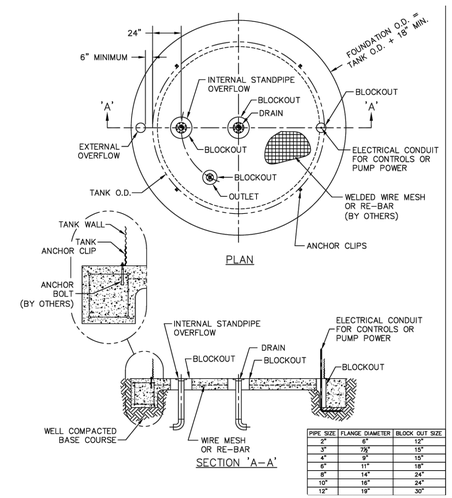
SCALE: 1" = 2'

NOTE:
A 2' CLAY LINER WILL BE INSTALLED UNDER THE FOREBAY AND DETENTION BASIN STARTING AT ELEVATION 753.

NOTE:
NO CHEMICALS ARE ALLOWED IN STORMWATER FEATURES OR BUFFER ZONES WITH THE FOLLOWING EXCEPTION: INVASIVE SPECIES MAY BE TREATED WITH CHEMICALS BY A CERTIFIED APPLICATOR.

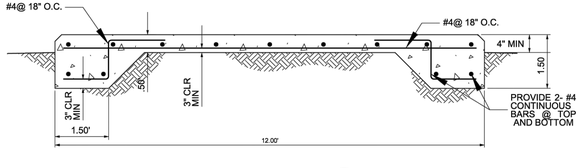
LABEL LEGEND

TC	TOP OF CURB
GU	GUTTER
TP	TOP OF PAVEMENT
FG	FINISHED GRADE
FF	FINISHED FLOOR
FES	FLARED END SECTION
ME	MATCH EXISTING
PR	PROPOSED
H.P.	HIGH POINT



PIPE SIZE	FLANGE DIAMETER	BLOCK OUT SIZE
2"	6"	12"
3"	7½"	15"
4"	9"	15"
6"	11"	18"
8"	14"	24"
10"	16"	24"
12"	19"	30"



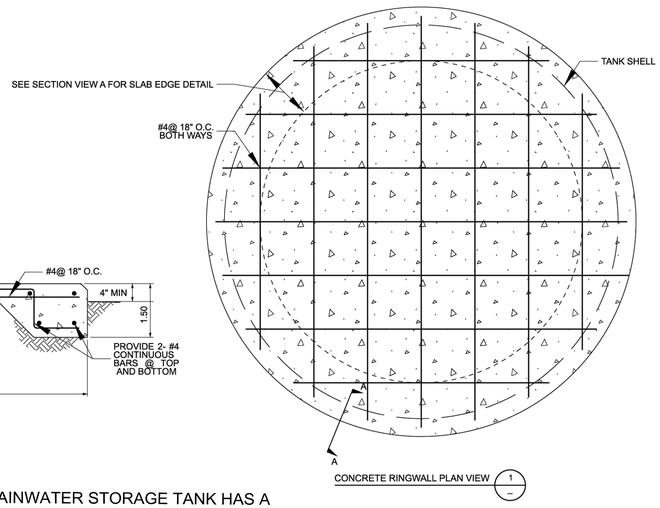


CONCRETE SLAB SECTION VIEW (A)

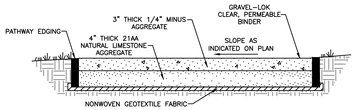
RAINWATER STORAGE TANK DETAILS

NO SCALE

NOTE:
EACH RAINWATER STORAGE TANK HAS A DIAMETER OF 18', A STORAGE HEIGHT OF 10', AND A STORAGE CAPACITY OF 19,035 GALLONS.

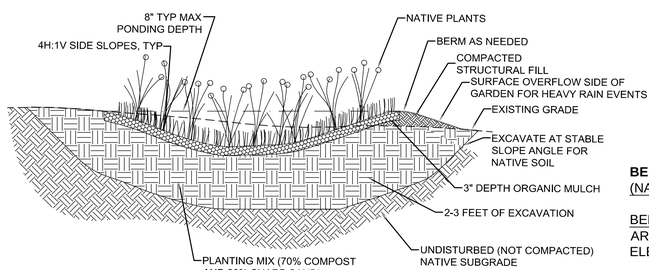


CONCRETE RINGWALL PLAN VIEW (1)



GRAVEL WALKWAY DETAIL

NO SCALE



RAIN GARDEN DETAIL

NO SCALE

DRAINAGE NARRATIVE:

CONTRIBUTING AREA TO DETENTION BASIN = 0.63 ACRES

THE ON-SITE STORMWATER CONSISTS OF FOUR DRAINAGE AREAS. THESE AREAS ARE PROPOSED TO BE COLLECTED IN AN UNDERGROUND STORM SEWER COLLECTION SYSTEM WHICH OUTLETS INTO A DETENTION BASIN. THE ULTIMATE OUTLET OF THE STORM SEWER COLLECTION SYSTEM AND THE DETENTION BASIN IS THE BAZLEY AND FOSTER COUNTY DRAIN.

THE CALCULATIONS FOR THE DETENTION REQUIREMENTS WERE COMPLETED IN ACCORDANCE WITH THE WASHTENAW COUNTY WATER RESOURCES COMMISSION PROCEDURES AND DESIGN STANDARDS FOR STORMWATER MANAGEMENT.

STATE OF MICHIGAN — LICENSED PROFESSIONAL ENGINEER — MICHELLE J. THOMPSON — License No. 6201310001 — 12/19/2025

BENCHMARKS:
(NAVD88 DATUM)

BENCHMARK 1
ARROW ON EX. WATER HYDRANT
ELEV. = 758.39

BENCHMARK 2
ARROW ON EX. WATER HYDRANT
ELEV.= 759.58

DATE	REVISION
12/19/2025	
3/11/2026	

Community Engineering Corps

ENGINEERS WITHOUT BORDERS USA DETROIT

CHAPTER NAME: EWB USA DETROIT
LOCATION: DETROIT, MI
CONTACT: CHAPTER@EWB-DETROIT.ORG

REIC: MICHELLE THOMPSON, P.E.	12/14/2025	SECTION 35	CLAY HILL COMMUNITY FARM & GARDEN	SCALE 0 5 10 1" = 10 FEET
PROJECT LEAD: ANDREW O'CONNOR		TOWN 2 SOUTH, RANGE 7 EAST	CLIENT: CLAY HILL COMMUNITY FARM & GARDEN 1850 NORTH HARRIS ROAD SUPERIOR CHARTER TOWNSHIP, MI 48198	SHEET NO.: C7
PROJECT LEAD:		SUPERIOR CHARTER TOWNSHIP	DETENTION BASIN & STORM DETAILS	SHEET 7 OF 9
DRAWN BY: ANDREW O'CONNOR		WASHTENAW COUNTY, MICHIGAN		
ROLE	CHECK DONE			

CURVE NUMBERS

Predevelopment Curve Number (Meadow, Group D)	78	Page 24
Post-Development Curve Number (Impervious Areas, Any Group)	98	Page 24

AREA	**SQFT**	**ACRE**
Total Site Area	83850	1.92
Roof Area	10062	0.23
Parking Lot Area	7439	0.17
Basin Area	4542	0.10
Total Impervious Area	22043	0.51

RAINFALL

First Flush	1	in
2 yr storm, 30 min	0.906	in
2 yr storm, 24 hrs	2.35	in
100 yr storm, 24 hrs	5.11	in
100 yr storm, 30 min	2.05	in

Water Use can be used to meet infiltration and storage requirements:
The amount of sotred water is equal to the volume reduction.

STANDARD METHOD RUNOFF VOLUME WORK SHEETS, Part E of Section 4, copied

Worksheet 1: Determining Post-Development Cover Types, Areas, Curve Numbers, and Runoff Coefficients

Total Site Area =	0.6265	acre	
Total Site Area Excluding "Self-Crediting" BMPs =	0.6265	acres	*Assuming no self-crediting BMPs, see page 29*

Area 1: Garden Center, Sheds, North Half of Hoop House and Vegetated Swale	0.2228	acres
Area 2: South Half of Hoop House and Vegetated Swale	0.0565	acres
Area 3: Parking Lot, Gravel Walkway, Green Space	0.2167	acres
Area 4: Basin Surface Area	0.1304	acres

Rational Method Variables (For First Flush Runoff Calculations)

Cover Type	Soil Type	Area (sqft)	Area (ac)	Runoff Coefficient (c)	(C) (Acreage)
Area 1:					
Garden Center Roof - Impervious	D	3354	0.0770	0.95	0.07
East Cargo Shed - Impervious	D	160	0.0037	0.95	0.00
West Cargo Shed - Impervious	D	160	0.0037	0.95	0.00
Compost and Vermiculture Sheds - Impervious	D	2142	0.0492	0.95	0.05
Shed with Solar Array - Impervious	D	1546	0.0355	0.95	0.03
North Half of Hoop House Roof - Impervious	D	1350	0.0310	0.95	0.03
North Vegetated Swale - Pervious	D	994	0.0228	0.45	0.01
Area 2:					
South Half of Hoop House Roof - Impervious	D	1350	0.0310	0.95	0.03
South Vegetated Swale - Pervious	D	1112	0.0255	0.45	0.01
Area 3:					
Parking Lot - Impervious	D	7439	0.1708	0.95	0.16
Gravel Walkway - Impervious	D	1475	0.0339	0.85	0.03
Green Space - Pervious	D	524	0.0120	0.45	0.01
Area 4:					
Basin Storage Area - Impervious	D	4542	0.1043	1.00	0.10
Basin Freeboard Area (without Clay Liner) - Pervious	D	1140	0.0262	0.45	0.01
		Area 1:	Area 2:	Area 3:	Area 4:
Total C*Ac		0.20	0.04	0.20	0.12
Total Ac		0.223	0.0565	0.217	0.130
Weighted C		0.90	0.72	0.91	0.89

NRCS Variables (For Bankfull and 100-year runoff Calculations)

Pervious Cover Type	Soil Type	Area (sqft)	Area (ac)	Curve Number	(C) (Area)
Area 1:					
North Vegetated Swale - Pervious	D	994	0.0228	78	1.78
Area 2:					
South Vegetated Swale - Pervious	D	1112	0.0255	78	1.99
Area 3:					
Green Space - Pervious	D	684	0.0157	80	1.26
Area 4:					
Basin Freeboard Area (without Clay Liner) - Pervious	D	1140	0.0262	80	2.09
		Area 1:	Area 2:	Area 3:	Area 4:
Total C*A		1.78	1.99	1.26	2.09
Total A		0.023	0.026	0.016	0.026
Weighted C		78	78	80	80

NRCS Variables (For Bankfull and 100-year runoff Calculations)

Impervious Cover Type	Soil Type	Area (sqft)	Area (ac)	Curve Number	(C) (Area)
Area 1:					
Garden Center Roof - Impervious	D	3354	0.0770	98	7.55
East Cargo Shed - Impervious	D	160	0.0037	98	0.36
West Cargo Shed - Impervious	D	160	0.0037	98	0.36
Compost and Vermiculture Sheds - Impervious	D	2142	0.0492	98	4.82
Shed with Solar Array - Impervious	D	1546	0.0355	98	3.48
North Half of Hoop House Roof - Impervious	D	1350	0.0310	98	3.04
Area 2:					
South Half of Hoop House Roof - Impervious	D	1350	0.0310	98	3.04
Area 3:					
Parking Lot - Impervious	D	7439	0.1708	98	16.74
Area 4:					
Basin Storage Area (with Clay Liner) - Impervious	D	4542	0.1043	98	10.22
		Area 1:	Area 2:	Area 3:	Area 4:
Total C*A		19.60	3.04	16.74	10.22
Total A		0.200	0.031	0.171	0.104
Weighted C		98	98	98	98

Worksheet 2: Standard Method - First Flush Runoff Calculations

First Flush Runoff Calculations (Vff)

	Area 1	Area 2	Area 3	Area 4	
	Vff=P*A*C				
P (in) =	1	1	1	1	*Page 31*
A (ac)=	0.223	0.0565	0.217	0.130	Above
C (weighted) =	0.90	0.72	0.91	0.89	Above
Vff (cft) =	727	149	713	421	*Calculated*

Total First Flush Volume (Vff) = 2010 cft *Calculated: Area 1, 2, 3, and 4 added together*

Worksheet 3: Standard Method - Predevelopment Bankfull Runoff Calculations

Pre-development Bankfull Runoff Calculations (Vbf-pre)
Based on 2-yr, 24-hr storm

	Area 1	Area 2	Area 3	Area 4	
	Vbf-pre = Q*(1/12)*A				
	Q = (P-0.2*S)^2/(P+0.8*S)				
P (in) =	2.35	2.35	2.35	2.35	*Page 32*
	S (in) = 1000/CN-10				
CN =	78	78	78	78	*Soil Group D, Good Cover Meadow*
S (in) =	2.82	2.82	2.82	2.82	*Calculated*
Q (in) =	0.69	0.69	0.69	0.69	*Calculated*
A (sf) =	9706	2462	9438	4542	
Vbf-pre (cft) =	560	142	545	262	*Calculated*

Worksheet 4: Standard Method - Pervious Cover Post-development Bankfull Runoff Calculations

Pervious Cover Post-Development Bankfull Runoff Calculations (Vbf-per-post)
Based on 2-yr, 24-hr storm

	Area 1	Area 2	Area 3	Area 4	
	Vbf-per-post (cft) = Q*(1/12)*A				
	Q = (P-0.2*S)^2/(P+0.8*S)				
P (in) =	2.35	2.35	2.35	2.35	*Page 33*
	S (in) = 1000/CN-10				
CN =	78	78	80	80	*Pervious Cover CN from Worksheet 1*
S (in) =	2.82	2.82	2.50	2.50	*Calculated*
Q (in) =	0.69	0.69	0.79	0.79	*Calculated*
A (sf) =	994	1112	684	1140	*Pervious Cover Area from Worksheet 1*
Vbf-per-post (cft) =	57	64	45	75	*Calculated*

Worksheet 5: Standard Method - Impervious Cover Post-development Bankfull Runoff Calculations

Impervious Cover Post-Development Bankfull Runoff Calculations (Vbf-imp-post)
Based on 2-yr, 24-hr storm

	Area 1	Area 2	Area 3	Area 4	
	Vbf-imp-post (cft) = Q*(1/12)*A				
	Q = (P-0.2*S)^2/(P+0.8*S)				
P (in) =	2.35	2.35	2.35	2.35	*Page 34*
	S (in) = 1000/CN-10				
CN =	98	98	98	98	*Impervious Cover CN from Worksheet 1*
S (in) =	0.20	0.20	0.20	0.20	*Calculated*
Q (in) =	2.12	2.12	2.12	2.12	*Calculated*
A (sf) =	9706	2462	9438	4542	*Impervious Cover Area from Worksheet 1*
Vbf-imp-post (cft) =	1716	435	1669	803	*Calculated*

Worksheet 6: Standard Method - Pervious Cover Post-Development 100-yr Storm Runoff Calculations

Pervious Cover Post-Development 100-yr Storm Runoff Calculations (V100-per-post)
Based on 100-yr storm

	Area 1	Area 2	Area 3	Area 4	
	V100-per-post (cft) = Q*(1/12)*A				
	Q = (P-0.2*S)^2/(P+0.8*S)				
P (in) =	5.11	5.11	5.11	5.11	*Page 35*
	S (in) = 1000/CN-10				
CN =	78	78	80	80	*Pervious Cover CN from Worksheet 1*
S (in) =	2.82	2.82	2.50	2.50	*Calculated*
Q100-per (in) =	2.81	2.81	2.99	2.99	*Calculated*
A (sf) =	994	1112	684	1140	*Pervious Cover Area from Worksheet 1*
V100-per-post (cft) =	232	260	170	284	*Calculated*

Worksheet 7: Standard Method - Impervious Cover Post-Development 100-yr Storm Runoff Calculations

Impervious Cover Post-Development 100-yr Storm Runoff Calculations (V100-imp-post)
Based on 100-yr storm

	Area 1	Area 2	Area 3	Area 4	
	V100-imp-post (cft) = Q*(1/12)*A				
	Q = (P-0.2*S)^2/(P+0.8*S)				
P (in) =	5.11	5.11	5.11	5.11	*Page 35*
	S (in) = 1000/CN-10				
CN =	98	98	98	98	*Impervious Cover CN from Worksheet 1*
S (in) =	0.20	0.20	0.20	0.20	*Calculated*
Q100-imp (in) =	4.87	4.87	4.87	4.87	*Calculated*
A (sf) =	9706	2462	4896	4542	*Impervious Cover Area from Worksheet 1*
V100-imp-post (cft) =	3941	1000	1988	1844	*Calculated*

Worksheet 8: Standard Method - Time of Concentration Calculations

Parking Lot to Basin
Time of Conccentration for Applicable Flow Types (Tc-hrs)

Flow Type	K	Change in Elevation (ft)	Length, L (ft)	Slope, S (%)	S^0.5	V = K*S^0.5	Tc=L/(V*3600)
Sheet Flow 1 - Gravel Walkway to Parking Lot	0.48	0.90	26	3.46	1.86	0.89	0.01
Sheet Flow 2 - Parking Lot	0.48	1.27	91	1.40	1.18	0.57	0.04
Small Tributary - Pipe 1 - Parking Lot Catch Basin to Southeast Manhole	2.1		68	0.44	0.66	1.39	0.01
Small Tributary - Pipe 2 - Southeast Manhole to Combined Manhole	2.1		65	0.44	0.66	1.39	0.01
Small Tributary - Pipe 3 - Combined Manhole to Basin Discharge	2.1		37	0.44	0.66	1.39	0.01
					Total Time of Concentration (hrs) =		**0.09**

Worksheet 9: Standard Method - Runoff Summary & Onsite Infiltration Requirement

A: Runoff Summary from Previous Worksheets

Area 1: First Flush Volume (Vff) =	727	cft	*Worksheet 2*
Area 1: Pre-Development Bankfull Runoff Volume (Vbf-pre) =	560	cft	*Worksheet 3*
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post) =	57	cft	*Worksheet 4*
Area 1: Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post) =	1716	cft	*Worksheet 5*
Area 1: Cistern Storage Volume =	38070	gal	*(2) 19,035 gal containers fed by both downspouts*
Area 1: Cistern Storage Volume =	5090	cft	*Conversion*
Area 1: Total BF Volume (Vbf-post) =	57	cft	*Calculated*
Area 2: First Flush Volume (Vff) =	149	cft	*Worksheet 2*
Area 2: Pre-Development Bankfull Runoff Volume (Vbf-pre) =	142	cft	*Worksheet 3*
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post) =	64	cft	*Worksheet 4*
Area 2: Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post) =	435	cft	*Worksheet 5*
Area 2: Total BF Volume (Vbf-post) =	499	cft	*Calculated*
Area 3: First Flush Volume (Vff) =	713	cft	*Worksheet 2*
Area 3: Pre-Development Bankfull Runoff Volume (Vbf-pre) =	545	cft	*Worksheet 3*
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post) =	45	cft	*Worksheet 4*
Area 3: Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post) =	1669	cft	*Worksheet 5*
Area 3: Total BF Volume (Vbf-post) =	1714	cft	*Calculated*
Area 4: First Flush Volume (Vff) =	421	cft	*Worksheet 2*
Area 4: Pre-Development Bankfull Runoff Volume (Vbf-pre) =	262	cft	*Worksheet 3*
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post) =	75	cft	*Worksheet 4*
Area 4: Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post) =	803	cft	*Worksheet 5*
Area 4: Total BF Volume (Vbf-post) =	878	cft	*Calculated*
Total Bankfull Volume (Vbf-post) =	3148	cft	*Calculated: Area 1, 2, 3, and 4 added together*
Pervious Cover Post-Development 100-yr Volume (V100-per-post) =	232	cft	*Worksheet 6*
Area 1: Impervious Cover Post-Development 100-yr Volume (V100-imp-post) =	3941	cft	*Worksheet 7*
Area 1: Cistern Storage Volume =	38070	gal	*(2) 19,035 gal containers fed by both downspouts*
Area 1: Cistern Storage Volume =	5090	cft	*Conversion*
Area 1: Total 100-year Volume (V100) =	232	cft	*Calculated*
Pervious Cover Post-Development 100-yr Volume (V100-per-post) =	260	cft	*Worksheet 6*
Area 2: Impervious Cover Post-Development 100-yr Volume (V100-imp-post) =	1000	cft	*Worksheet 7*
Area 2: Total 100-year Volume (V100) =	1260	cft	*Calculated*
Pervious Cover Post-Development 100-yr Volume (V100-per-post) =	170	cft	*Worksheet 6*
Area 3: Impervious Cover Post-Development 100-yr Volume (V100-imp-post) =	1988	cft	*Worksheet 7*
Area 3: Total 100-year Volume (V100) =	2159	cft	*Calculated*
Pervious Cover Post-Development 100-yr Volume (V100-per-post) =	284	cft	*Worksheet 6*
Area 4: Impervious Cover Post-Development 100-yr Volume (V100-imp-post) =	1844	cft	*Worksheet 7*
Area 4: Total 100-year Volume (V100) =	2128	cft	*Calculated*
Total 100-year Volume (V100) =	5779	cft	*Calculated*
B: Determine Onsite Infiltration Requirement			
Subtracting the Pre-Development Bankfull from the Post-Development Bankfull volume			
Total Post-Development Bankfull Volume (Vbf-post) =	3148	cft	*Part A, above*
Pre-Development Bankfull Runoff Volume (Vbf-pre) =	1509	cft	*Worksheet 3*
Bankfull Volume Difference =	1639	cft	*Calculated*
First flush volume is greater than the bankfull volume difference and will be used as the onsite infiltration requirement.			
Onsite Infiltration Requirement (Vinf) =	2010	cft	

Worksheet 10: Standard Method - Detention/Retention Requirement

Equation Summary:
Detention Volume = Vdet = Delta/PF*V100
Delta = PF-0.15*Ac
PF = Qp*Q100*Ac/640
Determine Peak of the unit hydrograph (Qp)

Qp = 238.6*Tc^(-^0.82)			
Tc =	0.09	hr	*Gravel walkway and parking lot sheet flow, pipes are waterway.*
Qp =	1685.74	cfs/(in-mi^2)	
Q100=Q100-per + Q100-imp			
Q100-per =	2.90	in	*Average Q100-per for all areas.*
Q100-imp =	4.87	in	
Q100 =	7.77	in	
Total Site Area excluding self-crediting BMPs=	0.6265	ac	
Peak Flow, PF =	12.82	cfs	
Delta =	12.73	cfs	
V100=	5779	cft	
Vdet =	5737	cft	
	42910	gal	
With additional 20%	51492	gal	

DETENTION BASIN STORAGE CALCULATIONS

DETENTION BASIN CALCULATIONS

PROJECT NAME: Clay Hill
Design by: Andrew O'Connor Date: 3/11/2026

100 YEAR FLOOD VOLUME STORAGE
V100 = 6,884 ft3

BANKFULL FLOOD VOLUME
Vbf = 3,148 ft3

FIRST FLUSH VOLUME
Vff = 2,010 ft3

FOREBAY VOLUME REQUIRED
Vfo = V100 * 0.05
Vfo = 344 ft3

FOREBAY VOLUME

	Elevation	Area	Height, H	Incr Vol. (CU.FT.)	Vol (ft3)
Xbot	751	33	0	-	0
	752	177	1.00	95	95
	753	434	1.00	296	392

DETENTION BASIN VOLUME

	Elevation	Area	Height, H	Incr Vol. (CU.FT.)	Vol (ft3)
Xbot	750	1364	-	-	0
	751	2160	1.00	1,747	1,747
	752	3073	1.00	2,603	4,350
	753	4108	1.00	3,578	7,928

754 IS FREEBOARD ELEVATION

Bottom of Basin
751.10 = First Flush Storage Elevation (Xff)
751.80 = Bankfull Storage/2-Year Storm Elevation (Xbf)
752.71 = 100 Year Flood Volume Storage (X100)

OUTLET CONTROL STRUCTURE DESIGN

FIRST FLUSH:
Calculate Allowable Release Rate for First Flush Runoff (Vff)
Qff = Vff/[(24 hrs)*(3600 s/hr)]
Qff = 0.023 cfs
Calculate Average Head for First Flush Runoff
*assume trapezoidal cross section
H(average) = 2/3*(Xff - Xbot)
H(target) = 0.73 ft
Calculate Orifice Area Required for First Flush Discharge
Aff = Qff/[(0.62*(2*g*h)1/2]
Aff = 0.005 ft2
Calculate # of Orifice Openings
Orifice Diam. = **0.75** inches
Area = 0.003 ft2
# openings = Aff/(Area of office)
# openings = 1.78
 # openings required = 1.00
Total Area of orifice = 0.00 ft2
Calculate Detention Time for Orifice Openings
Qff(new) = Aff*0.62(2*g*Have)1/2
Qff(new) = 0.01 cfs
Tff(new) = Vff/Qff(new)
Tff(new) = 153,761 sec
Tff(new) = 42.71 hours
> 24-hour minimum time for discharge

BANKFULL FLOOD
Check FF Orifice to Determine Whether Adequate for BF Discharge in Allowable T (36<T<48hrs)
Calculate Average Head for First Flush Bankfull Orifice
*assume trapezoidal cross section
Hbf = 2/3*(Xbf - Xbot)
Hbf = 1.20 ft

Calculate Q Utilizing First Flush Orifice
Qbf = Aff*0.62(2*g*Hbf)1/2
Qbf = 0.02 cfs
Calculate Time for Bankfull Discharge (36 hrs< Tbf <48 hrs)
Tbf = Vbf/Qbf
Tbf = 188,237 sec
Tbf = 52.29 hours
Determine Additional Orifice Required for Bankfull Discharge Within 48 hrs
T(target) = **38** hours
V(remaining) = Vbf - Vff
V(remaining) = 1,138 ft3
T(remaining) = Tff - T(target)
T(remaining) = 4.71 hours
Calculate Q and V for Remaining Time
Hbf+ff = 2/3(Xbf-Xff)+(Xff-Xbot)
Hbf+ff = 1.57 ft
Qbf+ff = Aff*0.62(2*g*Hbf+ff)1/2
Qbf+ff = 0.02 cfs
V = T(remaining)*Qbf+ff
V = 324.09 ft3
Calculate Discharge Volume for Bankfull Orifice
Vbfo = Vrem - V
Vbfo = 813.91 ft3
Qbfo = Vbfo /Trem
Qbfo = 0.05 cfs
Hbf = 2/3(Xbf-Xff)
Hbf = 0.47 ft
Abf = Qbf/[0.62*(2*g*h)1/2]
Abf = 0.01 ft2
Calculate # of Orifice Openings
Orifice Diam. = 2 inches
Area = 0.022 ft2
# openings = Abf/(Area of office)
# openings = 0.65
 # openings required = 1.00
Total Area of orifice (Aff) = 0.02 ft2
Check Time for Bankfull Discharge (36 hrs< Tbf < 48hrs)
Qbfo = Aff*0.62(2*g*Hfwl)1/2
Qbfo = 0.07 cfs
Tbf = Tff(new)+Vrem/[(Qbf+ff + Qbfo)*(3600sec/1hr)]
Tbf = 46.10 hours

100 YEAR FLOOD
Maximum Allowable Flow = Qa
Qa = 0.15 * Total Area Tributary to Basin (acres)
Qa = 0.15 * 0.6265
Qa = 0.094 cfs
Calculate Q100 (flow not accomodated by FF or BF orifice under 100 year conditions)
Hbf = X100 - Xff
Hbf = 1.61 ft
Hff = X100-Xbot
Hff = 2.71 ft
Qff + Qbf = (0.62)(Aff)(2gHff)1/2 + (0.62)(Abf)(2gHbf)1/2
Qff + Qbf = 0.27 cfs
Calculate Q100
Q100 = Qa - (Qff+Qbf)
(0.17) cfs
Calculate Orifice Area required to Discharge Q100
H100 = X100 - Xbf
H100 = 0.91 ft
Atot = Q100/(0.62(2*g*H100)^0.5)
Atot = (0.04) ft2
Calculate # of Orifice Openings
Orifice Diam. = **3** inches
Area = 0.049 ft2
Calculate # of Orifices Needed
Orifice = Atot/(Area of Orifice)
Orifice = (0.75)
of openings required -1.000
Check allowable flow rate is not exceeded
Qact = Qff + Qbf + 0.62*#orifice*Aorifice*(2gH100)^0.5
Qact = 0.04 cfs
Check Time for 100-year Storm Discharge (T100 < 72 hrs)
Discharge through FF orifices
Hall = 2/3(X100-Xbf)+(Xbf-Xbot)
Hall = 2.41 ft
Qall = (0.62)(#Aorif)(Aforif)(2gHall)^0.5
Qall = 0.02 cfs
Discharge through BF orifices
Hbf = 2/3(X100-Xbf)+(Xbf-Xff)
Hbf = 1.31 ft
Qbf+100 = (0.62)(#aborif)(Aaborif)(2gHbf)^0.5
Qbf+100 = - cfs
Discharge through 100-year orifices
H100 = 2/3(X100-Xbf)
H100 = 0.60 ft
Q100 = (0.62)(#a100orif)(Aa100orif)(2gH100)^0.5
Q100 = (0.19) cfs
Time to Discharge
Vrem = V100 - Vbf
Vrem = 3,736 ft3
T100 = Tbf + Vrem/[(Qall + Qbf+100 + Q100)*(3600sec/1hr)]
T100 = 46.04 hrs

ORIFICE TABLE

CALCULATED	ELEVATION	ORIFICE #	DIAM. (IN)
Xff	751.10	1	0.75
Xbf	751.80	1	2
X100	752.71	-1	3

EMERGENCY SPILLWAY DESIGN

Detention Requirements
Tc for 100-Year Flood Volume Storage Calculation
Calculate Qo
A = 0.6265
Weighted C = 0.89
Qa = 0.15 cfs/acre * Acres
Qa = 0.094 cfs
Qo = Qa/(A*C)
Qo = 0.169 cfs/(ac-imp)
Calculate Storage Time for 100-year storm event
Tc = -25 + (10312.5/Qo)1/2
Tc = 222.36 min
Maximum Flow Rate
Qmax = C*I*A
Tc = 222.36 min
I10year = 175 / (Tc + 25)
Qmax = **0.39** cfs

Minimum Velocity = 2 fps
Maximum Velocity = 6 fps
Minimum Slope = 1.5 %
Side Slope No Steeper Than = 1V : 3H

Calculations:
Channel Bottom Width (B) = 1.00 ft
Channel Depth (d) = 0.50 ft
Channel Side Slope 1V : H = 4

Flow Area = B*d + 2*(1/2)*(d)(H*D)
1.50 ft2

Wetted Perimeter = B+2*(d2+(d*H)2)1/2
5.123

Hydraulic radius = Area / Wetted Perimeter
0.293

Mannings Formula:
n = 0.035
slope, s = 2 %

Full Flow, Q = 1.486/n*A*(A/P)2/3*(s/100)1/2
3.971 cfs
Is Full Flow greater than Qmax? **YES**

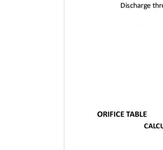
Velocity, V = Q/A
2.65 fps
Is Velocity less than 10 fps? **YES**

CAPACITY OF DETENTION BASIN OUTLET PIPE

Sum of all Flow into Basin =	0.71 cfs
Volume of Detention Basin =	6,884 ft3
Time to Fill Det. Basin = Vprov / Flow into Basin =	161.60 min
Longest Tc (from Storm Sewer Calculations) =	5.53 min
Isp = (175/(tc+ffil basin+25) =	0.91 in/ hr
Qexpso = C*isp*A =	0.51 cfs
Outlet Size =	12 in
A =	0.79 ft2
Slope =	0.44 %
n =	0.013
Hydraulic Radius, R =	0.397
Velocityruu =	3.01 ft/s
Q = VA =	2.36 cfs

Use	12	in Dia Outlet

Use 12" Diameter Overflow Outlet Pipe @ 0.44% Slope



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

Know what's below. Call before you dig.

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

BENCHMARKS:
(NAVD88 DATUM)

BENCHMARK 1
ARROW ON EX. WATER HYDRANT
ELEV. = 758.39

BENCHMARK 2
ARROW ON EX. WATER HYDRANT
ELEV.= 759.58

DATE	REVISION
12/19/2025	
3/11/2026	

Community Engineering Corps

ENGINEERS WITHOUT BORDERS USA DETROIT

CHAPTER NAME: EWB USA DETROIT
LOCATION: DETROIT, MI
CONTACT: CHAPTER@EWB-DETROIT.ORG

REIC: MICHELLE THOMPSON, P.E.
PROJECT LEAD: ANDREW O'CONNOR
PROJECT LEAD:
DRAWN BY: ANDREW O'CONNOR
ROLE

12/14/2025
CHECK DONE

SECTION 35
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR CHARTER TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

CLAY HILL COMMUNITY FARM & GARDEN
CLIENT: CLAY HILL COMMUNITY FARM & GARDEN
1850 NORTH HARRIS ROAD
SUPERIOR CHARTER TOWNSHIP, MI 48198
DETENTION BASIN CALCULATIONS

SCALE 0 - -
NO SCALE
SHEET NO.: C8
SHEET 8 OF 9

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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

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LEGEND

- PROPERTY LINE
- PROPOSED GRAVEL
- PROPOSED STORM STRUCTURES
- PROPOSED STORM SEWER
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER LEAD
- PROPOSED SANITARY CLEANOUT
- PROPOSED SANITARY LEAD
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER MAIN
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRIC
- EXISTING ASPHALT
- 1000 PROPOSED CONTOURS
- 1000 EXISTING CONTOURS

RAIN GARDEN SEED MIX

QUA.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
	Aquilgea canadensis	COLUMBINE	2"x6" LIVE PLUG	18" O.C.
	Carex stipata	COMMON FOX SEDGE	2"x6" LIVE PLUG	18" O.C.
	Rudbeckia hirta	BLACK EYED SUSAN	2"x6" LIVE PLUG	18" O.C.
	Asclepias incarnata	SWAMP MILKWEED	2"x6" LIVE PLUG	24" O.C.

FOREBAY AND BORDER GRASS SEED MIX

40%	CREEPING RED FESCUE
30%	ANNUAL RYEGRASS
20%	PERENNIAL RYEGRASS
10%	KENTUCKY BLUEGRASS
NO FERTILIZER SHALL BE USED	

VEGETATED SWALES, DETENTION POND UPPER FREEBOARD AREA AND BORDER PLANTINGS

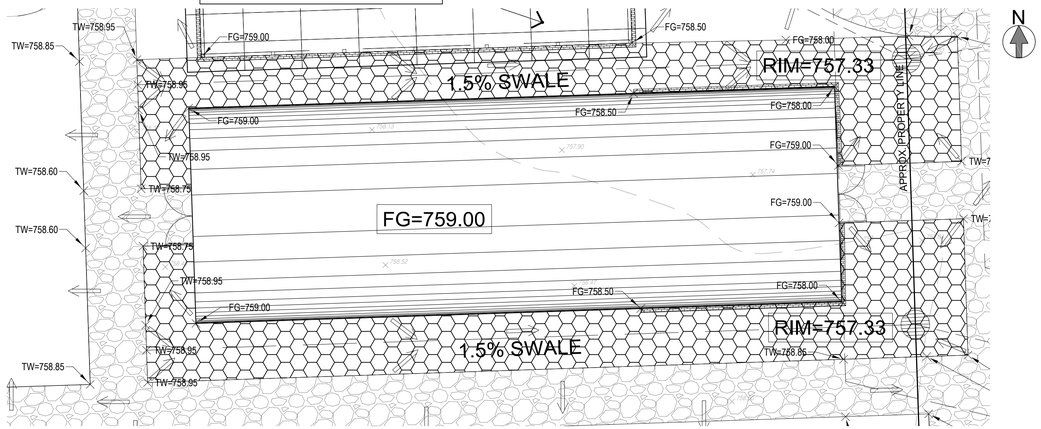
QUA.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
	Aquilgea canadensis	COLUMBINE	2"x6" LIVE PLUG	18" O.C.
	Carex stipata	COMMON FOX SEDGE	2"x6" LIVE PLUG	18" O.C.
	Rudbeckia hirta	BLACK EYED SUSAN	2"x6" LIVE PLUG	18" O.C.

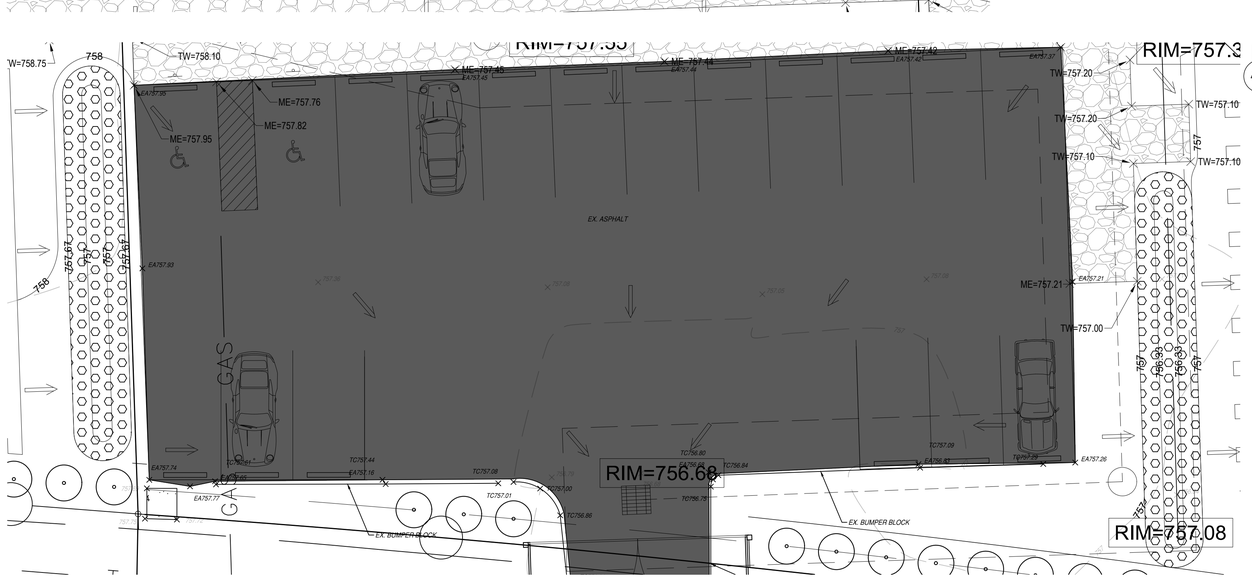
DETENTION POND LOWER FREEBOARD AREA PLANTINGS

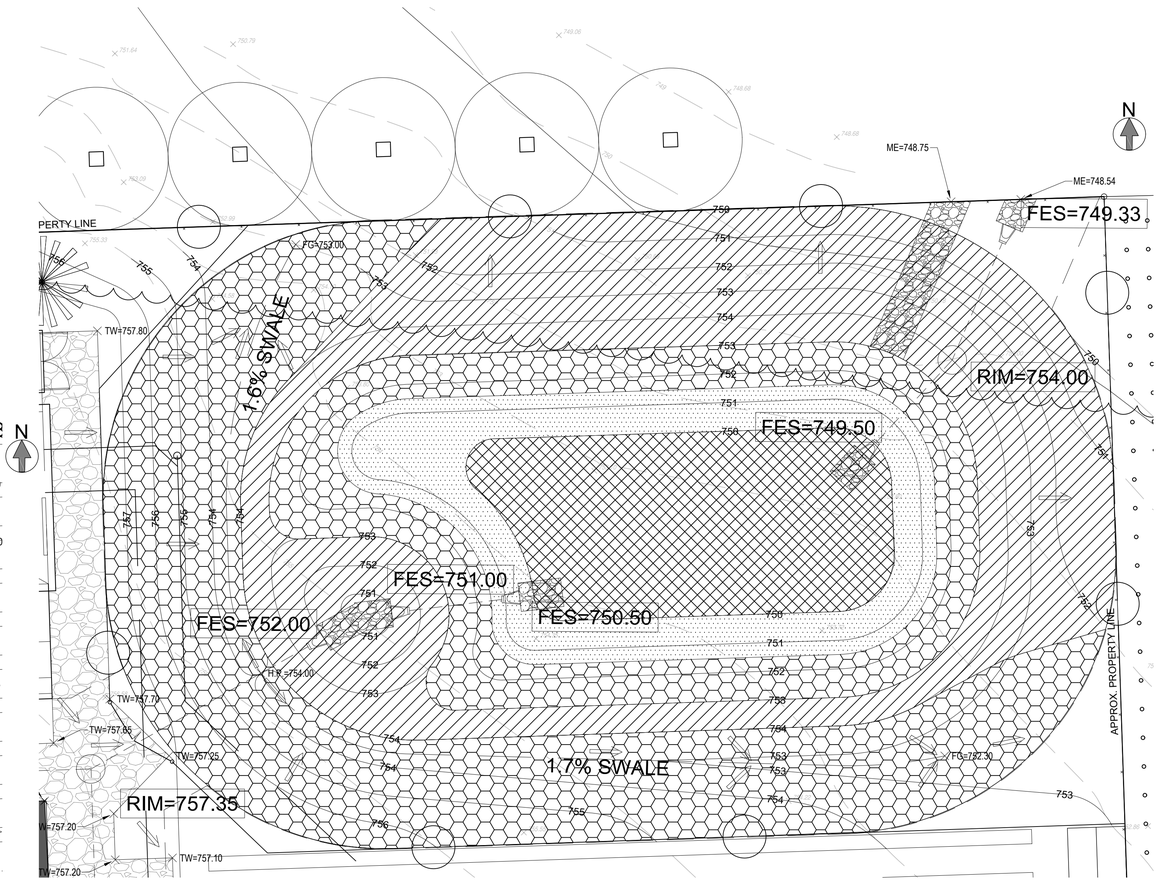
QUA.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
	Aster novae-angliae	NEW ENGLAND ASTER	2"x6" LIVE PLUG	36" O.C.
	Cornus sericea	RED TWIG DOGWOOD	2"x6" LIVE PLUG	36" O.C.
	Eryngium yuccifolium	RATTLESNAKE MASTER	2"x6" LIVE PLUG	36" O.C.

DETENTION POND FLOOR AREA PLANTINGS

QUA.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
	Asclepias incarnata	SWAMP MILKWEED	2"x6" LIVE PLUG	24" O.C.
	Iris verginica	BLUE FLAG IRIS	2"x6" LIVE PLUG	24" O.C.
	Lobelia siphilitica	BLUE LOBELIA	2"x6" LIVE PLUG	24" O.C.
	Panicum virgatum	SWITCH GRASS	2"x6" LIVE PLUG	24" O.C.







NOTE:
A 2' CLAY LINER WILL BE INSTALLED UNDER THE FOREBAY AND DETENTION BASIN STARTING AT ELEVATION 753.

NOTE:
NO CHEMICALS ARE ALLOWED IN STORMWATER FEATURES OR BUFFER ZONES WITH THE FOLLOWING EXCEPTION: INVASIVE SPECIES MAY BE TREATED WITH CHEMICALS BY A CERTIFIED APPLICATOR.

DATE	REVISION
12/19/2025	
3/11/2026	

Community Engineering Corps

ENGINEERS WITHOUT BORDERS USA DETROIT

CHAPTER NAME: EWB USA DETROIT
LOCATION: DETROIT, MI
CONTACT: CHAPTER@EWB-DETROIT.ORG

REIC: MICHELLE THOMPSON, P.E.	12/14/2025	
PROJECT LEAD: ANDREW O'CONNOR		
PROJECT LEAD:		
DRAWN BY: ANDREW O'CONNOR		
ROLE	CHECK DONE	

SECTION 35	CLAY HILL COMMUNITY FARM & GARDEN
TOWN 2 SOUTH, RANGE 7 EAST	CLIENT: CLAY HILL COMMUNITY FARM & GARDEN 1850 NORTH HARRIS ROAD SUPERIOR CHARTER TOWNSHIP, MI 48198
SUPERIOR CHARTER TOWNSHIP	LANDSCAPING PLAN
WASHTENAW COUNTY, MICHIGAN	

SCALE
0 5 10
1" = 10 FEET

SHEET NO.: C9

SHEET 9 OF 9

MATCH LINE A

SANITARY STRUCTURE TABLE					
STRUCTURE I.D.	NORTHING	EASTING	STRUCTURE TYPE	RIM ELEVATOIN	PIPES
1	N= 281683.5688	E= 13335778.2700	SANITARY MANHOLE	RIM = 756.54	12" RCP INV. = 783.05

LEGAL DESCRIPTION J -10-35-200-009

THE LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF WASHTENAW, TOWNSHIP OF SUPERIOR, PART OF THE NORTHWEST 1/4 CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST. W.D. L3325 P924 ****FROM 1035200067 07/22/9851U 35-5A-1A-1A COM AT NW COR SEC 35, TH S 01-47-15 E 1520.09 FT ALNGC/L HARRIS RD TO POB, TH N 88-27-45 E 233.00 FT, TH S 01-47-15 E 236.11 FT, TH N 82-44-06 W 235.95 FT, TH N 01-47-15 W 200.00 FT TO POB. PT OF NW1/4 SEC 35, T2S-R7E. 1.17 AC.

LEGAL DESCRIPTION J-10-35-200-003

THE LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF WASHTENAW, TOWNSHIP OF SUPERIOR, PART OF THE NORTHWEST 1/4 CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST. *OLD SID - J 10-035-006-05 SU 35-5A-1C COM AT NW CORNER SEC 5, TH S 1-47-15 E 2151.7 FT TO POB, TH S 87-56-30 E 196.7 FT, TH N 4-40 E 60 FT, TH N 1-47-15 W 213.57 FT, TH S 88-12-45 W 203.0 FT, TH SOUTH TO POB PART OF NW 1/4 SEC 35 T2S R7E 1.0 AC

LEGAL DESCRIPTION J-10-35-200-004

THE LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF WASHTENAW, TOWNSHIP OF SUPERIOR, PART OF THE NORTHWEST 1/4 CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST. W.D. L3325 P924 ****FROM 1035200007 07/22/9851U 35-5A-1A-1A COM AT NW COR SEC 35, TH S 01-47-15 E 1520.09 FT ALNGC/L HARRIS RD TO POB, TH N 88-27-45 E 233.00 FT, TH S 01-47-15 E 236.11 FT, TH N 82-44-06 W 235.95 FT, TH N 01-47-15 W 200.00 FT TO POB. PT OF NW1/4 SEC 35, T2S-R7E. 1.17 AC.



SITE LOCATION MAP

NOT TO SCALE

EXISTING UTILITY LEGEND

- EXISTING OVERHEAD UTILITY
- EXISTING OVERHEAD TELEPHONE
- EXISTING GAS MAIN
- EXISTING CONDENSATION LINE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TELEPHONE LINE
- EXISTING FIBER OPTIC LINE
- EXISTING CABLE TELEVISION
- FUEL LINE
- EXISTING IRRIGATION LINE
- EXISTING STORM SEWER
- EXISTING WATER MAIN, AS NOTED
- EXISTING SANITARY SEWER
- CONTOUR
- INDEX CONTOUR
- CHAIN LINK FENCE
- IRON FENCE
- WOOD FENCE
- HYDRANT
- GATE VALVE
- POST INDICATOR VALVE (PIV)
- WATER MAIN MANHOLE
- SQUARE CATCH BASIN
- ROUND CATCH BASIN
- BEEHIVE CATCH BASIN
- SANITARY MANHOLE
- END SECTION
- CULVERT
- STORM MANHOLE
- CLEAN OUT
- SIGN
- UTILITY POLE
- RISER
- LIGHT POLE
- LANDSCAPE LIGHT
- SPRINKLER
- ELECTRICAL BOX/TRANSFORMER
- ELECTRICAL MANHOLE
- FLAG POLE
- MAILBOX
- TOP OF CURB
- GUTTER
- EX. GRADE
- EDGE OF ASPHALT
- TOP OF WALL
- BOTTOM OF WALL
- TREE
- CONCRETE
- ASPHALT PAVEMENT
- GRAVEL
- RIP-RAP

NOTES

- DRAWING BASED ON NAD83 MICHIGAN STATE PLANE COORDINATES SYSTEM, SOUTH ZONE, INTERNATIONAL FOOT.
- THIS SURVEY WILL NOT SHOW ALL EASEMENTS OF RECORD UNTIL AN UPDATED TITLE POLICY HAS BEEN FURNISHED TO THE SURVEYOR BY THE OWNER.
- ALL ELEVATIONS ARE RECORD/EXISTING ELEVATIONS
- THE LOCATION OF THE EXISTING UTILITIES AS SHOWN WERE OBTAINED FROM CLIENT PROVIDED DOCUMENTS, MUNICIPAL AND UTILITY COMPANIES RECORDS. NO GUARANTEE CAN BE MADE REGARDING THE COMPLETENESS OR EXACTNESS OF THE UTILITIES LOCATION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY IN THE FIELD THE LOCATION OF ALL UTILITIES.

BENCHMARK DATA:

BENCHMARK 1
ARROW ON HYDRANT
ELEV= 758.39

BENCHMARK 2
ARROW ON HYDRANT
ELEV= 759.58

FLOODPLAIN NOTE:

THE SUBJECT PROPERTY LIES IN FLOOD ZONE "X", ACCORDING TO FLOOD INSURANCE RATE MAP, MAP NO. 26161C0290E FOR WASHTENAW COUNTY, MICHIGAN, DATED APRIL 03, 2012 AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. LINES SHOWN HAVE BEEN DIGITALLY TRANSLATED FROM DFIRM DATABASE INFORMATION SUPPLIED BY THE FEMA MAP SERVICE CENTER (HTTPS://MSC.FEMA.GOV). MAP NOT PRINTED

SOILS DATA

NeB - Nappanee silty clay loam, 2 to 6 percent slopes

PwmaoA - Pewamo clay loam, dense substratum, 0 to 1 percent slopes

SOIL INFORMATION TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL SURVEY SITE.

STORM STRUCTURE TABLE					
STRUCTURE I.D.	NORTHING	EASTING	STRUCTURE TYPE	RIM ELEVATOIN	PIPES
1	N= 281628.9967	E= 13335874.8800	CATCH BASIN	RIM = 753.60	12" RCP INV. = 749.10 (SW)
2	N= 281673.8129	E= 13335526.2700	CATCH BASIN	RIM = 757.45	12" RCP INV. = 753.30 (S)
3	N= 281803.3823	E= 13335411.0900	END SECTION		12" RCP INV. = 755.35
4	N= 281828.1472	E= 13335411.4300	END SECTION		12" RCP INV. = 755.20
5	N= 281863.3248	E= 13335410.5200	END SECTION		12" RCP INV. = 755.06
6	N= 281888.1175	E= 13335410.2600	END SECTION		12" RCP INV. = 754.19
7	N= 282025.9485	E= 13335405.6100	END SECTION		48" CULVERT INV. = 749.64
8	N= 282155.5572	E= 13335398.3700	END SECTION		12" RCP INV. = 754.42
9	N= 282180.7182	E= 13335397.9600	END SECTION		12" RCP INV. = 754.73
10	N= 282394.9427	E= 13335390.3300	END SECTION		12" RCP INV. = 758.24
11	N= 282423.1958	E= 13335389.4800	END SECTION		12" RCP INV. = 758.11
12	N= 282436.8009	E= 13335389.4400	END SECTION		12" RCP INV. = 759.61
13	N= 281628.9967	E= 13335874.8800	CATCH BASIN	RIM = 761.43	12" RCP INV. = 761.43 (S)

PRIORITY ENGINEERING, LLC

Engineer's Seal

STATE OF MICHIGAN
Thomas M. Smith
License No. 4001031606
LICENSED PROFESSIONAL SURVEYOR

Certification

North

SCALE

0' 20' 40'

GRAPHIC SCALE: 1" = 20'

Project
CLAY HILL FARM MARKET

Project Location
9045 MACARTHUR BLVD, SUPERIOR CHARTER TOWNSHIP, MICHIGAN

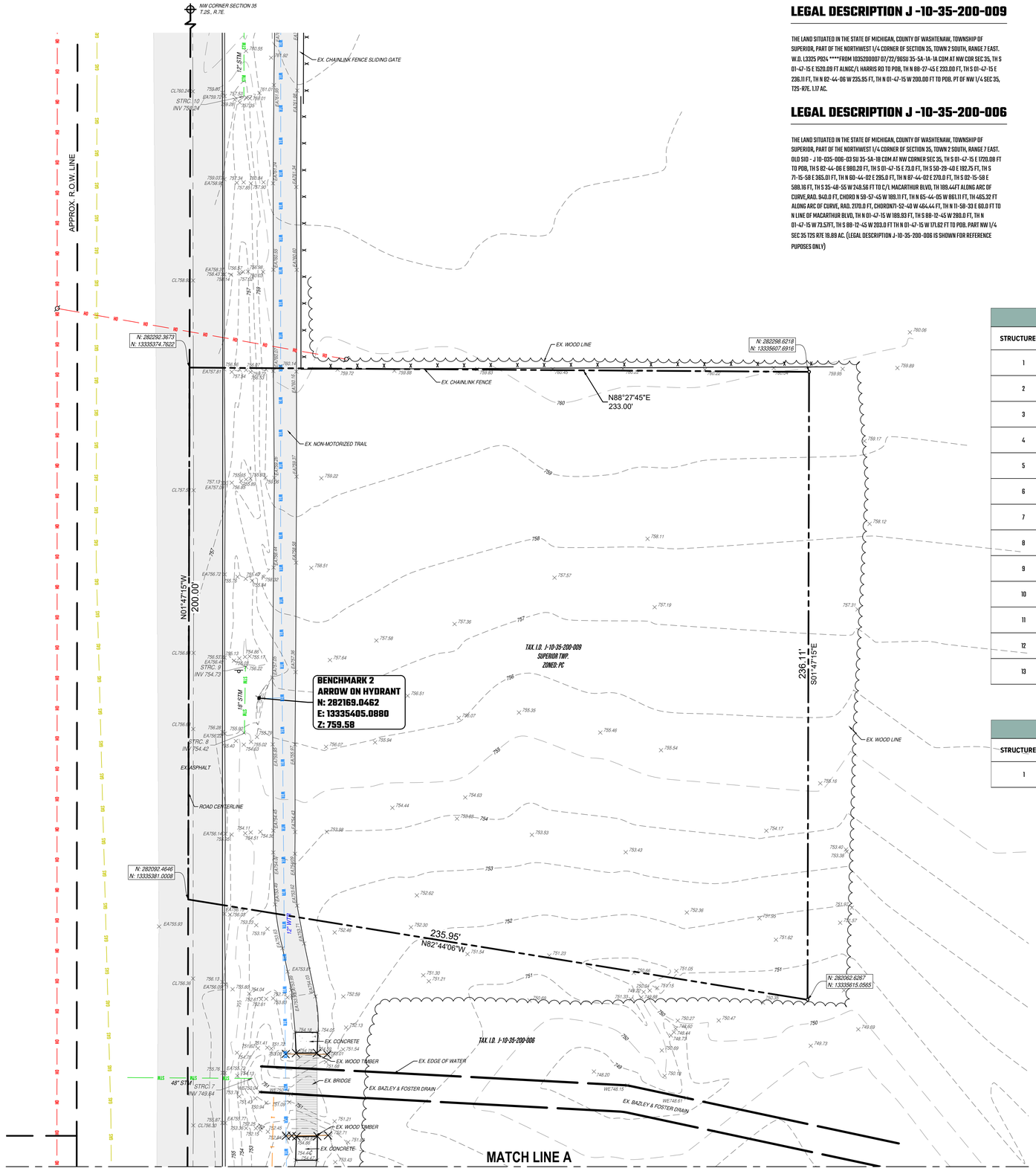
Sheet Name
TOPOGRAPHIC SURVEY

Revisions

REV	ISSUED FOR	ISSUE DATE	BY

Date:	04/15/2024
Reviewed By:	BF
ENG/CADD:	BH
Checked By:	KMA
PE Project No.	24-0008
Sheet No.	1

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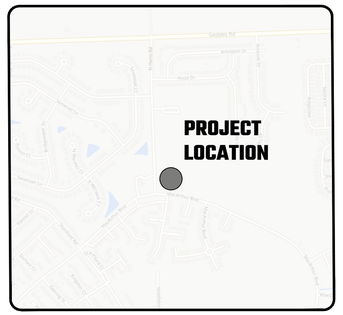


LEGAL DESCRIPTION J -10-35-200-009

THE LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF WASHTENAW, TOWNSHIP OF SUPERIOR, PART OF THE NORTHWEST 1/4 CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST. W.D. L 13325 P924 ****FROM 1035200007 07/22/08SU 35-5A-1A-1A COM AT NW COR SEC 35, TH S 01-47-15 E 1520.09 FT ALNGC/L HARRIS RD TO POB, TH N 88-27-45 E 233.00 FT, TH S 01-47-15 E 236.11 FT, TH N 82-44-06 W 235.95 FT, TH N 01-47-15 W 200.00 FT TO POB. PT OF NW 1/4 SEC 35, T2S-R7E. 1.17 AC.

LEGAL DESCRIPTION J -10-35-200-006

THE LAND SITUATED IN THE STATE OF MICHIGAN, COUNTY OF WASHTENAW, TOWNSHIP OF SUPERIOR, PART OF THE NORTHWEST 1/4 CORNER OF SECTION 35, TOWN 2 SOUTH, RANGE 7 EAST. OLD SID - J 10-035-006-03 SU 35-5A-1B COM AT NW CORNER SEC 35, TH S 01-47-15 E 1720.08 FT TO POB, TH S 82-44-06 E 980.20 FT, TH S 01-47-15 E 73.0 FT, TH S 50-29-40 E 192.75 FT, TH S 71-15-58 E 365.01 FT, TH N 60-44-02 E 295.0 FT, TH N 87-44-02 E 270.0 FT, TH S 02-15-58 E 588.16 FT, TH S 35-48-55 W 248.56 FT TO C/L MACARTHUR BLVD, TH 189.44FT ALONG ARC OF CURVE,RAD. 940.0 FT, CHORD N 58-57-45 W 189.11 FT, TH N 65-44-05 W 861.11 FT, TH 465.32 FT ALONG ARC OF CURVE, RAD. 2070.0 FT, CHORD N71-52-40 W 464.44 FT, TH N 11-58-33 E 60.0 FT TO N LINE OF MACARTHUR BLVD, TH N 01-47-15 W 189.93 FT, TH S 88-12-45 W 200.0 FT, TH N 01-47-15 W 73.57FT, TH S 88-12-45 W 203.0 FT TH N 01-47-15 W 171.62 FT TO POB. PART NW 1/4 SEC 35 T2S R7E 19.89 AC. (LEGAL DESCRIPTION J-10-35-200-006 IS SHOWN FOR REFERENCE PUPOSES ONLY)



SITE LOCATION MAP

NOT TO SCALE

STORM STRUCTURE TABLE

STRUCTURE I.D.	NORTHING	EASTING	STRUCTURE TYPE	RIM ELEVATOIN	PIPES
1	N= 281628.9967	E= 13335874.8800	CATCH BASIN	RIM = 753.60	12" RCP INV. = 749.10 (SW)
2	N= 281673.8129	E= 13335526.2700	CATCH BASIN	RIM = 757.45	12" RCP INV. = 753.30 (S)
3	N= 281803.3823	E= 13335411.0900	END SECTION		12" RCP INV. = 755.35
4	N= 281828.1472	E= 13335411.4300	END SECTION		12" RCP INV. = 755.20
5	N= 281863.3248	E= 13335410.5200	END SECTION		12" RCP INV. = 755.06
6	N= 281888.1175	E= 13335410.2600	END SECTION		12" RCP INV. = 754.19
7	N= 282025.9485	E= 13335405.6100	END SECTION		48" CULVERT INV. = 749.64
8	N= 282155.5572	E= 13335398.3700	END SECTION		12" RCP INV. = 754.42
9	N= 282180.7182	E= 13335397.9600	END SECTION		12" RCP INV. = 754.73
10	N= 282394.9427	E= 13335390.3300	END SECTION		12" RCP INV. = 758.24
11	N= 282423.1958	E= 13335389.4800	END SECTION		12" RCP INV. = 758.11
12	N= 282436.8009	E= 13335389.4400	END SECTION		12" RCP INV. = 759.61
13	N= 281628.9967	E= 13335874.8800	CATCH BASIN	RIM = 761.43	12" RCP INV. = 761.43 (S)

SANITARY STRUCTURE TABLE

STRUCTURE I.D.	NORTHING	EASTING	STRUCTURE TYPE	RIM ELEVATOIN	PIPES
1	N= 281683.5688	E= 13335778.2700	SANITARY MANHOLE	RIM = 756.54	12" RCP INV. = 783.05

EXISTING UTILITY LEGEND

- EXISTING OVERHEAD UTILITY
- EXISTING OVERHEAD TELEPHONE
- EXISTING GAS MAIN
- EXISTING CONDENSATION LINE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TELEPHONE LINE
- EXISTING FIBER OPTIC LINE
- EXISTING CABLE TELEVISION
- FUEL LINE
- EXISTING IRRIGATION LINE
- EXISTING STORM SEWER
- EXISTING WATER MAIN, AS NOTED
- EXISTING SANITARY SEWER
- CONTOUR
- INDEX CONTOUR
- CHAIN LINK FENCE
- IRON FENCE
- WOOD FENCE
- HYDRANT
- GATE VALVE
- POST INDICATOR VALVE (PIV)
- WATER MAIN MANHOLE
- SQUARE CATCH BASIN
- ROUND CATCH BASIN
- BEEHIVE CATCH BASIN
- SANITARY MANHOLE
- END SECTION
- CULVERT
- STORM MANHOLE
- CLEAN OUT
- SIGN
- UTILITY POLE
- RISER
- LIGHT POLE
- LANDSCAPE LIGHT
- SPRINKLER
- ELECTRICAL BOX/TRANSFORMER
- ELECTRICAL MANHOLE
- FLAG POLE
- MAILBOX
- TOP OF CURB
- GUTTER
- EX. GRADE
- EDGE OF ASPHALT
- TOP OF WALL
- BOTTOM OF WALL
- TREE
- CONCRETE
- ASPHALT PAVEMENT
- GRAVEL
- RIP-RAP

NOTES

- DRAWING BASED ON NAD83 MICHIGAN STATE PLANE COORDINATES SYSTEM, SOUTH ZONE, INTERNATIONAL FOOT.
- THIS SURVEY WILL NOT SHOW ALL EASEMENTS OF RECORD UNTIL AN UPDATED TITLE POLICY HAS BEEN FURNISHED TO THE SURVEYOR BY THE OWNER.
- ALL ELEVATIONS ARE RECORD/EXISTING ELEVATIONS
- THE LOCATION OF THE EXISTING UTILITIES AS SHOWN WERE OBTAINED FROM CLIENT PROVIDED DOCUMENTS, MUNICIPAL AND UTILITY COMPANIES RECORDS. NO GUARANTEE CAN BE MADE REGARDING THE COMPLETENESS OR EXACTNESS OF THE UTILITIES LOCATION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY IN THE FIELD THE LOCATION OF ALL UTILITIES.

BENCHMARK DATA:

BENCHMARK 1
ARROW ON HYDRANT
ELEV= 758.39

BENCHMARK 2
ARROW ON HYDRANT
ELEV= 759.58

FLOODPLAIN NOTE:

THE SUBJECT PROPERTY LIES IN FLOOD ZONE "X", ACCORDING TO FLOOD INSURANCE RATE MAP, MAP NO. 26161C0290E FOR WASHTENAW COUNTY, MICHIGAN, DATED APRIL 03, 2012 AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. LINES SHOWN HAVE BEEN DIGITALLY TRANSLATED FROM DFIRM DATABASE INFORMATION SUPPLIED BY THE FEMA MAP SERVICE CENTER HTTPS://MSC.FEMA.GOV). MAP NOT PRINTED

SOILS DATA

NeB - Nappanee silty clay loam, 2 to 6 percent slopes

PwmaoA - Pewamo clay loam, dense substratum, 0 to 1 percent slopes

SOIL INFORMATION TAKEN FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL SURVEY SITE.

PRIORITY ENGINEERING, LLC

Engineer's Seal

STATE OF MICHIGAN
Thomas M. Smith
License No. 4001031606
LICENSED PROFESSIONAL SURVEYOR

Certification

North

SCALE

0' 20' 40'

GRAPHIC SCALE: 1" = 20'

Project
CLAY HILL FARM MARKET

Project Location
9045 MACARTHUR BLVD, SUPERIOR CHARTER TOWNSHIP, MICHIGAN

Sheet Name
TOPOGRAPHIC SURVEY

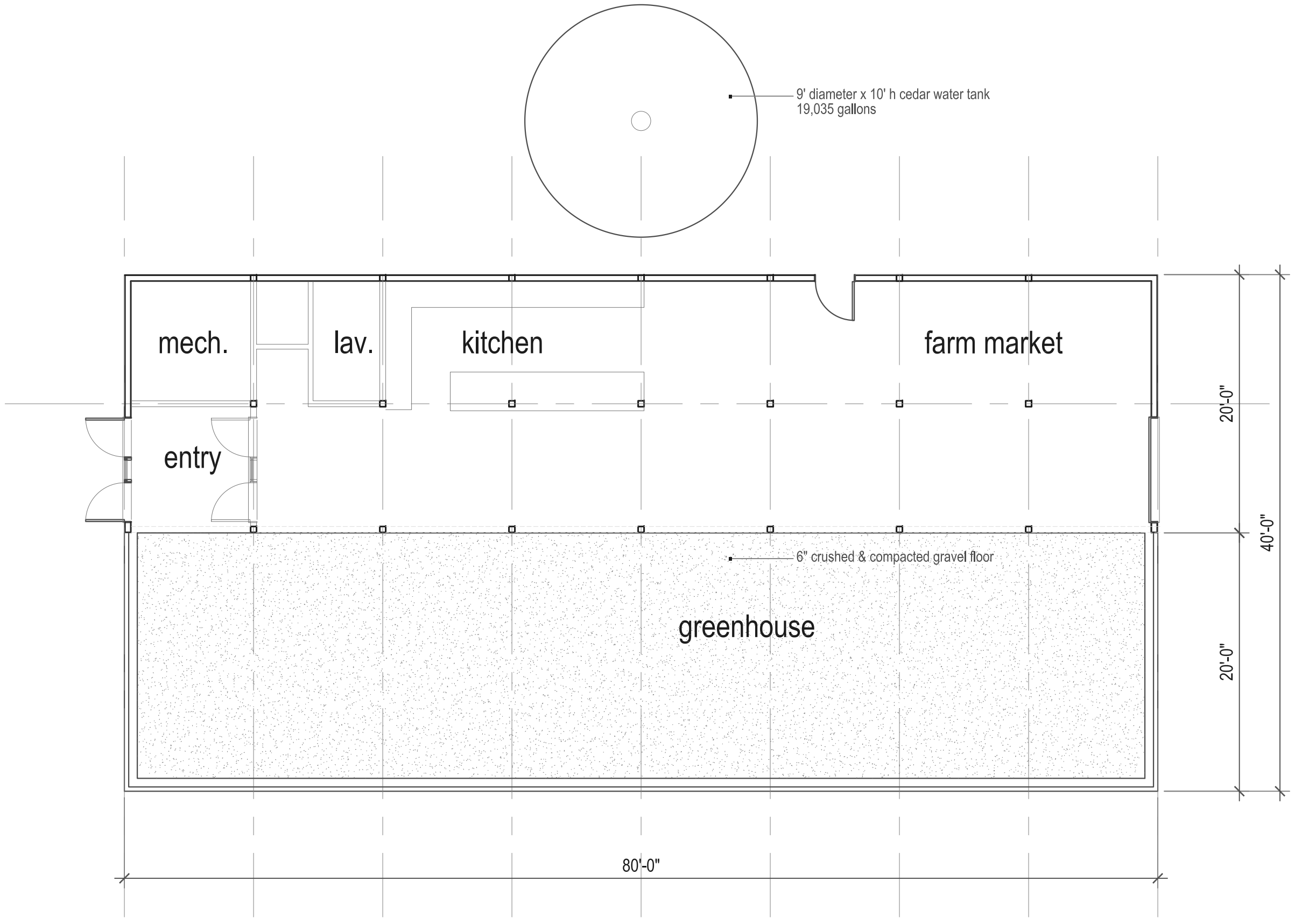
Revisions

REV	ISSUED FOR	ISSUE DATE	BY

Date:	04/15/2024
Reviewed By:	BF
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PE Project No.	24-0008
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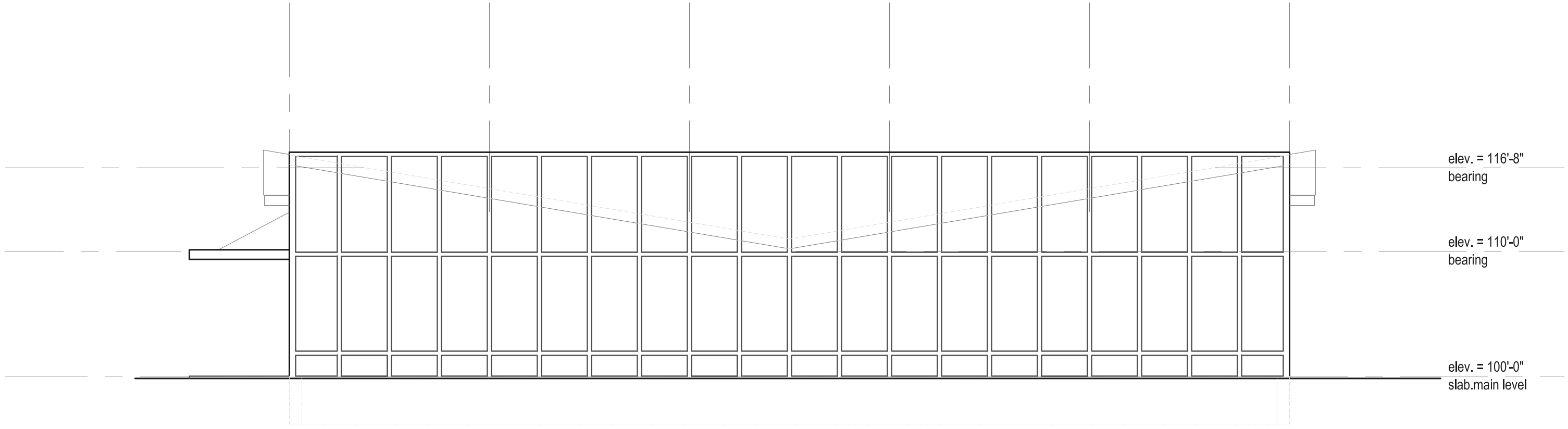
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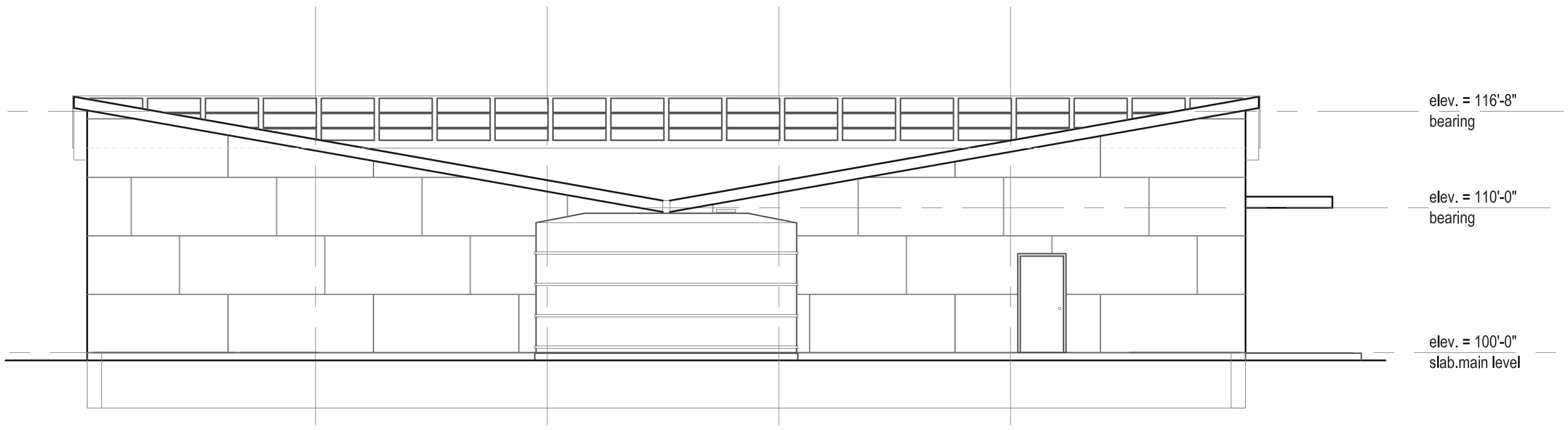
The Clayhill Farm
ypsilante. michigan

farm market/ greenhouse plan

3,200 sq. ft.
scale 1/8" = 1'- 0"

december.12.2024 d1
#2404





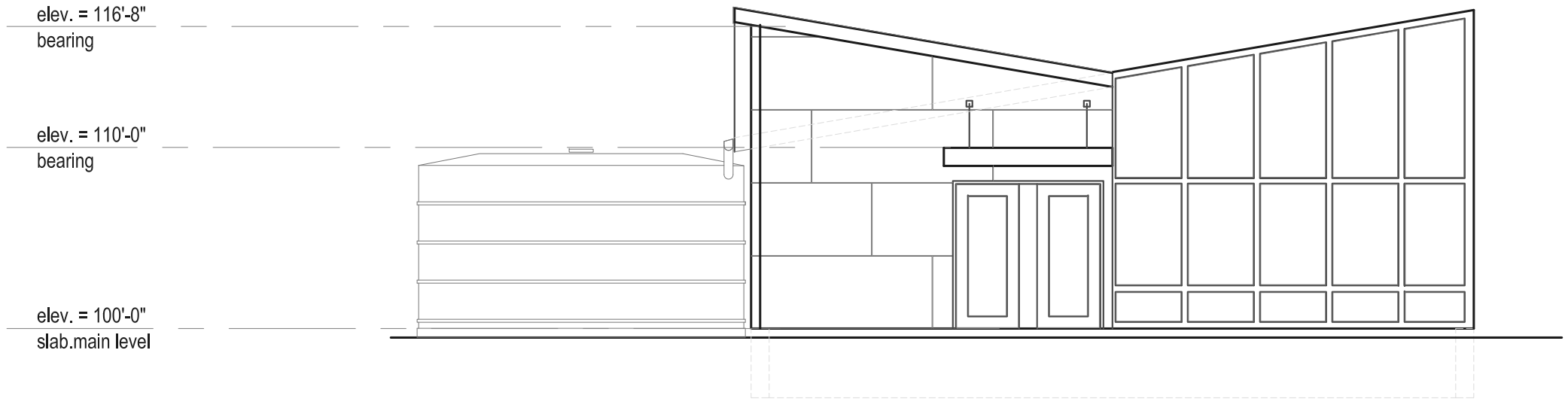
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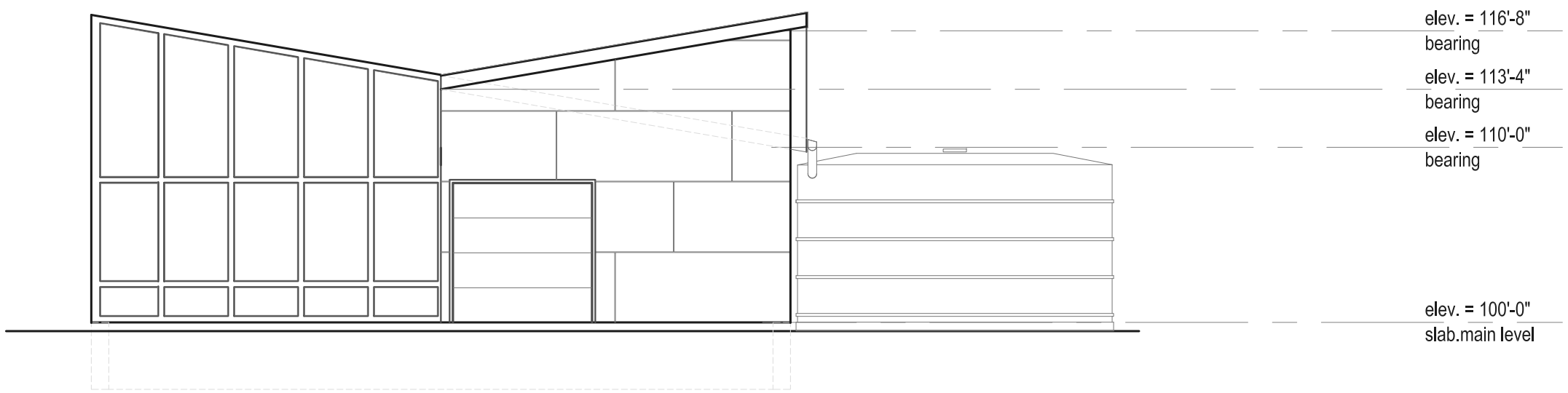
The Clayhill Farm
ypsilante. michigan

farm market/ greenhouse south & north elevation

scale 1/8" = 1'- 0"

december.12.2024 d2
#2404





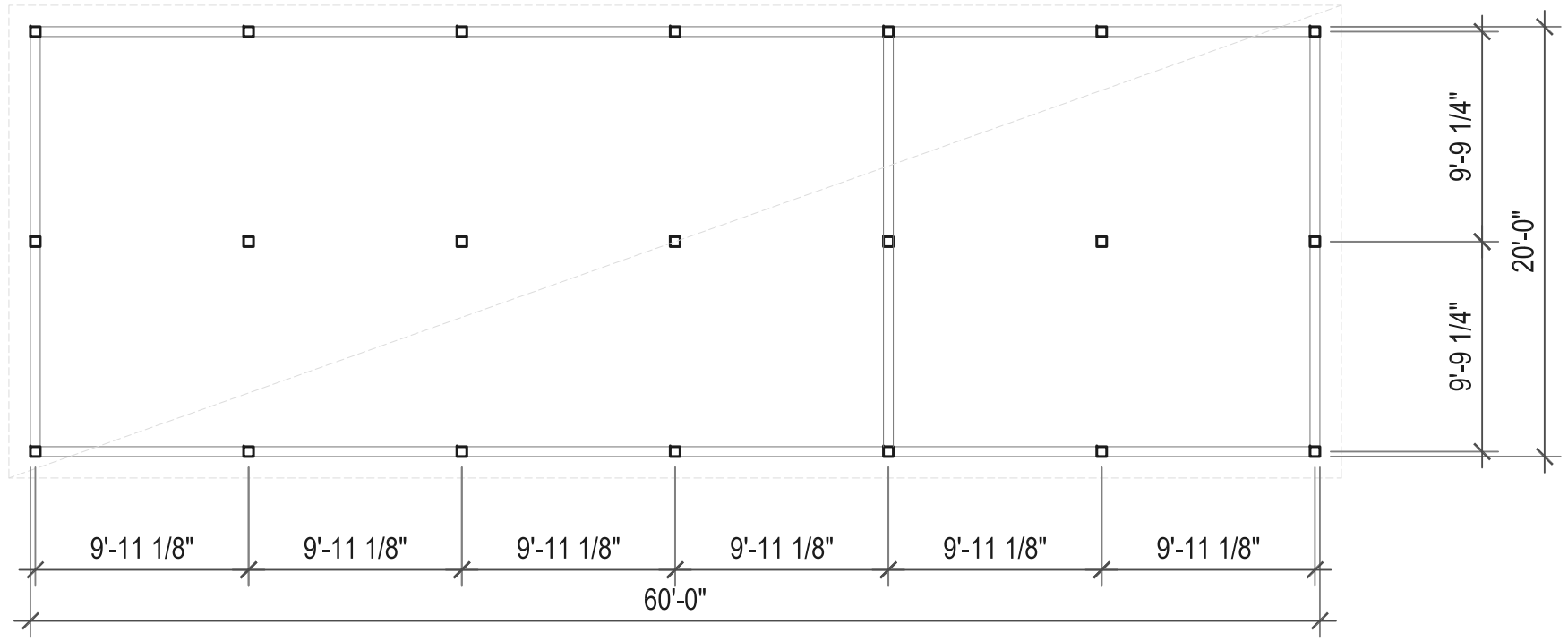
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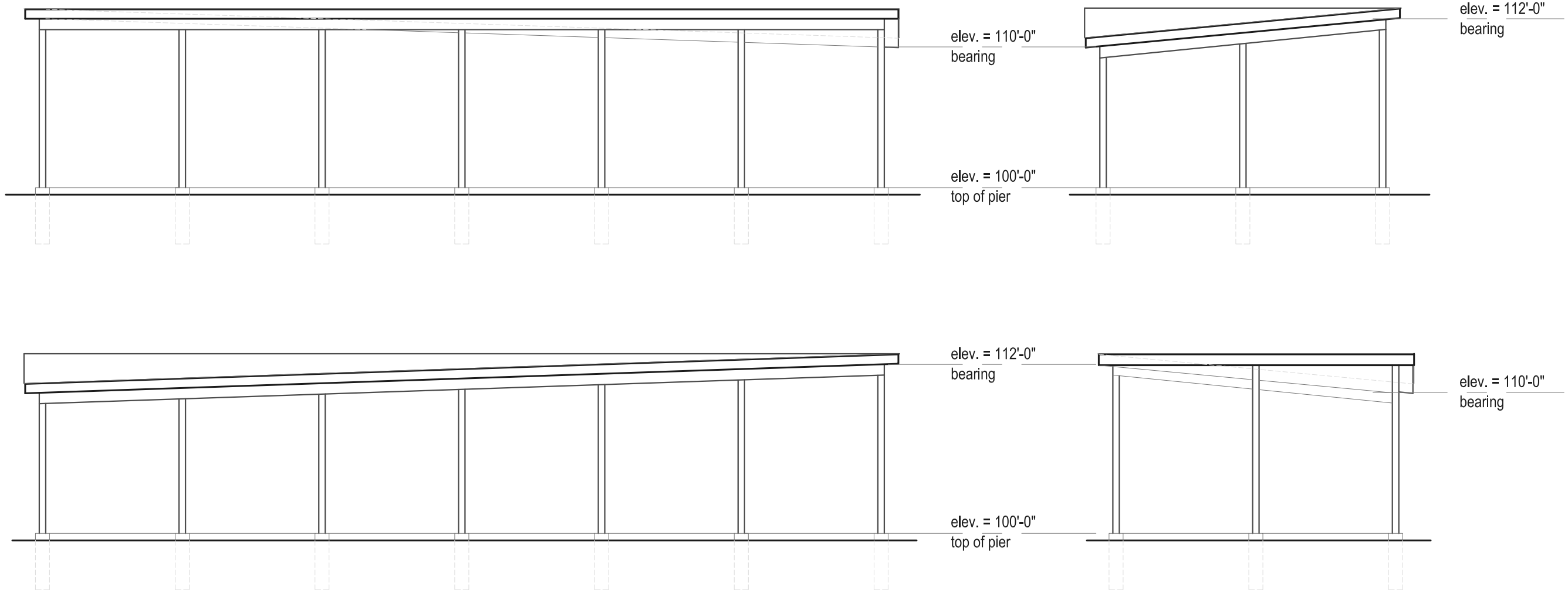
The Clayhill Farm
ypsilante. michigan

farm market/ greenhouse east & west elevation

scale 1/8" = 1'- 0"

december.12.2024 d3
#2404





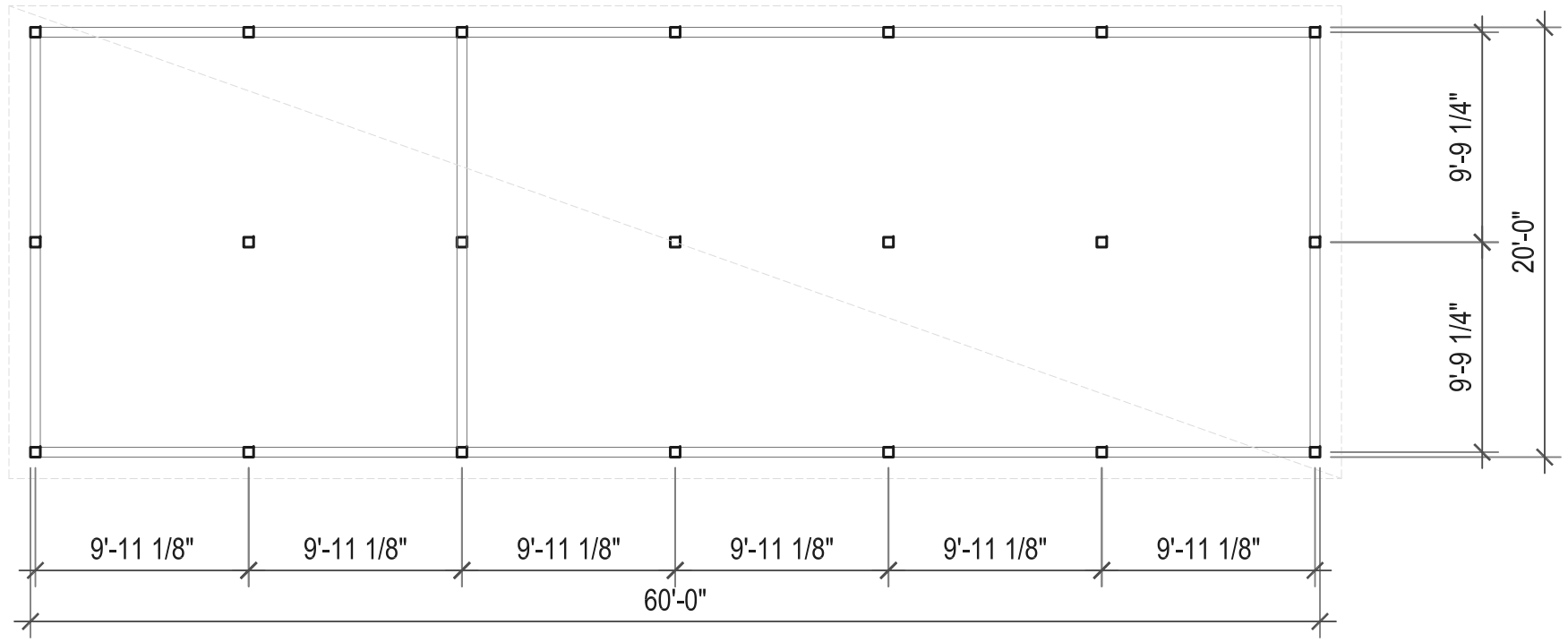
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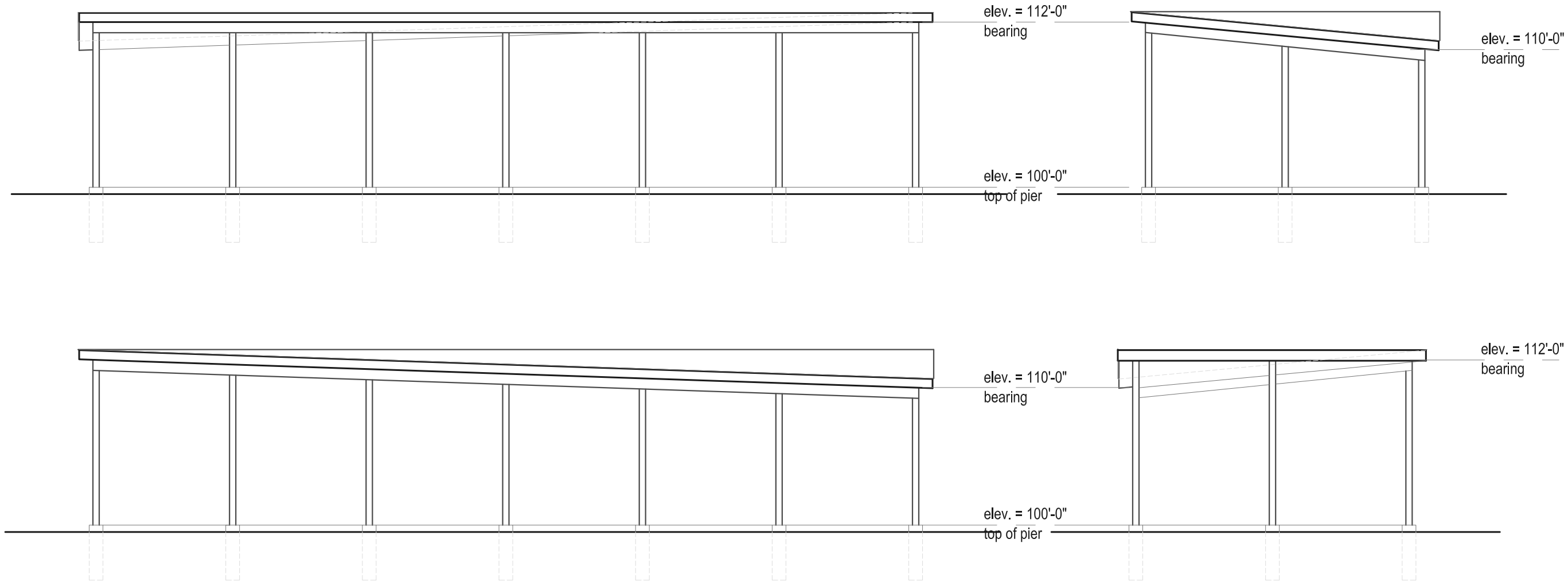
The Clayhill Farm
ypsilante. michigan

compost shed - south

1,200 sq.ft.
scale 1/8" = 1'- 0"

december.12.2024 d4
#2404





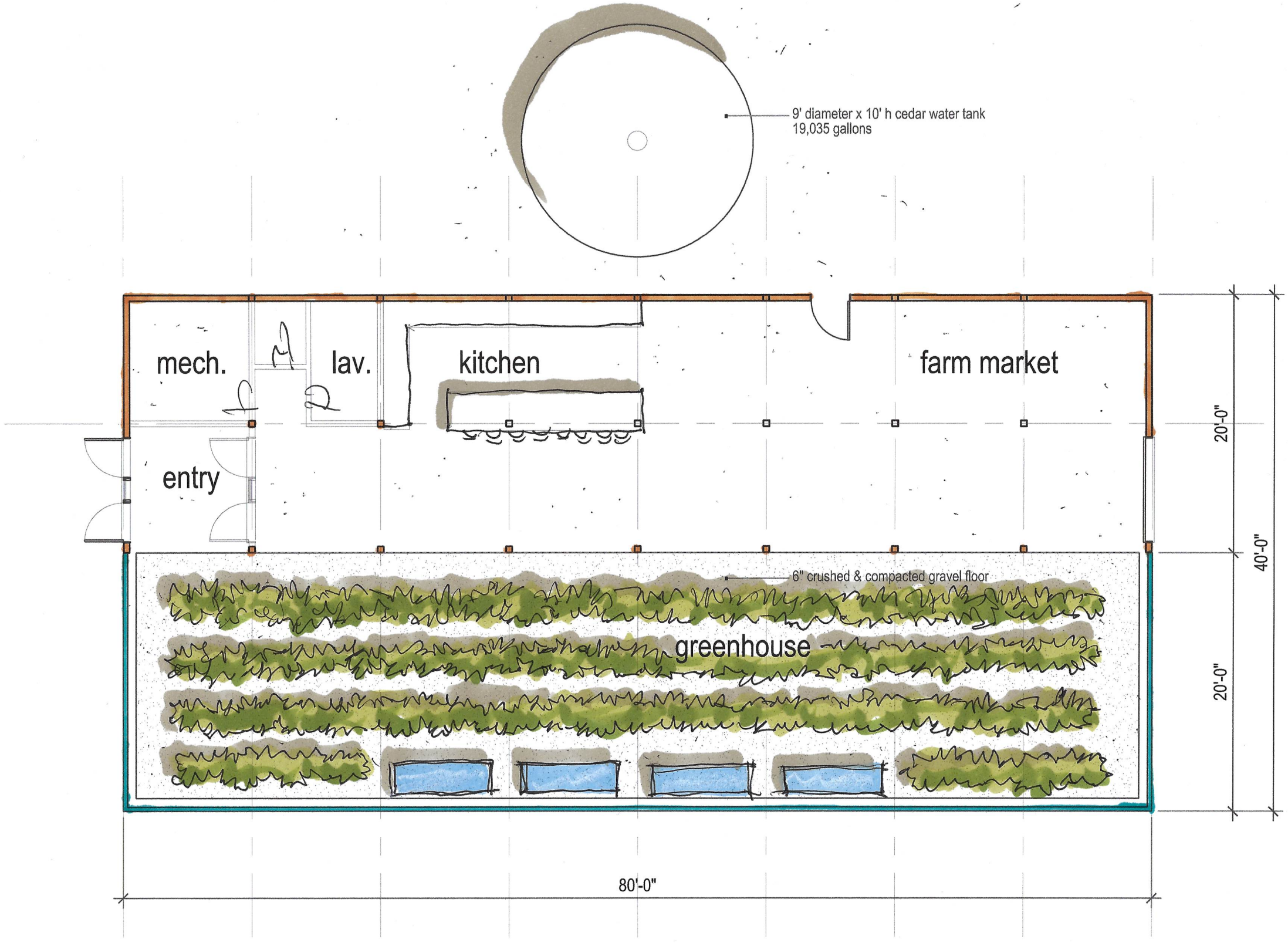
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The Clayhill Farm
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compost shed - north

1,200 sq.ft.
scale 1/8" = 1'- 0"

december.12.2024 d5
#2404



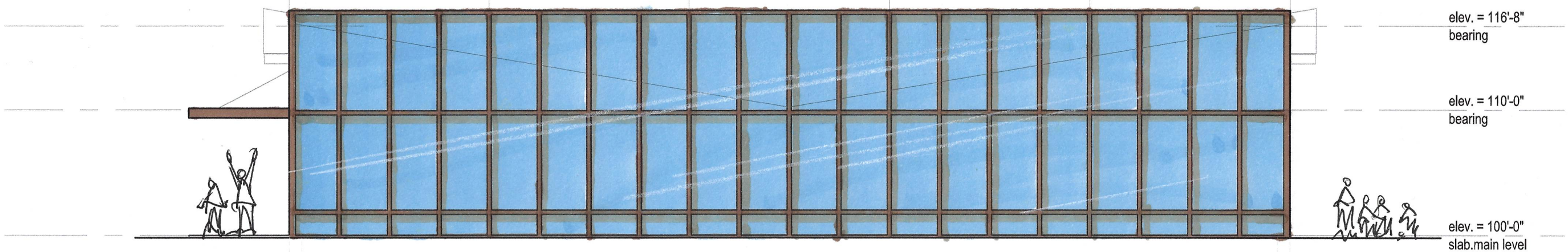
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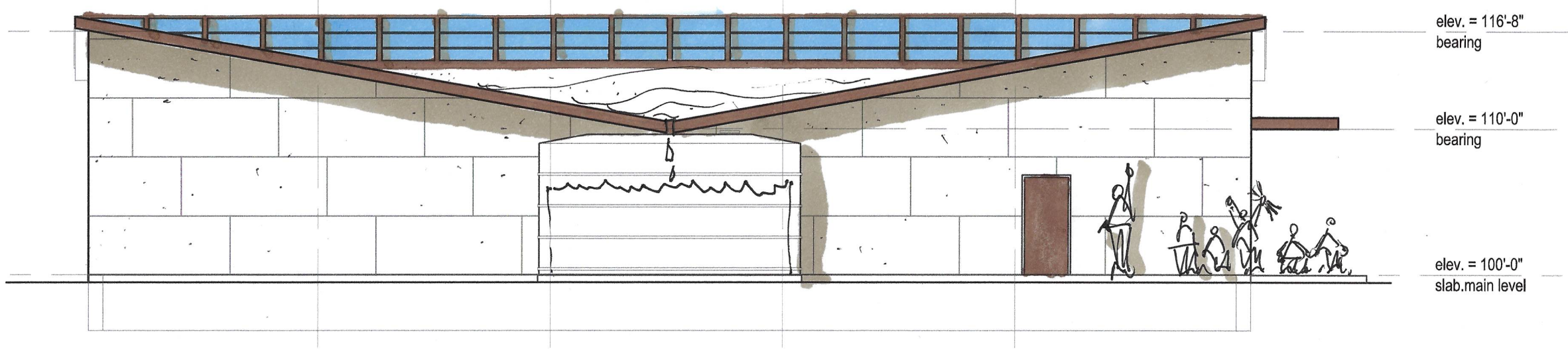
The Clayhill Farm
ypsilante. michigan

farm market/ greenhouse plan

3,200 sq. ft.
scale 1/8" = 1'- 0"

december.12.2024 d1
#2404





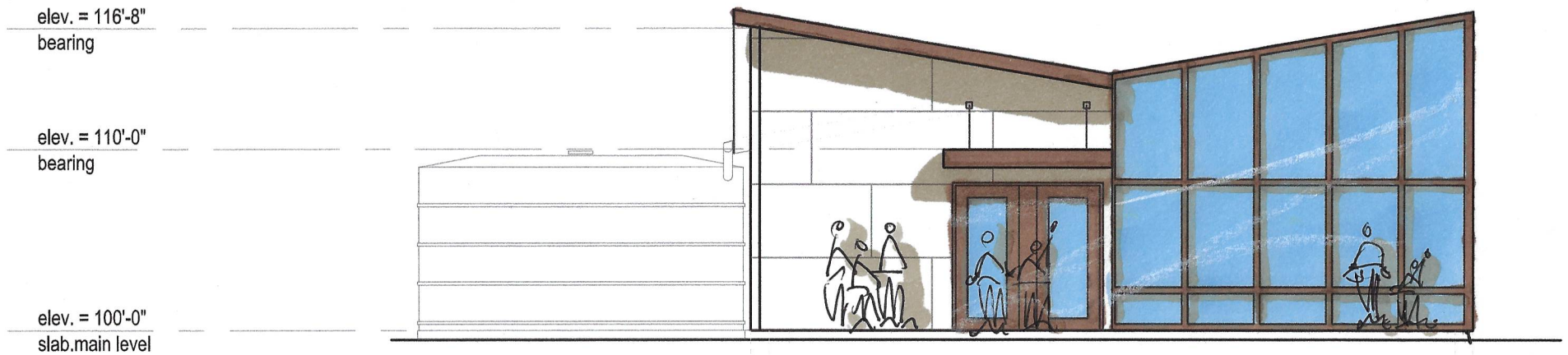
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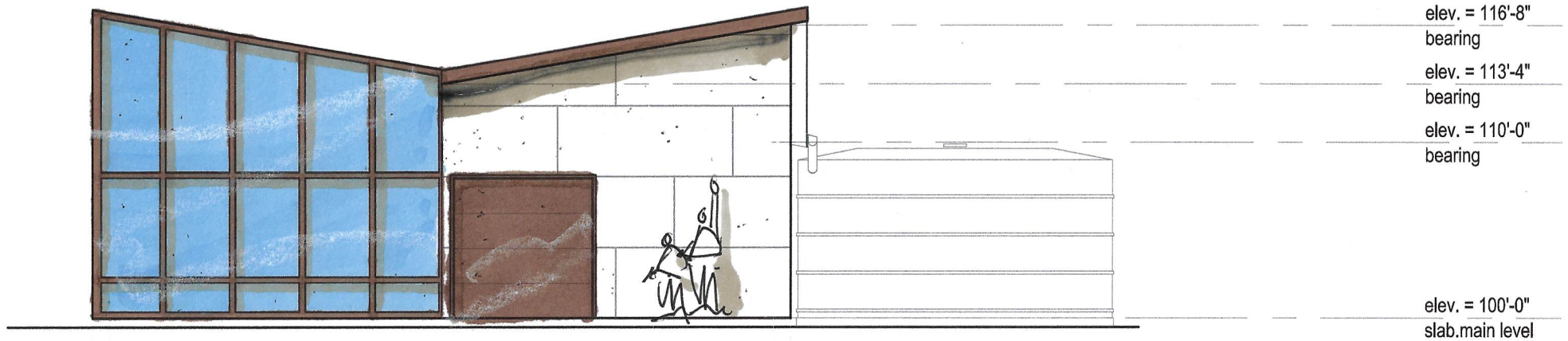
The Clayhill Farm
ypsilante. michigan

farm market/ greenhouse south & north elevation

scale 1/8" = 1'- 0"

december.12.2024 d2
#2404





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The Clayhill Farm
ypsilante. michigan

farm market/ greenhouse east & west elevation

scale 1/8" = 1'- 0"

december.12.2024 d3
#2404

MEMO

TO: Superior Charter Township Board of Trustees

FROM: Michelle Marin, Planning & Zoning Administrator

RE: Planning & Zoning Department Report

DATE: April 6, 2026

Below is a summary of the planning and zoning activities for the month of March 2026.

ZONING ORDINANCE REWRITE

Update: A public open house to educate folks on the zoning ordinance update is schedule for April 23rd 6:30 – 8pm at the Library. A Board of Trustees work session to discuss the zoning ordinance update is scheduled for May 18th at 5:30pm.

Background: At the February 25th regular meeting, the Planning Commission passed a resolution to recommend to the Township Board approval of the rewritten zoning ordinance and zoning map. The recommendation came after the public hearing and the culmination of a nearly 2-year review process. For over 1 year, the Planning Commission reviewed the draft ordinance article at a time, with several articles being discussed at multiple Planning Commission meetings.

PROSPECT POINTE SOUTH

Update: At the March 25, 2026, meeting, the Planning Commission adopted a resolution recommending approval of the area plan/rezoning petition for the Prospect Pointe South project, based on the revised area plan that was submitted on January 29th. The project is anticipated for placement on the May Board of Trustees meeting agenda. The Planning Commission recommended approval with the condition that the Board of Trustees review the public input that was offered at the Planning Commission meetings.

Background: In July 2025, M/I Homes submitted a rezoning and area plan application for a three-phase single-family residential development project, on two adjacent parcels with a total area of ~48 acres. One parcel is zoned R-4 and one parcel is zoned PC – Planned Community. The development (STPC #25-05) is located on the east side of North Prospect Road, between Berkshire Drive, Sheffield Drive, and the Autumn Woods condos. The applicant is proposing to develop Prospect Pointe South as a 119- unit single family residential development. The existing site is vacant and heavily wooded on roughly ¾ of the property. A public hearing was held at the August 27th Planning Commission meeting, at which time the Commission postponed action on the area plan application and directed the applicant to address the following items:

a. Traffic study, including coordination with the Washtenaw County Road Commission
b. Road connections, including private roads
c. Stormwater management
d. Landscape buffer
e. Power grid capacity
f. Density concerns

The applicant submitted revised plans, following a meeting with the development review team. Carlisle Wortman provided a review of the revised plans, and many of the suggested site layout changes were not taken into consideration by the applicant. The applicant appeared again on the December 17th Planning Commission meeting. Following a lengthy discussion, the Planning Commission postponed action and directed the application to address the following items:

1. Provide increased landscaping buffer along Lakeview Estates and between Park Lane.
2. Consider alternative site layouts including access and reconfiguration of houses fronting on Berkshire.
3. Consider alternative housing products such as duplexes or townhomes.
4. Address stormwater management concerns.

CLAY HILL COMMUNITY FARM AND GARDEN

The applicant submitted a site plan application that substantially deviated from the approved area plan. As such, the applicant is applying for an area plan amendment as well as site plan approval. A public hearing for the area plan amendment will be held at the April 22nd Planning Commission meeting. Following the Planning Commission recommendation, the area plan amendment will advance to the Board of Trustees for final approval. The site plan is not expected to be ready for Planning Commission review until the May meeting at the earliest.

DTE GRENADA SUBSTATION

Update: OHM is currently reviewing the environmental reports and subconsultants are reviewing the noise and EMF studies provided by DTE. The applicant submitted revised plans on April 6, 2026.

Background: Conditional Use Permit/Preliminary Site Plan - DTE Grenada Substation Expansion (STPC #25-02). The applicant submitted a revised application, including a revised site plan, noise study, EMF study, environmental impact statement, and site renderings. in November. The project appeared on the December 17, 2025, Planning Commission agenda. Following a lengthy discussion of the changes, the Planning Commission postponed action and directed the applicant to address the following items:

1. Township to independently review the following:
    i. Environmental Impact Study

   ii. Electromagnetic Field Study
   iii. Noise Study
2. Provide graphics to confirm if the combination of a berm and landscaping is sufficient to screen all site operations from all property lines.
   i. If deficient, increase berm and landscaping.
3. Confirm ability to obtain 12-foot-tall evergreens.
4. Clarify tree replacement shortfall (97 required vs. 63 proposed) and how remaining replacement obligations will be satisfied (additional on-site trees, off-site planting, or other Township-acceptable mitigation).
5. Provide more detailed tree preservation analysis to confirm viability of "to remain" trees whose critical root zones may be disturbed.
6. Provide formal landscape maintenance plan (practices, products, schedule, and replacement of dead/diseased plant material).
7. Confirm whether site lighting will be used only for emergencies and maintenance normal condition: lights off) and ensure any operating schedule is clearly documented.
8. Confirm feasibility of brick wall around facility.

TIMBER CREEK AREA PLAN

Update: The area plan application was fully submitted on February 27th and distributed to the plan reviewers. Following staff review of the application, a public hearing has been scheduled for the April 22nd Planning Commission meeting to consider the area plan petition.

Background: The Planning Commission discussed a concept plan for a mixed density housing development located on MacArthur Blvd at parcel ID #J -10-35-300-003 at the December 17, 2025, meeting. The applicant has not formally submitted an area plan application but provided a concept plan that was reviewed by Ben Carlisle for the housing project, aimed to be completed by the end of 2028. The developer, Elmington Capital, develops, owns, and operates income-restricted housing units financed through tax credits. For the proposed Timber Creek project, 20 acres of the site will be developed by Elmington, and the remainder of the site will be developed as a single-family housing community by another TBD developer. 80% of the units will be 60% AMI, which is $70,000-$90,000 annual household income. 10% of units will be at 70% AMI, which is up to $102,000 annual income, and 10% will be at 40% AMI. The applicant indicated that there will be no housing vouchers tied to the project.

TRINITY HEALTH – ER ADDITION/RENOVATION

On October 29th, the Planning Commission approved a site plan (STPC #25-07) for a renovation/addition project to the Trinity Health Emergency Department. The site plan includes

alterations to the parking and drop off area as well as a building addition to allow additional ER rooms. The approval was conditioned upon the applicant addressing minor outstanding planning and engineering items. The conditions of approval were satisfied in December 2025. Construction is scheduled to begin in April 2026.

PROSPECT POINTE WEST

Prospect Pointe West is a four-phase single-family residential development project, on a ~67-acre parcel of land zoned R-4, an Urban Residential District. The development is located on the southwest corner of Geddes Road and Prospect Road, west of Hunters Creek Drive in the northeast quarter of Section 33. The applicant is proposing to develop Prospect Pointe West as a 157-unit site condominium.

The four (4) phases consist of the following number of units:

- Phase 1 – 39 units
- Phase 2 – 45 units
- Phase 3 – 26 units
- Phase 4 – 47 units

The proposed lot dimensions are 66' x 130' with a minimum lot size of 8,580 sf. The homes will range in size from 2,000 to 3,200 sf with sales prices starting in the $400,000s. The development has private roads with sidewalks on both sides and will be serviced by public sanitary sewer which will be designed as an extension of the existing Prospect Pointe development. Public water will also be extended from the existing subdivision. Each phase of the development is required to go through the Final Site Plan process.

The Final Site Plan for Prospect Pointe West Phase 1 (STPC #22-03) was approved by action of the Superior Township Planning Commission on April 26, 2023, and includes 39 single family lots. Building permits for individual homes are being issued and construction has commenced.

The Final Site Plan for Prospect Pointe West Phase 2 (STPC #24-01) was approved by action of the Superior Township Planning Commission on May 22, 2024, and includes 45 single family lots. The Development Agreement for Phase 2 has been recorded and a preconstruction meeting was held on September 10, 2024.

The Final Site Plan for Prospect Pointe West Phase 3 (STPC #25-01) was approved by the Planning Commission at the May 28th meeting. This phase includes 25 single family lots. The development agreement was approved by the Township Board of Trustees at the September 15th meeting.

The applicant submitted a final site plan application for Prospect Pointe West Phase 4 (STPC #25-08) in September. The final site plan was approved, without conditions, at the December 17, 2025, Planning Commission meeting.

MEADOWS 2 AT HAWTHORNE MILL AREA PLAN

Lombardo and Atwell have submitted an application for an area plan for 12 single family detached homes at 7330 Geddes Road, directly adjacent to the Meadows at Hawthorne Mill development. The Meadows 2 (STPC #25-10) includes interior connections to the original Meadows at Hawthorne Mill and proposes no new entrances from Geddes Road. The planning review of the proposed area plan questions how the 12 homes will be connected to the original Meadows at Hawthorne Mill homes, particularly with respect to a single HOA. The public hearing for the proposed area plan occurred at the November 19th Planning Commission meeting, where the Planning Commission had a lengthy discussion regarding the ways in which the proposed project is supported by some of the Master Plan goals but conflicts with others. Ultimately, the Planning Commission determined that the area plan was warranted and approved a resolution recommending approval to the Township Board of the proposed area plan and rezoning. The Township Board approved the Area Plan at their December 15, 2025, meeting.

TRINITY HEALTH - EMERGENCY FAMILY SHELTER

Following a public hearing on August 27th, the Planning Commission approved the conditional use permit to establish an emergency family shelter in the Towsley Health Building of the Trinity Health Campus, in the MS Medical Services District. The proposed project (STPC #25-04) provides 30 apartment-style temporary housing units for families in need, in collaboration with the Interfaith Hospitality Network at Alpha House. The application does not include a site plan, as the existing building is already outfitted with dwelling units, and the project includes interior renovations only. This project will mark the second temporary housing facility in Washtenaw County managed by Alpha House. The Alpha House grand opening occurred in November 2025.

HYUNDAI FUEL LOADING SYSTEM

On August 27th, the Planning Commission approved a combined preliminary and final site plan for a fueling facility at the Hyundai America Technical Center in the PM Planned Manufacturing District. The project (STPC #25-06) includes the construction of a two-pump accessory fueling facility and underground storage tanks. The facility is intended for vehicles being used on site and does not include a retail sales component. The planning and engineering reviews have been completed, with

several outstanding items identified in both reviews. Construction began on the project in September 2025.

GARRETT'S SPACE

Garrett's Space is proposed to be a residential center where young adults suffering from depression and anxiety are treated. The facility will include both in-patient and daily services, with a non-medical and non-institutional focus. Garrett's Space is proposed on seven (7) parcels that will be combined into one lot totaling approximately 76.0 acres. The property has historically been used as a single-family residence with an address of 3900 Dixboro Road and is in Section 7 of the Township. The site includes significant natural resources including woodlands, steep slopes, a creek, floodplain, and wetlands.

The applicant proposes the following improvements:

1) Convert the existing home on the site to administrative offices
2) Construct a 10,100 square foot building to house 15 to 20 residents
3) Construct a 2,100 square foot building for recreational and therapy activities
4) Construction of a parking lot
5) Landscaping improvements
6) Create walking paths and lookouts through the site's natural features.
7) Expanding the sites well and sceptic system
8) Construct two (2) stormwater detention ponds

The applicant proposes a phased development:

- Phase 1: Use of the existing house for administrative offices and day programming. This phase does not include any overnight guests.
- Phase 2: Construction of the residential structure and creativity studio with parking areas, and utility and landscaping improvements. This phase includes expanded day programming and overnight residents.
- Phase 3: Additional ancillary elements, including the barn for gardening and therapeutic animals, and outdoor recreation and gathering spaces, will be constructed as funding allows.

Previous Township approvals are as follows:

- Property was rezoned from A-2 to Planned Community (PC) Special District via an Area Plan petition approved by the Township Board on July 17, 2023.

- The applicant recorded a Zoning and Land Use Agreement dated October 16, 2023, that limits uses, the number of residents and the number of employees.

- A Preliminary Site Plan (STPC 23-03) was approved by the Planning Commission with conditions on January 24, 2024.

- A Final Site Plan (STPC 23-03) was approved by the Planning Commission on September 25, 2024, with the following conditions:
  1) Obtain all outside agency approvals permits outlined in Township Engineer's memo dated 9/19/24.
  2) Combine existing seven (7) parcels into one parcel prior to receiving certificate of occupancy.
  3) Record conservation protection prior to certificate of occupancy.

- A Development Agreement was approved by the Township Board on October 21, 2024.

To date, the applicant has completed Final Site Plan conditions #1, #2, and #3:

1) OHM reviewed the Engineering Plans submittal (dated 12/20/24) and had no exceptions to the proposed development moving forward as shown on the plans as submitted.

2) The seven (7) parcels have been combined into one and a new parcel assigned (J -10-07-200-021). Furthermore, the Township Assessor has changed the zoning of this new parcel to PC.

3) Resolution No. 2025-13 to approve Garrett's Space Conservation Deed Restriction Agreement between Garrett's Space and the Township was approved by the Board of Trustees on March 17, 2025.

Building permits have been submitted and a preconstruction meeting was held on March 18, 2025. Preliminary site work has commenced. The approved Development Agreement requires the conservation area protection to be recorded prior to Certificate of Occupancy (CO) for the main residential structure to be newly constructed (Phase 2). A temporary C of O was issued for the Phase 1 portion of the project on December 19th.

BROOKWOOD

Brookwood is a Master Planned Community on an ~84 acre parcel of land zoned Planned Community (PC) a Special District. The development is located on the east side of Leforge Road approximately 700 feet north of Clark Road in the southwest corner of Section 33. The applicant is proposing to develop Brookwood with 318 dwelling units divided into three (3) residential dwelling product types (i.e., stacked flats, duplex units, four-plex units, and attached townhomes).

The development is designed for renters and owners plus a section dedicated for people over 55 years of age. Stacked flats and duplexes are anticipated to rent from $1.50 - $2.50 per square foot. The townhomes will be for sale and priced per unit according to the market. The development will also include a clubhouse, amenity areas, paved parking areas, landscape improvement, and a continuous sidewalk network along private drives throughout the development and walking paths that connect amenities with various areas of the development. Existing public water and sanitary sewer mains will be extended to serve the development.

The Brookwood Superior Area Plan Amendment was approved at second reading by the Township Board on May 20, 2024.
The Brookwood Superior Preliminary Site Plan (STPC #23-05) was approved by action of the Superior Township Planning Commission on May 22, 2024, with the following conditions:

1) Address all items in the Township Engineers May 9, 2024, review.
2) Provide additional details on Natural Feature Plan including how the 25% slopes will be protected, and their integrity remain intact.
3) Provide a more detailed landscape plan that meets all landscape, screening, and woodland preservation requirements.
4) Provide lighting and photometric plan.
5) Provide a detailed narrative of the architectural concept for the site including materials details.

The Final Site Plan for Brookwood Estates (STPC #23-05) was approved by the Planning Commission at the May 2025 meeting. The engineering plans have been reviewed by OHM. Applicant must still obtain EGLE water main permit, private sanitary pump station permit, and SESC permit.

THE MEADOWS AT HAWTHORNE MILLS

The Meadows at Hawthorne Mills is a 215 unit single-family residential site condominium located on 71 acres of land located south of Geddes Road and east of Leforge Rd. The site includes private roads that provide two (2) access points to Geddes Road and has two (2) connection points with the adjacent Prospect Pointe West Development. In addition, there is a road stub for future development to the south. The proposed development will be served with public utilities. A sewer will connect from Leforge Road, and the Prospect Pointe Development and water will be looped throughout the development from Geddes Road. Stormwater management will be handled with four (4) proposed detention ponds located throughout the development.

The entire development received preliminary site plan approval on October 28, 2020. There are five (5) phases of development, and each phase required final site plan approval. The final site plan for Phase 1 was approved by the Planning Commission with conditions on November 15, 2023. Phase

1 includes a total of 40 lots/units as well as construction of the roads and infrastructure items to directly serve those units, extension of a sanitary sewer from LeForge Road across the neighboring property to the west needed to service Phase 1, and mass grading of the entire site.

The final site plan for Phase 1 of the Meadows at Hawthorne Mill was set to expire and the applicant petitioned the Planning Commission to grant a one-year extension. On January 22, 2025, the Planning Commission granted an extension of the approved final site plan with the following conditions:

1. Provide a cost estimate for required woodland mitigation to be paid into Superior tree fund. Once a fund number is agreed upon with the Township, the applicant shall pay the amount to the Township.
2. All future homebuilders will be required to submit floor plans and elevations for review and approval by the Planning Commission.
3. Secure all required Washtenaw County Road Commission (WCRC) permits and right-of-way dedications to facilitate improvements at the intersection of Prospect and Geddes Rd as well as turn lane improvements for the private connection on Geddes Road.
4. Complete a Development Agreement and present to the Board of Trustees for approval prior to Phase 1 moving to the pre-construction phase of the development.

The applicant for the Meadows at Hawthorn Mills (Louis J. Eyde Family, LLC) is selling the property, possibly in two parts, to Lombardo and/or Pulte. Jared Kime of Atwell is working with Pulte to prepare necessary submissions including an amendment to the Phase 1 Final Site Plan. An application to amend the final site plan was received on March 13, 2025, and is under review. A summary of the changes proposed are as follows:

1. Phase 1 FSP revision
    a. Minor revisions to lot grading for Pulte standards
    b. Landscape revision and phasing of the tree impacts/mitigation calculations
    c. Reduction of mass grading to only phase 1 and the sanitary corridor going through future phases
    d. Would also include the necessary building elevations for PC review
2. Overall Engineering Plan update
    a. Raised road grades on south half of site to improve earthwork balance
    b. Associated lot grading revisions throughout site
    c. Some storm sewer modifications due to the lot changes in future phase areas
    d. Updated water main profiles due to new road elevations in future phase areas

e. Overall landscape plan update with tree impacts/mitigation calculations

The Planning Commission has authority to determine whether a requested change is major or minor, in accordance with this Section 10.12. Changes to the ownership may impact changes to the site layout, and as such the review of the project is currently on hold until ownership changes are verified.

Other outstanding items to be addressed by the applicant(s) prior to any final site plan approval:

1. Development Agreement – BOT approval
2. Intersection ROW dedication – BOT approval

The Development Agreement was approved by the Board of Trustees at the August meeting, conditioned upon finalizing the Right-of-Way Dedication. The applicant is aiming to begin construction in Spring 2026.

ZONING BOARD OF APPEALS

Per bylaws, the ZBA consists of seven (7) regular and two (2) alternates members appointed by the Township Board. One (1) of the members must be a member of the Township Planning Commission and one member may be a member of the Township Board. The remaining members must reside in the unincorporated areas of the Township and represent the population distribution and various interests present. Current ZBA members include:

- Thomas Brennan, (Chair & PC Member)
- Rachel Smith
- Dana Greene (BOT)
- Tanya Markos-Vanno
- Meghan Winslow
- Jack Gilbreath
- William Schoefield
- Austin Anderson (alternate)

The Township has regularly scheduled ZBA meetings on the 2nd Wednesday of the month; if there are no agenda items, the meeting is cancelled. The March 2026 meeting was canceled due to a lack of agenda items. The April meeting has similarly been canceled.

PLANNING COMMISSION

Per bylaws, the Planning Commission shall consist of seven (7) members serving three (3) year terms with eligibility for re-appointment. One member of the Township Board shall be appointed to the

Planning Commission as an ex officio member and Township Board Representative, with full voting rights. The current Planning Commission is comprised of the following members:

- Jay Gardner, Chair (Term expires 2/28/2029)
- Robert Steele, Vice Chair (Term expires 2/28/2028)
- Thomas Brennan, Secretary (Term expires 2/28/2027)
- Patrick McGill (Term expires 2/28/2027)
- Brenda McKinney– Board Rep. (Term expires 11/7/2028)
- Nahid Sanii-Yahyai (Term expires 2/28/2029)
- Curt Wolf (Term expires 1/01/2028)

OTHER BUSINESS/NEWS

1) Michelle Marin of Carlisle Wortman Associates (CWA) reviewed and approved 24 Certificates of Zoning Compliance and Burn Permits in March.

   Michelle responded to many general phone and email inquiries from the public both during and outside of office hours and met in person with numerous folks at the Township Hall during office hours. She prepared the packet and staffed the March Planning Commission meeting. Michelle works with Accounts Payable to ensure all escrow accounts are balanced at the end of each month.

2) Carlisle Wortman Associates staff also serve in the role as the Township Planner and review and manage projects that are paid from escrows including applicant inquiries and project coordination.

Carlisle | Wortman
ASSOCIATES, INC.
117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

TO: Superior Township Planning Commission

FROM: Benjamin Carlisle and Michelle Marin, Planning Consultants

DATE: March 18, 2026

RE: Zoning Ordinance Amendment: Energy Systems and Facilities

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BACKGROUND

Based on our recommendation and the Board's request, we have prepared the attached proposed zoning ordinance amendment that would amend Section 10.05 KK, Energy Systems and Facilities, of the proposed Superior Township Zoning Ordinance. The amendment establishes standards for the siting, design, installation, and operation of Battery Energy Storage Systems (BESS), Solar Energy Systems (SES), and Wind Energy Systems (WES) within the Township.

The purpose of the amendment is to provide a clear regulatory framework for emerging energy technologies while addressing potential impacts related to safety, noise, visual character, and compatibility with surrounding land uses. The standards are intended to allow appropriate energy development while protecting the public health, safety, and welfare of Township residents.

In November 2023, the State of Michigan adopted Public Act 233 of 2023, which established a new siting framework for certain large renewable energy facilities. The law grants the Michigan Public Service Commission (MPSC) authority to approve the location of large-scale wind, solar, and battery storage facilities under certain circumstances.

Under PA 233, developers may seek state approval for qualifying renewable energy projects rather than local approval if the local zoning ordinance does not allow the facility or is considered more restrictive than the standards established by the State. As a result, local governments retain the ability to regulate renewable energy facilities through zoning; however, local standards must be consistent with the state law to avoid the possibility of state preemption.

The proposed ordinance amendment is intended, in part, to ensure that Superior Township has clear and defensible standards in place to guide the review of energy facilities while remaining consistent with the framework established by PA 233. While the proposed

Benjamin R. Carlisle, *President* John L. Enos, *Vice President*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal* Brent Strong, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* Craig Strong, *Principal* Douglas J. Lewan, *Principal*
Richard K. Carlisle, *Past President/Senior Principal* R. Donald Wortman, *Past Principal*

ordinance does not constitute a Compatible Renewable Energy Ordinance (CREO) under state law, the regulations are intended to remain workable so that a potential developer could reasonably meet Township requirements rather than seeking approval through the Michigan Public Service Commission (MPSC).

OVERVIEW OF PROPOSED AMENDMENT

Definitions and Applicability

The amendment introduces definitions for various energy technologies and related terminology, including battery energy storage systems, solar energy systems, wind energy systems, and utility-scale energy facilities. These definitions clarify the types of systems regulated by the ordinance and distinguish between small-scale systems serving on-site energy needs and utility-scale facilities intended to generate or store electricity for distribution through the electrical grid. The definition and regulations for small-scale solar systems that do not meet the 50 MW threshold were already included in the zoning ordinance that was recommended for approval in February.

The standards would apply to all BESS, SES, and WES constructed or modified after the effective date of the ordinance, including modifications that increase the nameplate capacity of existing systems.

General Standards

The amendment establishes baseline requirements that apply to energy systems and facilities regardless of size. These standards address:

- Compliance with applicable building, fire, and electrical codes
- Equipment certification and safety standards
- Site maintenance and emergency access
- Visual impact considerations
- Noise limitations

For example, the ordinance establishes a maximum noise level of 55 dBA measured at the property line for energy systems and associated equipment.

These provisions are intended to ensure safe operation and minimize impacts on adjacent properties.

Utility-Scale Energy Facilities

The amendment also establishes standards for utility-scale energy facilities, including large-scale solar arrays, battery storage installations, and wind energy systems intended to generate or store electricity for off-site distribution.

Utility-scale facilities would be permitted as conditional land uses, subject to Planning Commission review and approval. Applications must include detailed information such as site plans, environmental impact descriptions, operational plans, and emergency response procedures.

The ordinance includes standards related to setbacks, fencing, lighting, landscaping, screening, and noise to help mitigate potential impacts on surrounding properties. Additional provisions address compliance with applicable state and federal regulations.

Decommissioning and Operational Requirements

To ensure long-term site management, the amendment requires applicants to submit a decommissioning plan and provide financial assurances to cover the cost of removing the facility and restoring the site when operations cease.

The ordinance also requires operational documentation such as emergency operations plans, commissioning plans, and maintenance procedures to ensure that facilities are operated safely throughout their lifespan.

Conclusion

The proposed amendment establishes a comprehensive set of standards to guide the development of energy systems and facilities in Superior Township. The ordinance is intended to provide clear expectations for applicants while ensuring that potential impacts on surrounding properties and Township services are appropriately addressed.

We recommend that the Planning Commission review the attached draft amendment and provide feedback or recommended revisions prior to forwarding the proposed ordinance amendment to the Township Board for consideration.

Sincerely,

CARLISLE/WORTMAN ASSOC., INC.
Benjamin R. Carlisle, AICP, LEED AP

CARLISLE/WORTMAN ASSOC., INC.
Michelle Marin, AICP

Section KK Energy Systems and Facilities

1. Intent.

It is the intent of Superior Township to regulate the siting, design, installation, and operation of energy systems and facilities, which include Battery Energy Storage Systems (BESS), Solar Energy Systems (SES), and Wind Energy Systems (WES). These standards permit the efficient and effective operation of energy systems and facilities within the Township while mitigating their potential negative impacts and ensuring their compatibility with adjacent land uses in order to protect public health, safety, and welfare. BESS, SES, and WES, as defined herein, are only permitted as authorized by this Section.

2. Definitions.

As used in this Section the following terms shall have the meanings indicated:

Aircraft Detection Lighting System: A sensor-based system designed to detect aircraft as they approach a wind energy facility and that automatically activates obstruction lights until they are no longer needed.

ANSI: American National Standards Institute

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighting network, as expressed as dB(A) or dBA.

Battery(ies): A single cell or a group of cells connected together electrically in series, in parallel, or a combination of both, which can charge, discharge, and store energy electrochemically. For the purposes of this law, batteries utilized in consumer products are excluded from these requirements.

Battery Energy Storage Management System: An electronic system that protects energy storage systems from operating outside their safe operating parameters and disconnects electrical power to the energy storage system or places it in a safe condition if potentially hazardous temperatures or other conditions are detected.

Battery Energy Storage System (BESS): One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time, not to include a stand-alone 12-volt car battery or an electric motor vehicle.

Building Code: Stille-DeRossett-Hale Single State Construction Code Act (Act No. 230, P.A. 1972, as amended)

Cell: The basic electrochemical unit, characterized by an anode and a cathode, used to receive, store, and deliver electrical energy.

Commissioning: A systematic process that provides documented confirmation that an energy facility functions according to the intended design criteria and complies with applicable code requirements.

Construction: Any substantial action taken constituting the placement, erection, expansion, or repowering of an energy facility

Dark Sky-Friendly Lighting Technology: A light fixture that is designed to minimize the amount of light that escapes upward into the sky.

dBA: The sound pressure level in decibels using the "A" weighted scale defined by the American National Standards Institute (ANSI)

Decibel: A unit used to measure the intensity of a sound or the power level of an electric signal by comparing it with a given level on a logarithmic scale.

Dedicated Use building: A building that is built for the primary intention of housing battery energy storage system equipment, is classified as Group F-1 occupancy as defined in the Building Code, and complies with the following:

1. The building's only use is battery energy storage, energy generation, and other electrical grid-related operations.

2. No other occupancy types are permitted in the building.

3. Occupants in the rooms and areas containing battery energy storage systems are limited to personnel that operate, maintain, service, test, and repair the battery energy storage system and other energy systems.

4. Administrative and support personnel are permitted in areas within the buildings that do not contain battery energy storage system, provided the following:

    a. The areas do not occupy more than 10 percent of the building area of the story in which they are located.

    b. A means of egress is provided from the administrative and support use areas to the public way that does not require occupants to traverse through areas containing battery energy storage systems or other energy system equipment.

Essential Services. The erection, construction, alteration or maintenance, by public utilities or municipal departments, of underground, surface or overhead gas, electrical, steam, fuel or water transmission or distribution systems or collection, communication, supply or disposal systems therewith that are reasonably necessary for the furnishing of adequate service for the general health, safety and welfare.

a. Poles, wires, mains, drains, sewers, pipes, conduits, transformers, splice boxes, cables, towers, fire alarm boxes, police call boxes, traffic signals, hydrants or similar equipment and accessories associated with an essential service shall be considered essential services under this Ordinance.

b. Wireless communication facilities, private community wastewater treatment and disposal systems (PCWS), privately owned energy systems and facilities as defined by this Ordinance (Battery Energy Storage Systems (BESS), Solar Energy Systems (SES), and Wind Energy Systems (WES)), utility buildings, and storage yards shall not be considered essential services under this Ordinance.

Fire Code: 2021 Edition of the International Fire Code, the Appendix chapters, including the reference standards" as published by the International Code Council, as adopted by the Township of Superior in the State of Michigan.

Independent Power Producer (IPP): A person that is not an electric provider but owns or operates facilities to generate electric power for sale to electric providers, the state, or local units of government.

Leq: The equivalent average sound level for the measurement period.

Light Intensity Dimming Solution Technology: Obstruction lighting that provides a means of tailoring the intensity level of lights according to surrounding visibility.

Light-Mitigating Technology System: An aircraft detection lighting system, a light intensity dimming solution technology, or a comparable solution that reduces the impact of nighttime lighting while maintaining night conspicuity sufficient to assist aircraft in identifying and avoiding collision with the wind energy facilities.

Maximum Blade Tip Height: The nominal hub height plus the nominal blade length of a wind turbine, as listed in the wind turbine specifications provided by the wind turbine manufacturer. If not listed in the wind turbine specifications, maximum blade tip height means the actual hub height plus the actual blade length.

Maximum Tilt: The maximum angle of a solar array (i.e. most vertical position) for capturing solar radiation as compared to the horizon line.

Nameplate Capacity: The designed full-load sustained generating output of an energy facility. Nameplate capacity shall be determined by reference to the sustained output of an energy facility even if components of the energy facility are located on different parcels, whether contiguous or noncontiguous.

Nationally Recognized Testing Laboratory (NRTL): A U.S. Department of Labor designation recognizing a private sector organization to perform certification for certain products to ensure that they meet the requirements of both the construction and general industry OSHA electrical standards.

NEC: National Electric Code.

NFPA: National Fire Protection Association.

Non-participating Property: A property that is adjacent to a battery energy storage facility and that is not a participating property.

Outdoor Installations: Outdoor installations are battery energy storage systems that are not Dedicated Use-Buildings.

Participating Property: Real property that either is owned by an applicant or that is the subject of an agreement that provides for the payment by an applicant to a landowner of monetary compensation related to a battery energy storage facility regardless of whether any part of that energy facility is constructed on the property.

Repowering: The replacement of all or substantially all of the energy facility for the purpose of extending its life. Repowering does not include repairs related to the ongoing operations that do not increase the capacity or energy output of the energy facility.

Shadow Flicker: Alternating changes in light intensity caused by the moving blade of a WES casting shadows on the ground and stationary objects, such as but not limited to a window at a dwelling.

Small-Scale Energy Equipment: A battery energy storage system (BESS), solar energy system (SES), or wind energy system (WES) with a nameplate capacity below the threshold to meet this Ordinance's definition of a Utility-Scale BESS, SES, or WES.

Sound Pressure: The difference at a given point between the pressure produced by sound energy and the atmospheric pressure, expressed as pascals (Pa).

Sound Pressure Level: Twenty times the logarithm to the base 10 of the ratio of the root-mean-square sound pressure to the reference pressure of micro pascals, expressed as decibels (dB). Unless expressed with reference to a specific weighing network (such as dBA), the unit dB shall refer to an unweighted measurement.

Solar Energy System (SES): A system that captures and converts solar energy into electricity. A solar energy system includes, but is not limited to, the following equipment and facilities: photovoltaic solar panels; solar inverters; access roads; distribution, collection, and feeder lines; wires and cables; conduit; footings; foundations; towers; poles; crossarms; guy lines and anchors; substations; interconnection or switching facilities; circuit breakers and transformers; overhead and underground control; communications and radio relay systems and telecommunications equipment; utility lines and installations; generation tie lines; solar monitoring stations; and accessory equipment and structures.

Utility, Private. A person, firm, corporation or private entity duly authorized to furnish and furnishing, under federal, state or municipal regulations or franchise agreements, to the public: gas, steam, electricity, communication, telegraph or transportation. Such uses as community wells, private community wastewater treatment and disposal systems (PCWS), radio stations,

privately owned energy systems and facilities as defined by this Ordinance (Battery Energy Storage Systems (BESS), Solar Energy Systems (SES), and Wind Energy Systems(WES)), and wireless communication facilities shall be considered private utilities under this Ordinance.

Utility, Public. A governmental entity or municipal department, board or commission duly authorized to furnish and furnishing, under federal, state, or municipal regulations, electricity, gas, steam, communications, telegraph, or transportation to the public. Such utility shall be regulated by a governmental pricing structure, have the right of eminent domain, be a single entity as designated by Federal or State government to provide a specified service or product, and provide a service considered essential to a public need.

c. Publicly owned and operated or municipal water distribution and sanitary sewer systems, and stormwater drainage facilities under the jurisdiction of the Washtenaw County Drain Commissioner, shall also be considered public utilities.

d. Such uses as community wells, private community wastewater treatment and disposal systems (PCWS), radio stations, privately owned energy systems and facilities as defined by this Ordinance (Battery Energy Storage Systems (BESS), Solar Energy Systems (SES), and Wind Energy Systems(WES)), and wireless communication facilities shall not be considered public utilities under this Ordinance.

Utility-Scale Energy Facility: A facility or equipment that meets this Ordinance's definition of a utility-scale battery energy storage system (BESS), utility-scale solar energy system (SES), or utility-scale wind energy system (WES). Utility-scale BESS, SES, and WES may be collocated at a single facility. A utility-scale energy facility may be located on more than 1 parcel of property, including noncontiguous parcels, but shares a single point of interconnection to the grid.

Utility-Scale Battery Energy Storage System: A Battery Energy Storage System (BESS) that has an aggregate energy capacity greater than 600kWh or is comprised of more than one battery storage technology in a room or enclosed area.

Utility-Scale Solar Energy System (SES): Utility-Scale SES shall mean a solar energy system that meets one or more of the following:

1. Primarily used for generating electricity for sale and distribution to an authorized public utility; and/or

2. The total surface area of all solar collector surfaces exceeds 1,500 square feet; and/or

3. Does not serve as an accessory use or structure.

Utility-Scale Wind Energy System (WES): A WES with a nameplate capacity of 1 MW or more for the primary purpose of off-site use through the electrical grid or export to the wholesale market.

Wind Energy System (WES): A system that captures and converts wind into electricity. Wind energy system includes, but is not limited to, the following equipment and facilities: wind towers;

wind turbines; access roads; distribution, collection, and feeder lines; wires and cables; conduit; footings; foundations; towers; poles; crossarms; guy lines and anchors; substations; interconnection or switching facilities; circuit breakers and transformers; overhead and underground control; communications and radio relay systems and telecommunications equipment; monitoring and recording equipment and facilities; erosion control facilities; utility lines and installations; generation tie lines; ancillary buildings; wind monitoring stations; and accessory equipment and structures.

3. Applicability

a) The requirements of this Section shall apply to all BESS, SES, and WES constructed, installed, or modified in Superior Township after the effective date of this Section, excluding general maintenance and repair.

b) Modifications to, retrofits, or replacements of an existing BESS, SES, and WES that increase the nameplate capacity shall be subject to this Section.

4. General Requirements

a) **BESS System Certification System Certification.** Battery energy storage systems and equipment shall be listed by a Nationally Recognized Testing Laboratory to UL 9540 (Standard for battery energy storage systems and Equipment) or approved equivalent, with subcomponents meeting each of the following standards as applicable:

   a. UL 1973 (Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail Applications),

   b. UL 1642 (Standard for Lithium Batteries),

   c. UL 1741 or UL 62109 (Inverters and Power Converters),

   d. Certified under the applicable electrical, building, and fire prevention codes as required.

   e. Alternatively, field evaluation by an approved testing laboratory for compliance with UL 9540 (or approved equivalent) and applicable codes, regulations and safety standards may be used to meet system certification requirements.

b) **Installation and Maintenance.** All BESS, SES, and WES shall be installed, maintained, and used only in accordance with the manufacturer's directions. A copy of such directions shall be submitted with the application for the certificate of zoning compliance, site plan, or special land use approval from the Township as applicable.

c) **Site Maintenance.** Site access shall be maintained at all sites where a BESS, SES, and WES are located, including snow removal at a level acceptable to the Township and the Superior Township Fire Department.

d) **Visual Impact.** All BESS, SES, and WES shall not have a significant adverse impact on the natural features or neighborhood character of the surrounding area and shall be located to maximize its distance and visibility from adjacent properties and roadways.

e) **Noise.** The 1-hour average noise generated from a BESS, SES, and WES, components, and associated ancillary equipment shall not exceed a noise level of fifty-five (55) dBA as measured at any point along any property line where the system is located. Applicants may submit equipment and component manufacturer's noise ratings to demonstrate compliance. The Zoning Administrator or Planning Commission may require an applicant to provide an acoustic assessment or sound study prepared by a licensed engineer from a reasonable number of sampled locations at the perimeter of the BESS, SES, or WES to demonstrate compliance with this standard.

f) **Code Compliance.** All BESS, SES, and WES, all Dedicated Use Buildings, and all other buildings or structures that (1) contain or are otherwise associated with a BESS, SES, and SES and (2) subject to the Building Code shall be designed, erected, and installed in accordance with all applicable provisions of the Building Code, all applicable state and federal regulations, and industry standards as referenced in the Building Code and the Superior Township Zoning Ordinance.

g) Compliance with Additional Codes. BESS, SES, and WES, and the installation and use thereof, shall comply with the Building Code, Fire Code, and other applicable Township, County, and State codes. Installation of a BESS, SES, and WES shall not commence until all necessary **Small-Scale Battery Energy Storage Systems (BESS)**

i. Small-scale BESS are a conditional use in the A-1, A-2, PSP, and PM districts.

ii. Unless not permitted due to fire and other applicable life safety codes, small-scale BESS shall be located inside of a building. All small-scale BESS that are located outside of a building shall be screened to the maximum extent possible without posing a fire risk. All small-scale BESS must be placed in a secure container or enclosure meeting the requirements of the Building Code and, when no longer in use, shall be disposed of in accordance with applicable laws and regulations.

iii. **Setbacks.** In all zoning districts, ground-mounted small-scale BESS shall be located only in the rear or side yard and shall conform to the setback requirements of Article 4 (Dimensional Standards).

iv. **Height**. Ground-mounted small-scale BESS shall not exceed sixteen (16) feet in height, measured from the ground at the base of the system to its highest point.

v. **Ground-Mounted Systems.** Ground-mounted small-scale BESS shall be permanently and safely attached to the ground. Proof of the safety and reliability of the means of attachment shall be submitted to the Zoning Administrator prior to installation. The Township Zoning Administrator may require an additional certification by a professional engineer or other qualified person prior to installation.

vi. **Building-Mounted Systems.** Building-mounted small-scale BESS shall only be installed if they can be safely supported by the structure. Proof of the safety and reliability of the means of attachment shall be submitted to the Zoning Inspector prior to installation. The Township Zoning Administrator may require an additional certification by a professional engineer or other qualified person prior to installation.

2. Small-Scale Solar Energy Systems (SES)

1. Criteria for the use of all solar energy equipment.

    a. Solar energy equipment shall be located in the least visibly obtrusive location where panels would be functional.

    b. Solar energy equipment shall be repaired or replaced within three months of becoming nonfunctional.

    c. Each system shall conform to applicable industry standards including those of the American National Standards Institute (ANSI).

2. **Application for administrative review.** An applicant who seeks to install building-mounted solar energy equipment shall submit an application for a certificate of zoning compliance, as provided by the Township. The application shall include the following:

    a. Photographs of the property's existing conditions.

    b. Renderings or catalogue cuts of the proposed solar energy equipment.

    c. Certificate of compliance demonstrating that the system has been tested and approved by Underwriters Laboratories (UL) or other approved independent testing agency.

    d. Plot plan to indicate where the solar energy equipment is to be installed on the property.

e. Description of the screening to be provided for ground- or wall-mounted solar energy equipment.

3. Exclusions from administrative review.

   a. The installation of one solar panel with a total area of less than eight (8) square feet.

   b. Repair and replacement of existing solar energy equipment, provided that there is no expansion of the size or coverage area of the solar energy equipment.

4. **Building-mounted solar energy collector requirements.** A building-mounted solar energy collector shall be a permitted accessory use in all zoning districts, subject to the following requirements:

   a. An administrative review is required for all building-mounted solar energy collectors permitted as an accessory use. (See exclusions in Subsection D above.)

   b. Solar energy collectors that are mounted on the roof of a building shall not project more than five feet above the highest point of the roof but, in any event, shall not exceed the maximum building height limitation for the zoning district in which it is located, and shall not project beyond the eaves of the roof.

   c. Solar energy collectors mounted on the roof of a building shall be only of such weight as can safely be supported by the roof. Proof thereof, in the form of certification by a professional engineer or other qualified person, shall be submitted to the Township Building Official prior to installation; such certification shall be subject to the Building Official's approval.

   d. Solar energy collectors that are roof-mounted, wall-mounted or are otherwise attached to a building or structure shall be permanently and safely attached to the building or structure. Proof of the safety and reliability of the means of such attachment shall be submitted to the Building Official prior to installation; such proof shall be subject to the Building Official's approval.

   e. Solar energy collectors that are wall-mounted shall not exceed the height of the building wall to which they are attached.

   f. Solar energy collectors shall not be mounted on a building wall that is parallel to an adjacent public right-of-way.

   g. The exterior surfaces of solar energy collectors that are mounted on the roof or on a wall of a building, or are otherwise attached to a building or structure, shall be generally neutral in color and substantially nonreflective of light.

h. Solar energy collectors shall be installed, maintained, and used only in accordance with the manufacturer's directions. Upon request, a copy of such directions shall be submitted to the Township Building Official prior to installation. The Building Official may inspect the completed installation to verify compliance with the manufacturer's directions.

i. Solar energy collectors, and the installation and use thereof, shall comply with the Township Construction Code, the Electrical Code, and other applicable Township construction codes.

5. **Ground-mounted solar energy collector requirements.** A ground-mounted solar energy collector system shall be a conditional use, subject to the approval of the Planning Commission under Article 9, and subject to the following requirements:

    a. Ground-mounted commercial solar energy systems and fields are permitted as a conditional use in the A-1, A-2, PSP, and PM districts only.

    b. Ground-mounted solar energy collectors shall be located only as follows:

        i. They may be located in the rear yard and the side yard, but not in the required rear yard setback or in the required side yard setback unless permitted by the Planning Commission in its approval of the conditional land use.

        ii. They may be located in the front yard only if permitted by the Planning Commission in its approval of the conditional land use but, in any event, they shall not be located in the required front yard setback.

    c. Ground-mounted solar energy collectors shall not exceed sixteen (16) feet in height, measured from the ground at the base of such equipment.

    d. The total area of ground-mounted solar energy collectors shall be included in the calculation of the maximum permitted lot coverage requirement for the parcel of land.

    e. Solar energy collectors shall be permanently and safely attached to the ground. Proof of the safety and reliability of the means of such attachment shall be submitted with the conditional use application and shall be subject to the Planning Commission's approval.

    f. Solar energy collectors shall be installed, maintained and used only in accordance with the manufacturer's directions. A copy of such directions shall be submitted with the conditional use application. The conditional use, if granted, may be subject to the Building Official's inspection to determine compliance with the manufacturer's directions.

    g. The exterior surfaces of solar energy collectors shall be generally neutral in color and substantially nonreflective of light.

h. Ground-mounted solar energy collectors, and the installation and use thereof, shall comply with the Township Construction Code, the Electrical Code, and other applicable Township construction codes.

i. The conditional use may include terms and conditions in addition to those stated in this subsection.

6. **Solar access requirements.** When a solar energy collection system is installed on a lot, accessory structures or vegetation on an abutting lot shall not be located so as to block the solar collector's access to solar energy. The portion of a solar collector that is protected is the portion which:

   a. Is located so as not to be shaded between the hours of 10:00 a.m. and 3:00 p.m. by a hypothetical twelve-foot obstruction located on the lot line; and

   b. Has an area not greater than one-half of the heated floor area of the structure, or the largest of the structures, to be served.

7. Solar access exemptions. Structures or vegetation existing on an abutting lot at the time of installation of the solar energy collection system, or the effective date of this chapter, whichever is later is exempt from Subsection G above. Said subjection described in Subsection G above controls any structure erected on, or vegetation planted in, abutting lots after the installation of the solar energy collection system.

5. Small-Scale Wind Energy Systems (WES)

a) **Approval required.** It shall be unlawful to construct, erect, install, alter, or locate any WES within the Township except in compliance with the section.

b) **Accessory use application.** Where an on-site WES is allowed as an accessory use, the Zoning Administrator shall conduct an administrative plan review. An application for such review shall be submitted to the Township, and shall include the following:

   a. Name, address, and contact information.

   b. A general, written description of the proposed project as well as a legal description (property identification number) of the property on which the project would be located.

   c. A plan showing a map with the physical features and land uses of the project area, both before and after construction of the proposed project. The plan shall include:

      i. The project area boundaries.

ii. The location, height, and dimensions of all existing and proposed structures and fencing.

iii. Distance of proposed structure from all property lines and permanent structures.

iv. The location, grades and dimensions of all temporary and permanent on-site WES access roads.

v. Existing topography.

vi. Water bodies, waterways, wetlands, and drainage ditches (county drains).

vii. All new infrastructure above ground related to the project.

viii. The location of all overhead utility wires.

d. Proof of the applicant's liability insurance covering the WES.

e. Documentation of the manufacturer's designed sound pressure levels (decibels) for unit to be installed.

f. The applicant shall provide evidence of ownership of the land on which the WES is to be located and the written consent of the landowner if different from the applicant. If the applicant is leasing land, the applicant shall provide a copy of the lease agreement and the landowner's written authorization for the applicant to construct the structure.

c) On-site WES Principal Use application.

a. **Principal Use WES application.** The application for a commercial WES shall meet all of the requirements for a conditional use permit application and shall include a complete site plan in accordance with Article 8, Site Plan Review.

b. **Standards and requirements.** All principal use WES shall meet the Conditional Use Standards and the following additional standards and requirements:

i. Property setbacks.

ii. The distance between a WES and the nearest property line shall be at least 1.5 times the height of the WES.

iii. No part of the WES structure, including guy wire anchors, may extend closer than 10 feet to the owner's property line.

iv. Height.

1. Principal use WES shall be less than 275 feet in height.

2. Height shall be measured from the existing grade to the tip of the turbine blade at its highest point.

3. The applicant shall demonstrate compliance with all FAA lighting regulations and the Michigan Tall Structures Act (MCL 259.481 et seq.) as part of the approval process, if applicable.

v. Other required setbacks.

1. The distance between a WES and a road or a public right-of-way shall be at least 1.5 times the height of the WES.

2. The distance between a WES and any WES shall be at least 1.5 times the height of the taller of the two WES.

3. Noise; sound pressure level.

4. Audible noise or the sound pressure level of an on-site WES or commercial WES shall not exceed 55 dB(A) (A-weighted decibels) at the property line closest to the WES. For commercial WES, modeling and analysis of sound pressure shall be required in accordance with the provisions outlined below.

5. This sound pressure level may be exceeded during short-term events, such as utility outages and/or severe wind storms.

c. **Shadow flicker.** The applicant shall conduct an analysis of potential shadow flicker. The analysis shall identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations from sunrise to sunset over the course of a year. The analysis shall identify impacted areas where shadow flicker may affect occupants or users of the structures or properties in the impacted area. The analysis shall describe measures that will be taken to eliminate or mitigate negative impacts.

d. Construction codes, towers, and interconnections standards.

i. Every WES shall comply with all applicable state construction codes and local building permit requirements.

ii. Every WES shall comply with Federal Aviation Administration requirements, the Airport Zoning Act, the Tall Structures Act (PA 259 of 1959) (MCL 259.431), and any other applicable state or federal laws or regulations.

iii. An on-site WES or commercial WES that is tied to the electrical grid shall comply with Michigan Public Service Commission and utility interconnection requirements. Off-grid WES are exempt from this requirement.

e. Safety.

i. **Design safety certification**. The safety of the design of every WES shall be certified by the applicant's professional engineer registered in the State of Michigan and reviewed by the Township. If WES construction is approved, the professional engineer shall certify that the construction and installation of the WES meets or exceeds the manufacturer's construction and installation standards, and any applicable state and federal laws and regulations prior to operation.

ii. **Controls and brakes.** Every WES shall be equipped with manual and automatic controls to limit rotation of blades to a speed not to exceed the design limits of the WES. The applicant's professional engineer must certify that the rotor and overspeed control design and fabrication conform to applicable design standards. No changes or alterations from certified design shall be permitted unless accompanied by a professional engineer's statement of certification approved by the Township.

iii. **Lightning protection.** Every WES shall have lightning protection.

iv. **Guy wires.** If an on-site WES is supported by guy wires, the wires shall be clearly visible to a height of a least six feet above the guy wire anchors. Every commercial WES must be of a freestanding monopole design, and guy wires shall not be used.

v. **Grade clearance.** The minimum vertical blade tip clearance from grade shall be twenty-five (25) feet for any WES employing a horizontal axis rotor.

vi. Interference. Every WES shall be designed and operated to minimize or mitigate interference with existing electromagnetic communications, such as radio, telephone, microwave, or television signals.

vii. **Color.** Towers and blades shall be painted a nonreflective neutral color designated on the application and approved by the Township or as otherwise required by law.

viii. **Climb prevention.** Every WES must be protected by anticlimbing devices such as:

1. Fences with locking portals at least eight feet high.

2. Anticlimbing devices 12 feet from base of pole including anticlimb panels, anticlimb brackets, and other similar devices.

f. **Removal of abandoned WES.** In the event a WES is abandoned or unused for a period of 180 days, or if a WES is damaged, the owner of the tower or the land shall promptly remove the tower and all related equipment. Failure to remove the tower and related equipment in accordance with the foregoing shall subject the tower owner and landowner to fines established by the Township Board. In addition, by accepting a permit for the on-site WES, the applicant and landowner agree that in the event the tower and equipment is not removed as required, after 30 days' notice from the Township, the Township may undertake such removal and bill the costs to the applicant and landowner plus an administrative fee of 15% which, if not paid within thirty (30) days, shall be assessed against the land on which the tower and equipment is located and collected in the same manner as delinquent taxes.

g. **Additional requirements for principal use WES.** The following standards and requirement shall apply to every principal use WES:

i. **Warnings.** A visible warning sign of high voltage shall be placed at the base of every principal use WES. The sign must have at least six-inch letters with three-fourths-inch stroke. Such signs shall be located a maximum of 300 feet apart and at all points of site ingress and egress.

ii. **Signage.** In addition to warning signs and signs required by law, every principal use WES shall be equipped with a sign containing owner identification and contact information. No other signs or advertising are permitted.

iii. **Liability insurance.** The owner or operator of a commercial WES shall maintain a current commercial liability and property damage insurance policy with coverage limits acceptable to the Township pertaining to installation and operation of the principal use WES. The amount and terms of the policy shall be established as a condition of conditional use

permit approval. The Township and landowner shall be named as additional insureds. Certificates of insurance shall be provided to the Township annually.

iv. **Security.** The application shall include a description of security to be posted at the time of receiving a building permit for the WES to ensure removal of the WES when it has been abandoned or is no longer needed, as provided in Subsection J(9) below. The security shall be in compliance with Article 3 for the timely removal of the commercial WES as required under this section, and payment of any costs and attorney fees incurred by the Township in connection with such removal.

v. **Visual appearance; lighting; power lines.** The design of the WES buildings and related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend WES components with the natural setting and existing environment. For commercial WES exceeding minimum FAA height requirements for lighting, minimum FAA lighting standards shall not be exceeded. All tower lighting required by the FAA shall be shielded to the extent possible to reduce glare and visibility from the ground. The tower shaft shall not be illuminated unless required by the FAA. The electrical collection system shall be placed underground within the interior of each parcel at a depth designed to accommodate any existing land use to the maximum extent practicable. The collection system may be placed overhead adjacent to public roadways, at points of interconnection to the electric grid or in other areas as necessary.

vi. **Wildlife impact.** The applicant shall submit an avian study by a qualified professional, such as an ornithologist or wildlife biologist, describing the potential impact of the commercial WES on migratory birds or bats and threatened or endangered species.

vii. **Annual inspection; maintenance.** The WES and surrounding area shall be maintained in accordance with industry standards, including painting and landscaping. Every commercial WES must be inspected annually by an authorized factory representative or professional engineer to certify that the WES is in good working condition and is not a hazard to persons or property. Certification records shall be submitted annually to the Township.

viii. **Sound pressure level.** As part of the application and prior to installation of any commercial WES, the applicant shall provide modeling and analysis

that will confirm that the commercial WES will not exceed the maximum permitted sound pressure levels. Modeling and analysis shall conform to IEC 61400 and ISO 9613. After installation of the commercial WES, sound pressure level measurements shall be done by a third party, qualified professional according to the procedures in the most current version of ANSI S12.18. All sound pressure levels shall be measured with a sound meter that meets or exceeds the most current version of ANSI S1.4 specifications for a Type II sound meter. Documentation of the sound pressure level measurements shall be provided to the local government within 60 days of the operation of the project.

ix. **Removal.** A principal use WES shall be removed by the owner of the WES or land when the commercial WES has been abandoned or unused for 180 days (non-use period). For purposes of this section, the damage, destruction or removal of any part of WES equipment, or the cessation of operations shall be considered as the beginning of a non-use period. The WES owner or applicant shall notify the Township of the beginning of any non-use period or any removal of equipment. The end of the non-use period may be sooner than 180 days after commencement if the WES or any portion of the facility becomes a nuisance or is dangerous to the public health, safety, and welfare.

x. At the end of the non-use period, the owner of the WES or the land shall immediately apply for and obtain any applicable demolition or removal permit, and shall immediately proceed with and complete the demolition and removal of the WES and restoration of the land to the condition existing prior to installation, to the extent reasonably feasible.

xi. If the required demolition, removal and restoration of the WES has not been lawfully completed within 60 days after the end of the non-use period, then after fifteen (15) days' prior written notice to the landowner and the WES owner, the Township may remove or secure the removal of the WES and related equipment and the Township's costs, expenses, attorneys' fees and consultants' fees, plus a fifteen-percent administrative charge may be drawn and collected from the security described in Subsection J(4) above, and any costs and fees in excess of the amount of the security shall constitute a lien on the land on which the WES is located and may be collected in the same manner as delinquent taxes.

8. Utility-Scale Energy Facilities

Utility-Scale BESS, SES, and WES Energy Facilities may be permitted as a conditional land use subject to the following standards.

a. Prior to the construction of a Utility-Scale Energy Facility, an application for a conditional use permit must be filed and approved according to the procedures established in Article 9.

b. The construction and operation of all Utility-Scale Energy Facilities shall comply with all applicable local, state and federal requirements.

c. No Utility-Scale Energy Facility shall be constructed, installed, or modified as provided in this section without first obtaining all applicable permits.

d. Applications to build a Utility-Scale Energy Facility in Superior Township must be accompanied by the fees required for a special use permit and site plan review.

e. Utility-Scale Energy Facilities shall not be approved until evidence has been provided to the Planning Commission that the property owners and applicable utility authorities have authorized the proposed system.

9. Utility-Scale Energy Facilities Application Requirements

Applications for the installation, replacement or renewal, or commissioning of a Utility-Scale Energy Facility shall be accompanied by the following information, in addition to all of the information required for conditional uses and site plans. The Planning Commission shall have the authority to modify any of the following requirements based on information provided by applicants or recommendations of the Township Engineer, Superior Area Fire Department, or Township staff. All of the following documents must be prepared by an engineer licensed by the State of Michigan.

1. **General Application Information.**

a. The planned date for the start of construction and the expected duration of construction.

b. A description of the energy facility, including a site plan as described in Section 224 of the Clean and Renewable Energy Waste Reduction Act, 2008 PA 295, MCL 460.1224. The following items must be shown on the site plan:

i. A map of all properties upon which any component of a facility or ancillary feature would be located, and for wind energy systems, all properties within two thousand (2,000) feet of such properties, and for solar energy

or battery energy storage systems, all properties within one thousand (1,000) feet. This should indicate the location of all existing structures and shall identify such structures as occupied or vacant.

ii. Lot lines and required setbacks shown and dimensioned.

iii. Size and location of existing and proposed water utilities, including any proposed connections to public, or private community sewer or water supply systems.

iv. A map of any existing overhead and underground major facilities for electric, gas, telecommunications transmission within the facility and surrounding area

i. The location and size of all surface water drainage facilities, including source, volume expected, route, and course to final destination.

c. A description of the expected use of the energy facility.

d. Expected public benefits of the proposed energy facility.

e. The expected direct impacts of the proposed energy facility on the environment and natural resources and how the applicant intends to address and mitigate these impacts.

f. Information on the effects of the proposed energy facility on public health and safety.

g. A description of the portion of the community where the energy facility will be located.

h. A statement and reasonable evidence that the proposed energy facility will not commence commercial operation until it complies with applicable state and federal environmental laws, including, but not limited to, the Natural Resources and Environmental Protection Act, 1994 PA 451, MCL 324.101 to 324.90106.

i. Evidence of consultation, before submission of the application, with the Department of Environment, Great Lakes, and Energy and other relevant state and federal agencies before submitting the application, including, but not limited to, the Department of Natural Resources and the Department of Agriculture and Rural Development.

j. The Soil and Economic Survey Report under Section 60303 of the Natural Resources and Environmental Protection Act, 1994 PA 451, MCL 324.60303, for the county where the proposed energy facility will be located.

k. Interconnection queue information for the applicable regional transmission organization.

l. If the proposed site of the energy facility is undeveloped land, a description of feasible alternative developed locations, including, but not limited to, vacant industrial property and brownfields, and an explanation of why they were not chosen.

m. If the energy facility is reasonably expected to have an impact on television signals, microwave signals, agricultural global position systems, military defense radar, radio reception, or weather and doppler radio, a plan to minimize and mitigate that impact. Information in the plan concerning military defense radar is exempt from disclosure under the Freedom of Information Act, 1976 PA 442, MCL 15.231 to 15.246, and shall not be disclosed by the commission or the electric provider or independent power producer except pursuant to court order.

n. A stormwater assessment and a plan to minimize, mitigate, and repair any drainage impacts at the expense of the electric provider or IPP. The applicant shall make reasonable efforts to consult with the county drain commissioner before submitting the application and shall include evidence of those efforts in its application.

o. A sound study and site plan details that include modeled sound isolines extending from the sound source to the property lines to demonstrate compliance with this Ordinance.

p. A detailed landscape and buffering plan.

2. **Construction documents.** Construction documents shall include the following plans, manuals, and specifications:

a. Location and layout diagram of the room or area in which the energy equipment is to be installed.

b. Details on the hourly fire-resistance ratings of assemblies enclosing the energy equipment.

c. The quantities and types of energy equipment to be installed.

d. Manufacturer’s specifications, ratings and listings of the energy equipment.

e. Description of energy management systems and their operation.

f. Location and content of required signage.

g. Details on fire suppression, smoke or fire detection, thermal management, ventilation, exhaust and deflagration venting systems, if provided.

h. Support arrangement associated with the installation, including any required seismic restraint.

3. **Operation and Maintenance Manuals.** Documents that describe continuing energy equipment maintenance and property upkeep, as well as design, construction, installation, testing and commissioning information and shall meet all requirements set forth in the Fire Code, Building Code, and other applicable standards.

4. **Commissioning Plan.** Such plan shall document and verify that the system and its associated controls and safety systems are in proper working condition per requirements set forth in the Fire Code, Building Code, or applicable standard.

5. **Emergency Operations Plan.** A copy of the approved Emergency Operations Plan shall be given to the system owner, the local fire department, and local fire code official. A permanent copy shall also be placed in an approved location to be accessible to facility personnel, fire code officials, and emergency responders. The emergency operations plan shall include the following information:

   a. Procedures for safe shutdown, de-energizing, or isolation of equipment and systems under emergency conditions to reduce the risk of fire, electric shock, and personal injuries, and for safe start-up following cessation of emergency conditions.

   b. Procedures for inspection and testing of associated alarms, interlocks, and controls.

   c. Procedures to be followed in response to notifications from the Energy Management System, when provided, that could signify potentially dangerous conditions, including shutting down equipment, summoning service and repair personnel, and providing agreed upon notification to fire department personnel for potentially hazardous conditions in the event of a system failure.

   d. Emergency procedures to be followed in case of fire, explosion, release of liquids or vapors, damage to critical moving parts, or other potentially dangerous conditions. Procedures can include sounding the alarm, notifying the fire department, evacuating personnel, de-energizing equipment, and controlling and extinguishing the fire.

e. Response considerations similar to a safety data sheet (SDS) that will address response safety concerns and extinguishment when an SDS is not required.

f. Emergency response measures by contingency.

g. Evacuation control measures by contingency.

h. Community notification procedures by contingency.

i. An identification of potential approach and departure routes to and from the facility site for police, fire, ambulance, and other emergency vehicles.

j. A commitment to review and update the ERP with fire departments, first responders, and county emergency managers at least once every three (3) years.

k. Procedures and schedules for conducting drills of these procedures and for training local first responders on the contents of the plan and appropriate response procedures.

l. Other procedures as determined necessary by Superior Township to provide for the safety of occupants, neighboring properties, and emergency responders.

6. **Decommission plan.** A decommissioning plan that is consistent with agreements reached between the applicant and other landowners of participating properties and that ensures the return of all participating properties to a useful condition similar to that which existed before construction, including removal of above-surface facilities and infrastructure that have no ongoing purpose. The decommissioning plan shall include, but is not limited to, financial assurance in the form of a bond, a parent company guarantee, or an irrevocable letter of credit, but excluding cash. The amount of the financial assurance shall not be less than the estimated cost of decommissioning the energy facility, after deducting salvage value, as calculated by a third party with expertise in decommissioning, hired by the applicant.

7. For energy storage systems, evidence of compliance with NFPA 855 including, but not limited to:

    a. Commissioning Plan (NFPA 855 Chapters 4.2.4 & 6.1.3.2)

    b. Emergency Operation Plan (NFPA 855 Chapter 4.3.2.1.4)

    c. Hazard Mitigation Analysis (NFPA 855 Chapter 4.4)

10. Standards for Utility-Scale Energy Facilities

All Utility-Scale Energy Facilities shall comply with the following:

a. Fencing. All Utility-Scale Energy Facility equipment, including all mechanical equipment, shall be enclosed by a fence with a self-locking gate to prevent unauthorized access unless housed in a dedicated-use building and not interfering with ventilation or exhaust ports. A minimum of twenty-four (24) feet of clearance shall be maintained on both sides of the perimeter fence in order to provide emergency vehicle access.

b. **Lighting.** Utility-Scale Energy Facilities shall be illuminated according to the standards of Article 12 of the Zoning Ordinance. Unless otherwise permitted by this Ordinance, lighting of a Utility-Scale Energy Facility shall be limited to that minimally required for safety and operational purposes and shall be reasonably shielded and downcast from abutting properties. Utility-Scale Energy Facilities shall implement dark sky-friendly lighting solutions.

c. **Noise:** The sound pressure level of a Utility-Scale Energy Facility and all ancillary equipment shall not exceed 50 dBA (Leq (1-hour)) as measured at any point along any property line where the system is located. Decibel modeling shall use the A-weighted sound level meter as designed by the American National Standards Institute.

d. **Screening and Noise Barriers.** Utility-Scale Energy Facilities shall be landscaped according to the standards of Article 12 of the Zoning Ordinance. The facility shall use architectural features, earth berms, landscaping, or other screening methods that will visually screen the facility from adjacent properties and function as a sound barrier. These elements shall be designed to harmonize the facility with the surrounding area but shall not interfere with any ventilation or exhaust ports.

e. Utility Connections. Utility connections and/or connection transmission lines shall not require a separate land use approval, but connection/transmission lines may be either determined and approved at the time of a Utility-Scale Energy Facility special land use approval process, or, if not finalized at the time of such approval, such lines may be approved by way of site plan approval, so long as such lines connect to an approved Utility-Scale Energy Facility project.

f. **Maximum Ground Floor Coverage.** For purposes of density and/or Maximum Ground Floor Coverage, Outdoor Installations shall be exempt from such calculation, although any Dedicated-Use Building shall be included in such calculation.

g. **Signs.** Utility-Scale Energy Facilities shall post signs in compliance with ANSI Z535 and shall include the type of technology associated with the facility, any special hazards associated, the type of suppression system installed (if any), and 24-hour emergency contact information, including reach-back phone number. As required by the NEC, disconnect and other emergency shutoff information shall be clearly displayed on a light reflective surface. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations.

i. Additional signs may be permitted subject to the requirements of Article 9 of the Zoning Ordinance.

11. Standards for Utility-Scale Battery Energy Storage Systems

a. Setbacks. Utility-Scale BESS shall be set back at least 300 hundred feet from road right-of-way lines and all property lines.

b. Height. Utility-Scale BESS enclosures shall comply with the building height limitations for principal structures of the underlying zoning district.

c. Michigan Public Service Commission Requirements. Utility-Scale BESS shall comply with any more stringent requirements adopted by the MPSC after determining that such requirements are necessary for compliance with state or federal environmental regulations as provided in MCL 460.1226(8)(c)(v).

12. Standards for Utility-Scale Solar Energy Systems (SES).

a. Setbacks. Utility-Scale SES shall be set back at least 600 hundred feet from road right-of-way lines and all property lines.

b. Height. Total height for a Utility-Scale SES shall not exceed a maximum of twenty-five (25) feet above ground when the arrays are at maximum tilt.

c. Michigan Public Service Commission requirements: Utility-Scale SES shall comply with any more stringent requirements adopted by the MPSC after determining that such requirements are necessary for compliance with state or federal environmental regulations as provided in MCL 460.1226(8)(a)(vi).

13. Standards for Utility-Scale Wind Energy Systems (WES).

a. Setbacks. Setback distance shall be measured from the stated location below to the center of the base of the wind tower as follows:

i. Occupied community buildings and residences on non-participating properties: A horizontal distance equal to 2.1 times the maximum blade tip height from the nearest point on the outside wall of the structure.

ii. Residences and other structures on participating properties: A horizontal distance equal to 1.1 times the maximum blade tip height from the nearest point on the outside wall of the structure.

iii. Non-participating property lines: A horizontal distance equal to 1.1 times the maximum blade tip height from the property line.

iv. Public road right of way: A horizontal distance equal to 1.1 times the maximum blade tip height from the center line of the public road right-of-way;

v. Overhead communication and electric transmission, not including utility service lines to individual houses or outbuildings: A horizontal distance equal to 1.1 times the maximum blade tip height from the center line of the easement containing the overhead line.

b. **Height.** Total height, measured at the wind tower blade tip, for a Utility-Scale WES shall not exceed the height allowed under a Determination of No Hazard to Air Navigation by the Federal Aviation Administration under 14 CFR Part 77.

c. **Lighting.** Utility-Scale WES shall be equipped with functioning light-mitigating technology. To allow proper conspicuity of a wind turbine at night during construction, a turbine shall be lighted with temporary lighting until the permanent lighting configuration, including the light-mitigating technology, is implemented. A temporary exemption from the requirements of this section may be granted if installation of appropriate light-mitigating technology is not feasible. A request for a temporary exemption must be in writing and state all of the following:

a. The purpose of the exemption;

b. The proposed length of the exemption;

c. A description of the light-mitigating technologies submitted to the Federal Aviation Administration;

d. The technical or economic reason a light-mitigating technology is not feasible.

d. **Shadow Flicker.** Shadow flicker shall not exceed 30 hours per year under planned operating conditions as indicated by industry standard computer modeling and measured at the exterior wall of an occupied community building or non-participating residence.

e. **Signal Interference.** Utility-Scale WES shall meet any standards concerning radar interference, lighting, or other relevant issues as determined by the Michigan Public Service Commission in any implementation or rule-making process.

f. **Michigan Public Service Commission requirements.** Utility-scale WES shall comply with any more stringent requirements adopted by the MPSC after determining that such requirements are necessary for compliance with state or federal environmental regulations as provided in MCL 460.1226(8)(b)(vii).

14. Issuance and Compliance with Permit.

a. Construction of an approved Utility-Scale Energy Facility shall not begin until the permit holder has completed the following:

   i. Submitted the funds for site decommissioning and stabilization in the full amount specified in the approved decommissioning plan in a form acceptable to the Township (bond, parent company guarantee, or an irrevocable letter of credit, but excluding cash).

   ii. Executed a development agreement, in a form approved by the Township, specifying all the terms and understandings relative to the construction and operation of the Utility-Scale Energy Facility, the permit holder's responsibilities according to this Ordinance, and the conditions of the special use permit. Development agreements following the approval of Utility-Scale Energy Facility shall be at the Township's discretion. All costs incurred by the Township, including attorney fees, in drafting and approving the development agreement shall be paid by the permit holder. The content of the agreement shall outline the specifics of the proposed Utility-Scale Energy Facility, but shall at a minimum provide the following terms:

      1. A survey of the acreage involved in the proposed development.

      2. A description of the ownership of the subject property.

      3. General description the Utility-Scale Energy Facility and all associated site improvements.

      4. The anticipated life of the Utility-Scale Energy Facility.

      5. Mechanisms to ensure the continued maintenance of the Utility-Scale Energy Facility, and that maintenance is assured by means satisfactory to the Township.

      6. The method of ensuring that funds will be available for site decommissioning and stabilization in the amount determined after each annual review as required by this Ordinance.

      7. Requirements that the applicant maintain insurance coverage during development in amounts established by the Township, naming the Township as an additional insured, and required insurance provisions after the development is completed.

      8. The approved site plan and special use permit shall be incorporated by reference and attached as an exhibit.

9. Description of the timing to complete the development of the facility. If the facility is to be developed in phases, a timeline to complete the construction of each phase.

10. A listing of any contingencies for removing an intact operational energy storage system from service, and for removing an energy storage system from service that has been damaged by a fire or other event.

iii. Construction of an approved Utility-Scale Energy Facility must begin within five (5) years after approval is granted. The Township Board may extend this timeline at the request of the applicant without requiring a new application.

iv. Approved Utility-Scale Energy Facilities shall remain in compliance at all times with the standards identified for approval of the special use permit and all documentation submitted with and affirmations made in the application, including, but not limited to, the site plan, decommissioning plan, fire response plan, and emergency plan. No changes may be made to the permit by the Utility-Scale Energy Facility owner/operator without the written agreement of the Township. The Utility-Scale Energy Facility must further comply with all local ordinances, state and federal laws and regulations except as otherwise provided in Section MCL 460.1231. The Township shall not revoke a permit except for material noncompliance with the special use permit by the owner/operator.

v. A review of the amount of the decommissioning fund based on inflation, salvage value, and current removal costs shall be completed every year, for the life of the project, and approved by the Township Board.

vi. Approved Utility-Scale Energy Facility special use permits may be transferred to another owner/operator upon the filing with the Township of an attestation by the transferee that it accepts the terms of the permit and acknowledges that it is subject to this Ordinance.

vii. The permit holder shall enter into a host community agreement with the Township within 90 days after issuance of the permit. The host community agreement shall require that, upon commencement of any operation, the energy facility owner must pay the Township $2,000 per megawatt of nameplate capacity located within the Township. The payment shall be used as determined by the Township for police, fire, public safety, or other infrastructure, or for other projects as agreed to by the Township and the permit holder within said 90 days.

b. Performance guarantees.

A corrective action plan shall be developed for any open or continuing issues that are allowed to be continued after commissioning. A report describing the results of the system commissioning and including the results of the initial acceptance testing required in the Fire Code and Building Code shall be provided to the Zoning Inspector prior to final inspection and approval and maintained at an approved on-site location.

c. **Changes to Approved Utility-Scale Energy Facilities**

Minor changes to an approved Utility-Scale Energy Facility may be reviewed and approved by the Township Zoning Inspector or their designee. The Township Zoning Inspector may, at their discretion, determine that a proposed amendment constitutes a major change that requires a new special use and site plan approval.

i. The following changes shall be considered minor:

1. Technical changes to the following application documents:

a. Construction documents

b. Fire Safety Compliance Plan

c. Operation and Maintenance Manual

d. Emergency Operations Plan

2. Modifications to, retrofits or replacements of an existing Utility-Scale Energy Facility that do not substantially increase the total Utility-Scale Energy Facility nameplate capacity or increase the system lot coverage.

ii. All other changes to an approved Utility-Scale Energy Facility shall be considered major and shall require a new special land use and site plan approval.

Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

TO: Superior Township Planning Commission

FROM: Ben Carlisle, AICP
Michelle Marin, AICP

DATE: March 18, 2026

RE: Security Camaras Regulations

Township staff requested that we review the current Zoning Ordinance and prepare draft language addressing the use of security cameras within new developments. The purpose of the proposed regulations is to establish basic standards for the placement and operation of security cameras in order to support site safety and security, while also addressing potential concerns related to privacy, lighting, and site design.

In general, the proposed standards would apply to multi-family residential developments and non-residential properties and would require that security cameras be installed and maintained as part of site development. Camera plans would be reviewed during the site plan review process, similar to other site design elements.

The draft language also includes standards related to:

- Camera placement and mounting height
- Orientation of cameras to limit impacts on adjacent properties
- Lighting and glare from infrared or other camera lighting
- Integration with building design
- Maintenance and operation requirements
- Data retention and access for law enforcement as permitted by law
- Signage notifying visitors that an area is under video surveillance

In addition, the draft language establishes standards for freestanding camera poles, including height limits, setbacks, and design requirements. Where feasible, cameras should be mounted on buildings or existing light poles to minimize additional structures on a site. The regulations also identify prohibited practices, such as directing cameras toward private areas of neighboring properties or installing equipment that creates excessive visual or noise impacts.

As part of these regulations, we also recommend adding “Security Camera Plan” as a required submittal for site plan review so that the Planning Commission can evaluate

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Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Principal* Brent Strong, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* Craig Strong, *Principal* Douglas J. Lewan, *Principal*
Richard K. Carlisle, *Past President/Senior Principal* R. Donald Wortman, *Past Principal*

camera placement and related design considerations as part of the development review process.

The proposed ordinance language is provided below for the Planning Commission's review and discussion.

Section 12.05 Security Cameras

A. *Security Camaras*
   1. *Applicability*
      i. *For all multiple family residential and non-residential and properties, security cameras shall be installed, maintained, and accessible to law enforcement upon request as required by law.*
      ii. *Camara security plans shall be reviewed as part of the Site Plan Review process.*
   2. *Standards*
      i. *Location & Mounting:*
         1. *Building-mounted cameras shall be installed below the roofline and generally between eight (8) and twenty (20) feet above grade, unless required for large sites or multi-story façades.*
         2. *Freestanding poles shall meet standards of Subsection 3.*
         3. *Cameras shall not extend into public rights-of-way or obstruct sidewalks or accessibility routes.*
      ii. *Aiming, Screening & Privacy:*
         1. *Cameras shall be aimed to monitor on-site areas (entries, parking lots, drive aisles) and not be directed to focus primarily on adjacent private property, dwelling windows, or private areas. Incidental capture of areas visible from public vantage points is permitted if not the primary focus.*
         2. *Lens hoods, privacy masking, geofencing, or screen walls/landscaping may be used to avoid intrusion into private areas.*
         3. *Cameras located near property lines shall be aimed inward to minimize the capture of adjacent properties and public rights-of-way, except where necessary for legitimate site security at driveways or public entrances.*
      iii. *Illumination & Glare:*
         1. *Infrared (IR) or visible illuminators shall be oriented to prevent glare or light trespass onto adjacent residential property or public streets.*
         2. *Any associated security lighting shall comply with lighting standards in Section 12.04,Exterior Lighting, including cutoffs and luminance limits.*
      iv. *Visual Integration:*

1. *Conduit and cabling shall be concealed within walls, soffits, or painted to match the mounting surface.*
2. *Camera housings shall be neutral, non-reflective finishes.*
3. *Roof- or parapet-mounted cameras shall be set back to minimize visibility from the street.*

v. *Maintenance:*
1. *Cameras and associated equipment shall be kept in good working order, firmly affixed, and free of dangling cables.*
2. *Damaged or inoperable equipment shall be repaired or removed within 30 days.*

vi. *Audio Recording & Privacy Compliance:*
1. *Any audio recording features shall comply with applicable state and federal laws regarding recording of private conversations.*
2. *Cameras shall not be used for surveillance of areas where a reasonable expectation of privacy exists.*
3. *Use of facial recognition analytics, if any, shall comply with applicable laws.*

vii. *Data Security & Retention:*
1. *Recorded data shall be stored securely with access limited to authorized personnel or vendors.*
2. *All security cameras shall be high definition with a minimum resolution of 1080p and night vision.*
3. *The security cameras shall be in operation twenty-four (24) hours a day, seven (7) days a week, and shall be set to maintain the record of the prior thirty (30) days of continuous operation.*
4. *An alarm system is required that is operated and monitored by a recognized security company. Security cameras shall be placed to cover the entire site.*
5. *Upon request related to an active code enforcement or public safety investigation, the owner shall cooperate, consistent with applicable law.*

viii. *Signage:*
1. *When cameras monitor publicly accessible on-site areas (e.g., store entrances, parking lots), a notice sign stating "Area Under Video Surveillance" is recommended/required at primary entries.*
2. *Sign area shall be no larger than two(2) square feet and compatible with sign standards set forth in Article 14 of this ordinance.*

3. *Freestanding Poles & Enclosures*

i. *Where Allowed: Freestanding camera poles are permitted in nonresidential districts and in multi-family or mixed-use developments when building mounting is impractical.*

ii. *Height: Maximum 20 feet when within 100 feet of a residential lot line; otherwise 25 ft. The Zoning Administrator may allow up to thirty (30) feet*

for large campuses or parking fields where necessary to reduce the number of poles.

iii. Setbacks: Minimum ten (10) feet from any lot line and outside required clear sight triangles.

iv. Design: Poles shall match the site's light poles or be a matte, neutral finish. Ground equipment shall be within tamper-resistant cabinets; any enclosures shall be screened per landscape/screening standards.

v. Co-Location: Where feasible, co-locate cameras on existing light poles or structures to reduce clutter, provided that structural and electrical capacity is adequate.

4. Prohibited Practices

i. Aiming cameras to continuously monitor interior dwelling windows or other private areas on adjacent property.

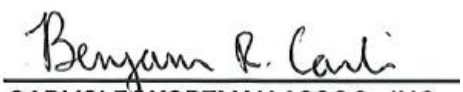
ii. Mounting cameras on fences that project over a public right-of-way or onto another property.

iii. Strobes or distracting flashing lights associated with cameras.

iv. Use of decibel-producing audible alarms (sirens) associated with camera triggers except as permitted by the noise ordinance.

We look forward to discussing the proposed standards and receiving feedback from the Planning Commission.

Sincerely,



CARLISLE/WORTMAN ASSOC., INC.
Benjamin R. Carlisle, AICP, LEED-AP
President



CARLISLE/WORTMAN ASSOC., INC.
Michelle Marin, AICP
Associate Planner