



A PERFECT ENVIRONMENT

Residential Recreational Responsible

Chair
Edward Kranick
Supervisors
Steve Michels
Joe Woelfle
Magalie Miller
Terri Mahoney-Ogden
Clerk/Treasurer
Dan Green

TOWN OF DELAFIELD PLAN COMMISSION MEETING

Tuesday, December 5, 6:30 p.m.

Town of Delafield Town Hall W302 N1254 Maple Avenue, Delafield, WI 53018

Prior to the start of the scheduled Plan Commission meeting there will be a joint public hearing in front of the Town Board, Plan Commission and a representative of the Waukesha County Department of Parks and Land Use, Planning Division staff. The hearing is at the request of Amy Thomas on behalf of owners, Kellen H. Wesson and Amy E. Thomas, et al, and The Robert G. and Ann B. Thomas Revocable Trust and Amy E. Thomas, et al, to rezone three parcels of land (151.05 acres) located north of Golf Road, west of Elmhurst Road, south of the Lake Country Bicycle and Pedestrian Trail and the High Ridge East Addition No. 1 subdivision and east of Glen Cove Road from A-1 Agricultural District to PDD Planned Development District in Town of Delafield's jurisdiction; and A-1 to R-3 Residential in Waukesha County's jurisdiction and a Residential Planned Unit Development Conditional Use in Waukesha County's jurisdiction. Tax Key Nos. DELT0809-995; DELT0809-996 and DELT0811-999. The regularly scheduled Plan Commission meeting will begin immediately following the conclusion of the public hearing.

AGENDA

1. Call to Order and Pledge of Allegiance
2. Approval of the minutes of November 7, 2023.
3. Communications (for discussion and possible action): None
4. Unfinished Business: None
5. New Business:
 - A. Amy Thomas, et al, Re: Consideration and possible action on a zoning amendment from A-1 Agricultural District to PDD No. 1 - Planned Development District No. 1 on the Thomas family properties (151.05 acres) located north of Golf Road, west of Elmhurst Road, south of the Lake Country Bicycle and Pedestrian Trail and the High Ridge East Addition No. 1 subdivision and east of Glen Cove Road in the Town of Delafield's jurisdiction. Also, recommendation to Town Board and Waukesha County on the request for rezoning lands from A-1 to R-3 Residential and a Planned Unit Development Conditional Use Permit for lands that are under Waukesha County zoning jurisdiction. Tax Key Nos. DELT0809-995; DELT0809-996 and DELT0811-999.
6. Discussion: None
7. Announcements and Planning Items: Next meeting: January 16, 2024.
8. Adjournment

PLEASE NOTE:

- ✓ It is possible that action will be taken on any of the items on the agenda and that the agenda may be discussed in any order. It is also possible that members of and possible a quorum of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information; no action will be taken by

any governmental body at the above-stated meeting other than the governmental body specifically referred to above in this notice.

- ✓ Also, upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service, contact Town Clerk Dan Green (262) 646-2398.

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that a Joint Public Hearing will be held by the Town of Delafield Plan Commission, Delafield Town Board and a Staff Representative of the Waukesha County Department of Parks and Land Use - Planning and Zoning Division, on **Tuesday, December 5, 2023, at 6:30 p.m.** at the Delafield Town Hall, located at W302 N1254 Maple Avenue, Delafield, WI, 53018, to consider the **rezoning (RZ116) and conditional use request (CU89) of Neumann Developments, Inc., N27 W24025 Paul Court, Pewaukee, WI 53072. The property owner representative is Amy E. Thomas on behalf of multiple family owners.** Lands that are subject to the Waukesha County Shoreland Protection Ordinance are proposed to be rezoned from the A-1 Agricultural District to the R-3 Residential District. C-1 Conservancy, EC Environmental Corridor and DSO Delafield Shoreland Overlay District designations will remain. A Residential Planned Unit Development Conditional Use is being sought. The rezoning and conditional use requests would accommodate a proposed conservation design subdivision that would contain single family lots and side by side residential condominiums. The property that is subject to the request is located partially within the Waukesha County Shoreland Protection Ordinance jurisdictional limits and is described as follows:

Located in part of the NE, SE and SW ¼ of Section 23, T7N, R18E, Town of Delafield and includes Tax Key No's. DELT 0809.995, DELT 0809.996 and DELT 0811.999.

For additional information regarding this public hearing, please contact Jason Fruth, Planning and Zoning Manager of the Waukesha County Department of Parks and Land Use at (262) 548-7790.

All interested parties will be heard.

WAUKESHA COUNTY DEPARTMENT OF PARKS AND LAND USE

Dale R. Shaver, Director
515 W. Moreland Blvd.
Waukesha, WI 53188

Legal notice to be published in the
Waukesha Freeman on
Tuesday, November 21, 2023 and
Tuesday, November 28, 2023

TOWN OF DELAFIELD
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that a Public Hearing will be held by the Town of Delafield Town Board and Plan Commission and a representative of the Waukesha County Department of Parks and Land Use, Planning Division staff on Tuesday, December 5, 2023, starting at 6:30 p.m., at the Delafield Town Hall, W302 N1254 Maple Avenue, Delafield, WI 53018. The purpose of the hearing is to consider a request by Neumann Development, Inc., on behalf of owners, Kellen H. Wesson and Amy E. Thomas, et al, and The Robert G. and Ann B. Thomas Revocable Trust and Amy E. Thomas, et al, to rezone three parcels of land (151.05 acres) located north of Golf Road, west of Elmhurst Road, south of the Lake Country Bicycle and Pedestrian Trail and the High Ridge East Addition No. 1 subdivision and east of Glen Cove Road from A-1 Agricultural to PDD Planned Development District No. 1. Tax Key Nos. is DELT0809-995; DELT0809-996 and DELT0811-999.

For information regarding the public hearing, please contact Tim Barbeau, Town Engineer at (262) 317-3307 or Dan Green, Town Administrator at (262) 646-2398.

All interested parties will be heard.

TOWN OF DELAFIELD
Edward Kranick, Chairman
W302 N1254 Maple Avenue
Delafield, WI 53018

Waukesha Freeman. Please run this notice in a column on November 21, 2023, and November 28, 2023.

**TOWN OF DELAFIELD
PLAN COMMISSION MEETING
TUESDAY, NOVEMBER 7, 2023, 6:30 P.M.**

Video Link: <https://www.youtube.com/watch?v=ckTPHZeGveA>

Prior to the start of the scheduled Plan Commission meeting there will be a joint public hearing in front of the Town Board and Plan Commission to consider the repeal of Section 17.10 5. H. Protest of the Town of Delafield Municipal Code. The regularly scheduled Plan Commission meeting will begin immediately following the conclusion of the public hearing.

Public Comments:

Terri Mahoney-Ogden, W290N2171 Happy Hollow Road, explained she did research to find the history of this bill. stated that it is inevitable that we will have to remove this from our code. This was passed as part of a bigger plan to allow workforce housing. This bill applies to everybody, including cities and villages. She stated we are not a city; we are a town. She feels it is a violation of rights. She suggested not doing this so early. She explained that removing this section of the code does not fit the Town of Delafield and is infringing on rights of residents. This has to be done by January of 2025. Its good we have the information out, but there is no rush. The Town has over a year to get it done.

Joe Woelfle, N20W30060 Glen Cove Road, stated that the attorney provided guidance to the Town to protect us from being sued. He stated the Town should follow the attorney's advice.

First order of business: Call to Order and Pledge of Allegiance

Chairperson Fitzgerald called the meeting to order at 6:40 p.m. and led all in the Pledge of Allegiance.

Members present: Chairperson Kranick, Commissioner Dickenson, Commissioner Mihalovich, Commissioner Cummings, Commissioner Janusiak, and Plan Commission Chairperson Fitzgerald.

Also present: Supervisor Mahoney-Ogden, Supervisor Miller, Engineer Tim Barbeau and Administrator Dan Green.

Supervisor Michels and Commissioner Mihalovich were excused.

Second order of business: Approval of the minutes of October 3, 2023.

Motion by Chairman Kranick to approve the minutes from October 3, 2023. *Seconded by Commissioner Cummings. Motion passed 5-0.*

Third order of business: Communications (for discussion and possible action):

Engineer Barbeau gave an update on a letter from Waukesha County for Cassandras Motorsports, Tom Beaudry's property, regarding the CSM. There are a lot of comments from Waukesha County. Most comments are less technical and relating to grading, the PEC, and wetland. They typically add numerous notes to their plats of survey, and CSMs, which they are requesting of this CSM as well.

Fourth order of business: Unfinished Business: NONE

Fifth order of business: New Business:

- A. Ben Rolfs, S65 W37850 Couty Road ZZ, Eagle, WI, Re: Consideration and possible action on a request for the approval of a plan of operation to operate OsteoStrong Wellness Center located in Unit 103 of Ridgpoint Centre, located at W307 N1497 Golf Road.

Engineer Barbeau stated this property is across from the old Town Hall. The facility is existing and has parking. There is no change to the site plan. The issue is the plan of operation the Plan Commission has to review and approve prior to the lessee going to the business. The business is what he would call a wellness center. The applicant can explain more about what happens there. They use equipment to increase bone density. They do call the people their members. The hours are 7 am to 5pm Monday – Friday. Some days he may want to be open until 8 pm. On Saturday, the hours are from 8 am to noon. There are coaches on site at all times. They will have signage to match. There are standards for those signs, and when the sign application comes in, staff will review and approve. This is in the B-1 district and we allow these types of businesses. There is an aesthetic facility, a yoga facility, and a “Wellnest” facility. This fits into what this center is becoming. The Engineer recommended approval subject to the discussion by the Plan Commission.

Ben Rolfs, is the owner of Osteostrong, Lake Country. Commissioner Cummings asked Mr. Rolfs if this is by appointment only. Mr. Rolfs explained that it is by appointment, and members come once a week on a consistent schedule. This is a franchise, with 180 locations in the United States. This is the first in Wisconsin.

Engineer Barbeau explained the staff are actual physicians. The previous business at this location was open from 7 am or 8 pm. He explained they try to be consistent with hours in the building, and 8 PM would be the very latest they would be open. Engineer Barbeau suggests he let staff know the days he would be open later than 5 pm. Most franchises usually just have one night they are open late to accommodate schedules. Commissioner Cummings asked if there is training for staff. The applicant explained they are trained through the franchise. They are called session coaches.

Motion by Chairman Kranick to the plan of operation to operate OsteoStrong Wellness Center located in Unit 103 of Ridgpoint Centre, located at W307N1497 Golf Road, once late nights are identified, they are communicated to staff. Seconded by Commissioner Janusiak. Motion passed 5-0.

- B. Town of Delafield, Re: Consideration and Possible action on the repeal of Section 17.10 5. H. Protest of the Town of Delafield Municipal Code.

Engineer Barbeau explained, in the preamble, it states the changes that are being made to favor the property rights of the people. Engineer Barbeau addressed Ms. Mahoney-Ogden’s comments about the rights of residents, but the law is to favor the rights of the property owners.

Motion by Chairman Kranick to recommend to the Town Board approval of an ordinance to repeal Section 17.10 5. H. of the Town Zoning Code. Seconded by Commissioner Cummings. Motion passed 5-0.

Sixth Order of Business Discussion: None

Seventh Order of Business: Announcements and Planning Items: Next meeting: December 5, 2023.

Eighth Order of Business: Adjournment

Motion by Chairman Kranick to adjourn the November 7, 2023, Plan Commission meeting at 6:50 p.m. Seconded by Commissioner Dickenson. Motion passed 5-0.

Respectfully submitted,

Dan Green, CMC, WCMC
Administrator-Clerk/Treasurer

Plan Commission Report for December 5, 2023

Thomas Family Properties Zoning Amendment Agenda Item No. 5. A.

Applicant: Neumann Development, Inc. by Bryan Lindgren

Owner: Amy Thomas, et.al.

Project: Welshire Farm subdivision

Requested Action: Recommendation to Town Board on an amendment to rezone the Thomas Family properties from A-1 Agricultural to PDD No.1 - Planned Development District No. 1 within areas of Town zoning jurisdiction, and recommendation to Town Board and Waukesha County on zoning amendment from A-1 to R-3 Residential and Residential Planned Unit Development Conditional Use in areas of Waukesha County zoning jurisdiction.

Zoning: A-1 Agricultural (Town)
A-1 Agricultural (County Shoreland Area)

Location: North of Golf Road, west of Elmhurst Road, south of Lake Country Bike Trail and High Ridge East Add'n No. 1 subdivision and east of Glen Cove Road

Report

Background

On December 3, 2019, the Plan Commission unanimously recommended approval of a Land Use Plan amendment on the Thomas family properties as follows (no change to Primary Environmental Corridor designation):

DELT 0811-999: Commercial and/or Office Park to Mixed Use
DELT 0809-966: Suburban Density I Residential to Low Density Residential
DELT 0809-995: Suburban Density I Residential to Low Density Residential (north of a line between the southeast corner of tax parcel DELT 0809-966 and the centerline of Elmhurst Road directly west of Lot 9 Golf Ridge subdivision)
DELT 0809-995: Commercial and/or Office Park to Mixed Use (south of line described above)

On December 10, 2019, the Town Board approved the Land Use Plan amendment on a 4:1 vote. Waukesha County Board approved the Land Use Plan Amendment on May 23, 2023.

Uses allowed in the mixed-use land use category include “development that may contain residential and could contain a combination of public, institutional, office, retail, service, light industrial, research and development, and/or other commercial uses, including off street parking and may take the form of a business park.” The low-density residential use allows residential development at a density of 20,000 square feet to 1.4 acres of area per dwelling unit.

Between the time that the Land Use Plan Amendment was approved by the Town Board (December 10, 2019) and October of 2022, the Town Plan Commission developed a zoning district for mixed uses. The ordinance set forth the regulations by which a development can take place on the specific Thomas Family properties. On October 4, 2022, the Plan Commission recommended approval of an ordinance that created a Planned Development District that would meet the mixed-use land use intent, on a 5:0 vote. On October 11, 2022, the Town Board approved the recommended ordinance on a 4:1 vote, with a change in the number of residential units on the specific property to be a maximum of 230 units. Waukesha County Board approved the creation of the Planned Development District No. 1 ordinance on May 23, 2023.

Considerations

The request before the Plan Commission is to amend the Town’s zoning map for the Thomas Family properties from A-1 Agricultural District to Planned Development District No. 1 (PDD No. 1).

The ordinance includes the following Statement of Intent:

- Provide for mixed residential use in an attractive, integrated environment which is complimentary to the surroundings.
- Preserve the natural environment by conserving environmental corridor areas, wetlands and tree lines designated for preservation to the extent practicable.
- Provide for landscape buffer along Glen Cove Road, Elmhurst Road and Golf Road to ensure harmony with surrounding neighborhoods.
- Provide a trail network that links existing neighborhoods, individual development sites and the Lake Country Trail.
- Mitigate traffic impacts by splitting access between both local roads and the county trunk highway system.
- Provide a heightened level of site design and connectivity between development sites.
- Provide a broad range of potential living unit options that will accommodate residents of varying ages.

The specific regulations contained in the PDD No. 1 zoning district implement the intent of the ordinance. The ordinance requires that General Development Plan (GDP) materials be included with an application to rezone to the PDD No. 1 district. The table below provides the status of the submittal:

Item	Submitted?	Complete?	Notes
General Development Plan Drawing	Yes	Yes	Proposal is for 212 new units; one existing unit is to remain on the Thomas property (existing historic house on Thomas Lane).

Open Space and Natural Protection Plan	Yes	Yes	No wetlands or environmental corridor will be disturbed, except for bike and pedestrian path construction. Species trees will be saved.
Traffic Impact Analysis (TIA)	Yes	Yes	TIA concluded that turn and by-pass lanes are required on Golf Road. No other improvements recommended. Document was reviewed by Waukesha County Dept. of Public Works staff and the Town Engineer.
Road Access Plan	Yes	Yes	Two access points to Golf Road; one to Glen Cove Road and one to Elmhurst Road.
Sanitary Sewer Plan	Yes	Yes	Entire site can be served by gravity sanitary sewer; there is capacity at the Fox River Pollution Control Center in Brookfield; Per LPSD, the capacity is 7 persons per buildable area. The proposed development results in 5.76 persons per developable acre. LPSD has provided a draft copy of the study completed for the Stenz and Thomas properties which has identified that the gravity system has adequate capacity to serve both properties. The study identified an existing deficiency at Lift Station 11 and that Lift Station No. 6 requires capacity upgrades.
Water Study	Yes	Yes	The code required that a water study be performed and that SEWRPC, WDNR, and LPSD be consulted with regards to anticipated water table impacts. Also, the study must demonstrate that a private water supply will adequately serve the project and not adversely impact private wells or other natural resources. A detailed water study was submitted by the developer's environmental consulting engineer. The study was reviewed by the Town, County, and SEWRPC. Comments provided by each entity were addressed through various iterations of the study. Conclusions include: The water table drawdown will be 4 to 5 feet, which is similar to surrounding subdivisions; the maximum drawdown is less than the natural groundwater fluctuation of 6 feet as observed at USGS monitoring wells in the neighborhood; flows of groundwater to Pewaukee Lake will be maintained. The development will infiltrate 94.2% of the pre-development infiltration volume; both SEWRPC and LPSD state that any increase in the stormwater infiltration

			rate can be expected to increase recharge to the groundwater system.
Preliminary Stormwater Plan	Yes	Yes	Preliminary review by Waukesha County concluded that the development will likely be able to meet the ordinance requirements; however, there are several design and modeling details that are require attention which will take place during detailed construction plan review.
Bike and Pedestrian Plan	Yes	Yes	Public paved path extends from Glen Cove Road to the Lake Country Trail. Private walking paths in the environmental corridor are indicated on the GDP map.
Active Recreation Plan	Yes	Yes	One-acre public pocket park included near entrance off Golf Road is included in the development.

I have reviewed the development to determine if the GDP plans meet or will meet specific code regulations. Conclusions are as follows:

Subsection Heading	Code Met?	Notes
5. Use Regulations	Yes	Proposed uses on GDP meet designated uses for each zone.
6. Density	Yes	230 units allowed; 212 proposed; lots meet minimum lot sizes for each zone.
7. Building Location	Yes	Meets road setbacks for Golf, Glen Cove and Elmhurst; all internal lots meet setbacks and offsets for each specific use type
8. Height//Bulk Regulations	Yes	To be determined at time a building permit is submitted for each house.
9. Area Regulations	Yes	To be determined at time a building permit is submitted for each house; Minimum average lot width is met for all proposed lots.
10. Open Space for Development Site	Yes	Open space for each development zone is met; wetlands and environmental corridor are preserved; tree lines removed will be re-vegetated; landscape buffers are provided on Glen Cove Road, Golf Road and Elmhurst Road.
11. Signage Regulations	-	To be determined when signs are submitted for approval
12. Parking Regulations	-	Parking provided for clubhouse; landscape screening required on sides; detailed plan to be reviewed at time specific development plan is submitted.
13. Open Space for Each Lot	Yes	Designated on the GDP; actual open space to be determined at time a building permit is submitted for each house.
14. Dumpster Enclosures	-	No dumpsters proposed for the site.

15. Road Layout	Yes	The road layout winds through the development. Glen Cove Road to Elmhurst Road requires 4 stops or corner turns, which will discourage people cutting through the development.
16. Cul-de-Sac Length	Yes	Crooked Creek cul-de-sac extends into the Welshire development; No other cul-de-sacs extend beyond 400 feet.
17. Developer's Agreement	-	To be reviewed and approved at time the preliminary plat is submitted

Staff Recommendation:

I recommend that the petition for zoning amendment and the General Development Plan be forwarded to the Town Board with a recommendation to approve based on the following:

- The request is in compliance with the Town Land Use Plan.
- The application is complete and all information required by Section 17.04 (5)(R)4. b. has been submitted for review.
- Each element of the information required in the code regulations has been adequately addressed.
- The General Development Plan (GDP) layout has been reviewed in light of the regulations within each subsection of Section 17.09 (5)(R) and have been found in compliance with the ordinance, subject to a detailed review when subdivision plats and construction plans are submitted for review and approval in accordance with normal Town review processes. Development of the subject property shall be in substantial conformance with the maps and studies identified in the GDP as follows:

Map No.	Date	Title
1, 1A, 1B, 1C	4/7/2023	General Development Plan Drawing
2, 2A, 2B	4/7/2023	Open Space and Natural Resource Protection Plan
3	4/7/2023	Road Access Plan
4	4/7/2023	Sanitary Sewer Plan
5	4/7/2023	Preliminary Stormwater Plan
6	4/7/2023	Bike and Pedestrian Plan
7	4/7/2023	Active Recreation Plan
L1 – L7	3/27/2023	Landscape Plan
	3/22/2023	Traffic Impact Analysis
	3/24/2023	Hydrogeologic Assessment Report
	7/14/2023	Response to SEWRPC Comments
	9/29/2023	Response to SEWRPC Comments

Tim Barbeau, Town Engineer
November 28, 2023



TOWN OF DELAFIELD

APPLICATION FOR PLAN COMMISSION AGENDA

Plan Commission meetings are typically held the first Tuesday of every month. All applications must be submitted at least 3 weeks before a Plan Commission meeting to make the agenda. Any late submittals will be considered at the following meeting.

(PLEASE PRINT)

Owner Information			Applicant		
Name: Thomas Family - multiple owners			Name: Neumann Developments Inc. - Bryan Lindgren		
Address N14 W29542 Golf Rd			Address N27 W24025 Paul Ct, Suite 100		
City Pewaukee	State WI	Zip 53072	City Pewaukee	State WI	Zip 53072
Telephone Number			Telephone Number 262-542-9200		
Email:			Email: blindgren@neumanncompanies.com		

APPLICATION TYPE AND FEE (CHECK ALL THAT APPLY)

*Application fees are non-refundable. Fees cover costs associated with public notification, postage, copies, and document recording, however, applicants agree to pay all additional expenses that the Town may incur by virtue of contracted plan review services including but not limited to: legal, surveying and engineering costs.

- | | | | |
|---|----------|---|-----------------|
| <input type="checkbox"/> Site Plan..... | \$150.00 | <input type="checkbox"/> Home Occupation..... | \$50.00 |
| <input type="checkbox"/> Site Grading Plan..... | \$50.00 | <input checked="" type="checkbox"/> Zoning Amendment..... | \$300.00 |
| <input type="checkbox"/> Lighting Plan..... | \$50.00 | <input type="checkbox"/> Land Use Amendment..... | \$300.00 |
| <input type="checkbox"/> Signage Plan..... | \$75.00 | <input type="checkbox"/> Conditional Use..... | \$225.00 |
| <input type="checkbox"/> Preliminary Plat..... | \$300.00 | <input type="checkbox"/> Plan of Operation..... | \$150.00 |
| <input type="checkbox"/> Final Plat..... | \$150.00 | <input type="checkbox"/> Planned unit Development..... | \$225.00 |
| <input type="checkbox"/> Certified Survey Map..... | \$250.00 | <input type="checkbox"/> Conceptual Plan Review..... | \$50.00 |
| <input type="checkbox"/> Developer's Agreement..... | \$100.00 | <input type="checkbox"/> Other..... | \$50.00 minimum |

PROJECT NAME:

Welshire Farm

Property Address:

N14 W29542 Golf Rd.

Tax ID/Parcel ID:

DEL0811999-DEL0809995-DEL0809996

Lot Size:

approx. 152 acres

Current Zoning:

A-1 / C-1 / Shoreland

Proposed Zoning (if applicable)

PDD-1

Present Use:

Agricultural

Intended Use (if applicable):

Residential

A complete application along with the appropriate fees shall be submitted by the deadline outlined at the top of the application. In order for an application to be considered complete, the application shall include the required number of site plans/maps, and all of the necessary supporting information as indicated on the project review checklist. If applying for a conditional use or development agreement, a document showing vested interest in the property is required. The Town of Delafield reserves the right not to accept an application that is deemed incomplete.



TOWN OF DELAFIELD PLAN COMMISSION APPLICATION

Project Description

Please answer the questions below that pertain to your request. If necessary, please attach a separate sheet.

PETITION FOR REZONING

In the space below, please describe the purpose of the rezoning.

Please see attachments

PETITION FOR LAND USE AMENDMENT

In the space below, please describe the purpose of the Land Use Amendment.

PETITION FOR CONDITIONAL USE

In the space below, please describe the purpose of the Conditional Use.

PETITION FOR CERTIFIED SURVEY MAP / PRELIMINARY PLAT / FINAL PLAT

In the space below, please describe the intention of the land division.

PETITION FOR SITE PLAN / PLAN OF OPERATION / OTHER APPLICATION

In the space below, please describe the intention for the site plan, plan of operation, or other application.



Required Forms for Submittal

Required Forms Checklist:

- Legal Description (all applications)
- Professional Staff/Fees Chargeback Acknowledgement (all applications)
- Certification for Division of Land (Certified Survey Map land splits)

Submittal Information:

- One (1) copy of this application (signed & dated)
- One (1) electronic copy of all supporting materials, i.e., drawings, plans and written documentation (via email to dgreen@townofdelafield.org).
- Two (2) full size hard copies of all supporting materials, i.e., drawings, plans and written documentation of plans 11"x17" and smaller.
- Seven (7) copies of supporting materials larger than 11"x17".

I understand that this form shall be on file in the office of the Town Administrator by 4:00 p.m. on the 21st day before the meeting on which I desire to be heard or as required in the Land Division or Zoning Ordinance, whichever is longer. Plan Commission meetings are held the first Tuesday of each month. Furthermore, I understand that any engineering or legal review fees associated with this project may be charged to me.

FAILURE TO PROVIDE ALL REQUIRED MATERIALS AND INFORMATION CAN RESULT IN THIS APPLICATION BEING WITHDRAWN FOR CONSIDERATION BY THE PLAN COMMISSION.

Amy E. Thomas
Signature of Owner

3-23-2023
Date

Amy E. Thomas
Print Name

For Office Use Only

Application Received _____
Date Received _____
PC Meeting Date _____
Public Hearing Date _____

Amount Received _____
Received by _____
Board Meeting Date _____

Publication Date (if required) _____



TOWN OF DELAFIELD

PROFESSIONAL STAFF FEES CHARGEBACK ACKNOWLEDGEMENT

PLEASE BE ADVISED

That pursuant to the Town of Delafield Code of Ordinances, the Town of Delafield Town Board has determined that whenever the services of the Town Attorney, Town Engineer or any of the other Town's professional staff results in a charge to the Town for that professional's time and services, and such service is not a service supplied to the Town as a whole, the Town Clerk shall charge that service and the fees incurred by the Town to the owner of the property. Also be advised that pursuant to the Town of Delafield Code of Ordinances certain other fees, costs and charges are the responsibility of the property owner.

I, the undersigned, have been advised that, pursuant to the Town of Delafield Code of Ordinances, if the Town Attorney, Town Engineer or any other Town professional provides services to the Town as a result of my activities, whether at my request or at the request of the Town, I shall be responsible for the fees incurred by the Town. Also, I have been advised that pursuant to the Town of Delafield Code of Ordinances, certain other fees, costs and charges are my responsibility.

Amy E. Thomas

Signature of Owner

3-23-2023

Date

Amy E. Thomas

Owner's name (please print)

Form received by: _____

Date: _____

WAUKESHA COUNTY DEPARTMENT OF PARKS AND LAND USE
PLANNING AND ZONING DIVISION
515 W. Moreland Blvd. Room AC230
WAUKESHA, WISCONSIN 53188
(262) 548-7790

Email pod@waukeshacounty.gov Website www.waukeshacounty.gov/planningandzoning

**PETITION TO AMEND THE MAP OF THE COUNTY ZONING CODE and/or
THE COUNTY SHORELAND AND FLOODLAND PROTECTION ORDINANCE**

Fee Pd. \$ _____ Receipt No. _____ Appl received by _____ Petition No. _____

Town Zoning _____ County Zoning _____ Shoreland Zoning Only _____

Shoreland and Town Zoning _____ Shoreland and County Zoning X

City/Village and/or Shoreland Annexed Area _____

**HONORABLE BOARD OF SUPERVISORS/Common Council/Board of Trustees in
THE TOWN/CITY/VILLAGE OF Delafield WAUKESHA COUNTY, WISCONSIN:**

I/We, the undersigned, owner(s) of the property described below, located in the Town/City/Village of Delafield do hereby petition to amend the MAP of the County Zoning Code and/or the County Shoreland and Floodland Protection Ordinance on this date, 3-22-23, in the following manner:

Existing Zoning Classification(s): A-1

Proposed Zoning Classification(s): R-3 Residential

Existing Use(s) of the subject property: Agricultural

Proposed Use(s) of the subject property: Residential Development

Tax Key No(s). DELTO811999 - DELTO809995 - DELTO809996

Address of subject premises: N14W29542 Golf Rd., Pewaukee WI 53072

Legal Description of the subject property:

see attached

Reasons/Conditions, which justify a change in the zoning (attach additional pages, if necessary):

see attached

Owner: _____

Applicant: Neumann Developments, Inc.

N27W24025 Paul Ct, Suite 100

Pewaukee, WI 53072

Daytime Phone No. (_____) _____

Daytime Phone No. (262) 542-9200

Email address and/or fax number if you would like a copy of the staff report forwarded to you prior to the

(Waukesha Co. Park and Planning Commission) meeting: blindgren@neumanncompanies.com

The following information **must be** submitted with this application:

1. One electronic copy of a detailed and accurate site plan/map or plat of survey (preferred) drawn **TO SCALE**, showing the location of the proposed zoning district boundaries, the location and use of the buildings on the subject property, and the use of **all** properties within 300 feet of the subject property.
2. A filing fee payable to the Waukesha County Department of Parks and Land Use (inquire as to the current fee amount).

Note: Review of this application may include a site inspection.

The undersigned owner hereby certifies that **all** of the above statements, information and attachments contained herein are true and accurate to the best of his or her knowledge and belief. By signing this form, the owner or his/her authorized agent is giving their consent for the Dept. of Parks and Land Use to inspect the site as necessary and related to this application even if the property has been posted against trespassing pursuant to Wis. Stat.; and serves as your acceptance of the wetland statement included on your Property Owner letter issued with your permit, as applicable.

Signature of Owner Amy E. Thamm

Date of Filing 3-23-23

Signature of Applicant [Signature]

Date of Filing 3-22-23

WAUKESHA COUNTY DEPARTMENT OF PARKS AND LAND USE
PLANNING AND ZONING DIVISION
515 W. Moreland Blvd. Room AC230
WAUKESHA, WI 53188
(262) 548-7790

Email pod@waukeshacounty.gov Website www.waukeshacounty.gov/planningandzoning

PETITION FOR CONDITIONAL USE

Office Use Only:
Fee Pd. \$ _____ Receipt No. _____ ATF Y/N: _____ Appl. recd. by: _____
Petition No. _____

Owner Amy E. Thomas Applicant Neumann Development, Inc.
Address [REDACTED] Address N27W24025 Paul Ct., Suite 100
[REDACTED] Pewaukee, WI 53072

Daytime Phone No. [REDACTED] Daytime Phone No. (262) 542-9200

Email address and/or fax number if you would like a copy of the staff report forwarded to you prior to the Co. Park and Planning Commission meeting: blindgren@neumanncompanies.com

Petition is hereby made on this date, 3-22-23, for a CONDITIONAL USE PERMIT on property located in the Town of Delafield, Section 23,

Tax Key No(s) DELT0811999 - DELT0809995 &, and which has the following Legal Description: DELT0809996

See attached

Address of subject premises: N14W29542 Golf Rd, Pewaukee, WI 53072

Specific type of CU requested, Section Residential PUD - Delafield PDD-1 in ZC/SFPO.

Said CONDITIONAL USE PERMIT to provide for the use of the property and/or buildings in the following described manner (Give a **detailed** description of the use(s) requested. Attach additional pages, if necessary.):

See attached

Property is presently zoned as pending R-3 rezone request

Property is presently used as agricultural

The following information **must be** submitted with this application:

1. **One electronic copy** of a detailed and accurate site plan/map or plat of survey (preferred) drawn **TO SCALE**, showing the **subject property**, its location, length, and direction of each boundary thereof, **the location and existing use(s) of all buildings and structures thereon, and the principal use of the property.**
2. Any **supplemental information** deemed necessary for a reasonable understanding of the proposed conditional use depending on the type of conditional use requested, e.g., detailed description of the use or operation, topographical information, cross sections, elevations, etc.
3. A **filing fee** payable to the Waukesha County Department of Parks and Land Use (inquire as to the current fee amount).

The undersigned owner hereby certifies that all of the above statements, information and attachments contained herein (site plan/survey, plans, exhibits, etc.) are true and accurate to the best of his or her knowledge and belief. By signing this form, the owner or his/her authorized agent is giving their consent for the Dept. of Parks and Land Use to inspect the site as necessary and related to this application even if the property has been posted against trespassing pursuant to Wis. Stat.; and serves as your acceptance of the wetland statement included on your Property Owner letter issued with your zoning permit, as applicable.

Signature of Owner Amy E. Sharma

Date of Filing 3-23-2023

Signature of Applicant [Signature]

Date of Filing 3-22-23

LANDOWNER'S AUTHORIZED AGENT FORM

Subject Property Address N14 W29542 Golf Rd., Pewaukee, WI 53072

Street/Section/Town (FP Dev in ROW Permits only) _____

Add Location Description (FP Dev in ROW Permits only) _____

Tax Key No(s), if applicable DELTO811999 - DELTO809995 - DELTO809996

Owner(s) of the Subject Property* Kellen Wesson + Amy Thomas + The Robert G and Ann B Thomas Revocable Trust
Charlotte Thomas + Jennifer Holquist

Officer to be Contacted (if Corporate Owner) _____

Owner's Mailing Address _____

Phone (Day) _____ Phone (Evening) _____

*The applicant for any permit, variance, special exception, appeal, conditional use, site plan, plan of operation, rezoning, comprehensive development plan amendment, CSM, subdivision plat, license or other application for governmental approval under the Planning and Zoning Division ordinances **shall be the landowner**, specifically a person or entity holding fee title to the subject property, as set forth below.

- A. In the case of a corporation, an officer or by a member of the corporation who has overall responsibility for the operation of the site for which the permit is sought.
- B. In the case of a limited liability company, a member or manager.
- C. In the case of a partnership, a general partner.
- D. In the case of a sole proprietorship, the proprietor.
- E. For a unit of government, by an elected official or other duly authorized representative.
- F. In the case of an individual, by the individual, an attorney, or one allowed to act as power of attorney.

I, Amy E. Thomas (owner's name), authorize the named agent below to represent my interests (see ** below) in the subject property described above for the purpose of these applications and any permits subsequently issued.

Owner's Signature(s) Amy E. Thomas Date 3-23-2023

Owner's Signature(s) _____ Date _____

Agent Bryan Lindgren

Agent's Company Name (if applicable) Neumann Companies Inc.

Agent's Mailing Address N27W24025 Paul Ct., Suite 100, Pewaukee, WI 53072

Phone (Day) 262-542-9200 Phone (Evening) 608-215-4934

**I, the authorized agent for the owner, am aware of the requirements of the Planning and Zoning Division ordinances and I understand and agree to follow the procedures, deadlines, fees, inspection requirements, and the proposal associated with these applications and any permits subsequently issued.

Agent's Signature [Signature] Date 3-22-23

LEGAL DESCRIPTION:

All that part of the Northeast 1/4 of the Southwest 1/4, and the Northwest 1/4, Northeast 1/4 of the Southeast 1/4, and the Southwest 1/4, Southeast 1/4 of the Northeast 1/4 all in Section 23, Township 7 North, Range 18 East, in the Town of Delafield, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

Commencing at the Northwest corner of said Southwest 1/4 Section, Thence North $88^{\circ}51'15''$ East along the North line of Said Southwest 1/4, 1345.64 feet to a point on the East Right-of-Way of "Glen Cove Road" and the place of beginning of the lands hereinafter described.

Thence continuing North $88^{\circ}51'15''$ East along said North line, 1335.76 feet to the Northeast corner of Said Southwest 1/4 Section; Thence North $00^{\circ}19'12''$ East along the West line of Said Northeast 1/4 Section, 1208.72 feet to a point on the South line of a 75' wide "W.E.P.C.O." Right-of-Way; Thence North $88^{\circ}50'36''$ East along said South line, 2005.82 feet to a point on the West Right-of-Way line of "Elmhurst Road"; Thence South $00^{\circ}34'32''$ West along said West line, 1226.97 feet to a point; Thence South $89^{\circ}21'41''$ West along said West line, 25.26 feet to a point; Thence South $00^{\circ}33'48''$ West along said West line, 116.67 feet to a point; Thence Southerly 446.63 feet along the arc of a curve whose center lies to the East, whose radius is 1196.28 feet, whose central angle is $21^{\circ}23'29''$ and whose chord bears South $10^{\circ}07'56''$ East 444.04 feet to a point; Thence South $13^{\circ}45'04''$ East along said West line, 451.55 feet to a point on the Northerly Right-of-Way line of "Interstate "94"; Thence South $73^{\circ}59'23''$ West along said Northerly line, 846.37 feet to a point; Thence South $87^{\circ}20'08''$ West along said Northerly line, 889.36 feet to a point; Thence Westerly 168.94 feet along the arc of a curve whose center lies to the North, whose radius is 23,123.33 feet, whose central angle is $00^{\circ}25'07''$ and whose chord bears South $87^{\circ}07'34''$ West 168.94 feet to a point; Thence North $87^{\circ}44'18''$ West along said Northerly line, 253.63 feet to a point; Thence Southwesterly 1214.05 feet along the arc of a curve whose center lies to the South, whose radius is 23,148.33 feet, whose central angle is $03^{\circ}00'18''$ and whose chord bears South $84^{\circ}47'22''$ West 1213.91 feet to a point; Thence North $48^{\circ}47'43''$ West along said Northerly line, 166.11 feet to a point on the East Right-of-Way of "Glen Cove Road"; Thence North $00^{\circ}03'57''$ West along said East line, 60.72 feet to a point; Thence South $89^{\circ}56'03''$ West along said East line, 35.00 feet to a point; Thence North $00^{\circ}03'57''$ West along said East line, 1157.05 feet to the point of beginning.

Said Lands contains 6,598,997 Square Feet (or 151.4921 Acres) of land, more or less.



Welshire Farm PDD-1 Zoning Request

Town of Delafield
W302N1254 Maple Avenue
Delafield, WI 53018

Dear Town Board and Plan Commission,

We are excited to be submitting for consideration our request to re-zone and amend the comprehensive plan for the lands known as the Thomas farm located in the Town of Delafield:

- Subject property:
 - Address: N14W29542 Golf Road



- Tax Keys: DELT0811999, DELT0809995, DELT0808996
- Legal Description: All that part of the Northeast 1/4 of the Southwest 1/4, and the Northwest 1/4, Northeast 1/4 of the Southeast 1/4, and the Southwest 1/4, Southeast 1/4 of the Northeast 1/4 all in Section 23, Township 7 North, Range 18 East, in the Town of



Delafield, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

Commencing at the Northwest corner of said Southwest 1/4 Section, Thence North 88°51'15" East along the North line of Said Southwest 1/4, 1345.64 feet to a point on the East Right-of-Way of "Glen Cove Road" and the place of beginning of the lands hereinafter described.

Thence continuing North 88°51'15" East along said North line, 1335.76 feet to the Northeast corner of Said Southwest 1/4 Section; Thence North 00°19'12" East along the West line of Said Northeast 1/4 Section, 1208.72 feet to a point on the South line of a 75' wide "W.E.P.C.O." Right-of-Way; Thence North 88°50'36" East along said South line, 2005.82 feet to a point on the West Right-of-Way line of "Elmhurst Road"; Thence South 00°34'32" West along said West line, 1226.97 feet to a point; Thence South 89°21'41" West along said West line, 25.26 feet to a point; Thence South 00°33'48" West along said West line, 116.67 feet to a point; Thence Southerly 446.63 feet along the arc of a curve whose center lies to the East, whose radius is 1196.28 feet, whose central angle is 21°23'29" and whose chord bears South 10°07'56" East 444.04 feet to a point; Thence South 13°45'04" East along said West line, 451.55 feet to a point on the Northerly Right-of-Way line of "Interstate "94"; Thence South 73°59'23" West along said Northerly line, 846.37 feet to a point; Thence South 87°20'08" West along said Northerly line, 889.36 feet to a point; Thence Westerly 168.94 feet along the arc of a curve whose center lies to the North, whose, radius is 23,123.33 feet, whose central angle is 00°25'07" and whose chord bears South 87°07'34" West 168.94 feet to a point; Thence North 87°44'18" West along said Northerly line, 253.63 feet to a point; Thence Southwesterly 1214.05 feet along the arc of a curve whose center lies to the South, whose radius is 23,148.33 feet, whose central angle is 03°00'18" and whose chord bears South 84°47'22" West 1213.91 feet to a point; Thence North 48°47'43" West along said Northerly line, 166.11 feet to a point on the East Right-of-Way of "Glen Cove Road"; Thence North 00°03'57" West along said East line, 60.72 feet to a point; Thence South 89°56'03" West along said East line, 35.00 feet to a point; Thence North 00°03'57" West along said East line, 1157.05 feet to the point of beginning.

Said Lands contains 6,598,997 Square Feet (or 151.4921 Acres) of land, more or less.

Size: approximately 151.05 acres

Current Owner: Amy Thomas, Kellen Wesson, the Robert G and Ann B Thomas Revocable Trust, Charlotte Thomas, and Jennifer Holquist

Project Vision

The proposed Welshire Farm Development on the Thomas property represents an exciting clustered conservation development that converts farmland into a much needed and desirable neighborhood all while preserving a significant amount of green space and natural resource features. The variety of for-sale residential housing appeals to homeowners across a wide range of price points and housing types.



About Neumann Developments Inc.

Neumann Developments Inc. has been developing land in South-Eastern and South-Central Wisconsin since the year 2000. Since the year 2000, Neumann Developments has developed over 5000 home sites, built over 55 miles of roads, and preserved over 2700 acres of land. As a proud member of the Metropolitan Builders Association and a licensed Real Estate Brokerage Company in the State of Wisconsin we have the experience to design, develop, and deliver on high quality master planned developments like the one envisioned for the Thomas property! In just the past five years, Neumann Developments has completed developments in more than a dozen municipalities in southeast Wisconsin including the Town of Delafield. Neumann Developments Inc. had the vision, knowledge, and financial ability to complete these projects to the full satisfaction of the municipalities as well as the end users.

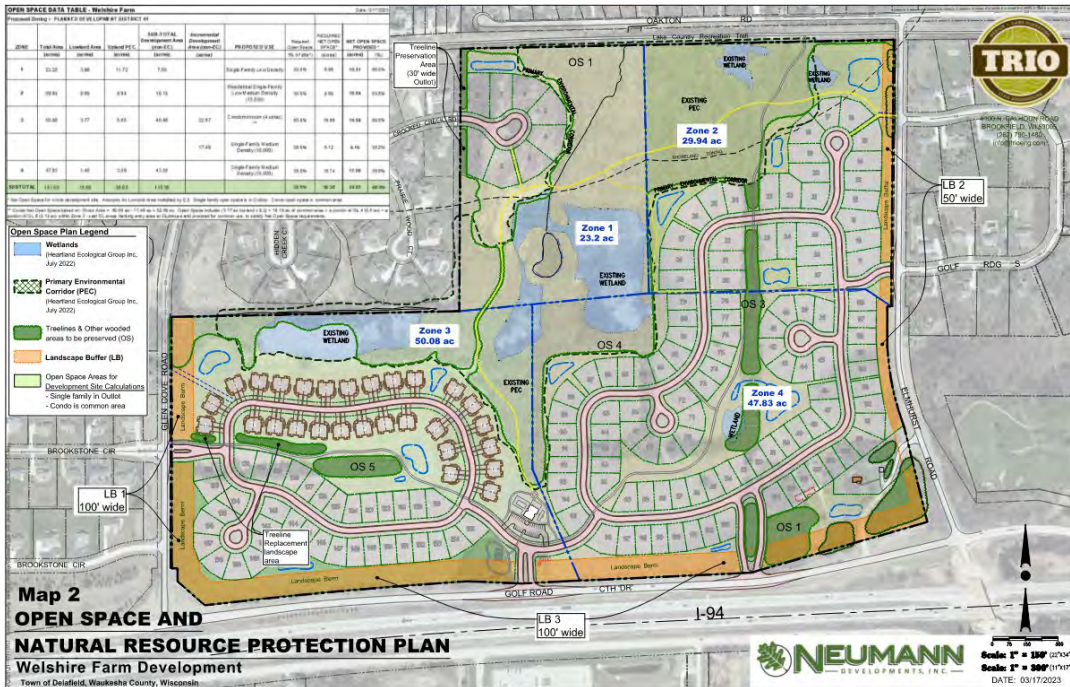
Neumann Companies Inc., which owns Neumann Developments Inc., also is an ownership partner in Harbor Homes, Tim O'Brien Homes, and Halen Homes. These partner builders have been three of the top four builders in terms of building permits for new residential development in Southeast Wisconsin in the last five years. Our partnership with these builders allows us to develop a site and immediately have our builder partners move in and begin construction and sales of the new homes and condominiums. Our combination of knowledge, experience, and builder partnerships are what makes Neumann Developments the right partner for this complicated site.

Through strategic partnerships with some of the area's largest builders and contractors we are able to create high quality developments that bring lasting value to communities. We look forward to the opportunity to bring a great development to the Town of Delafield.

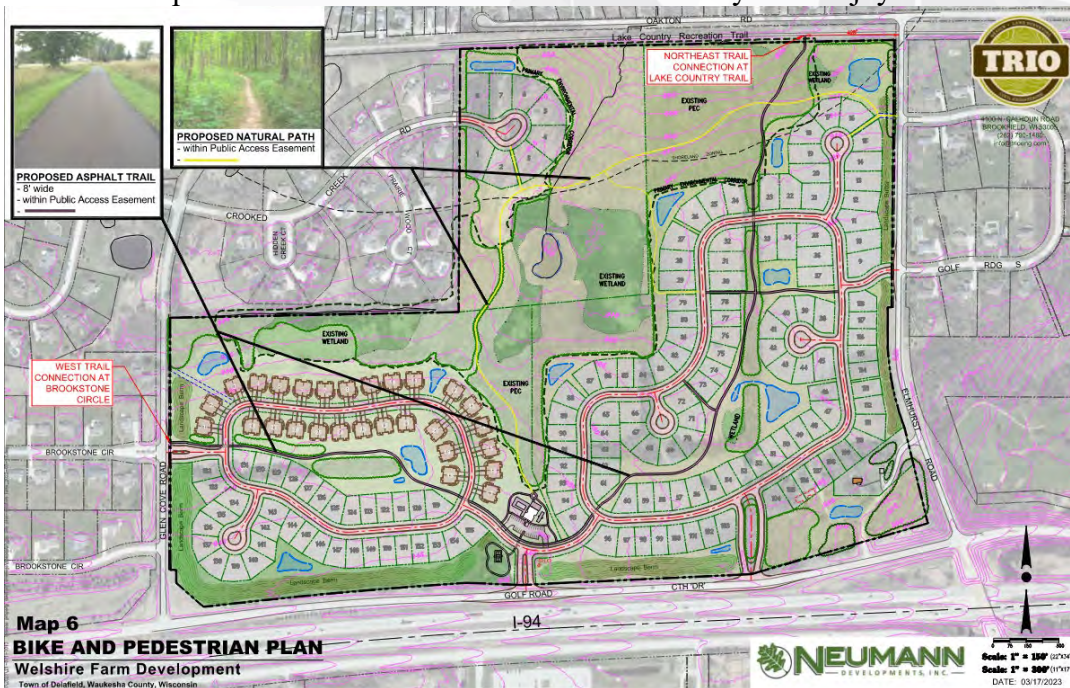
Public Benefits

The benefits of developing the Thomas farm area as a Planned Development are numerous. Those benefits are as follows:

- **Attainable and Diverse Housing** – The goal of the development is to offer housing options for residents of all lifestyles and desired price points. The variety of proposed for-sale housing offers housing designed for everyone from first time home buyers to empty nesters looking to downsize all within the desired price points identified in the County and regional housing studies. By offering a range of housing options, we can attract new families and young professionals to our town, which will help to create a more vibrant and diverse community. This diversity will bring new ideas, perspectives, and energy to our town, helping to enrich our community. In many ways a variety of housing types and price points is good for new residents and existing residents.
- **Environmental Protection** – The development will preserve 74.07 Acres or 49% of the total area as open space. This vast amount of open space includes wetlands, but primarily preserves uplands and environmental corridors in the form of neighborhood common space. All delineated environmental corridors are being preserved in their entirety. Where open space tree lines are identified in the ordinance, tree inventories have been completed and specimen species are being preserved everywhere possible. Where tree lines are being broken for road connectivity, native plantings will be planted to recreate these buffers and tree lines.



- Trails and Paths** – The bike and pedestrian plan (EXHIBIT H) shows miles of paved trails and paths that wrap around and through the development linking residents to the Lake Country Bike Trail to the North and neighborhoods to the north, east, and west. These trails will be made available for public use and serve to invite the community in to enjoy the natural areas.



- Tax Increment** – Development of this area over the next decade will create approximately \$130,000,000 worth of new tax base upon completion: significantly above the current assessed value. New homes provide economic growth to our town. They create job opportunities for



construction workers, contractors, and other local businesses, which boosts our local economy. This, in turn, increases property values and provides additional tax revenue for the town, which can be used to fund public services such as schools, roads, and emergency services.

Development Overview

The attached Welshire Farm Site Plan (EXHIBIT A) identifies various areas of the development for further discussion.

Projected Construction 2024-2030/31

Proposed Residential Unit Count: **212**
 Single Family Residential 156
 Duplex Ranch Condominium 56

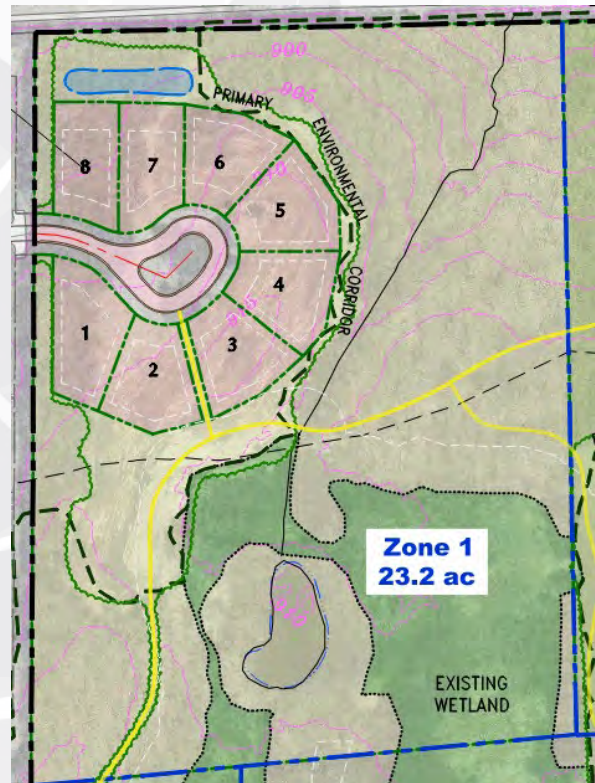
Density = 1.397 un/ac

Net Open Space Provided = 74.07 Acres
 49.0% of Site

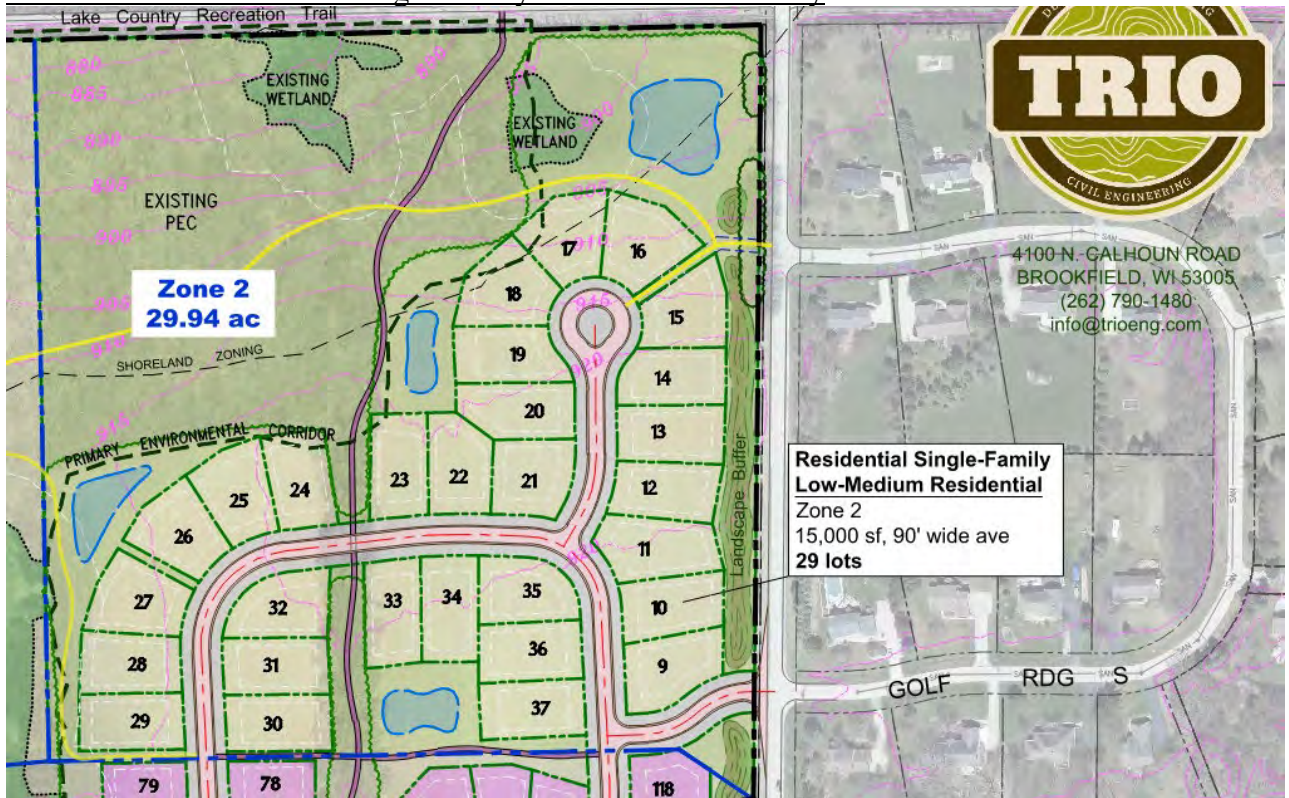
SITE DATA TABLE	
- Gross Area	151.49 acres
- Road Dedication (Glen Cove Rd & Elmhurst Rd)	- 0.44 acres
- TOTAL AREA	151.05 acres
- Proposed Zoning: Planned Residential District #1	
Zone 1:	23.2 acres 8 lots
Zone 2:	29.94 acres 29 lots
Zone 3:	50.08 acres 37 lots
	+ 56 units
Zone 4:	47.83 acres 81 lots
Existing Farmhouse	1 lot
TOTAL	151.05 acres 212 units
- DENSITY = 212 / 151.05 = 1.404 un/ac	

- Zone 1: “The Estates” Estate Single Family Low Density

- Total Acres = 23.2 Acres
- Proposed Zoning = PDD-1
- Total Lots = 8
- Open Space Zone= 66%
- Lot Size = 20,000 SF minimum
- Avg Lot Width = 75'
- Setbacks
 - Min. Road = 35'
 - Side offset = 15'
 - Rear offset = 20'
 - Wetland = 75'
- Max Building Footprint = 17.5% of lot
- Open Space per Lot = 70% of lot
- Home and Lot Estimate = \$750K+



- **Zone 2: “The Residences” Single Family Low-Medium Density**



Total Area = 29.94 Ac

- Proposed Zoning = PDD-1
- Total Lots = 29
- Open Space Zone = 53.6%
- Lot Size = 15,000 SF Minimum
- Avg Lot Width = 90'
- Setbacks:
 - Min. Road = 25'
 - Side Offset = 12.5'
 - Rear Offset = 20'
 - Wetland = 75'
 - Elmhurst Rd = 50'
- Max Building Footprint = 25% of lot
- Open Space per Lot = 60% of lot
- Home and Lot Estimate = \$600-650K

- Zone 3: “The Villas” Single Family Medium Density and “The Reserve” Duplex Condos



Total Area = 50.08 Acres

- Proposed Zoning = PDD-1
- Total Single Family Lots = 37
- Total Duplex Units = 56
- Open Space Zone
 - Duplex Condos = 60%
 - Single Family = 35.2%
- Single Family
 - Lot Size = 10,000 SF Minimum
 - Avg Lot Width = 75'
 - Setbacks:
 - Min. Road = 25'
 - Side Offset = 10'
 - Rear Offset = 20'
 - Wetland = 75'
 - Glen Cove Rd = 100'
 - Golf Road = 100'
 - Max Building Footprint = 30% of lot
 - Open Space per Lot = 60% of lot
 - Home and Lot Estimate = \$500-550K

- Duplex Condos
 - Density = 4 un/acre max
 - Density proposed = 56 units/22.97ac = 2.48 un/acre
 - Setbacks:
 - Min. Road = 25'
 - Side Offset = 20' building to building
 - Rear Offset = N/A
 - Wetland = 75'
 - Glen Cove Rd = 100'
 - Golf Road = 100'
 - Max Building Footprint = 25%
 - Open Space per Lot = 60%
 - The intent of the duplex condominium component of this area is to offer a single story ranch style duplex home in a condominium style for those seeking ease of maintenance and lifestyle. “The Reserve”, will offer two bedrooms and two baths single story homes with two car attached garages.



- The Reserve duplex condos are anticipated in the upper \$400's

- **Zone 4: “The Villas” Single Family Medium Density**



- Total Area = 47.83 Acres
- Proposed Zoning = PDD-1
- Total Lots = 81
- Open Space Zone = 35.6%
- Lot Size = 10,000 SF Minimum
- Avg Lot Width = 75'
- Setbacks:
 - Min. Road = 25'
 - Side Offset = 10'
 - Rear Offset = 20'
 - Wetland = 75'
 - Elmhurst Rd = 50'
 - Golf Road = 100'
- Max Building Footprint = 30% of lot
- Open Space per Lot = 60% of lot
- Home and Lot Estimate = \$500-550K



Homeowner’s Association and Architectural Control

The entire residential portion of the development will be controlled by a master HOA and architectural controls will be in place to create an aesthetically pleasing neighborhood as well as to manage common amenities and green spaces. The Architectural Review Committee and the Neighborhood Covenants and Restrictions Code will be set up to ensure the continued development of high-quality design, architecture and site execution is carried throughout the neighborhood. Review and approval of building plans by the Architectural Control Committee of the Homeowner’s Association will be required prior to submitting for a building permit to the Town of Delafield. Maintenance responsibilities and architectural requirements will be further detailed in the covenants and restrictions recorded against each property.

Sanitary Sewer System

At the time of submittal of an application to rezone the property to the PDD-1 district, the General Development Plan requires that adequate sewer capacity must be demonstrated. It has been determined that the Lake Pewaukee Sanitary District (LPSD) has designed and reserved capacity downstream for land within the LPSD sewer service area at a designed density of 7 people per acre per LPSD ordinances #101 and #102 as amended. It was further defined by an amendment to LPSD Ordinance #102 dated February 20, 2007 that a Residential User Equivalent (RUE) or “living unit” shall “be conclusively presumed to include 3 persons”. The designed capacity allowed for the Thomas Property can then be computed as follows:

Total Acreage	= 151.05 Acres
Design Density	= <u>7 people per acre</u>
Thomas Land Design Population Density	= 1057 people

Thomas Land designed RUE’s at 3 people per RUE	= 352 Residential User Equivalent Units
Welshire Farm Residential Units	= 211 RUE’s

As you can see, the proposed total units in Welshire Farm is well below the LPSD designed capacity allocated for the property and does not necessitate density offsets as would be required in a higher density development per LPSD ordinance. Notwithstanding this information, a sewer system study has still been contracted to assess any improvements to existing infrastructure that LPSD may need to include in their long term planning projects. The results of this study will be available after flow data has been collected in the Spring of 2023 and will be used to further design the sanitary system prior to specific development plans and permitting. A Preliminary Sanitary Sewer Plan has been included with this submittal.

Summary

The proposed zoning districts are consistent with the Comprehensive Master Plan and furthers the desire by the developer and the Town to create housing options that will be an asset to the community for many years to come. The use of a planned development district on this property provides for uses compatible with planning and surrounding areas that results in the provision of a safe and efficient system for pedestrian and vehicular traffic, attractive recreation and landscaped open spaces, economic design and



location of public and private utilities and community facilities; and ensures adequate standards of construction and planning. We believe this neighborhood would be a great addition to Delafield and the new residents will love the proximity to easy commuter routes, blend of urban and rural environment, ample green space, easy access to commercial conveniences, and quick access to downtown areas.

If approved, we would seek to start development work in the spring of 2024. This project would be developed in phases over the next 5-6 years. These phases would begin where utilities are available. All improvements associated with the phase being developed will be installed and completed at the time of phase construction. This project would be owned and developed by a Neumann Developments Inc. related entity. The Reserve and Villas would be sold as home and lot packages through affiliated builder Harbor Homes, and The Residences and Estates lots would be available through affiliated builder Tim O'Brien Homes as well as made available directly to individuals and other builders.

This petition is being made after careful consideration regarding the market supply and demand of different residential product types in the Delafield area and we feel it provides options that will benefit the Town for many years to come.

Thank you for your consideration of this proposed project.

Sincerely,

Bryan Lindgren

Neumann Developments Inc.

EXHIBITS

Legal Description

Exhibit A: Welshire Farm General Development Site Plan

Exhibit B: Open Space and Natural Resource Protection Plan

Exhibit C: Traffic Impact Analysis

Exhibit D: Road Access Plan

Exhibit E: Sanitary Sewer Plan

Exhibit F: Water Study Report

Exhibit G: Preliminary Storm Water Map and Report

Exhibit H: Bike and Pedestrian Plan

Exhibit I: Active Recreation Plan

Exhibit J: Landscape Plan

LOT CHARACTERISTICS

SINGLE-FAMILY LOW DENSITY
Zone 1: Lots 1 - 8

- Lot Size = 20,000 sf
- Average Lot Width = 100 feet
- Setbacks:
 - Min. Road = 35'
 - Side Offset = 15'
 - Rear Offset = 20'
 - Wetland = 75'
- Max Building Footprint = 17.5% of lot
- Open Space per Lot = 70% of lot

RESIDENTIAL SINGLE-FAMILY LOW-MEDIUM DENSITY
Zone 2: Lots 9 - 37

- Lot Size = 15,000 sf
- Average Lot Width = 90 feet
- Setbacks:
 - Min. Road = 25'
 - Side Offset = 12.5'
 - Rear Offset = 20'
 - Wetland = 75'
 - Elmhurst Rd = 50'
- Max Building Footprint = 25% of lot
- Open Space per Lot = 60% of lot

SINGLE-FAMILY MEDIUM DENSITY
Zones 3 & 4: Lots 38 - 155

- Lot Size = 10,000 sf
- Average Lot Width = 75 feet
- Setbacks:
 - Min. Road = 25'
 - Side Offset = 10'
 - Rear Offset = 20'
 - Wetland = 75'
 - Glen Cove Rd = 100'
 - Golf Rd (CTH DR) = 100'
 - Elmhurst Rd = 50'
- Max Building Footprint = 30% of lot
- Open Space per Lot = 60% of lot

DUPLEX CONDOS
Zone 3: Lots 156 & 157 (Bldgs 1-28)

- Density = 4 un/ac
- Setbacks:
 - Min. Road = 25'
 - Side Offset = 20' (building to building)
- Rear Offset = N/A
- Wetland = 75'
- Glen Cove Rd = 100'
- Golf Rd (CTH DR) = 100'
- Max Building Footprint = 25%
- Open Space per Lot = 60% of lot

SITE DATA TABLE

- Gross Area 151.49 acres
- Road Dedication (Glen Cove Rd & Elmhurst Rd) - 0.44 acres
- TOTAL AREA 151.05 acres

Proposed Zoning: Planned Residential District #1

Zone 1: 23.2 acres	8 lots
Zone 2: 29.94 acres	29 lots
Zone 3: 50.08 acres	37 lots
	+ 56 units
Zone 4: 47.83 acres	81 lots
Existing Farmhouse	1 lot
TOTAL	212 units

- DENSITY = 212 / 151.05 = **1.404 un/ac**

- STORMWATER PLAN NOTES:**
- THE PROPOSED DEVELOPMENT (ALL PHASES) ARE SERVED BY ON-SITE SHARED STORMWATER FACILITIES, AS SHOWN ON THE PRELIMINARY STORMWATER PLAN.
 - THE STORMWATER FACILITIES WILL BE CONSTRUCTED WITH THEIR CORRESPONDING PHASE OF DEVELOPMENT.
 - THE STORMWATER FACILITIES WILL BE LOCATED WITHIN OUTLOTS AND/OR DRAINAGE EASEMENTS.
 - ALL RESIDENTIAL LOTS AND CONDOMINIUM UNITS WILL BE PART OF A MASTER HOMEOWNERS ASSOCIATION.
 - THE MASTER HOMEOWNERS ASSOCIATION WILL BE RESPONSIBLE FOR THE REPAIR, MAINTENANCE AND RESTORATION OF THE STORMWATER PRACTICES.

Single-Family Medium Density & Condominium
Zone 3

- Duplex Ranch = 56 units
- 10,000 sf Single Family Lots = 37 units
- Total = 93 units

Low Density Single Family Residential
Zone 1
20,000 sf, 100' wide ave
8 lots

Zone 1
23.2 ac

Zone 2
29.94 ac

Zone 3
50.08 ac

Zone 4
47.83 ac

Residential Single-Family Low-Medium Residential
Zone 2
15,000 sf, 90' wide ave
29 lots

Single-Family Medium Density
Zone 4
10,000 sf, 75' wide ave
81 lots



4100 N. GALHOUN ROAD
BROOKFIELD, WI 53005
(262) 790-1480
info@trioeng.com

EXISTING FARMHOUSE TO REMAIN

Map 1
GENERAL DEVELOPMENT PLAN DRAWING
Welshire Farm Development
Town of Delafield, Waukesha County, Wisconsin

Pocket Park (1 acre)
- Pickleball Court
- Garden & Picnic Area
- Benches

Clubhouse Amenity Area (1.4 acre)
- Clubhouse
- Pool
- Playground
- Bike Service Station
- Site Amenities



Scale: 1" = 150' (22"x34")
Scale: 1" = 300' (11"x17")
DATE: 04/07/2023

ZONE 3

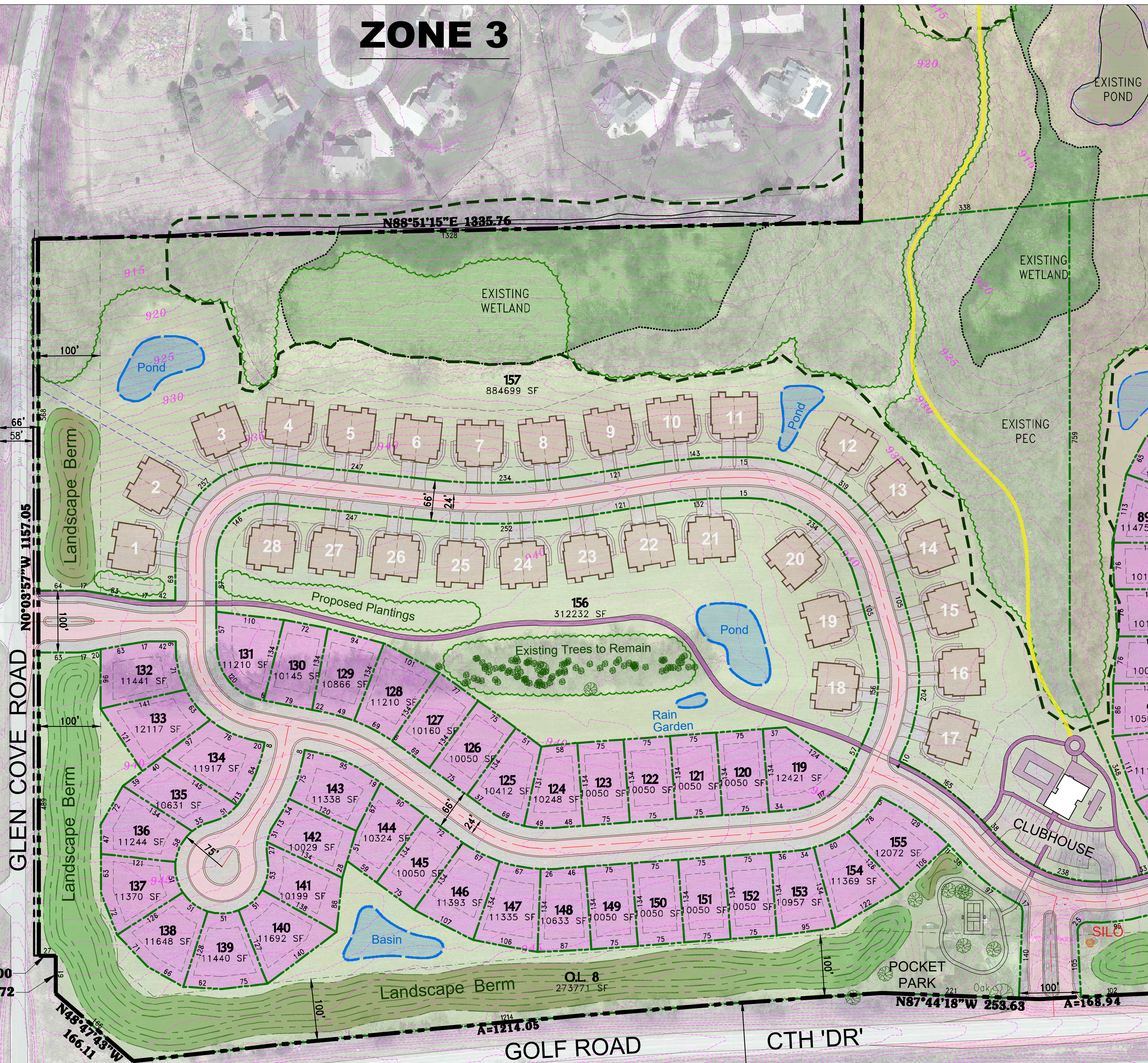
LOT CHARACTERISTICS

SINGLE-FAMILY MEDIUM DENSITY

- Zone 3: Lots 119 - 155**
- Lot Size = 10,000 sf
 - Average Lot Width = 75 feet
 - Setbacks:
 - Min. Road = 25'
 - Side Offset = 10'
 - Rear Offset = 20'
 - Wetland = 75'
 - Glen Cove Rd = 100'
 - Golf Rd (CTH DR) = 100'
 - Elmhurst Rd = 50'
 - Max Building Footprint = 30% of lot
 - Open Space per Lot = 60% of lot

DUPLEX CONDOS

- Zone 3: Lots 156 & 157
(Buildings 1 - 28)**
- Density = 4 un/ac
 - Setbacks:
 - Min. Road = 25'
 - Side Offset = 20'
 - Rear Offset = (building to building)
 - Wetland = 75'
 - Glen Cove Rd = 100'
 - Golf Rd (CTH DR) = 100'
 - Max Building Footprint = 25%
 - Open Space per Lot = 60% of lot

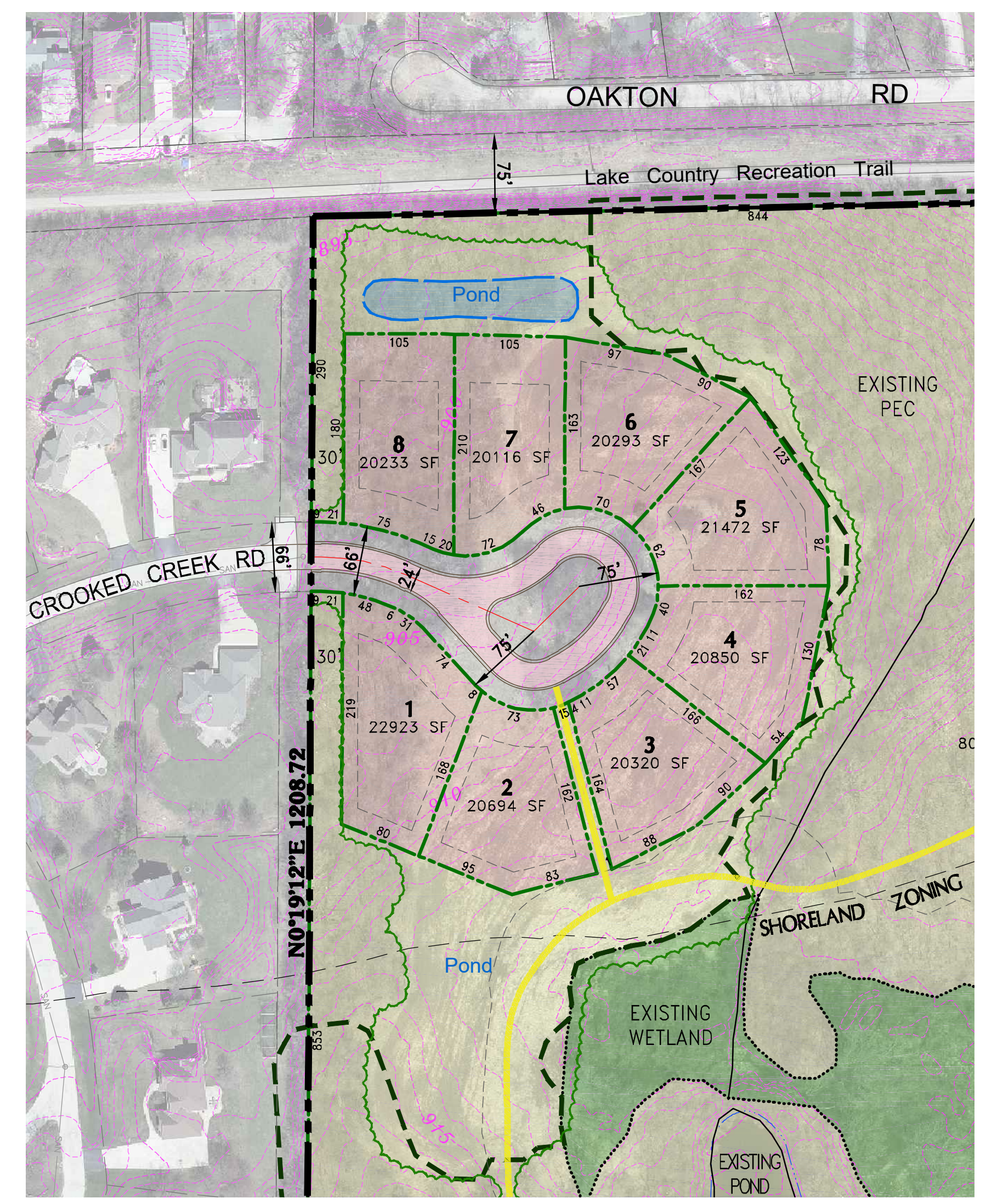


ZONE 1

LOT CHARACTERISTICS

SINGLE-FAMILY LOW DENSITY

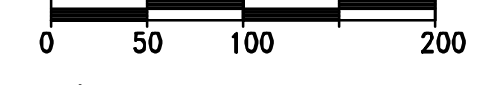
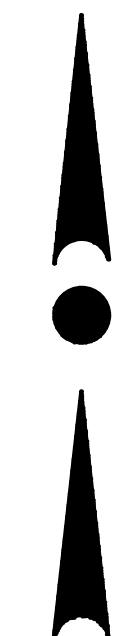
- Zone 1: Lots 1 - 8**
- Lot Size = 20,000 sf
 - Average Lot Width = 100 feet
 - Setbacks:
 - Min. Road = 35'
 - Side Offset = 15'
 - Rear Offset = 20'
 - Wetland = 75'
 - Max Building Footprint = 17.5% of lot
 - Open Space per Lot = 70% of lot



4100 N. CALHOUN ROAD
BROOKFIELD, WI 53005
(262) 790-1480
info@trioeng.com

STORMWATER PLAN NOTES:

- THE PROPOSED DEVELOPMENT (ALL PHASES) ARE SERVED BY ON-SITE SHARED STORMWATER FACILITIES, AS SHOWN ON THE PRELIMINARY STORMWATER PLAN.
- THE STORMWATER FACILITIES WILL BE CONSTRUCTED WITH THEIR CORRESPONDING PHASE OF DEVELOPMENT.
- THE STORMWATER FACILITIES WILL BE LOCATED WITHIN OUTLOTS AND/OR DRAINAGE EASEMENTS.
- ALL RESIDENTIAL LOTS AND CONDOMINIUM UNITS WILL BE PART OF A MASTER HOMEOWNERS ASSOCIATION.
- THE MASTER HOMEOWNERS ASSOCIATION WILL BE RESPONSIBLE FOR THE REPAIR, MAINTENANCE AND RESTORATION OF THE STORMWATER PRACTICES.



Scale: 1" = 100' (22"x34")

Scale: 1" = 200' (11"x17")

DATE: 04/07/2023



LOT CHARACTERISTICS

RESIDENTIAL SINGLE-FAMILY LOW-MEDIUM DENSITY
Zone 2: Lots 9 - 37
 - Lot Size = 15,000 sf
 - Average Lot Width = 90 feet
 - Setbacks:
 - Min. Road = 25'
 - Side Offset = 12.5'
 - Rear Offset = 20'
 - Wetland = 75'
 - Elmhurst Rd = 50'
 - Max Building Footprint = 25% of lot
 - Open Space per Lot = 60% of lot

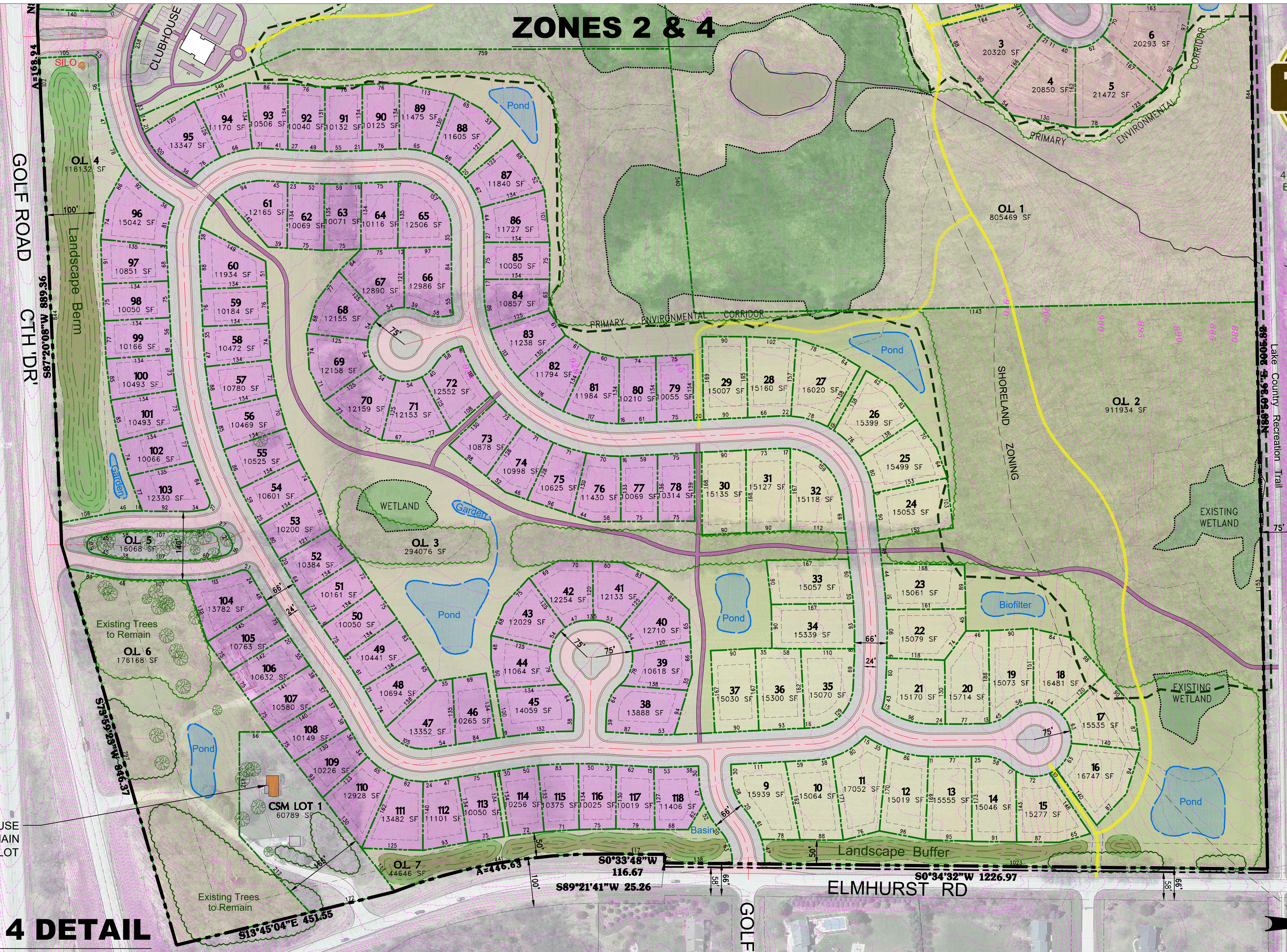
SINGLE-FAMILY MEDIUM DENSITY
Zones 4: Lots 38 - 118
 - Lot Size = 10,000 sf
 - Average Lot Width = 75 feet
 - Setbacks:
 - Min. Road = 25'
 - Side Offset = 10'
 - Rear Offset = 20'
 - Wetland = 75'
 - Glen Cove Rd = 100'
 - Golf Rd (CTH DR) = 100'
 - Elmhurst Rd = 50'
 - Max Building Footprint = 30% of lot
 - Open Space per Lot = 60% of lot

STORMWATER PLAN NOTES:

- THE PROPOSED DEVELOPMENT (ALL PHASES) ARE SERVED BY ON-SITE SHARED STORMWATER FACILITIES, AS SHOWN ON THE PRELIMINARY STORMWATER PLAN.
- THE STORMWATER FACILITIES WILL BE CONSTRUCTED WITH THEIR CORRESPONDING PHASE OF DEVELOPMENT.
- THE STORMWATER FACILITIES WILL BE LOCATED WITHIN OUTLOTS AND/OR DRAINAGE EASEMENTS.
- ALL RESIDENTIAL LOTS AND CONDOMINIUM UNITS WILL BE PART OF A MASTER HOMEOWNERS ASSOCIATION.
- THE MASTER HOMEOWNERS ASSOCIATION WILL BE RESPONSIBLE FOR THE REPAIR, MAINTENANCE AND RESTORATION OF THE STORMWATER PRACTICES.

Map 1-B
ZONES 2 & 4 DETAIL
GENERAL DEVELOPMENT PLAN DRAWING
Welshire Farm Development
 Town of Delafield, Waukesha County, Wisconsin

ZONES 2 & 4



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EXISTING FARM HOUSE TO REMAIN ON SEPARATE LOT

Existing Trees to Remain

Existing Trees to Remain



0 50 100 200
Scale: 1" = 100' (22"x34")
Scale: 1" = 200' (11"x17")
 DATE: 04/07/2023

PHASING NOTES

LANDSCAPE BERMS:

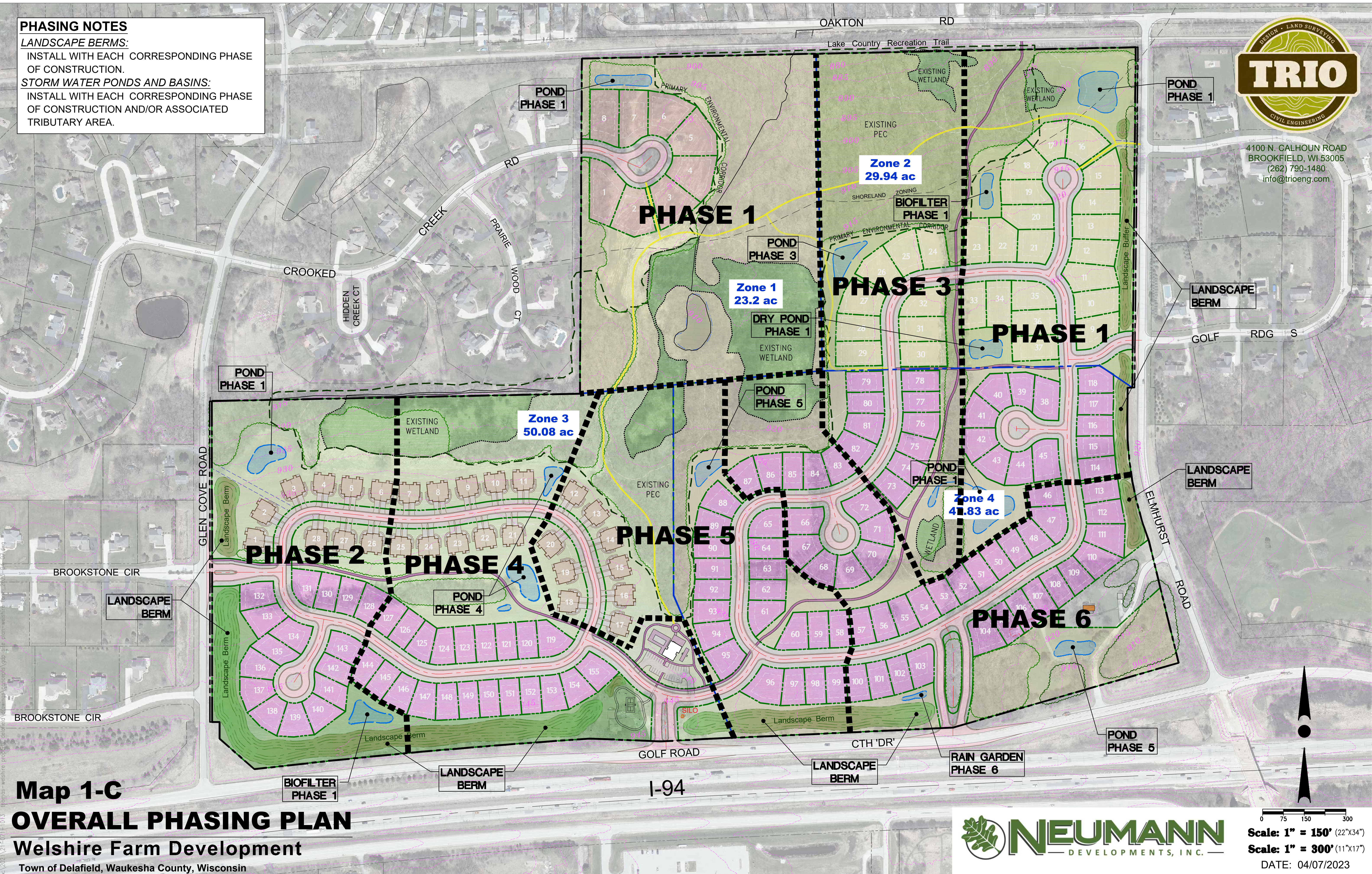
INSTALL WITH EACH CORRESPONDING PHASE OF CONSTRUCTION.

STORM WATER PONDS AND BASINS:

INSTALL WITH EACH CORRESPONDING PHASE OF CONSTRUCTION AND/OR ASSOCIATED TRIBUTARY AREA.



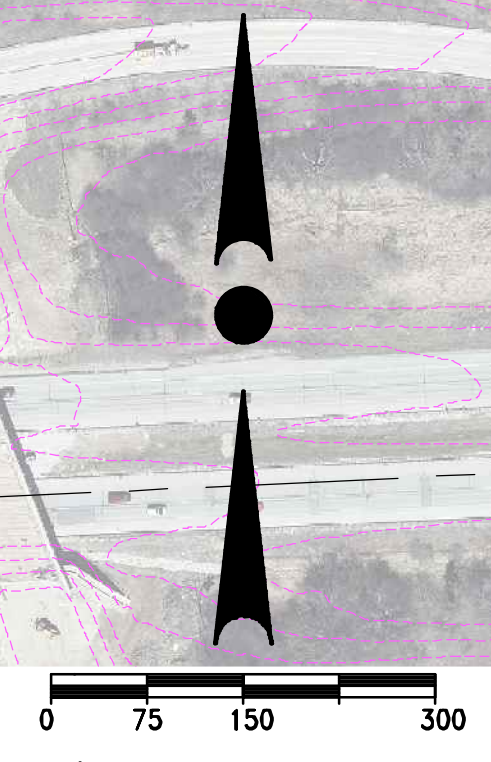
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Map 1-C
OVERALL PHASING PLAN

Welshire Farm Development

Town of Delafield, Waukesha County, Wisconsin



Scale: 1" = 150' (22"x34")
Scale: 1" = 300' (11"x17")
DATE: 04/07/2023

OPEN SPACE DATA TABLE - Welshire Farm Date: 3/17/2023

Proposed Zoning = PLANNED DEVELOPMENT DISTRICT #1

ZONE	Total Area (acres)	Lowland Area (acres)	Upland PEC (acres)	SUB-TOTAL Development Area (non-EC) (acres)	Incremental Development Area (non-EC) (acres)	PROPOSED USE	Required Open Space (% of site*)	REQUIRED NET OPEN SPACE* (acres)	NET OPEN SPACE PROVIDED* (acres)	(%)
1	23.20	3.98	11.72	7.50		Single-Family Low Density	30.0%	6.96	15.31	66.0%
2	29.94	0.90	9.94	19.10		Residential Single-Family Low-Medium Density (15,000)	30.0%	8.98	16.04	53.6%
3	50.08	3.77	5.85	40.46	22.97	Condominium (4 un/ac) **	60.0%	19.56	19.56	60.0%
						Single-Family Medium Density (10,000)	35.0%	6.12	6.16	35.2%
4	47.83	1.45	3.09	43.30		Single-Family Medium Density (10,000)	35.0%	16.74	17.00	35.6%
SUBTOTAL	151.05	10.09	30.60	110.36			38.6%	58.36	74.07	49.0%

* Net Open Space for whole development site. Accounts for Lowland Area multiplied by 0.2. Single family open space is in Outlots. Condo open space is common area.

** Condo Net Open Space based on: Gross Area = 50.08 ac - 17.49 ac = 32.59 ac. Open Space includes (3.77 ac lowland x 0.2) + 18.19 ac of common area + a portion of OL 4 (0.5 ac) + a portion of OL 8 (0.12 ac) within Zone 3 - said OL areas flanking entry area at Clubhouse and provided for common use, to satisfy Net Open Space requirements.

Open Space Plan Legend

- Wetlands**
(Heartland Ecological Group Inc, July 2022)
- Primary Environmental Corridor (PEC)**
(Heartland Ecological Group Inc, July 2022)
- Treelines & Other wooded areas to be preserved (OS)**
- Landscape Buffer (LB)**
- Open Space Areas for Development Site Calculations**
- Single family in Outlot
- Condo is common area



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LB 2
50' wide

LB 1
100' wide

LB 3
100' wide

Map 2
OPEN SPACE AND
NATURAL RESOURCE PROTECTION PLAN
Welshire Farm Development
Town of Delafield, Waukesha County, Wisconsin



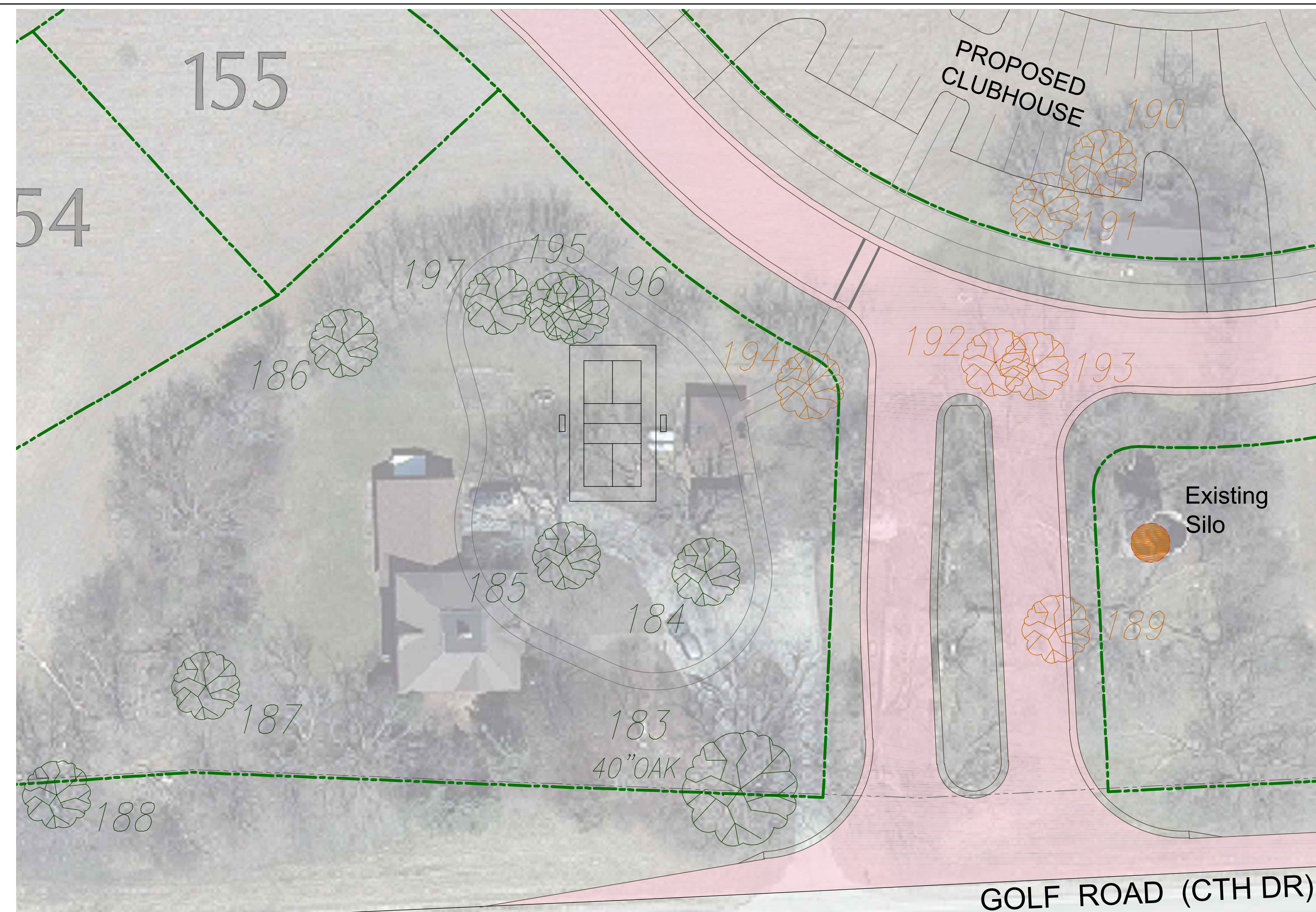
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Scale: 1" = 300' (11"x17")
DATE: 04/07/2023



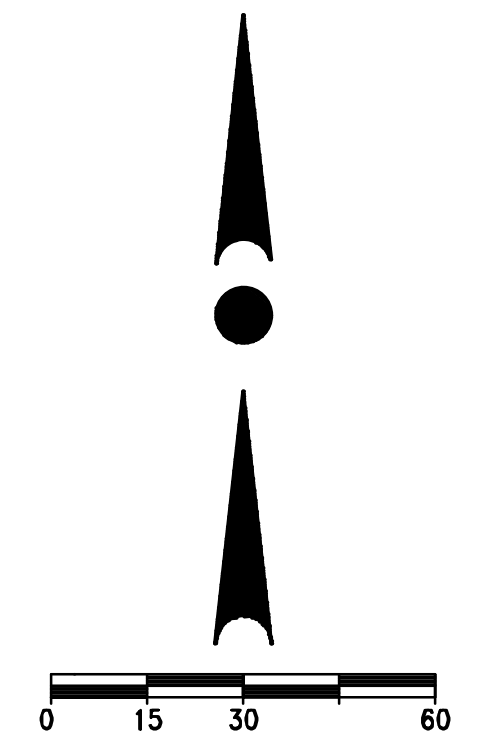
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(262) 790-1480
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Tree Identification Legend	
	Existing Tree to Remain (Field surveyed by Heartland Ecological Group Inc, Feb 2023)
	Existing Tree to be Removed (Field surveyed by Heartland Ecological Group Inc, Feb 2023)
	Treelines & Other wooded areas to be preserved (OS)



Map 2-A
ZONE 3
EXISTING TREE PLAN
Welshire Farm Development
Town of Delafield, Waukesha County, Wisconsin



Scale: 1" = 30' (22"x34")
Scale: 1" = 60' (11"x17")
DATE: 04/07/2023

x:\2021\21-071-1013 thomas-welshire property deliafield\drawings\concepts\gdp site plan-welshire form_2023-04-07.dwg

ALL ZONES

FIELD LOCATED TREES TO BE REMOVED

ID	Common Name	Species	DBH	To be Removed
1	Siberian Elm	Ulmus pumila	30	Remove
2	Boxelder	Acer negundo	10	Remove
3	Boxelder	Acer negundo	13	Remove
4	Black Cherry	Prunus serotina	24	Remove
5	Black Cherry	Prunus serotina	24	Remove
6	Boxelder	Acer negundo	10	Remove
7	Boxelder	Acer negundo	30	Remove
8	Black Cherry	Prunus serotina	14	Remove
9	Black Cherry	Prunus serotina	9	Remove
10	Boxelder	Acer negundo	25	Remove
11	Boxelder	Acer negundo	12	Remove
12	Black Cherry	Prunus serotina	8	Remove
13	Black Cherry	Prunus serotina	13	Remove
14	Boxelder	Acer negundo	9	Remove
15	Boxelder	Acer negundo	7	Remove
16	Boxelder	Acer negundo	12	Remove
17	Boxelder	Acer negundo	8	Remove
18	Boxelder	Acer negundo	6	Remove
19	Black Cherry	Prunus serotina	9	Remove
20	Black Cherry	Prunus serotina	9	Remove
21	Black Cherry	Prunus serotina	11	Remove
22	Black Cherry	Prunus serotina	6	Remove
23	Silver Maple	Acer saccharinum	7	Remove
24	Black Cherry	Prunus serotina	13	Remove
25	Black Cherry	Prunus serotina	12	Remove
26	Black Cherry	Prunus serotina	14	Remove
27	Boxelder	Acer negundo	5	Remove
28	Boxelder	Acer negundo	14	Remove
29	Boxelder	Acer negundo	12	Remove
30	Black Cherry	Prunus serotina	26	Remove
31	Black Cherry	Prunus serotina	28	Remove
32	Boxelder	Acer negundo	9	Remove
33	Boxelder	Acer negundo	22	Remove
34	Boxelder	Acer negundo	14	Remove
35	Boxelder	Acer negundo	5	Remove
36	Boxelder	Acer negundo	9	Remove
37	Boxelder	Acer negundo	8	Remove
38	Boxelder	Acer negundo	9	Remove
39	Boxelder	Acer negundo	11	Remove
40	Boxelder	Acer negundo	26	Remove
41	Black Cherry	Prunus serotina	14	Remove
42	Black Cherry	Prunus serotina	12	Remove
43	Black Cherry	Prunus serotina	13	Remove
44	Black Cherry	Prunus serotina	9	Remove
45	Black Cherry	Prunus serotina	7	Remove
46	Black Cherry	Prunus serotina	12	Remove
47	Black Cherry	Prunus serotina	15	Remove
48	Black Cherry	Prunus serotina	13	Remove
49	Black Cherry	Prunus serotina	10	Remove
50	Silver Maple	Acer saccharinum	9	Remove
51	Silver Maple	Acer saccharinum	5	Remove
52	Silver Maple	Acer saccharinum	5	Remove
53	Boxelder	Acer negundo	10	Remove
54	Boxelder	Acer negundo	13	Remove
55	Boxelder	Acer negundo	8	Remove
56	Boxelder	Acer negundo	14	Remove
57	Boxelder	Acer negundo	14	Remove
58	Boxelder	Acer negundo	14	Remove
59	Boxelder	Acer negundo	14	Remove
60	Boxelder	Acer negundo	6	Remove
61	Boxelder	Acer negundo	18	Remove
62	Black Cherry	Prunus serotina	20	Remove
63	Black Cherry	Prunus serotina	24	Remove
64	Black Cherry	Prunus serotina	9	Remove
65	Boxelder	Acer negundo	8	Remove
66	Boxelder	Acer negundo	14	Remove
67	Boxelder	Acer negundo	12	Remove
68	Northern Hackberry	Celtis occidentalis	11	Remove
69	Boxelder	Acer negundo	10	Remove
70	Boxelder	Acer negundo	10	Remove
71	Boxelder	Acer negundo	24	Remove
72	Black Cherry	Prunus serotina	5	Remove
73	Boxelder	Acer negundo	26	Remove
74	Black Cherry	Prunus serotina	14	Remove
75	Black Cherry	Prunus serotina	21	Remove
76	Black Cherry	Prunus serotina	14	Remove
77	Black Cherry	Prunus serotina	19	Remove
80	Boxelder	Acer negundo	5	Remove
177	Boxelder	Acer negundo	11	Remove
178	Boxelder	Acer negundo	12	Remove
179	Boxelder	Acer negundo	4	Remove
180	Boxelder	Acer negundo	6	Remove
181	Boxelder	Acer negundo	15	Remove
182	Boxelder	Acer negundo	8	Remove
189	Misc			Remove
190	Misc			Remove
191	Misc			Remove
192	Misc			Remove
193	Misc			Remove
194	Misc			Remove
EAST 1	Twin Cherry		27	Remove
EAST 2	Oak		30	Remove
EAST 3	Cherry		18	Remove
EAST 4	Cherry		15	Remove

ALL ZONES

FIELD LOCATED TREES TO REMAIN

ID	Common Name	Species	DBH	To be Removed
78	Boxelder	Acer negundo	6	
79	Boxelder	Acer negundo	6	
81	Boxelder	Acer negundo	6	
82	Boxelder	Acer negundo	7	
83	Boxelder	Acer negundo	4	
84	Boxelder	Acer negundo	8	
85	Boxelder	Acer negundo	12	
86	Boxelder	Acer negundo	8	
87	Boxelder	Acer negundo	10	
88	Boxelder	Acer negundo	9	
89	Boxelder	Acer negundo	12	
90	Boxelder	Acer negundo	14	
91	Boxelder	Acer negundo	16	
92	Boxelder	Acer negundo	16	
93	Boxelder	Acer negundo	9	
94	Boxelder	Acer negundo	9	
95	Boxelder	Acer negundo	7	
96	Boxelder	Acer negundo	10	
97	Boxelder	Acer negundo	6	
98	Boxelder	Acer negundo	12	
99	Boxelder	Acer negundo	14	
100	Boxelder	Acer negundo	5	
101	Boxelder	Acer negundo	6	
102	Boxelder	Acer negundo	11	
103	Boxelder	Acer negundo	5	
104	Boxelder	Acer negundo	4	
105	Boxelder	Acer negundo	10	
106	Boxelder	Acer negundo	9	
107	Boxelder	Acer negundo	11	
108	Boxelder	Acer negundo	5	
109	Boxelder	Acer negundo	12	
110	Boxelder	Acer negundo	5	
111	Boxelder	Acer negundo	8	
112	Boxelder	Acer negundo	5	
113	Boxelder	Acer negundo	10	
114	Boxelder	Acer negundo	10	
115	Boxelder	Acer negundo	13	
116	Black Cherry	Prunus serotina	11	
117	Boxelder	Acer negundo	8	
118	Bur Oak	Quercus macrocarpa	43	
119	Boxelder	Acer negundo	5	
120	Black Cherry	Prunus serotina	6	
121	Boxelder	Acer negundo	4	
122	Boxelder	Acer negundo	9	
123	Boxelder	Acer negundo	12	
124	Boxelder	Acer negundo	10	
125	Boxelder	Acer negundo	12	
126	Boxelder	Acer negundo	4	
127	Boxelder	Acer negundo	15	
128	Boxelder	Acer negundo	6	
129	Boxelder	Acer negundo	4	
130	Boxelder	Acer negundo	10	
131	Boxelder	Acer negundo	9	
132	Boxelder	Acer negundo	13	
133	Boxelder	Acer negundo	9	
134	Boxelder	Acer negundo	14	
135	Boxelder	Acer negundo	8	
136	Boxelder	Acer negundo	11	
137	Boxelder	Acer negundo	11	
138	Boxelder	Acer negundo	6	
139	Boxelder	Acer negundo	14	
140	Boxelder	Acer negundo	7	
141	Boxelder	Acer negundo	17	
142	Boxelder	Acer negundo	16	
143	Boxelder	Acer negundo	20	
144	Boxelder	Acer negundo	10	
145	Boxelder	Acer negundo	15	
146	Boxelder	Acer negundo	17	
147	Boxelder	Acer negundo	15	
148	Boxelder	Acer negundo	10	
149	Boxelder	Acer negundo	16	
150	Boxelder	Acer negundo	23	
151	Boxelder	Acer negundo	17	
152	Boxelder	Acer negundo	24	
153	Boxelder	Acer negundo	13	
154	Boxelder	Acer negundo	16	
155	Boxelder	Acer negundo	15	
156	Boxelder	Acer negundo	14	
157	Boxelder	Acer negundo	12	
158	Boxelder	Acer negundo	11	
159	Boxelder	Acer negundo	6	
160	Boxelder	Acer negundo	18	
161	Boxelder	Acer negundo	11	
162	Boxelder	Acer negundo	12	
163	Boxelder	Acer negundo	13	
164	Boxelder	Acer negundo	14	
165	Boxelder	Acer negundo	13	
166	Boxelder	Acer negundo	15	
167	Boxelder	Acer negundo	11	
168	Boxelder	Acer negundo	13	
169	Boxelder	Acer negundo	12	
170	Boxelder	Acer negundo	13	
171	Black Cherry	Prunus serotina	16	
172	Black Cherry	Prunus serotina	17	
173	Boxelder	Acer negundo	4	
174	Boxelder	Acer negundo	13	
175	Boxelder	Acer negundo	14	
176	Boxelder	Acer negundo	17	
183	Burr Oak		40	
184	Misc			
185	Misc			
186	Misc			
187	Misc			
188	Misc			
195	Misc			
196	Misc			
197	Misc			

Tree Identification Legend

-  **Existing Tree to Remain**
(Field surveyed by Heartland Ecological Group Inc, Feb 2023)
-  **Existing Tree to be Removed**
(Field surveyed by Heartland Ecological Group Inc, Feb 2023)
-  **Treelines & Other wooded areas to be preserved (OS)**



4100 N. CALHOUN ROAD
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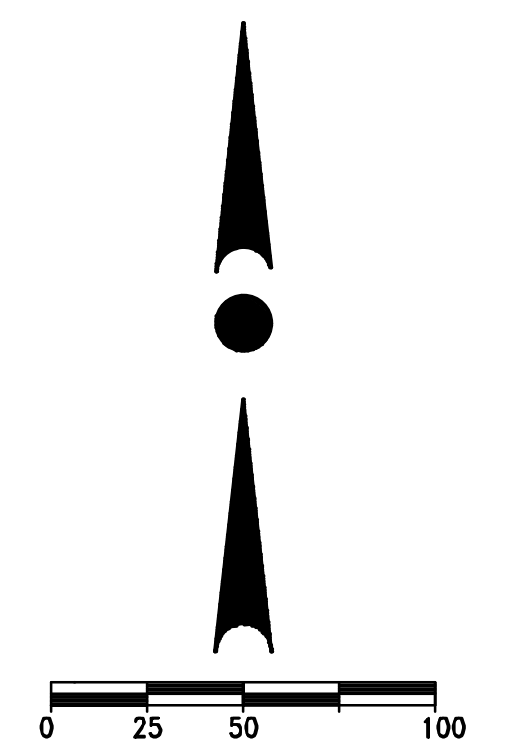
Map 2-B

ZONE 4

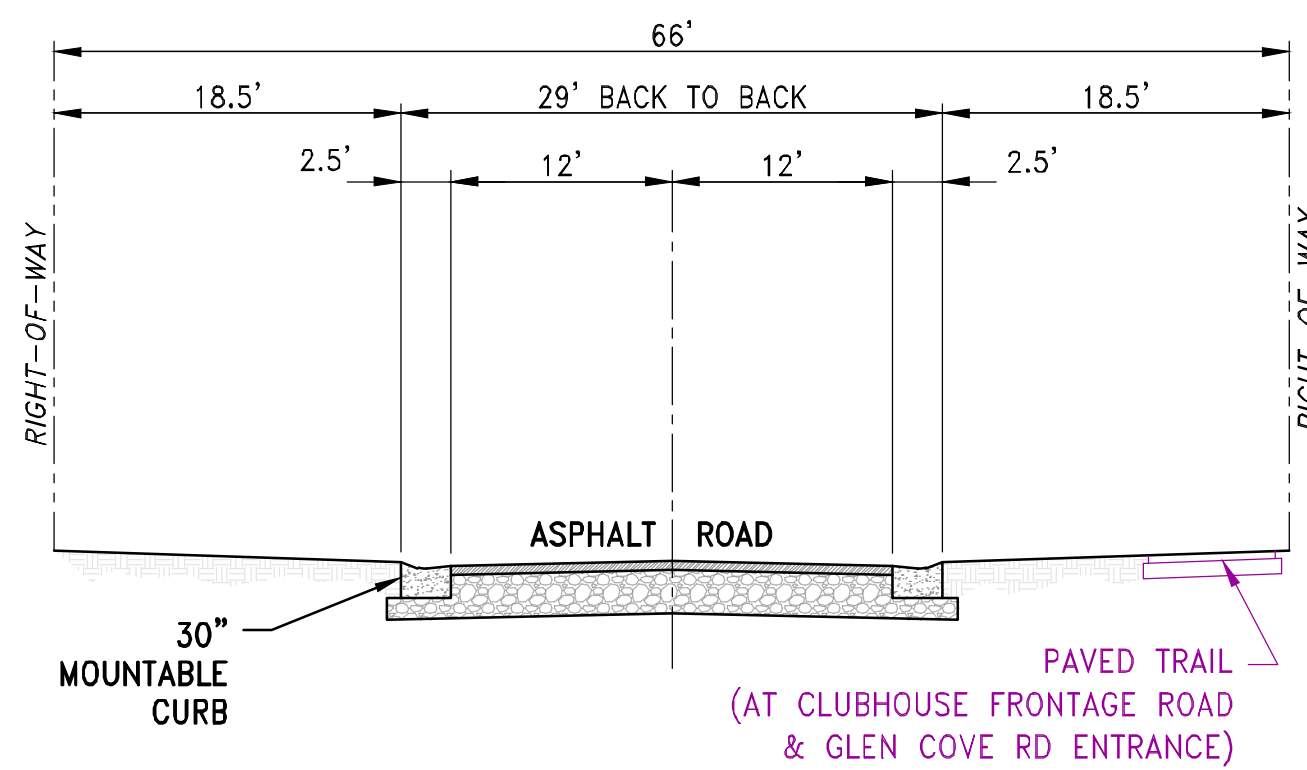
EXISTING TREE PLAN

Welshire Farm Development

Town of Delafield, Waukesha County, Wisconsin



Scale: 1" = 50' (22"x34")
Scale: 1" = 100' (11"x17")
DATE: 04/07/2023



PROPOSED PUBLIC ROAD CROSS SECTION
NOT TO SCALE



4100 N. GALHOUN ROAD
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Map 3
ROAD ACCESS PLAN
Welshire Farm Development
Town of Delafield, Waukesha County, Wisconsin



0 75 150 300
Scale: 1" = 150' (22"x34")
Scale: 1" = 300' (11"x17")
DATE: 04/07/2023



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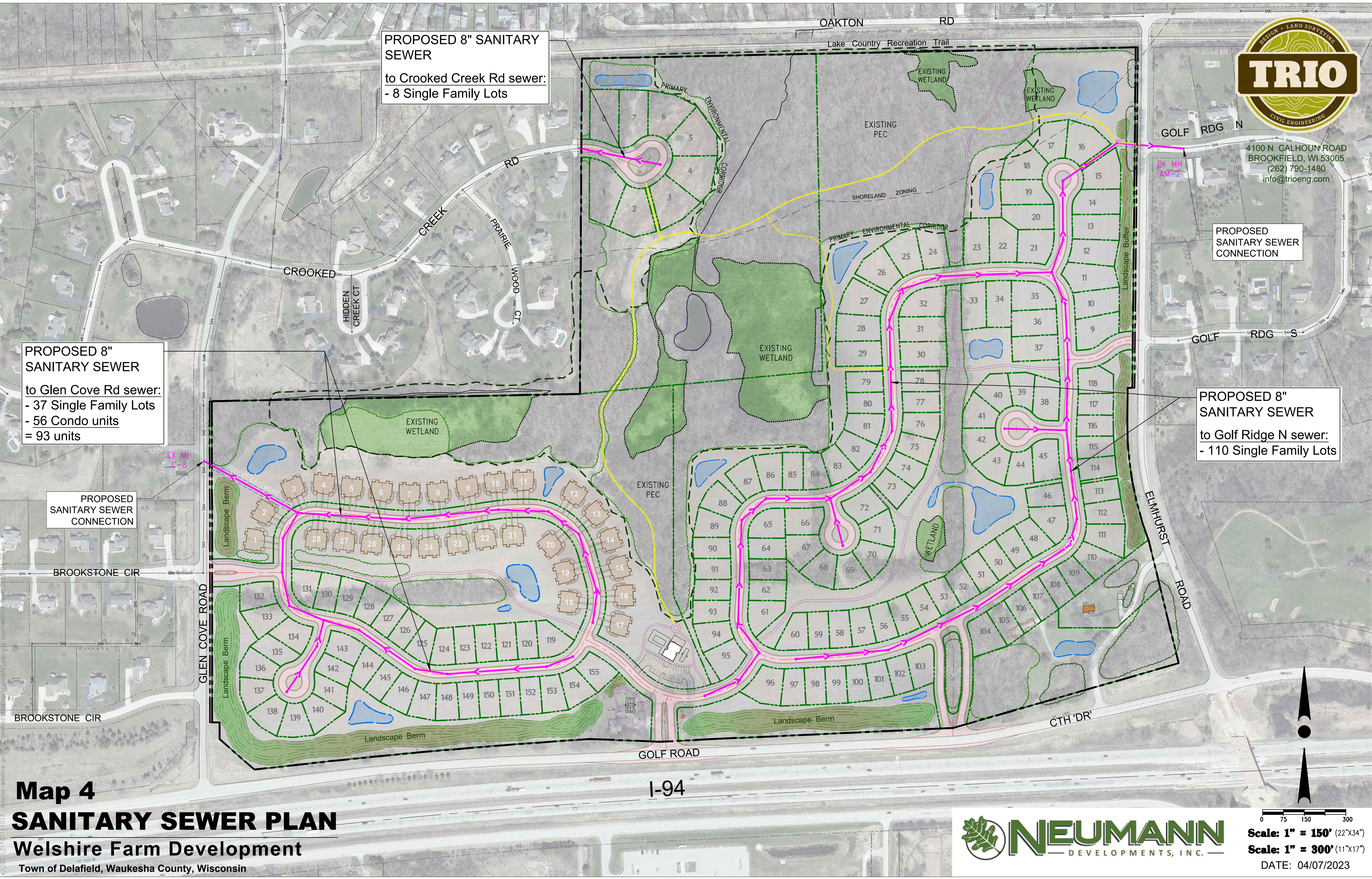
PROPOSED 8" SANITARY SEWER
to Crooked Creek Rd sewer:
- 8 Single Family Lots

PROPOSED 8" SANITARY SEWER
to Glen Cove Rd sewer:
- 37 Single Family Lots
- 56 Condo units
= 93 units

PROPOSED SANITARY SEWER CONNECTION

PROPOSED SANITARY SEWER CONNECTION

PROPOSED 8" SANITARY SEWER
to Golf Ridge N sewer:
- 110 Single Family Lots



Map 4 SANITARY SEWER PLAN

Welshire Farm Development

Town of Delafield, Waukesha County, Wisconsin



0 75 150 300

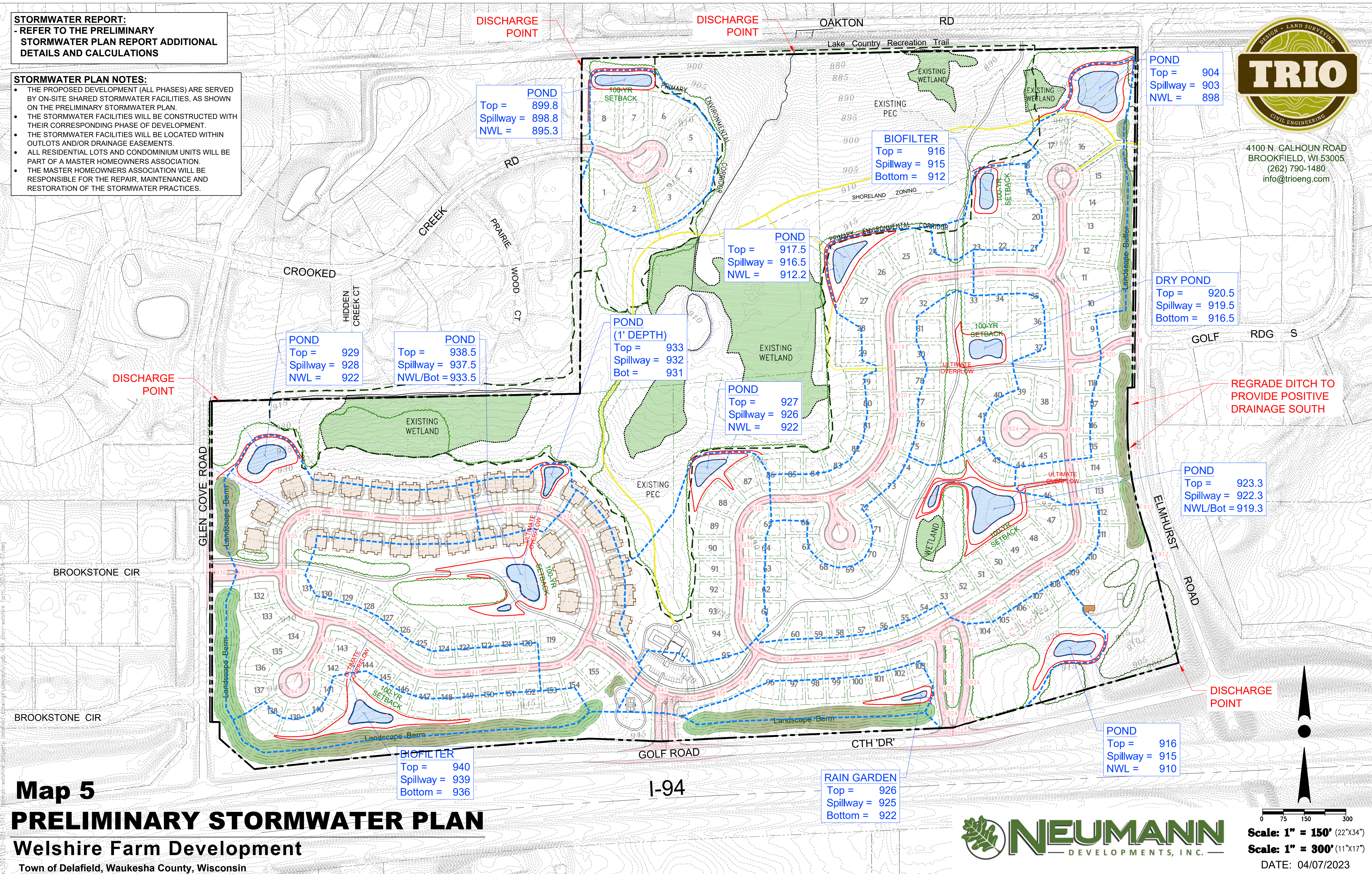
Scale: 1" = 150' (22"x34")
Scale: 1" = 300' (11"x17")
DATE: 04/07/2023

STORMWATER REPORT:
 - REFER TO THE PRELIMINARY
 STORMWATER PLAN REPORT ADDITIONAL
 DETAILS AND CALCULATIONS

- STORMWATER PLAN NOTES:**
- THE PROPOSED DEVELOPMENT (ALL PHASES) ARE SERVED BY ON-SITE SHARED STORMWATER FACILITIES, AS SHOWN ON THE PRELIMINARY STORMWATER PLAN.
 - THE STORMWATER FACILITIES WILL BE CONSTRUCTED WITH THEIR CORRESPONDING PHASE OF DEVELOPMENT.
 - THE STORMWATER FACILITIES WILL BE LOCATED WITHIN OUTLOTS AND/OR DRAINAGE EASEMENTS.
 - ALL RESIDENTIAL LOTS AND CONDOMINIUM UNITS WILL BE PART OF A MASTER HOMEOWNERS ASSOCIATION.
 - THE MASTER HOMEOWNERS ASSOCIATION WILL BE RESPONSIBLE FOR THE REPAIR, MAINTENANCE AND RESTORATION OF THE STORMWATER PRACTICES.



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DISCHARGE POINT

DISCHARGE POINT

POND
 Top = 904
 Spillway = 903
 NWL = 898

POND
 Top = 899.8
 Spillway = 898.8
 NWL = 895.3

BIOFILTER
 Top = 916
 Spillway = 915
 Bottom = 912

POND
 Top = 917.5
 Spillway = 916.5
 NWL = 912.2

DRY POND
 Top = 920.5
 Spillway = 919.5
 Bottom = 916.5

POND
 Top = 929
 Spillway = 928
 NWL = 922

POND
 Top = 938.5
 Spillway = 937.5
 NWL/Bot = 933.5

POND
 (1' DEPTH)
 Top = 933
 Spillway = 932
 Bot = 931

POND
 Top = 927
 Spillway = 926
 NWL = 922

REGRADE DITCH TO
 PROVIDE POSITIVE
 DRAINAGE SOUTH

POND
 Top = 923.3
 Spillway = 922.3
 NWL/Bot = 919.3

DISCHARGE POINT

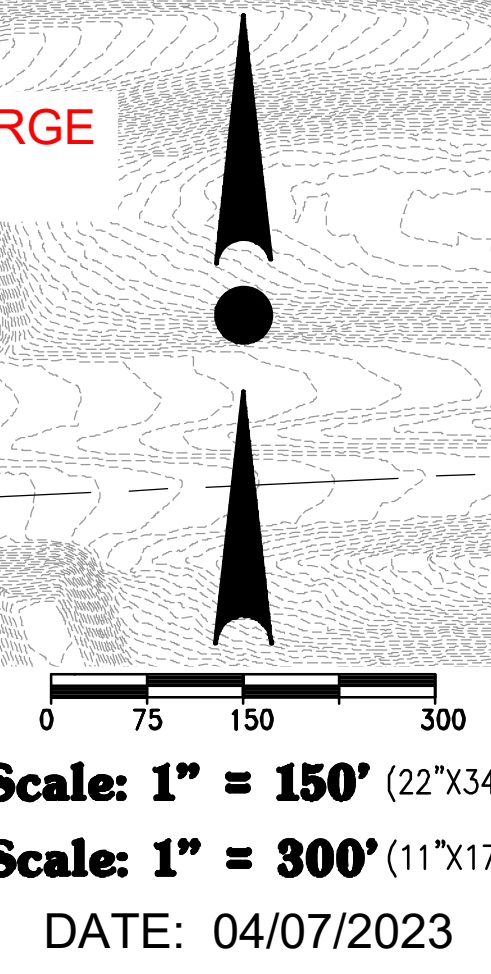
DISCHARGE POINT

BIOFILTER
 Top = 940
 Spillway = 939
 Bottom = 936

RAIN GARDEN
 Top = 926
 Spillway = 925
 Bottom = 922

POND
 Top = 916
 Spillway = 915
 NWL = 910

Map 5
PRELIMINARY STORMWATER PLAN
Welshire Farm Development
 Town of Delafield, Waukesha County, Wisconsin





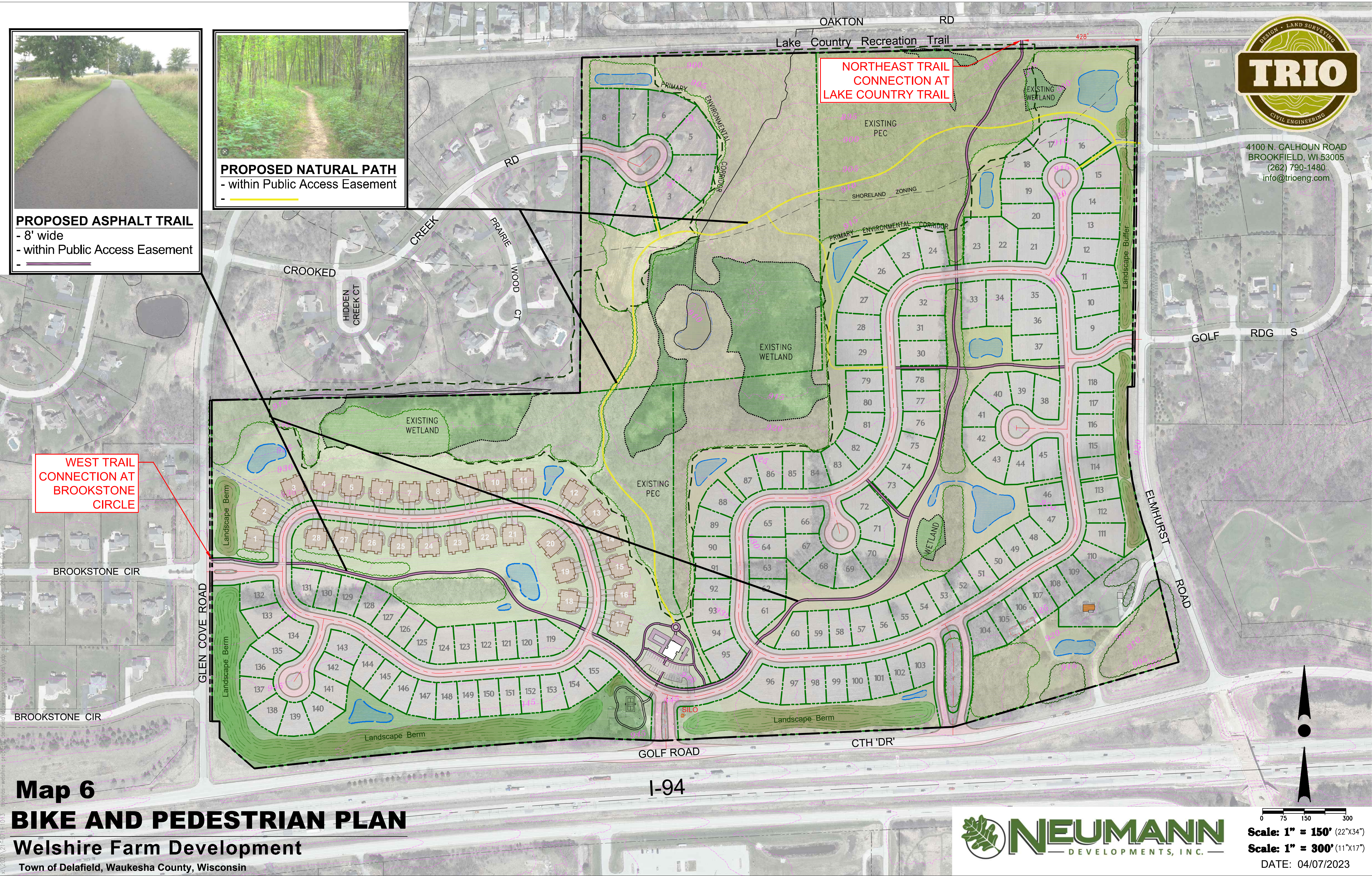
PROPOSED ASPHALT TRAIL
- 8' wide
- within Public Access Easement



PROPOSED NATURAL PATH
- within Public Access Easement



4100 N. GALHOUN ROAD
BROOKFIELD, WI 53005
(262) 790-1480
info@trioeng.com



Map 6
BIKE AND PEDESTRIAN PLAN
Welshire Farm Development
Town of Delafield, Waukesha County, Wisconsin



Scale: 1" = 150' (22"x34")
Scale: 1" = 300' (11"x17")
DATE: 04/07/2023



4100 N. CALHOUN ROAD
BROOKFIELD, WI 53005
(262) 790-1480
info@trioeng.com

- CLUBHOUSE AMENITY AREA**
- 1.4 Acre
 - Clubhouse
 - Pool & Patio
 - Playground
 - Bike Service Station
 - Site Amenities (fire pit, benches, etc.)

- POCKET PARK**
- 1 Acre
 - Pickleball Court
 - Garden & Picnic Area
 - Benches
 - Quality existing trees to remain

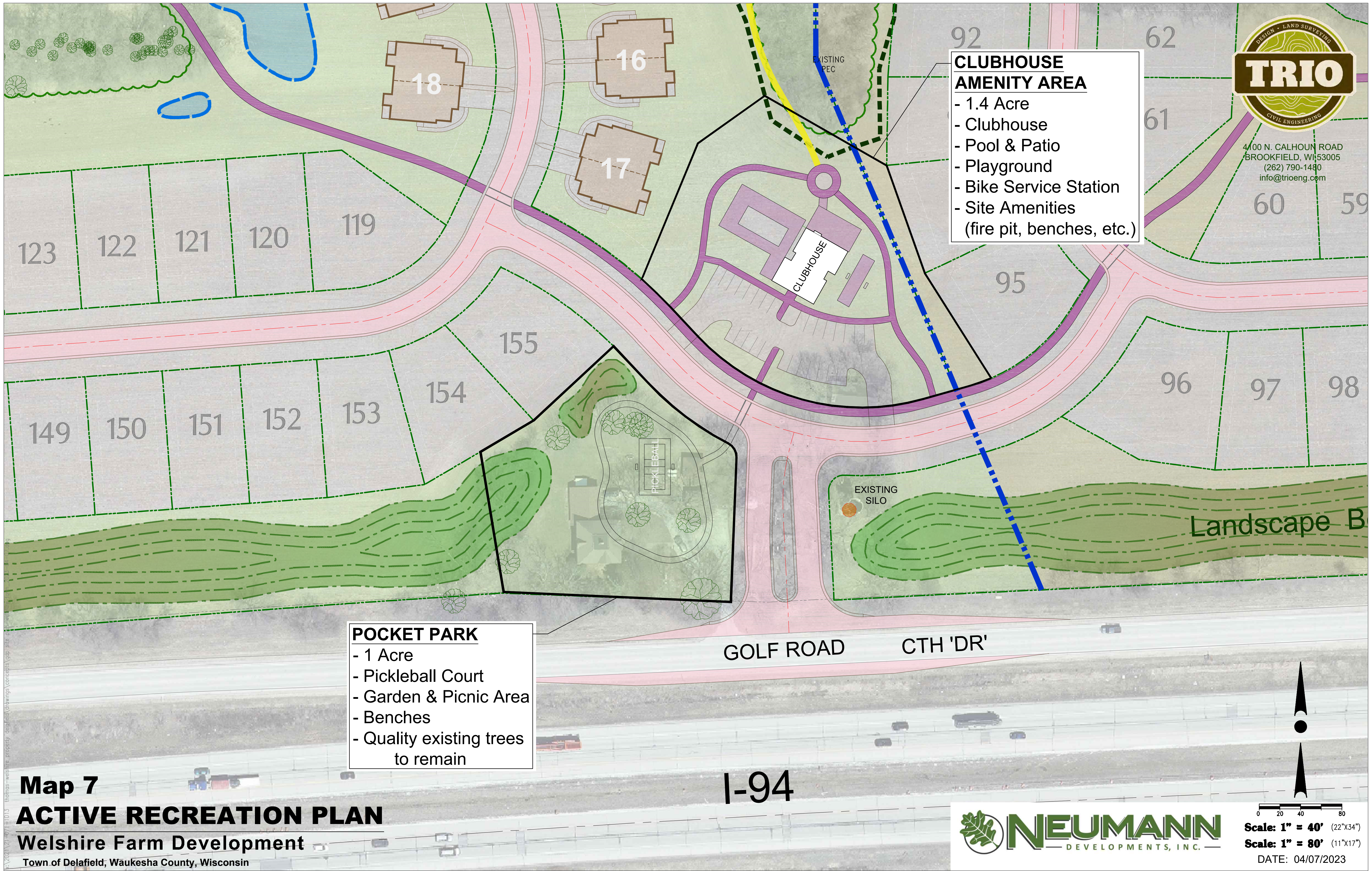


EXHIBIT J

ENLARGED LANDSCAPE PLAN; SEE 1/L-4

ENLARGED LANDSCAPE PLAN; SEE 2/L-4

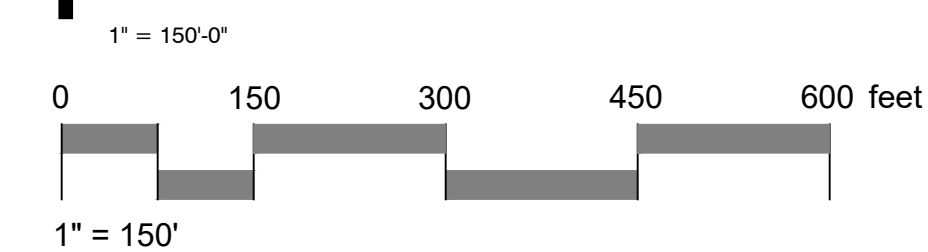
ENLARGED LANDSCAPE PLAN; SEE 1/L-2

ENLARGED LANDSCAPE PLAN; SEE 1/L-3

ENLARGED LANDSCAPE PLAN; SEE 1/L-5



1 OVERALL LANDSCAPE PLAN



LANDSCAPE NOTES




1. LANDSCAPE CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR PHASING OF LANDSCAPE PLAN.
2. TREES NOT TO BE PLANTED WITHIN 5' FROM FIRE HYDRANTS, CONTRACTOR TO CONFIRM TREE LOCATIONS IN FIELD.
3. TREES NOT TO BE PLANTED WITHIN 5' OF BURIED OR OVERHEAD UTILITIES, CONTRACTOR TO CONFIRM TREE LOCATIONS IN FIELD.
4. CONTRACTOR TO FIELD VERIFY ALL PLANT & MATERIAL QUANTITIES TO MEET INTENT OF DRAWING. PLANT / REFERENCE NOTES SCHEDULE ARE GUIDES FOR PLANNING PURPOSES.

PRELIMINARY

SHEET INVENTORY

- L-1 OVERALL LANDSCAPE PLAN
- L-2 ENLARGED LANDSCAPE PLAN
- L-3 ENLARGED LANDSCAPE PLAN
- L-4 ENLARGED LANDSCAPE PLAN
- L-5 ENLARGED LANDSCAPE PLAN
- L-6 ENLARGED LANDSCAPE PLAN
- L-7 DETAILS

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPPYRIFERA 'RENCI' TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X 'ADAMS' / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA 'MCKSENTRY' / AMERICAN SENTRY LINDEN
	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LINDEN
	ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM



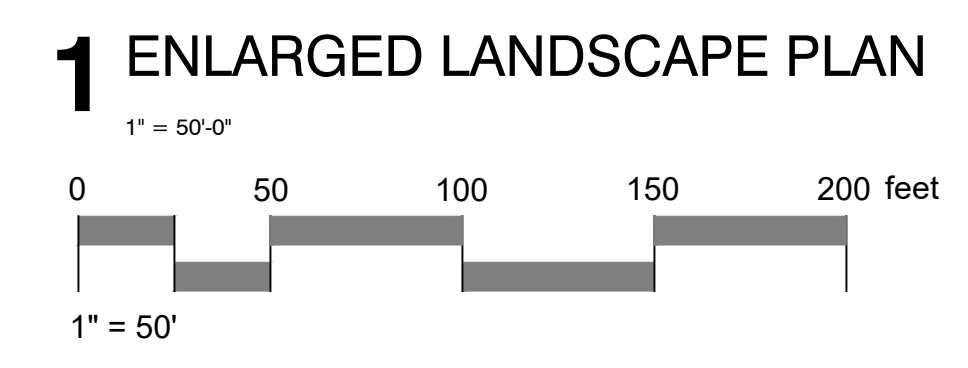
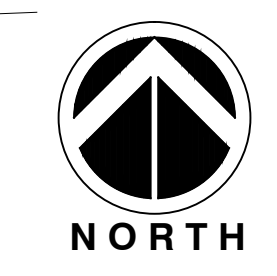
ENLARGED LANDSCAPE PLAN; SEE 6/L-6

ENLARGED LANDSCAPE PLAN; SEE 5/L-6

GLEN COVE ROAD

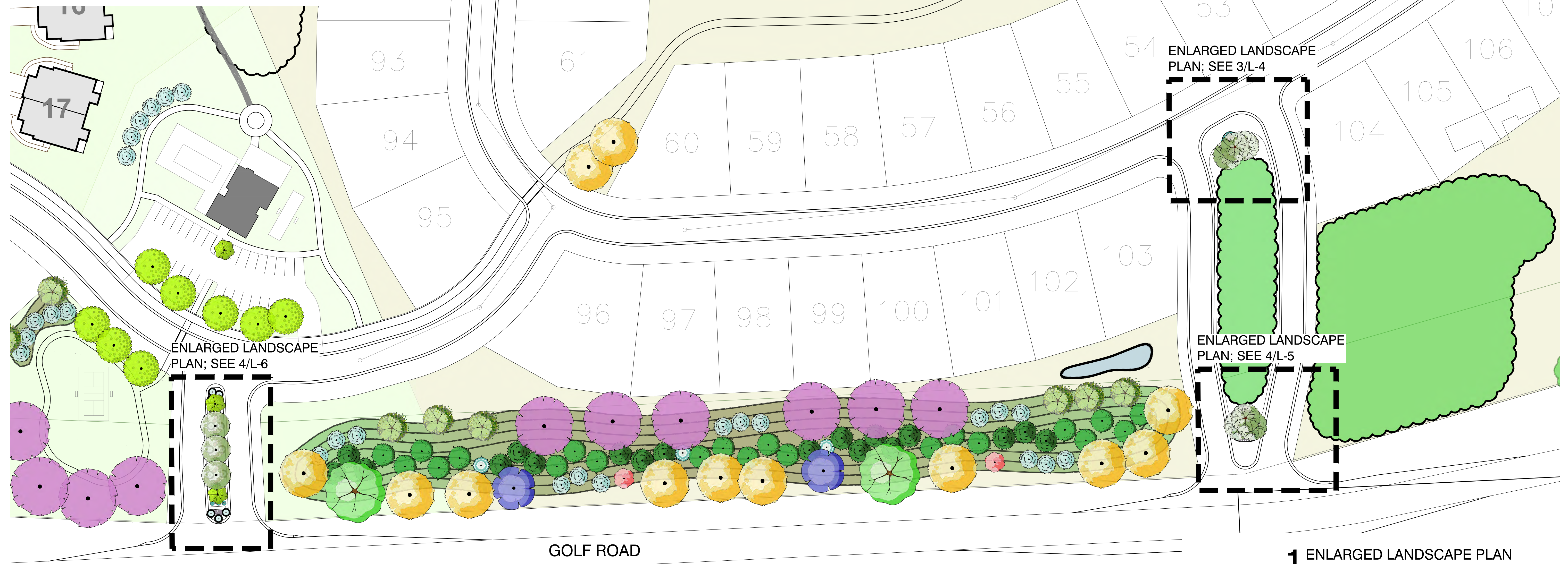
GOLF ROAD

PRELIMINARY

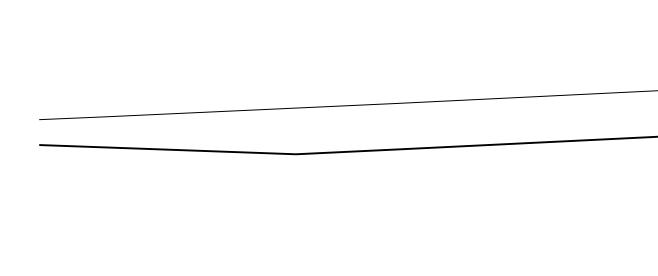
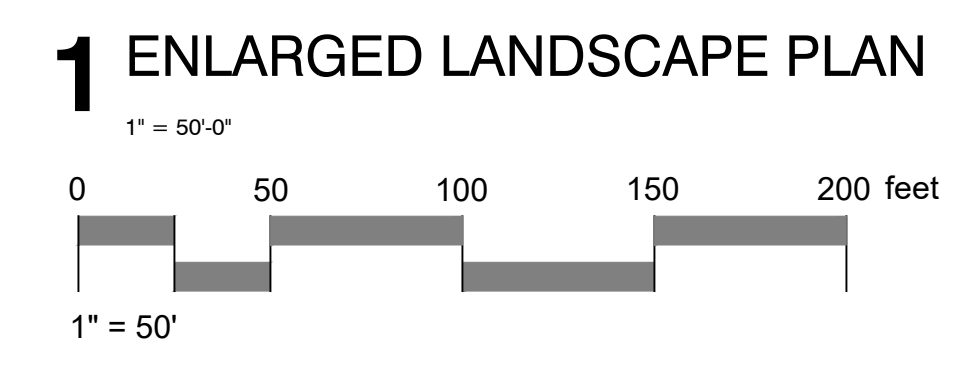


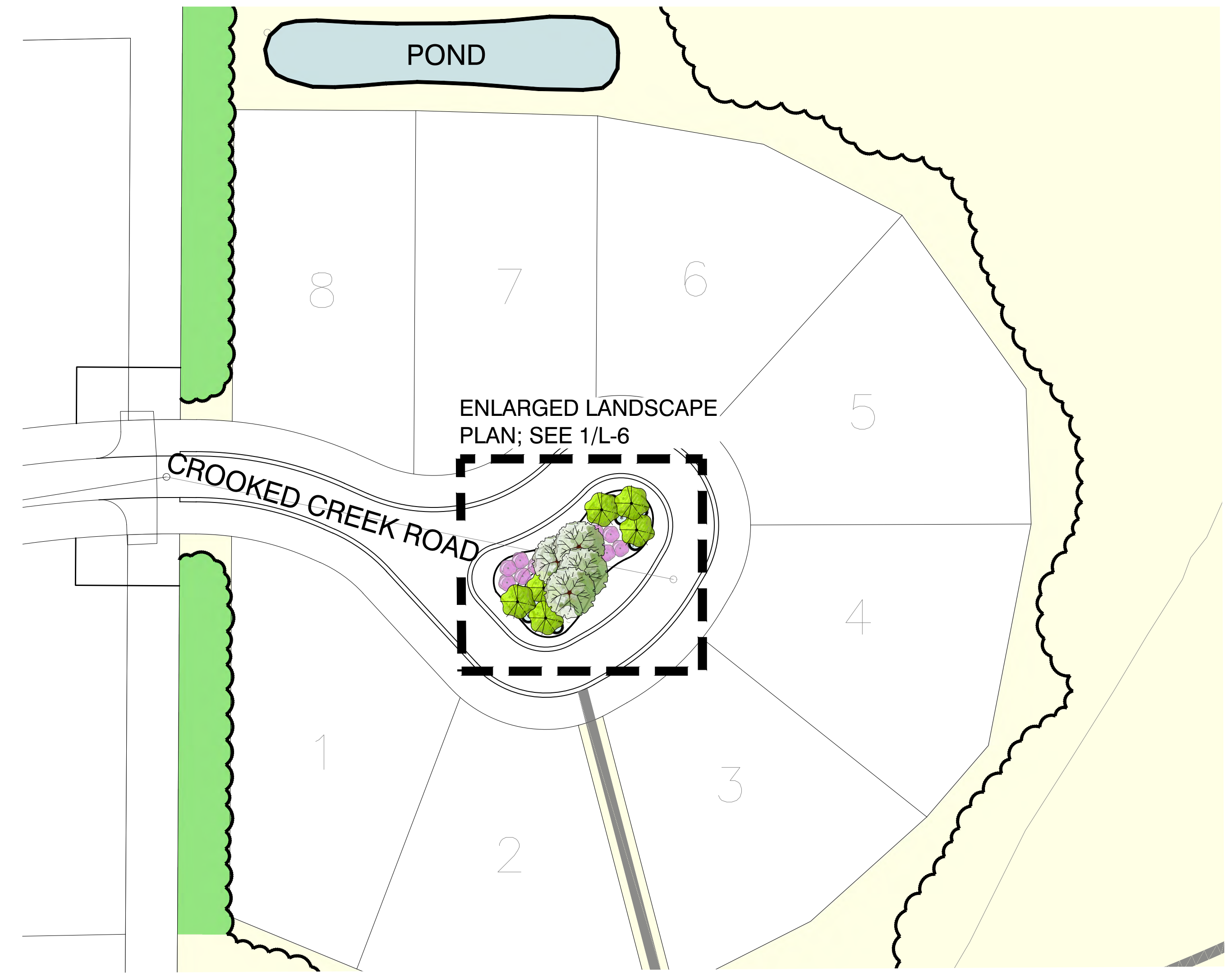
PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPIRYFERA 'RENCI' TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X 'ADAMS' / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA 'MCKSENTRY' / AMERICAN SENTRY LINDEN
	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LINDEN
	ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM



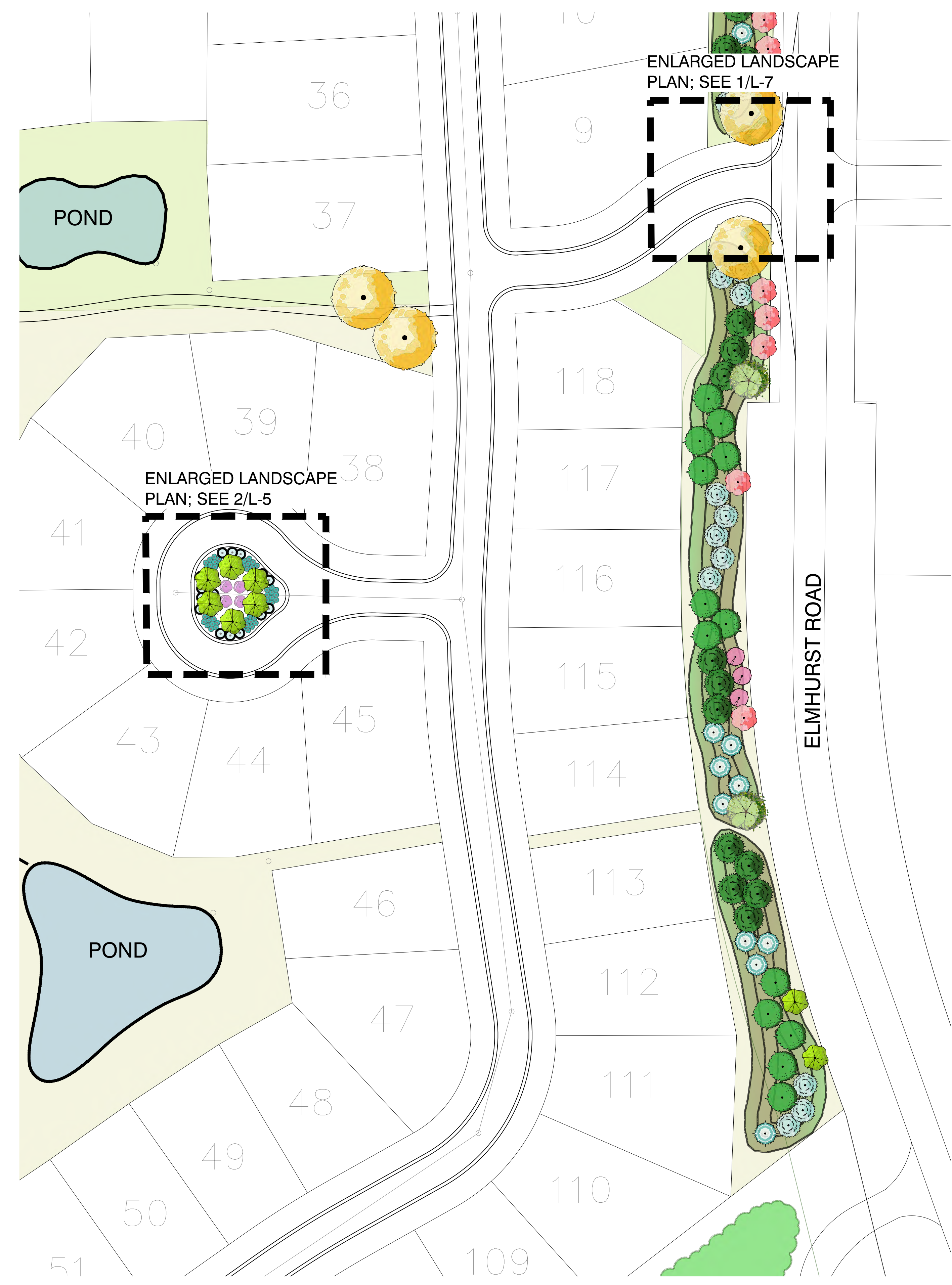
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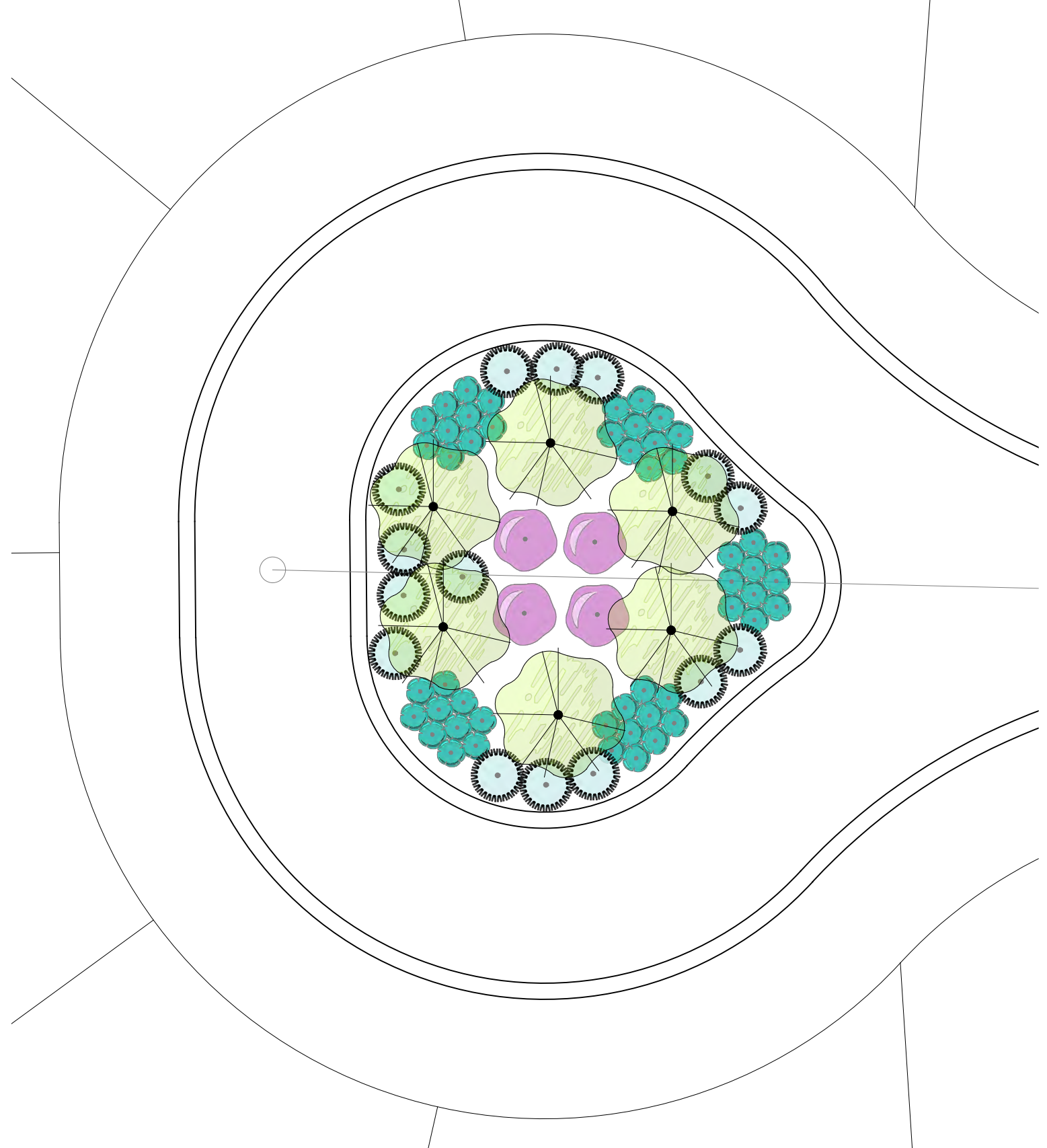
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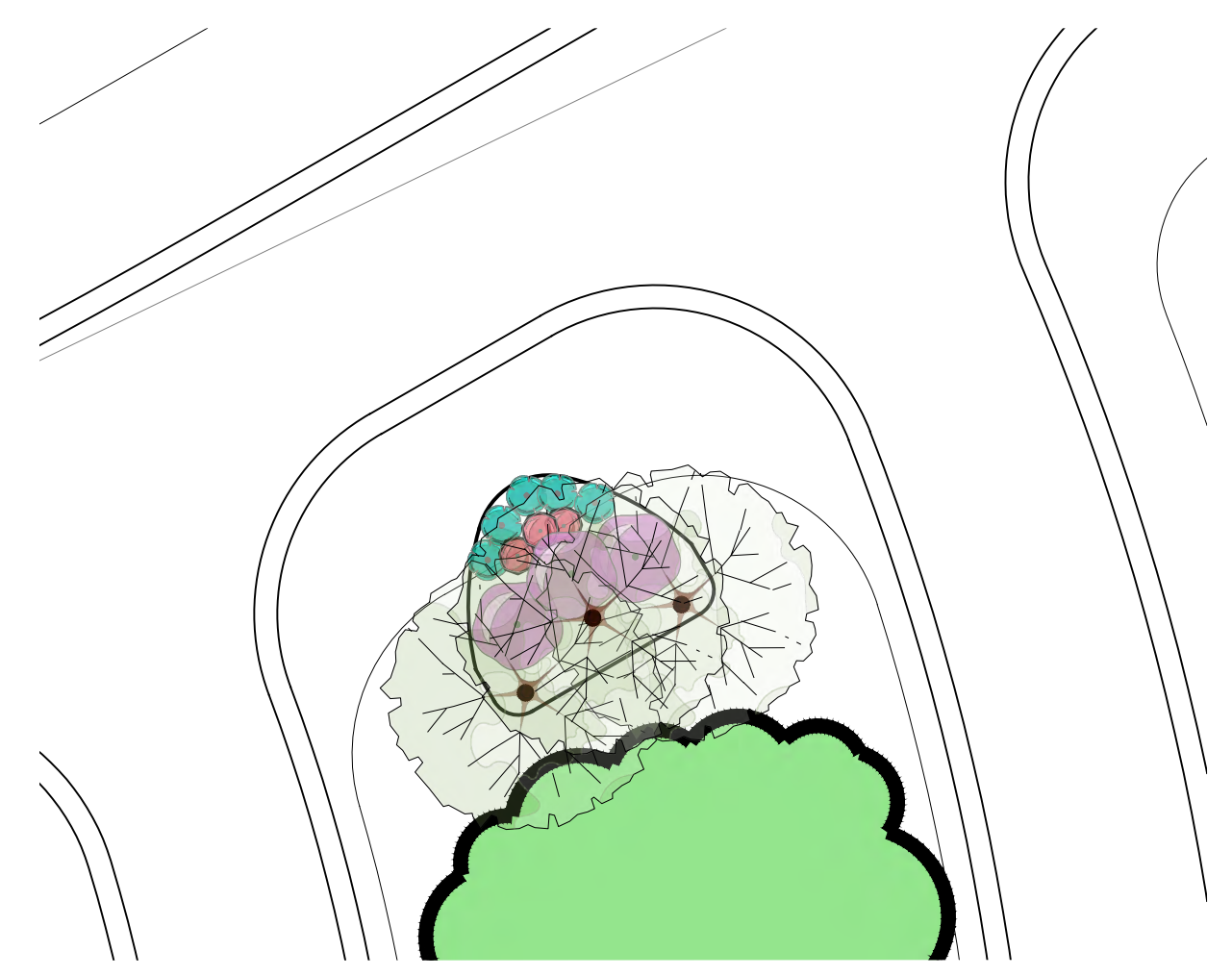


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1" = 50'-0"
0 50 100 150 200 feet
1" = 50'
NORTH

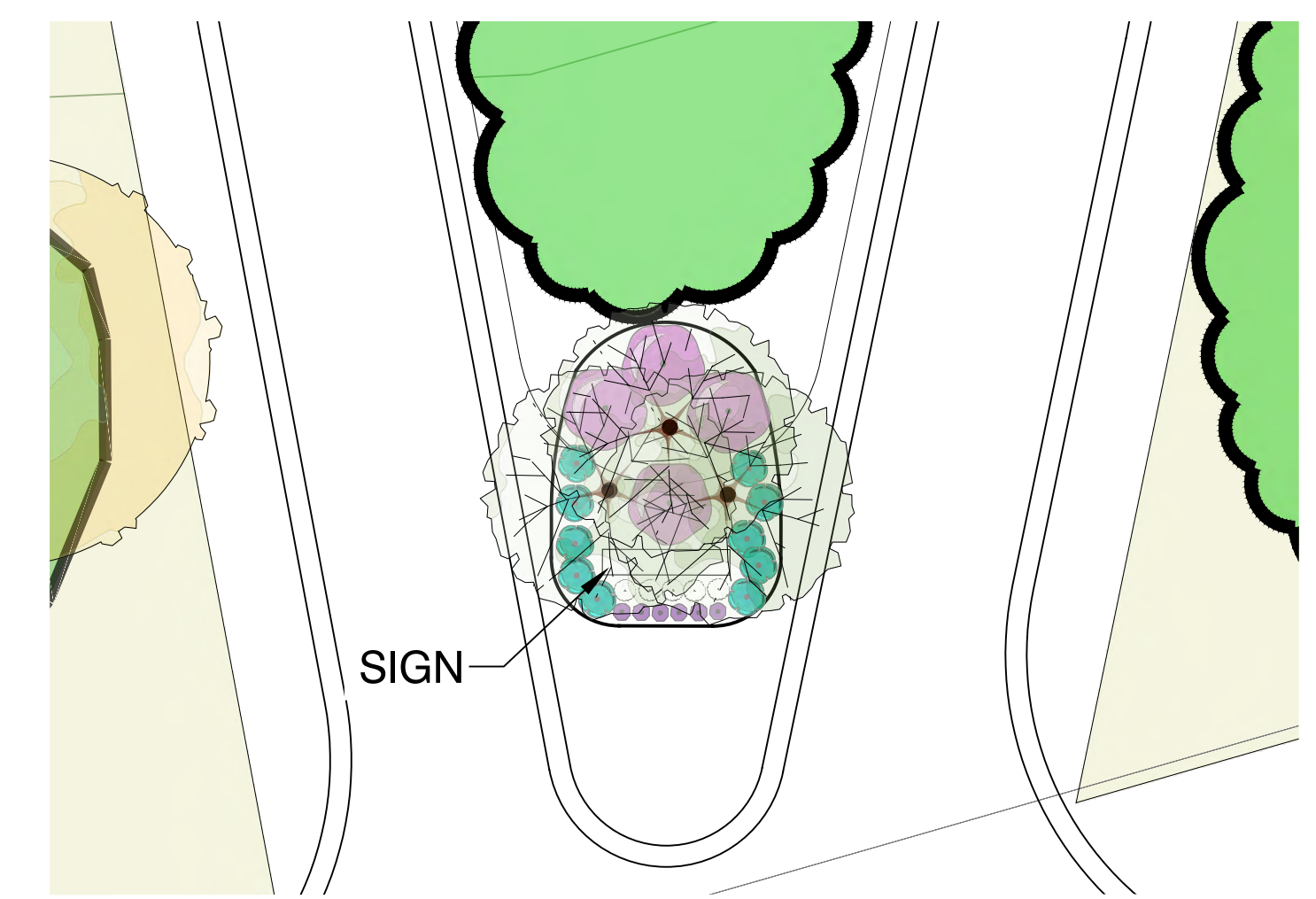
PRELIMINARY



2 ENLARGED LANDSCAPE PLAN
1" = 20'-0"
0 20 40 60 80 feet
1" = 20'
NORTH



3 ENLARGED LANDSCAPE PLAN
1" = 50'-0"
0 50 100 150 200 feet
1" = 50'
NORTH



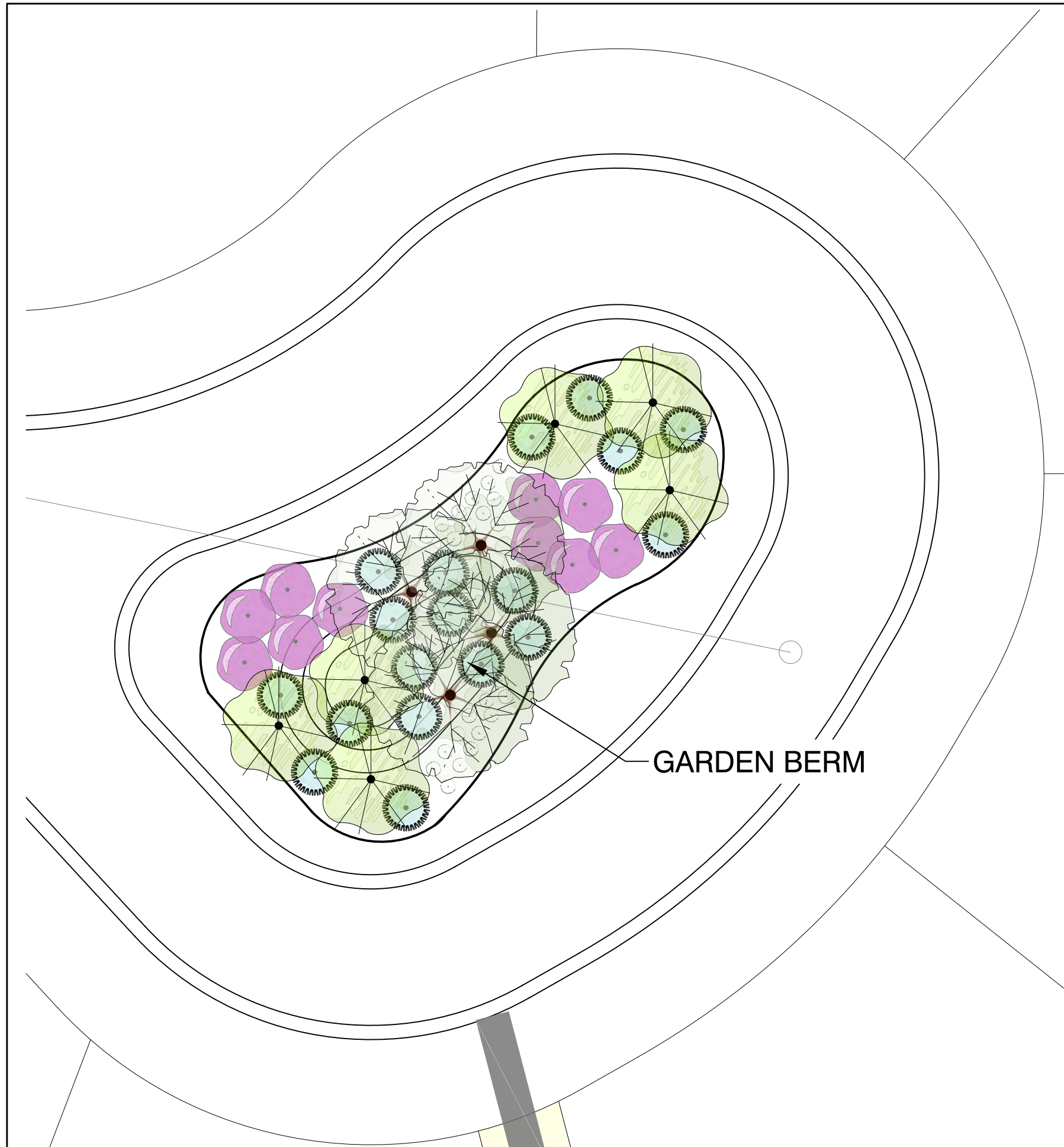
4 ENLARGED LANDSCAPE PLAN
1" = 50'-0"
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1" = 50'
NORTH

PLANT SCHEDULE

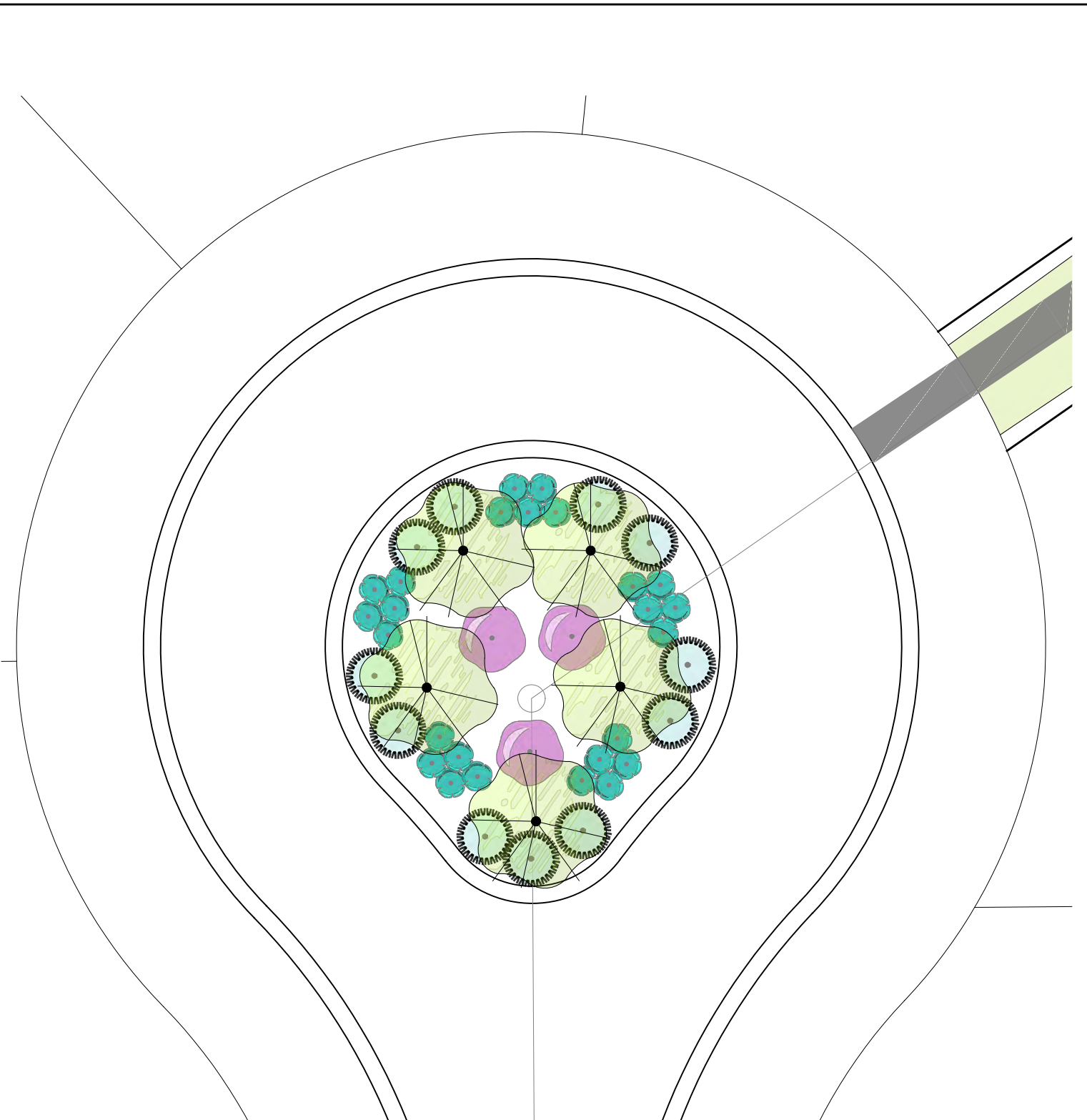
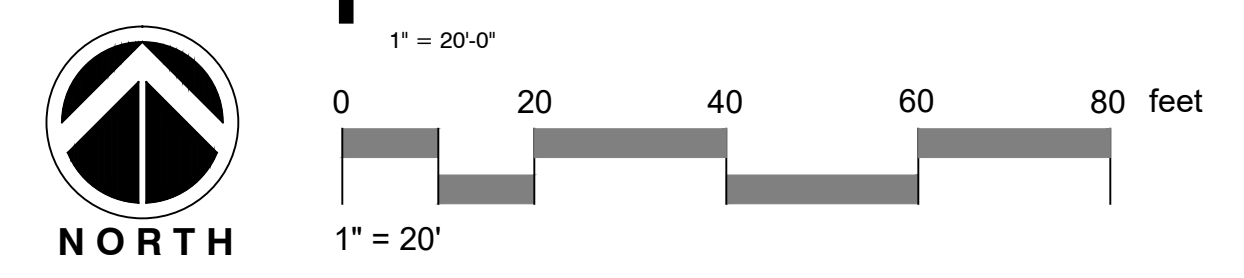
TREES	BOTANICAL / COMMON NAME
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	BETULA PAPYRIFERA 'RENCI' TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X 'ADAMS' / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA 'MCKSENTRY' / AMERICAN SENTRY LINDEN
	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LINDEN
	ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM
SHRUBS	BOTANICAL / COMMON NAME
	CORNUS STOLONIFERA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD
	HYDRANGEA MACROPHYLLA 'PIHM-II' / ENDLESS SUMMER® BLOOMSTRUCK® HYDRANGEA
	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER
	LAVANDULA X INTERMEDIA 'HIDCOTE GIANT' / HIDCOTE GIANT LAVENDIN
	LEUCANTHEMUM X SUPERBUM 'BECKY' / BECKY SHASTA DAISY
	SYRINGA VULGARIS 'CHARLES JOLY' / CHARLES JOLY COMMON LILAC

PLANT SCHEDULE

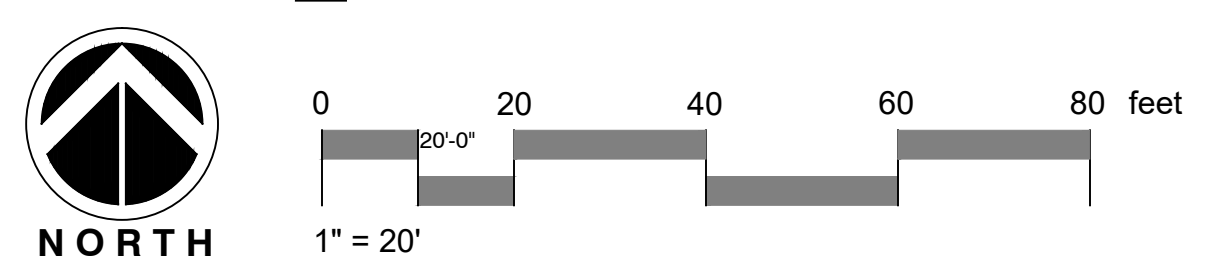
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	BETULA PAPYRIFERA 'RENCI' TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X 'ADAMS' / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
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	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
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	ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM
SHRUBS	BOTANICAL / COMMON NAME
	CORNUS STOLONIFERA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD
	HYDRANGEA MACROPHYLLA 'PIIHM-II' / ENDLESS SUMMER® BLOOMSTRUCK® HYDRANGEA
	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER
	LAVANDULA X INTERMEDIA 'HIDCOTE GIANT' / HIDCOTE GIANT LAVENDIN
	LEUCANTHEMUM X SUPERBUM 'BECKY' / BECKY SHASTA DAISY
	SYRINGA VULGARIS 'CHARLES JOLY' / CHARLES JOLY COMMON LILAC



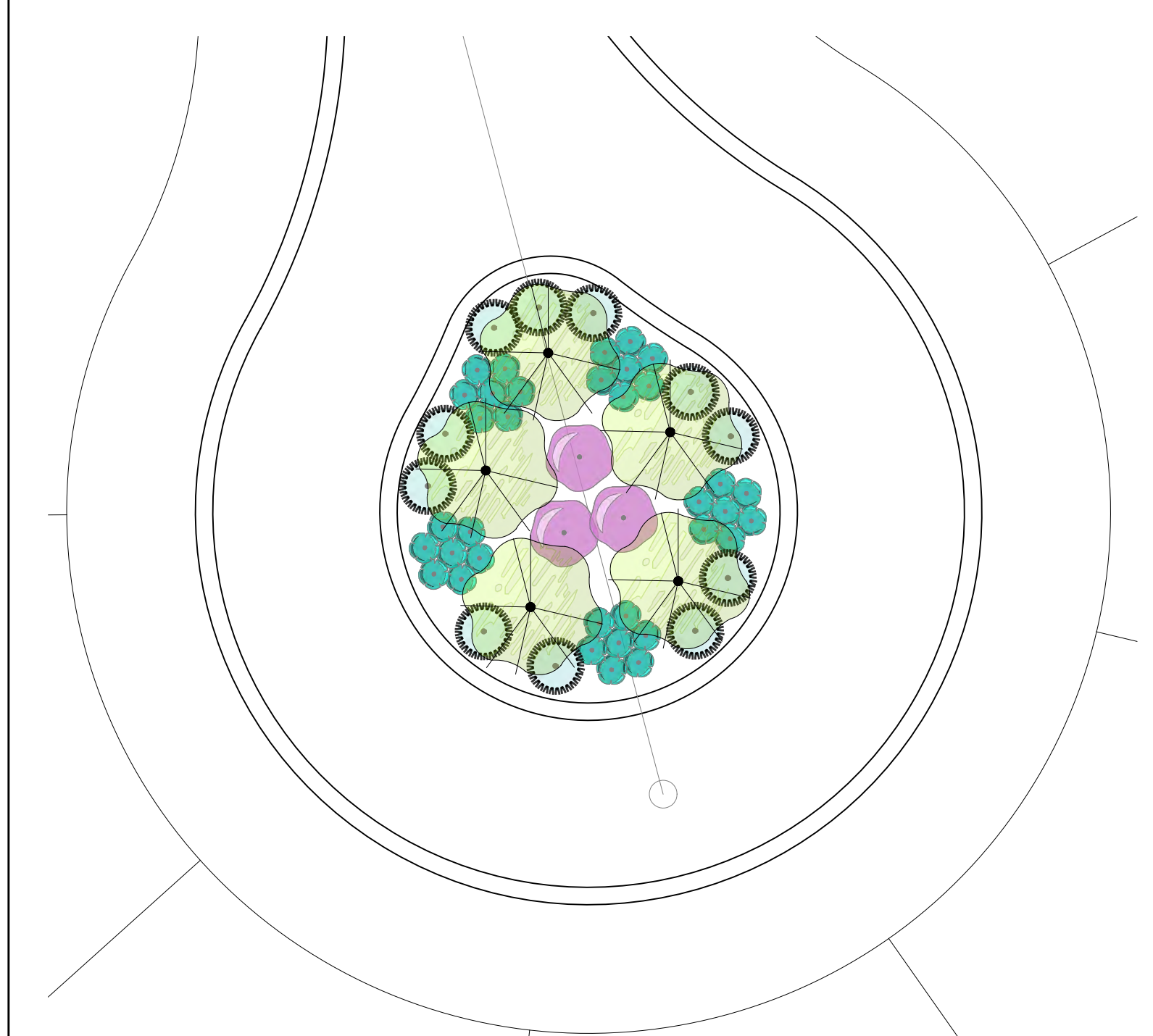
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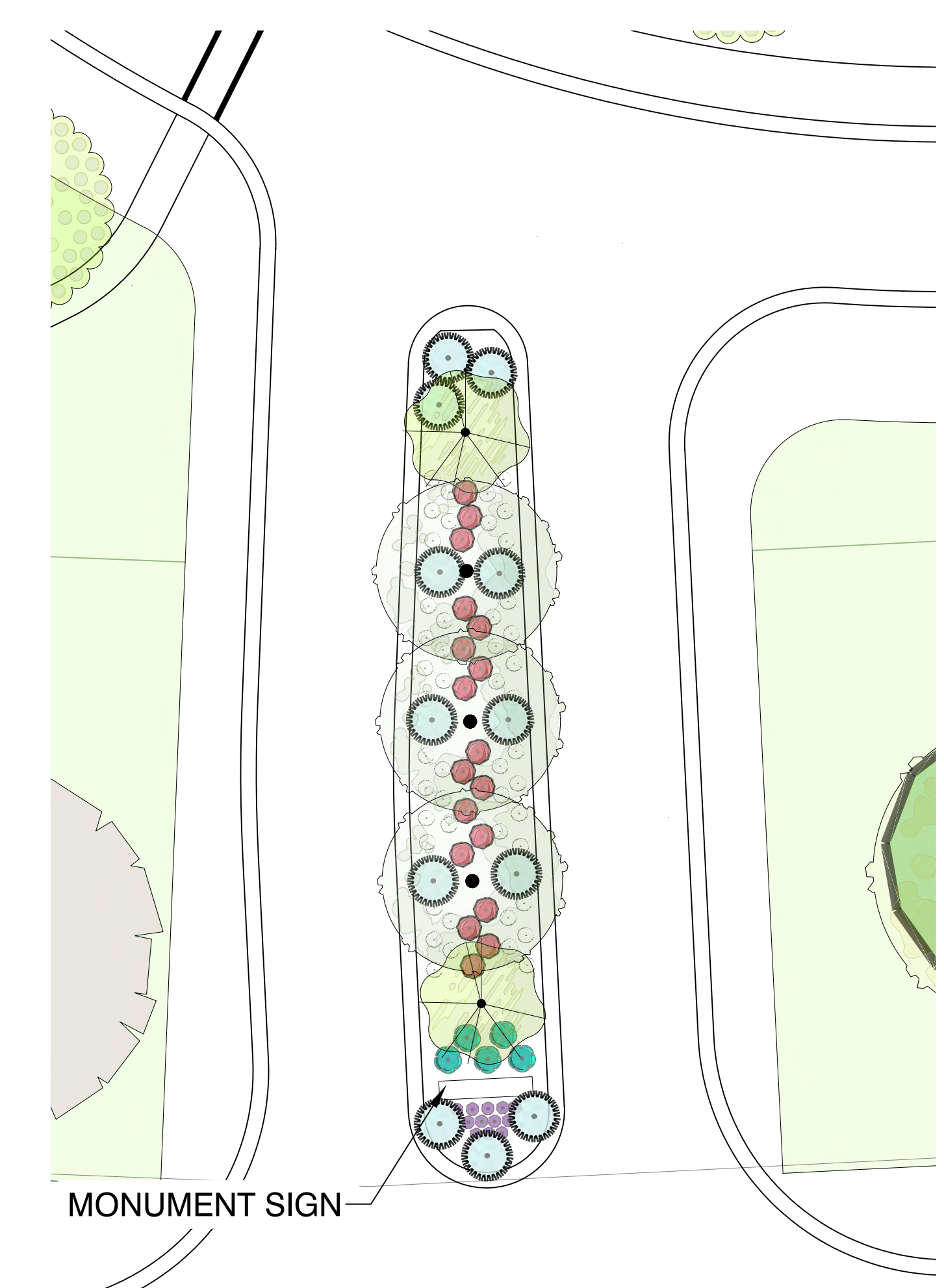
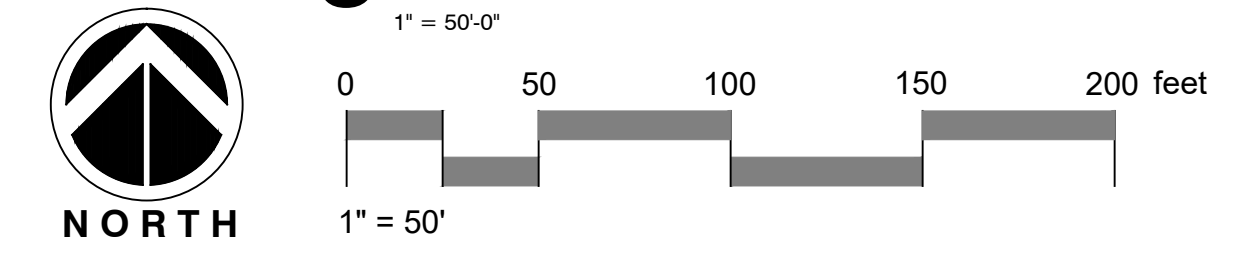
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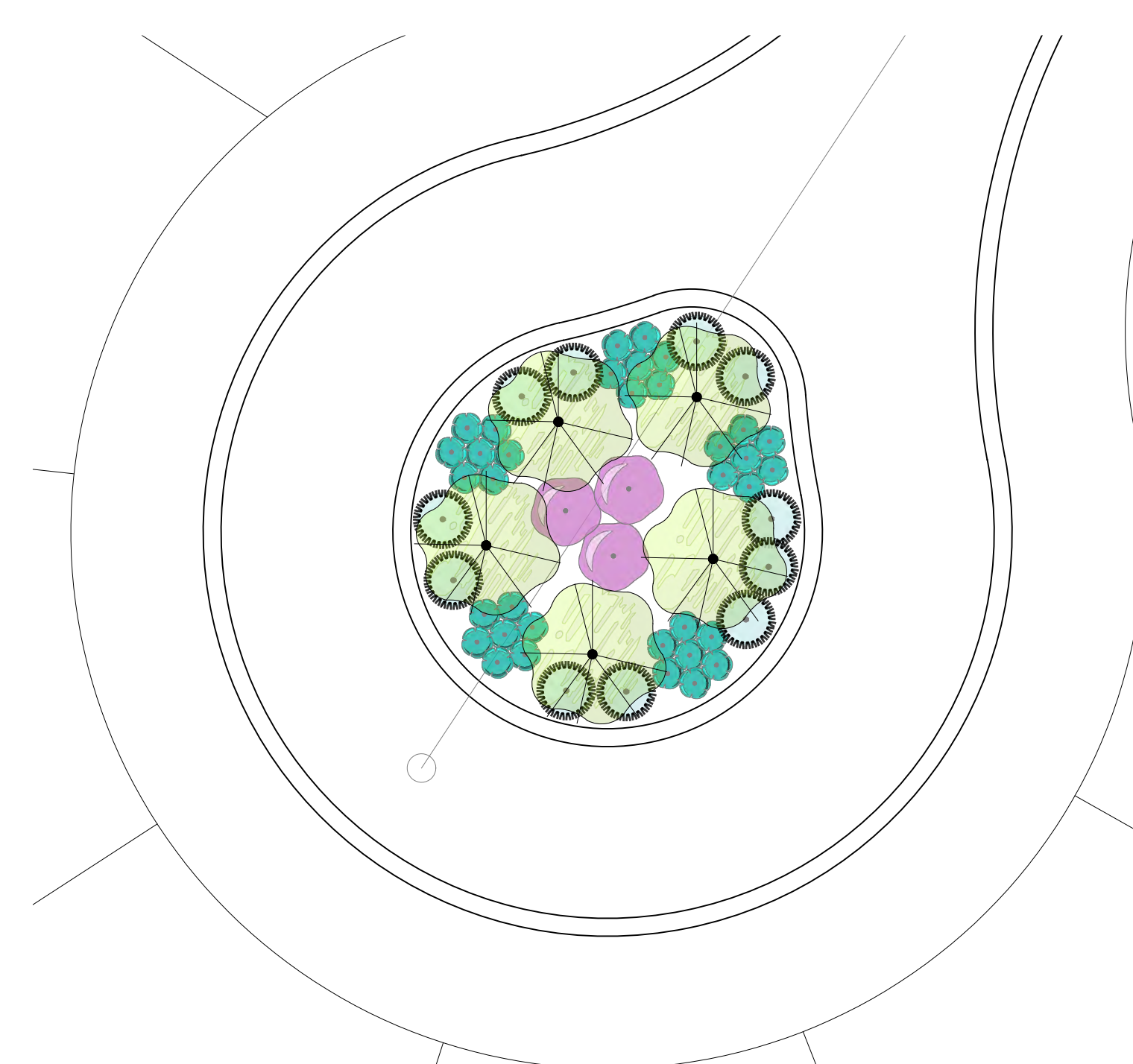
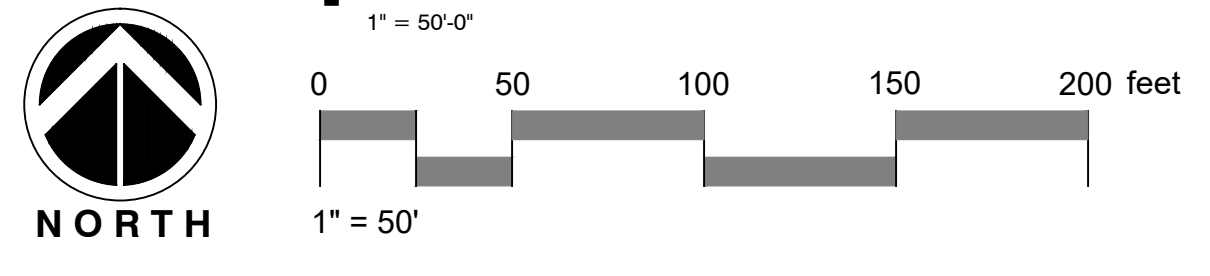
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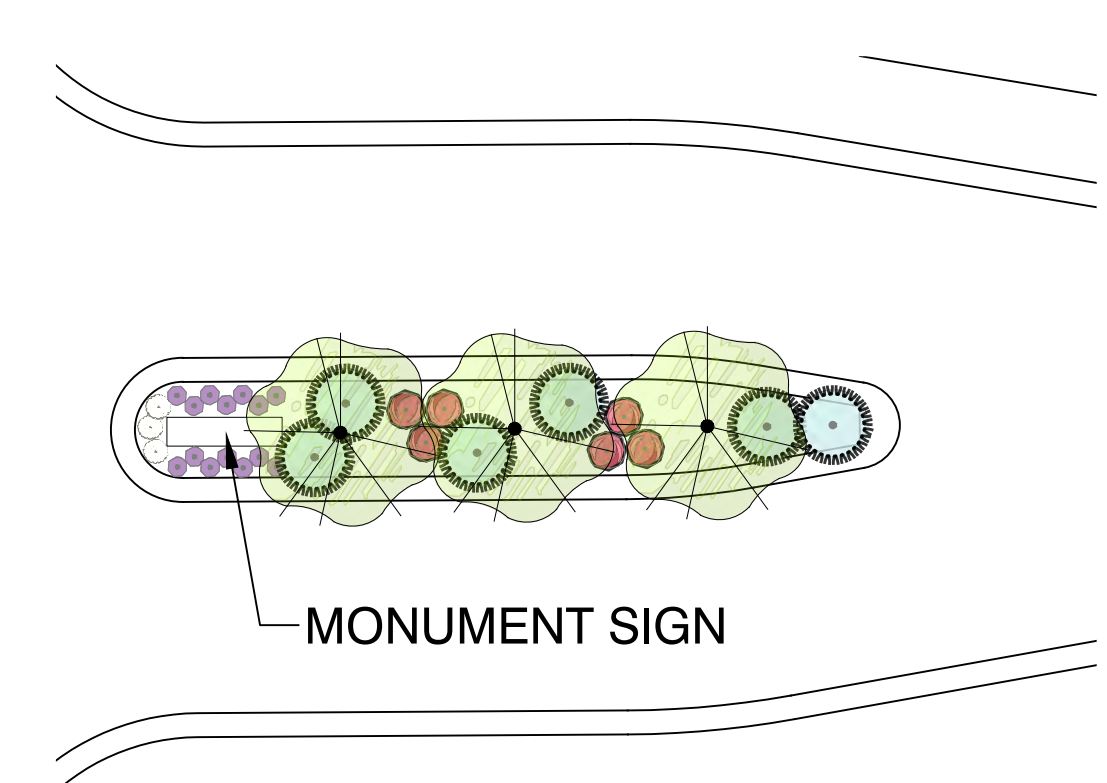
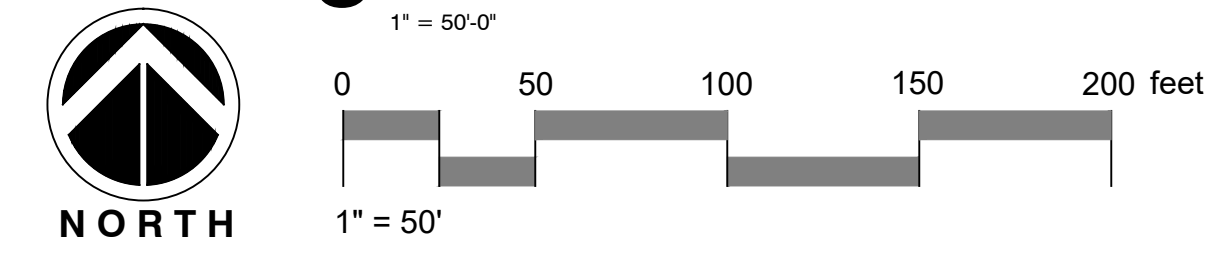
3 ENLARGED LANDSCAPE PLAN



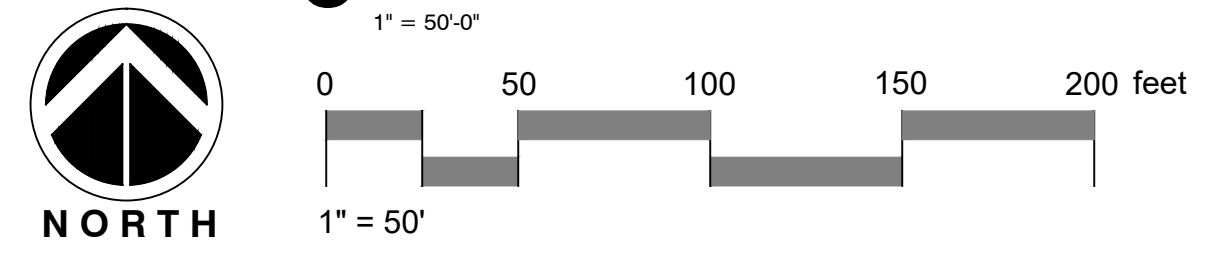
4 ENLARGED LANDSCAPE PLAN



5 ENLARGED LANDSCAPE PLAN



6 ENLARGED LANDSCAPE PLAN



















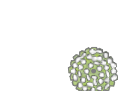






MONUMENT SIGN

MONUMENT SIGN

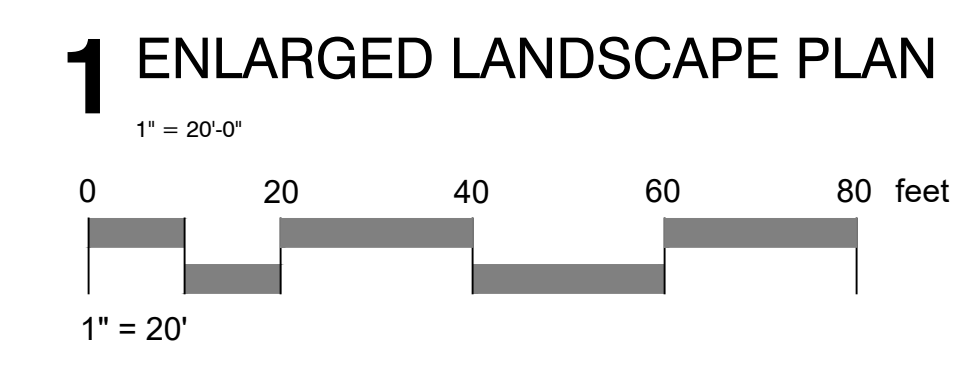
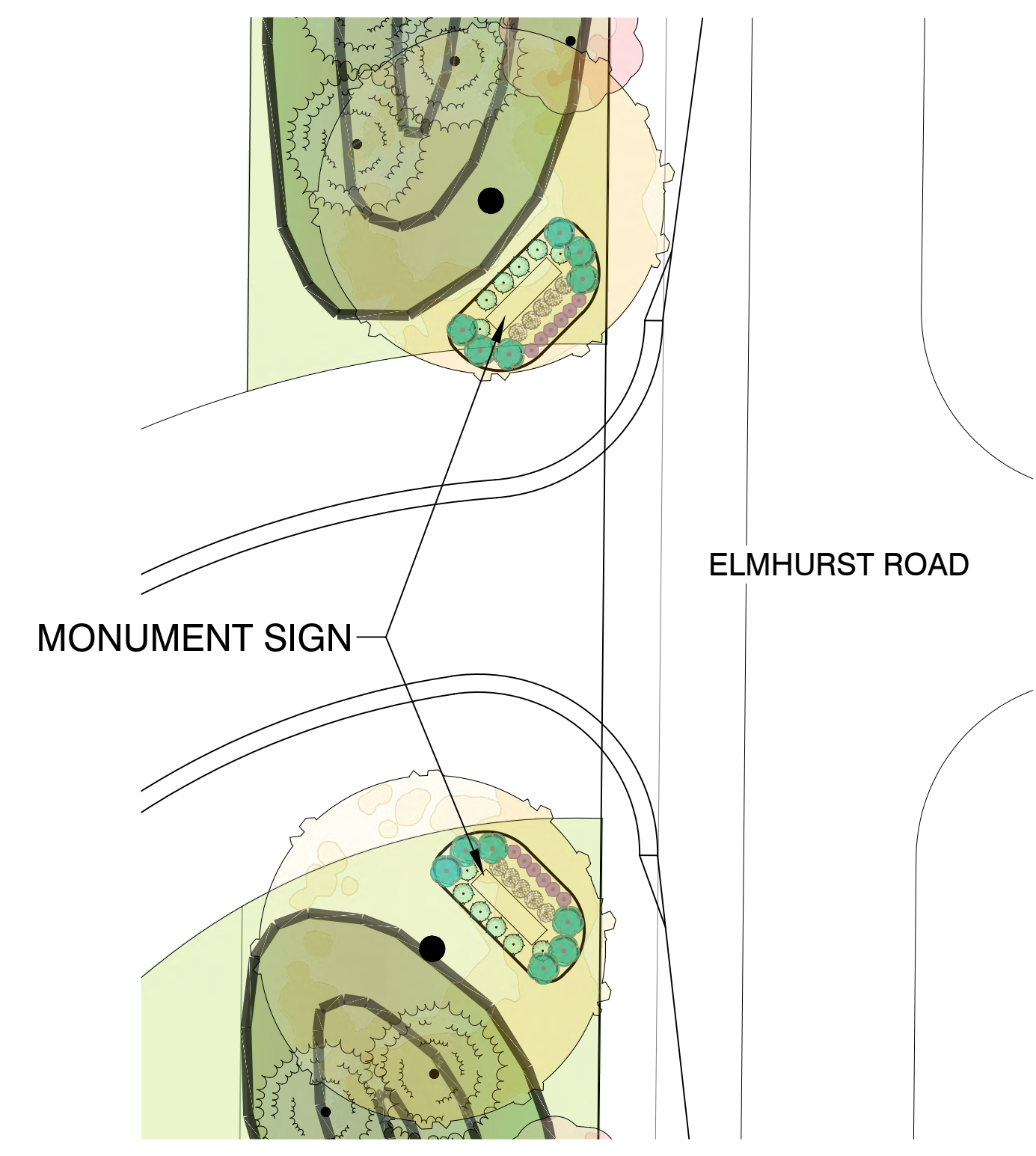
GARDEN BERM

PLANT SCHEDULE

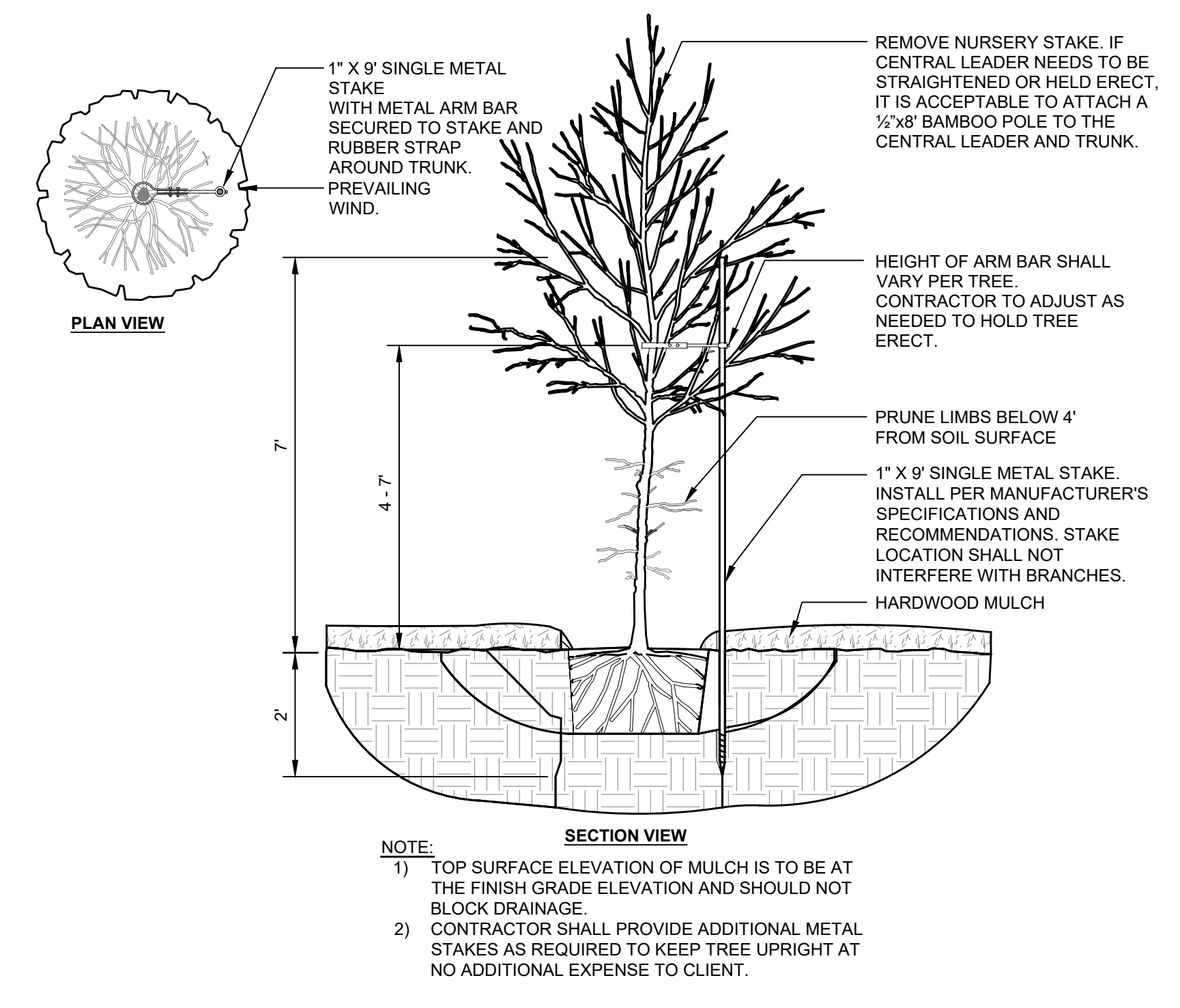
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	32	ACER SACCHARUM / SUGAR MAPLE	2" CAL.	B&B	FALL COLOR, 70" HEIGHT
	38	AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE SERVICEBERRY	25 GAL.	POT	WHITE FLOWERS, JUNE BERRIES, RED FALL FOLIAGE
	10	BETULA PAPYRIFERA 'RENCI' TM / RENAISSANCE REFLECTION PAPER BIRCH	2" CAL.	B&B	
	21	GLEDTISIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST	2" CAL.	B&B	YELLOW FALL FOLIAGE, STREET TREE, 60" HEIGHT
	10	JUGLANS NIGRA / BLACK WALNUT	2" CAL.	B&B	
	12	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR	3' HT.	POT	
	9	MALUS X 'ADAMS' / ADAMS CRABAPPLE	2" CAL.	B&B	
	79	PICEA ABIES / NORWAY SPRUCE	5' HT.	B&B	
	48	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE	5' HT.	B&B	
	55	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE	5' HT.	B&B	
	79	PINUS STROBUS / WHITE PINE	5' HT.	B&B	
	9	QUERCUS ALBA / WHITE OAK	2.5" CAL.	B&B	
	12	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK	2.5" CAL.	B&B	
	17	SORBUS DECORA / SHOWY MOUNTAIN ASH	2" CAL.	B&B	
	10	TILIA AMERICANA 'MCKSENTRY' / AMERICAN SENTRY LINDEN	2" CAL.	POT	PYRAMIDAL FORM, 50" HEIGHT, STREET TREE
	19	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LINDEN	2" CAL.	B&B	PYRAMIDAL FORM, DARK GREEN, 40" HEIGHT
	18	ULMUS AMERICANA 'VALLEY FORGE' / AMERICAN ELM	2" CAL.	B&B	80" HEIGHT, VASE SHAPE, YELLOW FALL FOLIAGE
SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	CONTAINER	REMARKS
	27	CORNUS STOLONIFERA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD	3 GAL.	POT	
	177	HYDRANGEA MACROPHYLLA 'PIHM-II' / ENDLESS SUMMER® BLOOMSTRUCK® HYDRANGEA	3 GAL.	POT	
	84	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER	3 GAL.	POT	
	44	LAVANDULA X INTERMEDIA 'HIDCOTE GIANT' / HIDCOTE GIANT LAVENDIN	1 GAL.	POT	
	89	LEUCANTHEMUM X SUPERBUM 'BECKY' / BECKY SHASTA DAISY	1 GAL.	POT	
	30	SYRINGA VULGARIS 'CHARLES JOLY' / CHARLES JOLY COMMON LILAC	3 GAL.	POT	

PLANT TOTALS

- 478 TREES IN PROJECT.
- 451 SHRUBS IN PROJECT.
- 929 TOTAL PLANTS IN PROJECT.

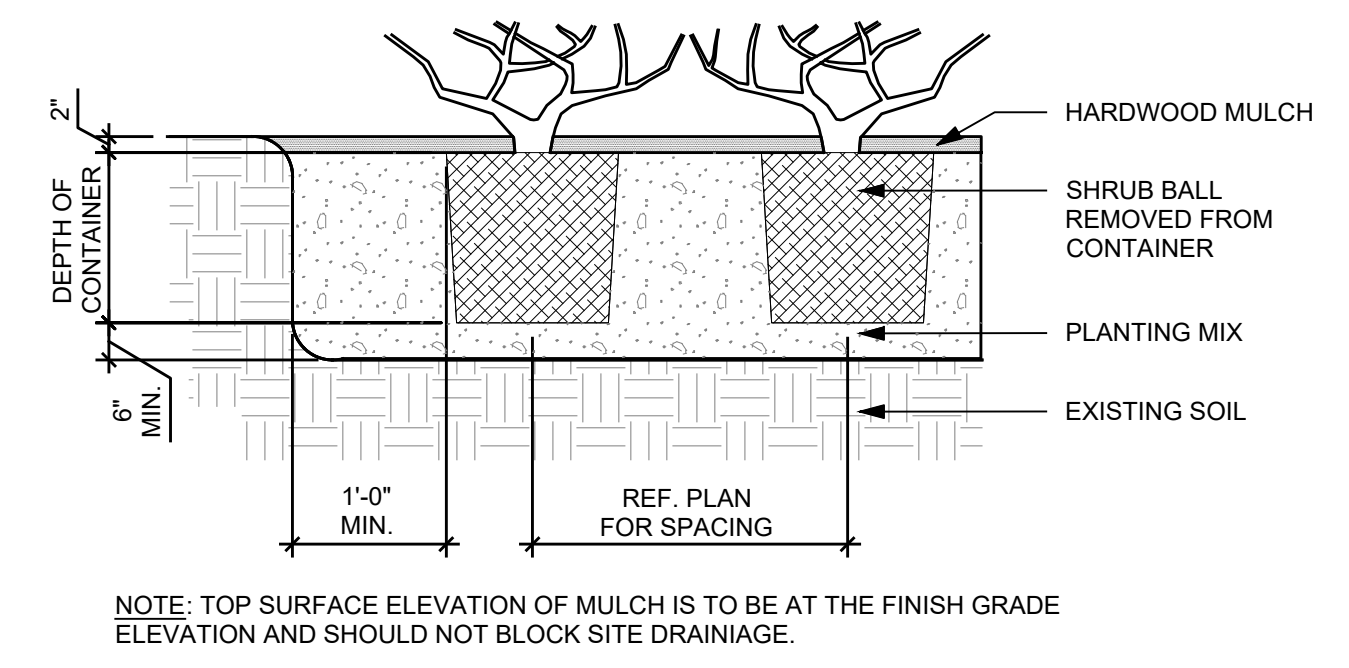


PRELIMINARY



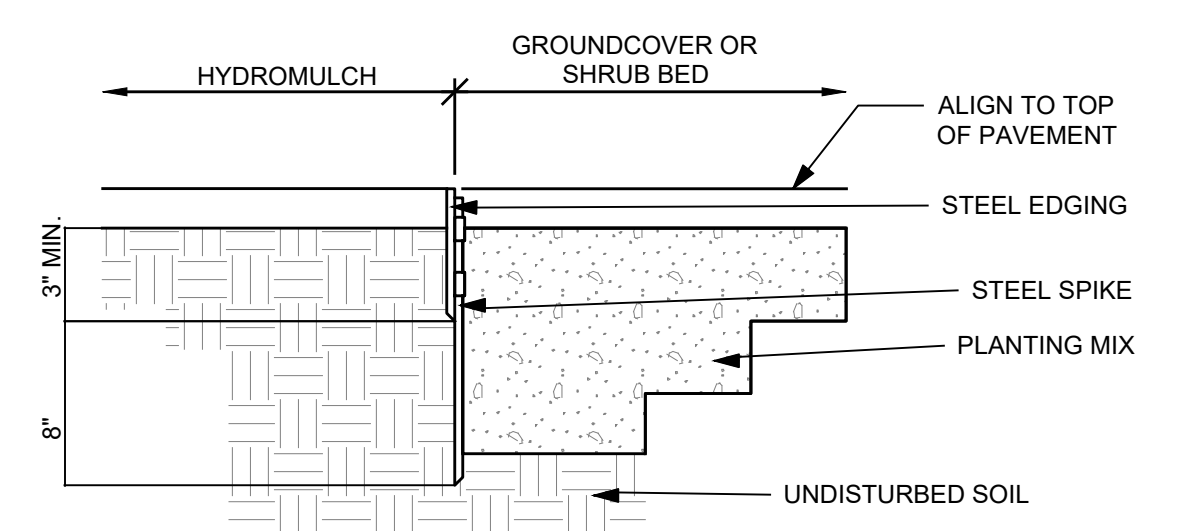
2 TREE PLANTING DETAIL

NOT TO SCALE



3 SHRUB PLANTING DETAIL

NOT TO SCALE



4 EDGER DETAIL

NOT TO SCALE

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Welshire Farm
Single Family Residential Development
Town of Delafield, Wisconsin 53018

revisions:



Thomas Farms Residential Development Traffic Impact Analysis

Town of Delafield
Waukesha County, Wisconsin

March 22, 2023



TRAFFIC IMPACT ANALYSIS
FOR:

THOMAS FARMS RESIDENTIAL DEVELOPMENT

TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN

DATE SUBMITTED: March 22, 2023

PREPARED FOR:

Neumann Developments, Inc.
N27 W24025 Paul Court, Suite 100
Pewaukee, WI 53072
Phone: (262) 542-9200
Contact Persons: Bryan Lindgren

PREPARED BY:

Traffic Analysis & Design, Inc.
P.O. Box 128
Cedarburg, WI 53012
Phone: (800) 605-3091

Contact Persons: Don Lee, P.E.

(WisDOT TIA Certification # SE05-804-046)

John Bieberitz, P.E., PTOE

(WisDOT TIA Certification # SE05-804-044)

"I certify that this Traffic Impact Analysis 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."

Donald J. Lee, P.E.

Wisconsin Registration #35214-006

Traffic Analysis & Design, Inc.

**Thomas Farms Residential Development
Traffic Impact Analysis
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- Exhibit 1-1Project Location Map
- Exhibit 1-2Conceptual Site Plan
- Exhibit 1-3Recommended Modifications

- Exhibit 2-1Project Overview Map
- Exhibit 2-2Conceptual Site Plan

- Exhibit 3-1Existing Transportation Detail
- Exhibit 3-2Existing Traffic Volumes

- Exhibit 4-3On-Site Trip Generation & Distribution Tables
- Exhibit 4-5New Trips
- Exhibit 4-11Full Build Traffic

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Appendix A...Traffic

Existing Turning Movement Counts

Appendix B ...Peak Hour Analysis Outputs

Existing Traffic

Full Build Traffic

Full Build Traffic – with modifications (Not Applicable)

CHAPTER I – INTRODUCTION & EXECUTIVE SUMMARY

PART A – PURPOSE OF REPORT AND STUDY OBJECTIVES

The Thomas Farms residential development is being proposed to be located along the north side of Golf Road (CTH DR) immediately west of Elmhurst Road and east of Glen Cove Road in the Town of Delafield, Waukesha County, Wisconsin. Traffic Analysis & Design, Inc. has been retained to determine the additional traffic expected to be generated by the development and to identify roadway modifications, if any, attributed to the new development for the opening year (2023) traffic scenario.

This report documents the procedures, findings, and conclusions of the traffic impact analysis. The analysis identifies recommended modifications based on existing intersection geometrics, background traffic volumes and additional traffic expected to be generated by the proposed development within the limits of the study area.

PART B – EXECUTIVE SUMMARY

The executive summary includes a description of the study area, description of the proposed development areas and conclusions based on the findings of the TIA.

B1. Location of Study Site with Respect to Area Roadway Network

Based on discussions with Waukesha County and as shown in [Exhibit 1-1](#), the study area for the proposed development includes the following intersections:

- Golf Road (CTH DR) with Glen Cove Road
- Golf Road (CTH DR) with the western development access road
- Golf Road (CTH DR) with eastern development access road
- Golf Road (CTH DR) with Elmhurst Road
- Glen Cove Road with Brookstone Circle North/development access road
- Glen Cove Road with Brookstone Circle South
- Elmhurst Road with Golf Ridge North
- Elmhurst Road with Golf Ridge South/ development access road
- Elmhurst Road with Oakton Road

B2. On-Site Development Description and Timings

The Thomas Farms Residential development site is proposed to include the following land uses for the development site:

- Single Family Detached Housing (LU210) – 157 units
- Single Family Attached Housing/Townhouses (LU215) – 56 units

Build out of the site is expected to begin in the year 2023 with full build out over the next few years. However, for traffic study purposes, full build is assumed in the opening year Full Build traffic scenario. The site plan for the proposed Thomas Farms residential development is shown in [Exhibit 1-2](#).

B3. Off-Site Development Description and Timings

No off-site development has been identified in the study area.

B4. Generated Traffic

Upon full build, the on-site residential development is expected to generate 145 new trips (40 in/105 out) during a typical weekday morning peak hour. During the typical weekday evening peak hour, the development site is expected to generate 190 new trips (115 in/75 out). On a typical weekday, the proposed development is expected to generate 2,050 new trips (1,025 in/1,025 out) under full build conditions.

B5. Site Access

Access to the site is proposed via two new three-legged “Tee” roadway connections onto Golf Road and two additional access roadways, one onto Glen Cove Road and one onto Elmhurst Road. The new access roadway onto Glen Cove Road is proposed opposite the Brookstone Circle North access and the new access roadway onto Elmhurst Road is proposed opposite the Golf Ridge South access roadway. All access roadways are proposed as full access intersections with stop control on the new approaches. The extension of Crooked Creek Road to provide access to eight additional single-family parcels is also proposed as part of the development.

B6. Recommended Modifications

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual (HCM) 6th Edition*. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. In accordance with WisDOT and Waukesha County accepted traffic engineering standards, LOS D or better was used to define acceptable peak hour operating conditions.

Modifications to address traffic impacts are shown in [Exhibit 1-3](#) for the Year 2023 traffic conditions and have been shown for the following two scenarios:

- “Existing Traffic” – These modifications are expected to be necessary to accommodate existing traffic volumes without the proposed residential development.
- “Build Traffic” – These modifications are expected to be necessary to accommodate the full build traffic volumes, which includes full build out of the proposed residential development.

The analysis was conducted using existing intersection geometrics and traffic control. The following modifications, as shown in [Exhibit 1-3](#), are recommended to accommodate the existing and full build traffic volumes, respectively.

Golf Road (CTH DR) with Glen Cove Road

- *Existing Traffic*: No modifications.
- *Build Traffic*: No modifications.

Golf Road (CTH DR) with Western Development Access Road

- *Existing Traffic*: No modifications.
- *Build Traffic*:
 - Construct a new roadway connection to Golf Road with a single shared left-turn/right-turn exit lane on the north approach as shown on the site plan.
 - Construct an eastbound by-pass lane along the south side of Golf Road at the new roadway connection.

- Provide stop sign control on the north approach of the new roadway connection.

Golf Road (CTH DR) with Eastern Development Access Road

- *Existing Traffic:* No modifications.
- *Build Traffic:*
 - Construct a new roadway connection to Golf Road with a single shared left-turn/right-turn exit lane on the north approach as shown on the site plan.
 - Construct an eastbound by-pass lane along the south side of Golf Road at the new roadway connection.
 - Provide stop sign control on the north approach of the new roadway connection.

Golf Road (CTH DR) with Elmhurst Road

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

Glen Cove Road with Brookstone Circle North/ Development Access Road

- *Existing Traffic:* No modifications.
- *Build Traffic:*
 - Construct a new roadway connection to Glen Cove Road across from Brookstone Circle North with a single shared exit lane on the east approach as shown on the site plan.
 - Provide stop sign control on the east approach of the new roadway connection.

Glen Cove Road with Brookstone Circle South

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

Elmhurst Road with Golf Ridge North

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

Elmhurst Road with Golf Ridge South/ Development Access Road

- *Existing Traffic:* No modifications.
- *Build Traffic:*
 - Construct a new roadway connection to Elmhurst Road across from Golf Ridge South with a single shared exit lane on the west approach as shown on the site plan.
 - Provide stop sign control on the west approach of the new roadway connection.

Elmhurst Road with Oakton Road

- *Existing Traffic*: No modifications.
- *Build Traffic*: No modifications.

The recommendation for a by-pass lane at the new intersections along Golf Road are based on the Waukesha County Code of Ordinances (*Section 15-54; Access Point Design Criteria*) that requires a by-pass lane at any new “T” type intersection when the mainline AADT volumes are greater than 2,500 vehicles per day (vpd). Based on historic WisDOT AADT count information, the Golf Road (CTH DR) AADT within the limits of the new roadway connection under the existing (no development) conditions was approximately 4,400-vpd (2018 count). Therefore, a by-pass lane is required at the new roadway connections per the Waukesha County code.

All movements at the study area intersections are expected to continue to operate at acceptable levels at LOS B or better under the Full Build (with proposed development) traffic conditions with the recommended modifications implemented.

B7. Conclusion

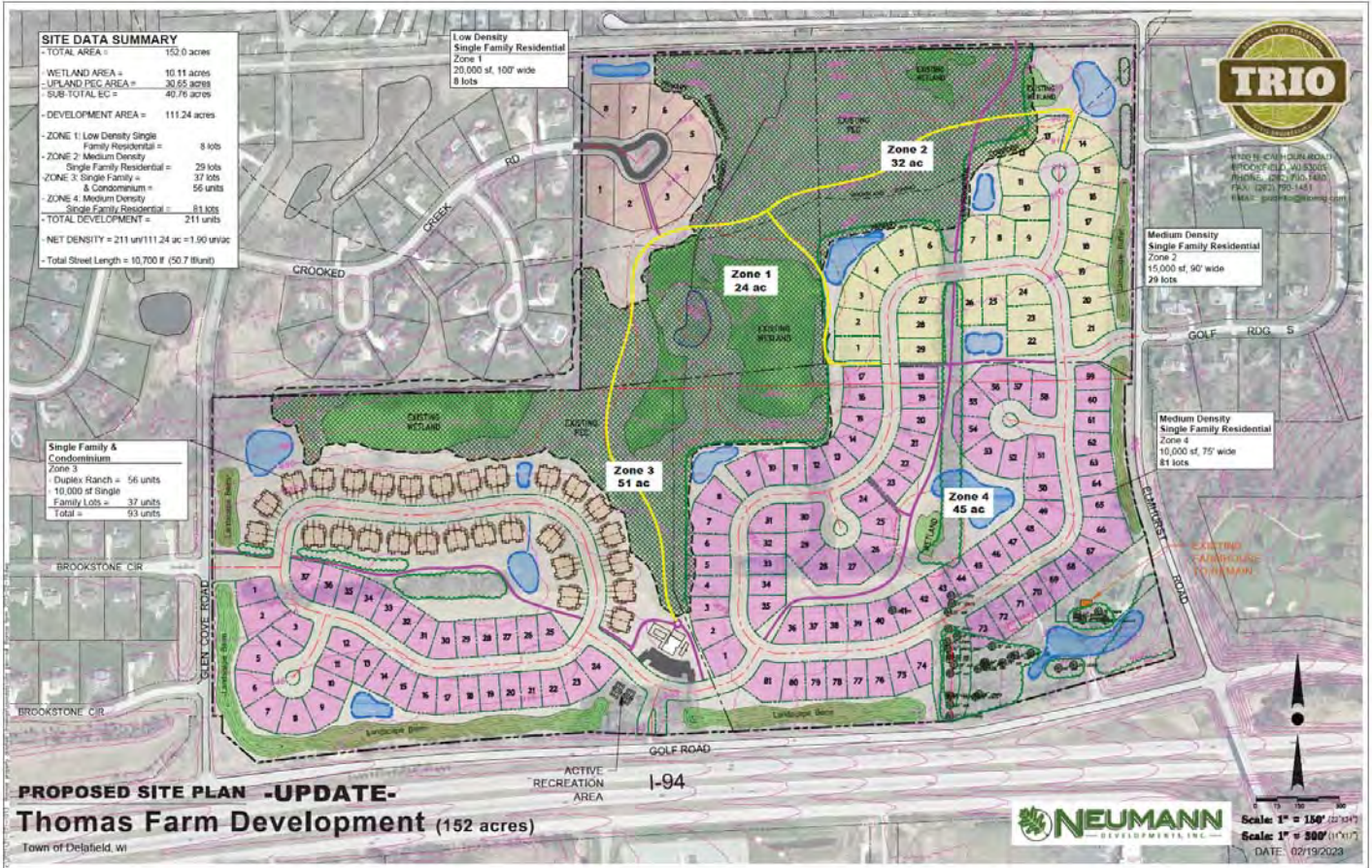
All movements at the study area intersections are expected to operate safely and efficiently through the opening year with the modifications identified in this TIA.





LEGEND

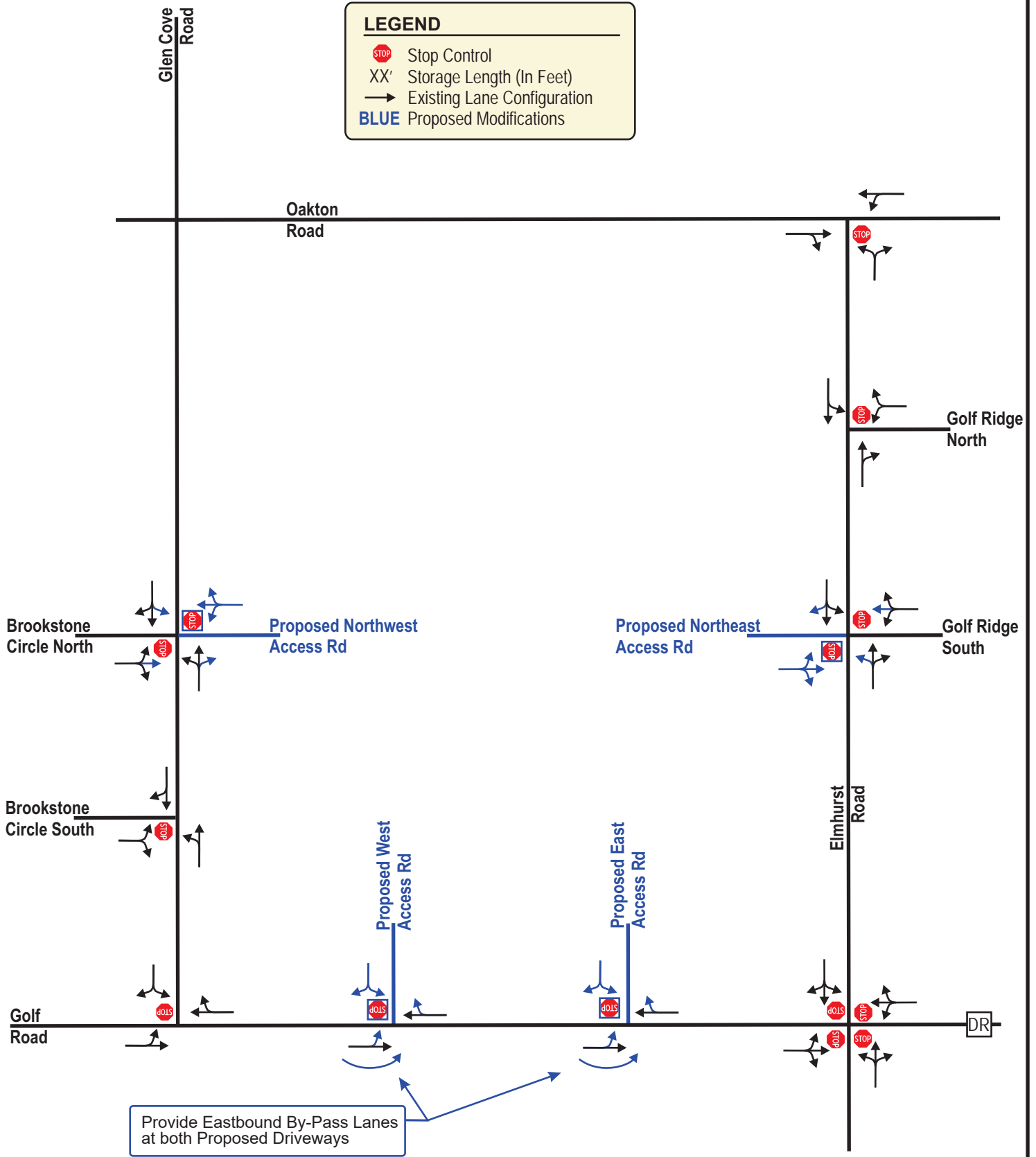
- Study Area Intersection
- Proposed Development Site





LEGEND

-  Stop Control
- XX' Storage Length (In Feet)
-  Existing Lane Configuration
- BLUE** Proposed Modifications



CHAPTER II – PROPOSED DEVELOPMENT

PART A – PROPOSED DEVELOPMENT

A1. Development Description and Site Location

The Thomas Farms residential development is being proposed to be located along the north side of Golf Road immediately west of Elmhurst Road and east of Glen Cove Road in the Town of Delafield, Waukesha County, Wisconsin. Access to the site is proposed via two new three-legged “Tee” roadway connections onto Golf Road and two additional access roadways, one onto Glen Cove Road and one onto Elmhurst Road. The new access roadway onto Glen Cove Road is proposed opposite the Brookstone Circle North access and the new access roadway onto Elmhurst Road is proposed opposite the Golf Ridge South access roadway. All access roadways are proposed as full access intersections with stop control on the new approaches. The extension of Crooked Creek Road to provide access to eight additional single-family parcels is also proposed as part of the development. A street map illustrating the location of the proposed development is shown in [Exhibit 2-1](#).

A2. Land Use and Development Timing

The site is currently utilized for agricultural uses with wooded areas located throughout the site. Residential uses exist adjacent to the site in the northwest quadrant of the site. Additional residential uses exist further to the north, east and west on the opposite sides of the adjacent roadways.

The Thomas Farms Residential development site is proposed to include the following land uses for the development site:

- Single Family Detached Housing (LU210) – 157 units
- Single Family Attached Housing/Townhouses (LU215) – 56 units

Build out of the site is expected to begin in the year 2023 with full build out over the next few years. However, for traffic study purposes, full build is assumed in the opening year Full Build traffic scenario. The site plan for the proposed Thomas Farms residential development is shown in [Exhibit 2-2](#).

PART B – STUDY AREA

B1. Influence Area

The proposed development is expected to draw trips both locally and within a larger regional area. The areas of significant influence include the City of Pewaukee, City of Delafield, Town of Delafield and the other surrounding communities in southeast Wisconsin.

B2. Area of Significant Traffic Impact

Based on discussions with Waukesha County and as shown in [Exhibit 2-1](#), the study area for the proposed development includes the following intersections:

- Golf Road (CTH DR) with Glen Cove Road
- Golf Road (CTH DR) with the western development access road
- Golf Road (CTH DR) with the eastern development access road
- Golf Road (CTH DR) with Elmhurst Road
- Glen Cove Road with Brookstone Circle North/development access road

- Glen Cove Road with Brookstone Circle South
- Elmhurst Road with Golf Ridge North
- Elmhurst Road with Golf Ridge South/ development access road
- Elmhurst Road with Oakton Road

PART C – SITE ACCESSIBILITY

C1. Study Area Roadways

The study area roadways are discussed below:

Golf Road (CTH DR) is a two-lane undivided east/west minor arterial highway with a posted speed limit of 50 miles per hour (mph) within the limits of the proposed site. According to WisDOT, the Year 2018 annual average daily traffic (AADT) volume on Golf Road was approximately 4,400 vehicles per day (vpd) east of Elmhurst Road. Neither sidewalks nor bicycle lanes are currently provided along either side of Golf Road through the project limits.

Elmhurst Road is a two-lane undivided north/south major collector roadway with a posted speed limit of 35-mph within the limits of the study area. There is no WisDOT AADT volume available on Elmhurst Road within the limits of the proposed site. Neither sidewalks nor bicycle lanes are currently provided along either side of Elmhurst Road through the project limits.

Glen Cove Road is a two-lane undivided north/south minor collector roadway with a posted speed limit of 35-mph within the limits of the study area. There is no WisDOT AADT volume available on Glen Cove Road within the limits of the proposed site. Neither sidewalks nor bicycle lanes are currently provided along either side of Glen Cove Road through the project limits.

Oakton Road is a two-lane undivided east/west major collector roadway to the east of Elmhurst Road and a minor collector to the west. The posted speed limit on Oakton Road is 35-mph to the east of Elmhurst Road and 25-mph to the west. There is no WisDOT AADT volume available on Glen Cove Road within the limits of the proposed site. Neither sidewalks nor bicycle lanes are currently provided along either side of Glen Cove Road through the project limits; however, the Lake Country Recreational Trail is located about 70-feet south of Oakton Road and runs parallel to the roadway within the limits of the study area.

Brookstone Circle is a two-lane undivided east/west local residential road with a posted speed limit of 25-mph that intersects Glen Cove Road at two locations from the west at two conventional one-way stop sign controlled “T” intersection. There is no WisDOT AADT volume available on Brookstone Circle. Neither sidewalks nor bicycle lanes are currently provided along either side of Brookstone Circle.

Golf Ridge is a two-lane undivided east/west local residential road with a posted speed limit of 25-mph that intersects Elmhurst Road at two locations from the east at two conventional one-way stop sign controlled “T” intersection. There is no WisDOT AADT volume available on Golf Ridge. Neither sidewalks nor bicycle lanes are currently provided along either side of Golf Ridge.

It is noted that the WisDOT annual average daily traffic (AADT) volume on Golf Road is utilized as a reference point. The weekday highest hours of traffic volumes (the weekday AM and PM peak hours) are used for the traffic analysis as they represent the worst case or highest traffic volume hours of the day. Therefore, detailed traffic turning movement counts were taken at each study area intersection on a typical weekday from 6:45 to 9:00 am and 3:00 to 6:00 pm.

C2. Alternative Modes of Transportation

Pedestrians and bicyclists may use their respective modes to access the area, though these alternate modes are expected to make up a very small portion of the overall trips to/from the study area. Therefore, for the purpose of this analysis, all traffic to and from the proposed residential development area was assumed to be by motor vehicle.

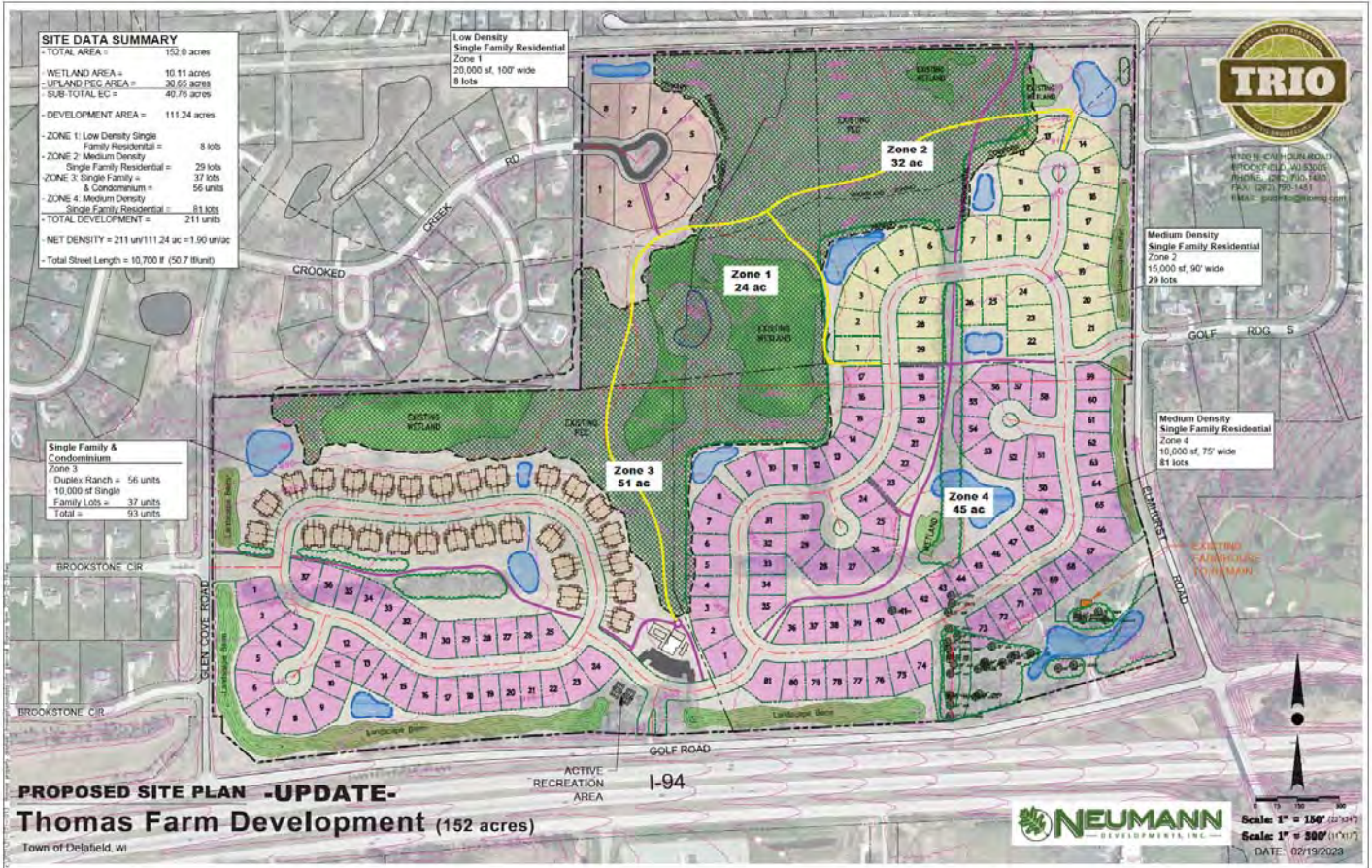
Transit is not present within the community.



LEGEND

- Study Area Intersection
- Proposed Development Site





CHAPTER III – ANALYSIS OF EXISTING CONDITIONS

PART A – PHYSICAL CHARACTERISTICS

[Exhibit 3-1](#) shows the existing transportation detail for the study area intersections. More specifically, the exhibit illustrates intersection lane configurations, intersection traffic controls, posted speed limits and approximate intersection spacing.

PART B – TRAFFIC VOLUMES

The weekday morning and weekday evening peak hours are expected to drive the improvements needed to adequately accommodate the proposed development, as they represent the highest trip generation for the site. Therefore, typical weekday morning (6:45 to 9:00 am) and weekday evening (3:00 to 6:00 pm) turning movement counts were conducted at the study area intersections in early February of 2023.

Based on these counts; the weekday morning and weekday evening peak hours were identified as being 7:45 to 8:45 am and 4:30 to 5:30 pm; respectively. The existing traffic volumes, balanced along the study area corridors, are shown in [Exhibit 3-2](#). The traffic count used to determine peak hour factors and truck percentages has been included in the [appendix](#) of this study.

PART C – CAPACITY LEVEL OF SERVICE

C1. Level of Service Definitions

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual (HCM), 6th Edition*. Intersection operation is defined by “level of service.” Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. In accordance with WisDOT and Waukesha County accepted traffic engineering standards, LOS D or better was used to define desirable peak hour operating conditions. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At unsignalized intersections, average delays are 35 to 50 seconds.

LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At unsignalized intersections, average delays exceed 50 seconds.

C2. Existing Traffic Operations – No Modifications

Table 1 shows the existing traffic peak hour operating conditions at the study area intersections. The existing traffic analysis was conducted using the existing lane configurations shown in Exhibit 3-1 and the existing traffic volumes shown in Exhibit 3-2.

Table 1
Existing Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙	
Node 100: Golf Road & Glen Cove Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	-	-	1	-	-	-	-
		LOS	A	-	-	*	-	-	-	B	-	-	-	-	A
		Delay	8	-	-	*	-	-	-	11	-	-	-	-	2
	PM	Queue	25'	-	-	*	-	-	-	25'	-	-	-	-	
		LOS	A	-	-	*	-	-	-	B	-	-	-	-	A
		Delay	8	-	-	*	-	-	-	11	-	-	-	-	1
Queue	25'	-	-	*	-	-	-	25'	-	-	-	-			
Node 400: Golf Road & Elmhurst Road <i>All-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	-	1	-	-	-	-	
		LOS	A	-	-	A	-	-	A	A	-	-	-	A	
		Delay	9	-	-	9	-	-	9	8	-	-	-	9	
	PM	Queue	30'	-	-	25'	-	-	25'	25'	-	-	-	25'	
		LOS	A	-	-	A	-	-	A	A	-	-	-	A	
		Delay	9	-	-	9	-	-	9	8	-	-	-	9	
Queue	30'	-	-	30'	-	-	25'	25'	-	-	-	25'			
Node 500: Brookstone Circle North & Glen Cove Road & Proposed Northwest Access Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	-	-	1	-	-	-	-	1	-	
		LOS	A	-	-	-	-	A	-	-	-	-	*	A	
		Delay	9	-	-	-	-	7	-	-	-	-	*	1	
	PM	Queue	25'	-	-	-	-	25'	-	-	-	-	*		
		LOS	A	-	-	-	-	A	-	-	-	-	*	A	
		Delay	9	-	-	-	-	7	-	-	-	-	*	1	
Queue	25'	-	-	-	-	25'	-	-	-	-	*				
Node 600: Brookstone Circle South & Glen Cove Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	-	-	1	-	-	-	-	1	-	
		LOS	A	-	-	-	-	A	-	-	-	-	*	A	
		Delay	9	-	-	-	-	7	-	-	-	-	*	1	
	PM	Queue	25'	-	-	-	-	25'	-	-	-	-	*		
		LOS	A	-	-	-	-	A	-	-	-	-	*	A	
		Delay	9	-	-	-	-	7	-	-	-	-	*	1	
Queue	25'	-	-	-	-	25'	-	-	-	-	*				
Node 700: Elmhurst Road & Oakton Road <i>One-Way Stop Control</i>	AM	Lanes->	-	1	-	1	-	-	1	-	-	-	-	-	
		LOS	-	*	-	A	-	-	A	-	-	-	-	A	
		Delay	-	*	-	7	-	-	9	-	-	-	-	7	
	PM	Queue	-	*	-	25'	-	-	25'	-	-	-	-		
		LOS	-	*	-	A	-	-	A	-	-	-	-	A	
		Delay	-	*	-	7	-	-	9	-	-	-	-	7	
Queue	-	*	-	25'	-	-	25'	-	-	-	-				
Node 800: Elmhurst Road & Golf Ridge North <i>One-Way Stop Control</i>	AM	Lanes->	-	-	-	1	-	-	1	-	-	1	-	-	
		LOS	-	-	-	A	-	-	*	A	-	-	-	A	
		Delay	-	-	-	9	-	-	*	7	-	-	-	1	
	PM	Queue	-	-	-	25'	-	-	*	25'	-	-	-		
		LOS	-	-	-	A	-	-	*	A	-	-	-	A	
		Delay	-	-	-	9	-	-	*	7	-	-	-	1	
Queue	-	-	-	25'	-	-	*	25'	-	-	-				
Node 900: Elmhurst Road & Golf Ridge South & Proposed Northeast Access Road <i>One-Way Stop Control</i>	AM	Lanes->	-	-	-	1	-	-	1	-	-	1	-	-	
		LOS	-	-	-	A	-	-	*	A	-	-	-	A	
		Delay	-	-	-	9	-	-	*	7	-	-	-	1	
	PM	Queue	-	-	-	25'	-	-	*	25'	-	-	-		
		LOS	-	-	-	A	-	-	*	A	-	-	-	A	
		Delay	-	-	-	9	-	-	*	7	-	-	-	1	
Queue	-	-	-	25'	-	-	*	25'	-	-	-				

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.
Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.






As shown in Table 1, all study area intersections are currently operating acceptably at LOS B or better operations under the existing traffic volumes and current geometric conditions during the typical weekday morning and weekday evening peak periods.

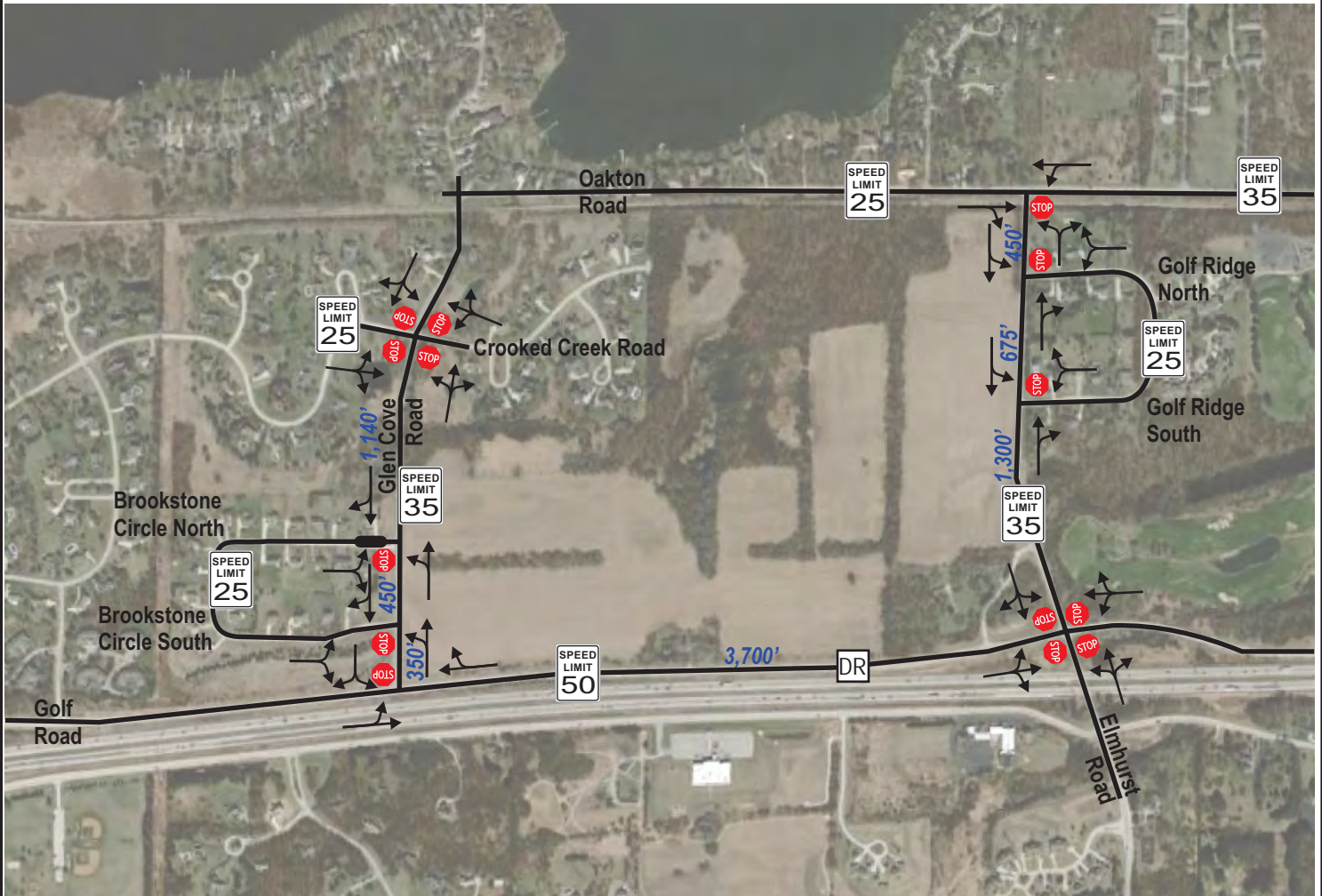
PART D – SOURCES OF DATA

The following sources of data were obtained for use in conducting this traffic study:

- Turning movement traffic counts – Traffic Analysis & Design, Inc.
- Existing transportation detail – Traffic Analysis & Design, Inc., and Google™ Earth
- On-site development information – Neumann Companies, Inc.

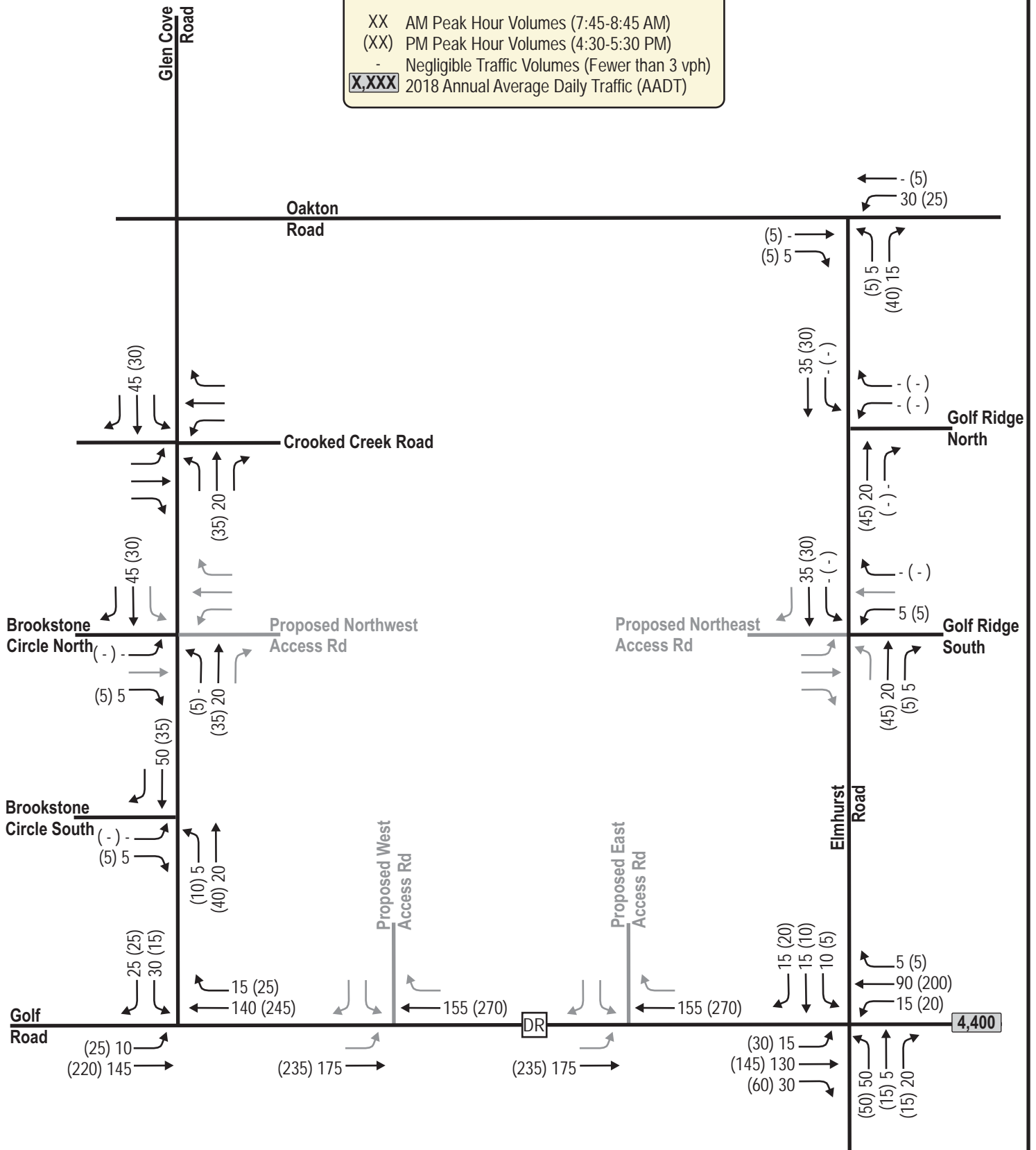
LEGEND

-  Stop Sign
-  Existing Lane Configuration
-  Existing Storage Length (in Feet)
-  Distance Between Roadways (in Feet)
-  Divided Roadway Median



LEGEND

- XX AM Peak Hour Volumes (7:45-8:45 AM)
- (XX) PM Peak Hour Volumes (4:30-5:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)
- X,XXX 2018 Annual Average Daily Traffic (AADT)



CHAPTER IV – DEVELOPMENT TRAFFIC

PART A – TRAFFIC FORECASTING

Future year forecasts were not developed for this project.

A1. On-Site Trip Generation

The expected trip generation for the on-site Thomas Farms residential development is shown in [Exhibit 4-3](#). As shown, the on-site residential development is expected to generate 145 new trips (40 in/105 out) during a typical weekday morning peak hour. During the typical weekday evening peak hour, the development site is expected to generate 190 new trips (115 in/75 out). On a typical weekday, the proposed development is expected to generate 2,050 new trips (1,025 in/1,025 out) under full build conditions.

A2. Trip Distribution

The trip distribution for the proposed on-site development, listed below and shown in table format in [Exhibit 4-3](#) was determined based on the existing traffic patterns, the type of proposed land uses (residential) and the location of existing populations and main arterials within the immediate study area. It is noted that the existing traffic patterns at the study area intersections reflect the traffic patterns of the existing surrounding residential development. Since the proposed development is also expected to be residential, it is anticipated that the traffic distribution of the new residential development would mirror the traffic patterns of the existing surrounding residential development as follows:

- 30-percent to/from the east on Golf Road
- 35-percent to/from the west on Golf Road
- 15-percent to/from the east on Oakton Road
- 20-percent to/from the south on Elmhurst Road

A3. Trip Assignment

The peak hour new trips expected to be generated by the full build-out of the proposed residential development were assigned to the study area roadways based on the above trip distribution and are shown on [Exhibit 4-5](#).

PART B – BUILD TRAFFIC

The existing traffic volumes, [Exhibit 3-2](#), were added to the on-site new trips, illustrated in [Exhibit 4-5](#), to determine the Full Build traffic volumes ([Exhibit 4-11](#)).

Trip Generation Table¹

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Single-Family Detached Housing (A)	210	8 Units	100 FCE	0 (26%)	5 (74%)	5 FCE	5 (63%)	5 (37%)	10 FCE
Single-Family Attached Housing (B)	215	56 Units	380 FCE	10 (31%)	15 (69%)	25 FCE	15 (57%)	15 (43%)	30 FCE
Single-Family Detached Housing (C)	210	39 Units	420 FCE	10 (26%)	20 (74%)	30 FCE	25 (63%)	15 (37%)	40 FCE
Single-Family Detached Housing (D)	210	81 Units	830 FCE	15 (26%)	45 (74%)	60 FCE	50 (63%)	30 (37%)	80 FCE
Single-Family Detached Housing (E)	210	29 Units	320 FCE	5 (26%)	20 (74%)	25 FCE	20 (63%)	10 (37%)	30 FCE
Total New Trips			2,050	40	105	145	115	75	190

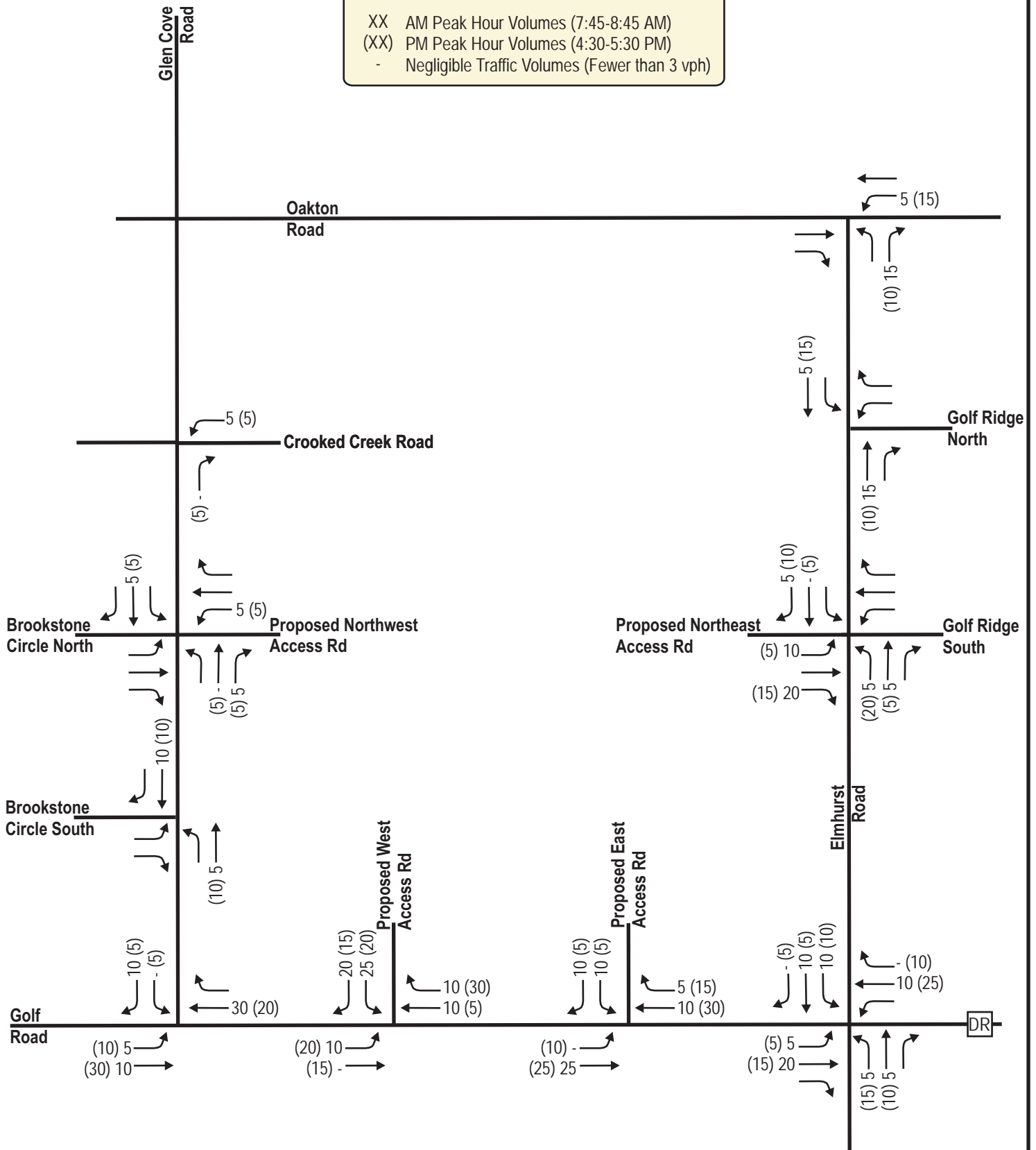
¹ ITE Trip Rates (X.XX) and/or Fitted Curve Equations (FCE) are from the ITE Trip Generation Manual, 11th Edition.

TRIP DISTRIBUTION (New Trips - All)

Golf Road East	30%	615	10	30	35	25
Golf Road West	35%	715	15	40	40	25
Oakton Road East	15%	310	5	15	15	10
Elmurst Road South	20%	410	10	20	25	15
	100%	2050	40	105	115	75

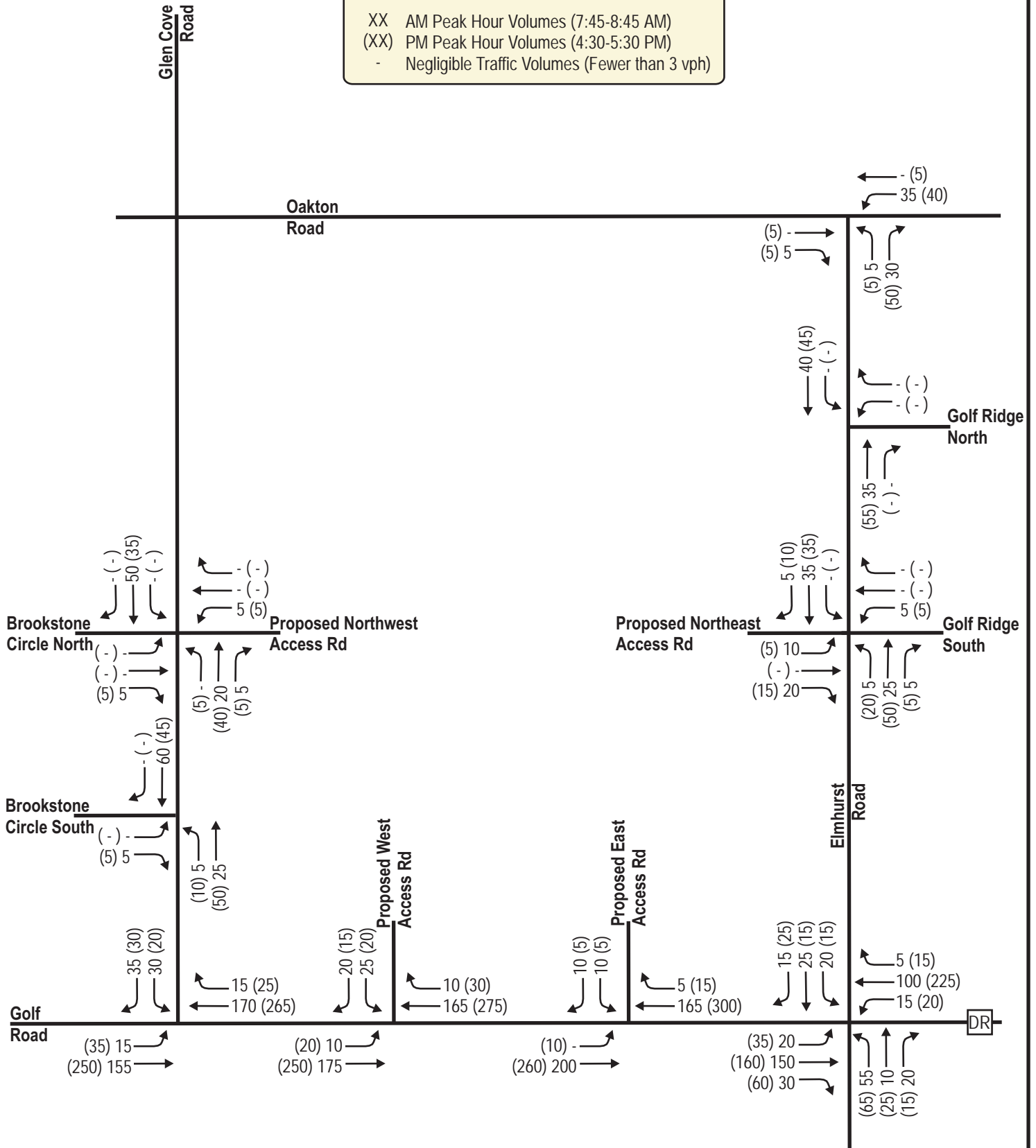
LEGEND

- XX AM Peak Hour Volumes (7:45-8:45 AM)
- (XX) PM Peak Hour Volumes (4:30-5:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



LEGEND

- XX AM Peak Hour Volumes (7:45-8:45 AM)
- (XX) PM Peak Hour Volumes (4:30-5:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



CHAPTER V – TRAFFIC AND IMPROVEMENT ANALYSIS

PART A – SITE ACCESS

Access to the site is proposed via two new three-legged “Tee” roadway connections onto Golf Road and two additional access roadways, one onto Glen Cove Road and one onto Elmhurst Road. The new access roadway onto Glen Cove Road is proposed opposite the Brookstone Circle North access and the new access roadway onto Elmhurst Road is proposed opposite the Golf Ridge South access roadway. All access roadways are proposed as full access intersections with stop control on the new approaches. The extension of Crooked Creek Road to provide access to eight additional single-family parcels is also proposed as part of the development.

PART B – CAPACITY LEVEL OF SERVICE ANALYSIS

B1. Full Build Traffic Operating Conditions – No Modifications

[Table 2](#) shows the Full Build traffic peak hour operating conditions at the study area intersections. The Full Build traffic analysis was conducted using existing intersection configurations and traffic control.

Table 2
Full Build Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay	
			Eastbound			Westbound			Northbound			Southbound				
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙		
Node 100: Golf Road & Glen Cove Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	-	-	-	1	-	-	-	-
		LOS	A	-	-	*	-	-	-	-	-	B	-	-	-	-
		Delay	8	-	-	*	-	-	-	-	-	11	-	-	-	-
	PM	Queue	25'	-	-	*	-	-	-	-	-	25'	-	-	-	-
		LOS	A	-	-	*	-	-	-	-	-	B	-	-	-	-
		Delay	8	-	-	*	-	-	-	-	-	12	-	-	-	-
Queue	25'	-	-	*	-	-	-	-	-	25'	-	-	-	-		
Node 200: Golf Road & Proposed West Access Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	-	-	-	1	-	-	-	-
		LOS	A	-	-	*	-	-	-	-	-	B	-	-	-	-
		Delay	8	-	-	*	-	-	-	-	-	11	-	-	-	-
	PM	Queue	25'	-	-	*	-	-	-	-	-	25'	-	-	-	-
		LOS	A	-	-	*	-	-	-	-	-	B	-	-	-	-
		Delay	8	-	-	*	-	-	-	-	-	12	-	-	-	-
Queue	25'	-	-	*	-	-	-	-	-	25'	-	-	-	-		
Node 300: Golf Road & Proposed East Access Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	-	-	-	1	-	-	-	-
		LOS	A	-	-	*	-	-	-	-	-	B	-	-	-	-
		Delay	8	-	-	*	-	-	-	-	-	11	-	-	-	-
	PM	Queue	25'	-	-	*	-	-	-	-	-	25'	-	-	-	-
		LOS	A	-	-	*	-	-	-	-	-	B	-	-	-	-
		Delay	8	-	-	*	-	-	-	-	-	12	-	-	-	-
Queue	25'	-	-	*	-	-	-	-	-	25'	-	-	-	-		
Node 400: Golf Road & Elmhurst Road <i>All-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	1	-	-	1	-	-	-	-
		LOS	A	-	-	A	-	-	A	-	-	A	-	-	-	-
		Delay	9	-	-	9	-	-	9	-	-	9	-	-	-	-
	PM	Queue	35'	-	-	25'	-	-	25'	-	-	25'	-	-	-	-
		LOS	A	-	-	B	-	-	A	-	-	A	-	-	-	-
		Delay	9	-	-	10	-	-	9	-	-	9	-	-	-	-
Queue	40'	-	-	40'	-	-	25'	-	-	25'	-	-	-	-		
Node 500: Brookstone Circle North & Glen Cove Road & Proposed Northwest Access Road <i>Two-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	1	-	-	1	-	-	-	-
		LOS	A	-	-	A	-	-	A	-	-	A	-	-	-	-
		Delay	9	-	-	9	-	-	7	-	-	7	-	-	-	-
	PM	Queue	25'	-	-	25'	-	-	25'	-	-	25'	-	-	-	-
		LOS	A	-	-	A	-	-	A	-	-	A	-	-	-	-
		Delay	9	-	-	9	-	-	7	-	-	7	-	-	-	-
Queue	25'	-	-	25'	-	-	25'	-	-	25'	-	-	-	-		
Node 600: Brookstone Circle South & Glen Cove Road <i>One-Way Stop Control</i>	AM	Lanes->	1	-	-	-	-	1	-	-	-	1	-	-	-	-
		LOS	A	-	-	-	-	A	-	-	-	A	-	-	-	-
		Delay	9	-	-	-	-	7	-	-	-	7	-	-	-	-
	PM	Queue	25'	-	-	-	-	25'	-	-	-	25'	-	-	-	-
		LOS	A	-	-	-	-	A	-	-	-	A	-	-	-	-
		Delay	9	-	-	-	-	7	-	-	-	7	-	-	-	-
Queue	25'	-	-	-	-	25'	-	-	-	25'	-	-	-	-		
Node 700: Elmhurst Road & Oakton Road <i>One-Way Stop Control</i>	AM	Lanes->	-	1	-	1	-	-	1	-	-	-	-	-	-	-
		LOS	-	*	-	A	-	-	A	-	-	-	-	-	-	-
		Delay	-	*	-	7	-	-	9	-	-	-	-	-	-	-
	PM	Queue	-	*	-	25'	-	-	25'	-	-	-	-	-	-	-
		LOS	-	*	-	A	-	-	A	-	-	-	-	-	-	-
		Delay	-	*	-	7	-	-	9	-	-	-	-	-	-	-
Queue	-	*	-	25'	-	-	25'	-	-	-	-	-	-	-		
Node 800: Elmhurst Road & Golf Ridge North <i>One-Way Stop Control</i>	AM	Lanes->	-	-	-	1	-	-	1	-	-	1	-	-	-	-
		LOS	-	-	-	A	-	-	*	-	-	A	-	-	-	-
		Delay	-	-	-	9	-	-	*	-	-	7	-	-	-	-
	PM	Queue	-	-	-	25'	-	-	*	-	-	25'	-	-	-	-
		LOS	-	-	-	A	-	-	*	-	-	A	-	-	-	-
		Delay	-	-	-	9	-	-	*	-	-	7	-	-	-	-
Queue	-	-	-	25'	-	-	*	-	-	25'	-	-	-	-		
Node 900: Elmhurst Road & Golf Ridge South & Proposed Northeast Access Road <i>Two-Way Stop Control</i>	AM	Lanes->	1	-	-	1	-	-	1	-	-	1	-	-	-	-
		LOS	A	-	-	A	-	-	A	-	-	A	-	-	-	-
		Delay	9	-	-	9	-	-	7	-	-	7	-	-	-	-
	PM	Queue	25'	-	-	25'	-	-	25'	-	-	25'	-	-	-	-
		LOS	A	-	-	B	-	-	A	-	-	A	-	-	-	-
		Delay	9	-	-	10	-	-	7	-	-	7	-	-	-	-
Queue	25'	-	-	25'	-	-	25'	-	-	25'	-	-	-	-		

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

As shown in [Table 2](#), all movements are expected to continue to operate acceptably at LOS B or better operations under the Full Build traffic volumes and current geometric conditions during the typical weekday morning and weekday evening peak periods.

B2. Full Build Traffic Operating Conditions – *With Modifications*

Modifications to accommodate the Full Build traffic volumes (with development) are summarized in *Chapter VI – Recommendations and Conclusion*. As stated, other than by-pass lanes along Golf Road and stop signs on the new approaches of the proposed driveways, no modifications are recommended to the existing geometry or traffic control at the study area intersections. Therefore, all movements are expected to continue to operate acceptably at LOS B or better operations under the Full Build traffic volumes during the typical weekday morning and weekday evening peak periods.

PART C – QUEUEING ANALYSIS

To estimate storage length requirements for turn bays at the study area intersections with modifications, a queuing analysis has been conducted. Note that the 95th percentile probable queue lengths were used for the design of turn bay storage at stop sign controlled intersections. The following is a list of where the results of the queuing analysis can be found.

- Background Traffic Expected Maximum Queues – [Table 1](#)
- Full Build Traffic Expected Maximum Queues – [Table 2](#)

PART D – PEDESTRIAN, BICYCLE AND TRANSIT CONSIDERATIONS

The Lake Country Recreational Trail is located adjacent to and immediately north of the development site, about 70-feet south of Oakton Road and runs parallel to Oakton Road within the limits of the study area. There are currently no residential sidewalks within the limits of the study area as previously described in this report. Pedestrians and bicyclists may use their respective modes to access the area, though these alternate modes are expected to make up a very small portion of the overall trips to/from the study area. Therefore, for the purpose of this analysis, all traffic to and from the proposed residential development area was assumed to be by motor vehicle.

Transit is not present within the community.

CHAPTER VI – RECOMMENDATIONS AND CONCLUSION

PART A – RECOMMENDATIONS

A1. Recommended Modifications

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual (HCM) 6th Edition*. Intersection operation is defined by “level of service.” Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A,’ to very poor, represented by LOS ‘F’. In accordance with WisDOT and Waukesha County accepted traffic study standards, LOS D or better was used to define acceptable peak hour operating conditions.

Modifications to address traffic impacts are shown in [Exhibit 1-3](#) for the Year 2023 traffic conditions and have been shown for the following two scenarios:

- “Existing Traffic” – These modifications are expected to be necessary to accommodate existing traffic volumes without the proposed residential development.
- “Build Traffic” – These modifications are expected to be necessary to accommodate the full build traffic volumes, which includes full build out of the proposed residential development.

The analysis was conducted using existing intersection geometrics and traffic control. The following modifications, as shown in [Exhibit 1-3](#), are recommended to accommodate the existing and full build traffic volumes, respectively.

Golf Road (CTH DR) with Glen Cove Road

- *Existing Traffic*: No modifications.
- *Build Traffic*: No modifications.

Golf Road (CTH DR) with Western Development Access Road

- *Existing Traffic*: No modifications.
- *Build Traffic*:
 - Construct a new roadway connection to Golf Road with a single shared left-turn/right-turn exit lane on the north approach as shown on the site plan.
 - Construct an eastbound by-pass lane along the south side of Golf Road at the new roadway connection.
 - Provide stop sign control on the north approach of the new roadway connection.

Golf Road (CTH DR) with Eastern Development Access Road

- *Existing Traffic*: No modifications.
- *Build Traffic*:
 - Construct a new roadway connection to Golf Road with a single shared left-turn/right-turn exit lane on the north approach as shown on the site plan.

- Construct an eastbound by-pass lane along the south side of Golf Road at the new roadway connection.
- Provide stop sign control on the north approach of the new roadway connection.

Golf Road (CTH DR) with Elmhurst Road

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

Glen Cove Road with Brookstone Circle North/ Development Access Road

- *Existing Traffic:* No modifications.
- *Build Traffic:*
 - Construct a new roadway connection to Glen Cove Road across from Brookstone Circle North with a single shared exit lane on the east approach as shown on the site plan.
 - Provide stop sign control on the east approach of the new roadway connection.

Glen Cove Road with Brookstone Circle South

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

Elmhurst Road with Golf Ridge North

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

Elmhurst Road with Golf Ridge South/ Development Access Road

- *Existing Traffic:* No modifications.
- *Build Traffic:*
 - Construct a new roadway connection to Elmhurst Road across from Golf Ridge South with a single shared exit lane on the west approach as shown on the site plan.
 - Provide stop sign control on the west approach of the new roadway connection.

Elmhurst Road with Oakton Road

- *Existing Traffic:* No modifications.
- *Build Traffic:* No modifications.

The recommendation for a by-pass lane at the new intersections along Golf Road are based on the Waukesha County Code of Ordinances (*Section 15-54; Access Point Design Criteria*) that requires a by-pass lane at any new “T” type intersection when the mainline AADT volumes are greater than 2,500 vehicles per day (vpd). Based on historic WisDOT AADT count information, the Golf Road (CTH DR) AADT within the limits of the new roadway connection under the

existing (no development) conditions was approximately 4,400-vpd (2018 count). Therefore, a by-pass lane is required at the new roadway connections per the Waukesha County code.

All movements at the study area intersections are expected to continue to operate at acceptable levels at LOS B or better under the Full Build (with proposed development) traffic conditions with the recommended modifications implemented.

PART B – CONCLUSION

All movements at the study area intersections are expected to operate safely and efficiently through the opening year with the modifications identified in this TIA.

Appendix A

Traffic

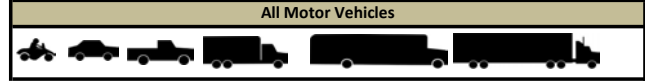
Existing Turning Movement Counts

Intersection Traffic Volume Report

Count Basics		Page 4 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

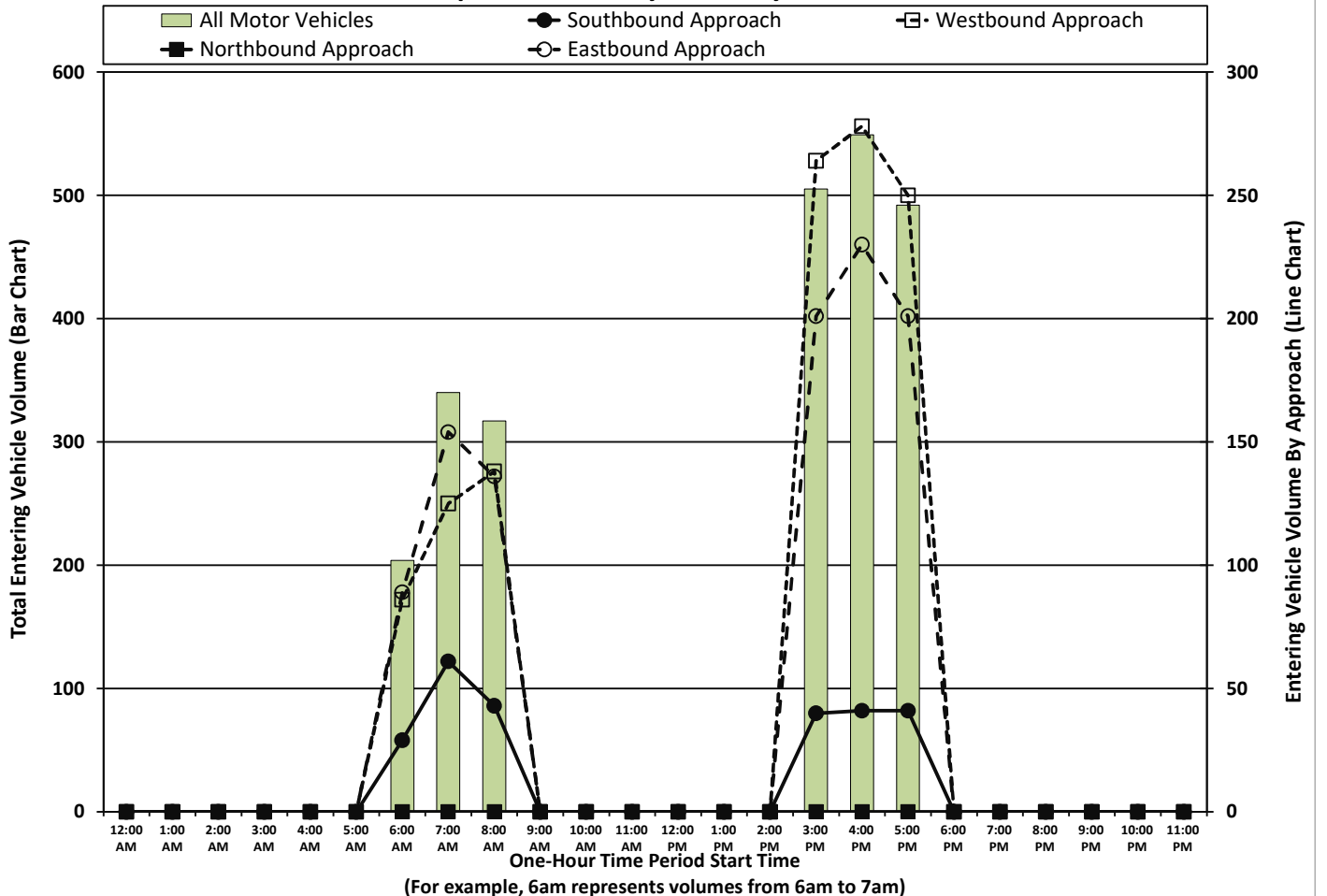
Glen Cove Road & CTH DR - Golf Road



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Glen Cove Road					From East CTH DR - Golf Road					From South Glen Cove Road					From West CTH DR - Golf Road					Total Vehicle Volume	Directional Volume Totals				
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total						
																								E/W	N/S	
Pre-AM																										
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM																										
6:00 AM	8	0	21	0	29	2	84	0	0	86	0	0	0	0	0	0	84	5	0	89	204	175	29			
7:00 AM	26	0	35	0	61	6	119	0	0	125	0	0	0	0	0	0	146	8	0	154	340	279	61			
8:00 AM	22	0	21	0	43	12	126	0	0	138	0	0	0	0	0	0	129	7	0	136	317	274	43			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MD																										
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM																										
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	25	0	15	0	40	20	244	0	0	264	0	0	0	0	0	0	177	24	0	201	505	465	40			
4:00 PM	23	0	18	0	41	23	255	0	0	278	0	0	0	0	0	0	209	21	0	230	549	508	41			
5:00 PM	26	0	15	0	41	33	217	0	0	250	0	0	0	0	0	0	179	22	0	201	492	451	41			
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	130	0	125	0	255	96	1045	0	0	1141	0	0	0	0	0	0	924	87	0	1011	2407	2152	255			

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics	Start Date: Wednesday, February 8, 2023	Weekday	Schools in Session	Page 11 of 13
	Total Number of Hours Counted: 6	Non-Holiday	No Special Events	

15-Minute Pedestrian and Bicyclist Data

Glen Cove Road & CTH DR - Golf Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Glen Cove Road			CTH DR - Golf Road			Glen Cove Road			CTH DR - Golf Road				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	1	0	1	0	0	0	0	0	0	1	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	5.5	Non-Holiday	No Special Events

Base Information, Observed (5.5) Hour and Estimated (24) Hour Volume Summaries

Major St: Glen Cove Road
 Minor St: Brookstone Circle North
 Intersection of: Glen Cove Road & Brookstone Circle North

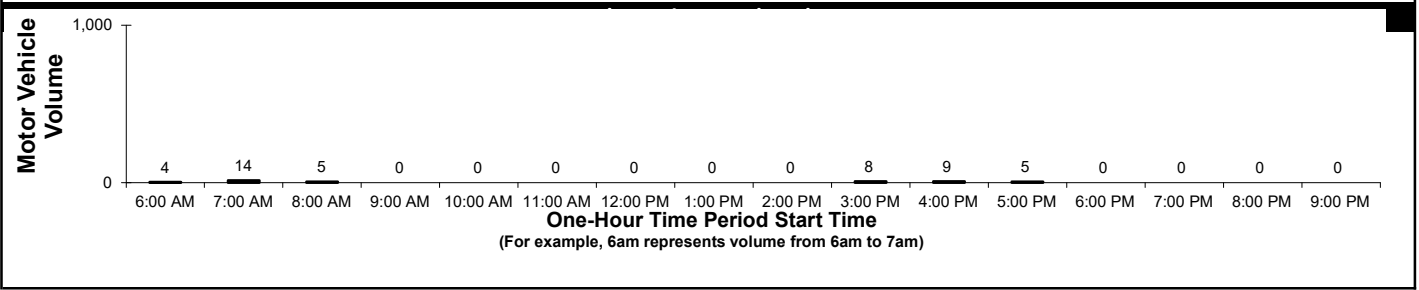
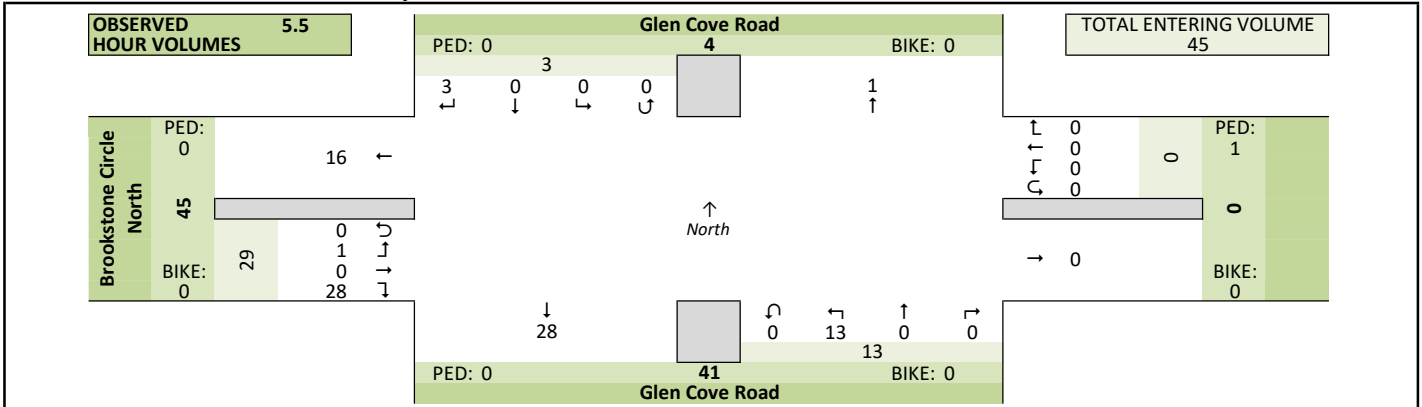
Site Information

Municipality	City of Pewaukee		
County	67 - Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction ↑		
North Leg	Glen Cove Road		
East Leg			
South Leg	Glen Cove Road		
West Leg	Brookstone Circle North		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

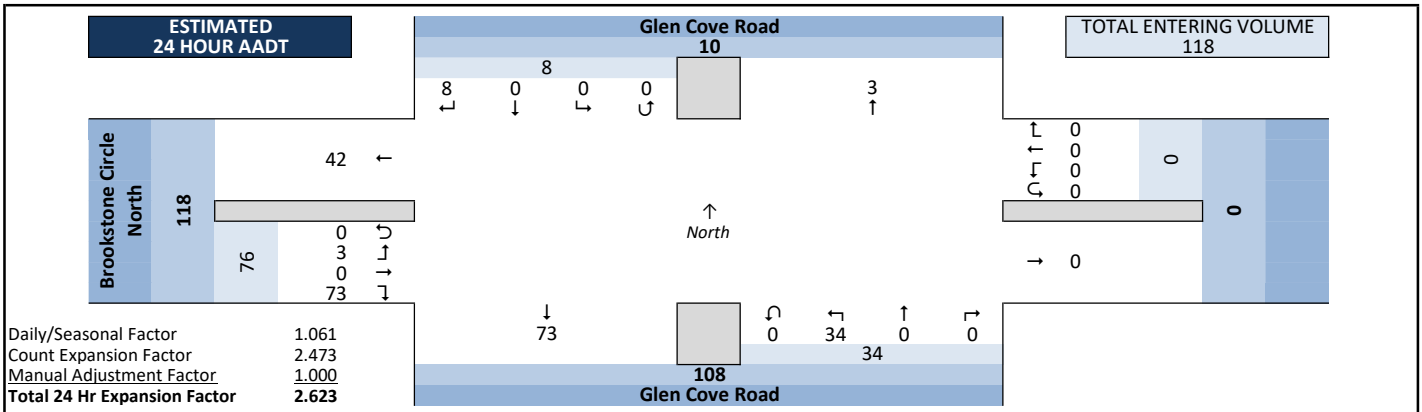
Count Information

Hrs Counted:	06:00 AM-06:15 AM, 06:30 AM-09:00 AM, and 03:00 PM-05:45 PM		
1st Day of Count	Wednesday, February 8, 2023		Weather
AM Peak Period	Wednesday, February 8, 2023		Clear & Dry
Midday Peak Period	Wednesday, February 8, 2023		Clear & Dry
PM Peak Period	Wednesday, February 8, 2023		Clear & Dry
Calculated Peak Hours			
	AM	7:00-8:00am MD	PM 4:15-5:15pm
Peak Hours Selected for Analysis			
	AM	7:45-8:45am MD	PM 4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.061	Count Expansion Factor	2.473
Company Name	TADI, Inc.		Manual Adj. 1.000
Observers	AM Peak Period	Jane Fait	
	Midday Peak Period	None	
	PM Peak Period	Jane Fait	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 5.5 Hour Volume Summary



Estimated 24 Hour AADT

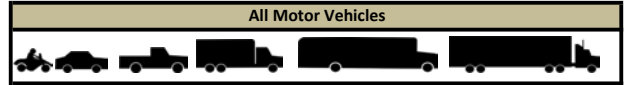


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	5.5	Non-Holiday	No Special Events

Peak Hour Volume Summary

Glen Cove Road & Brookstone Circle North



Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, February 8, 2023		From North					From East					From South					From West					Totals	
AM Peak Hour		Glen Cove Road					Glen Cove Road					Brookstone Circle North											
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	0	0	0	0	3	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Peak Hour Volume	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	6	0	0	0	0	6	8
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.25	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.50	0.00	0.00	0.00	0.50	0.50	0.50	

N/A		From North					From East					From South					From West					Totals	
MD Peak Hour		Glen Cove Road					Glen Cove Road					Brookstone Circle North											
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Wednesday, February 8, 2023		From North					From East					From South					From West					Totals	
PM Peak Hour		Glen Cove Road					Glen Cove Road					Brookstone Circle North											
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	2	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	2
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	3	0	1	0	0	4	9
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5	0	0	0	0	5	10
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.62	0.75	0.00	0.25	0.00	0.50	0.75	0.75	

Peak Hour Pedestrian and Bicyclist Volumes

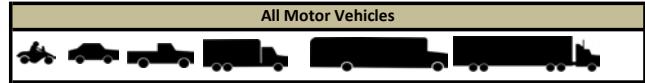
Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Glen Cove Road			Glen Cove Road			Glen Cove Road			Brookstone Circle North			
15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	5.5	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

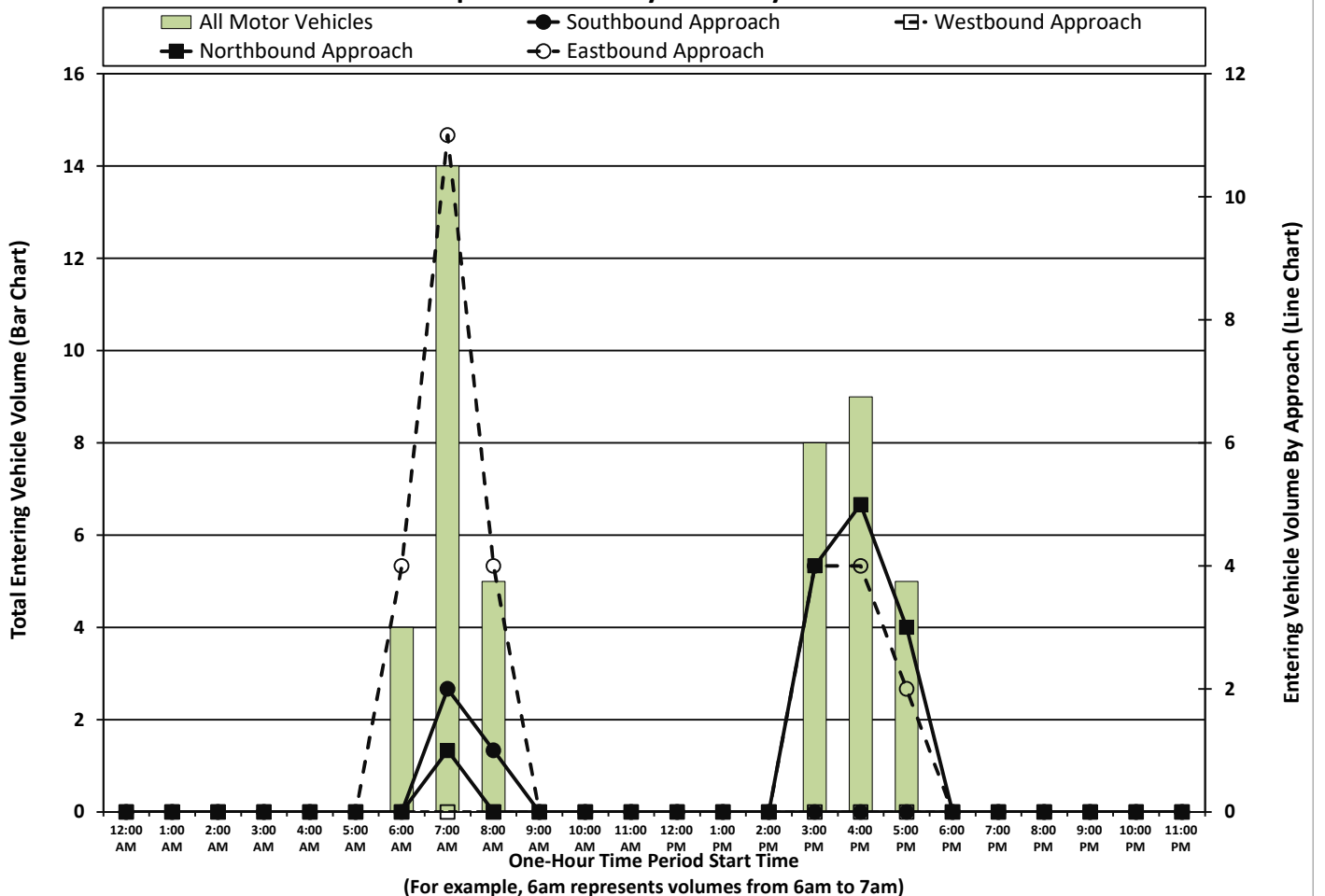
Glen Cove Road & Brookstone Circle North



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Glen Cove Road					From East					From South Glen Cove Road					From West Brookstone Circle North					Total Vehicle Volume	Directional Volume Totals			
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S		
	Start Time																								
Pre-AM	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	4	0
	7:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	1	1	11	0	0	0	0	11	14	3	11	3
	8:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	4	5	1	1	4	1
MD	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	4	8	4	4	4	4
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	5	5	5	3	0	1	0	4	9	4	5	4	5
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	3	3	2	0	0	0	2	5	2	3	2	3
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		3	0	0	0	3	0	0	0	0	0	0	0	13	0	13	28	0	1	0	29	45	29	16	

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basis	Wednesday, February 8, 2023	Weekday	Page 5 of 13
Start Date		Schools in session	
Total Number of Hours Counted: 5.5		Non-Holiday	No Special Events

15-Minute Motor Vehicle Data

Glen Cove Road & Brookstone Circle North



15-Minute Motor Vehicle Data

15-Minute Time Period	From North Glen Cove Road					From East					From South Glen Cove Road					From West Brookstone Circle North					15-Min Totals	Hourly Sum	PHF				
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total							
	Start Time																										
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	9	0.75	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	11	0.69	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	14	0.88	
7:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	3	12	0.75
7:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	4	11	0.69
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	3	0	3	4	8	0.50
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	5	0.63
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1		
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	8	0.67	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	1	7	0.58	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	1	1	2	9	0.75	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	0	0	0	1	1	3	9	0.75	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	1	9	0.75
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	2	0	2	10	0.83	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	0	0	0	0	0	0	0	2	9	0.75
5:00 PM	0	0	0	0	0																						

Intersection Traffic Volume Report

Count Basics	Start Date: Wednesday, February 8, 2023	Weekday	Schools in Session	Page 11 of 13
	Total Number of Hours Counted: 5.5	Non-Holiday	No Special Events	

15-Minute Pedestrian and Bicyclist Data

Glen Cove Road & Brookstone Circle North



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Glen Cove Road			Glen Cove Road			Glen Cove Road			Brookstone Circle North				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	0	0	0	1	0	1	0	0	0	0	0	0	1	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters		x				
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted: 4.5		Non-Holiday	No Special Events

Base Information, Observed (4.5) Hour and Estimated (24) Hour Volume Summaries

Major St: Glen Cove Road
 Minor St: Brookstone Circle South
 Intersection of: Glen Cove Road & Brookstone Circle South

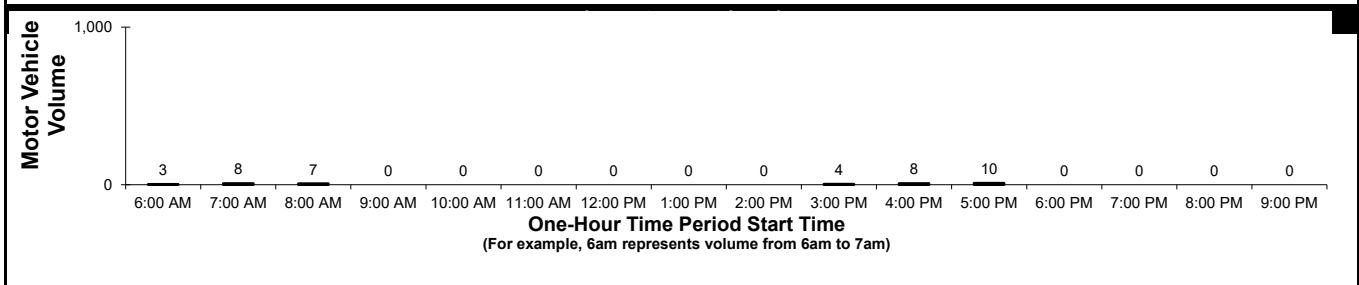
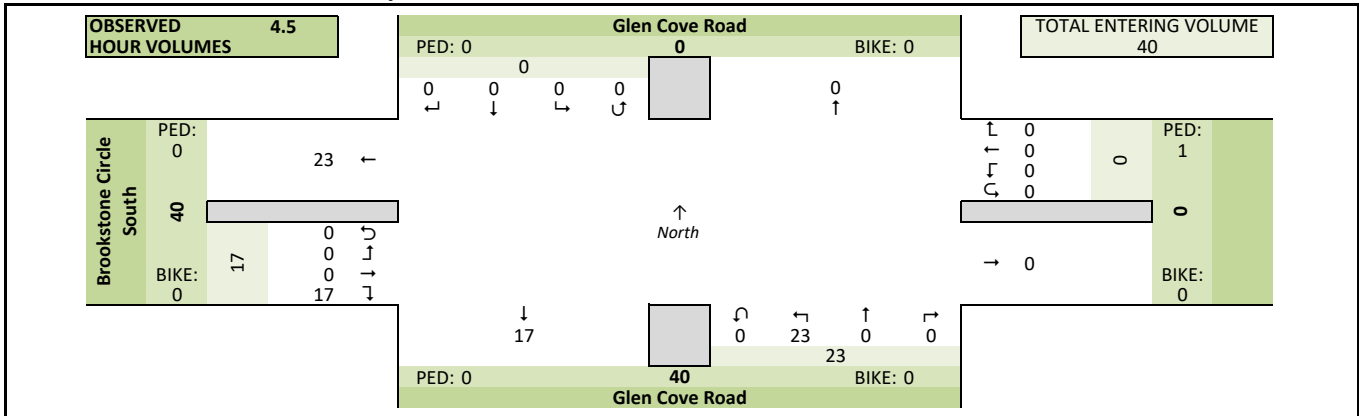
Site Information

Municipality	City of Pewaukee		
County	67 - Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg	Glen Cove Road		
East Leg			
South Leg	Glen Cove Road		
West Leg	Brookstone Circle South		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

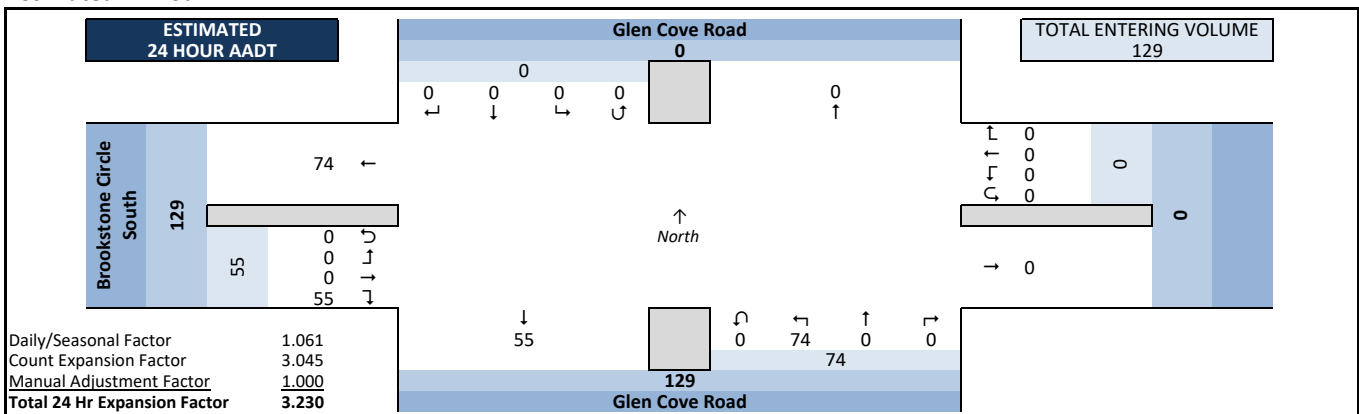
Count Information

Hrs Counted:	06:00 AM-06:15 AM, 06:30 AM-07:15 AM, and 07:30 AM-08:45 AM		
1st Day of Count	Wednesday, February 8, 2023		Weather
AM Peak Period	Wednesday, February 8, 2023		Clear & Dry
Midday Peak Period	Wednesday, February 8, 2023		Clear & Dry
PM Peak Period	Wednesday, February 8, 2023		Clear & Dry
Calculated Peak Hours			
	AM	7:30-8:30am	MD
			PM
			4:30-5:30pm
Peak Hours Selected for Analysis			
	AM	7:45-8:45am	MD
			PM
			4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.061	Count Expansion Factor	3.045
Company Name	TADI, Inc.		Manual Adj.
			1.000
Observers	AM Peak Period	Jane Fait	
	Midday Peak Period	None	
	PM Peak Period	Jane Fait	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4.5 Hour Volume Summary



Estimated 24 Hour AADT

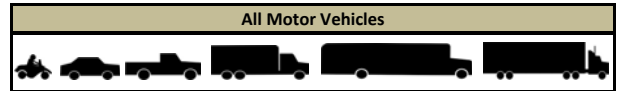


Intersection Traffic Volume Report

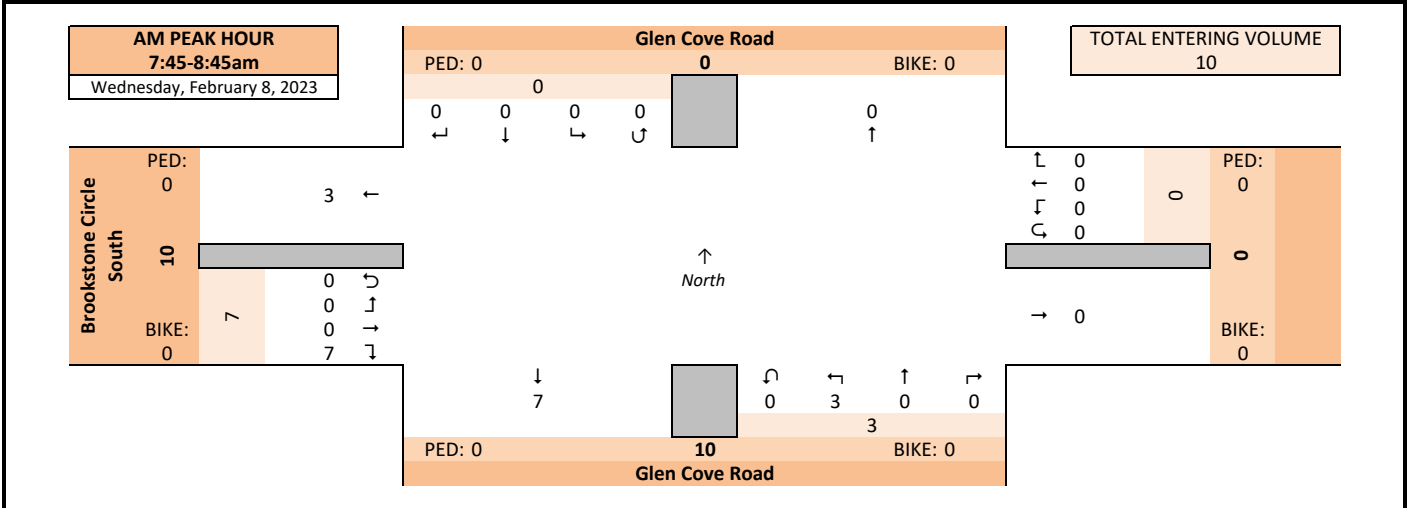
Count Basics		Page 2 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted: 4.5		Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

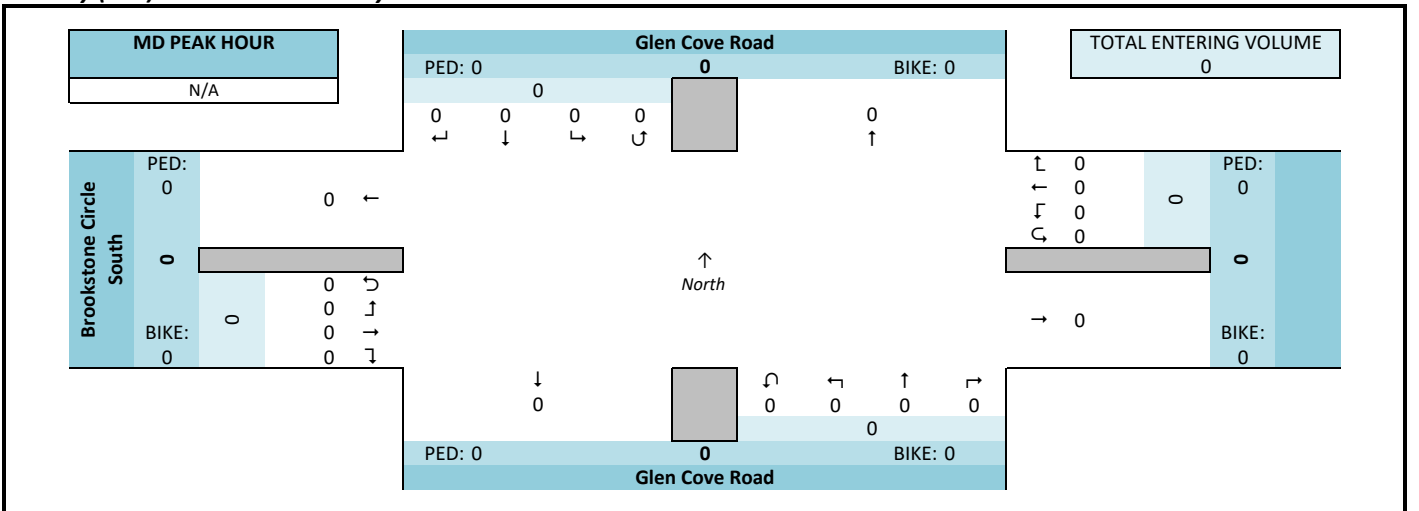
Glen Cove Road & Brookstone Circle South



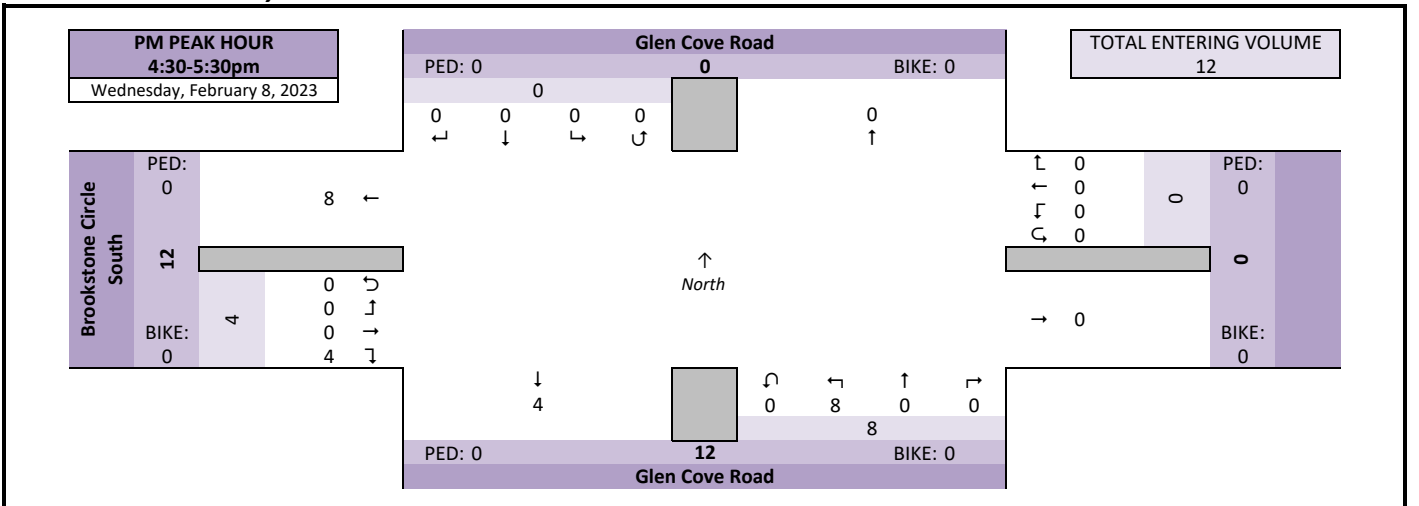
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

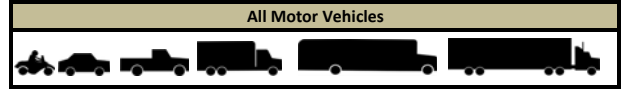


Intersection Traffic Volume Report

Count Basics		Page 3 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4.5	Non-Holiday	No Special Events

Peak Hour Volume Summary

Glen Cove Road & Brookstone Circle South



Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, February 8, 2023		From North Glen Cove Road					From East					From South Glen Cove Road					From West Brookstone Circle South					Totals	
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Hour	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	7	0	0	0	7	10
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5	0	0	0	5	10
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0	14.3	10.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	0.0	0.0	14.3	10.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.75	0.58	0.00	0.00	0.00	0.58	0.83

N/A		From North Glen Cove Road					From East					From South Glen Cove Road					From West Brookstone Circle South					Totals	
MD Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
Midday (MD) Peak Hour	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Wednesday, February 8, 2023		From North Glen Cove Road					From East					From South Glen Cove Road					From West Brookstone Circle South					Totals	
PM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
PM Peak Hour	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	4	0	0	0	4	12
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	5	0	0	0	5	15
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.67	0.50	0.00	0.00	0.00	0.50	1.00

Peak Hour Pedestrian and Bicyclist Volumes

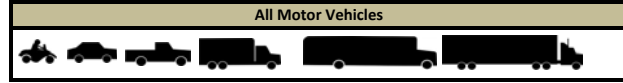
Pedestrians and Bicyclists		Crossing North Approach Glen Cove Road			Crossing East Approach			Crossing South Approach Glen Cove Road			Crossing West Approach Brookstone Circle South			Total Ped & Biker Volume
15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics		Page 4 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4.5	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

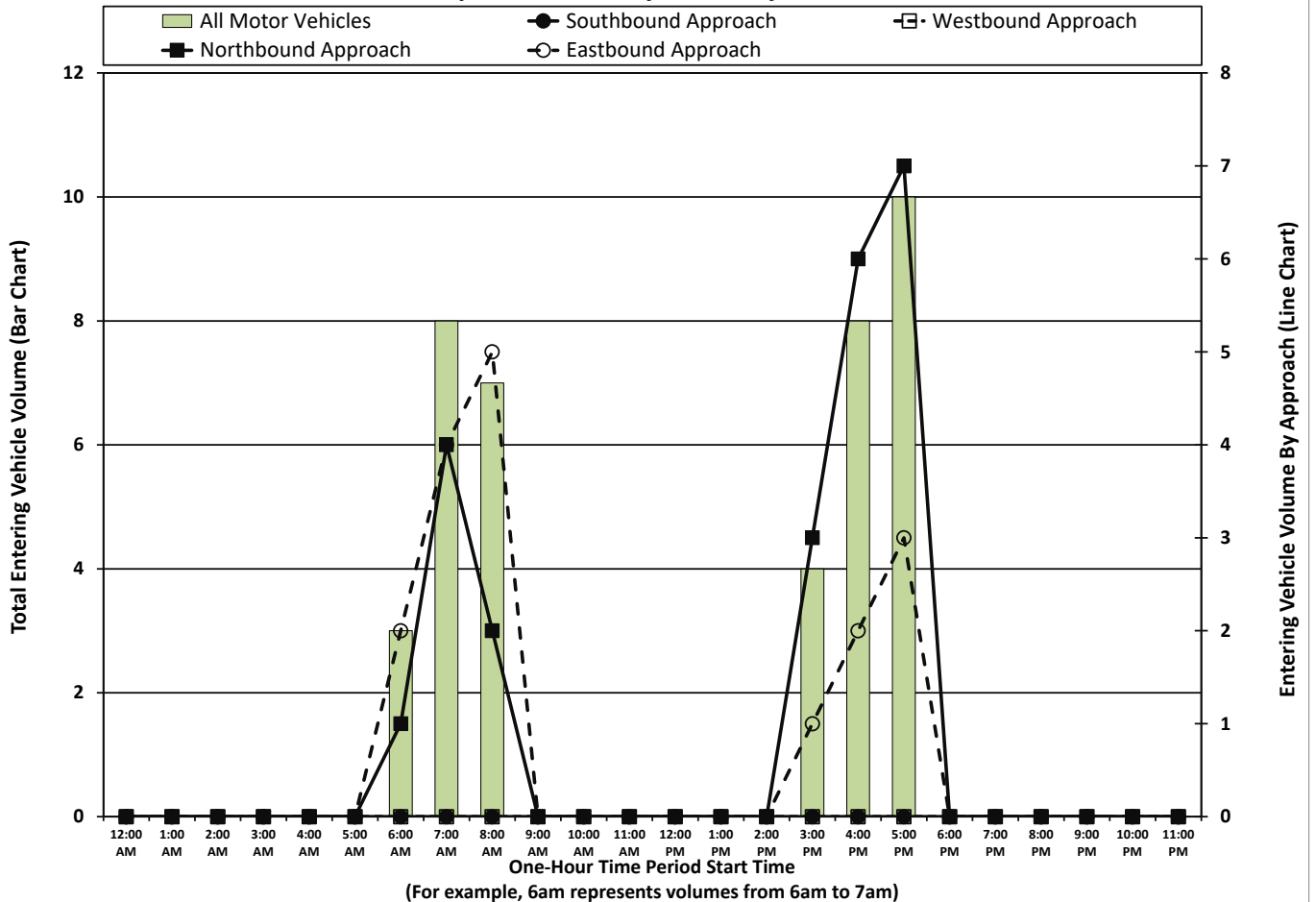
Glen Cove Road & Brookstone Circle South



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Glen Cove Road					From East					From South Glen Cove Road					From West Brookstone Circle South					Total Vehicle Volume	Directional Volume Totals			
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S		
	Start Time																								
Pre-AM	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2	3	2	1	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	4	8	4	4	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5	0	0	0	0	5	7	5	2	
MD	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	3	1	0	0	0	1	4	1	3		
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	6	2	0	0	0	2	8	2	6		
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	7	0	7	3	0	0	0	3	10	3	7		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		0	0	0	0	0	0	0	0	0	0	0	0	23	0	23	17	0	0	0	17	40	17	23	

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics		Page 11 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4.5	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Glen Cove Road & Brookstone Circle South



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Glen Cove Road			Glen Cove Road			Glen Cove Road			Brookstone Circle South				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	0	0	0	1	0	1	0	0	0	0	0	0	0	1

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basis		Page 13 of 13	
Start Date	Wednesday, February 8, 2023	Weekday	Schools In Session
Total Number of Hours Counted:	4.5	Non-Holiday	No Special Events

15-Minute Bicycle Turning Movement Count (Manual Entry)

Glen Cove Road & Brookstone Circle South



15-Minute Bicycle Data

15-Minute Time Period	From North				From East				From South				From West				15-Min Totals	Hourly Sum
	Glen Cove Road				Glen Cove Road				Brookstone Circle South				Brookstone Circle South					
	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0</													

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2		Page 1 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session		
Total Number of Hours Counted:	6	Non-Holiday	No Special Events		

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: Elmhurst Road
 Minor St: CTH DR - Golf Road
 Intersection of: Elmhurst Road & CTH DR - Golf Road

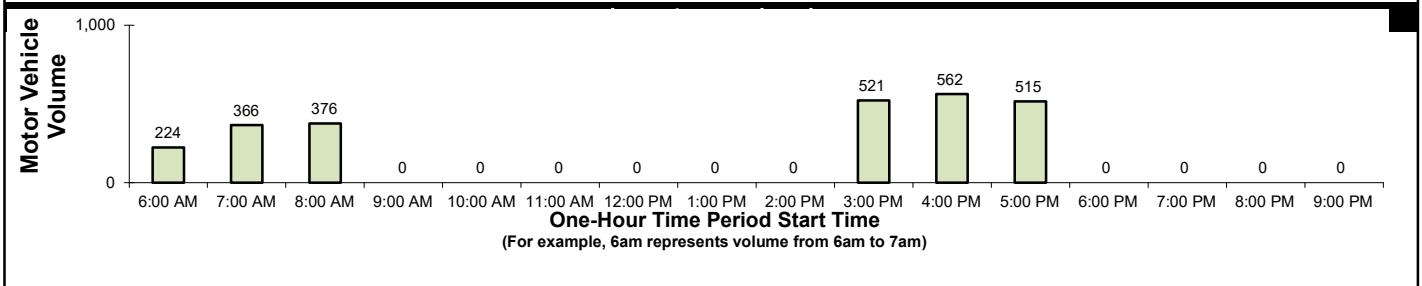
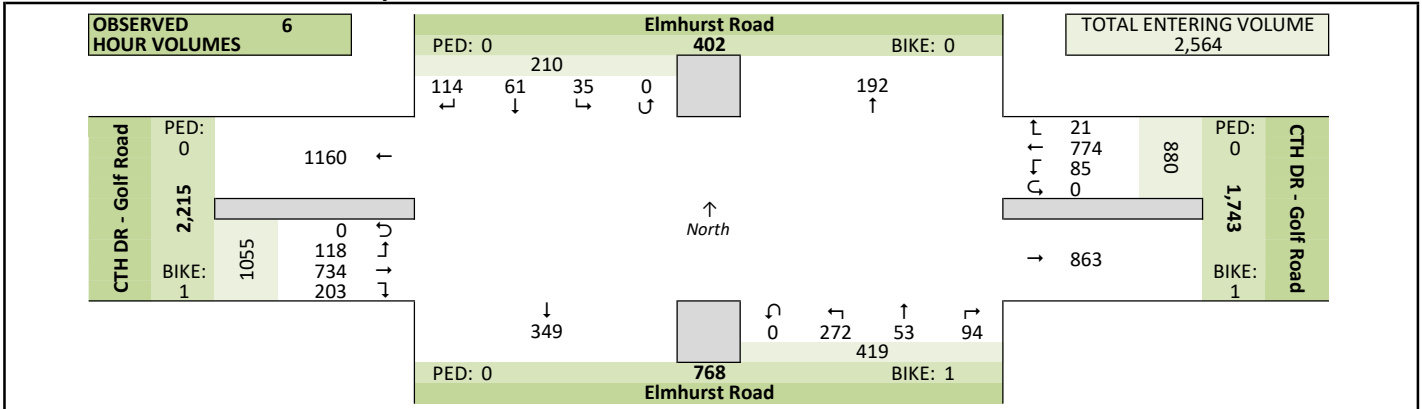
Site Information

Municipality	City of Pewaukee		
County	67 - Waukesha	WisDOT Region	SE
Traffic Control	All-Way Stop		
Roadway Names	North Direction	↑	
North Leg	Elmhurst Road		
East Leg	CTH DR - Golf Road		
South Leg	Elmhurst Road		
West Leg	CTH DR - Golf Road		
Special Considerations	None		
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed	None		
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

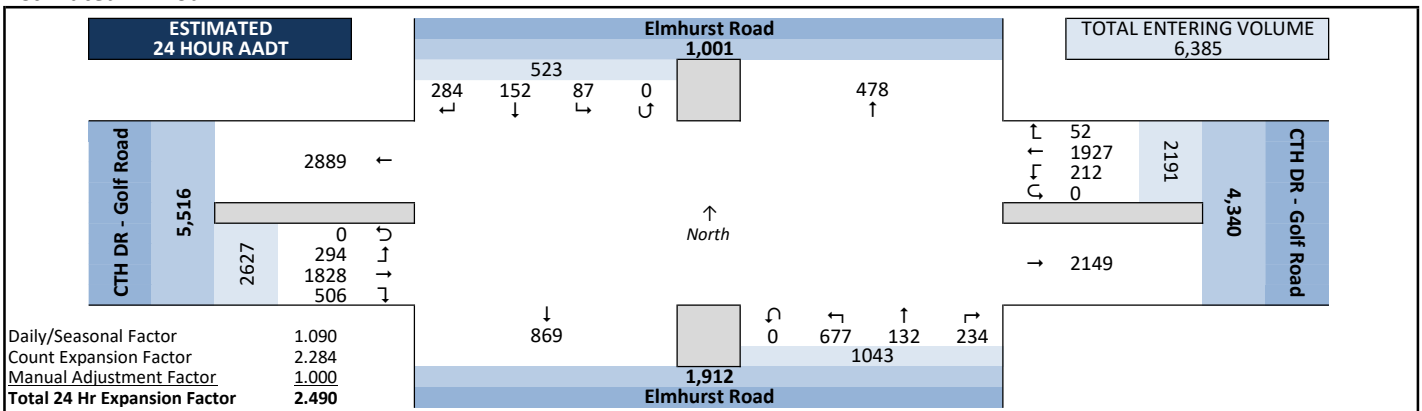
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM		
1st Day of Count	Wednesday, February 8, 2023		Weather
AM Peak Period	Wednesday, February 8, 2023		Clear & Dry
Midday Peak Period	Thursday, February 9, 2023		Clear & Dry
PM Peak Period	Thursday, February 9, 2023		Clear & Dry
Calculated Peak Hours	AM 7:45-8:45am MD PM 4:30-5:30pm		
Peak Hours Selected for Analysis	AM 7:45-8:45am MD PM 4:30-5:30pm		
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.090	Count Expansion Factor	2.284
Company Name	TADI, Inc.		Manual Adj. 1.000
Observers	AM Peak Period	Amy Scheuerlein	
	Midday Peak Period	None	
	PM Peak Period	Amy Scheuerlein	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 6 Hour Volume Summary



Estimated 24 Hour AADT

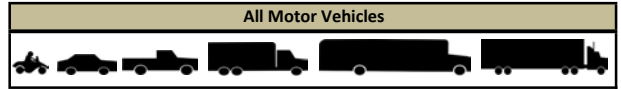


Intersection Traffic Volume Report

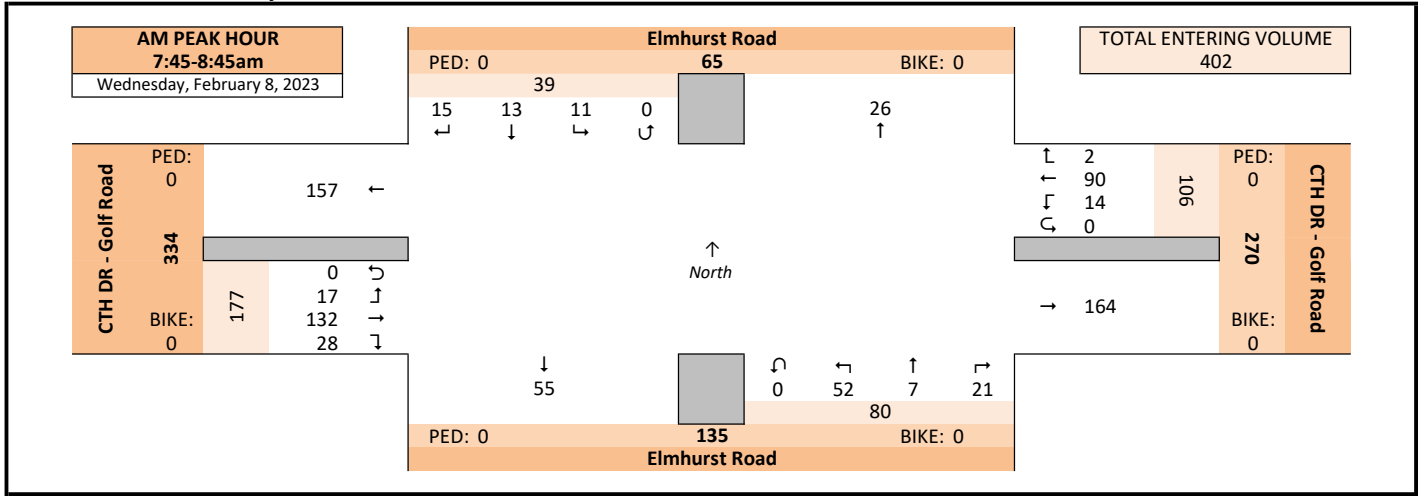
Count Basics		Page 2 of 13	
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

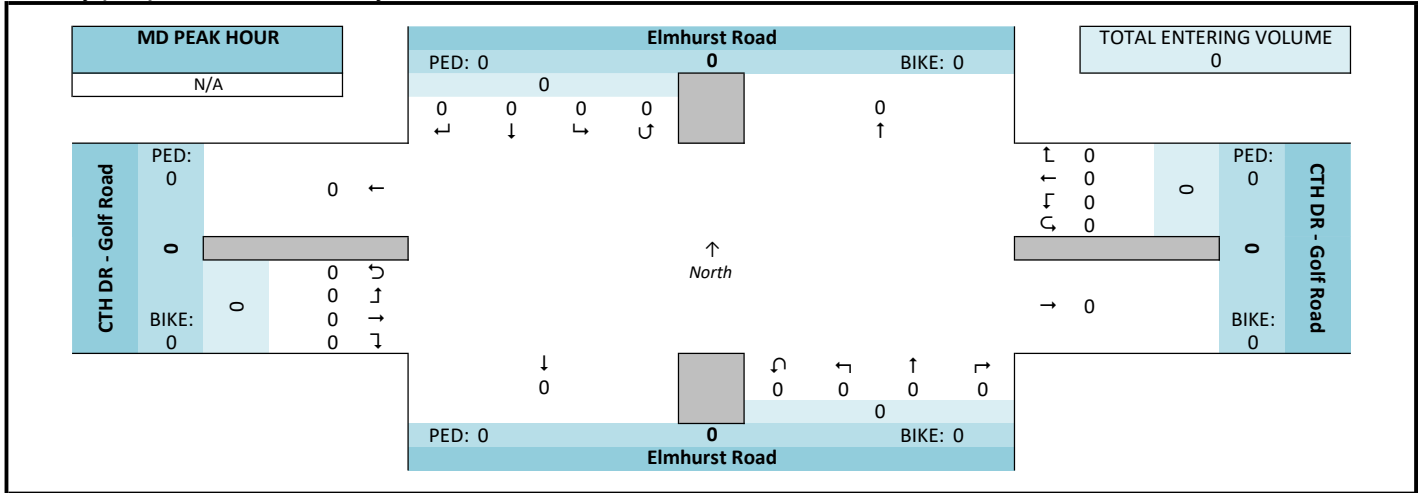
Elmhurst Road & CTH DR - Golf Road



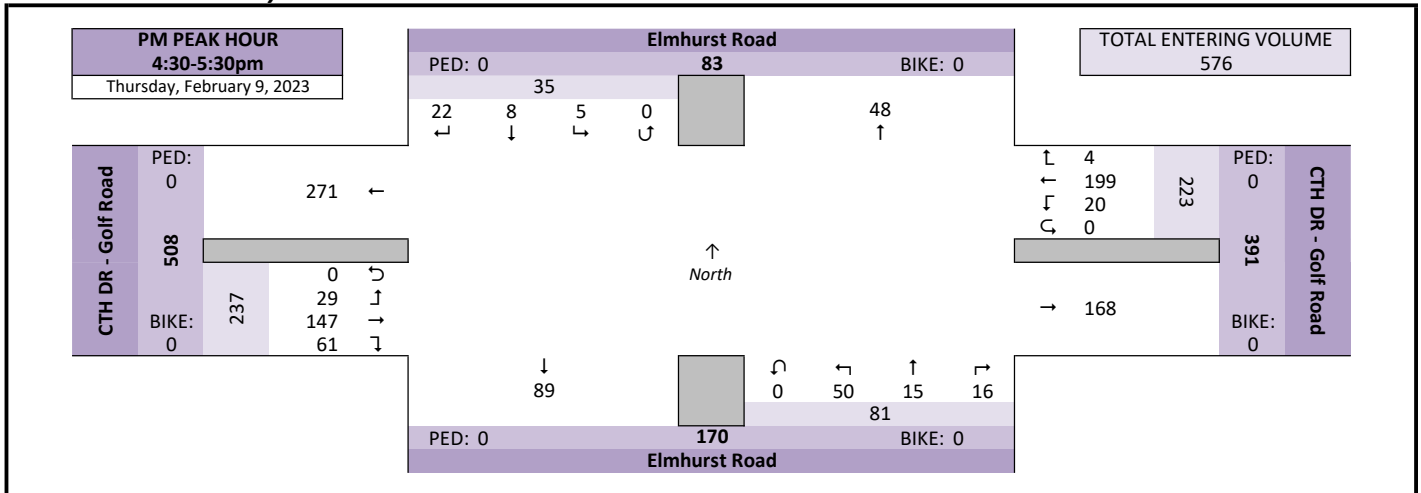
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

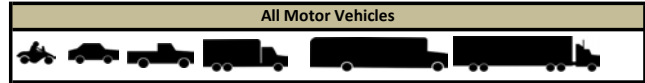


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

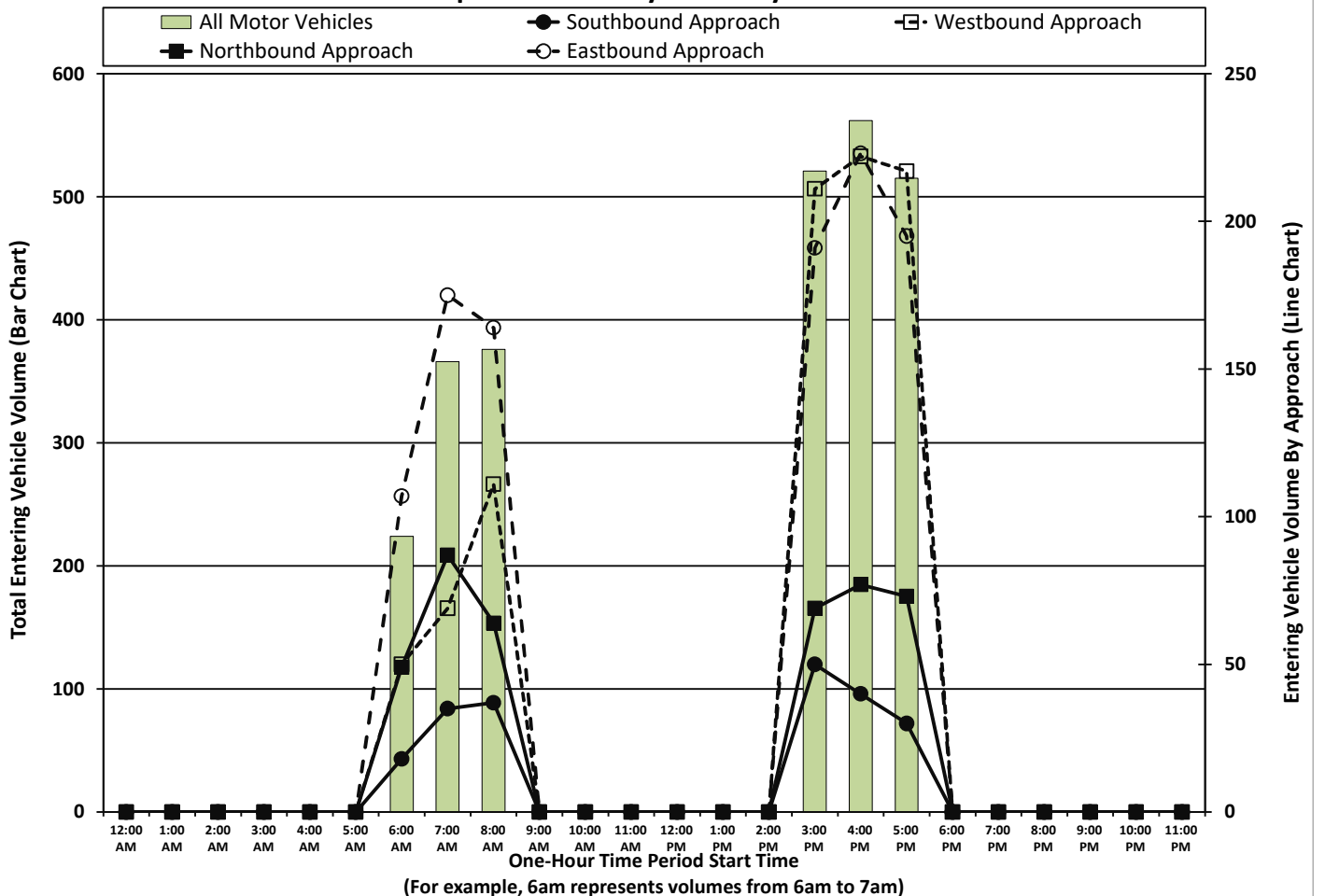
Elmhurst Road & CTH DR - Golf Road



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Elmhurst Road					From East CTH DR - Golf Road					From South Elmhurst Road					From West CTH DR - Golf Road					Total Vehicle Volume	Directional Volume Totals			
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S		
	Start Time																								
Pre-AM	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 AM	7	7	4	0	18	0	47	3	0	50	11	6	32	0	49	24	79	4	0	107	224	157	67	
	7:00 AM	18	12	5	0	35	2	54	13	0	69	25	8	54	0	87	22	141	12	0	175	366	244	122	
	8:00 AM	18	9	10	0	37	2	97	12	0	111	17	7	40	0	64	26	120	18	0	164	376	275	101	
MD	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	33	11	6	0	50	5	188	18	0	211	15	10	44	0	69	31	134	26	0	191	521	402	119	
	4:00 PM	25	12	3	0	40	7	195	20	0	222	11	12	54	0	77	47	137	39	0	223	562	445	117	
	5:00 PM	13	10	7	0	30	5	193	19	0	217	15	10	48	0	73	53	123	19	0	195	515	412	103	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		114	61	35	0	210	21	774	85	0	880	94	53	272	0	419	203	734	118	0	1055	2564	1935	629	

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

Elmhurst Road & CTH DR - Golf Road



15-Minute Motor Vehicle Data

15-Minute Time Period	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF			
	Elmhurst Road					CTH DR - Golf Road					Elmhurst Road					CTH DR - Golf Road										
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total						
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:00 AM	1	1	0	0	2	2	8	0	0	8	2	0	0	5	7	6	13	1	0	20	37			224	0.74	
6:15 AM	2	2	0	0	4	0	14	0	0	14	3	2	5	10	4	14	0	0	18	46			263	0.87		
6:30 AM	3	2	3	0	8	0	14	1	0	15	1	0	5	6	5	30	1	0	36	65			301	0.90		
6:45 AM	1	2	1	0	4	0	11	2	0	13	5	4	17	26	9	22	2	0	33	76			317	0.94		
7:00 AM	5	4	0	0	9	0	4	2	0	6	9	2	7	18	5	34	4	0	43	76			366	0.73		
7:15 AM	7	2	0	0	9	1	11	6	0	18	5	2	9	16	3	37	1	0	41	84			385	0.77		
7:30 AM	5	2	3	0	10	0	14	0	0	14	3	2	15	20	8	25	4	0	37	81			390	0.78		
7:45 AM	1	4	2	0	7	1	25	5	0	31	8	2	23	33	6	45	3	0	54	125			402	0.80		
8:00 AM	5	1	3	0	9	0	22	7	0	29	8	1	10	19	6	27	5	0	38	95			376	0.95		
8:15 AM	4	2	3	0	9	1	19	1	0	21	5	1	11	17	10	28	4	0	42	89						
8:30 AM	5	6	3	0	14	0	24	1	0	25	0	3	8	11	6	32	5	0	43	93						
8:45 AM	4	0	1	0	5	1	32	3	0	36	4	2	11	17	4	33	4	0	41	99						
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
3:00 PM	11	5	4	0	20	0	47	6	0	53	5	3	11	19	9	25	6	0	40	132			521	0.96		
3:15 PM	6	2	0	0	8	3	39	5	0	47	3	2	10	15	8	38	6	0	52	122			537	0.91		
3:30 PM	6	3	0	0	9	0	53	5	0	58	3	1	6	10	3	41	10	0	54	131			547	0.92		
3:45 PM	10	1	2	0	13	2	49	2	0	53	4	4	17	25	11	30	4	0	45	136			548	0.93		
4:00 PM	7	3	1	0	11	2	49	8	0	66	2	3	12	17	14	30	10	0	54	148			562	0.94		
4:15 PM	4	5	1	0	10	3	41	3	0	47	1	2	17	20	5	36	14	0	55	132			560	0.93		
4:30 PM	5	2	1	0	8	1	57	2	0	60	5	3	12	20	12	27	5	0	44	132			576	0.96		
4:45 PM	9	2	1	0	11	0	42	7	0	49	3	4	13	20	16	44	10	0	70	150			558	0.93		
5:00 PM	6	2	1	0	9	3	52	6	0	61	8	3	8	19	17	34	6	0	57	146			515	0.87		
5:15 PM	2	2	3	0	7	0	48	5	0	53	0	5	17	22	16	42	8	0	66	148						
5:30 PM	2	4	3	0	9	2	45	5	0	52	5	1	13	19	13	19	2	0	34	114						
5:45 PM	3	2	0	0	5																					

Intersection Traffic Volume Report

Count Basis	Wednesday, February 8, 2023	Weekday	Page 11 of 13
Start Date:	Wednesday, February 8, 2023	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Elmhurst Road & CTH DR - Golf Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Elmhurst Road			CTH DR - Golf Road			Elmhurst Road			CTH DR - Golf Road				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	1	1	0	0	0	1	3
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:30 PM	0	0	0	1	1	0	0	0	0	1	1	2	2	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	1	1	0	1	1	0	1	1	3	3

Special Pedestrians

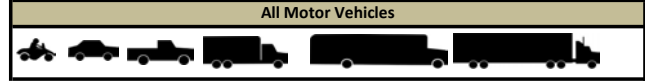
Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Thursday, February 9, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

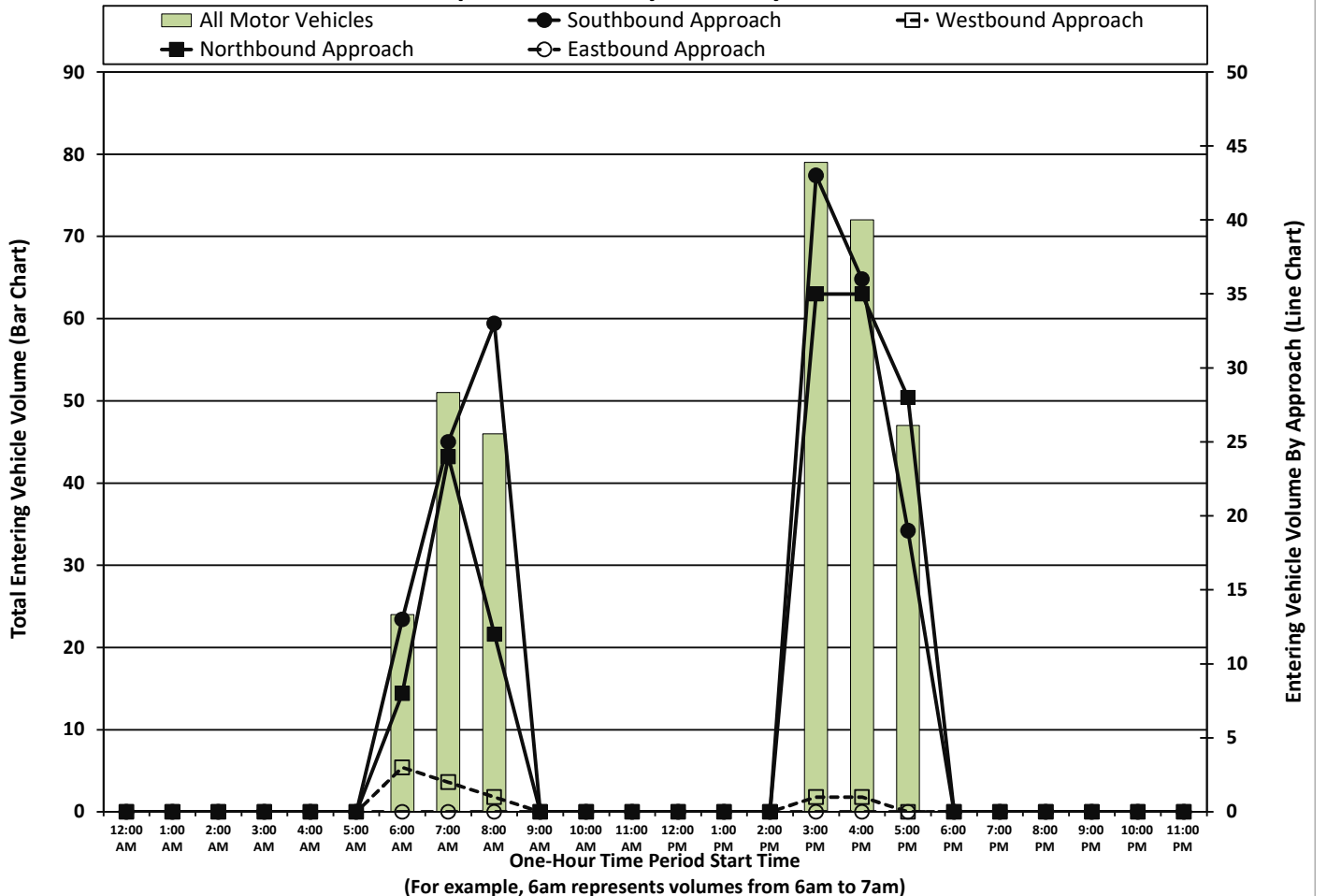
Elmhurst Road & Golf Ridge North Road



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Elmhurst Road					From East Golf Ridge North Road					From South Elmhurst Road					From West					Total Vehicle Volume	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
	Start Time																							
Pre-AM	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00 AM	0	13	0	0	13	0	0	3	0	3	0	8	0	0	8	0	0	0	0	0	24	3	21
	7:00 AM	0	25	0	0	25	0	0	2	0	2	1	23	0	0	24	0	0	0	0	0	51	2	49
	8:00 AM	0	33	0	0	33	1	0	0	0	1	0	12	0	0	12	0	0	0	0	0	46	1	45
MD	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	42	1	0	43	0	0	1	0	1	1	34	0	0	35	0	0	0	0	0	79	1	78
	4:00 PM	0	35	1	0	36	1	0	0	0	1	2	33	0	0	35	0	0	0	0	0	72	1	71
	5:00 PM	0	17	2	0	19	0	0	0	0	0	3	25	0	0	28	0	0	0	0	0	47	0	47
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals		0	165	4	0	169	2	0	6	0	8	7	135	0	0	142	0	0	0	0	0	319	8

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics	Thursday, February 9, 2023		Page 11 of 13
Start Date:	Thursday, February 9, 2023	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Elmhurst Road & Golf Ridge North Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Elmhurst Road			Golf Ridge North Road			Elmhurst Road			Elmhurst Road				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2		Page 1 of 13	
Start Date:	Thursday, February 9, 2023	Weekday		Schools in Session	
Total Number of Hours Counted:	6	Non-Holiday		No Special Events	

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: Elmhurst Road
Minor St: Golf Ridge South Road
Intersection of: Elmhurst Road & Golf Ridge South Road

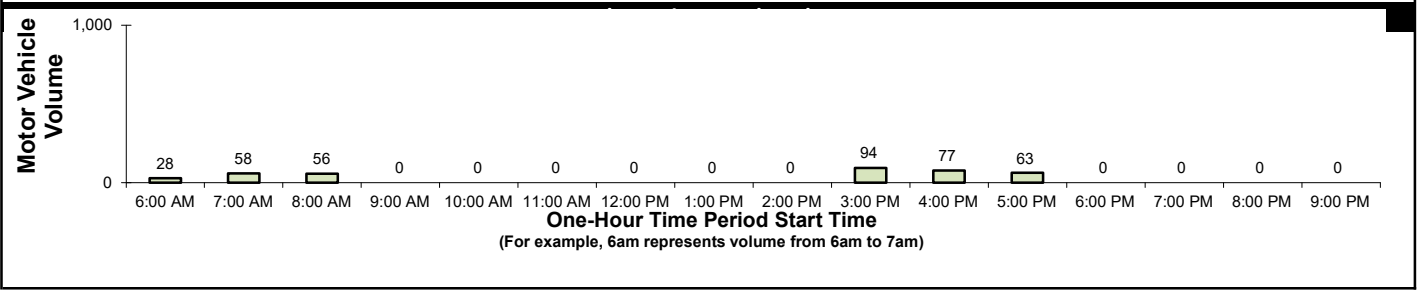
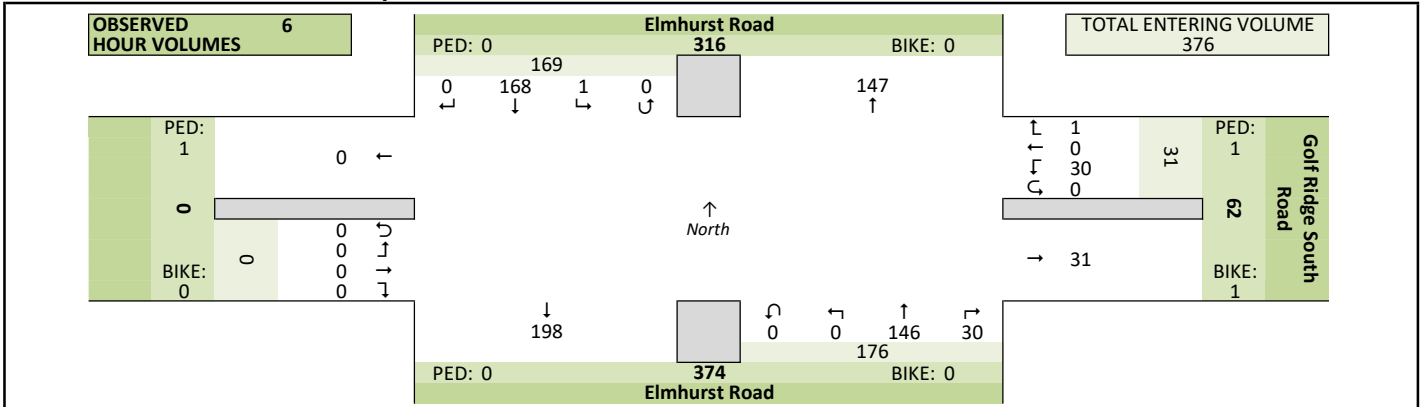
Site Information

Municipality	City of Pewaukee		
County	67 - Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction ↑		
North Leg	Elmhurst Road		
East Leg	Golf Ridge South Road		
South Leg	Elmhurst Road		
West Leg			
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)		None	None

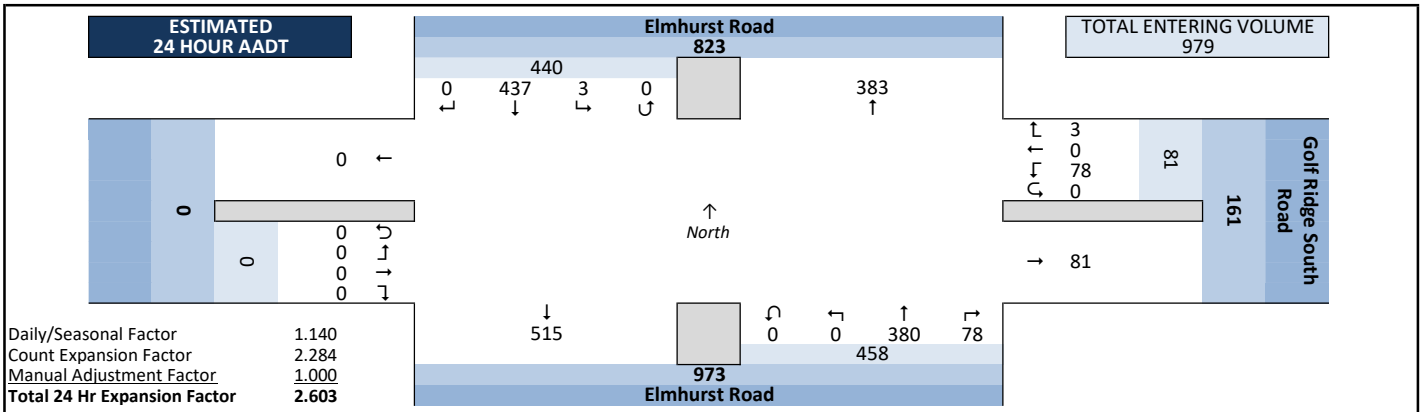
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM		
1st Day of Count	Thursday, February 9, 2023		Weather
AM Peak Period	Thursday, February 9, 2023		Clear & Dry
Midday Peak Period	Thursday, February 9, 2023		Clear & Dry
PM Peak Period	Monday, February 13, 2023		Clear & Dry
Calculated Peak Hours			
	AM	6:45-7:45am MD	PM 3:00-4:00pm
Peak Hours Selected for Analysis			
	AM	7:45-8:45am MD	PM 4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.140	Count Expansion Factor	2.284
Company Name	TADI, Inc.		Manual Adj. 1.000
Observers	AM Peak Period	Wendy Picard	
	Midday Peak Period	None	
	PM Peak Period	Wendy Picard	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 6 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

Count Basics	Thursday, February 9, 2023	Weekday	Page 11 of 13
Start Date:	Thursday, February 9, 2023	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Elmhurst Road & Golf Ridge South Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Elmhurst Road			Golf Ridge South Road			Elmhurst Road			West Approach				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	1	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:45 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	2
4:00 PM	0	0	0	0	1	1	0	0	0	0	0	0	1	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	1	1	2	0	0	0	1	0	1	3	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics	Start Date: Thursday, February 9, 2023		Page 12 of 13	
	Total Number of Hours Counted: 6		Weekday	
			Schools in Session	
			Non-Holiday	
			No Special Events	

15-Minute Adult & Children Count (Manual Entry)

Elmhurst Road & Golf Ridge South Road



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Elmhurst Road			Golf Ridge South Road			Elmhurst Road			West Approach				
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	1	0	1	1	1	2	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	1	0	1	0	0	0	1	0	1	2	

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Thursday, February 9, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: Elmhurst Road
 Minor St: Oakton Road
 Intersection of: Elmhurst Road & Oakton Road

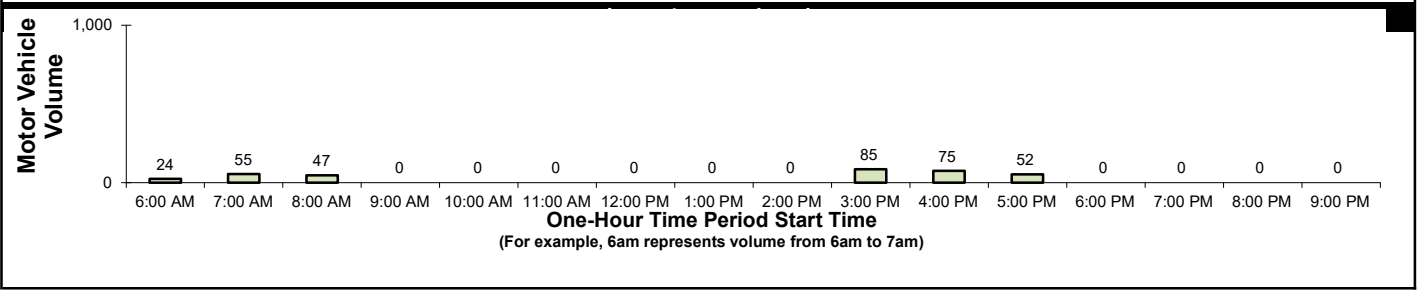
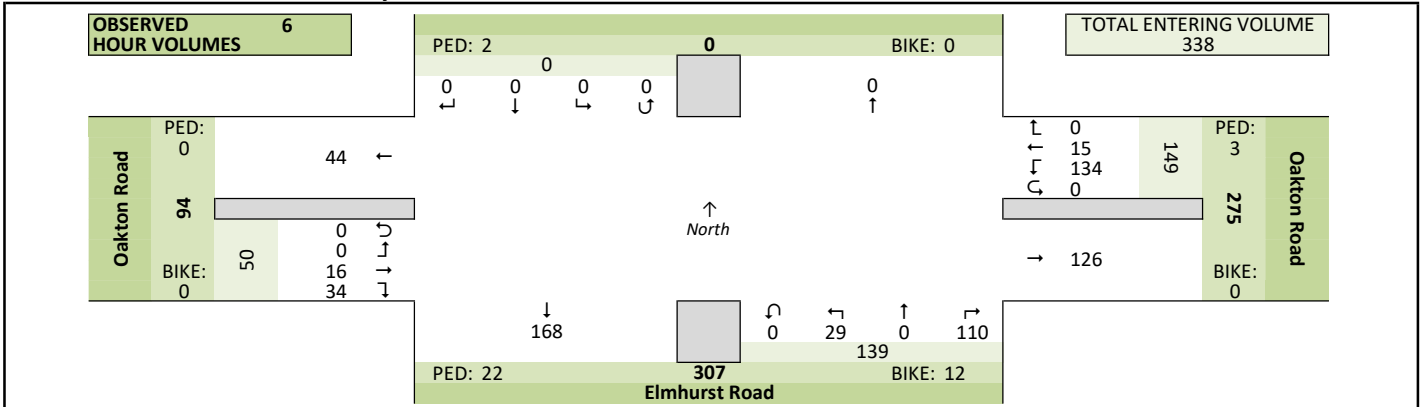
Site Information

Municipality	City of Pewaukee		
County	67 - Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg			
East Leg	Oakton Road		
South Leg	Elmhurst Road		
West Leg	Oakton Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

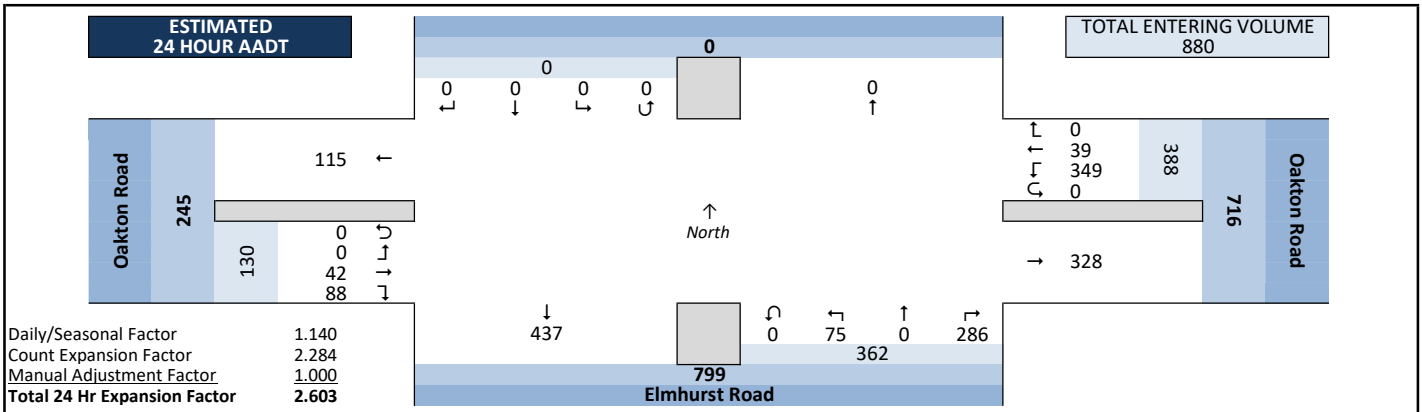
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM		
1st Day of Count	Thursday, February 9, 2023	Weather	
AM Peak Period	Thursday, February 9, 2023	Clear & Dry	
Midday Peak Period	Thursday, February 9, 2023	Clear & Dry	
PM Peak Period	Monday, February 13, 2023	Clear & Dry	
Calculated Peak Hours			
	AM 6:45-7:45am	MD	PM 3:00-4:00pm
Peak Hours Selected for Analysis			
	AM 7:45-8:45am	MD	PM 4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.140	Count Expansion Factor	2.284
Company Name	TADI, Inc.	Manual Adj.	1.000
Observers	AM Peak Period	Amy Scheuerlein	
	Midday Peak Period	None	
	PM Peak Period	Amy Scheuerlein	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 6 Hour Volume Summary



Estimated 24 Hour AADT

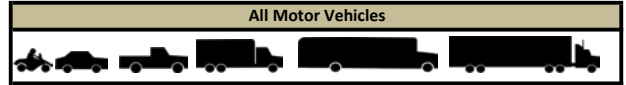


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Thursday, February 9, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

Peak Hour Volume Summary

Elmhurst Road & Oakton Road



Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, February 9, 2023		From North					From East					From South					From West					Totals
AM Peak Hour		Oakton Road					Oakton Road					Elmhurst Road					Oakton Road					
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
7:45 AM		0	0	0	0	0	0	0	3	0	3	5	0	1	0	6	0	0	0	0	0	9
8:00 AM		0	0	0	0	0	0	0	7	0	7	2	0	1	0	3	0	0	0	0	0	10
8:15 AM		0	0	0	0	0	0	0	8	0	8	1	0	1	0	2	1	0	0	0	0	11
8:30 AM		0	0	0	0	0	0	0	5	0	5	6	0	0	0	6	1	0	0	0	0	12
Peak Hour Volume		0	0	0	0	0	0	0	23	0	23	14	0	3	0	17	2	0	0	0	0	2
Rounded Hourly Volume		0	0	0	0	0	0	0	25	0	25	15	0	5	0	20	0	0	0	0	0	45
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	2.4
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	2.4
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.72	0.58	0.00	0.75	0.00	0.71	0.50	0.00	0.00	0.00	0.50	0.87

N/A		From North					From East					From South					From West					Totals
MD Peak Hour		Oakton Road					Oakton Road					Elmhurst Road					Oakton Road					
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
12:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rounded Hourly Volume		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monday, February 13, 2023		From North					From East					From South					From West					Totals
PM Peak Hour		Oakton Road					Oakton Road					Elmhurst Road					Oakton Road					
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
4:30 PM		0	0	0	0	0	0	1	9	0	10	12	0	3	0	15	2	1	0	0	3	28
4:45 PM		0	0	0	0	0	0	1	5	0	6	5	0	0	0	5	2	2	0	0	4	15
5:00 PM		0	0	0	0	0	0	0	6	0	6	4	0	2	0	6	1	0	0	0	1	13
5:15 PM		0	0	0	0	0	0	2	4	0	6	8	0	0	0	8	0	0	0	0	0	14
Peak Hour Volume		0	0	0	0	0	0	4	24	0	28	29	0	5	0	34	5	3	0	0	8	70
Rounded Hourly Volume		0	0	0	0	0	0	5	25	0	30	30	0	5	0	35	5	5	0	0	10	75
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	1.4
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	1.4
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.67	0.00	0.70	0.60	0.00	0.42	0.00	0.57	0.62	0.37	0.00	0.00	0.50	0.62

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Oakton Road			Oakton Road			Elmhurst Road			Oakton Road			
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
7:45 AM	AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	MD	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	PM	0	0	0	0	0	0	3	0	3	0	0	0	3
4:45 PM		0	0	0	0	0	0	5	0	5	0	0	0	5
5:00 PM		0	0	0	1	0	1	2	8	10	0	0	0	11
5:15 PM		0	0	0	0	0	0	2	0	2	0	0	0	2
Total		0	0	0	1	0	1	12	8	20	0	0	0	21

Intersection Traffic Volume Report

Count Basics	Start Date: Thursday, February 9, 2023	Weekday	Schools in Session	Page 11 of 13
	Total Number of Hours Counted: 6	Non-Holiday	No Special Events	

15-Minute Pedestrian and Bicyclist Data

Elmhurst Road & Oakton Road



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Oakton Road			Elmhurst Road			Oakton Road			15-Min Totals				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total					
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:00 AM	0	0	0	0	0	0	2	2	0	0	0	2	2	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	2	0	2	1	0	1	4	1	5	0	0	8	13	
3:15 PM	0	0	0	0	0	0	2	2	4	0	0	4	6	
3:30 PM	0	0	0	0	0	0	1	0	1	0	0	1	4	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	6	
4:00 PM	0	0	0	0	0	0	1	0	1	0	0	1	11	
4:15 PM	0	0	0	1	0	1	0	1	0	0	0	2	21	
4:30 PM	0	0	0	0	0	0	3	0	3	0	0	3	21	
4:45 PM	0	0	0	0	0	0	5	0	5	0	0	5	18	
5:00 PM	0	0	0	1	0	1	2	8	10	0	0	11	13	
5:15 PM	0	0	0	0	0	0	2	0	2	0	0	2		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	2	0	2	3	0	3	22	12	34	0	0	0	39	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelcha)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basis	Thursday, February 9, 2023		Weekday	Schools in Session
	Total Number of Hours Counted: 6		Non-Holiday	No Special Events

15-Minute Adult & Children Count (Manual Entry)

Elmhurst Road & Oakton Road



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Oakton Road			Elmhurst Road			Oakton Road			Oakton Road				
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	2	2	0	0	0	0	0	2	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	9
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3:00 PM	2	2	4	1	4	5	4	0	0	0	7	7	10	10
3:15 PM	0	0	0	0	2	2	2	0	0	0	2	4	10	4
3:30 PM	0	0	0	0	1	1	1	0	0	0	1	3	10	3
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:00 PM	0	0	0	0	1	1	1	0	0	0	1	10	10	1
4:15 PM	0	0	0	1	1	2	0	0	0	0	1	12	12	1
4:30 PM	0	0	0	0	3	3	3	0	0	0	3	13	13	3
4:45 PM	0	0	0	0	5	5	5	0	0	0	5	10	10	5
5:00 PM	0	0	0	1	2	3	2	0	0	0	3	5	5	3
5:15 PM	0	0	0	0	2	2	2	0	0	0	2	2	2	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	0	2	3	0	3	22	0	22	0	0	0	27	

Intersection Traffic Volume Report

Count Basics		Page 13 of 13	
Start Date:	Thursday, February 9, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	6	Non-Holiday	No Special Events

15-Minute Bicycle Turning Movement Count (Manual Entry)

Elmhurst Road & Oakton Road



15-Minute Bicycle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum
	Oakton Road					Oakton Road					Elmhurst Road					Oakton Road						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
12:00 AM					0					0					0					0	0	
12:15 AM					0					0					0					0	0	
12:30 AM					0					0					0					0	0	
12:45 AM					0					0					0					0	0	
1:00 AM					0					0					0					0	0	
1:15 AM					0					0					0					0	0	
1:30 AM					0					0					0					0	0	
1:45 AM					0					0					0					0	0	
2:00 AM					0					0					0					0	0	
2:15 AM					0					0					0					0	0	
2:30 AM					0					0					0					0	0	
2:45 AM					0					0					0					0	0	
3:00 AM					0					0					0					0	0	
3:15 AM					0					0					0					0	0	
3:30 AM					0					0					0					0	0	
3:45 AM					0					0					0					0	0	
4:00 AM					0					0					0					0	0	
4:15 AM					0					0					0					0	0	
4:30 AM					0					0					0					0	0	
4:45 AM					0					0					0					0	0	
5:00 AM					0					0					0					0	0	
5:15 AM					0					0					0					0	0	
5:30 AM					0					0					0					0	0	
5:45 AM					0					0					0					0	0	
6:00 AM					0					0					0					0	0	
6:15 AM					0					0					0					0	0	
6:30 AM					0					0					0					0	0	
6:45 AM					0					0					0					0	0	
7:00 AM					0					0					0					0	0	
7:15 AM					0					0					0					0	0	
7:30 AM					0					0					0					0	0	
7:45 AM					0					0					0					0	0	
8:00 AM					0					0					0					0	0	
8:15 AM					0					0					0					0	0	
8:30 AM					0					0					0					0	0	
8:45 AM					0					0					0					0	0	
9:00 AM					0					0					0					0	0	
9:15 AM					0					0					0					0	0	
9:30 AM					0					0					0					0	0	
9:45 AM					0					0					0					0	0	
10:00 AM					0					0					0					0	0	
10:15 AM					0					0					0					0	0	
10:30 AM					0					0					0					0	0	
10:45 AM					0					0					0					0	0	
11:00 AM					0					0					0					0	0	
11:15 AM					0					0					0					0	0	
11:30 AM					0					0					0					0	0	
11:45 AM					0					0					0					0	0	
12:00 PM					0					0					0					0	0	
12:15 PM					0					0					0					0	0	
12:30 PM					0					0					0					0	0	
12:45 PM					0					0					0					0	0	
1:00 PM					0					0					0					0	0	
1:15 PM					0					0					0					0	0	
1:30 PM					0					0					0					0	0	
1:45 PM					0					0					0					0	0	
2:00 PM					0					0					0					0	0	
2:15 PM					0					0					0					0	0	
2:30 PM					0					0					0					0	0	
2:45 PM					0					0					0					0	0	
3:00 PM					0					0					0					0	0	
3:15 PM					0					0					0					0	0	
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4:30 PM					0					0					0					0	0	
4:45 PM					0					0					0					0	0	
5:00 PM					0					0					0					0	0	
5:15 PM					0					0					0					0	0	
5:30 PM					0					0					0					0	0	
5:45 PM					0					0					0					0	0	
6:00 PM					0					0					0					0	0	
6:15 PM					0					0					0					0	0	
6:30 PM					0					0					0					0	0	
6:45 PM					0					0					0					0	0	
7:00 PM					0					0					0					0	0	
7:15 PM					0					0					0					0	0	
7:30 PM					0					0					0					0	0	
7:45 PM					0					0					0					0	0	
8:00 PM					0					0					0					0	0	
8:15 PM					0					0					0					0	0	
8:30 PM					0					0					0					0	0	
8:45 PM					0					0					0					0	0	
9:00 PM					0					0					0					0	0	
9:15 PM					0					0					0					0	0	
9:30 PM					0					0					0					0	0	
9:45 PM					0					0					0					0	0	
10:00 PM					0					0					0					0	0	
10:15 PM					0					0					0					0	0	
10:30 PM					0					0					0					0	0	
10:45 PM					0					0					0					0	0	
11:00 PM					0					0					0					0	0	
11:15 PM					0					0					0					0	0	
11:30 PM					0					0					0					0	0	
11:45 PM					0					0					0					0	0	
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Peak Hour Bicycle Turning Movement Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B

Peak Hour Analysis Outputs

Existing Traffic

Full Build Traffic

Full Build Traffic – with modifications (Not Applicable)

Lanes, Volumes, Timings
100: Golf Road & Glen Cove Rd

AM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↔		↙	↘
Traffic Volume (vph)	10	145	140	15	30	25
Future Volume (vph)	10	145	140	15	30	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.939	
Flt Protected		0.997			0.973	
Satd. Flow (prot)	0	1839	1769	0	1653	0
Flt Permitted		0.997			0.973	
Satd. Flow (perm)	0	1839	1769	0	1653	0
Link Speed (mph)		50	50		35	
Link Distance (ft)		518	1379		355	
Travel Time (s)		7.1	18.8		6.9	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	3%	3%	6%	6%	5%	5%
Adj. Flow (vph)	13	188	182	19	39	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	201	201	0	71	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	145	140	15	30	25
Future Vol, veh/h	10	145	140	15	30	25
Conflicting Peds, #/hr	1	0	0	1	1	1
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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	6	6	5	5
Mvmt Flow	13	188	182	19	39	32

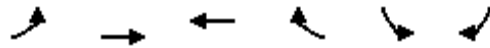
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	202	0	-	0	408 194
Stage 1	-	-	-	-	193 -
Stage 2	-	-	-	-	215 -
Critical Hdwy	4.13	-	-	-	6.45 6.25
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	2.227	-	-	-	3.545 3.345
Pot Cap-1 Maneuver	1364	-	-	-	594 840
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	814 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1363	-	-	-	586 838
Mov Cap-2 Maneuver	-	-	-	-	586 -
Stage 1	-	-	-	-	823 -
Stage 2	-	-	-	-	813 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1363	-	-	-	679
HCM Lane V/C Ratio	0.01	-	-	-	0.105
HCM Control Delay (s)	7.7	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lanes, Volumes, Timings
200: Golf Road & Prop West D/W

AM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	175	155	0	0	0
Future Volume (vph)	0	175	155	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1845	1792	0	1881	0
Flt Permitted						
Satd. Flow (perm)	0	1845	1792	0	1881	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1379	1075		611	
Travel Time (s)		18.8	14.7		16.7	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	3%	3%	6%	6%	1%	1%
Adj. Flow (vph)	0	227	201	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	227	201	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	175	155	0	0	0
Future Vol, veh/h	0	175	155	0	0	0
Conflicting Peds, #/hr	1	0	0	1	1	1
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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	6	6	1	1
Mvmt Flow	0	227	201	0	0	0

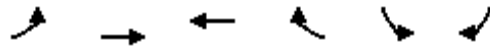
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	202	0	-	0	430 203
Stage 1	-	-	-	-	202 -
Stage 2	-	-	-	-	228 -
Critical Hdwy	4.13	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.227	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1364	-	-	-	584 840
Stage 1	-	-	-	-	834 -
Stage 2	-	-	-	-	812 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1363	-	-	-	583 838
Mov Cap-2 Maneuver	-	-	-	-	583 -
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	811 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1363	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings
300: Golf Road & Prop East D/W

AM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	175	155	0	0	0
Future Volume (vph)	0	175	155	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1845	1792	0	1881	0
Flt Permitted						
Satd. Flow (perm)	0	1845	1792	0	1881	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1075	1238		587	
Travel Time (s)		14.7	16.9		16.0	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	3%	3%	6%	6%	1%	1%
Adj. Flow (vph)	0	227	201	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	227	201	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	175	155	0	0	0
Future Vol, veh/h	0	175	155	0	0	0
Conflicting Peds, #/hr	1	0	0	1	1	1
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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	6	6	1	1
Mvmt Flow	0	227	201	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	202	0	-	0	430 203
Stage 1	-	-	-	-	202 -
Stage 2	-	-	-	-	228 -
Critical Hdwy	4.13	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.227	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1364	-	-	-	584 840
Stage 1	-	-	-	-	834 -
Stage 2	-	-	-	-	812 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1363	-	-	-	583 838
Mov Cap-2 Maneuver	-	-	-	-	583 -
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	811 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1363	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings
400: Elmhurst Road & Golf Road

AM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	15	130	30	15	90	5	50	5	20	10	15	15
Future Volume (vph)	15	130	30	15	90	5	50	5	20	10	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.977			0.994			0.964			0.950	
Flt Protected		0.996			0.993			0.968			0.987	
Satd. Flow (prot)	0	1795	0	0	1736	0	0	1755	0	0	1730	0
Flt Permitted		0.996			0.993			0.968			0.987	
Satd. Flow (perm)	0	1795	0	0	1736	0	0	1755	0	0	1730	0
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		1238			631			570			807	
Travel Time (s)		16.9			8.6			11.1			15.7	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	3%	3%	3%	8%	8%	8%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	19	163	38	19	113	6	63	6	25	13	19	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	220	0	0	138	0	0	94	0	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	130	30	15	90	5	50	5	20	10	15	15
Future Vol, veh/h	15	130	30	15	90	5	50	5	20	10	15	15
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	3	3	3	8	8	8	1	1	1	3	3	3
Mvmt Flow	19	163	38	19	113	6	63	6	25	13	19	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	8.6	8.5	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	67%	9%	14%	25%
Vol Thru, %	7%	74%	82%	38%
Vol Right, %	27%	17%	5%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	175	110	40
LT Vol	50	15	15	10
Through Vol	5	130	90	15
RT Vol	20	30	5	15
Lane Flow Rate	94	219	138	50
Geometry Grp	1	1	1	1
Degree of Util (X)	0.124	0.265	0.176	0.065
Departure Headway (Hd)	4.761	4.369	4.62	4.705
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	753	823	777	760
Service Time	2.792	2.392	2.646	2.74
HCM Lane V/C Ratio	0.125	0.266	0.178	0.066
HCM Control Delay	8.5	9	8.6	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	1.1	0.6	0.2

Lanes, Volumes, Timings
500: Glen Cove Rd & Brookstone Cir N/Prop Northwest D/W

AM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	0	5	0	0	0	1	20	0	0	45	1
Future Volume (vph)	1	0	5	0	0	0	1	20	0	0	45	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.884								0.998			
Flt Protected	0.993								0.998			
Satd. Flow (prot)	0	1651	0	0	1881	0	0	1806	0	0	1806	0
Flt Permitted	0.993								0.998			
Satd. Flow (perm)	0	1651	0	0	1881	0	0	1806	0	0	1806	0
Link Speed (mph)	25				25			35		35		
Link Distance (ft)	690				726			450		582		
Travel Time (s)	18.8				19.8			8.8		11.3		
Confl. Peds. (#/hr)	1			1	1			1	1	1	1	1
Confl. Bikes (#/hr)			1				1			1		
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	1	0	6	0	0	0	1	26	0	0	58	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	0	0	0	27	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0					0		0		0		
Link Offset(ft)	0					0		0		0		
Crosswalk Width(ft)	16					16		16		16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		15	9		15	9		15	9	
Sign Control	Stop			Stop			Free			Free		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	5	0	0	0	1	20	0	0	45	1
Future Vol, veh/h	1	0	5	0	0	0	1	20	0	0	45	1
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	1	1	1	1	1	1	5	5	5	5	5	5
Mvmt Flow	1	0	6	0	0	0	1	26	0	0	58	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	89	89	61	92	89	28	60	0	0	27	0	0
Stage 1	60	60	-	29	29	-	-	-	-	-	-	-
Stage 2	29	29	-	63	60	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	898	803	1007	894	803	1050	1525	-	-	1568	-	-
Stage 1	954	847	-	991	873	-	-	-	-	-	-	-
Stage 2	991	873	-	950	847	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	895	801	1005	886	801	1048	1524	-	-	1567	-	-
Mov Cap-2 Maneuver	895	801	-	886	801	-	-	-	-	-	-	-
Stage 1	952	846	-	989	871	-	-	-	-	-	-	-
Stage 2	989	871	-	943	846	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.7		0		0.4		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	985	-	1567	-
HCM Lane V/C Ratio	0.001	-	-	0.008	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

Lanes, Volumes, Timings
600: Glen Cove Rd & Brookstone Cir S

AM Peak
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	5	20	50	1
Future Volume (vph)	1	5	5	20	50	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.884			0.998		
Flt Protected	0.993			0.991		
Satd. Flow (prot)	1463	0	0	1793	1806	0
Flt Permitted	0.993			0.991		
Satd. Flow (perm)	1463	0	0	1793	1806	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	709			355	450	
Travel Time (s)	19.3			6.9	8.8	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	14%	14%	5%	5%	5%	5%
Adj. Flow (vph)	1	6	6	26	65	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	32	66	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	15.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	5	20	50	1
Future Vol, veh/h	1	5	5	20	50	1
Conflicting Peds, #/hr	1	1	1	0	0	1
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	77	77	77	77	77	77
Heavy Vehicles, %	14	14	5	5	5	5
Mvmt Flow	1	6	6	26	65	1

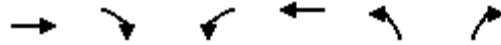
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	106	68	67	0	0
Stage 1	67	-	-	-	-
Stage 2	39	-	-	-	-
Critical Hdwy	6.54	6.34	4.15	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-
Follow-up Hdwy	3.626	3.426	2.245	-	-
Pot Cap-1 Maneuver	863	963	1516	-	-
Stage 1	926	-	-	-	-
Stage 2	953	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	858	961	1515	-	-
Mov Cap-2 Maneuver	858	-	-	-	-
Stage 1	921	-	-	-	-
Stage 2	952	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1515	-	942	-	-
HCM Lane V/C Ratio	0.004	-	0.008	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings
700: Elmhurst Road & Oakton Road

AM Peak
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1	5	30	1	5	15
Future Volume (vph)	1	5	30	1	5	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.884				0.900	
Flt Protected				0.954	0.987	
Satd. Flow (prot)	1663	0	0	1795	1592	0
Flt Permitted				0.954	0.987	
Satd. Flow (perm)	1663	0	0	1795	1592	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	540			604	478	
Travel Time (s)	14.7			11.8	9.3	
Confl. Peds. (#/hr)		1	1		1	1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	1%	6%	6%
Adj. Flow (vph)	1	6	34	1	6	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	35	23	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	5	30	1	5	15
Future Vol, veh/h	1	5	30	1	5	15
Conflicting Peds, #/hr	0	1	1	0	1	1
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	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	6	6
Mvmt Flow	1	6	34	1	6	17

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	8	0	75 6
Stage 1	-	-	-	-	5 -
Stage 2	-	-	-	-	70 -
Critical Hdwy	-	-	4.11	-	6.46 6.26
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	-	-	2.209	-	3.554 3.354
Pot Cap-1 Maneuver	-	-	1619	-	919 1065
Stage 1	-	-	-	-	1008 -
Stage 2	-	-	-	-	943 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1617	-	898 1063
Mov Cap-2 Maneuver	-	-	-	-	898 -
Stage 1	-	-	-	-	1007 -
Stage 2	-	-	-	-	922 -

Approach	EB	WB	NB
HCM Control Delay, s	0	7	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1016	-	-	1617	-
HCM Lane V/C Ratio	0.023	-	-	0.021	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lanes, Volumes, Timings
800: Elmhurst Road & Golf Ridge N

AM Peak
02/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	20	1	1	35
Future Volume (vph)	1	1	20	1	1	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932		0.994			
Flt Protected	0.976					0.999
Satd. Flow (prot)	1711	0	1782	0	0	1879
Flt Permitted	0.976					0.999
Satd. Flow (perm)	1711	0	1782	0	0	1879
Link Speed (mph)	25		35			35
Link Distance (ft)	484		690			478
Travel Time (s)	13.2		13.4			9.3
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	6%	6%	1%	1%
Adj. Flow (vph)	1	1	22	1	1	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	23	0	0	40
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.0%		ICU Level of Service A			
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	1	1	20	1	1	35
Future Vol, veh/h	1	1	20	1	1	35
Conflicting Peds, #/hr	1	1	0	1	1	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	90	90	90	90	90	90
Heavy Vehicles, %	1	1	6	6	1	1
Mvmt Flow	1	1	22	1	1	39

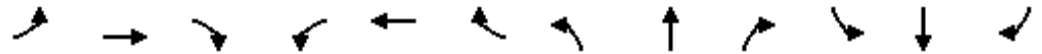
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	66	25	0	0	24
Stage 1	24	-	-	-	-
Stage 2	42	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11
Critical Hdwy Stg 1	5.41	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209
Pot Cap-1 Maneuver	942	1054	-	-	1597
Stage 1	1001	-	-	-	-
Stage 2	983	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	939	1052	-	-	1595
Mov Cap-2 Maneuver	939	-	-	-	-
Stage 1	1000	-	-	-	-
Stage 2	981	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	992	1595
HCM Lane V/C Ratio	-	-	0.002	0.001
HCM Control Delay (s)	-	-	8.6	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Lanes, Volumes, Timings
 900: Elmhurst Road & Prop Northeast D/W/Golf Ridge S

AM Peak
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↕			↕			↕			↕			
Traffic Volume (vph)	0	0	0	5	0	1	0	20	5	1	35	0		
Future Volume (vph)	0	0	0	5	0	1	0	20	5	1	35	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor														
Frt					0.981					0.972				
Flt Protected					0.959						0.999			
Satd. Flow (prot)	0	1881	0	0	1770	0	0	1679	0	0	1879	0		
Flt Permitted					0.959						0.999			
Satd. Flow (perm)	0	1881	0	0	1770	0	0	1679	0	0	1879	0		
Link Speed (mph)					25					35				
Link Distance (ft)					685					577				
Travel Time (s)					18.7					15.7				
Confl. Peds. (#/hr)	1			1	1			1	1			1		
Confl. Bikes (#/hr)			1				1				1	1		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	10%	10%	10%	1%	1%	1%		
Adj. Flow (vph)	0	0	0	6	0	1	0	23	6	1	40	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	7	0	0	29	0	0	41	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right		
Median Width(ft)	0			0				0			0			
Link Offset(ft)	0			0				0			0			
Crosswalk Width(ft)	16			16				16			16			
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9		15	9			15	9	15	9			
Sign Control	Stop			Stop				Free			Free			
Intersection Summary														
Area Type:	Other													
Control Type:	Unsignalized													
Intersection Capacity Utilization	14.0%						ICU Level of Service A							
Analysis Period (min)	15													

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	5	0	1	0	20	5	1	35	0
Future Vol, veh/h	0	0	0	5	0	1	0	20	5	1	35	0
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1	10	10	10	1	1	1
Mvmt Flow	0	0	0	6	0	1	0	23	6	1	40	0

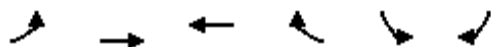
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	71	73	42	70	70	28	41	0	0	30	0	0
Stage 1	43	43	-	27	27	-	-	-	-	-	-	-
Stage 2	28	30	-	43	43	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.2	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.29	-	-	2.209	-	-
Pot Cap-1 Maneuver	923	819	1032	924	822	1050	1518	-	-	1589	-	-
Stage 1	974	861	-	993	875	-	-	-	-	-	-	-
Stage 2	992	872	-	974	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	919	817	1030	921	820	1048	1517	-	-	1587	-	-
Mov Cap-2 Maneuver	919	817	-	921	820	-	-	-	-	-	-	-
Stage 1	973	859	-	992	874	-	-	-	-	-	-	-
Stage 2	990	871	-	972	859	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.9	0	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1517	-	-	-	940	1587	-
HCM Lane V/C Ratio	-	-	-	-	0.007	0.001	-
HCM Control Delay (s)	0	-	-	0	8.9	7.3	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-

Lanes, Volumes, Timings
100: Golf Road & Glen Cove Rd

PM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	220	245	25	15	25
Future Volume (vph)	25	220	245	25	15	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.915	
Flt Protected		0.995			0.982	
Satd. Flow (prot)	0	1872	1857	0	1690	0
Flt Permitted		0.995			0.982	
Satd. Flow (perm)	0	1872	1857	0	1690	0
Link Speed (mph)		50	50		35	
Link Distance (ft)		518	1379		355	
Travel Time (s)		7.1	18.8		6.9	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	27	237	263	27	16	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	264	290	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	25	220	245	25	15	25
Future Vol, veh/h	25	220	245	25	15	25
Conflicting Peds, #/hr	1	0	0	1	1	1
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	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	27	237	263	27	16	27

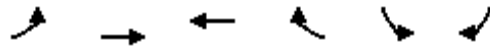
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	291	0	-	0	570 279
Stage 1	-	-	-	-	278 -
Stage 2	-	-	-	-	292 -
Critical Hdwy	4.11	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.209	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1276	-	-	-	485 762
Stage 1	-	-	-	-	771 -
Stage 2	-	-	-	-	760 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1275	-	-	-	472 761
Mov Cap-2 Maneuver	-	-	-	-	472 -
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	759 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1275	-	-	-	619
HCM Lane V/C Ratio	0.021	-	-	-	0.069
HCM Control Delay (s)	7.9	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Lanes, Volumes, Timings
200: Golf Road & Prop West D/W

PM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	235	270	0	0	0
Future Volume (vph)	0	235	270	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1881	1881	0	1881	0
Flt Permitted						
Satd. Flow (perm)	0	1881	1881	0	1881	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1379	1075		611	
Travel Time (s)		18.8	14.7		16.7	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	253	290	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	253	290	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	235	270	0	0	0
Future Vol, veh/h	0	235	270	0	0	0
Conflicting Peds, #/hr	1	0	0	1	1	1
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	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	0	253	290	0	0	0

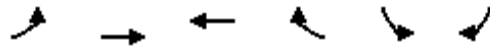
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	291	0	0	545	292
Stage 1	-	-	-	291	-
Stage 2	-	-	-	254	-
Critical Hdwy	4.11	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	3.509	3.309
Pot Cap-1 Maneuver	1276	-	-	501	750
Stage 1	-	-	-	761	-
Stage 2	-	-	-	791	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	500	749
Mov Cap-2 Maneuver	-	-	-	500	-
Stage 1	-	-	-	760	-
Stage 2	-	-	-	790	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1275	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings
300: Golf Road & Prop East D/W

PM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	235	270	0	0	0
Future Volume (vph)	0	235	270	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1881	1881	0	1881	0
Flt Permitted						
Satd. Flow (perm)	0	1881	1881	0	1881	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1075	1238		587	
Travel Time (s)		14.7	16.9		16.0	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	0	253	290	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	253	290	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.5%		ICU Level of Service A			
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	235	270	0	0	0
Future Vol, veh/h	0	235	270	0	0	0
Conflicting Peds, #/hr	1	0	0	1	1	1
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	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	0	253	290	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	291	0	0	545	292
Stage 1	-	-	-	291	-
Stage 2	-	-	-	254	-
Critical Hdwy	4.11	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	3.509	3.309
Pot Cap-1 Maneuver	1276	-	-	501	750
Stage 1	-	-	-	761	-
Stage 2	-	-	-	791	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1275	-	-	500	749
Mov Cap-2 Maneuver	-	-	-	500	-
Stage 1	-	-	-	760	-
Stage 2	-	-	-	790	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1275	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Lanes, Volumes, Timings
400: Elmhurst Road & Golf Road

PM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	30	145	60	20	200	5	50	15	15	5	10	20
Future Volume (vph)	30	145	60	20	200	5	50	15	15	5	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.965			0.997			0.974			0.921	
Flt Protected		0.994			0.996			0.970			0.993	
Satd. Flow (prot)	0	1804	0	0	1868	0	0	1777	0	0	1594	0
Flt Permitted		0.994			0.996			0.970			0.993	
Satd. Flow (perm)	0	1804	0	0	1868	0	0	1777	0	0	1594	0
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		1238			631			570			807	
Travel Time (s)		16.9			8.6			11.1			15.7	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%	9%	9%
Adj. Flow (vph)	31	151	63	21	208	5	52	16	16	5	10	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	245	0	0	234	0	0	84	0	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

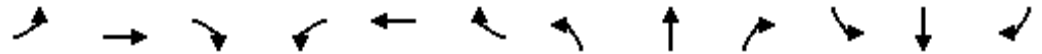
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	145	60	20	200	5	50	15	15	5	10	20
Future Vol, veh/h	30	145	60	20	200	5	50	15	15	5	10	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	9	9	9
Mvmt Flow	31	151	63	21	208	5	52	16	16	5	10	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.2	9.4	8.8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	62%	13%	9%	14%
Vol Thru, %	19%	62%	89%	29%
Vol Right, %	19%	26%	2%	57%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	235	225	35
LT Vol	50	30	20	5
Through Vol	15	145	200	10
RT Vol	15	60	5	20
Lane Flow Rate	83	245	234	36
Geometry Grp	1	1	1	1
Degree of Util (X)	0.117	0.296	0.292	0.05
Departure Headway (Hd)	5.036	4.347	4.483	4.916
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	825	802	725
Service Time	3.081	2.378	2.514	2.967
HCM Lane V/C Ratio	0.117	0.297	0.292	0.05
HCM Control Delay	8.8	9.2	9.4	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	1.2	1.2	0.2

Lanes, Volumes, Timings
500: Glen Cove Rd & Brookstone Cir N/Prop Northwest D/W

PM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	0	5	0	0	0	5	35	0	0	30	1
Future Volume (vph)	1	0	5	0	0	0	5	35	0	0	30	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt	0.887								0.996			
Flt Protected	0.992								0.994			
Satd. Flow (prot)	0	1655	0	0	1881	0	0	1870	0	0	1874	0
Flt Permitted	0.992								0.994			
Satd. Flow (perm)	0	1655	0	0	1881	0	0	1870	0	0	1874	0
Link Speed (mph)	25				25			35		35		
Link Distance (ft)	690				726			450		582		
Travel Time (s)	18.8				19.8			8.8		11.3		
Confl. Peds. (#/hr)	1			1	1			1	1	1	1	1
Confl. Bikes (#/hr)			1				1			1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	0	5	0	0	0	5	38	0	0	32	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	0	0	0	43	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0					0		0		0		
Link Offset(ft)	0					0		0		0		
Crosswalk Width(ft)	16					16		16		16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		15	9			15	9	15	9	
Sign Control	Stop			Stop			Free			Free		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	16.6%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	5	0	0	0	5	35	0	0	30	1
Future Vol, veh/h	1	0	5	0	0	0	5	35	0	0	30	1
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	0	5	0	0	0	5	38	0	0	32	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	83	83	35	85	83	40	34	0	0	39	0	0
Stage 1	34	34	-	49	49	-	-	-	-	-	-	-
Stage 2	49	49	-	36	34	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	907	809	1041	904	809	1034	1584	-	-	1577	-	-
Stage 1	985	869	-	967	856	-	-	-	-	-	-	-
Stage 2	967	856	-	982	869	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	903	805	1039	896	805	1032	1582	-	-	1575	-	-
Mov Cap-2 Maneuver	903	805	-	896	805	-	-	-	-	-	-	-
Stage 1	981	868	-	963	853	-	-	-	-	-	-	-
Stage 2	963	853	-	976	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	0	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1582	-	-	1014	-	1575	-
HCM Lane V/C Ratio	0.003	-	-	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.6	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

Lanes, Volumes, Timings
600: Glen Cove Rd & Brookstone Cir S

PM Peak
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	10	40	35	1
Future Volume (vph)	1	5	10	40	35	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.887				0.997	
Flt Protected	0.992			0.990		
Satd. Flow (prot)	1467	0	0	1862	1876	0
Flt Permitted	0.992			0.990		
Satd. Flow (perm)	1467	0	0	1862	1876	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	709			355	450	
Travel Time (s)	19.3			6.9	8.8	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	14%	14%	1%	1%	1%	1%
Adj. Flow (vph)	1	5	11	43	38	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	0	54	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	5	10	40	35	1
Future Vol, veh/h	1	5	10	40	35	1
Conflicting Peds, #/hr	1	1	1	0	0	1
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	93	93	93	93	93	93
Heavy Vehicles, %	14	14	1	1	1	1
Mvmt Flow	1	5	11	43	38	1

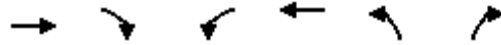
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	106	41	40	0	0
Stage 1	40	-	-	-	-
Stage 2	66	-	-	-	-
Critical Hdwy	6.54	6.34	4.11	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-
Follow-up Hdwy	3.626	3.426	2.209	-	-
Pot Cap-1 Maneuver	863	997	1576	-	-
Stage 1	952	-	-	-	-
Stage 2	927	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	855	995	1574	-	-
Mov Cap-2 Maneuver	855	-	-	-	-
Stage 1	944	-	-	-	-
Stage 2	926	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1574	-	969	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings
700: Elmhurst Road & Oakton Road

PM Peak
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	5	5	25	5	5	40
Future Volume (vph)	5	5	25	5	5	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932			0.880		
Flt Protected				0.960	0.995	
Satd. Flow (prot)	1753	0	0	1806	1615	0
Flt Permitted				0.960	0.995	
Satd. Flow (perm)	1753	0	0	1806	1615	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	540			604	478	
Travel Time (s)	14.7			11.8	9.3	
Confl. Peds. (#/hr)	12		12	1		1
Confl. Bikes (#/hr)	8					1
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Adj. Flow (vph)	8	8	40	8	8	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	48	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	5	25	5	5	40
Future Vol, veh/h	5	5	25	5	5	40
Conflicting Peds, #/hr	0	12	12	0	1	1
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	62	62	62	62	62	62
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	8	8	40	8	8	65

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	28	0	113
Stage 1	-	-	-	-	24
Stage 2	-	-	-	-	89
Critical Hdwy	-	-	4.11	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.209	-	3.527
Pot Cap-1 Maneuver	-	-	1592	-	881
Stage 1	-	-	-	-	996
Stage 2	-	-	-	-	932
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1574	-	848
Mov Cap-2 Maneuver	-	-	-	-	848
Stage 1	-	-	-	-	985
Stage 2	-	-	-	-	907

Approach	EB	WB	NB
HCM Control Delay, s	0	6.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1010	-	-	1574	-
HCM Lane V/C Ratio	0.072	-	-	0.026	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lanes, Volumes, Timings
800: Elmhurst Road & Golf Ridge N

PM Peak
02/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	45	1	1	30
Future Volume (vph)	1	1	45	1	1	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932		0.997			
Flt Protected	0.976					0.998
Satd. Flow (prot)	1711	0	1839	0	0	1877
Flt Permitted	0.976					0.998
Satd. Flow (perm)	1711	0	1839	0	0	1877
Link Speed (mph)	25		35			35
Link Distance (ft)	484		690			478
Travel Time (s)	13.2		13.4			9.3
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Heavy Vehicles (%)	1%	1%	3%	3%	1%	1%
Adj. Flow (vph)	2	2	80	2	2	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	82	0	0	56
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.0%		ICU Level of Service A			
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	45	1	1	30
Future Vol, veh/h	1	1	45	1	1	30
Conflicting Peds, #/hr	1	1	0	1	1	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	56	56	56	56	56	56
Heavy Vehicles, %	1	1	3	3	1	1
Mvmt Flow	2	2	80	2	2	54

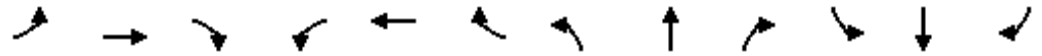
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	141	83	0	0	83	0
Stage 1	82	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	854	979	-	-	1520	-
Stage 1	944	-	-	-	-	-
Stage 2	966	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	851	977	-	-	1519	-
Mov Cap-2 Maneuver	851	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	964	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	910	1519
HCM Lane V/C Ratio	-	-	0.004	0.001
HCM Control Delay (s)	-	-	9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Lanes, Volumes, Timings
 900: Elmhurst Road & Prop Northeast D/W/Golf Ridge S

PM Peak
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↕			↕			↕			↕			
Traffic Volume (vph)	0	0	0	5	0	1	0	45	5	1	30	0		
Future Volume (vph)	0	0	0	5	0	1	0	45	5	1	30	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor														
Frt					0.973					0.987				
Flt Protected					0.962						0.998			
Satd. Flow (prot)	0	1881	0	0	1761	0	0	1839	0	0	1877	0		
Flt Permitted					0.962						0.998			
Satd. Flow (perm)	0	1881	0	0	1761	0	0	1839	0	0	1877	0		
Link Speed (mph)					25					35				
Link Distance (ft)					685					577				
Travel Time (s)					18.7					15.7				
Confl. Peds. (#/hr)	1			1	1			1	1			1		
Confl. Bikes (#/hr)			1			1			1			1		
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%		
Adj. Flow (vph)	0	0	0	8	0	2	0	73	8	2	48	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	10	0	0	81	0	0	50	0		
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No		
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right		
Median Width(ft)	0				0				0		0			
Link Offset(ft)	0				0				0		0			
Crosswalk Width(ft)	16				16				16		16			
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15		9		15		9		15		9			
Sign Control	Stop			Stop			Free			Free				
Intersection Summary														
Area Type:	Other													
Control Type:	Unsignalized													
Intersection Capacity Utilization	14.0%						ICU Level of Service A							
Analysis Period (min)	15													

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	5	0	1	0	45	5	1	30	0
Future Vol, veh/h	0	0	0	5	0	1	0	45	5	1	30	0
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1
Mvmt Flow	0	0	0	8	0	2	0	73	8	2	48	0

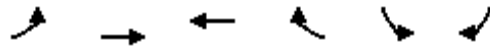
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	132	135	50	131	131	79	49	0	0	82	0	0
Stage 1	53	53	-	78	78	-	-	-	-	-	-	-
Stage 2	79	82	-	53	53	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	842	758	1021	844	762	984	1558	-	-	1522	-	-
Stage 1	962	853	-	933	832	-	-	-	-	-	-	-
Stage 2	932	829	-	962	853	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	839	756	1019	841	760	982	1557	-	-	1521	-	-
Mov Cap-2 Maneuver	839	756	-	841	760	-	-	-	-	-	-	-
Stage 1	961	851	-	932	831	-	-	-	-	-	-	-
Stage 2	930	828	-	960	851	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	0		9.2		0		0.2			
HCM LOS	A		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1557	-	-	-	862	1521	-
HCM Lane V/C Ratio	-	-	-	-	0.011	0.001	-
HCM Control Delay (s)	0	-	-	0	9.2	7.4	0
HCM Lane LOS	A	-	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-

Lanes, Volumes, Timings
100: Golf Road & Glen Cove Rd

AM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	155	170	15	30	35
Future Volume (vph)	15	155	170	15	30	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.989		0.928	
Flt Protected		0.996			0.977	
Satd. Flow (prot)	0	1837	1773	0	1641	0
Flt Permitted		0.996			0.977	
Satd. Flow (perm)	0	1837	1773	0	1641	0
Link Speed (mph)		50	50		35	
Link Distance (ft)		518	1379		355	
Travel Time (s)		7.1	18.8		6.9	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	3%	3%	6%	6%	5%	5%
Adj. Flow (vph)	19	201	221	19	39	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	220	240	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	31.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	15	155	170	15	30	35
Future Vol, veh/h	15	155	170	15	30	35
Conflicting Peds, #/hr	1	0	0	1	1	1
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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	6	6	5	5
Mvmt Flow	19	201	221	19	39	45

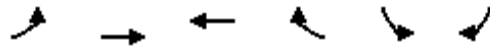
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	241	0	-	0	472 233
Stage 1	-	-	-	-	232 -
Stage 2	-	-	-	-	240 -
Critical Hdwy	4.13	-	-	-	6.45 6.25
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	2.227	-	-	-	3.545 3.345
Pot Cap-1 Maneuver	1320	-	-	-	545 799
Stage 1	-	-	-	-	799 -
Stage 2	-	-	-	-	793 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1319	-	-	-	535 797
Mov Cap-2 Maneuver	-	-	-	-	535 -
Stage 1	-	-	-	-	785 -
Stage 2	-	-	-	-	792 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1319	-	-	-	650
HCM Lane V/C Ratio	0.015	-	-	-	0.13
HCM Control Delay (s)	7.8	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lanes, Volumes, Timings
200: Golf Road & Prop West D/W

AM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	10	175	165	10	25	20
Future Volume (vph)	10	175	165	10	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.992		0.939	
Flt Protected		0.997			0.973	
Satd. Flow (prot)	0	1839	1778	0	1719	0
Flt Permitted		0.997			0.973	
Satd. Flow (perm)	0	1839	1778	0	1719	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1379	1075		611	
Travel Time (s)		18.8	14.7		16.7	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	3%	3%	6%	6%	1%	1%
Adj. Flow (vph)	13	227	214	13	32	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	240	227	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	175	165	10	25	20
Future Vol, veh/h	10	175	165	10	25	20
Conflicting Peds, #/hr	1	0	0	1	1	1
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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	6	6	1	1
Mvmt Flow	13	227	214	13	32	26

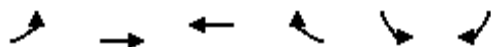
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	228	0	-	0	476 223
Stage 1	-	-	-	-	222 -
Stage 2	-	-	-	-	254 -
Critical Hdwy	4.13	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.227	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1334	-	-	-	549 819
Stage 1	-	-	-	-	817 -
Stage 2	-	-	-	-	791 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1333	-	-	-	542 817
Mov Cap-2 Maneuver	-	-	-	-	542 -
Stage 1	-	-	-	-	807 -
Stage 2	-	-	-	-	790 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	637
HCM Lane V/C Ratio	0.01	-	-	-	0.092
HCM Control Delay (s)	7.7	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Lanes, Volumes, Timings
300: Golf Road & Prop East D/W

AM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	200	165	5	10	10
Future Volume (vph)	1	200	165	5	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996		0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1845	1785	0	1711	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1845	1785	0	1711	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1075	1238		587	
Travel Time (s)		14.7	16.9		16.0	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	3%	3%	6%	6%	1%	1%
Adj. Flow (vph)	1	260	214	6	13	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	261	220	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	1	200	165	5	10	10
Future Vol, veh/h	1	200	165	5	10	10
Conflicting Peds, #/hr	1	0	0	1	1	1
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	77	77	77	77	77	77
Heavy Vehicles, %	3	3	6	6	1	1
Mvmt Flow	1	260	214	6	13	13

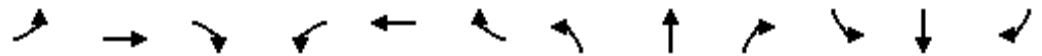
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	221	0	-	0	481 219
Stage 1	-	-	-	-	218 -
Stage 2	-	-	-	-	263 -
Critical Hdwy	4.13	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.227	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1342	-	-	-	546 823
Stage 1	-	-	-	-	821 -
Stage 2	-	-	-	-	783 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1341	-	-	-	544 821
Mov Cap-2 Maneuver	-	-	-	-	544 -
Stage 1	-	-	-	-	819 -
Stage 2	-	-	-	-	782 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	654
HCM Lane V/C Ratio	0.001	-	-	-	0.04
HCM Control Delay (s)	7.7	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings
400: Elmhurst Road & Golf Road

AM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	20	150	30	15	100	5	55	10	20	20	25	15
Future Volume (vph)	20	150	30	15	100	5	55	10	20	20	25	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.980			0.995			0.968			0.966	
Flt Protected		0.995			0.994			0.969			0.984	
Satd. Flow (prot)	0	1799	0	0	1740	0	0	1765	0	0	1753	0
Flt Permitted		0.995			0.994			0.969			0.984	
Satd. Flow (perm)	0	1799	0	0	1740	0	0	1765	0	0	1753	0
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		1238			631			570			807	
Travel Time (s)		16.9			8.6			11.1			15.7	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	3%	3%	3%	8%	8%	8%	1%	1%	1%	3%	3%	3%
Adj. Flow (vph)	25	188	38	19	125	6	69	13	25	25	31	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	251	0	0	150	0	0	107	0	0	75	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

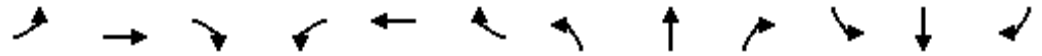
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	150	30	15	100	5	55	10	20	20	25	15
Future Vol, veh/h	20	150	30	15	100	5	55	10	20	20	25	15
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles, %	3	3	3	8	8	8	1	1	1	3	3	3
Mvmt Flow	25	188	38	19	125	6	69	13	25	25	31	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.6	9	8.8	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	10%	12%	33%
Vol Thru, %	12%	75%	83%	42%
Vol Right, %	24%	15%	4%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	200	120	60
LT Vol	55	20	15	20
Through Vol	10	150	100	25
RT Vol	20	30	5	15
Lane Flow Rate	106	250	150	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.313	0.199	0.103
Departure Headway (Hd)	4.933	4.51	4.771	4.939
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	725	795	750	722
Service Time	2.981	2.549	2.814	2.991
HCM Lane V/C Ratio	0.146	0.314	0.2	0.104
HCM Control Delay	8.8	9.6	9	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	1.3	0.7	0.3

Lanes, Volumes, Timings
 500: Glen Cove Rd & Brookstone Cir N/Prop Northwest D/W

AM Peak
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	1	5	5	1	1	1	20	5	1	50	1
Future Volume (vph)	1	1	5	5	1	1	1	20	5	1	50	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.899			0.983			0.975			0.998	
Flt Protected		0.994			0.964			0.998			0.999	
Satd. Flow (prot)	0	1681	0	0	1783	0	0	1761	0	0	1804	0
Flt Permitted		0.994			0.964			0.998			0.999	
Satd. Flow (perm)	0	1681	0	0	1783	0	0	1761	0	0	1804	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		690			726			450			582	
Travel Time (s)		18.8			19.8			8.8			11.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	1	1	6	6	1	1	1	26	6	1	65	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	8	0	0	33	0	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	14.0%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	5	5	1	1	1	20	5	1	50	1
Future Vol, veh/h	1	1	5	5	1	1	1	20	5	1	50	1
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	1	1	1	1	1	1	5	5	5	5	5	5
Mvmt Flow	1	1	6	6	1	1	1	26	6	1	65	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	102	104	68	104	101	31	67	0	0	33	0	0
Stage 1	69	69	-	32	32	-	-	-	-	-	-	-
Stage 2	33	35	-	72	69	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	881	788	998	878	791	1046	1516	-	-	1560	-	-
Stage 1	944	839	-	987	870	-	-	-	-	-	-	-
Stage 2	986	868	-	940	839	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	876	785	996	868	788	1044	1515	-	-	1559	-	-
Mov Cap-2 Maneuver	876	785	-	868	788	-	-	-	-	-	-	-
Stage 1	942	837	-	985	868	-	-	-	-	-	-	-
Stage 2	981	866	-	931	837	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.9		9.2		0.3		0.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1515	-	-	941	876	1559	-
HCM Lane V/C Ratio	0.001	-	-	0.01	0.01	0.001	-
HCM Control Delay (s)	7.4	0	-	8.9	9.2	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Lanes, Volumes, Timings
600: Glen Cove Rd & Brookstone Cir S

AM Peak
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	5	25	60	1
Future Volume (vph)	1	5	5	25	60	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.884				0.998	
Flt Protected	0.993			0.992		
Satd. Flow (prot)	1463	0	0	1795	1806	0
Flt Permitted	0.993			0.992		
Satd. Flow (perm)	1463	0	0	1795	1806	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	709			355	450	
Travel Time (s)	19.3			6.9	8.8	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	14%	14%	5%	5%	5%	5%
Adj. Flow (vph)	1	6	6	32	78	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	38	79	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	15.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	5	5	25	60	1
Future Vol, veh/h	1	5	5	25	60	1
Conflicting Peds, #/hr	1	1	1	0	0	1
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	77	77	77	77	77	77
Heavy Vehicles, %	14	14	5	5	5	5
Mvmt Flow	1	6	6	32	78	1

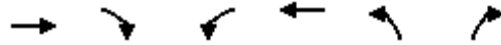
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	125	81	80	0	0
Stage 1	80	-	-	-	-
Stage 2	45	-	-	-	-
Critical Hdwy	6.54	6.34	4.15	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-
Follow-up Hdwy	3.626	3.426	2.245	-	-
Pot Cap-1 Maneuver	842	947	1499	-	-
Stage 1	914	-	-	-	-
Stage 2	948	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	837	945	1498	-	-
Mov Cap-2 Maneuver	837	-	-	-	-
Stage 1	909	-	-	-	-
Stage 2	947	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1498	-	925	-	-
HCM Lane V/C Ratio	0.004	-	0.008	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings
700: Elmhurst Road & Oakton Road

AM Peak
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (vph)	1	5	35	1	5	30
Future Volume (vph)	1	5	35	1	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.884			0.885		
Flt Protected				0.953	0.993	
Satd. Flow (prot)	1663	0	0	1793	1575	0
Flt Permitted				0.953	0.993	
Satd. Flow (perm)	1663	0	0	1793	1575	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	540			604	478	
Travel Time (s)	14.7			11.8	9.3	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	1%	6%	6%
Adj. Flow (vph)	1	6	40	1	6	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	41	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	1	5	35	1	5	30
Future Vol, veh/h	1	5	35	1	5	30
Conflicting Peds, #/hr	0	1	1	0	1	1
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	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	6	6
Mvmt Flow	1	6	40	1	6	34

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	8	0	87
Stage 1	-	-	-	-	5
Stage 2	-	-	-	-	82
Critical Hdwy	-	-	4.11	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	-	-	2.209	-	3.554
Pot Cap-1 Maneuver	-	-	1619	-	904
Stage 1	-	-	-	-	1008
Stage 2	-	-	-	-	931
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1617	-	880
Mov Cap-2 Maneuver	-	-	-	-	880
Stage 1	-	-	-	-	1007
Stage 2	-	-	-	-	907

Approach	EB	WB	NB
HCM Control Delay, s	0	7.1	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1032	-	-	1617	-
HCM Lane V/C Ratio	0.039	-	-	0.025	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Lanes, Volumes, Timings
800: Elmhurst Road & Golf Ridge N

AM Peak
02/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	35	1	1	40
Future Volume (vph)	1	1	35	1	1	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932		0.997			
Flt Protected	0.976					0.999
Satd. Flow (prot)	1711	0	1787	0	0	1879
Flt Permitted	0.976					0.999
Satd. Flow (perm)	1711	0	1787	0	0	1879
Link Speed (mph)	25		35			35
Link Distance (ft)	484		690			478
Travel Time (s)	13.2		13.4			9.3
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	6%	6%	1%	1%
Adj. Flow (vph)	1	1	39	1	1	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	40	0	0	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	35	1	1	40
Future Vol, veh/h	1	1	35	1	1	40
Conflicting Peds, #/hr	1	1	0	1	1	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	90	90	90	90	90	90
Heavy Vehicles, %	1	1	6	6	1	1
Mvmt Flow	1	1	39	1	1	44

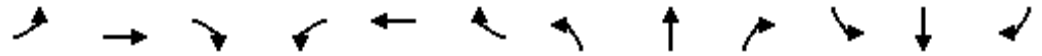
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	88	42	0	0	41
Stage 1	41	-	-	-	-
Stage 2	47	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11
Critical Hdwy Stg 1	5.41	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209
Pot Cap-1 Maneuver	915	1032	-	-	1575
Stage 1	984	-	-	-	-
Stage 2	978	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	912	1030	-	-	1574
Mov Cap-2 Maneuver	912	-	-	-	-
Stage 1	983	-	-	-	-
Stage 2	976	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	967	1574
HCM Lane V/C Ratio	-	-	0.002	0.001
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Lanes, Volumes, Timings
 900: Elmhurst Road & Prop Northeast D/W/Golf Ridge S

AM Peak
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	1	20	5	1	1	5	25	5	1	35	5
Future Volume (vph)	10	1	20	5	1	1	5	25	5	1	35	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.911			0.983			0.980			0.983	
Flt Protected		0.985			0.964			0.993			0.999	
Satd. Flow (prot)	0	1688	0	0	1783	0	0	1681	0	0	1847	0
Flt Permitted		0.985			0.964			0.993			0.999	
Satd. Flow (perm)	0	1688	0	0	1783	0	0	1681	0	0	1847	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		685			577			464			690	
Travel Time (s)		18.7			15.7			9.0			13.4	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	10%	10%	10%	1%	1%	1%
Adj. Flow (vph)	11	1	23	6	1	1	6	29	6	1	40	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	0	0	8	0	0	41	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	14.9%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	1	20	5	1	1	5	25	5	1	35	5
Future Vol, veh/h	10	1	20	5	1	1	5	25	5	1	35	5
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	1	1	1	1	1	1	10	10	10	1	1	1
Mvmt Flow	11	1	23	6	1	1	6	29	6	1	40	6

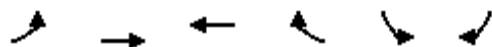
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	92	94	45	103	94	34	47	0	0	36	0	0
Stage 1	46	46	-	45	45	-	-	-	-	-	-	-
Stage 2	46	48	-	58	49	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.2	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.29	-	-	2.209	-	-
Pot Cap-1 Maneuver	894	798	1028	880	798	1042	1511	-	-	1581	-	-
Stage 1	970	859	-	971	859	-	-	-	-	-	-	-
Stage 2	970	857	-	956	856	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	887	792	1026	854	792	1040	1510	-	-	1579	-	-
Mov Cap-2 Maneuver	887	792	-	854	792	-	-	-	-	-	-	-
Stage 1	965	857	-	966	855	-	-	-	-	-	-	-
Stage 2	963	853	-	932	854	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.9		9.2		1.1		0.2	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1510	-	-	968	866	1579	-	-
HCM Lane V/C Ratio	0.004	-	-	0.037	0.009	0.001	-	-
HCM Control Delay (s)	7.4	0	-	8.9	9.2	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Lanes, Volumes, Timings
100: Golf Road & Glen Cove Rd

PM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	35	250	265	25	20	30
Future Volume (vph)	35	250	265	25	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.988		0.920	
Flt Protected		0.994			0.980	
Satd. Flow (prot)	0	1870	1859	0	1696	0
Flt Permitted		0.994			0.980	
Satd. Flow (perm)	0	1870	1859	0	1696	0
Link Speed (mph)		50	50		35	
Link Distance (ft)		518	1379		355	
Travel Time (s)		7.1	18.8		6.9	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	38	269	285	27	22	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	307	312	0	54	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	35	250	265	25	20	30
Future Vol, veh/h	35	250	265	25	20	30
Conflicting Peds, #/hr	1	0	0	1	1	1
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	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	38	269	285	27	22	32

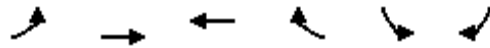
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	313	0	0	646	301
Stage 1	-	-	-	300	-
Stage 2	-	-	-	346	-
Critical Hdwy	4.11	-	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	5.41	-
Follow-up Hdwy	2.209	-	-	3.509	3.309
Pot Cap-1 Maneuver	1253	-	-	438	741
Stage 1	-	-	-	754	-
Stage 2	-	-	-	719	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1252	-	-	421	740
Mov Cap-2 Maneuver	-	-	-	421	-
Stage 1	-	-	-	726	-
Stage 2	-	-	-	718	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	568
HCM Lane V/C Ratio	0.03	-	-	-	0.095
HCM Control Delay (s)	8	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lanes, Volumes, Timings
200: Golf Road & Prop West D/W

PM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	250	275	30	20	15
Future Volume (vph)	20	250	275	30	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.943	
Flt Protected		0.996			0.972	
Satd. Flow (prot)	0	1874	1857	0	1724	0
Flt Permitted		0.996			0.972	
Satd. Flow (perm)	0	1874	1857	0	1724	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1379	1075		611	
Travel Time (s)		18.8	14.7		16.7	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	22	269	296	32	22	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	291	328	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	20	250	275	30	20	15
Future Vol, veh/h	20	250	275	30	20	15
Conflicting Peds, #/hr	1	0	0	1	1	1
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	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	22	269	296	32	22	16

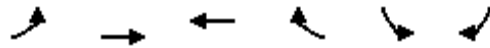
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	329	0	-	0	627 314
Stage 1	-	-	-	-	313 -
Stage 2	-	-	-	-	314 -
Critical Hdwy	4.11	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.209	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1236	-	-	-	449 729
Stage 1	-	-	-	-	744 -
Stage 2	-	-	-	-	743 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1235	-	-	-	439 728
Mov Cap-2 Maneuver	-	-	-	-	439 -
Stage 1	-	-	-	-	728 -
Stage 2	-	-	-	-	742 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1235	-	-	-	529
HCM Lane V/C Ratio	0.017	-	-	-	0.071
HCM Control Delay (s)	8	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Lanes, Volumes, Timings
300: Golf Road & Prop East D/W

PM Peak
02/24/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	260	300	15	5	5
Future Volume (vph)	10	260	300	15	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.994		0.932	
Flt Protected		0.998			0.976	
Satd. Flow (prot)	0	1877	1870	0	1711	0
Flt Permitted		0.998			0.976	
Satd. Flow (perm)	0	1877	1870	0	1711	0
Link Speed (mph)		50	50		25	
Link Distance (ft)		1075	1238		587	
Travel Time (s)		14.7	16.9		16.0	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	11	280	323	16	5	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	291	339	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	260	300	15	5	5
Future Vol, veh/h	10	260	300	15	5	5
Conflicting Peds, #/hr	1	0	0	1	1	1
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	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	11	280	323	16	5	5

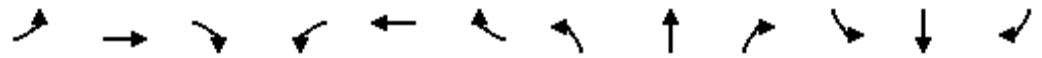
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	340	0	-	0	635 333
Stage 1	-	-	-	-	332 -
Stage 2	-	-	-	-	303 -
Critical Hdwy	4.11	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.209	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1225	-	-	-	444 711
Stage 1	-	-	-	-	729 -
Stage 2	-	-	-	-	751 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1224	-	-	-	438 710
Mov Cap-2 Maneuver	-	-	-	-	438 -
Stage 1	-	-	-	-	720 -
Stage 2	-	-	-	-	750 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1224	-	-	-	542
HCM Lane V/C Ratio	0.009	-	-	-	0.02
HCM Control Delay (s)	8	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings
400: Elmhurst Road & Golf Road

PM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	35	160	60	20	225	15	65	25	15	15	15	25
Future Volume (vph)	35	160	60	20	225	15	65	25	15	15	15	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.968			0.992			0.980			0.939	
Flt Protected		0.993			0.996			0.970			0.986	
Satd. Flow (prot)	0	1808	0	0	1859	0	0	1788	0	0	1614	0
Flt Permitted		0.993			0.996			0.970			0.986	
Satd. Flow (perm)	0	1808	0	0	1859	0	0	1788	0	0	1614	0
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		1238			631			570			807	
Travel Time (s)		16.9			8.6			11.1			15.7	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%	9%	9%
Adj. Flow (vph)	36	167	63	21	234	16	68	26	16	16	16	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	266	0	0	271	0	0	110	0	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.9%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

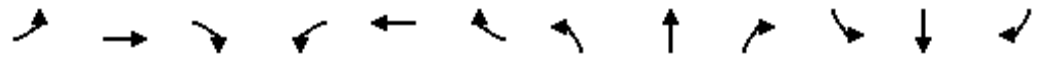
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	160	60	20	225	15	65	25	15	15	15	25
Future Vol, veh/h	35	160	60	20	225	15	65	25	15	15	15	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	9	9	9
Mvmt Flow	36	167	63	21	234	16	68	26	16	16	16	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.9	10.2	9.3	8.8
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	62%	14%	8%	27%
Vol Thru, %	24%	63%	87%	27%
Vol Right, %	14%	24%	6%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	255	260	55
LT Vol	65	35	20	15
Through Vol	25	160	225	15
RT Vol	15	60	15	25
Lane Flow Rate	109	266	271	57
Geometry Grp	1	1	1	1
Degree of Util (X)	0.159	0.336	0.348	0.083
Departure Headway (Hd)	5.249	4.549	4.632	5.215
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	678	786	772	681
Service Time	3.319	2.599	2.682	3.292
HCM Lane V/C Ratio	0.161	0.338	0.351	0.084
HCM Control Delay	9.3	9.9	10.2	8.8
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.6	1.5	1.6	0.3

Lanes, Volumes, Timings
500: Glen Cove Rd & Brookstone Cir N/Prop Northwest D/W

PM Peak
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	1	5	5	1	1	5	40	5	1	35	1
Future Volume (vph)	1	1	5	5	1	1	5	40	5	1	35	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.904			0.981			0.987			0.997	
Flt Protected		0.993			0.966			0.995			0.999	
Satd. Flow (prot)	0	1689	0	0	1783	0	0	1847	0	0	1874	0
Flt Permitted		0.993			0.966			0.995			0.999	
Satd. Flow (perm)	0	1689	0	0	1783	0	0	1847	0	0	1874	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		690			726			450			582	
Travel Time (s)		18.8			19.8			8.8			11.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	1	1	5	5	1	1	5	43	5	1	38	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	7	0	0	53	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.5%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	5	5	1	1	5	40	5	1	35	1
Future Vol, veh/h	1	1	5	5	1	1	5	40	5	1	35	1
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	1	5	5	1	1	5	43	5	1	38	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	100	101	41	102	99	48	40	0	0	49	0	0
Stage 1	42	42	-	57	57	-	-	-	-	-	-	-
Stage 2	58	59	-	45	42	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	884	791	1033	881	793	1024	1576	-	-	1564	-	-
Stage 1	975	862	-	957	849	-	-	-	-	-	-	-
Stage 2	956	848	-	971	862	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	878	786	1031	871	788	1022	1574	-	-	1563	-	-
Mov Cap-2 Maneuver	878	786	-	871	788	-	-	-	-	-	-	-
Stage 1	971	860	-	953	846	-	-	-	-	-	-	-
Stage 2	950	845	-	963	860	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.8		9.1		0.7		0.2	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1574	-	-	964	876	1563	-	-
HCM Lane V/C Ratio	0.003	-	-	0.008	0.009	0.001	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9.1	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lanes, Volumes, Timings
600: Glen Cove Rd & Brookstone Cir S

PM Peak
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	5	10	50	45	1
Future Volume (vph)	1	5	10	50	45	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.887				0.997	
Flt Protected	0.992			0.992		
Satd. Flow (prot)	1467	0	0	1866	1876	0
Flt Permitted	0.992			0.992		
Satd. Flow (perm)	1467	0	0	1866	1876	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	709			355	450	
Travel Time (s)	19.3			6.9	8.8	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	14%	14%	1%	1%	1%	1%
Adj. Flow (vph)	1	5	11	54	48	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	0	65	49	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	5	10	50	45	1
Future Vol, veh/h	1	5	10	50	45	1
Conflicting Peds, #/hr	1	1	1	0	0	1
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	93	93	93	93	93	93
Heavy Vehicles, %	14	14	1	1	1	1
Mvmt Flow	1	5	11	54	48	1

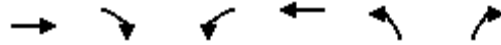
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	127	51	50	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	77	-	-	-	-	-
Critical Hdwy	6.54	6.34	4.11	-	-	-
Critical Hdwy Stg 1	5.54	-	-	-	-	-
Critical Hdwy Stg 2	5.54	-	-	-	-	-
Follow-up Hdwy	3.626	3.426	2.209	-	-	-
Pot Cap-1 Maneuver	840	984	1563	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	832	982	1562	-	-	-
Mov Cap-2 Maneuver	832	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1562	-	953	-	-
HCM Lane V/C Ratio	0.007	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings
700: Elmhurst Road & Oakton Road

PM Peak
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	5	5	40	5	5	50
Future Volume (vph)	5	5	40	5	5	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932				0.877	
Flt Protected				0.957	0.996	
Satd. Flow (prot)	1753	0	0	1800	1611	0
Flt Permitted				0.957	0.996	
Satd. Flow (perm)	1753	0	0	1800	1611	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	540			604	478	
Travel Time (s)	14.7			11.8	9.3	
Confl. Peds. (#/hr)		12	12		1	1
Confl. Bikes (#/hr)		8				1
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles (%)	1%	1%	1%	1%	3%	3%
Adj. Flow (vph)	8	8	65	8	8	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	73	89	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection

Int Delay, s/veh 7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	5	5	40	5	5	50
Future Vol, veh/h	5	5	40	5	5	50
Conflicting Peds, #/hr	0	12	12	0	1	1
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	62	62	62	62	62	62
Heavy Vehicles, %	1	1	1	1	3	3
Mvmt Flow	8	8	65	8	8	81

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	28	0	163
Stage 1	-	-	-	-	24
Stage 2	-	-	-	-	139
Critical Hdwy	-	-	4.11	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.209	-	3.527
Pot Cap-1 Maneuver	-	-	1592	-	825
Stage 1	-	-	-	-	996
Stage 2	-	-	-	-	885
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1574	-	782
Mov Cap-2 Maneuver	-	-	-	-	782
Stage 1	-	-	-	-	985
Stage 2	-	-	-	-	848

Approach	EB	WB	NB
HCM Control Delay, s	0	6.6	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1005	-	-	1574	-
HCM Lane V/C Ratio	0.088	-	-	0.041	-
HCM Control Delay (s)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Lanes, Volumes, Timings
800: Elmhurst Road & Golf Ridge N

PM Peak
02/24/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	1	55	1	1	45
Future Volume (vph)	1	1	55	1	1	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932		0.997			
Flt Protected	0.976					0.999
Satd. Flow (prot)	1711	0	1839	0	0	1879
Flt Permitted	0.976					0.999
Satd. Flow (perm)	1711	0	1839	0	0	1879
Link Speed (mph)	25		35			35
Link Distance (ft)	484		690			478
Travel Time (s)	13.2		13.4			9.3
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Heavy Vehicles (%)	1%	1%	3%	3%	1%	1%
Adj. Flow (vph)	2	2	98	2	2	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	100	0	0	82
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	55	1	1	45
Future Vol, veh/h	1	1	55	1	1	45
Conflicting Peds, #/hr	1	1	0	1	1	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	56	56	56	56	56	56
Heavy Vehicles, %	1	1	3	3	1	1
Mvmt Flow	2	2	98	2	2	80

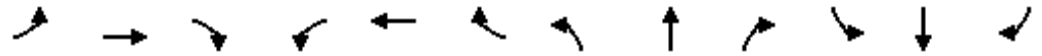
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	185	101	0	0	101	0
Stage 1	100	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	807	957	-	-	1498	-
Stage 1	927	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	805	955	-	-	1497	-
Mov Cap-2 Maneuver	805	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	874	1497
HCM Lane V/C Ratio	-	-	0.004	0.001
HCM Control Delay (s)	-	-	9.1	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Lanes, Volumes, Timings
 900: Elmhurst Road & Prop Northeast D/W/Golf Ridge S

PM Peak
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	5	1	15	5	1	1	20	50	5	1	35	10
Future Volume (vph)	5	1	15	5	1	1	20	50	5	1	35	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.905			0.977			0.991			0.971	
Flt Protected		0.988			0.968			0.987			0.999	
Satd. Flow (prot)	0	1682	0	0	1779	0	0	1822	0	0	1825	0
Flt Permitted		0.988			0.968			0.987			0.999	
Satd. Flow (perm)	0	1682	0	0	1779	0	0	1822	0	0	1825	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		685			577			464			690	
Travel Time (s)		18.7			15.7			9.0			13.4	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	8	2	24	8	2	2	32	81	8	2	56	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	0	0	12	0	0	121	0	0	74	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	15	5	1	1	20	50	5	1	35	10
Future Vol, veh/h	5	1	15	5	1	1	20	50	5	1	35	10
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
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	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	1	1	1	1	1	1	2	2	2	1	1	1
Mvmt Flow	8	2	24	8	2	2	32	81	8	2	56	16

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	221	223	66	232	227	87	73	0	0	90	0	0
Stage 1	69	69	-	150	150	-	-	-	-	-	-	-
Stage 2	152	154	-	82	77	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.12	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.218	-	-	2.209	-	-
Pot Cap-1 Maneuver	737	678	1001	725	674	974	1527	-	-	1512	-	-
Stage 1	944	839	-	855	775	-	-	-	-	-	-	-
Stage 2	853	772	-	929	833	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	720	661	999	692	657	972	1526	-	-	1511	-	-
Mov Cap-2 Maneuver	720	661	-	692	657	-	-	-	-	-	-	-
Stage 1	922	837	-	835	757	-	-	-	-	-	-	-
Stage 2	830	754	-	903	831	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.2		10.1		2		0.2	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1526	-	-	895	716	1511	-
HCM Lane V/C Ratio	0.021	-	-	0.038	0.016	0.001	-
HCM Control Delay (s)	7.4	0	-	9.2	10.1	7.4	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-

EXHIBIT F



March 24, 2023
File No. 20.0158210.00

Mr. Bryan Lindgren, Project Manager
Neumann Developments, Inc.
N27 W24025 Paul Court, Suite 100
Pewaukee, Wisconsin 53072-6239

Re: Hydrogeologic Assessment Report
Proposed Thomas Farm Subdivision Development
Town of Delafield, Wisconsin

Dear Mr. Lindgren:

In accordance with your request and authorization on February 27, 2023, GZA GeoEnvironmental, Inc. (GZA) is pleased to submit this Hydrogeologic Assessment Report to Neumann Developments, Inc. (Neumann/"Client") for the proposed Thomas Farm Subdivision Development ("Development") in the Town of Delafield, Waukesha County, Wisconsin. The proposed Development is located in the NE, SE, and SW $\frac{1}{4}$ of The United States Public Land Survey Section Number 23, Township 7 North, Range 18 East, Waukesha County, Wisconsin ("Site").

Neumann provided GZA with a proposed Development plan showing the layout and features of the Development, and the Town of Delafield Ordinance, Section 17.04 5. R., entitled "Planned Development District No. 1" ("Ordinance"), that is solely applicable to the Site and includes a requirement for a water study. It is understood that the Site covers an area of approximately 152 acres, which include 30.65 acres identified as a Primary Environmental Corridor (PEC) by the Southeastern Wisconsin Regional Planning Commission (SEWRPC), 10.11 acres identified as wetlands, and 111.24 acres available for development. The proposed Development plan includes 160 single-family, residential units and 28 condominium buildings with 56 individual units.

The objective of the water study identified in the Ordinance is to demonstrate that a private water supply will adequately serve the project and not adversely impact existing private wells in the area or other natural resources. The applicant also needs to demonstrate that the SEWRPC, Wisconsin Department of Natural Resources (WDNR), and the Lake Pewaukee Sanitary District were consulted on the anticipated water table impacts of the planned private water use. The Ordinance does not, however, provide means or methods for performing the water study or a specific minimum or maximum criteria for evaluating the impact to the water table.

The following sections of this report present information pertaining to the proposed subdivision, the geologic and hydrogeologic conditions of the Site, and an assessment of the impact to groundwater from the proposed subdivision. Note that Limitations to our evaluation are provided in **Attachment 1**.

BACKGROUND

As described above, the proposed Development is located in the NE, SE, and SW $\frac{1}{4}$ of The United States Public Land Survey Section Number 23, Township 7 North, Range 18 East, in the Town of Delafield, Waukesha County, Wisconsin. The Site covers approximately 152 acres on the northwest intersection of Golf Road and Elmhurst Road, which includes 30.65 acres identified as a PEC, 10.11 acres identified as wetlands, and 111.24 acres available for development. The



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proposed Development plan includes 160 lots for single-family, residential units and 28 buildings with 56 duplex condominium units. The conceptual Development plan is provided as **Figure 1**.

The Site is located in a rural area with primarily single-family, residential properties immediately adjacent to the Site, a mixture of agricultural and limited commercial development south of the Site, and Pewaukee Lake to the north. Located north of the Site is East Glen Cove Road, beyond which are residential properties and Pewaukee Lake; located west of the Site are residential properties and Glen Cove Road, beyond which are additional residential properties; located south of the Site is Golf Road, beyond which is Wisconsin Veterans Memorial Highway (Interstate 94 [I-94]); and located east of the Site is Elmhurst Road, beyond which is Western Lakes Golf Course and residential properties.

TOPOGRAPHY AND HYDROLOGY

The Site is located in the center of Waukesha County within the southwestern extent of the Lake Michigan glacial lobe of the Laurentide Ice Sheet. Due to the glacial history, the region is characterized by various types of glacial deposits, including moraines, drumlins, kames, outwash plains, and lake basin deposits. Although there are small, internally-drained basins as a result of the kettles and pitted outwash across the undulating plain, the surface generally slopes eastward toward Lake Michigan.

Based on a review of the Hartland, Wisconsin Quadrangle of the United States Geological Survey (USGS) Topographic Map (1959), the elevation of the Site ranges from 880 feet above mean sea level (msl) along the north perimeter of the Site to 950 feet above msl on the southwest perimeter of the Site. The surface slope of the property is to the east and north. An unnamed, 0.5-acre pond is located on the center of the north Site boundary. Pewaukee Lake is located approximately 600 feet to the north side of East Glen Cove Road, Salow Lake is located approximately 0.4-mile south of the Site, Etter Lake is located approximately 1 mile southeast of the Site, Aubrey Creek is located approximately 0.5-mile west of the Site, and Zion Creek is located approximately 0.15-mile south of the Site. An unnamed pond exists approximately 230 feet northwest of the Site. Numerous unnamed ponds are located on the Western Lakes Golf Course property approximately 500 feet east of the Site, which are connected to Zion Creek. **Figure 2** is a map showing the topography of the Site and the surrounding area.

The Site is located within the 151 square-mile, Upper Fox River – Illinois watershed. Surface run-off and shallow percolating groundwater are expected to drain north toward and recharge Pewaukee Lake.

According to the Fish and Wildlife National Wetlands Inventory, Freshwater Forested/Shrub Wetlands are located on the Site, covering an area of approximately 18.54 acres. 11.05 acres of wetland, located in the center of the Site, are considered to be semi-permanently flooded, whereas 6.34 acres of wetlands along the northwest perimeter, and 1.15 acres oriented north-south along the northern area of the Site, are considered to be seasonally flooded.

Soil at the Site, as described by the Natural Resources Conservation Service (NRCS) on the Web Soil Survey website, consists of loam and silt loam from 0% to 30% slope. The specific soil classification units include the following:



Mapped Wetland on the Northeast Corner of the Site
(Fish and Wildlife National Wetlands Inventory Mapper)



- BsA - Brookstone Silt Loam, 0% to 2% slopes, poorly-drained;
- HmB - Hochheim Loam, 2% to 6% slopes, well-drained;
- HmC2 - Hochheim Loam, 6% to 12% slopes, well-drained;
- KIA - Kendall Silt Loam, 1% to 3% slopes, somewhat poorly-drained;
- KwA - Knowles Silt Loam, 0% to 2% slopes, well-drained;
- KwB - Knowles Silt Loam, 2% to 6% slopes, well-drained;
- LmB - Lamartine Silt Loam, 0% to 3% slopes, somewhat poorly-drained;
- Lu - Loamy Land, moderately well-drained;
- MoB - Mayville Silt Loam, 2% to 6% slopes, moderately well-drained;
- RkB - Ritchey Silt Loam, 1% to 6% slopes, well-drained;
- RkE - Ritchey Silt Loam, 12% to 30% slopes, well-drained;
- ThA - Theresa Silt Loam, 0% to 2% slopes, well-drained;
- ThB - Theresa Silt Loam, 2% to 6% slopes, well-drained; and
- ThB2 - Theresa Silt Loam, 2% to 6% slopes, erode, well-drained.



Distribution of Soil Types Across the Site
(Well-drained Soils Shown in Yellow, Poorly-drained Soils Shown in Blue)
(NRCS Web Soil Survey).

The majority of the soils are considered to be well-drained, indicating that water drains through the soils readily and free water is deep to very deep in the soil column. The soils on the central portion of the Site are considered poorly drained, indicating that the soils may exhibit frequent flooding or ponding.

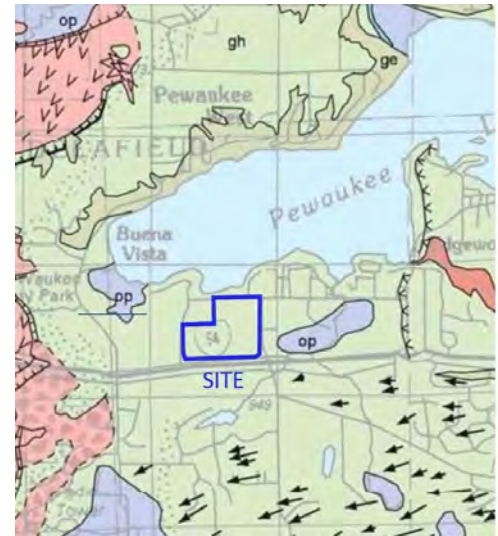
REGIONAL GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

Waukesha County is underlain by Precambrian-age crystalline rocks, Cambrian-age sandstone; Ordovician-age dolomite, sandstone, and shale; and Silurian-age dolomite. These consolidated deposits are overlain by quaternary-age glacial deposits deposited by the Green Bay and Lake Michigan glacial lobes during the last glacial period. Three principal aquifers are located in Waukesha County: 1) a shallow and locally discontinuous sand and gravel aquifer comprised of glacial deposits of Quaternary-age; 2) the Niagara Dolomite aquifer of Silurian-age; and 3) the Sandstone aquifer of Ordovician-Cambrian age. The Sandstone aquifer is hydrologically separated from the Niagara aquifer by the low-permeability Maquoketa Shale formation. The Sandstone aquifer is the primary water supply for municipal and industrial use and, to a lesser extent, residential use. The Sandstone aquifer incorporates the formations above the Pre-Cambrian crystalline rocks and below the Maquoketa Shale, which includes the Galena-Platteville unit, the St. Peter Sandstone, the Trempealeau Formation, and the Franconia, Galesville, Eau Claire, and Mount Simon Sandstones. The Sandstone aquifer coverage is continuous across the state; however, due to glacial erosion, the sand and gravel and Niagara aquifers do not exist in the central and southwestern portions of the County and the uppermost bedrock unit is the Maquoketa shale.



LOCAL GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

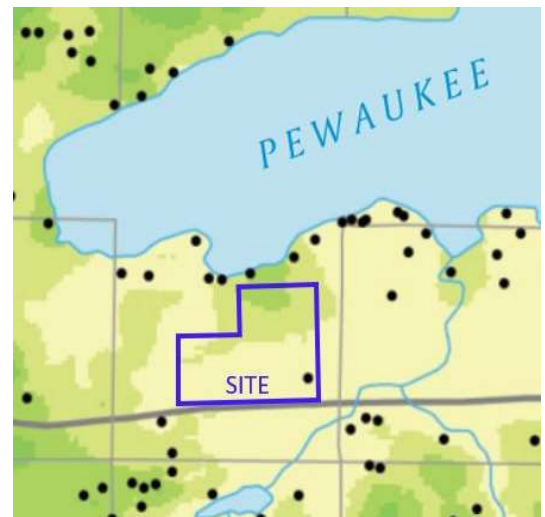
The USGS publication, Ground-Water Resources of Waukesha County (J. B. Gunther, 1975), identifies the glacial deposits in the vicinity of the Site as ground moraine. Ground moraine deposits predominantly consist of unsorted glacial till ranging in size from clay to boulders, but may contain lenses of stratified sand and gravel. Ground moraine deposits are characterized by gently undulating topography of low relief, with alternating small till mounds and depressions. Lee Clayton (2001) mapped the quaternary-age glacial deposits as sandy till of the Holy Hill Formation. The unconsolidated deposits at the Site are underlain by Ordovician-age Maquoketa Shale to the north and the Silurian-age Kankakee Dolomite to the south, as identified by K.M Massie-Ferch (2004). Massie-Ferch and R. M. Peters (2004) estimate the depth to bedrock in the proposed Development to be less than 50 feet below ground surface (bgs) on the south half of the Site and between 50 and 150 feet bgs on the north half of the Site.



Surface Geology Consisting of Sandy Till of the Holy Hill Formation (green)
(L. Clayton, 2001)

Based on a review of area well construction records, GZA prepared generalized geologic cross-section A-A' and B-B' oriented north-south and east-west, respectively. The approximate locations of the cross-sections are shown on Figure 3 and the geologic cross-sections are presented on Figures 4A and 4B. The well construction records used to prepare the cross-sections were obtained from the WDNR Water Well Database and are provided in **Attachment 2**. The Site is underlain by glacial till and isolated deposits of sand and gravel. Depth to bedrock is less than 10 feet on the northeastern and southeastern portions of the Site and more than 80 feet on the northwestern portion of the Site. According to the SEWRPC publication, A Lake Management Plan for Pewaukee Lake, Waukesha County, Wisconsin (2020), bedrock is exposed in an area east of Elmhurst Road, which borders the eastern perimeter of the proposed subdivision.

Due to the erosion of the Niagara Dolomite, the Maquoketa shale is the uppermost bedrock unit and is consistently encountered at depths between 3 and 81 feet bgs, which correspond to elevations between 939 and 791 feet above msl. The Maquoketa Shale is a low permeability shale formation that is fractured in the upper 100 feet and has interbedded limestone layers of the Fort Atkinson member up to 40 feet thick (Eaton et al., 2000; Gunther, 1975). Limestone is encountered on top of the Maquoketa Shale in wells located near the south end of the Site, consistent with Massie-Ferch (2004); however, GZA considers this overlying limestone to be part of the Maquoketa Shale due to the limestone's limited thickness, the absence of wells completed in the limestone, and the inability to distinguish the overlying limestone from interbedded limestone within the Maquoketa Shale. The Maquoketa Shale is not considered an aquifer in literature publications due to its low permeability, but is used for potable water supply in wells near the proposed development.



Depth to Bedrock Map of the Site Showing Increase From <50 ft (yellow) to 50-100 ft (light green) to 100-150 ft (dark green)
(Massie-Ferch and Peters, 2004).



The Galena-Platteville unit is the upper formation in the Sandstone aquifer and is encountered at depths between 145 and 269 feet bgs, which correspond to elevations between 750 and 629 feet above msl. The underlying St. Peter's sandstone is encountered at depths between 402 and 485 feet bgs, which correspond to elevations between 496 and 429 feet above msl. The geologic conditions and depth to bedrock obtained by GZA from available well logs are consistent with the published maps and descriptions noted above.

The depth to groundwater was recorded on the well logs within the Maquoketa Shale at depths between 5 and 125 feet bgs, corresponding to groundwater elevations between 922 and 791 feet above msl. Most private domestic wells in the area are completed within the Maquoketa Shale dolomite layers or in the deeper Sandstone aquifer.

WATER REQUIREMENTS OF THE SUBDIVISION

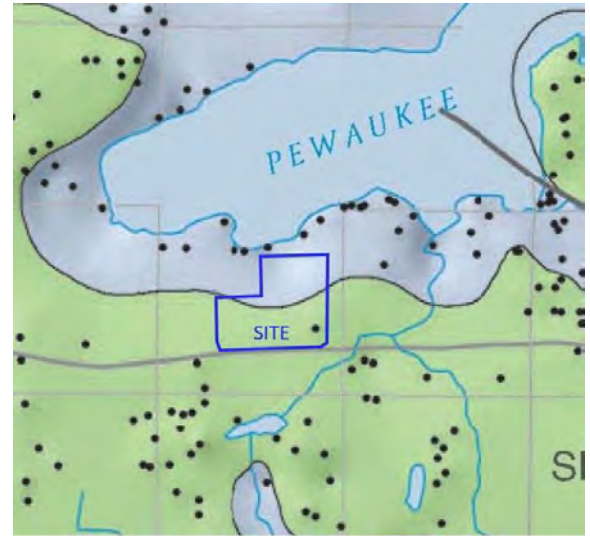
As shown on **Figure 1**, the proposed subdivision will consist of 28 condominium buildings and 155 single-family homes. For this assessment, GZA assumes that each single-family home will be serviced by a private water supply well; each home will be serviced by municipal sanitary sewer, not private septic systems; and there are limited stormwater controls within the proposed subdivision that could promote infiltration and recharge to the groundwater system. For the condominiums, the assumptions are the same as the single-family properties and that each building (two units) will be serviced by a single well. Based on the Development plan, it is assumed that there will be a total of 183 privately owned water supply wells.

Based on a review of the US Census' five-year estimate (2017-2021) demographics for the Town of Delafield, each home has an average of 2.75 individuals, which translates into a total population for the subdivision of approximately 580 individuals. The USGS estimated that in 2015, the water usage per capita for self-supplied domestic sources was 77 gallons per capita per day (gpcd). Using a water use of 77 gpcd, the average total daily groundwater withdrawal for the subdivision is estimated to be 44,660 gallons per day (gpd) or about 31 gallons per minute (gpm).

For this evaluation, GZA used a conservative value of three individuals per single-family home and condominium unit, or a total population of 633 individuals, and water usage per capita of 125 gpcd. Using these assumptions, the total water usage of each single-family home well is 375 gpd or 0.26 gpm, and for each condominium building, 750 gpd or 0.52 gpm. In addition, this evaluation will assume that there is no infiltration or recharge to the bedrock aquifer system due to the low permeability (hydraulic conductivity) of the Maquoketa Shale. These assumptions will provide a conservatively high estimation of the influence from the groundwater pumping in the proposed subdivision on the groundwater system, which will reduce underestimating the calculated drawdown and will account for potential variation in the total population exceeding the average household size.

ESTIMATE OF POTENTIAL OF PUMPING IMPACT

It is GZA's understanding that there are no existing municipal codes relating to groundwater drawdown that are required to be met for this evaluation. To evaluate the potential hydrogeologic impact of the proposed residential subdivision on the local groundwater resources, GZA calculated the drawdown at the property boundary for the single-family and multi-family properties based on a continuous pumping scenario for each well over a 50-year period. The drawdown was calculated without considering the return of water to the groundwater system through stormwater retention or recharge.



Bedrock Map of the Site Showing Silurian-age Kankakee Dolomite (green) and Ordovician-age Maquoketa Shale (blue)
(K.M. Massie-Ferch, 2004)



For the single- and multi-family scenarios, the well locations were assumed based on typical setbacks from roads and the location of the buildings on the property. The wells were placed in locations to minimize the distance from the property boundary and maximize the calculated drawdown. For the single-family properties, the wells were assumed to be 30 feet from the property boundary, adjacent to the road in the center of the property boundary. For the condominiums, the wells were assumed to be between the buildings near the center of the building because the piping would need to service both units. In addition to calculating the drawdown at the setback distances above, the drawdown was also calculated at the midpoint between neighboring wells to determine the cumulative drawdown effect at the intersection of each well's cone of depression.

For the single-family homes, the lot sizes range from 0.22- to 0.38-acre and are generally rectangular in shape. The low-density lots in Zone 1 range from 0.47- to 0.54-acre. The actual location and size of the homes on each lot are unknown, therefore, a conservative well location close to the property boundary was assumed to be a location 30 feet from the road in the center of the property boundary adjacent to the road. By assuming the well at this location, the well will be at the minimum setback distance from the road; however, it is possible that the well could be placed at a distance greater than 30 feet from the closest property boundary based on the lot sizes and the side and rear setbacks. As shown on **Figure 5**, the distance from the well and the intersection of the neighboring property boundary is estimated to be approximately 40 feet. These same dimensions were applied to the larger lots in Zone 1, even though a greater distance could be assumed.

For the condominiums, the Site on the Development plan is not divided into individual parcels for each building, but rather, the condominiums are located within a single parcel. The well location was assumed to be between each building and the distance between the well location and the closest property boundary was assumed to be approximately 60 feet to the north or south. As shown on **Figure 5**, the distance from the well and the intersection of the neighboring property well is estimated to be approximately 50 feet, as they are approximately 100 to 110 feet apart. At the intersection of two neighboring wells, the drawdown is assumed to be cumulative.

The drawdown at the critical distance radius to the property line for each location was calculated using the Theis non-equilibrium well equation:

$$s = \frac{114.6 * Q}{T} * W(u) \quad (1)$$

Where:

- s = drawdown
- Q = discharge, gpm
- T = transmissivity, gallons per day per foot (gpd/ft)
- W(u) = well function

The well function, W(u), is approximated by the following equations:

$$W(u) = -0.577216 \mp \ln u - \frac{u}{2 * 2!} + \frac{u}{3 * 3!} - \frac{u}{4 * 4!} \quad (2)$$

and:

$$u = \frac{1.87 * r^2 * S}{T * t} \quad (3)$$



Where:

- r = distance from the discharging well, ft
- t = length of pumping time, days
- S = storage coefficient, unitless

The aquifer is assumed to be confined and, as such, the storage coefficient was determined based on the following equations:

$$S = b * S_s \quad (4)$$

Where:

- b = aquifer thickness, ft
- S_s = specific storage, ft⁻¹

Specific storage values for the Maquoketa Shale range between 3.7 x 10⁻⁹ ft⁻¹ and 8.5 x 10⁻⁷ ft⁻¹ based on laboratory pulse-decay testing of unfractured rock core (Eaton et al., 2000). GZA calculated the average storage coefficient to be 7.13 x 10⁻⁵ ft⁻¹. This does not consider the likelihood of fractures within the upper 100 feet of the Maquoketa Shale; therefore, this is a conservatively low estimate of effective porosity to ensure the calculated drawdown is not underestimated. Based on WDNR well logs, the aquifer thickness is likely 167 feet, which aligns with literature values for average thickness of 160 to 215 feet (Foley et al., 1953).

Based on the Theis equation, the only variable that cannot be estimated from the literature review or development plan is transmissivity. GZA utilized the method described in the paper by Bradbury and Rothschild (1985) to estimate transmissivity from specific capacity data using an iterative spreadsheet method. The equation to calculate the transmissivity considering partial penetration and well loss is shown in equation 6 below.

$$T = \frac{Q}{4 * \pi * (s - s_w)} * \left[\ln \left(\frac{2.25 * T * t}{r_w^2 * S} \right) + 2 * s_p \right] \quad (6)$$

Where:

- s_p = partial penetration factor
- s_w = well loss

The equation for calculating the partial penetration factor is as follows:

$$s_p = \frac{1 - \frac{L}{b}}{\frac{L}{b}} * \left(\ln \frac{b}{r_w} - G * \left\{ \frac{L}{b} \right\} \right) \quad (7)$$

Where:

- L = length of open interval
- b = aquifer thickness

$$G = \text{a function of } L/b \text{ defined by } G \left\{ \frac{L}{b} \right\} = 2.948 - \left(7.363 * \frac{L}{b} \right) + \left(11.447 * \left\{ \frac{L}{b} \right\}^2 \right) - \left(4.675 * \left\{ \frac{L}{b} \right\}^3 \right)$$

In equation 6, transmissivity is on both sides of the equation, so the transmissivity cannot be calculated directly. The value for transmissivity was estimated iteratively until the difference in calculated consecutive transmissivity values was less than 0.0001 or until a maximum of 1,000 iterative calculations were completed. The difference of 0.0001 was reached prior to 1,000 iterations for each well.

A total of 148 well construction logs were retrieved from the WDNR Well Driller Viewer for Section number 23, Township 7 North, Range 18 East of The United States Public Land Survey. Of the 148 well logs, 39 were disregarded due to lack of



drawdown information noted on the pumping test section of the well construction record. Of the 109 remaining records, seven wells (6.5%) were completed in surficial, isolated sand and gravel deposits, 80 wells (73%) were completed in the underlying Maquoketa Shale formation, 15 wells (14%) were completed in the underlying Galena-Platteville unit of the Sandstone aquifer, and seven (6.5%) wells were completed in the St. Peters sandstone unit of the Sandstone aquifer. For this evaluation, GZA assumed that the proposed subdivision wells will be completed within the Maquoketa Shale because: 1) the sand and gravel deposits are considered too sparse and isolated to support the water supply of the proposed subdivision; 2) 80 out of 109 wells in the vicinity of the Site are completed in the Maquoketa Shale; and 3) the depth of the underlying Sandstone aquifer may not be economical for the subdivision. The Maquoketa Shale is not considered an aquifer, however, can transmit considerable amounts of water from overlying formations where fractures and dolomite interbeds are present.

Of the remaining 109 well records, 80 wells were deemed representative for this analysis of hydraulic properties, which included wells within the immediate vicinity and those completed within the Maquoketa Shale. The specific capacity data from a total of 80 well construction records were reviewed, and the transmissivity was estimated. **Table 1** presents the well data reviewed and the estimated transmissivity calculated for each well.

The geometric mean of the estimated transmissivity values for the 80 wells was calculated to be approximately 7,920 gpd/ft. Over 50% of the transmissivity values are 7,500 gpd/ft or less and over 25% are 2,500 gpd/ft or less. For this evaluation, GZA used the lower transmissivity value of 2,500 gpd/ft as a conservative value. Using this value, the hydraulic conductivity can be calculated by dividing the transmissivity by the aquifer thickness. Based on the WDNR well logs, the average thickness of the Maquoketa Shale is approximately 167 feet. Dividing the transmissivity by 167 feet results in an estimated hydraulic conductivity of 1.39×10^{-3} feet per minute (ft/min) or 2.32×10^{-5} feet per second (ft/sec). This hydraulic conductivity value is consistent with and in the range for literature values for Maquoketa Shale (Eaton and Bradbury, 1998).

Using the values estimated in the discussion above, drawdown was calculated using the Theis equation presented in equations 1, 2, and 3 for the appropriate critical distances estimated for the single-family homes and condominiums. Below is a summary of the values used for each of the different drawdown scenarios.

Variable	Single-Family		Multi-Family Condominium Buildings	
	Drawdown at Nearest Property Boundary	Drawdown With Neighboring Property Well Considering Cumulative Drawdown From Intersecting Cones of Depression	Drawdown at Nearest Property Boundary	Drawdown With Neighboring Property Well Considering Cumulative Drawdown From Intersecting Cones of Depression
Per Capita Home	3	3	6	6
Daily Water Use, gpd	125	125	125	125
Well Discharge	375 gpd / 0.26 gpm	375 gpd / 0.26 gpm	750 gpd / 0.52 gpm	750 gpd / 0.52 gpm
Critical Distance, ft	30	40	60	50
Storage, unitless	0.0000713	0.0000713	0.0000713	0.0000713
Transmissivity, gpd/ft	2,500	2,500	2,500	2,500
50-Year Pumping Period, days	18,250	18,250	18,250	18,250
Aquifer Thickness, ft	167	167	167	167
Saturated Screen Length, ft	3	3	3	3
Well Radius, ft	0.25	0.25	0.25	0.25
Drawdown at Critical Distance	0.23 feet 2.75 inches	0.44 feet 5.0 inches	0.42 feet 5.10 inches	0.87 feet 9.60 inches



Based on GZA's review of the available information in the Ordinance that requires this groundwater study, it does not state an acceptable standard by which to evaluate the effect of the proposed development on the groundwater due to pumping. In GZA's experience, the Village of Richfield in Washington County has a Groundwater Protection Ordinance that specifically states that "...drawdown at the property boundary shall not exceed one foot..." and that "...the drawdown at any perennial stream, wetland or lake shall not exceed 1/2 foot." These criteria seem reasonable for evaluating the effect on groundwater and represented the criteria used to evaluate the effect of the proposed development on the groundwater and surface water due to pumping.

The calculated drawdown for the different types of proposed buildings indicates that the impact to the groundwater system by the proposed development at the property boundary of each lot is less than 1 foot and at the intersection of the cones of depression between adjacent wells where drawdown is cumulative. The calculated drawdown is considered a conservatively high value based on the assumptions presented above, including an increase in the per capita capacity of the household and the increase in the water usage per building per capita. In addition, the calculated drawdown assumed no groundwater recharge from surface water infiltration from stormwater features that would have the effect of minimizing the drawdown.

An evaluation of the surface water or natural resources indicates that these features are protected from the groundwater withdrawal. A review of the water well logs indicates that the water wells in this area are predominantly withdrawing water from the underlying bedrock, not the shallow glacial deposits. The shallow glacial deposits are classified as well-drained soils, indicating that the soils in this area have a moderate to high recharge potential. Although the shallow glacial deposits have a recharge potential, the underlying Maquoketa Shale act as an aquitard and the change in permeability between the overlying glacial deposits and the Maquoketa Shale limits the vertical hydraulic communication between perched water, such as wetland and ponds and the underlying aquifers. Therefore, the pumping in the Maquoketa Shale will not cause the water level in the surface water features to be affected. The surface water features are not in direct communication with the groundwater pumping, therefore, the proposed development will not impact the surface water features such as wetlands, ponds, and streams, and drawdown at these features due to groundwater pumping is considered to be negligible to non-existent.

CONCLUSIONS

Based on a review of the proposed subdivision, available published literature, and well construction records from the WDNR, GZA was able to gain an understanding of the water requirements and underlying aquifer conditions that form the basis of this evaluation. GZA used the Theis non-equilibrium well equation to determine drawdown at the nearest property boundary, as well as the cumulative drawdown at the intersection of each well's cone of depression for both the single-family and multi-family living scenarios. Based on calculations of drawdown over a 50-year pumping period, assuming no recharge to the groundwater system and using very conservative assumptions for water use, the maximum drawdown calculated at the closest property boundary is less than 3 inches and the cumulative drawdown at the intersection of each well's cone of depression is less than 10 inches. Based on GZA's interpretation of the calculated drawdown, it does not represent a significant drawdown that will affect the groundwater system. The proposed subdivision will not affect the local groundwater resources or recharge to Pewaukee Lake because the shallow groundwater in the glacial deposits has very limited hydraulic communication to the underlying bedrock aquifer due to the presence of Maquoketa Shale. The private well systems for this subdivision should be capable of supporting the subdivision without environmental impairment to groundwater or surface water features.



REFERENCES

Below is a list of publications and documents that GZA relied on for the development of this hydrogeologic assessment of the Development.

Bradbury K.R., and E. R. Rothschild, 1985, A Computerized Technique for Estimating the Hydraulic Conductivity of Aquifers from Specific Capacity Data, National Groundwater Association, Groundwater, Volume 23, No. 2, p. 240-246.

Dieter, C.A., Maupun, M.A., 2017, Public Supply and Domestic Water Use in the United States, 2015, Open-File Report 2017-1131, United States Geological Survey, 16 pgs.

Clayton, L., 2001, Pleistocene Geology of Waukesha County, Wisconsin. Bulletin 99, Plate 1. Map. 1:100,000. United States Geological Survey and Wisconsin Geological and Natural History Survey.

Eaton T.T. and K.R. Bradbury, 1998, Evaluation of the confining properties of the Maquoketa Formation in the SEWRPC Region of Southeastern Wisconsin, Final report prepared for the Wisconsin Department of Natural Resources, Wisconsin Geological and Natural History Survey Open-File Report 98-11, 32 pgs.

Eaton, T.T., Hart, D.J., Bradbury, K.R., Wang, H.F., 2000, Appendix B: Hydraulic Conductivity and Specific Storage of the Maquoketa Shale, WGNHS Open-File Report 2000-01, University of Wisconsin-Water Resources Institute, 31 pgs.

Foley, F.C., Walton, W.C., and Drescher, W.J., 1953, Ground-Water Conditions in the Milwaukee-Waukesha Area, Wisconsin, Geological Survey Water-Supply paper 1229, United States Geological Survey, 109 pgs.

Gunther, J.B., 1975, Ground-Water Resources of Waukesha County, Wisconsin, Information Circular No. 29, United States Geological Survey and Wisconsin Geological and Natural History Survey, 55 pgs.

Massie-Ferch, K.M, 2004, Preliminary Bedrock Geologic Map of Waukesha County Wisconsin. Wisconsin Open-File Report 2004-15A. Map. 1:100,000. Wisconsin Geological and Natural History Survey.

Massie-Ferch, K.M and Peters, R.M., 2004, Preliminary Depth to Bedrock Map of Waukesha County, Wisconsin. Wisconsin Geological and Natural History Survey Open-File Report 2004-15C. Map. 1:100,000. Wisconsin Geological and Natural History Survey.

National Wetland Inventory, U.S. Fish and Wildlife Service. National Wetlands Mapper. Available online: <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>. Accessed March 2023.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online: <http://websoilsurvey.sc.egov.usda.gov/>. Accessed March 2023.

Southeastern Wisconsin Regional Planning Commission, 2020, A Lake Management Plan for Pewaukee Lake, Waukesha County, Wisconsin. Community Assistance Planning Report No. 58, 3rd Edition.

Town of Delafield Ordinance, Section 17.04 5. R., entitled "Planned Development District No. 1." https://www.townofdelafield.org/sites/g/files/vyhliif5546/f/uploads/1704_rev_2019.pdf. Accessed March 2023.

United States Census Bureau. Quick Facts: Delafield Town, Waukesha County, Wisconsin. Available online: [U.S. Census Bureau QuickFacts: United States](https://www.census.gov/quickfacts/Delafield-town-wisconsin) Accessed March 2023.

Village of Richfield, Washington County, Wisconsin. Groundwater Protection Ordinance. <https://ecode360.com/16178324>. Accessed March 2023.

Wisconsin Department of Natural Resources, Surface Water Data Viewer. Available online: <https://dnrmaps.wi.gov/H5/?Viewer=SWDV>. Accessed March 2023.



CLOSING

GZA appreciates the opportunity to provide this professional evaluation to Neumann. If you have questions or require additional information, please feel free to contact Ms. Sheryl Stephenson at (262) 202-1716 or Mr. Kevin Hedinger at (262) 424-1761.

Sincerely,

GZA GeoEnvironmental, Inc.

A handwritten signature in blue ink that reads "Stephenson".

Sheryl I. Stephenson, P.G.
Project Hydrogeologist

A handwritten signature in blue ink that reads "Kevin M. Hedinger".

Kevin M. Hedinger
Senior Hydrogeologist

A handwritten signature in blue ink that reads "James F. Drought".

James F. Drought, P.H.
Principal Hydrogeologist

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Attachments: Table 1
Figures 1 through 5
Limitations
Well Construction Records



TABLES

TABLE 1
WELL DATA
Town of Delafield, Wisconsin

Address	Install Date	Unique ID	Well Diameter (inches)	Well Depth (ft bgs)	Well Screen (Top) (ft bgs)	Well Screen (Bottom) (ft bgs)	Initial Water Level (ft bgs)	Pumping Water Level (ft bgs)	Pumping Rate (gpm)	Duration (hours)	Storage Coefficient (S)	Well Loss Coefficient (C)	Aquifer Thickness	Measured drawdown (ft)	Saturated Screen Length (ft)	Well Loss (Sw) (ft)	Partial Penetration Parameter (sp)	Specific Capacity (gpm/ft)	TO	Transmissivity (ft ² /min)	1st term	2nd term	K (ft/sec)
MAQUOKETA																							
W296 N1926 GLEN COVE ROAD	5/22/1976	8KN577	6	143			43	48	10	3	7.1284E-05	4.38E-09	167	5	3	2.81783E-05	201.44	2	9.00840	9.00840	2.13E-02	423.40	0.000899042
N20W29612 GLEN COVE RD	1/30/1970	8NM374	6	80			21	26	10	9	7.1284E-05	4.38E-09	167	5	3	2.81783E-05	201.44	2	9.03183	9.03183	2.13E-02	424.51	0.00090138
N20W29536 GLEN COVE ROAD	10/12/1968	8NM376	6	265			5	100	8	8	7.1284E-05	4.38E-09	167	95	3	1.80341E-05	201.44	0.084211	0.37734	0.37734	8.96E-04	421.21	3.76582E-05
W92N2015 ELMHURST DRIVE	7/8/2021	AAK300	6	142			38	100	10	1	7.1284E-05	4.38E-09	167	62	3	2.81783E-05	201.44	0.16129	0.72026	0.72026	1.72E-03	419.78	7.18823E-05
N20 W29352 OAKTON RD	10/19/1993	GF227	6	68			11	18	20	18	7.1284E-05	4.38E-09	167	7	3	0.000112713	201.44	2.857143	12.93474	12.93474	3.04E-02	425.56	0.001290892
N18 W29022 GOLF RDG S	4/9/1993	GF527	6	245			90	200	10	4	7.1284E-05	4.38E-09	167	110	3	2.81783E-05	201.44	0.090909	0.40675	0.40675	9.67E-04	420.59	0.001491E-05
N18W28987 GOLF RIDGE SOURT	7/16/1993	GI594	6	221			40	160	7	1	7.1284E-05	4.38E-09	167	120	3	1.38074E-05	201.44	0.058333	0.25986	0.25986	6.21E-04	418.76	2.59343E-05
W299 N1848 WIND RIDGE CT	3/19/1994	GM165	6	191			65	78	11	1.3	7.1284E-05	4.38E-09	167	13	3	3.40958E-05	201.44	0.846154	3.79593	3.79593	9.00E-03	421.70	0.000378835
N18 W29926 CROOKED CREEK RD	12/17/1993	GM196	6	199			40	160	2	1.25	7.1284E-05	4.38E-09	167	120	3	1.12713E-06	201.44	0.016667	0.07406	0.07406	1.77E-04	417.73	7.39153E-06
N18 W29838 CROOKED CREEK RD	11/16/1993	GM199	6	192			33	160	3.5	1	7.1284E-05	4.38E-09	167	127	3	3.45185E-06	201.44	0.027559	0.12255	0.12255	2.93E-04	418.01	1.22304E-05
N18 W29845 CROOKED CREEK RD	8/14/1995	HD929	6	210			35	120	7	4	7.1284E-05	4.38E-09	167	85	3	1.38074E-05	201.44	0.082353	0.36838	0.36838	8.76E-04	420.50	3.67648E-05
N18 W29085 GOLF RIDGE S	12/10/1993	HM183	6	285			70	240	6	4	7.1284E-05	4.38E-09	167	170	3	1.01442E-05	201.44	0.035294	0.15756	0.15756	3.75E-04	419.65	1.57245E-05
N18 W29019 GOLF RIDGE S	12/7/1993	HM722	6	165			46	80	15	5	7.1284E-05	4.38E-09	167	34	3	6.34013E-05	201.44	0.411176	1.98243	1.98243	4.69E-03	422.40	0.000197848
N19 W28998 GOLF RIDGE N	12/9/1993	HM728	6	245			66	140	9	5	7.1284E-05	4.38E-09	167	74	3	2.28245E-05	201.44	0.121622	0.54484	0.54484	1.29E-03	421.11	5.43749E-05
N18 W29059 GOLF RDG S	5/2/1994	HR773	6	245			24	165	5	5	7.1284E-05	4.38E-09	167	141	3	7.04458E-06	201.44	0.035461	0.15839	0.15839	3.77E-04	419.87	1.58075E-05
W299 N1853 WINDRIDGE CT	5/27/1994	HR800	6	205			64	145	8	5	7.1284E-05	4.38E-09	167	81	3	1.80341E-05	201.44	0.098765	0.44223	0.44223	1.05E-03	420.90	4.41344E-05
W298 N1864 LOST TREE CT	7/27/1994	HT523	6	195			45	168	4.5	1.5	7.1284E-05	4.38E-09	167	123	3	5.70611E-06	201.44	0.036585	0.16296	0.16296	3.89E-04	418.70	1.62635E-05
N18 W29856 CROOKED CREEK RD	7/19/1994	HT524	6	196			33	55	12	1	7.1284E-05	4.38E-09	167	22	3	4.05768E-05	201.44	0.545455	2.44288	2.44288	5.80E-03	421.00	0.0002438
W299 N1828 WINDRIDGE CT	10/4/1994	HT561	6	190			55	90	10	1	7.1284E-05	4.38E-09	167	35	3	2.81783E-05	201.44	0.285714	1.27763	1.27763	3.04E-03	420.35	0.000127508
N18 W29925 CROOKED CREEK RD	8/29/1994	HT566	6	193			44	160	3	1.5	7.1284E-05	4.38E-09	167	116	3	2.53605E-06	201.44	0.025662	0.11510	0.11510	2.75E-04	418.35	1.14867E-05
W299 N1877 WINDRIDGE CT	10/13/1994	HT585	6	186			52	67	10	1	7.1284E-05	4.38E-09	167	15	3	2.81783E-05	201.44	0.066667	2.98717	2.98717	7.09E-03	421.20	0.000298121
N19 W29056 GOLF RDG N	6/6/1994	HT864	6	205			58	125	15	5	7.1284E-05	4.38E-09	167	67	3	6.34013E-05	201.44	0.223881	1.00439	1.00439	2.38E-03	421.72	0.000100239
N18W29054 GOLF RIDGE SOUTH	11/6/1995	HU441	6	192			58	120	15	72	7.1284E-05	4.38E-09	167	62	3	6.34013E-05	201.44	0.241935	1.09247	1.09247	2.57E-03	424.47	0.000199029
N20W29316 OAKTON RD	3/7/1995	HU445	6	85			18	40	20	30	7.1284E-05	4.38E-09	167	22	3	0.000112713	201.44	0.909091	4.10940	4.10940	9.67E-03	424.92	0.00041012
N18 W29822 CROOKED CREEK RD	7/18/1994	HW624	6	205			56	145	10	5	7.1284E-05	4.38E-09	167	89	3	2.81783E-05	201.44	0.11236	0.50325	0.50325	1.20E-03	421.03	5.02245E-05
W299 N1866 WINDRIDGE CT	4/11/1995	HE527	6	188			50	83	11	1	7.1284E-05	4.38E-09	167	33	3	3.40958E-05	201.44	0.333333	1.49112	1.49112	3.55E-03	420.51	0.000148814
N18 W29887 CROOKED CREEK RD	2/20/1995	IF101	6	345			108	280	10	4	7.1284E-05	4.38E-09	167	172	3	2.81783E-05	201.44	0.05814	0.25986	0.25986	6.18E-04	420.15	2.59337E-05
N19 W29015 GOLF RIDGE N	4/28/1995	II160	6	225			73	125	20	3	7.1284E-05	4.38E-09	167	52	3	0.000112713	201.44	0.384615	1.72562	1.72562	4.09E-03	421.75	0.000172217
N18 W 29582 CROOKED CREEK	12/6/1996	KB124	6	210			8	80	8	2	7.1284E-05	4.38E-09	167	72	3	1.80341E-05	201.44	0.111111	0.49656	0.49656	1.18E-03	420.10	4.95568E-05
N18 W29543 CROOKED CREEK RD	10/29/1997	KB792	6	210			17	80	8	1.5	7.1284E-05	4.38E-09	167	63	3	1.80341E-05	201.44	0.126984	0.56729	0.56729	1.35E-03	419.95	5.66155E-05
N18 W29521 CROOKED CREEK RD	5/13/1996	KM561	6	188			21	91	10	1	7.1284E-05	4.38E-09	167	70	3	2.81783E-05	201.44	0.142857	0.63776	0.63776	1.52E-03	419.66	6.000478E-05
W298 N1857 LOST TREE CT	8/29/1996	KM594	6	191			45	82	10	1.5	7.1284E-05	4.38E-09	167	37	3	2.81783E-05	201.44	0.27027	1.20958	1.20958	2.88E-03	420.70	0.000120717
N18 W29082 S GOLF RIDGE	1/26/1996	KO745	6	145			57	80	20	4	7.1284E-05	4.38E-09	167	23	3	0.000112713	201.44	0.869565	3.91164	3.91164	9.25E-03	422.86	0.000390383
N19 W29079 GOLF RIDGE N	12/5/1995	KO885	6	245			115	200	3.5	3	7.1284E-05	4.38E-09	167	85	3	3.45185E-06	201.44	0.041176	0.18376	0.18376	4.38E-04	419.51	1.83394E-05
N18 W29612 CROOKED CREEK RD	8/22/1996	KZ997	6	185			37	80	20	3	7.1284E-05	4.38E-09	167	43	3	0.000112713	201.44	0.465116	2.08774	2.08774	4.95E-03	421.94	0.000208357
W298 N1889 LOST TREE CT	11/4/1996	LU614	6	190			54	148	9	2	7.1284E-05	4.38E-09	167	94	3	2.28245E-05	201.44	0.095745	0.42773	0.42773	1.02E-03	419.95	4.26886E-05
W296 N1734 HIDDEN CREEK CT	12/24/1997	LT222	6	203			20	105	12	2	7.1284E-05	4.38E-09	167	85	3	4.05768E-05	201.44	0.141176	0.63128	0.63128	1.50E-03	420.34	6.30023E-05
W299 N1884 WINDRIDGE CT	5/7/1997	LU761	6	185			51	80	30	3	7.1284E-05	4.38E-09	167	29	3	0.000253605	201.44	1.034483	4.65226	4.65226	1.10E-02	422.74	0.000464298
N19 W29028 GOLF RIDGE NORTH	6/11/1997	LV116	6	247			66	247	2	2.5	7.1284E-05	4.38E-09	167	181	3	1.12713E-06	201.44	0.01105	0.04914	0.04914	1.18E-04	418.01	4.90378E-06
N18 W29873 CROOKED CREEK RD	8/25/1997	LV163	6	207			33	145	5	1.5	7.1284E-05	4.38E-09	167	112	3	7.04458E-06	201.44	0.044643	0.19894	0.19894	4.75E-04	418.90	1.98542E-05
N20 W29624 E GLEN COVE RD	10/28/1997	LV188	6	183			23	125	6	2	7.1284E-05	4.38E-09	167	102	3	1.01442E-05	201.44	0.058824	0.26249	0.26249	6.26E-04	419.46	2.61961E-05
W295 N1738 PRAIRIE WOODS	7/18/1997	LW273	6	105			11	40	20	4	7.1284E-05	4.38E-09	167	29	3	0.000112713	201.44	0.689565	3.10063	3.10063	7.34E-03	422.63	0.000309444
W296 N1763 HIDDEN CREEK CT	7/11/1997	LW665	6	185			35	105	15	2	7.1284E-05	4.38E-09	167	70	3	6.34013E-05	201.44	0.214286	0.95915	0.95915	2.28E-03	420.76	9.57237E-05
W295 N1777 PRAIRIE WOOD CT	10/31/1997	MC482	6	125			33	60	15	4	7.1284E-05												

TABLE 1
WELL DATA
Town of Delafield, Wisconsin

Address	Install Date	Unique ID	Well Diameter (inches)	Well Depth (ft bgs)	Well Screen (Top) (ft bgs)	Well Screen (Bottom) (ft bgs)	Initial Water Level (ft bgs)	Pumping Water Level (ft bgs)	Pumping Rate (gpm)	Duration (hours)	Storage Coefficient (S)	Well Loss Coefficient (C)	Aquifer Thickness	Measured drawdown (ft)	Saturated Screen Length (ft)	Well Loss (Sw) (ft)	Partial Penetration Parameter (sp)	Specific Capacity (gpm/ft)	T0	Transmissivity (ft ² /min)	1st term	2nd term	K (ft/sec)
N16 W29959 BROOKSTONE CIR	3/29/2000	NZ343	6	165			75	125	15	2	7.1284E-05	4.38E-09	167	50	3	6.34013E-05	201.44	0.3	1.34389	1.34389	3.19E-03	421.10	0.000134121
N15 W29981 BROOKSTONE CIR	3/28/2000	NZ349	6	145			40	65	15	2	7.1284E-05	4.38E-09	167	25	3	6.34013E-05	201.44	0.6	2.69222	2.69222	6.38E-03	421.79	0.000268684
N16 W29973 BROOKSTONE CIR	6/27/2000	OG103	6	207			31	56	12	2.5	7.1284E-05	4.38E-09	167	25	3	4.05768E-05	201.44	0.48	2.15377	2.15377	5.11E-03	421.79	0.000214947
N15 W29874 BROOKSTONE CIR	3/7/2001	OG175	6	205			42	60	15	1.5	7.1284E-05	4.38E-09	167	18	3	6.34013E-05	201.44	0.833333	3.73955	3.73955	8.87E-03	421.83	0.000373209
N16 W29966 BROOKSTONE CIR	8/24/2000	OG933	6	245			79	180	7.5	2	7.1284E-05	4.38E-09	167	101	3	1.58503E-05	201.44	0.074257	0.33154	0.33154	7.90E-04	419.70	3.30878E-05
N15 W29992 BROOKSTONE CT	11/14/2000	OH372	6	165			55	80	40	4	7.1284E-05	4.38E-09	167	25	3	0.000450853	201.44	1.6	7.20791	7.20791	1.70E-02	423.47	0.000719353
N16 W29835 BROOKSTONE CIR	1/11/2001	ON816	6	205			65	120	18	4	7.1284E-05	4.38E-09	167	55	3	9.12978E-05	201.44	0.327273	1.46878	1.46878	3.48E-03	421.88	0.000146585
N15 W29814 BROOKSTONE CIR	7/3/2001	OT151	6	225			125	185	5	3	7.1284E-05	4.38E-09	167	60	3	7.04458E-06	201.44	0.083333	0.37252	0.37252	8.86E-04	420.22	3.7178E-05
N16 W29886 BROOKSTONE CIR	4/25/2001	OV202	6	208			47	188	5	3	7.1284E-05	4.38E-09	167	141	3	7.04458E-06	201.44	0.035461	0.15820	0.15820	3.77E-04	419.36	1.57882E-05
N16 W29864 BROOKSTONE CIR	4/30/2001	OV203	6	215			39	97	11	2	7.1284E-05	4.38E-09	167	58	3	3.40958E-05	201.44	0.189655	0.84866	0.84866	2.02E-03	420.64	8.46963E-05
N16 W29942 BROOKSTONE CIR	2/27/2003	RK737	6	225			100	185	4	4	7.1284E-05	4.38E-09	167	85	3	4.50853E-06	201.44	0.047059	0.21022	0.21022	5.01E-04	419.93	2.09804E-05
N15 W29852 BROOKSTONE CIR.	11/23/2001	RW617	6	172			48	90	14	2	7.1284E-05	4.38E-09	167	42	3	5.52295E-05	201.44	0.333333	1.49358	1.49358	3.55E-03	421.20	0.00014906
N16 W29803 BROOKSTONE CIR	2/18/2002	RX509	6	210			43	60	14	2.5	7.1284E-05	4.38E-09	167	17	3	5.52295E-05	201.44	0.823529	3.69994	3.69994	8.76E-03	422.33	0.000369256
W292 N2010 ELMHURST RD	12/1/2003	SB120	6	223			44	100	15	5.5	7.1284E-05	4.38E-09	167	56	3	6.34013E-05	201.44	0.267857	1.20247	1.20247	2.85E-03	422.00	0.000120007
N20 W29538 E GLEN COVE RD	9/27/2005	TE643	6	385			80	345	1.5	5	7.1284E-05	4.38E-09	167	265	3	6.34013E-07	201.44	0.00566	0.02517	0.02517	6.02E-05	418.04	2.51218E-06
W297 N1915 GLEN COVE RD	5/31/2006	TI985	6	145			41	80	30	4	7.1284E-05	4.38E-09	167	39	3	0.000253605	201.44	0.769231	3.45930	3.45930	8.18E-03	422.74	0.000345239
N20 W29636 E GLEN COVE RD	7/25/2006	TW102	6	182			25	120	10	3	7.1284E-05	4.38E-09	167	95	3	2.81783E-05	201.44	0.105263	0.47082	0.47082	1.12E-03	420.45	4.69879E-05
W297 N2007 GLEN COVE RD	3/14/2012	WW715	6	146			32	105	8	1	7.1284E-05	4.38E-09	167	73	3	1.80341E-05	201.44	0.109589	0.48893	0.48893	1.17E-03	419.39	4.87955E-05
W299 N1831 WINDRIDGE CT	9/11/2012	WZ922	6	245			65	200	3.5	4	7.1284E-05	4.38E-09	167	135	3	3.45185E-06	201.44	0.025926	0.11565	0.11565	2.76E-04	419.34	1.15422E-05
N16 W2 BROOKSTONE CIRCLE	12/5/2012	YI525	6	262			70	230	5	1	7.1284E-05	4.38E-09	167	160	3	7.04458E-06	201.44	0.03125	0.13900	0.13900	3.32E-04	418.13	1.38726E-05
N12 W295888 S HAMPTON DR	11/1/2004	SN045	6	200			65	80	20	2	7.1284E-05	4.38E-09	167	15	3	0.000112713	201.44	1.333333	5.99408	5.99408	1.42E-02	422.59	0.000598212
SOUTHAMPTON DR	8/14/2019	ZW994	6	165			65	105	20	3	7.1284E-05	4.38E-09	167	40	3	0.000112713	201.44	0.5	2.24470	2.24470	5.32E-03	422.02	0.000224022
N20 W29254 ELMHURST DRIVE	10/29/1986	8KO526	6	202			13	35	15	3	7.1284E-05	4.38E-09	167	22	3	6.34013E-05	201.44	0.681818	3.06321	3.06321	7.25E-03	422.33	0.00030571

- Notes:
1. ft bgs = feet below ground surface.
 2. gpm = gallons per minute.
 3. gpm/ft = gallons per minute per foot.
 4. gpd/ft = gallons per day per foot.



FIGURES

SITE DATA SUMMARY

- TOTAL AREA = 152.0 acres
- WETLAND AREA = 10.11 acres
- UPLAND PEC AREA = 30.65 acres
- SUB-TOTAL EC = 40.76 acres
- DEVELOPMENT AREA = 111.24 acres
- ZONE 1: Low Density Single Family Residential = 8 lots
- ZONE 2: Medium Density Single Family Residential = 29 lots
- ZONE 3: Single Family & Condominium = 37 lots
- ZONE 4: Medium Density Single Family Residential = 81 lots
- TOTAL DEVELOPMENT = 211 units
- NET DENSITY = 211 un/111.24 ac = 1.90 un/ac
- Total Street Length = 10,700 lf (50.7 lf/unit)

Low Density Single Family Residential Zone 1
20,000 sf, 100' wide
8 lots

Zone 2
32 ac

Zone 1
24 ac

Zone 3
51 ac

Zone 4
45 ac

Medium Density Single Family Residential Zone 2
15,000 sf, 90' wide
29 lots

Medium Density Single Family Residential Zone 4
10,000 sf, 75' wide
81 lots

Single Family & Condominium Zone 3

- Duplex Ranch = 56 units
- 10,000 sf Single Family Lots = 37 units
- Total = 93 units



4100 N. CALHOUN ROAD
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpdudelko@trioeng.com

GOLF RDG S

EXISTING FARMHOUSE TO REMAIN

ELMHURST ROAD

GOLF ROAD

I-94

ACTIVE RECREATION AREA

CROOKED CREEK

CREEK RD

BROOKSTONE CIR

GLEN COVE ROAD

BROOKSTONE CIR

PROPOSED SITE PLAN -UPDATE-
Thomas Farm Development (152 acres)

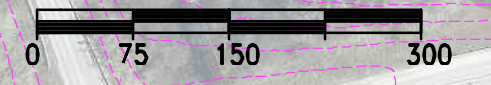
Town of Delafield, WI



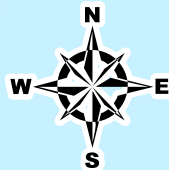
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Scale: 1" = 300' (11"x17")

DATE: 02/19/2023

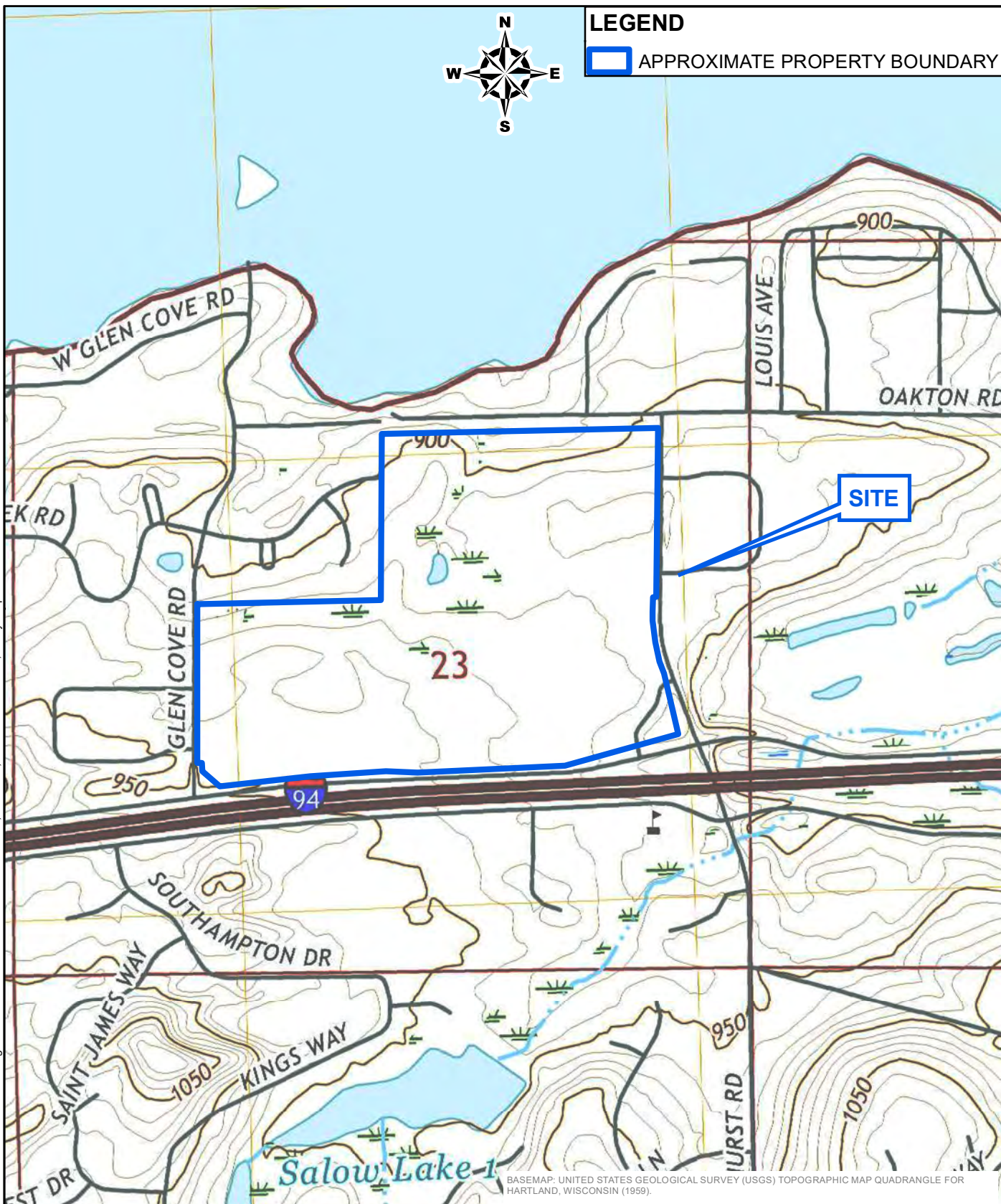


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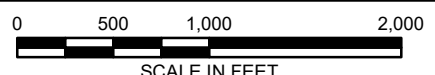


LEGEND

APPROXIMATE PROPERTY BOUNDARY



BASEMAP: UNITED STATES GEOLOGICAL SURVEY (USGS) TOPOGRAPHIC MAP QUADRANGLE FOR HARTLAND, WISCONSIN (1959).



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PROPOSED THOMAS FARM
SUBDIVISION DEVELOPMENT
TOWN OF DELAFIELD
WISCONSIN

PREPARED BY:
 GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
NEUMANN DEVELOPMENTS, INC.
N27 W24025 PAUL COURT, STE 100
PEWAUKEE, WISCONSIN, 53072-6239

SITE LOCATION MAP

PROJ MGR:	SIS	REVIEWED BY:	KMH	CHECKED BY:	JFD
DESIGNED BY:	SIS	DRAWN BY:	SIS	SCALE:	SEE ABOVE
DATE:	03/15/2023	PROJECT NO.:	20.0158210.00	REVISION NO.:	

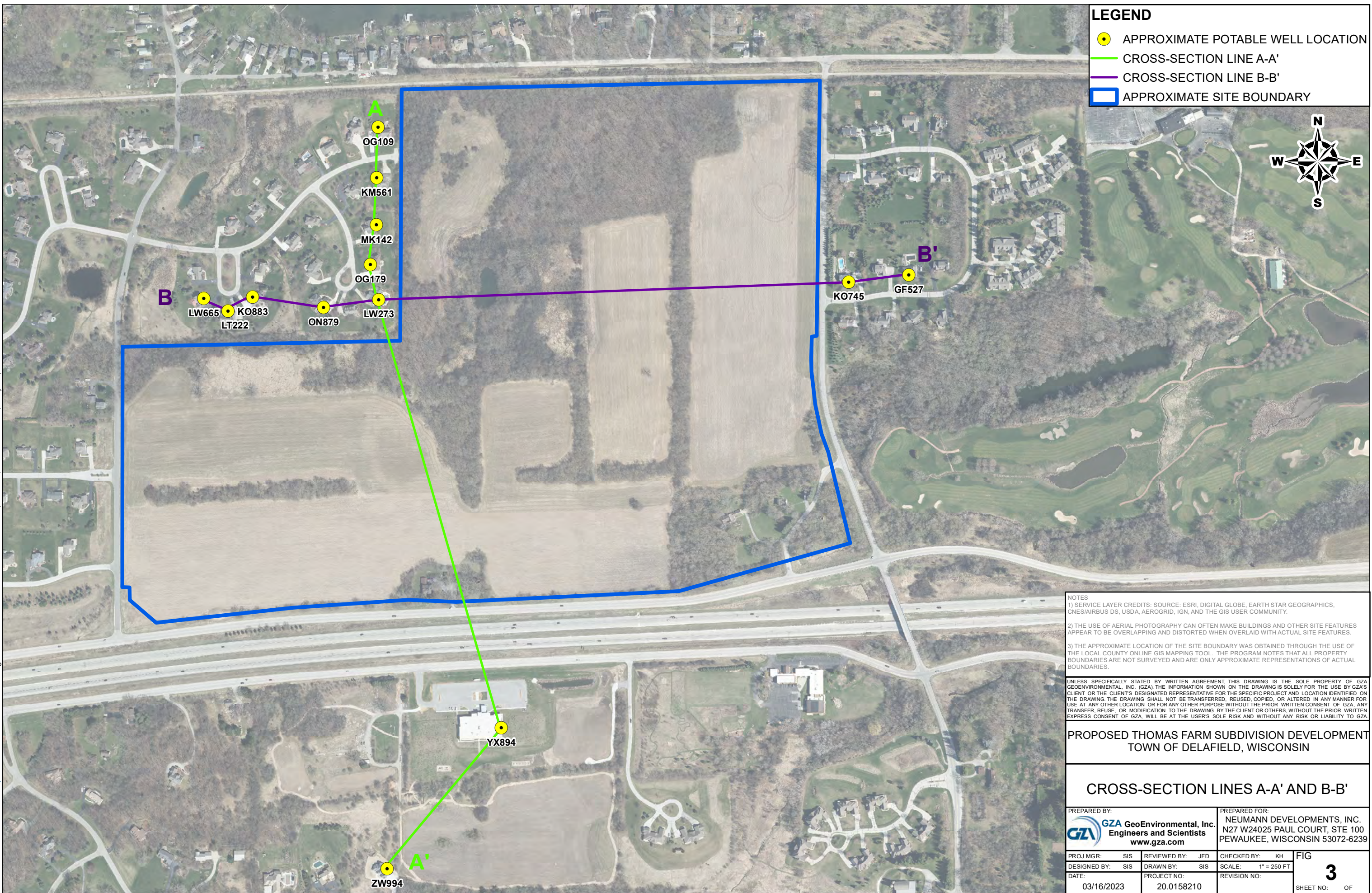
FIG	2
SHEET NO:	

© 2023 - GZA GeoEnvironmental, Inc. J:\158200\158299\158210\Figures\FIGURE 2 - SITE LOCATION MAP.mxd, March 15, 2023 - 12:40:12 AM, sheryl_stephenson

© 2023 - GZA GeoEnvironmental, Inc. J:\158200\158200\158200\Figures\FIGURE 3 - CROSS SECTION LINES.mxd, March 16, 2023 - 1:28:32 PM, sheryl.stephenson

LEGEND

- APPROXIMATE POTABLE WELL LOCATION
- CROSS-SECTION LINE A-A'
- CROSS-SECTION LINE B-B'
- APPROXIMATE SITE BOUNDARY



NOTES

- 1) SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITAL GLOBE, EARTH STAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, AEROGRIID, IGN, AND THE GIS USER COMMUNITY.
- 2) THE USE OF AERIAL PHOTOGRAPHY CAN OFTEN MAKE BUILDINGS AND OTHER SITE FEATURES APPEAR TO BE OVERLAPPING AND DISTORTED WHEN OVERLAID WITH ACTUAL SITE FEATURES.
- 3) THE APPROXIMATE LOCATION OF THE SITE BOUNDARY WAS OBTAINED THROUGH THE USE OF THE LOCAL COUNTY ONLINE GIS MAPPING TOOL. THE PROGRAM NOTES THAT ALL PROPERTY BOUNDARIES ARE NOT SURVEYED AND ARE ONLY APPROXIMATE REPRESENTATIONS OF ACTUAL BOUNDARIES.

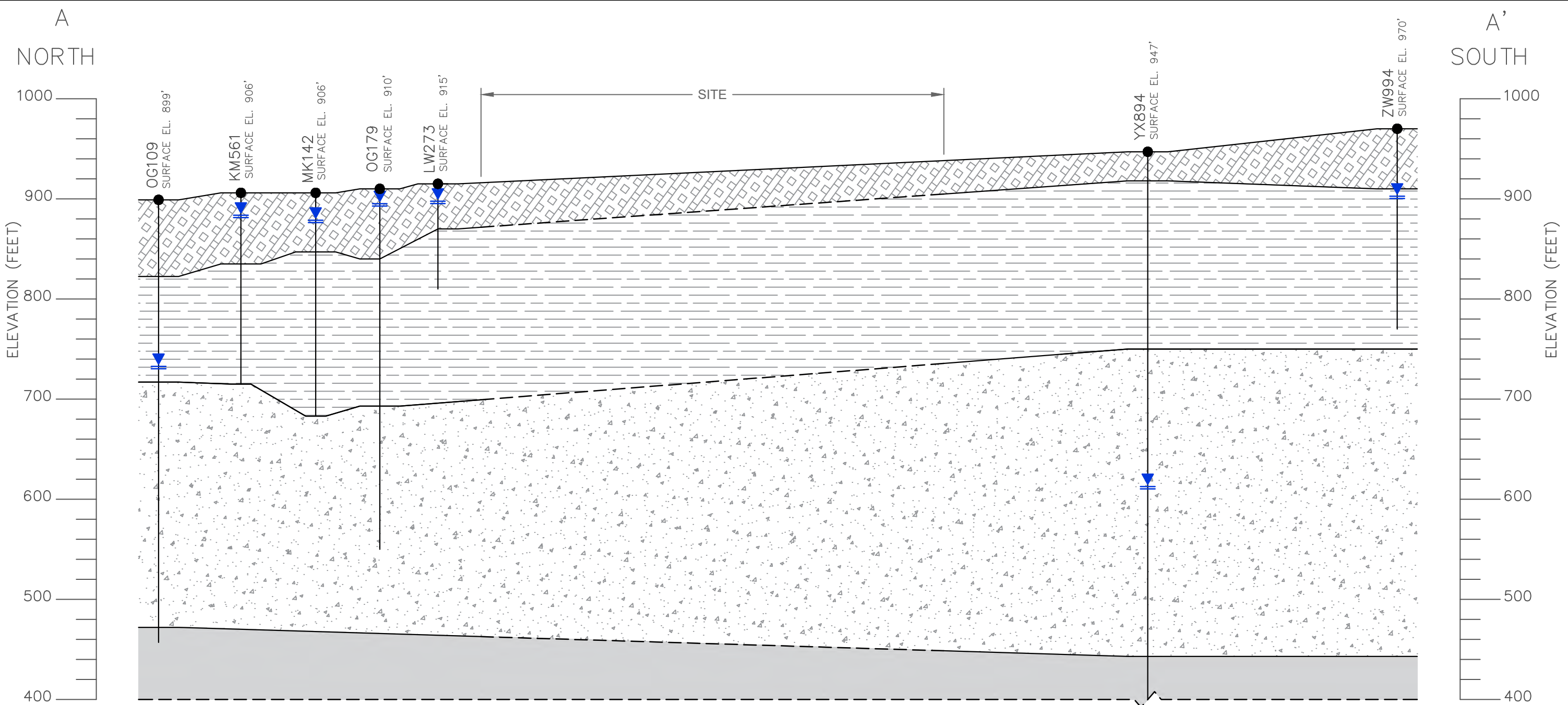
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**PROPOSED THOMAS FARM SUBDIVISION DEVELOPMENT
TOWN OF DELAFIELD, WISCONSIN**

CROSS-SECTION LINES A-A' AND B-B'

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NEUMANN DEVELOPMENTS, INC. N27 W24025 PAUL COURT, STE 100 PEWAUKEE, WISCONSIN 53072-6239	
PROJ MGR: SIS	REVIEWED BY: JFD	CHECKED BY: KH	FIG
DESIGNED BY: SIS	DRAWN BY: SIS	SCALE: 1" = 250 FT	3
DATE: 03/16/2023	PROJECT NO: 20.0158210	REVISION NO:	
			SHEET NO: OF

©2016 - GZA GeoEnvironmental, Inc. GZA-\\GZAWAUKESHA\JOBS\158210\CROSS SECTION\DWG CROSS SECTION A-A' MARCH 16, 2023 HUNTER PINKERTON



VERTICAL EXAGGERATION = 2x

LEGEND	
	GLACIAL DEPOSITS
	MAQUOKETA SHALE
	GALENA-PLATEVILLE UNIT
	ST. PETERS SANDSTONE UNIT
	DOMESTIC WATER WELL
	APPROXIMATE WATER TABLE
OG109	WDNR WELL ID

NOTES

- ELEVATIONS SHOWN ARE ESTIMATED FROM WAUKESHA COUNTY TOPOGRAPHY (1 FT. INTERVALS).
- THE STRATIFICATION LINES ARE BASED ON INTERPOLATIONS BETWEEN WIDELY SPACED BORING LOCATIONS AND THUS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN DEPOSIT TYPES. ACTUAL TRANSITIONS MAY VARY FROM THOSE SHOWN.
- MAGNIFICATION OF VERTICAL SCALE FOR PURPOSES OF PRESENTATION CAUSES TRENDS IN SOIL STRATA TO APPEAR MORE PRONOUNCED THAN THAT WHICH ACTUALLY EXISTS.
- WELL YX894 EXTENDS TO 202' ABOVE MSL BUT IS NOT SHOWN ON CROSS SECTION.
- GEOLOGICAL AND WATER LEVEL DATA ARE OBTAINED FROM WDNR WELL CONSTRUCTION RECORDS.
- WELL LOCATIONS WERE OBTAINED FROM ADDRESSES PROVIDED ON THE WDNR WELL CONSTRUCTION RECORDS, HOWEVER, EXACT WELL LOCATIONS ARE ESTIMATED.

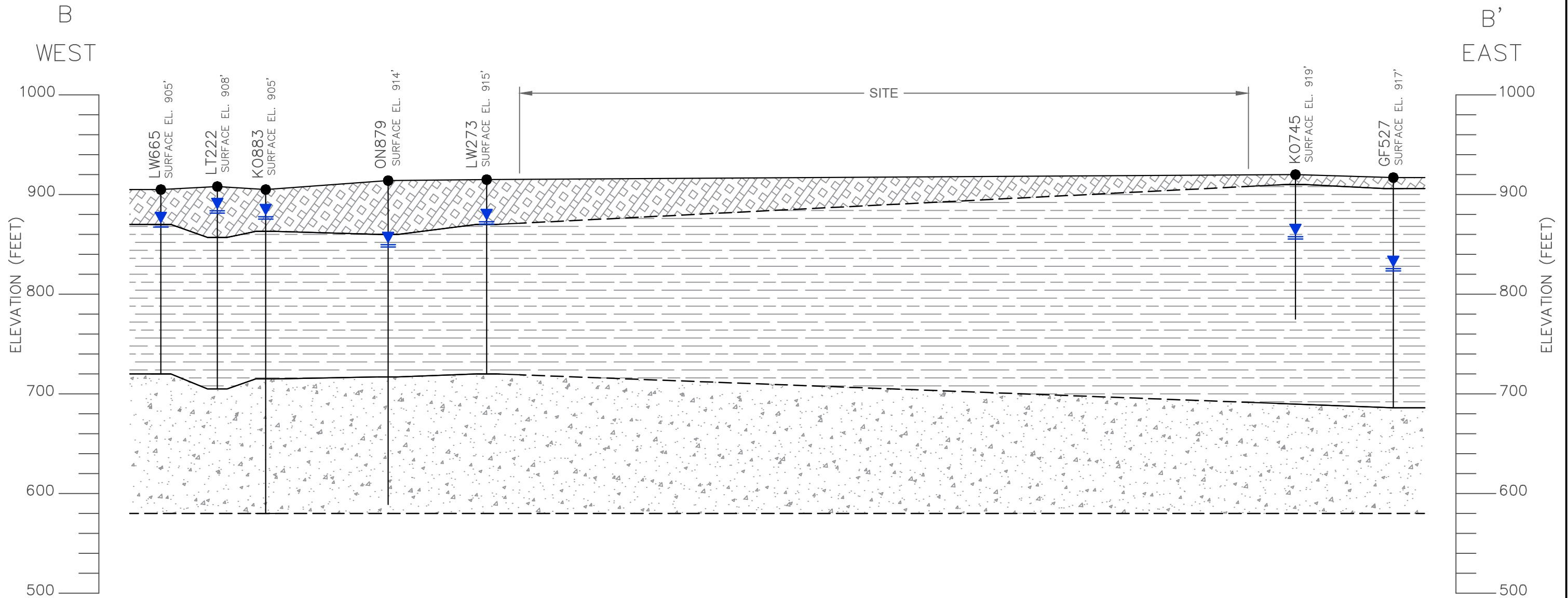
NO.	ISSUE/DESCRIPTION	BY	DATE

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PROPOSED THOMAS FARM SUBDIVISION DEVELOPMENT
TOWN OF DELAFIELD, WISCONSIN

GEOLOGIC CROSS SECTION (A-A')

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NEUMANN DEVELOPMENTS, INC. N27 W24025 PAUL COURT, STE 100 PEWAUKEE, WISCONSIN 53072-6239	
PROJ MGR: KMH	REVIEWED BY: KMH	CHECKED BY: SIS	FIG
DESIGNED BY: SIS	DRAWN BY: HKP	SCALE: 1" = 50'	4A
DATE: 03/16/2023	PROJECT NO. 20.0158210.00	REVISION NO.	



LEGEND	
	GLACIAL DEPOSITS
	MAQUOKETA SHALE
	GALENA-PLATEVILLE UNIT
	DOMESTIC WATER WELL
	APPROXIMATE WATER TABLE
LW665	WDNR WELL ID

NOTES

- ELEVATIONS SHOWN ARE ESTIMATED FROM WAUKESHA COUNTY TOPOGRAPHY (1 FT. INTERVALS).
- THE STRATIFICATION LINES ARE BASED ON INTERPOLATIONS BETWEEN WIDELY SPACED BORING LOCATIONS AND THUS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN DEPOSIT TYPES. ACTUAL TRANSITIONS MAY VARY FROM THOSE SHOWN.
- MAGNIFICATION OF VERTICAL SCALE FOR PURPOSES OF PRESENTATION CAUSES TRENDS IN SOIL STRATA TO APPEAR MORE PRONOUNCED THAN THAT WHICH ACTUALLY EXISTS.
- WELL YX894 EXTENDS TO 202' ABOVE MSL BUT IS NOT SHOWN ON CROSS SECTION.
- GEOLOGICAL AND WATER LEVEL DATA ARE OBTAINED FROM WDNR WELL CONSTRUCTION RECORDS.
- WELL LOCATIONS WERE OBTAINED FROM ADDRESSES PROVIDED ON THE WDNR WELL CONSTRUCTION RECORDS, HOWEVER, EXACT WELL LOCATIONS ARE ESTIMATED.

VERTICAL EXAGGERATION = 2x

NO.	ISSUE/DESCRIPTION	BY	DATE

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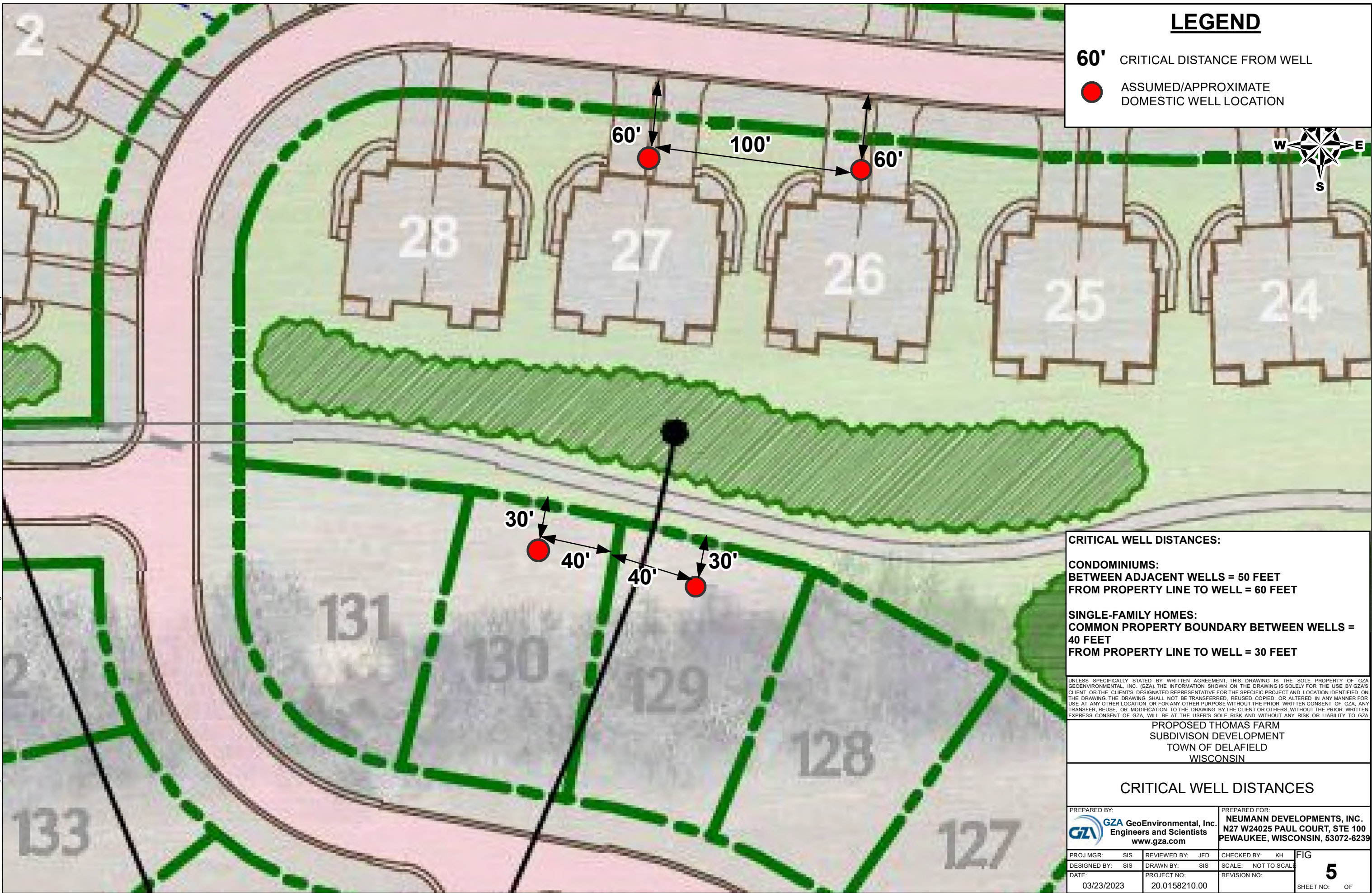
PROPOSED THOMAS FARM SUBDIVISION DEVELOPMENT
TOWN OF DELAFIELD, WISCONSIN

GEOLOGIC CROSS SECTION (B-B')

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: NEUMANN DEVELOPMENTS, INC. N27 W24025 PAUL COURT, STE 100 PEWAUKEE, WISCONSIN 53072-6239
--	---

PROJ MGR: KMH	REVIEWED BY: KMH	CHECKED BY: SIS	FIG
DESIGNED BY: SIS	DRAWN BY: HKP	SCALE: 1" = 50'	4B
DATE: 03/16/2023	PROJECT NO: 20.0158210.00	REVISION NO.	

© 2023 - GZA GeoEnvironmental, Inc. \\GZAWaukesha\Jobs\15820\0158299\158210\Figures\FIGURE 5 - CRITICAL WELL DISTANCE.mxd, March 23, 2023 - 2:45:38 PM, sheryl.stephenson



LEGEND

- 60'** CRITICAL DISTANCE FROM WELL
- ASSUMED/APPROXIMATE DOMESTIC WELL LOCATION



CRITICAL WELL DISTANCES:

CONDOMINIUMS:
 BETWEEN ADJACENT WELLS = 50 FEET
 FROM PROPERTY LINE TO WELL = 60 FEET

SINGLE-FAMILY HOMES:
 COMMON PROPERTY BOUNDARY BETWEEN WELLS = 40 FEET
 FROM PROPERTY LINE TO WELL = 30 FEET

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PROPOSED THOMAS FARM
 SUBDIVISION DEVELOPMENT
 TOWN OF DELAFIELD
 WISCONSIN

CRITICAL WELL DISTANCES

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NEUMANN DEVELOPMENTS, INC. N27 W24025 PAUL COURT, STE 100 PEWAUKEE, WISCONSIN, 53072-6239	
PROJ MGR: SIS	REVIEWED BY: JFD	CHECKED BY: KH	FIG
DESIGNED BY: SIS	DRAWN BY: SIS	SCALE: NOT TO SCALE	5
DATE: 03/23/2023	PROJECT NO: 20.0158210.00	REVISION NO:	



ATTACHMENT 1

Limitations



LIMITATIONS

1. In performing this assessment, GZA has relied on certain information provided by other parties referenced herein. GZA completed the evaluation in accordance with generally accepted practices of other consultants undertaking similar studies at the same time, in the same geographical areas. GZA observed the degree of care and skill generally exercised by other consultants under similar circumstances and conditions. GZA's findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the data available at the time of the evaluation. No warranty, expressed or implied, is made.
2. The conclusions submitted in this report are based in part on data obtained from a limited number of well logs from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until further investigation. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the recommendations of this report.
3. The generalized geologic profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more gradual. For specific information, refer to the boring logs.
4. Water level elevations have been derived from well construction reports made in the test pits, borings and/or wells at times and under conditions encountered at the time of installation. It must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.
5. In preparing this report, GZA has relied on certain information provided by state and local officials and other parties referenced therein, and on information contained in the files of state and/or local agencies available to GZA at the time of the site assessment. Although there may have been some degree of overlap in the information provided by these various sources, GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.



ATTACHMENT 2

Well Construction Records

Well Construction Report				GF527		Drinking Water and Groundwater - DG/5				Form 3300-077A				
WISCONSIN UNIQUE WELL NUMBER						Department of Natural Resources, Box 7921				Madison WI 53707				
Property Owner SIGNATURE BUILDERS						Phone #								
Mailing Address N18 W29022 GLF RDG S						1. Well Location						Fire # (if avail.)		
City PEWAUKEE						State WI		Zip Code 53072				Town of DELAFIELD		
County Waukesha		Co. Permit #		Notification #		Completed 04-09-1993		Street Address or Road Name and Number				N18 W29022 GOLF RDG S		
Well Constructor (Business Name) MICHAEL HARTMAN				Lic. # 436		Facility ID # (Public Wells)				Latitude / Longitude in Decimal Degree (DD)		Method Code		
Address W82 N28280 MARSHALL HARTLAND WI 53029				Well Plan Approval #		Approval Date (mm-dd-yyyy)		43.0551 °N -88.3252 °W		GCD013				
Hicap Permanent Well #		Common Well #		Specific Capacity 0.1		SE NE Section Township Range		or Govt Lot # 23 7 N 18 E		2. Well Type New Well			constructed in	
3. Well serves 1 # of Private, potable						Hicap Well ? No		Hicap Property ? No		Reason for replaced or reconstructed well ?				
Heat Exchange ___ # of drillholes						Hicap Potable ?		HOME					Construction Type Drilled	
4. Potential Contamination Sources - ON REVERSE SIDE														
5. Drillhole Dimensions and Construction Method														
Dia. (in.)		From (ft.)		To (ft.)		Upper Enlarged Drillhole				Lower Open Bedrock				
10		Surface		42		Rotary - Mud Circulation								
6		42		245		Yes Rotary - Air								
						Rotary - Air & Foam								
						Drill-Through Casing Hammer								
						Reverse Rotary								
						Cable-tool Bit ___ in. dia...								
						Dual Rotary								
						Temp. Outer Casing ___ in. dia								
						Removed? ___ depth ft. (If NO explain on back side)								
8. Geology														
Dia. (in.)		From (ft.)		To (ft.)		Geology Codes		8. Geology Type, Caving/Noncaving, Color, Hardness, etc...						
						P		HARDPAN						
						L		LIMESTONE						
						H		SHALE						
						L		LIMESTONE						
						H		SHALE						
6. Casing, Liner, Screen														
Dia. (in.)		Material, Weight, Specification Manufacturer & Method of Assembly				From (ft.)		To (ft.)						
6		0.280 A-53 GR.B SAWHILL STEEL WELDED				Surface		41						
Dia. (in.)		Screen type, material & slot size				From (ft.)		To (ft.)						
7. Grout or Other Sealing Material														
Method PUMP														
Kind of Sealing Material		From (ft.)		To (ft.)		# Sacks Cement								
PORTLAND		Surface		41.15										
9. Static Water Level														
90 ft. below ground surface														
10. Pump Test														
Pumping level 200 ft. below surface														
Pumping at 10 GP M for 4 Hrs.														
Pumping Method ?														
11. Well Is														
12 in. above grade														
Developed ? Yes														
Disinfected ? Yes														
Capped ? Yes														
12. Notified Owner of need to fill & seal ?														
Filled & Sealed Well(s) as needed? No														
NO WELLS														
13. Constructor / Supervisory Driller						Lic #		Date Signed						
MH								04-21-1993						
Drill Rig Operator						Lic or Reg #		Date Signed						

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		10	Collector Sewer - San or Storm		90
Clearwater Sump		15	Foundation Drain to Clearwater		11
			Sewer - Building Sanitary		40

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 08-06-1993

Created by: HFRC LOAD

Updated On: 07-09-2019

Updated by: PARCEL_MATCH

Well Construction Report				KM561		Drinking Water and Groundwater - DG/5		Form 3300-077A		
WISCONSIN UNIQUE WELL NUMBER						Department of Natural Resources, Box 7921		Madison WI 53707		
Property Owner ROGERS, LEONARD				Phone # (414)242-5316		1. Well Location		Fire # (if avail.)		
Mailing Address 11649 N ANNETTE 45 W						Town of DELAFIELD				
City MEQUON				State WI Zip Code 53092		Street Address or Road Name and Number N18 W29521 CROOKED CREEK RD				
County Waukesha		Co. Permit #		Notification #		Completed 05-13-1996		Subdivision Name Lot # Block # HIGH RIDGE EAST 1 40		
Well Constructor (Business Name) ROSCHI BROS WELL DRLG @ PUMP INC				Lic. # 435		Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD) Method Code 43.0561 °N -88.3347 °W GCD013		
Address N10W28210 NORTHVIEW WAUKESHA WI 53188-9401				Well Plan Approval #		SE NW Section Township Range or Govt Lot # 23 7 N 18 E		2. Well Type New Well		
Hicap Permanent Well #		Common Well #		Specific Capacity 0.1		Reason for replaced or reconstructed well ? NEW CONSTRUCTION				
3. Well serves 1 # of Private, potable				Hicap Well ? No		Construction Type Drilled				
Heat Exchange ___ # of drillholes				Hicap Property ? No						
Hicap Potable ?										
4. Potential Contamination Sources - ON REVERSE SIDE										
5. Drillhole Dimensions and Construction Method					8. Geology					
Dia. (in.)		From (ft.)		To (ft.)		Upper Enlarged Drillhole		Lower Open Bedrock		
8.75		Surface		69		Yes Rotary - Mud Circulation				
6		69		188		Rotary - Air				
						Rotary - Air & Foam				
						Drill-Through Casing Hammer				
						Reverse Rotary				
						Cable-tool Bit ___ in. dia...				
						Dual Rotary				
						Temp. Outer Casing ___ in. dia				
						Removed? ___ depth ft. (If NO explain on back side)				
6. Casing, Liner, Screen					9. Static Water Level			11. Well Is		
Dia. (in.)		Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)		To (ft.)		21 ft. below ground surface	
6		BLACK STEEL PIPE WELDED JOINTS 1897 LB ASTM B531780 PSI IPSCO			Surface		69		12 in. above grade	
Dia. (in.)		Screen type, material & slot size			From (ft.)		To (ft.)		Developed ? Yes	
									Disinfected ? Yes	
									Capped ? Yes	
7. Grout or Other Sealing Material					12. Notified Owner of need to fill & seal ?					
Method					Filled & Sealed Well(s) as needed?					
Kind of Sealing Material		From (ft.)		To (ft.)		# Sacks Cement				
BENTONITE DRILLING FLUID		Surface		69						
					13. Constructor / Supervisory Driller		Lic #		Date Signed	
					RR				05-13-1996	
					Drill Rig Operator		Lic or Reg #		Date Signed	
					TDK				05-13-1996	

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		10	Collector Sewer - San or Storm	>	50
			Foundation Drain to Clearwater		11

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 07-02-1996

Created by: HFRC LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				KO745		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A			
Property Owner COVENTRY HOMES					Phone #		1. Well Location				Fire # (if avail.)		
Mailing Address 16735 W GREENFIELD					Town of DELAFIELD		Street Address or Road Name and Number						
City NEW BERLIN			State WI	Zip Code 53151		N18 W29082 S GOLF RIDGE							
County Waukesha	Co. Permit #	Notification #		Completed 01-26-1996		Subdivision Name GOLF RIDGE			Lot # 10	Block #			
Well Constructor (Business Name) MICHAEL HARTMAN			Lic. # 436	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)			Method Code GCD013				
Address W82 N28280 MARSHALL HARTLAND WI 53029			Well Plan Approval #		SW NW Section Township Range		43.055 °N -88.3264 °W		18 E				
			Approval Date (mm-dd-yyyy)		or Govt Lot # 23		7 N						
Hicap Permanent Well #		Common Well #		Specific Capacity 0.9		2. Well Type New Well				of previous unique well # constructed in			
Hicap Well ? No		Hicap Property ? No		Hicap Potable ?		Reason for replaced or reconstructed well ?				NEW HOME			
3. Well serves 1 # of Private, potable			Heat Exchange ___ # of drillholes		Construction Type Drilled								
4. Potential Contamination Sources - ON REVERSE SIDE													
5. Drillhole Dimensions and Construction Method						8. Geology							
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole			Lower Open Bedrock		Geology Codes		8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
10	Surface	8	Rotary - Mud Circulation					X	CLAY SAND	Surface	8		
8.75	8	61	<u>Yes</u> Rotary - Air					L	H LIMESTONE SHALE	8	70		
6	61	145	Rotary - Air & Foam					H	SHALE	70	145		
			Drill-Through Casing Hammer										
			Reverse Rotary										
			Cable-tool Bit ___ in. dia...										
			Dual Rotary										
			Temp. Outer Casing ___ in. dia										
			<u>Yes</u> Removed? ___ depth ft. (If NO explain on back side)										
6. Casing, Liner, Screen						9. Static Water Level			11. Well Is				
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	57 ft. below ground surface			18 in. above grade				
6	0 280 A 53 GRB SAWHILL STEEL WELDED			Surface	63	10. Pump Test			Developed ? Yes				
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 80 ft. below surface			Disinfected ? Yes				
						Pumping at 20 GP M for 4 Hrs.			Capped ? Yes				
						Pumping Method ?							
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?							
Method PUMPED TREMIE						Filled & Sealed Well(s) as needed? No							
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		NO WELL							
PORTLAND CEMENT GROUT C 150		Surface	61	18 S									
13. Constructor / Supervisory Driller			Lic #	Date Signed									
MH				01-29-1996									
Drill Rig Operator			Lic or Reg #	Date Signed									
TW				04-24-1996									

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		12	Collector Sewer - San or Storm		75
Clearwater Sump		35	Foundation Drain to Clearwater		13
			Sewer - Building Sanitary		40

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 06-04-1996

Created by: HFRC LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report				KO883		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707		Form 3300-077A			
Property Owner MURPHY, DAN				Phone #		1. Well Location		Fire # (if avail.)			
Mailing Address W296 N1742 HIDDEN CR				Town of DELAFIELD		Street Address or Road Name and Number					
City PEWAUKEE				State WI	Zip Code 53072		W296 N1742 HIDDEN CREEK CT				
County Waukesha	Co. Permit #	Notification #		Completed 08-13-1996		Subdivision Name HIGH RIDGE		Lot #	Block #		
Well Constructor (Business Name) RICHARD L DANECKI			Lic. # 124	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD) 43.0546 °N -88.3369 °W		Method Code GCD013			
Address PO BOX 94 NORTH PRAIRIE WI 53153-0094			Well Plan Approval #		SE	NW	Section 23	Township 7 N	Range 18 E		
			Approval Date (mm-dd-yyyy)		or Govt Lot #		23	7 N	18 E		
Hicap Permanent Well #		Common Well #	Specific Capacity		2. Well Type New Well						
Reason for replaced or reconstructed well ?					NEW HOME						
3. Well serves 1 # of Private, potable			Hicap Well ? No		Construction Type Drilled						
Heat Exchange ___ # of drillholes			Hicap Property ? No								
Hicap Potable ?											
4. Potential Contamination Sources - ON REVERSE SIDE											
5. Drillhole Dimensions and Construction Method					8. Geology						
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole		Lower Open Bedrock		Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
6	Surface	325	Rotary - Mud Circulation					CLAY		Surface	41
			Rotary - Air				H	H	HARD SHALE	41	190
			Rotary - Air & Foam					L	LIMESTONE	190	325
			Drill-Through Casing Hammer								
			Reverse Rotary								
			Cable-tool Bit ___in. dia...								
			Dual Rotary								
			Temp. Outer Casing ___in. dia								
			Removed? ___depth ft. (If NO explain on back side)								
6. Casing, Liner, Screen					9. Static Water Level			11. Well Is			
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	10 ft. below ground surface		14 in. above grade			
6	SAW HILL USA STD ERW A53 90 GR BBLACK PLAIN END6 625 OD X 280 WALL			Surface	41	10. Pump Test		Developed ? Yes			
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 280 ft. below surface		Disinfected ? Yes			
						Pumping at 6 GP M for 4 Hrs.		Capped ? Yes			
						Pumping Method ?					
7. Grout or Other Sealing Material					12. Notified Owner of need to fill & seal ?						
Method					Filled & Sealed Well(s) as needed? No						
Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement		NONE						
8 MESH BENTONITE	Surface	41									
					13. Constructor / Supervisory Driller		Lic #	Date Signed			
					RLD			08-15-1996			
					Drill Rig Operator		Lic or Reg #	Date Signed			
					SH			08-15-1996			

4a. Potential Contamination Sources Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		23	Downspout/Yard Hydrant		24
Clearwater Sump		32	Foundation Drain to Clearwater		30
Collector Sewer - San or Storm		150	Sewer - Building Sanitary		60

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 01-28-1997

Created by: HFRC LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				LT222		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A					
Property Owner LIEN, JEFFREY					Phone #			1. Well Location				Fire # (if avail.)			
Mailing Address W296 N1734 HIDDEN CR					Town of DELEFIELD										
City PEWAUKEE					State WI		Zip Code 53072				Street Address or Road Name and Number W296 N1734 HIDDEN CREEK CT				
County Waukesha		Co. Permit #		Notification #		Completed 12-24-1997		Subdivision Name HIGH RDG E			Lot # 28	Block #			
Well Constructor (Business Name) GROTH WATER WELLS INC				Lic. # 639	Facility ID # (Public Wells)			Latitude / Longitude in Decimal Degree (DD)			Method Code GPS008				
Address W69 N949 WASHINGTON CEDARBURG WI 53012				Well Plan Approval #			SE	NW	Section 23	Township 7 N	Range 18 E				
				Approval Date (mm-dd-yyyy)			or Govt Lot #	23	7	N	18	E			
Hicap Permanent Well #		Common Well #		Specific Capacity 0.1			2. Well Type New Well								
Hicap Well ? No						of previous unique well # constructed in									
Hicap Property ? No						Reason for replaced or reconstructed well ?									
Hicap Potable ?						Construction Type Drilled									
3. Well serves 1 # of Private, potable Heat Exchange ___ # of drillholes															
4. Potential Contamination Sources - ON REVERSE SIDE															
5. Drillhole Dimensions and Construction Method						8. Geology									
Dia. (in.)		From (ft.)		To (ft.)		Upper Enlarged Drillhole		Lower Open Bedrock		Geology Codes		8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
8		Surface		52		Yes Rotary - Mud Circulation				Z S		SANDY CLAY @ GRAVEL		Surface	16
6		52		203		Rotary - Air				C S		SANDY CLAY		16	43
						Rotary - Air & Foam				Z S		SANDY CLAY W STONES		43	50
						Drill-Through Casing Hammer				H		SHALE		50	203
						Reverse Rotary									
						Cable-tool Bit ___in. dia...									
						Dual Rotary									
						Temp. Outer Casing ___in. dia									
						Removed? ___depth ft. (If NO explain on back side)									
6. Casing, Liner, Screen						9. Static Water Level				11. Well Is					
Dia. (in.)		Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)		To (ft.)		20 ft. below ground surface		12 in. above grade				
6		18 97# ASTM A53 PE SAWHILL			Surface		52		10. Pump Test		Developed ? Yes				
Dia. (in.)		Screen type, material & slot size			From (ft.)		To (ft.)		Pumping level 105 ft. below surface		Disinfected ? Yes				
									Pumping at 12 GP M for 2 Hrs.		Capped ? Yes				
									Pumping Method ?						
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?									
Method						Filled & Sealed Well(s) as needed?									
Kind of Sealing Material		From (ft.)		To (ft.)		# Sacks Cement									
DRILLING MUD		Surface		52											
13. Constructor / Supervisory Driller				Lic #		Date Signed									
HG						12-27-1997									
Drill Rig Operator				Lic or Reg #		Date Signed									

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Drain - Sanitary		29	Collector Sewer - San or Storm		150
Building Overhang		12	Foundation Drain to Clearwater		13
Clearwater Sump		15	Sewer - Building Sanitary		85

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 03-04-1998

Created by: HFRC LOAD

Updated On: 03-04-1998

Updated by: MIGRATION

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				LW273		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A	
Property Owner KUZMINSKI MARK				Phone # (414)695-8454		1. Well Location				Fire # (if avail.)	
Mailing Address W295 N1738 PRAIRIE W						Town of DELAFIELD					
City PEWAUKEE				State WI	Zip Code 53072	Street Address or Road Name and Number					
County Waukesha				Co. Permit #	Notification #	Subdivision Name		Lot #	Block #		
					Completed 07-18-1997	HIGH RIDGE		36			
Well Constructor (Business Name) MICHAEL HARTMAN				Lic. # 436	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)		Method Code		
					Well Plan Approval #		43.0546 °N -88.3348 °W	GCD013			
Address PO BOX 218 NORTH LAKE WI 53064-0218					Approval Date (mm-dd-yyyy)		SE NW	Section 23	Township 7 N	Range 18 E	
Hicap Permanent Well #				Common Well #	Specific Capacity 0.7		2. Well Type New Well				
							of previous unique well # constructed in				
							Reason for replaced or reconstructed well ?				
							NEW HOME				
3. Well serves 1 # of Private, potable				Hicap Well ? No				Construction Type Drilled			
Heat Exchange ___ # of drillholes				Hicap Property ? No							
				Hicap Potable ?							
4. Potential Contamination Sources - ON REVERSE SIDE											
5. Drillhole Dimensions and Construction Method						8. Geology					
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole		Lower Open Bedrock	Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)	
6	Surface	105	Rotary - Mud Circulation			C	CLAY		Surface	8	
			Rotary - Air			P	HARDPAN		8	44	
			Rotary - Air & Foam			H	SHALE		44	92	
			Drill-Through Casing Hammer			L	LIMESTONE		92	100	
			Reverse Rotary			H	SHALE		100	105	
			Cable-tool Bit ___in. dia...								
			Dual Rotary								
			Temp. Outer Casing ___in. dia								
			Removed? ___depth ft. (If NO explain on back side)								
6. Casing, Liner, Screen						9. Static Water Level			11. Well Is		
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	11 ft. below ground surface			18 in. above grade		
6	280 A53 GRB SAWHILL STEEL WELDED			Surface	72	10. Pump Test			Developed ? Yes		
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 40 ft. below surface			Disinfected ? Yes		
						Pumping at 20 GP M for 4 Hrs.			Capped ? Yes		
						Pumping Method ?					
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?					
Method MOUNDED											
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		Filled & Sealed Well(s) as needed? No					
CRUMBLES		Surface	0			NO WELL					
						13. Constructor / Supervisory Driller		Lic #	Date Signed		
						MH			07-21-1997		
						Drill Rig Operator		Lic or Reg #	Date Signed		
						TA					

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		13	Collector Sewer - San or Storm		85
Clearwater Sump		40	Foundation Drain to Clearwater		15
			Sewer - Building Sanitary		35

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 10-10-1997

Created by: HFRC LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				LW665		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A		
Property Owner FAIRWAY HOMES INC AMIDEI					Phone # (414)965-2020		1. Well Location				Fire # (if avail.)	
Mailing Address 575 DOUSMAN RD							Town of DELAFIELD					
City OCONOMOWOC					State WI	Zip Code 53066		Street Address or Road Name and Number				
County Waukesha	Co. Permit #	Notification #		Completed 07-11-1997		Subdivision Name HIGH RIDGE E				Lot # 27	Block #	
Well Constructor (Business Name) HERR WELL DRILLING INC			Lic. # 672	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)				Method Code GCD013		
Address W295 HERR RD DOUSMAN WI 53118-9407			Well Plan Approval #		SE	NW	Section 23	Township 7 N	Range 18		E	
Hicap Permanent Well #	Common Well #	Specific Capacity 0.2		Approval Date (mm-dd-yyyy)		2. Well Type New Well				of previous unique well # constructed in		
3. Well serves 1 # of Private, potable			Hicap Well ? No		Hicap Property ? No		Reason for replaced or reconstructed well ?				WATER SUPPLY FOR A NEW HO	
Heat Exchange ___ # of drillholes			Hicap Potable ?		Construction Type Drilled							
4. Potential Contamination Sources - ON REVERSE SIDE												
5. Drillhole Dimensions and Construction Method						8. Geology						
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole		Lower Open Bedrock		Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...			From (ft.)	To (ft.)
10	Surface	49	Yes Rotary - Mud Circulation				Z	GRAVEL @ CLAY			Surface	19
6	49	185	Rotary - Air				Y	SAND @ GRAVEL			19	26
			Rotary - Air & Foam				C	CLAY			26	33
			Drill-Through Casing Hammer				H	SHALE			33	185
			Reverse Rotary									
			Cable-tool Bit ___ in. dia...									
			Dual Rotary									
			Temp. Outer Casing ___ in. dia									
			Removed? ___ depth ft. (If NO explain on back side)									
6. Casing, Liner, Screen						9. Static Water Level			11. Well Is			
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	35 ft. below ground surface			12 in. above grade			
6	B SAWHILL TUBULAR 2660 LBS PSI			49	49	10. Pump Test			Developed ? Yes			
6	1897 LBS PER FOOT NEW STEEL PLAIN END ASTM A53 GR			Surface	49	Pumping level 105 ft. below surface			Disinfected ? Yes			
						Pumping at 15 GP M for 2 Hrs.			Capped ? Yes			
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping Method ?						
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?						
Method BRADEN HEAD						Filled & Sealed Well(s) as needed?						
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		13. Constructor / Supervisory Driller			Lic #	Date Signed		
NEAT CEMENT GROUT		Surface	49	16 S		JH				07-25-1997		
						Drill Rig Operator			Lic or Reg #	Date Signed		
						DK				07-27-1997		

4a. Potential Contamination Sources Is the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		13	Other Contamination Sources		119

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 09-09-1997

Created by: HFRC LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				MK142		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A			
Property Owner BELLA BUILDING CO					Phone # (414)305-2350			1. Well Location			Fire # (if avail.)		
Mailing Address W231 N7047 HOMESTEAD					Town of DELAFIELD			Street Address or Road Name and Number					
City SUSSEX			State WI	Zip Code 53089		W295 N1806 PRAIRIE WOOD CT							
County Waukesha	Co. Permit #	Notification #		Completed 06-30-1998		Subdivision Name HIGH RIDGE E			Lot #	Block #			
Well Constructor (Business Name) ROSCHI BROS WELL DRLG @ PUMP INC			Lic. # 435	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD) 43.0556 °N -88.3348 °W			Method Code GCD013				
Address N10W28210 NORTHVIEW WAUKESHA WI 53188-9401			Well Plan Approval #			SE	NW	Section 23	Township 7 N	Range 18 E			
			Approval Date (mm-dd-yyyy)			or Govt Lot #							
Hicap Permanent Well #		Common Well #		Specific Capacity		2. Well Type New Well			of previous unique well # constructed in				
						Reason for replaced or reconstructed well ?			NEW CONSTRUCTION				
3. Well serves 1 # of Private, potable			Hicap Well ? No		Hicap Property ? No		Construction Type Drilled						
Heat Exchange ___ # of drillholes			Hicap Potable ?										
4. Potential Contamination Sources - ON REVERSE SIDE													
5. Drillhole Dimensions and Construction Method						8. Geology							
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole			Lower Open Bedrock			Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
6	Surface	220	Rotary - Mud Circulation						I	TOPSOIL	Surface	3	
			<u>Yes</u> Rotary - Air						C G	STONEY CLAY	3	16	
			Rotary - Air & Foam						P	HARDPAN	16	54	
			Drill-Through Casing Hammer						H	SHALE	54	189	
			Reverse Rotary						H L	SHALE W STREAKS LIMESTONE	189	220	
			Cable-tool Bit ___in. dia...										
			Dual Rotary										
			Temp. Outer Casing ___in. dia										
			Removed? ___depth ft. (If NO explain on back side)										
6. Casing, Liner, Screen						9. Static Water Level			11. Well Is				
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	23 ft. below ground surface			12 in. above grade				
6	BLACK STEEL PIPE WELDED JOINTS 18 97# ASTM A531780 PSI SAWHILL TUBULAR			Surface	58	10. Pump Test			Developed ? Yes				
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 150 ft. below surface			Disinfected ? Yes				
						Pumping at 4.5 GP M for 1 Hrs.			Capped ? Yes				
						Pumping Method ?							
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?							
Method						Filled & Sealed Well(s) as needed?							
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		13. Constructor / Supervisory Driller			Lic #	Date Signed			
BENTONITE CRUMBLES		Surface	25			RR				06-30-1998			
						Drill Rig Operator			Lic or Reg #	Date Signed			
						KL				06-30-1998			

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		12	Foundation Drain to Clearwater		12

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 09-21-1998

Created by: HFRC LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				OG109		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A			
Property Owner BARENZ BUILDERS				Phone # (262)253-2282		1. Well Location				Fire # (if avail.)			
Mailing Address N112 W16700 MEQUON R						Town of DELAFIELD							
City GERMANTOWN				State WI	Zip Code 53022	Street Address or Road Name and Number							
County Waukesha				Co. Permit #	Notification #	Completed 07-14-2000		Subdivision Name		Lot #	Block #		
Well Constructor (Business Name) ROSCHI BROS WELL DRLG & PUMP INC				Lic. # 435	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)		Method Code				
Address N10W28210 NORTHVIEW RD WAUKESHA WI 53188-9401				Well Plan Approval #		43.0569 °N -88.3347 °W		GCD013					
Hicap Permanent Well #				Common Well #	Specific Capacity 0.1		SE NW Section Township Range		or Govt Lot # 23 7 N 18 E				
3. Well serves 1 # of Private, potable				Hicap Well ? No		2. Well Type New Well		of previous unique well # constructed in					
Heat Exchange ___ # of drillholes				Hicap Property ? No		Reason for replaced or reconstructed well ?		NEW CONSTRUCTION					
				Hicap Potable ?		Construction Type Drilled							
4. Potential Contamination Sources - ON REVERSE SIDE													
5. Drillhole Dimensions and Construction Method						8. Geology							
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole			Lower Open Bedrock			Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
6	Surface	441	Rotary - Mud Circulation						C G	STONEY CLAY	Surface	57	
			<u>Yes</u> Rotary - Air						C S	SANDY CLAY	57	77	
			Rotary - Air & Foam						H	SHALE	77	183	
			Drill-Through Casing Hammer						L	LIMESTONE	183	428	
			Reverse Rotary						N	SANDSTONE	428	441	
			Cable-tool Bit ___ in. dia...										
			Dual Rotary										
			Temp. Outer Casing ___ in. dia										
			Removed? ___ depth ft. (If NO explain on back side)										
6. Casing, Liner, Screen						9. Static Water Level				11. Well Is			
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	165 ft. below ground surface				12 in. above grade			
6	BLACK STEEL PIPE, WELDED JOINTS, 18.97 LB. ASTM A53 1780 PSI SAWHILL			Surface	77	10. Pump Test				Developed ? Yes			
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 335 ft. below surface				Disinfected ? Yes			
						Pumping at 11 GP M for 5 Hrs.				Capped ? Yes			
						Pumping Method ?							
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?							
Method						Filled & Sealed Well(s) as needed?							
Kind of Sealing Material			From (ft.)	To (ft.)	# Sacks Cement	13. Constructor / Supervisory Driller		Lic #	Date Signed				
BENTONITE CRUMBLES			Surface	77		RR			07-14-2000				
						Drill Rig Operator		Lic or Reg #	Date Signed				
						TDK			07-14-2000				

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		16	Collector Sewer - San or Storm	>	50
			Foundation Drain to Clearwater		17

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 09-11-2000

Created by: WELL CONST LOAD

Updated On: 07-11-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER	OG179	Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707	Form 3300-077A
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Property Owner PIEKARSKI, JAMES		Phone # 8960140
Mailing Address 2538 PEBBLE VALLE RD		
City WAUKESHA	State WI	Zip Code 53188
County Waukesha	Co. Permit #	Notification # Completed 04-09-2001

1. Well Location		Fire # (if avail.)
Town of DELAFIELD		
Street Address or Road Name and Number W295 N1774 PRAIRIE WOOD CT		
Subdivision Name HIGH RIDGE E	Lot #	Block #

Well Constructor (Business Name) ROSCHI BROS WELL DRLG & PUMP INC	Lic. # 435	Facility ID # (Public Wells)
Address N10W28210 NORTHVIEW RD WAUKESHA WI 53188-9401		Well Plan Approval # Approval Date (mm-dd-yyyy)
Hicap Permanent Well #	Common Well #	Specific Capacity

Latitude / Longitude in Decimal Degree (DD)		Method Code	
43.0551 °N	-88.3348 °W	GCD013	
NE	NE	Section 23	Township 7 N
Range 18 E			
2. Well Type New Well			
of previous unique well # constructed in			
Reason for replaced or reconstructed well ? NEW CONSTRUCTION			
Construction Type Drilled			

3. Well serves 1 # of	Hicap Well ? No
Private, potable	Hicap Property ? No
Heat Exchange ___ # of drillholes	Hicap Potable ?

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method			
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole
6	Surface	360	Lower Open Bedrock
Rotary - Mud Circulation Yes Rotary - Air No Rotary - Air & Foam Drill-Through Casing Hammer Reverse Rotary Cable-tool Bit ___ in. dia... Dual Rotary Temp. Outer Casing ___ in. dia Removed? ___ depth ft. (If NO explain on back side)			

8. Geology			
Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...	From (ft.)	To (ft.)
- - C G	STONEY CLAY	Surface	69
- - H -	SHALE	69	217
- - C G	STONEY CLAY	217	360

6. Casing, Liner, Screen			
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6	BLACK STEEL PIPE, WELDED JOINTS, 18.97 LB. ASTM A53 1780 PSI SAWHILL	Surface	69
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)

9. Static Water Level 12 ft. below ground surface	11. Well Is 12 in. above grade
10. Pump Test Pumping level 300 ft. below surface Pumping at 6 GP M for 2.5 Hrs. Pumping Method ?	Developed ? Yes Disinfected ? Yes Capped ? Yes

7. Grout or Other Sealing Material			
Method			
Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
BENTONITE CRUMBLES	Surface	24	

12. Notified Owner of need to fill & seal ?	
Filled & Sealed Well(s) as needed?	

13. Constructor / Supervisory Driller	Lic #	Date Signed
RR		04-09-2001
Drill Rig Operator	Lic or Reg #	Date Signed
KL		04-09-2001

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		14	Foundation Drain to Clearwater		18

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 10-02-2001

Created by: WELL CONST LOAD

Updated On: 07-11-2019

Updated by: PARCEL_MATCH

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				ON879		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A	
Property Owner SIGNATURE BUILDERS				Phone # (262)691-4440		1. Well Location				Fire # (if avail.)	
Mailing Address N18 W29022 GOLF RIDG						Town of DELAFIELD					
City PEWAUKEE				State WI	Zip Code 53072	Street Address or Road Name and Number					
County Waukesha				Co. Permit #	Notification #	Subdivision Name		Lot #	Block #		
					Completed 03-12-2001	HIGH RIDGE E		34			
Well Constructor (Business Name) MICHAEL HARTMAN				Lic. # 436	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)		Method Code		
					Well Plan Approval #		43.0546 °N -88.3359 °W	GCD013			
Address PO BOX 218 NORTH LAKE WI 53064-0218					Approval Date (mm-dd-yyyy)		SE NW	Section 23	Township 7 N	Range 18 E	
Hicap Permanent Well #				Common Well #	Specific Capacity 0.1		2. Well Type New Well				
							of previous unique well # constructed in				
3. Well serves 1 # of HOME				Hicap Well ? No		Reason for replaced or reconstructed well ?					
Private, potable				Hicap Property ? No		NEW HOME					
Heat Exchange ___ # of drillholes				Hicap Potable ?		Construction Type Drilled					
4. Potential Contamination Sources - ON REVERSE SIDE											
5. Drillhole Dimensions and Construction Method						8. Geology					
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole		Lower Open Bedrock	Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)	
6	Surface	325	Rotary - Mud Circulation			- - C -	SURFACE CLAY		Surface	7	
			Rotary - Air			- - Y -	SAND, GRAVEL		7	15	
			Rotary - Air & Foam			- - P -	HARDPAN		15	53	
			Drill-Through Casing Hammer			- - H -	SHALE		53	195	
			Reverse Rotary			- - L -	LIMESTONE		195	325	
			Cable-tool Bit ___in. dia...								
			Dual Rotary								
			Temp. Outer Casing ___in. dia								
			Removed? ___depth ft. (If NO explain on back side)								
6. Casing, Liner, Screen						9. Static Water Level			11. Well Is		
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	60 ft. below ground surface			18 in. above grade		
6	0.280 A 53 GRB SAWHILL STEEL WELDED			Surface	60	10. Pump Test			Developed ? Yes		
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 180 ft. below surface			Disinfected ? Yes		
						Pumping at 11 GP M for 4 Hrs.			Capped ? Yes		
						Pumping Method ?					
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?					
Method MOUNDED											
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		Filled & Sealed Well(s) as needed? No					
CRUMBLES		Surface				NO WELL					
						13. Constructor / Supervisory Driller		Lic #	Date Signed		
						MH			03-13-2001		
						Drill Rig Operator		Lic or Reg #	Date Signed		
						JB			07-10-2001		

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Building Overhang		8	Collector Sewer - San or Storm		148
Clearwater Sump		25	Foundation Drain to Clearwater		10
			Sewer - Building Sanitary		22

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 08-23-2001

Created by: WELL CONST LOAD

Updated On: 07-12-2019

Updated by: PARCEL_MATCH

Well Construction Report				YX894				Drinking Water and Groundwater - DG/5				Form 3300-077A					
WISCONSIN UNIQUE WELL NUMBER								Department of Natural Resources, Box 7921				Madison WI 53707					
Property Owner DAYSRING BAPTIST CHURCH						Phone #						1. Well Location					
Mailing Address N14 W79503 SILVERNAIL RD												Fire # (if avail.)					
City DELAFIELD						State WI		Zip Code 53018				Town of DELAFIELD N14 W29503					
Street Address or Road Name and Number SILVERNAIL RD																	
County Waukesha		Co. Permit #		Notification #		Completed		Subdivision Name				Lot #		Block #			
						05-18-2018											
Well Constructor (Business Name) D & D WELL & PUMPS LLC				Lic. # 7181		Facility ID # (Public Wells) 268680280				Latitude / Longitude in Decimal Degree (DD)				Method Code			
										43.0491 °N -88.3334 °W		GPS008					
Address N6331 COUNTY F OCONOMOWOC WI 53118				Well Plan Approval # 685014362		SW		SE		Section 23		Township 7 N		Range 18 E			
				Approval Date (mm-dd-yyyy) 04-03-2018													
Hicap Permanent Well # 92243		Common Well #		Specific Capacity 0.4				Reason for replaced or reconstructed well ?									
3. Well serves 1 # of CHURCH SCHOOL				Hicap Well ? Yes													
Non-community		School		Hicap Property ? Yes													
Heat Exchange ___ # of drillholes				Hicap Potable ? No						Construction Type Drilled							
4. Potential Contamination Sources - ON REVERSE SIDE																	
5. Drillhole Dimensions and Construction Method																	
Dia. (in.)		From (ft.)		To (ft.)		Upper Enlarged Drillhole				Lower Open Bedrock							
12.25		Surface		26		<u>Yes</u> Rotary - Mud Circulation				<u>No</u>							
12		26		241		<u>No</u> Rotary - Air				<u>Yes</u>							
8		241		745		<u>No</u> Rotary - Air & Foam				<u>No</u>							
						<u>No</u> Drill-Through Casing Hammer											
						<u>No</u> Reverse Rotary											
						<u>No</u> Cable-tool Bit ___in. dia...				<u>No</u>							
						<u>No</u> Dual Rotary				<u>No</u>							
						<u>Yes</u> Temp. Outer Casing 12in. dia											
						<u>No</u> Removed? 26depth ft. (If NO explain on back side)											
8. Geology																	
Dia. (in.)		From (ft.)		To (ft.)		Geology Codes				8. Geology Type, Caving/Noncaving, Color, Hardness, etc...							
		Surface		26		Y G				Y-SAND & GRAVEL G-W/GRAVEL/COBBLES/BOULDER/STONES							
		26		60		L				L-LIMESTONE/DOLOMITE							
		60		195		H L				H-SHALE L-LIMEY OR DOLOMITIC							
		195		505		L				L-LIMESTONE/DOLOMITE							
		505		745		N				N-SANDSTONE							
6. Casing, Liner, Screen																	
Dia. (in.)		Material, Weight, Specification Manufacturer & Method of Assembly				From (ft.)		To (ft.)									
8		STEEL 28.55 # A53-B IPSCO WELDED				Surface		241									
Dia. (in.)		Screen type, material & slot size				From (ft.)		To (ft.)									
7. Grout or Other Sealing Material																	
Method																	
Kind of Sealing Material		From (ft.)		To (ft.)		# Sacks Cement											
PORTLAND CEMENT		Surface		241		200 S											
9. Static Water Level																	
318 ft. below ground surface																	
10. Pump Test																	
Pumping level 505 ft. below surface																	
Pumping at 75 GP M for 2 Hrs.																	
Pumping Method ? Airlift																	
11. Well Is																	
18 in. above grade																	
Developed ? Yes																	
Disinfected ? Yes																	
Capped ? Yes																	
12. Notified Owner of need to fill & seal ?																	
NO WELL																	
Filled & Sealed Well(s) as needed? NO																	
NO WELL																	
13. Constructor / Supervisory Driller				Lic #		Date Signed											
DJ				5694		05-18-2018											
Drill Rig Operator				Lic or Reg #		Date Signed											

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
Grease Trap		72	Sewer - Building Sanitary		40
POWTS dispersal component (soil absorption unit or mound)	>	600	Septic or Holding, or POWTS Tank	>	600

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 07-13-2018

Created by: CHARMCAFEE

Updated On: 07-12-2019

Updated by: PARCEL_MATCH_LL
_OK

Well Construction Report				ZW994		Drinking Water and Groundwater - DG/5 Form 3300-077A								
WISCONSIN UNIQUE WELL NUMBER						Department of Natural Resources, Box 7921								
Madison WI 53707														
Property Owner KINGS WAY HOMES / CRAMER, GARTH & KIM				Phone # (414)303-8638		1. Well Location								
Mailing Address 700 PILGRIM PARKWAY						Town of DELAFIELD Fire # (if avail.) N12 W29556								
City ELM GROVE State WI Zip Code 53122						Street Address or Road Name and Number SOUTHAMPTON DRIVE								
County Waukesha		Co. Permit #		Notification # 7719574802		Completed 08-14-2019		Subdivision Name		Lot #	Block #			
Well Constructor (Business Name) HERR WELL DRILLING INC				Lic. # 672	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD)			Method Code GPS008				
Address W295 HERR RD DOUSMAN WI 53118-9407				Well Plan Approval #		SE	SW	Section 23	Township 7 N	Range 18 E				
Hicap Permanent Well #				Common Well #		Specific Capacity 0		2. Well Type New Well						
3. Well serves 1 # of HOME				Hicap Well ? No		of previous unique well # constructed in								
Private, potable				Hicap Property ? No		Reason for replaced or reconstructed well ?								
Heat Exchange ___ # of drillholes				Hicap Potable ? No		Construction Type Drilled								
4. Potential Contamination Sources - ON REVERSE SIDE														
5. Drillhole Dimensions and Construction Method														
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole				Lower Open Bedrock		Geology Codes		8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
8.75	Surface	62	<u>Yes</u>	Rotary - Mud Circulation				<u>Yes</u>	C	C	C-CLAY	Surface	15	
6	62	165	<u>No</u>	Rotary - Air				<u>No</u>	X	G	X-SAND & CLAY G-W/GRAVEL/STONES	15	45	
			<u>No</u>	Rotary - Air & Foam				<u>No</u>	L		L-LIMESTONE/DOLOMITE	45	50	
			<u>No</u>	Drill-Through Casing Hammer					H		H-SHALE	50	60	
			<u>No</u>	Reverse Rotary					L	H	L-LIMESTONE/DOLOMITE H-SHALEY	60	140	
			<u>No</u>	Cable-tool Bit ___in. dia...				<u>No</u>	B	L	B-BROKEN L-LIMESTONE/DOLOMITE	140	153	
			<u>No</u>	Dual Rotary				<u>No</u>	H		H-SHALE	153	165	
			<u>No</u>	Temp. Outer Casing ___in. dia										
			<u>No</u>	Removed? ___depth ft. (If NO explain on back side)										
6. Casing, Liner, Screen														
Dia. (in.)	Material, Weight, Specification			From (ft.)	To (ft.)									
6	18.97 LBS PER FT, NEW STEEL PLAIN END, ASTM A53 GRADE B, IPSCO TUBULAR, 2660 PSI			Surface	62									
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)									
7. Grout or Other Sealing Material														
Method BRADENHEAD														
Kind of Sealing Material			From (ft.)	To (ft.)	# Sacks Cement									
NEAT CEMENT GROUT			Surface	62	20 S									
8. Geology														
9. Static Water Level														
65 ft. below ground surface														
10. Pump Test														
Pumping level 105 ft. below surface														
Pumping at 20 GP M for 3 Hrs.														
Pumping Method ? Airlift														
11. Well Is														
16 in. above grade														
Developed ? Yes														
Disinfected ? Yes														
Capped ? Yes														
12. Notified Owner of need to fill & seal ?														
NONE														
Filled & Sealed Well(s) as needed? No														
NONE														
13. Constructor / Supervisory Driller														
GSD														
Lic # 6676														
Date Signed 08-15-2019														
Drill Rig Operator														
DJD														
Lic or Reg # 8131														
Date Signed 08-15-2019														

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
POWTS dispersal component (soil absorption unit or mound)		135	Septic or Holding, or POWTS Tank		120

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 08-15-2019

Created by: JohnCHerr

Updated On: 08-21-2019

Updated by: WELL PROCESS



Waukesha County
Department of Parks and Land Use

MEMORANDUM

TO: Town of Delafield Plan Commission
Town of Delafield Board
Waukesha County Park & Planning Commission

FROM: Jason Fruth, Planning & Zoning Manager

DATE: November 20, 2023

SUBJECT: Thomas Farms water analysis
DELT 0809.995, DELT 0809.996 and DELT 0811.999

Planned Development District No. 1

The Town of Delafield adopted an ordinance amendment in 2022 that created Section 17.04 5. R. "Planned Development District No. 1 (PDD No. 1)." The town has a pending rezoning request to amend the zoning of the Thomas Farm to PDD No. 1 and a public hearing has been scheduled for December 5, 2023. PDD No. 1 contains a number of unique requirements that must be considered by the Town Plan Commission and Board as part of the review of the required General Development Plan component of the rezoning consideration process. Requirement 4.b.6. of PDD No. 1 stipulates a water study to assess water table considerations relative to private water supplies and natural resources.

Water Supply Alternatives

The prospective developer has explored different options for water supply to the Thomas Farm site and discussed options with town and county staff.

- Municipal water. In considering the density allowances of PDD No. 1, the parties have determined that extension of municipal water to the site from the City of Pewaukee or City of Delafield is not feasible at the present time.
- Community water supply. Town staff does not believe that an alternative private community water supply system is viable because of the challenges of long term oversight and administration of a community water utility by a homeowners association.
- Private wells. Because of the described impediments to municipal water extension or a community water supply, the developer is proposing private wells for single family homes and private wells shared by side by side condominium units. The surrounding subdivisions and neighborhoods similarly rely upon private wells and municipal sewer.

Consultant's Analysis

The developer retained a consultant, GZA Environmental, Inc. to assess water supply considerations relating to the use of private wells to serve the development site. GZA evaluated the cumulative drawdown of 11 hypothetical pumping wells around the perimeter of the Thomas Farms property. The GZA modeling considers per capita water use and the projected number of dwelling units. GZA's findings conclude the following:

- The preliminary stormwater management plan for the development would provide post-development infiltration volume of 13,398,000 cubic feet of water annually, which is 94.2% of pre-development infiltration volume. The Waukesha County Stormwater Management & Erosion Control Ordinance requires a 90% infiltration standard.
- When considering anticipated well pumping and water consumption and the projected 94.2% infiltration rate, GZA estimated the water table drawdown at the property boundary to be approximately four to five feet.
- The maximum anticipated water table drawdown is less than the natural groundwater fluctuation of six feet that is observed in USGS monitoring wells in the area.
- Existing nearby subdivisions were studied using the same modeling methodology; neighboring developments likely have a similar water table drawdown if inputting today's enhanced stormwater management infiltration requirements.
- Flows of groundwater towards Pewaukee Lake will be maintained.

Southeastern Wisconsin Regional Planning Commission (SEWRPC)

Waukesha County requested the technical assistance of the Southeastern Wisconsin Regional Planning Commission (SEWRPC) relative to groundwater supply considerations. SEWRPC offered the following assessment relative to balancing pre-development infiltration and post-development infiltration:

- When any form of land development occurs and hard surfaces are created, groundwater re-charge is likely to be affected unless measures are taken to infiltrate stormwater.
- Net water loss can occur when private well water is pumped and discharged to an off-site downstream wastewater treatment facility or pumped and lost to evaporation in the form of lawn sprinkling unless measures are taken to offset the loss.
- Enhanced stormwater infiltration can be considered to offset water use and to maintain pre-development infiltration rates.
- SEWRPC Technical Report #47 shows the majority of the Thomas Farm site is mapped as having high or moderate groundwater recharge potential.
- *In general, based upon models used in Commission Technical Report No. 47, groundwater recharge in the general area of the proposed Thomas Farms development likely range from 3 to 7 inches per year, **averaging 5 inches per year.***
- *Assuming the entire Thomas Farms 151.9-acre site has a uniform 5-inch groundwater recharge rate, this equals roughly 63.3 acre-feet per year of groundwater recharge. At the estimated 77 gallons per capita per day water demand proposed for the development, the total volume of water drawn from wells in the proposed development is projected to be 33.8 gallons per minute (54.5 acre-feet per year).*
- *To sustain predevelopment local groundwater elevations and flow paths, stormwater management must infiltrate predevelopment groundwater recharge volumes **plus** that lost to residential water pumping. Therefore, to sustain predevelopment groundwater conditions, groundwater recharge on a site scale must strive to increase from 63.3 acre-feet per year to 117.8 acre-feet per year. With this example, average groundwater recharge infiltration across the entire site would need to increase from 5 inches per year to 9.3 inches per year.*

Collier Consulting Analysis

The Lake Pewaukee Sanitary District retained a consultant, Collier Consulting to assess groundwater considerations related to the proposed development. The Collier report notes, *Any actions that increase infiltration at the Development can be expected to increase recharge to the shallow ground water system and will help to compensate for any net loss form the shallow aquifer due to pumping from the residential wells.*

Summary

While GZA, Collier and SEWRPC have all examined the water supply issue in a unique manner and each entity offers its own perspective, the three entities have all identified stormwater infiltration as being a potential option for ensuring that shallow groundwater levels are not negatively impacted by development. All three entities conclude that Pewaukee Lake levels are unlikely to be affected by the use of private wells, particularly if stormwater infiltration is used to offset water withdrawal.

The developer has submitted preliminary stormwater management plan materials to the Waukesha County Department of Parks & Land Use, Land Resources Division (LRD). LRD has advised that there appears to be sufficient space on site to meet the county's standard stormwater management requirements. LRD has further advised that a variety of infiltration practices can be explored to enhance infiltration rates to offset water consumption. Projections suggest that existing groundwater supply can be sustained and balanced when considering post-development groundwater recharge compared to pre-development conditions. Given the site conditions which naturally have high and moderate infiltration rates, use of enhanced infiltration techniques can increase the average groundwater infiltration across the site.

Welshire Farm

Town of Delafield, Wisconsin

Preliminary

Stormwater Management Plan

Prepared by:



Trio Engineering LLC

4100 N. Calhoun Road
Brookfield, Wisconsin 53005
Contact: Josh Pudelko, P.E.
Telephone: (262) 790-1480
Email: info@trioeng.com

Sound Stormwater Design LLC

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March 20, 2023

TABLE OF CONTENTS

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Water Quality	5
Infiltration.....	5
Conclusion.....	6

APPENDICES

Figures

APPENDIX A	Pre-Development Hydrologic Analysis
APPENDIX B	Post-Development Hydrologic Analysis
APPENDIX C	Treatment Analysis / WinSLAMM
APPENDIX D	Soil Survey and Soil Boring Logs

Introduction

“Welshire Farm” is a proposed multi-family and single-family residential development on a 152-acre parcel located northwest of the intersection of Golf Road and Elmhurst Road in the Town of Delafield, Waukesha County, Wisconsin. Refer to Figure 1 for a general location of the project site.

The proposed subdivision design integrates with the existing topography, preserving trees and wetlands to the maximum extent practicable, and situates ponds and basins where runoff naturally flows, but with controlled outlets that reduce runoff rates and redirect runoff to adequate discharge points. This design approach minimizes site grading and maximizes the existing trees and wetlands that can be retained on the site.

This report documents the design computations for pre-development and post-development conditions and presents a plan for stormwater management that meets the requirements of the Town of Delafield, Waukesha County, and the Wisconsin Department of Natural Resources (WDNR).

Owner/ Developer

The owner, developer, and responsible entity for installation and maintenance of the stormwater management practices is:

Neumann Developments, Inc
N27 W24025 Paul Ct, Suite 100
Pewaukee, Wisconsin 53072
Contact: Bryan Lindgren
Phone: (262) 542-9200

Design Requirements

The following design standards have been used to develop the stormwater management plan for the “Welshire Farm” project:

- Waukesha County Chapter 14, Article VIII, Stormwater Management & Erosion Control Ordinance
- Wisconsin Department of Natural Resources (WDNR) Technical Standards, NR151, and NR216
- Summary of design requirements:
 - Peak Discharge:
 - Waukesha County: The peak flow discharge rates of stormwater runoff from the site under the post-development site conditions shall not exceed the rates under the pre-development conditions for the 1, 2, 10, and 100-year, 24-hour design storm events.

- Water Quality (Total Suspended Solids): Reduce to the maximum extent practicable the total suspended solids load by 80%, based on an average annual rainfall, as compared to no runoff management controls.
- Infiltration: For low impervious developments:
 - Infiltrate sufficient runoff volume so that the post-development infiltration volume is at least 90 percent of pre-development infiltration volume, based on an average annual rainfall.
 - No more than 1 percent of the post-construction site is required as an effective infiltration area.

Analysis Overview

The Stormwater Management Plan for the “Welshire Farm” subdivision has been designed in accordance with the Town of Delafield, Waukesha County, and all applicable state requirements. Pre-development and post-development stormwater runoff conditions for the site were analyzed for: runoff volume, peak volume, discharge, detention basin storage capacity required, outlet structure and storm sewer system requirements. The software package used for modeling and analysis was HydroCAD Version 10.10 software by HydroCAD Software Solutions. HydroCAD uses NRCS methods to generate runoff and pond routing hydrographs. The model’s capabilities include modeling simple drainage basins, combining hydrographs to determine runoff and storage requirements, and detention basin and outlet structure sizing.

MSE3 rainfall distributions were used for modeling the 1, 2, 10 and 100-year, 24-hour storm events. The corresponding rainfall data used for the modeling was taken from Table 3 of Chapter 14 of the County’s Ordinance and is shown in the following table.

**TABLE 1
Design Rainfall Values**

Storm Recurrence Interval	24-hour Rainfall Depths
1-year	2.4 inches
2-year	2.7 inches
10-year	3.81 inches
100-year	6.18 inches

Soil types for the site were determined from NRCS Soil Survey for Waukesha County and from soil boring logs prepared by Professional Service Industries (PSI). The Soil Survey identifies the soils at the site as mostly Theresa silt loam and Knowles silt loam with some limited areas of Hochheim loam and Ritchey silt loam soils. The soil boring logs indicated the soils encountered as generally 1 to 4 feet of dark brown clay to silty clay with organics underlain by clayey sand and sand with gravel extending to the termination of the borings. Groundwater was encountered with boring B-2, which was completed within the wetland area, at a depth of about 4 feet below existing grade. Groundwater was not observed during or at completion of drilling within the remaining boring locations. Based on this, a hydrologic soil group C was used to determine runoff curve numbers for the site. Refer to Appendix D for details.

Pre-Development Watershed Description

The project site is approximately 152-acres in size and is occupied by agricultural fields, woodlands, wetlands, residential homes, and a former farmstead with outbuildings. Surface drainage for the majority of the site is generally towards an on-site wetland that flows south to north and eventually drains to a culvert at Oakton Road that discharges to Pewaukee Lake. The remainder of the site slopes towards roadside ditches at Glen Cove Road, Elmhurst Road, and Gold Road.

Land cover types, drainage boundaries and flow paths are shown on Figure 2, Pre-Development Conditions Plan. The following table summarizes the results of the stormwater model for pre-development conditions. A schematic plan of the hydrological analysis and detailed hydrological computations for pre-development conditions are included in Appendix A.

TABLE 2
Pre-Development Conditions

Subarea, or Junction	Description	Area (acres)	Imp. Area (acres)	Time of Conc. (minutes)	Peak Flow Rate (cfs)			
					1-year	2-year	10-year	100-year
1	Subarea	11.87	0.00	12	10.95	14.33	28.30	61.73
1D	Depression	-	-	-	0.00	0.00	0.00	0.66
2	Subarea	14.46	0.00	13	13.42	17.40	33.95	72.95
3	Subarea	4.56	0.00	10	3.51	4.76	10.07	23.21
4	Subarea	1.10	0.00	9	1.24	1.61	3.10	6.62
5	Subarea	28.73	0.00	14	24.05	31.52	62.42	136.66
6	Subarea	10.75	0.00	22	7.84	10.20	19.95	43.17
6D	Depression	-	-	-	4.05	6.56	17.00	39.30
7	Subarea	38.81	0.72	29	21.91	28.83	57.65	127.63
1L	West Subwatershed	-	-	-	13.42	17.40	33.95	72.95
2L	Northwest Subwatershed	-	-	-	3.51	4.76	10.07	23.21
3L	North Subwatershed	-	-	-	24.95	32.69	64.72	142.42
4L	Southeast Subwatershed	-	-	-	24.37	34.61	74.65	166.73
99	Total Outflow	110.28	0.72	-	53.93	71.26	151.92	346.49

Post-Development Site Drainage Description

The proposed development includes the construction of twenty-eight (28) 2-family condominium units and one hundred fifty-five (155) single-family lots. The proposed plan will disturb approximately 100-acres and will result in a net increase in impervious area of approximately 28.42 acres.

Figure 3, Post-Development Conditions Plan, shows the proposed land cover, grading, drainage boundaries, flow paths, and proposed site and stormwater management improvements. The following table summarizes the results of the stormwater model for post-development conditions.

A schematic plan of the hydrological analysis and detailed hydrological computations for post-development conditions are included in Appendix B.

TABLE 3
Post-Development Conditions

Subarea, or Junction	Description	Area (acres)	Imp. Area (acres)	Time of Conc. (minutes)	Peak Flow Rate (cfs)			
					1-year	2-year	10-year	100-year
1	Subarea	11.05	3.17	10	14.43	18.14	32.93	66.94
1B	Bioretention Basin	-	-	-	0.89	1.17	1.84	5.44
2	Subarea	1.62	0.69	6	3.38	4.08	6.77	12.61
2B	Infiltration Basin	-	-	-	1.20	1.64	4.70	14.02
3	Subarea	13.36	5.72	15	18.90	23.09	39.32	75.17
3P	Pond	-	-	-	0.90	1.92	6.80	50.55
4	Subarea	4.39	0.58	10	4.65	6.01	11.57	24.71
4B	Infiltration Basin	-	-	-	0.11	0.26	0.82	3.49
5	Subarea	2.59	0.29	10	2.54	3.32	6.54	14.21
5B	Rain Garden	-	-	-	0.54	0.72	1.47	12.10
6	Subarea	8.80	2.99	10	12.26	15.29	27.25	54.50
6P	Pond	-	-	-	0.38	0.42	4.95	39.76
7	Subarea	11.60	2.67	15	11.92	15.16	28.22	58.56
7P	Pond	-	-	-	1.29	1.80	4.37	13.91
8	Subarea	4.61	0.72	10	4.88	6.31	12.15	25.95
8B	Infiltration Basin	-	-	-	0.19	0.39	0.93	10.98
9	Subarea	10.82	3.51	6	19.06	23.51	40.89	79.67
9P	Pond	-	-	-	0.29	0.33	0.46	12.64
10	Subarea	2.04	0.25	10	2.16	2.79	5.38	11.48
10B	Infiltration Basin	-	-	-	0.00	0.02	0.16	0.36
11	Subarea	7.98	2.96	6	14.06	17.34	30.16	58.76
11P	Pond	-	-	-	0.32	0.35	1.19	24.48
12	Subarea	7.03	1.88	10	8.59	10.89	20.14	41.52
12P	Pond	-	-	-	0.31	0.35	2.62	26.85
13	Subarea	5.25	1.11	10	6.41	8.13	15.04	31.01
13P	Pond	-	-	-	0.40	0.46	0.63	10.27
14	Subarea	0.41	0.03	10	0.34	0.46	0.94	2.13
15	Subarea	4.28	0.73	10	4.53	5.86	11.28	24.09
16	Subarea	10.89	1.18	10	9.88	13.06	26.27	58.22
17	Subarea	3.56	0.66	10	3.77	4.88	9.38	20.04
1L	West Subwatershed	-	-	-	5.01	6.49	13.34	67.98
2L	Northwest Subwatershed	-	-	-	0.58	0.75	1.38	10.99
3L	North Subwatershed	-	-	-	5.14	6.56	12.25	69.60
4L	Southeast Subwatershed	-	-	-	10.38	13.79	27.79	94.03
99	Total Outflow	110.28	29.14	-	21.10	27.57	54.42	229.59

Peak Discharge Summaries

Waukesha County requires post-development peak discharge rates to be no greater than pre-development discharge rates for the 1, 2, 10, and 100-yr, 24-hr design storms. The following table compares the results of the analysis from a peak discharge standpoint.

**TABLE 4
Comparison of Peak Discharge**

	Pre-Development		Post-Development
1-year	53.93 cfs	>	21.10 cfs
2-year	71.26 cfs	>	27.57 cfs
10-year	151.92 cfs	>	54.42 cfs
100-year	346.49 cfs	>	229.59 cfs

Water Quality

The Waukesha County requires new development sites to be designed to remove 80 percent of TSS, based on an average annual rainfall as compared to no runoff management controls. Stormwater quality was analyzed using SLAMM Version 10.4.1 software, developed by Robert Pitt and John Voorhees. The results of the SLAMM analysis indicate that approximately 81.0 percent of TSS will be removed from stormwater as a result of the proposed wet detention ponds, rain garden, bioretention basin, infiltration basins and the disconnected nature of select roof and patio areas in conformance with WDNR’s connected impervious guidance outlined in Document 3800-2020-1.

Based on conversations with the WDNR, to realize the treatment credit for disconnected surfaces two models are created. The first model is run with all surfaces modeled as connected to determine the total TSS loading produced prior to any treatment practices. The second model is run with select surfaces disconnected (such as backyard roof and patio areas) to determine the total TSS loading released after treatment practices. The particulate solids reduction percentage is calculated by dividing the total TSS removed by the total TSS loading produced (prior to any BMPs). Detailed computations are included in Appendix C.

Infiltration

Waukesha County’s Chapter 14 requires low imperviousness developments to infiltrate sufficient runoff volume so that the post-development infiltration volume is at least 90% of the pre-development infiltration volume, based on an average annual rainfall. However, no more than 1% of the project site is required as an effective infiltration area.

The development plan will disturb approximately 100 acres of area. In accordance with the County’s ordinance, the maximum effective infiltration area required is approximately 1.0 acre (1%

of the project site). The proposed bioretention basin, rain garden, and infiltration basins will provide a total effective infiltration area of at least 1.0 acres in accordance with the effective infiltration area requirement.

Conclusion

The proposed development will maintain compliance with the Town of Delafield, Waukesha County, and the WDNR's requirements for control of stormwater quantity, quality, and infiltration.

Prepared by:

SOUND STORMWATER DESIGN LLC

A handwritten signature in black ink, appearing to read "Jayme Sisel". The signature is fluid and cursive, with a large initial "J" and a distinct "S" for the last name.

Jayme Sisel, P.E.

FIGURES

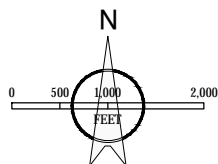
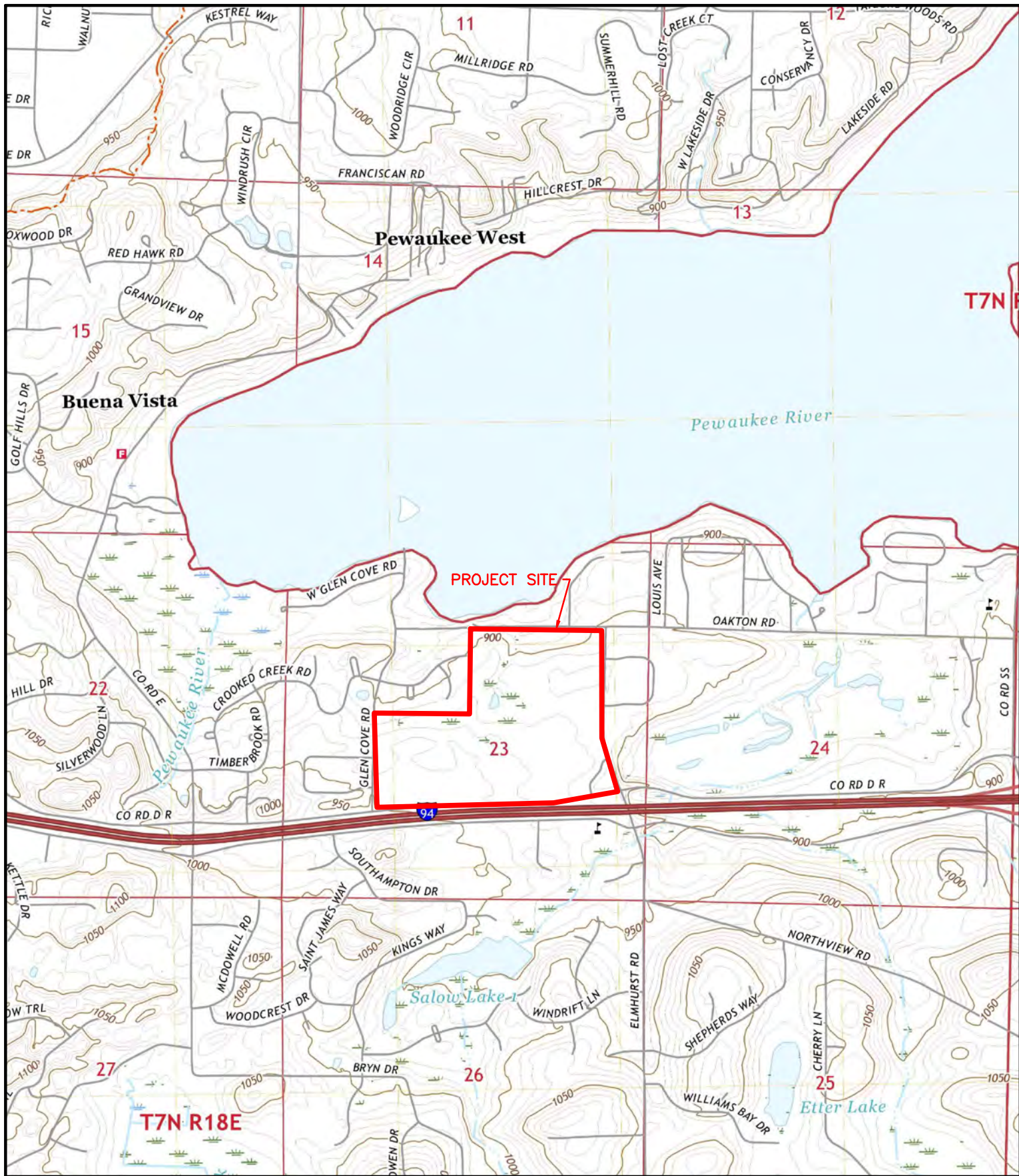


FIGURE 1

SITE LOCATION MAP

WELSHIRE FARM

TOWN OF DELAFIELD, WISCONSIN



SOUND STORMWATER
DESIGN



SOUND STORMWATER DESIGN

Copper Oaks Ct.
Muskego, WI 53150
414.286.4739
jayme.sisel@soundstormwater.com

CLIENT:
NEUMANN DEVELOPMENT, INC.

PROJECT TITLE:
WELSHIRE FARM DEVELOPMENT
GOLF ROAD
TOWN OF DELAFIELD, WISCONSIN

DATE: 02-03-23

JOB NO: 2023-003

SHEET TITLE:
PRE-DEVELOPMENT CONDITIONS PLAN

FIGURE:



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3/20/2023 4:46 PM



SOUND STORMWATER DESIGN

Copper Oaks Ct.
Muskego, WI 53150
414.286.4739
jayme.sisel@soundstormwater.com

CLIENT:
NEUMANN DEVELOPMENT, INC.

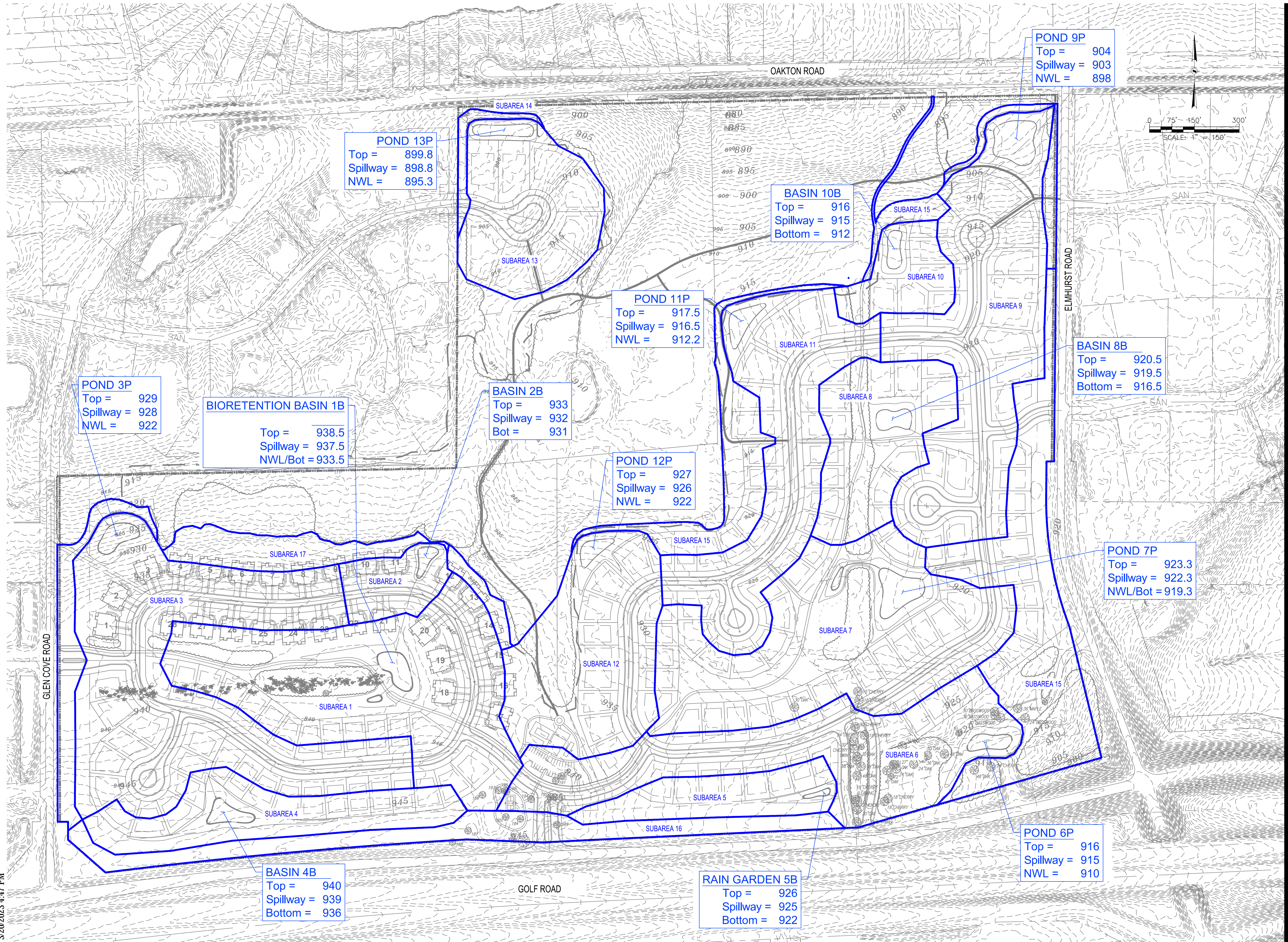
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WELSHIRE FARM DEVELOPMENT
GOLF ROAD
TOWN OF DELAFIELD, WISCONSIN

DATE: 02-03-23

JOB NO: 2023-003

SHEET TITLE:
POST-DEVELOPMENT CONDITIONS PLAN

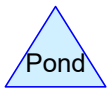
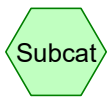
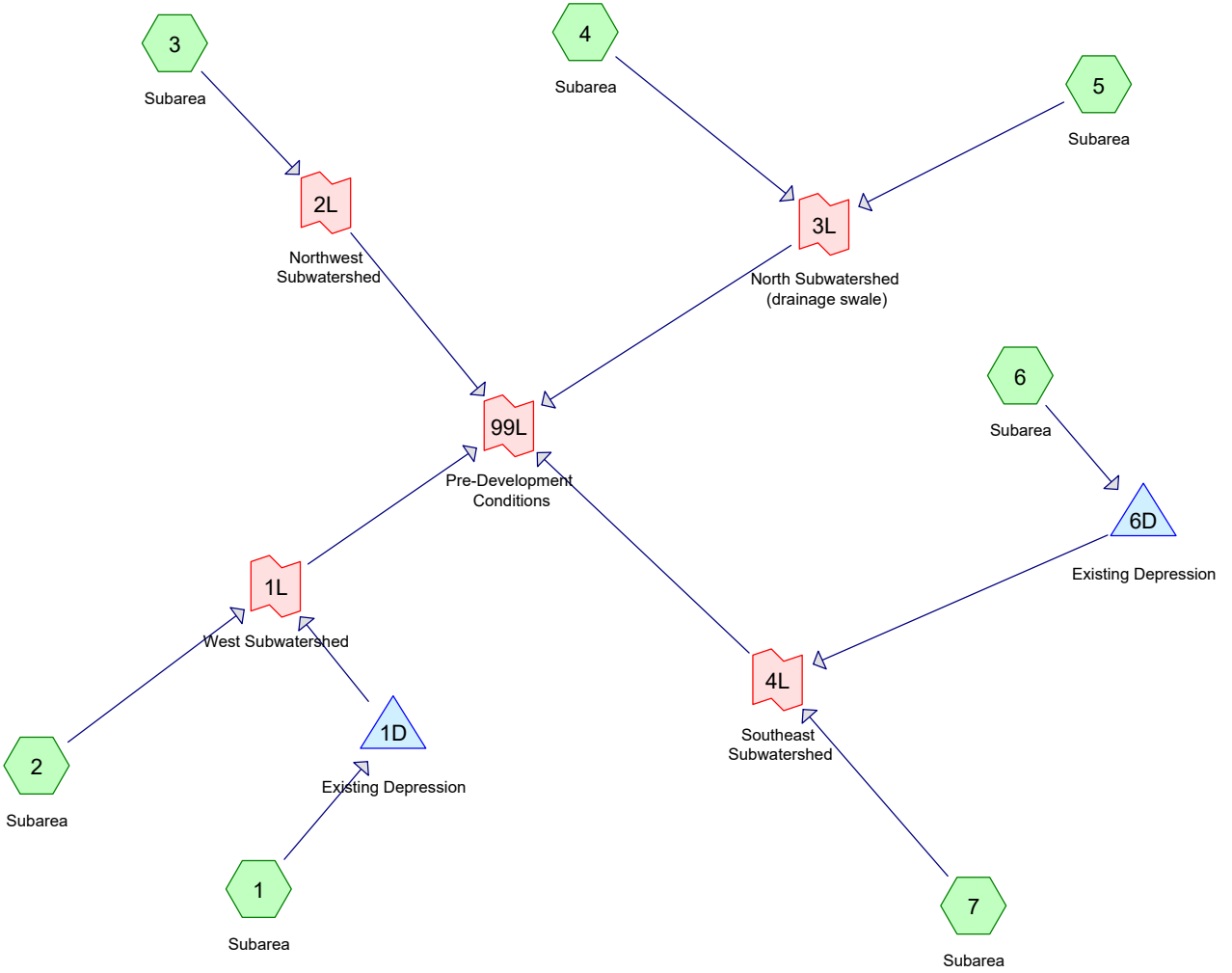
FIGURE:



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APPENDIX A

Pre-Development Hydrologic Analysis



Routing Diagram for Existing_2023-003
 Prepared by HP Inc., Printed 3/20/2023
 HydroCAD® 10.10-6a s/n 11025 © 2020 HydroCAD Software Solutions LLC

Existing_2023-003

Prepared by HP Inc.

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 yr	MSE 24-hr	3	Default	24.00	1	2.40	2
2	2 yr	MSE 24-hr	3	Default	24.00	1	2.70	2
3	10 yr	MSE 24-hr	3	Default	24.00	1	3.81	2
4	100 yr	MSE 24-hr	3	Default	24.00	1	6.18	2

Existing_2023-003

Prepared by HP Inc.

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Page 3

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
92.150	78	cropland - C soils (1, 2, 3, 4, 5, 6, 7)
0.720	98	impervious (7)
4.130	74	maintained lawn - C soils (7)
13.280	70	woodland - C soils (1, 2, 3, 5, 6, 7)
110.280	77	TOTAL AREA

Existing_2023-003

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MSE 24-hr 3 1 yr Rainfall=2.40"

Printed 3/20/2023

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>0.68"
 Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=10.95 cfs 0.670 af

Subcatchment2: Subarea Runoff Area=14.460 ac 0.00% Impervious Runoff Depth>0.72"
 Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=13.42 cfs 0.871 af

Subcatchment3: Subarea Runoff Area=4.560 ac 0.00% Impervious Runoff Depth>0.55"
 Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=74 Runoff=3.51 cfs 0.210 af

Subcatchment4: Subarea Runoff Area=1.100 ac 0.00% Impervious Runoff Depth>0.72"
 Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=1.24 cfs 0.066 af

Subcatchment5: Subarea Runoff Area=28.730 ac 0.00% Impervious Runoff Depth>0.68"
 Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=24.05 cfs 1.622 af

Subcatchment6: Subarea Runoff Area=10.750 ac 0.00% Impervious Runoff Depth>0.72"
 Flow Length=760' Tc=21.5 min CN=78 Runoff=7.84 cfs 0.647 af

Subcatchment7: Subarea Runoff Area=38.810 ac 1.86% Impervious Runoff Depth>0.68"
 Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=21.91 cfs 2.188 af

Pond 1D: Existing Depression Peak Elev=938.58' Storage=0.511 af Inflow=10.95 cfs 0.670 af
 Discarded=0.19 cfs 0.184 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.184 af

Pond 6D: Existing Depression Peak Elev=917.60' Storage=0.223 af Inflow=7.84 cfs 0.647 af
 Discarded=0.09 cfs 0.072 af Primary=4.05 cfs 0.410 af Outflow=4.14 cfs 0.483 af

Link 1L: West Subwatershed Inflow=13.42 cfs 0.871 af
 Primary=13.42 cfs 0.871 af

Link 2L: Northwest Subwatershed Inflow=3.51 cfs 0.210 af
 Primary=3.51 cfs 0.210 af

Link 3L: North Subwatershed(drainage swale) Inflow=24.95 cfs 1.689 af
 Primary=24.95 cfs 1.689 af

Link 4L: Southeast Subwatershed Inflow=24.37 cfs 2.598 af
 Primary=24.37 cfs 2.598 af

Link 99L: Pre-DevelopmentConditions Inflow=53.93 cfs 5.368 af
 Primary=53.93 cfs 5.368 af

Total Runoff Area = 110.280 ac Runoff Volume = 6.275 af Average Runoff Depth = 0.68"
99.35% Pervious = 109.560 ac 0.65% Impervious = 0.720 ac

Existing_2023-003

Prepared by HP Inc.

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MSE 24-hr 3 2 yr Rainfall=2.70"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>0.87"
 Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=14.33 cfs 0.858 af

Subcatchment2: Subarea Runoff Area=14.460 ac 0.00% Impervious Runoff Depth>0.92"
 Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=17.40 cfs 1.108 af

Subcatchment3: Subarea Runoff Area=4.560 ac 0.00% Impervious Runoff Depth>0.72"
 Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=74 Runoff=4.76 cfs 0.275 af

Subcatchment4: Subarea Runoff Area=1.100 ac 0.00% Impervious Runoff Depth>0.92"
 Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=1.61 cfs 0.084 af

Subcatchment5: Subarea Runoff Area=28.730 ac 0.00% Impervious Runoff Depth>0.87"
 Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=31.52 cfs 2.077 af

Subcatchment6: Subarea Runoff Area=10.750 ac 0.00% Impervious Runoff Depth>0.92"
 Flow Length=760' Tc=21.5 min CN=78 Runoff=10.20 cfs 0.823 af

Subcatchment7: Subarea Runoff Area=38.810 ac 1.86% Impervious Runoff Depth>0.87"
 Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=28.83 cfs 2.802 af

Pond 1D: Existing Depression Peak Elev=938.68' Storage=0.670 af Inflow=14.33 cfs 0.858 af
 Discarded=0.23 cfs 0.216 af Primary=0.00 cfs 0.000 af Outflow=0.23 cfs 0.216 af

Pond 6D: Existing Depression Peak Elev=917.63' Storage=0.247 af Inflow=10.20 cfs 0.823 af
 Discarded=0.09 cfs 0.073 af Primary=6.56 cfs 0.585 af Outflow=6.65 cfs 0.658 af

Link 1L: West Subwatershed Inflow=17.40 cfs 1.108 af
 Primary=17.40 cfs 1.108 af

Link 2L: Northwest Subwatershed Inflow=4.76 cfs 0.275 af
 Primary=4.76 cfs 0.275 af

Link 3L: North Subwatershed(drainage swale) Inflow=32.69 cfs 2.162 af
 Primary=32.69 cfs 2.162 af

Link 4L: Southeast Subwatershed Inflow=34.61 cfs 3.386 af
 Primary=34.61 cfs 3.386 af

Link 99L: Pre-DevelopmentConditions Inflow=71.26 cfs 6.931 af
 Primary=71.26 cfs 6.931 af

Total Runoff Area = 110.280 ac Runoff Volume = 8.028 af Average Runoff Depth = 0.87"
99.35% Pervious = 109.560 ac 0.65% Impervious = 0.720 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=28.30 cfs 1.645 af

Subcatchment2: Subarea Runoff Area=14.460 ac 0.00% Impervious Runoff Depth>1.74"
Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=33.95 cfs 2.091 af

Subcatchment3: Subarea Runoff Area=4.560 ac 0.00% Impervious Runoff Depth>1.46"
Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=74 Runoff=10.07 cfs 0.554 af

Subcatchment4: Subarea Runoff Area=1.100 ac 0.00% Impervious Runoff Depth>1.74"
Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=3.10 cfs 0.159 af

Subcatchment5: Subarea Runoff Area=28.730 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=62.42 cfs 3.982 af

Subcatchment6: Subarea Runoff Area=10.750 ac 0.00% Impervious Runoff Depth>1.73"
Flow Length=760' Tc=21.5 min CN=78 Runoff=19.95 cfs 1.553 af

Subcatchment7: Subarea Runoff Area=38.810 ac 1.86% Impervious Runoff Depth>1.66"
Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=57.65 cfs 5.371 af

Pond 1D: Existing Depression Peak Elev=939.00' Storage=1.347 af Inflow=28.30 cfs 1.645 af
Discarded=0.35 cfs 0.335 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.335 af

Pond 6D: Existing Depression Peak Elev=917.74' Storage=0.332 af Inflow=19.95 cfs 1.553 af
Discarded=0.12 cfs 0.078 af Primary=17.00 cfs 1.309 af Outflow=17.11 cfs 1.387 af

Link 1L: West Subwatershed Inflow=33.95 cfs 2.091 af
Primary=33.95 cfs 2.091 af

Link 2L: Northwest Subwatershed Inflow=10.07 cfs 0.554 af
Primary=10.07 cfs 0.554 af

Link 3L: North Subwatershed(drainage swale) Inflow=64.72 cfs 4.141 af
Primary=64.72 cfs 4.141 af

Link 4L: Southeast Subwatershed Inflow=74.65 cfs 6.681 af
Primary=74.65 cfs 6.681 af

Link 99L: Pre-DevelopmentConditions Inflow=151.92 cfs 13.466 af
Primary=151.92 cfs 13.466 af

Total Runoff Area = 110.280 ac Runoff Volume = 15.356 af Average Runoff Depth = 1.67"
99.35% Pervious = 109.560 ac 0.65% Impervious = 0.720 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>3.63"
Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=61.73 cfs 3.595 af

Subcatchment2: Subarea Runoff Area=14.460 ac 0.00% Impervious Runoff Depth>3.74"
Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=72.95 cfs 4.501 af

Subcatchment3: Subarea Runoff Area=4.560 ac 0.00% Impervious Runoff Depth>3.33"
Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=74 Runoff=23.21 cfs 1.267 af

Subcatchment4: Subarea Runoff Area=1.100 ac 0.00% Impervious Runoff Depth>3.74"
Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=6.62 cfs 0.343 af

Subcatchment5: Subarea Runoff Area=28.730 ac 0.00% Impervious Runoff Depth>3.63"
Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=136.66 cfs 8.700 af

Subcatchment6: Subarea Runoff Area=10.750 ac 0.00% Impervious Runoff Depth>3.73"
Flow Length=760' Tc=21.5 min CN=78 Runoff=43.17 cfs 3.344 af

Subcatchment7: Subarea Runoff Area=38.810 ac 1.86% Impervious Runoff Depth>3.63"
Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=127.63 cfs 11.738 af

Pond 1D: Existing Depression Peak Elev=939.53' Storage=2.909 af Inflow=61.73 cfs 3.595 af
Discarded=0.49 cfs 0.488 af Primary=0.66 cfs 0.303 af Outflow=1.14 cfs 0.791 af

Pond 6D: Existing Depression Peak Elev=917.90' Storage=0.486 af Inflow=43.17 cfs 3.344 af
Discarded=0.15 cfs 0.089 af Primary=39.30 cfs 3.087 af Outflow=39.45 cfs 3.175 af

Link 1L: West Subwatershed Inflow=72.95 cfs 4.804 af
Primary=72.95 cfs 4.804 af

Link 2L: Northwest Subwatershed Inflow=23.21 cfs 1.267 af
Primary=23.21 cfs 1.267 af

Link 3L: North Subwatershed(drainage swale) Inflow=142.42 cfs 9.042 af
Primary=142.42 cfs 9.042 af

Link 4L: Southeast Subwatershed Inflow=166.73 cfs 14.825 af
Primary=166.73 cfs 14.825 af

Link 99L: Pre-DevelopmentConditions Inflow=346.49 cfs 29.939 af
Primary=346.49 cfs 29.939 af

Total Runoff Area = 110.280 ac Runoff Volume = 33.489 af Average Runoff Depth = 3.64"
99.35% Pervious = 109.560 ac 0.65% Impervious = 0.720 ac

Summary for Subcatchment 1: Subarea

Runoff = 61.73 cfs @ 12.20 hrs, Volume= 3.595 af, Depth> 3.63"

Routed to Pond 1D : Existing Depression

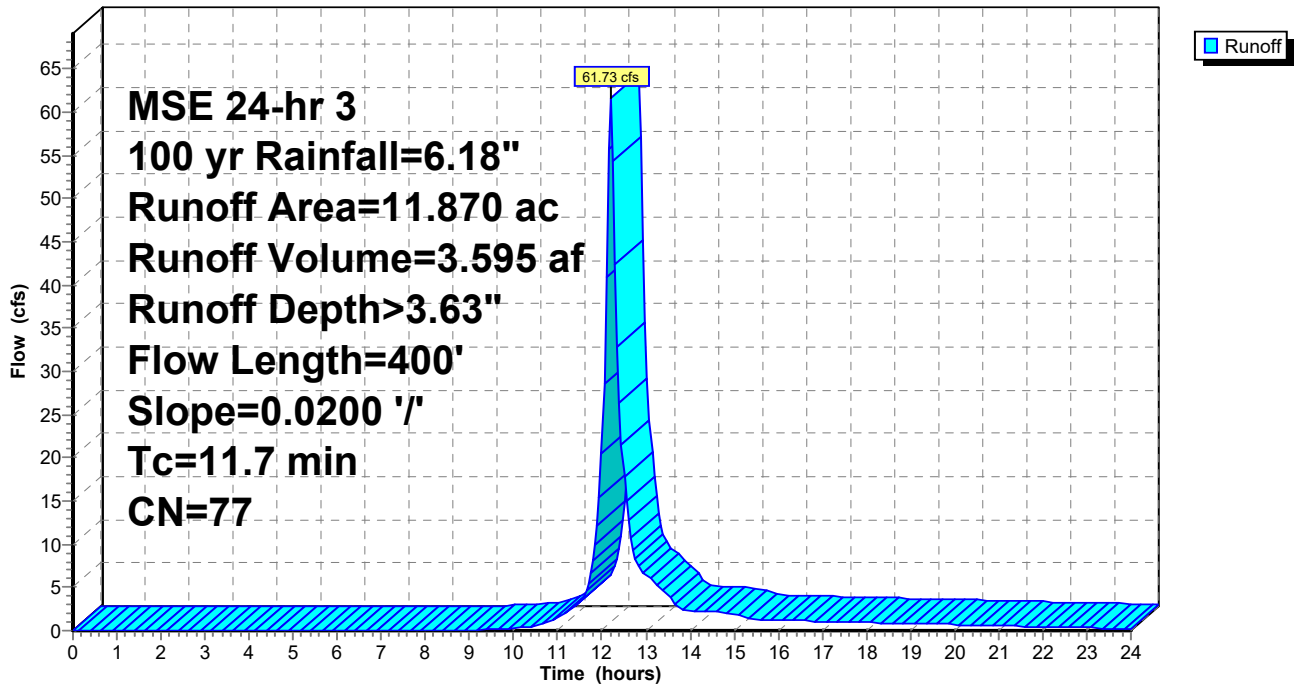
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 10.990	78	cropland - C soils
* 0.880	70	woodland - C soils
11.870	77	Weighted Average
11.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, Range n= 0.130 P2= 2.70"
2.2	300	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.7	400	Total			

Subcatchment 1: Subarea

Hydrograph



Summary for Subcatchment 2: Subarea

Runoff = 72.95 cfs @ 12.22 hrs, Volume= 4.501 af, Depth> 3.74"
 Routed to Link 1L : West Subwatershed

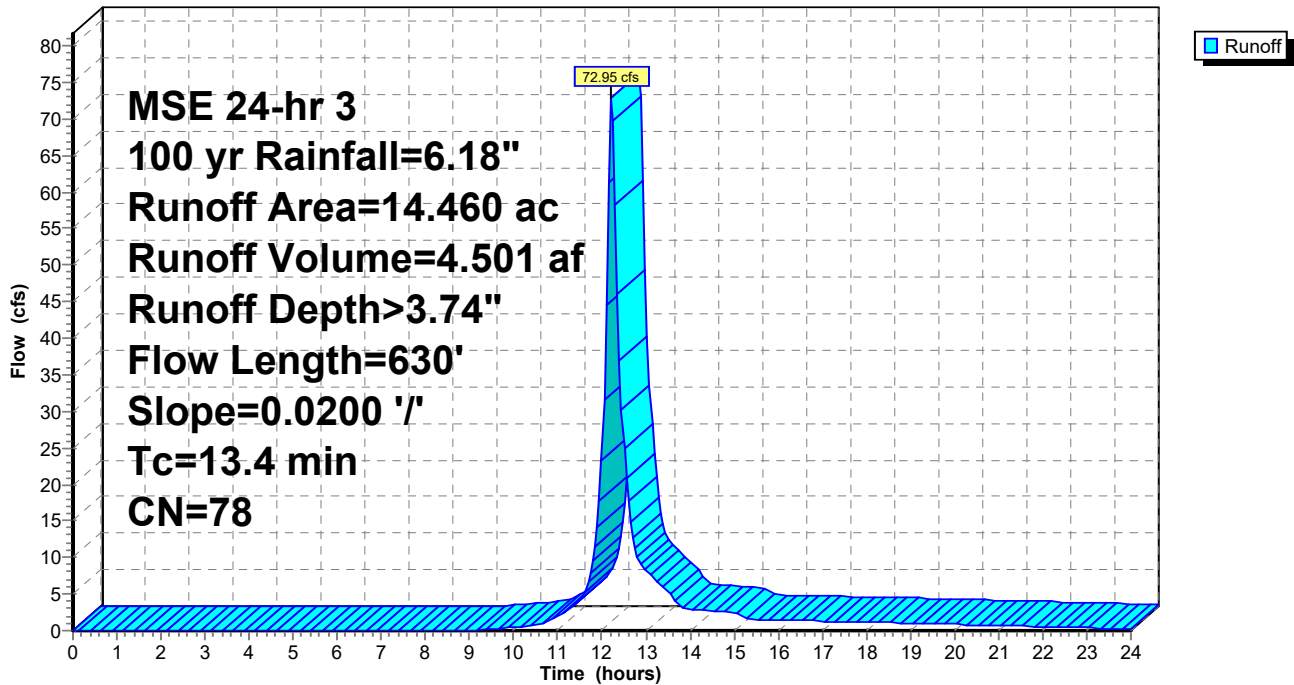
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 13.880	78	cropland - C soils
* 0.580	70	woodland - C soils
14.460	78	Weighted Average
14.460		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, Range n= 0.130 P2= 2.70"
3.9	530	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
13.4	630	Total			

Subcatchment 2: Subarea

Hydrograph



Summary for Subcatchment 3: Subarea

Runoff = 23.21 cfs @ 12.18 hrs, Volume= 1.267 af, Depth> 3.33"
 Routed to Link 2L : Northwest Subwatershed

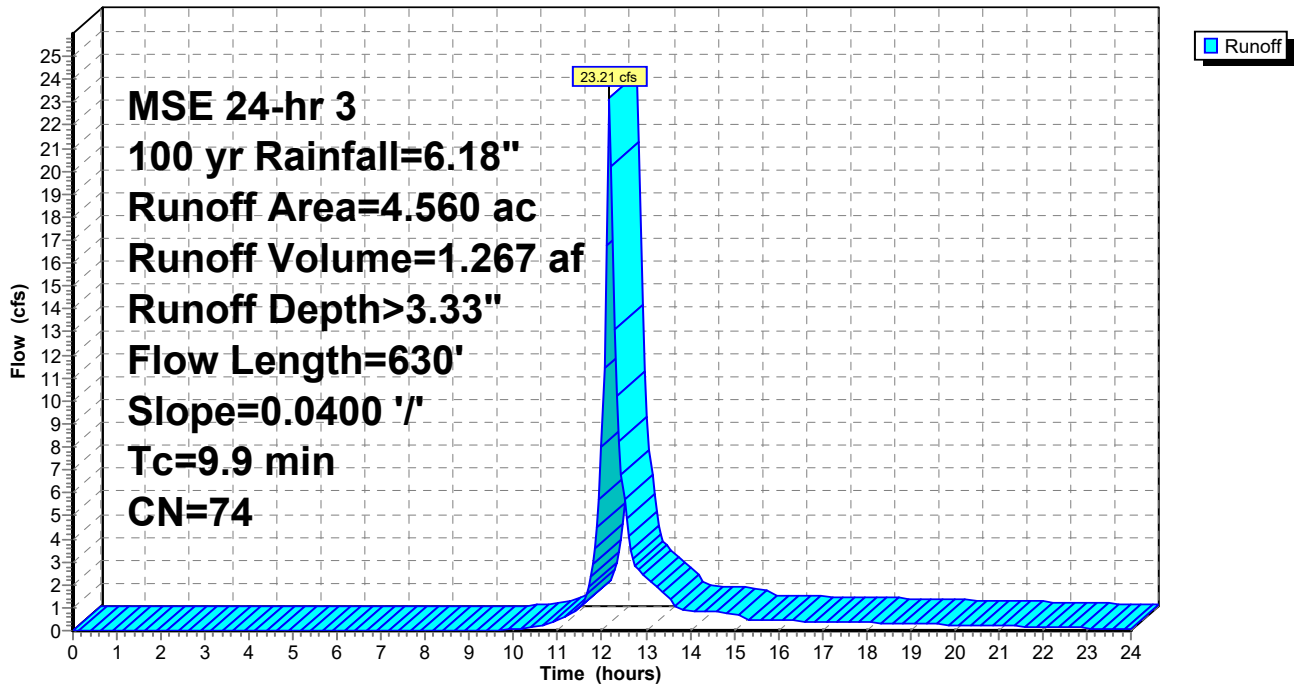
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.460	78	cropland - C soils
* 2.100	70	woodland - C soils
4.560	74	Weighted Average
4.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		Sheet Flow, Range n= 0.130 P2= 2.70"
2.7	530	0.0400	3.22		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
9.9	630	Total			

Subcatchment 3: Subarea

Hydrograph



Summary for Subcatchment 4: Subarea

Runoff = 6.62 cfs @ 12.16 hrs, Volume= 0.343 af, Depth> 3.74"

Routed to Link 3L : North Subwatershed (drainage swale)

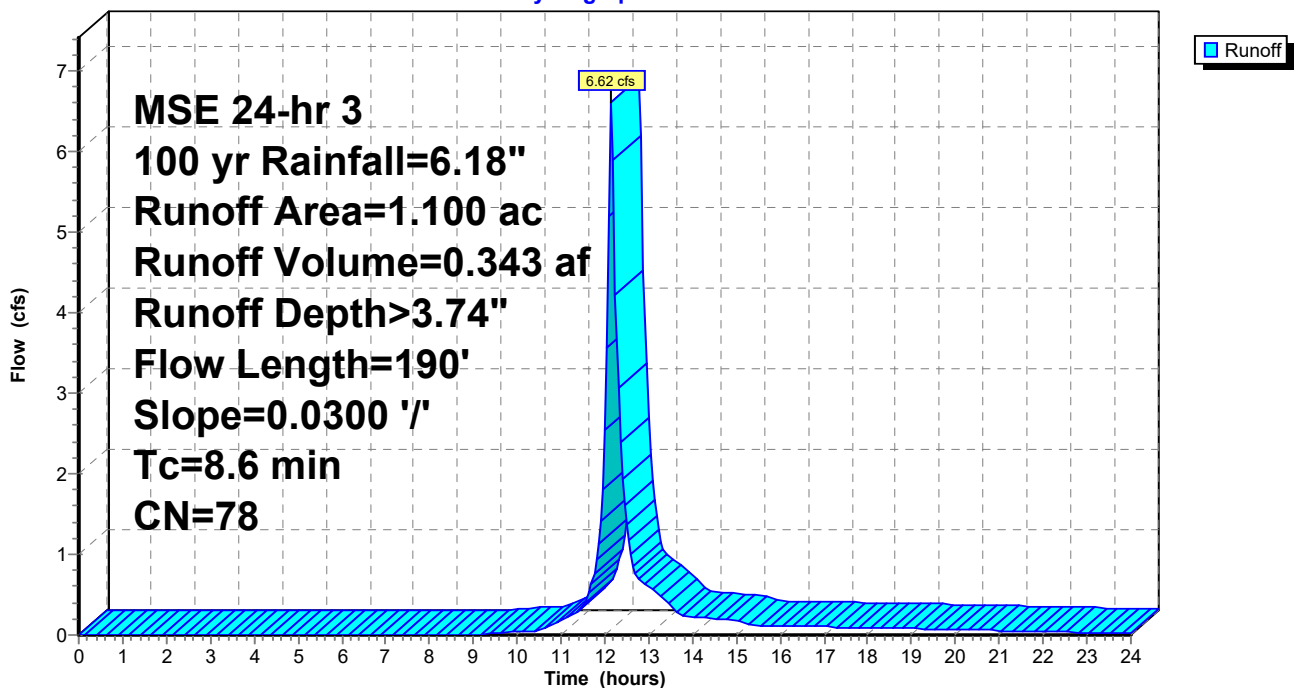
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.100	78	cropland - C soils
1.100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		Sheet Flow, Range n= 0.130 P2= 2.70"
0.5	90	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
8.6	190	Total			

Subcatchment 4: Subarea

Hydrograph



Summary for Subcatchment 5: Subarea

Runoff = 136.66 cfs @ 12.23 hrs, Volume= 8.700 af, Depth> 3.63"

Routed to Link 3L : North Subwatershed (drainage swale)

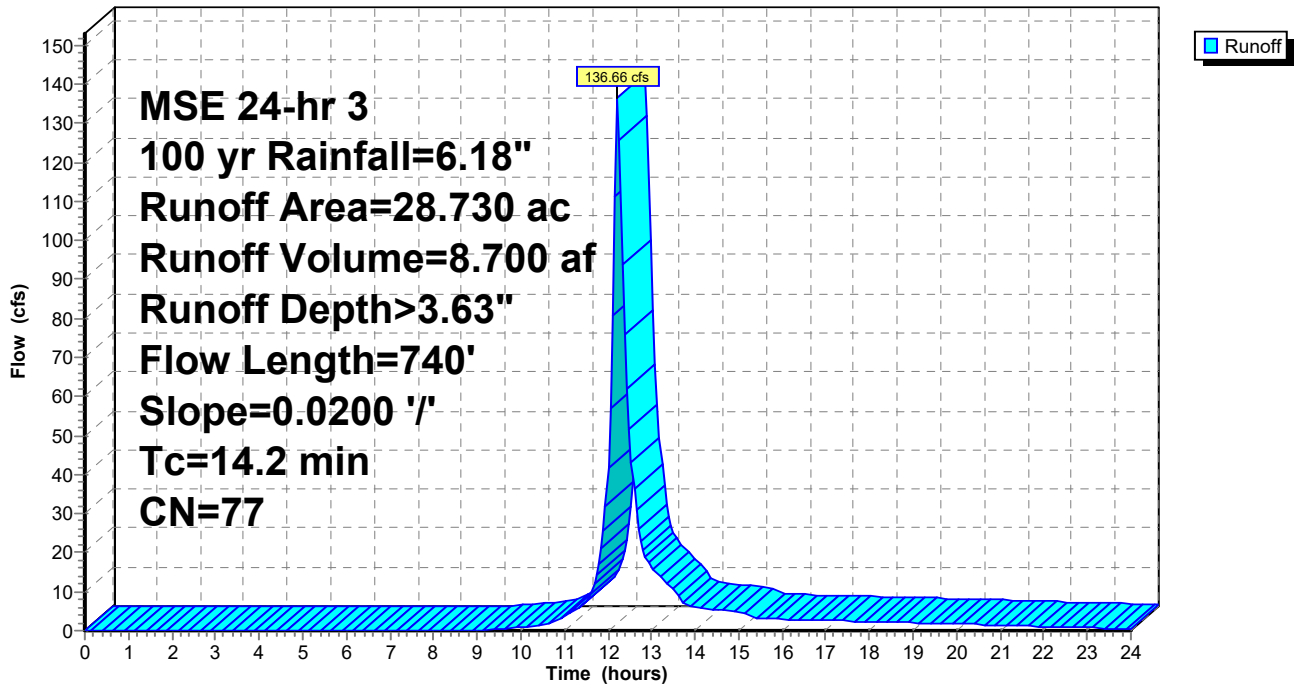
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 25.800	78	cropland - C soils
* 2.930	70	woodland - C soils
28.730	77	Weighted Average
28.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		Sheet Flow, Range n= 0.130 P2= 2.70"
4.7	640	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
14.2	740	Total			

Subcatchment 5: Subarea

Hydrograph



Summary for Subcatchment 6: Subarea

Runoff = 43.17 cfs @ 12.32 hrs, Volume= 3.344 af, Depth> 3.73"
 Routed to Pond 6D : Existing Depression

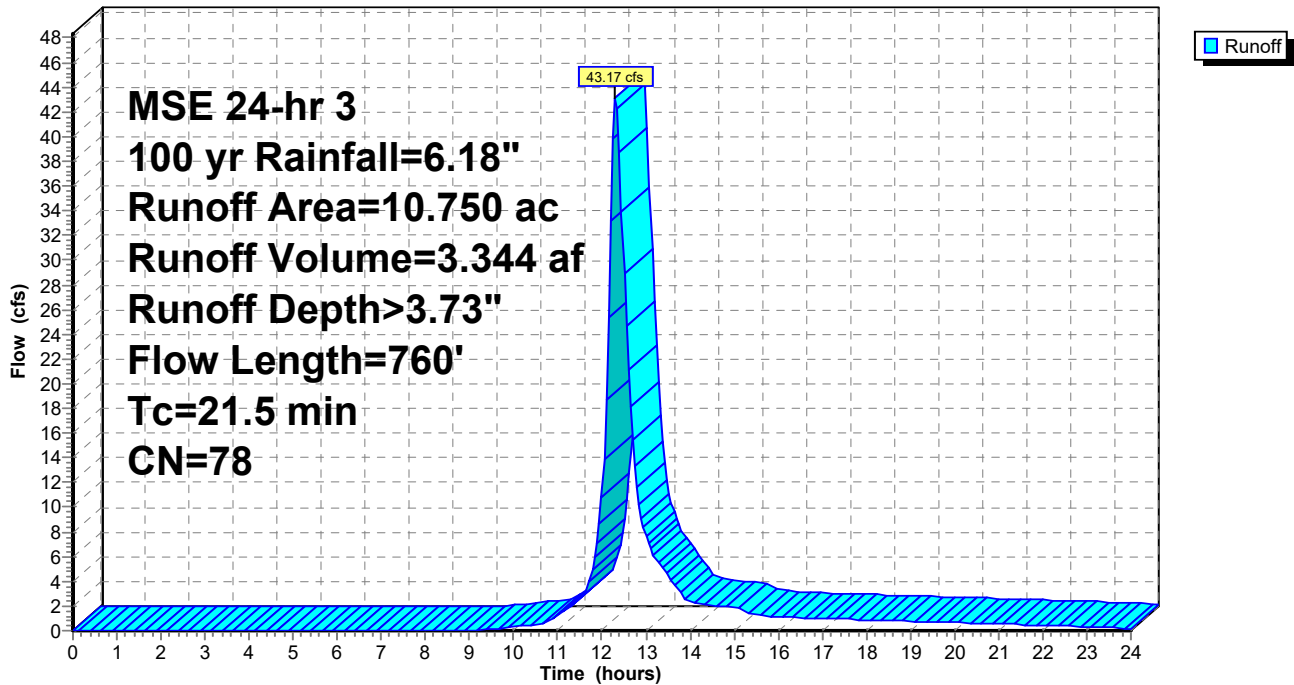
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 10.200	78	cropland - C soils
* 0.550	70	woodland - C soils
10.750	78	Weighted Average
10.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0100	0.13		Sheet Flow, Range n= 0.130 P2= 2.70"
2.0	190	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
6.9	470	0.0050	1.14		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
21.5	760	Total			

Subcatchment 6: Subarea

Hydrograph



Summary for Subcatchment 7: Subarea

Runoff = 127.63 cfs @ 12.42 hrs, Volume= 11.738 af, Depth> 3.63"
 Routed to Link 4L : Southeast Subwatershed

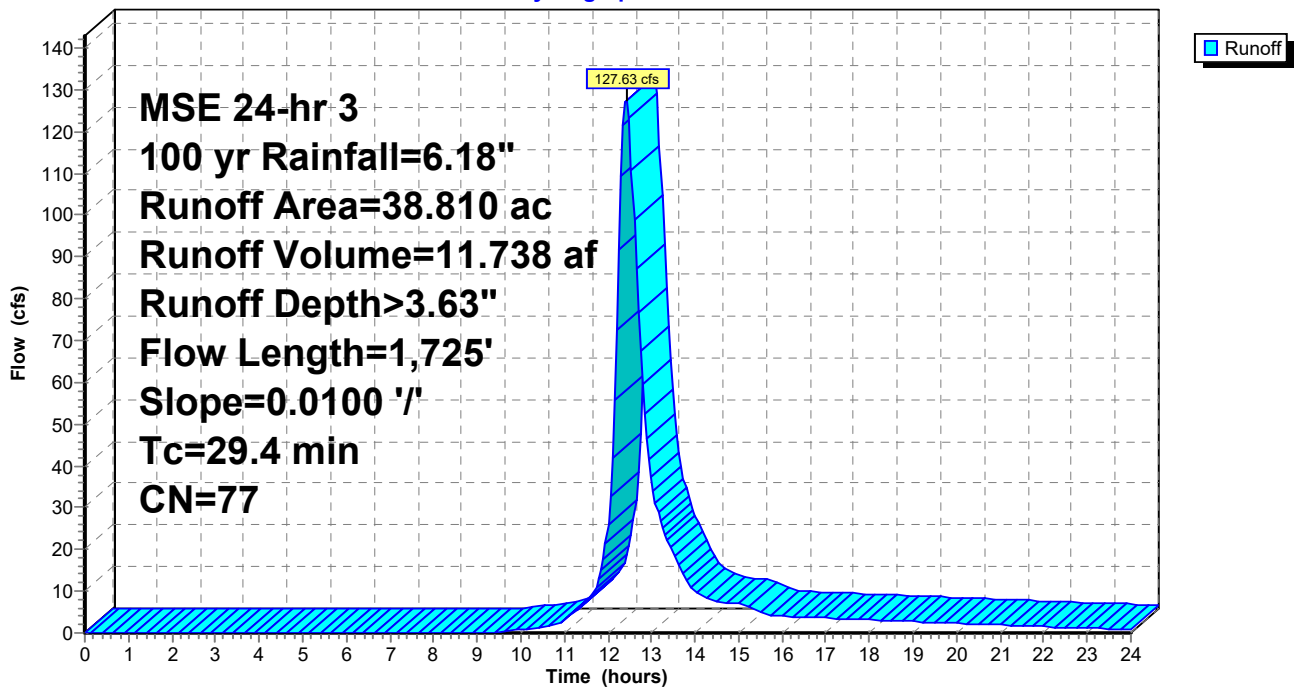
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 27.720	78	cropland - C soils
* 6.240	70	woodland - C soils
* 4.130	74	maintained lawn - C soils
* 0.720	98	impervious
38.810	77	Weighted Average
38.090		98.14% Pervious Area
0.720		1.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0100	0.13		Sheet Flow, Range n= 0.130 P2= 2.70"
16.8	1,625	0.0100	1.61		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
29.4	1,725	Total			

Subcatchment 7: Subarea

Hydrograph



Summary for Pond 1D: Existing Depression

Inflow Area = 11.870 ac, 0.00% Impervious, Inflow Depth > 3.63" for 100 yr event
 Inflow = 61.73 cfs @ 12.20 hrs, Volume= 3.595 af
 Outflow = 1.14 cfs @ 16.39 hrs, Volume= 0.791 af, Atten= 98%, Lag= 251.5 min
 Discarded = 0.49 cfs @ 16.39 hrs, Volume= 0.488 af
 Primary = 0.66 cfs @ 16.39 hrs, Volume= 0.303 af
 Routed to Link 1L : West Subwatershed

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 939.53' @ 16.39 hrs Surf.Area= 3.441 ac Storage= 2.909 af

Plug-Flow detention time= 373.3 min calculated for 0.791 af (22% of inflow)
 Center-of-Mass det. time= 273.2 min (1,076.5 - 803.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	938.00'	4.745 af	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
938.00	0.440	0.000	0.000	0.440	
939.00	2.520	1.338	1.338	2.520	
940.00	4.380	3.407	4.745	4.380	

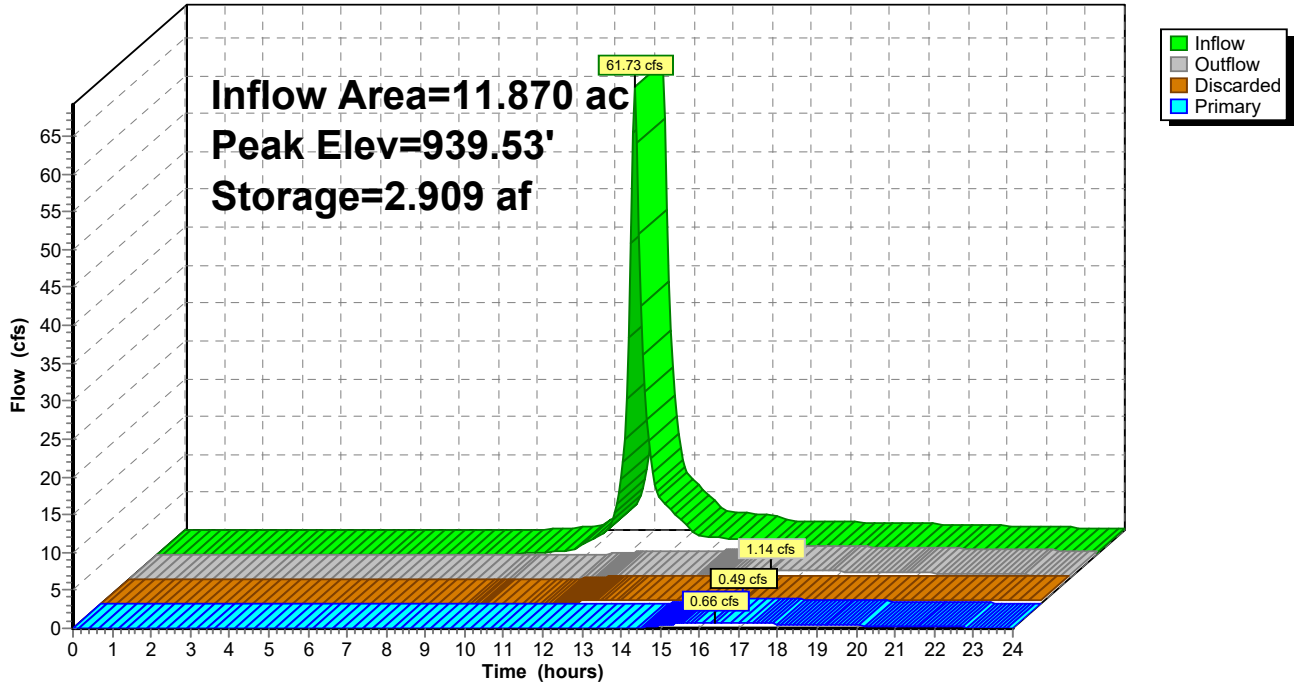
Device	Routing	Invert	Outlet Devices									
#1	Discarded	938.00'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 928.00' Phase-In= 0.01'									
#2	Primary	939.50'	50.0' long + 10.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Discarded OutFlow Max=0.49 cfs @ 16.39 hrs HW=939.53' (Free Discharge)
 ↑1=Exfiltration (Controls 0.49 cfs)

Primary OutFlow Max=0.63 cfs @ 16.39 hrs HW=939.53' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.63 cfs @ 0.43 fps)

Pond 1D: Existing Depression

Hydrograph



Summary for Pond 6D: Existing Depression

Inflow Area = 10.750 ac, 0.00% Impervious, Inflow Depth > 3.73" for 100 yr event
 Inflow = 43.17 cfs @ 12.32 hrs, Volume= 3.344 af
 Outflow = 39.45 cfs @ 12.39 hrs, Volume= 3.175 af, Atten= 9%, Lag= 4.8 min
 Discarded = 0.15 cfs @ 12.39 hrs, Volume= 0.089 af
 Primary = 39.30 cfs @ 12.39 hrs, Volume= 3.087 af
 Routed to Link 4L : Southeast Subwatershed

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.90' @ 12.39 hrs Surf.Area= 1.095 ac Storage= 0.486 af

Plug-Flow detention time= 40.7 min calculated for 3.175 af (95% of inflow)
 Center-of-Mass det. time= 15.8 min (826.1 - 810.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	916.50'	3.262 af	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
916.50	0.000	0.000	0.000	0.000	
917.00	0.110	0.018	0.018	0.110	
918.00	1.260	0.581	0.599	1.260	
919.00	4.380	2.663	3.262	4.380	

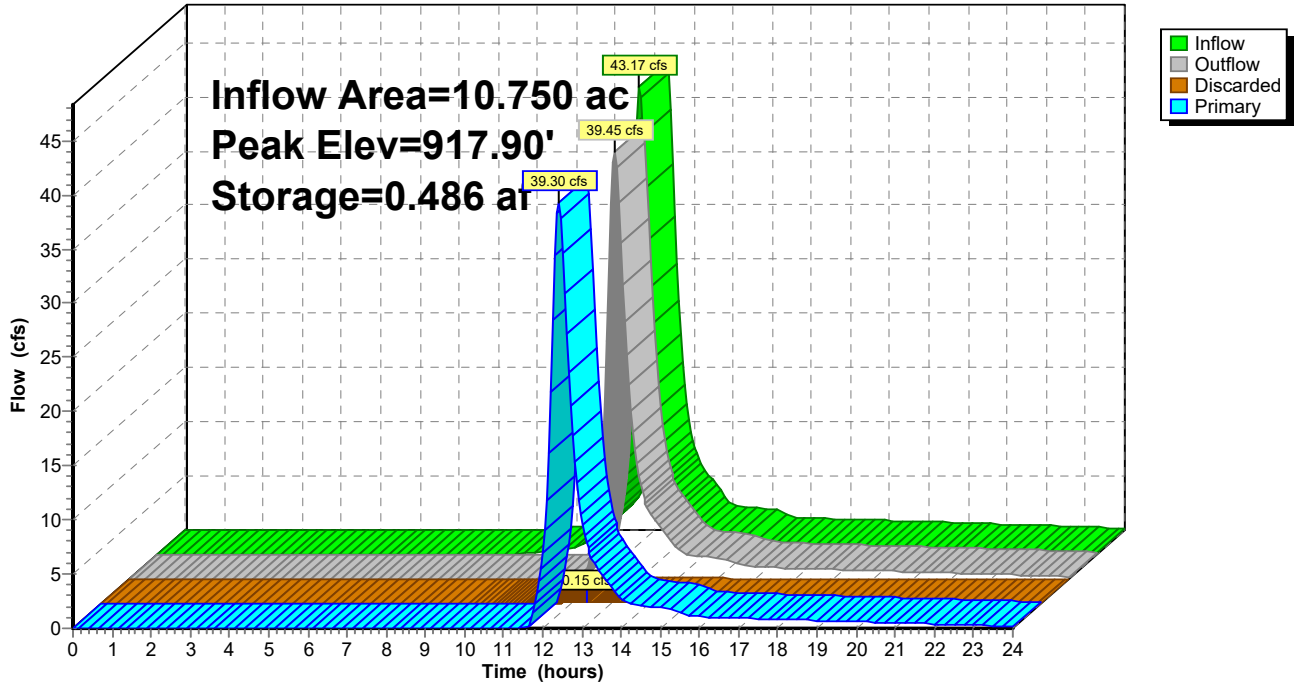
Device	Routing	Invert	Outlet Devices									
#1	Discarded	916.50'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 907.00' Phase-In= 0.01'									
#2	Primary	917.50'	50.0' long + 30.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Discarded OutFlow Max=0.15 cfs @ 12.39 hrs HW=917.90' (Free Discharge)
 ↑1=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=39.17 cfs @ 12.39 hrs HW=917.90' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir(Weir Controls 39.17 cfs @ 1.56 fps)

Pond 6D: Existing Depression

Hydrograph



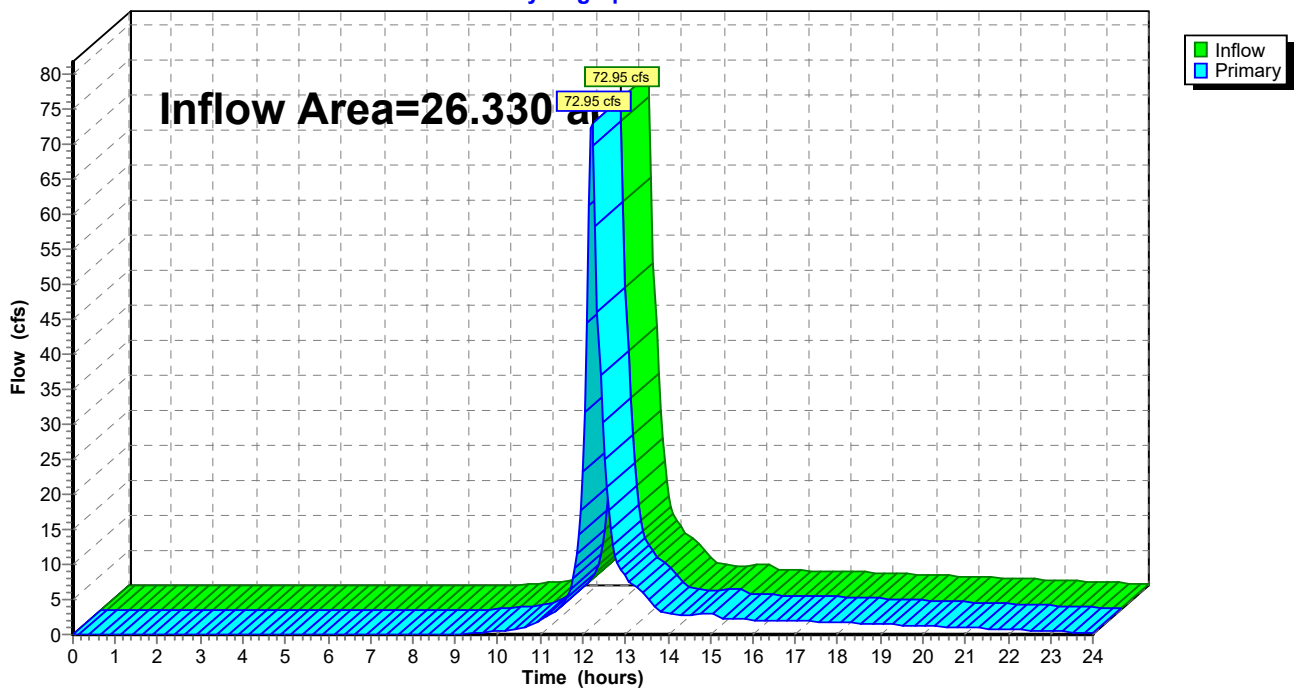
Summary for Link 1L: West Subwatershed

Inflow Area = 26.330 ac, 0.00% Impervious, Inflow Depth > 2.19" for 100 yr event
Inflow = 72.95 cfs @ 12.22 hrs, Volume= 4.804 af
Primary = 72.95 cfs @ 12.22 hrs, Volume= 4.804 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Pre-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: West Subwatershed

Hydrograph



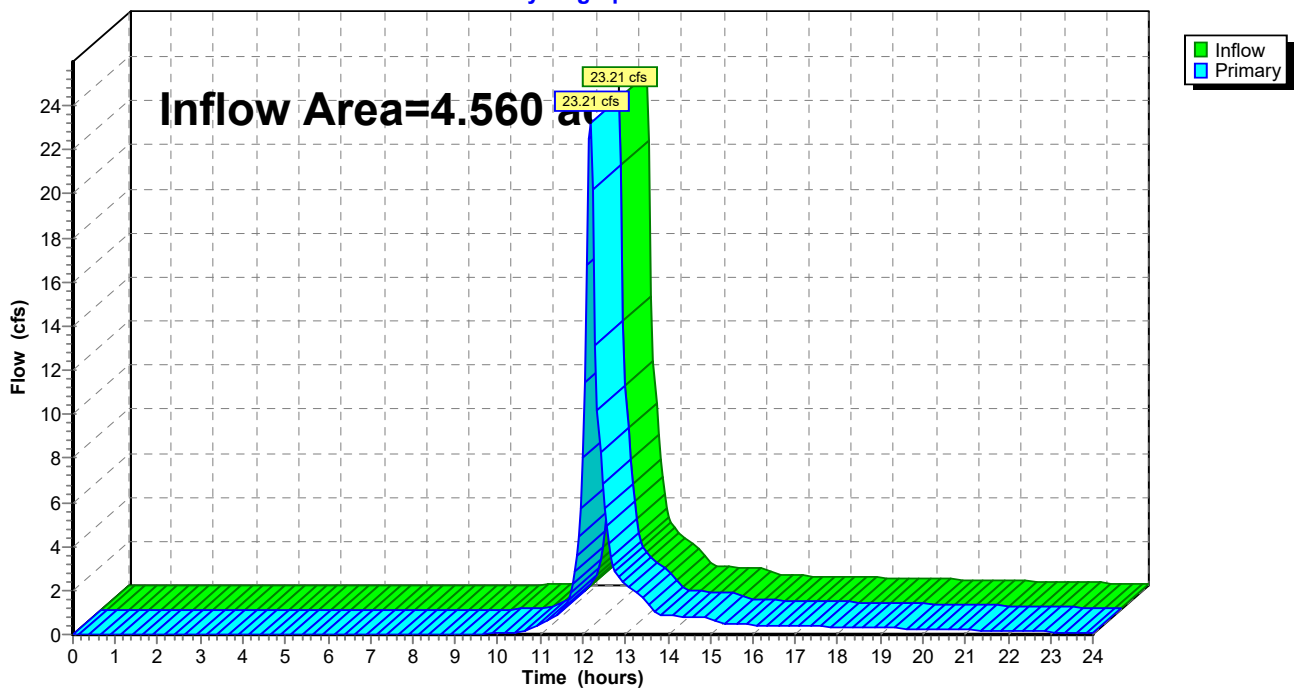
Summary for Link 2L: Northwest Subwatershed

Inflow Area = 4.560 ac, 0.00% Impervious, Inflow Depth > 3.33" for 100 yr event
Inflow = 23.21 cfs @ 12.18 hrs, Volume= 1.267 af
Primary = 23.21 cfs @ 12.18 hrs, Volume= 1.267 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Pre-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: Northwest Subwatershed

Hydrograph

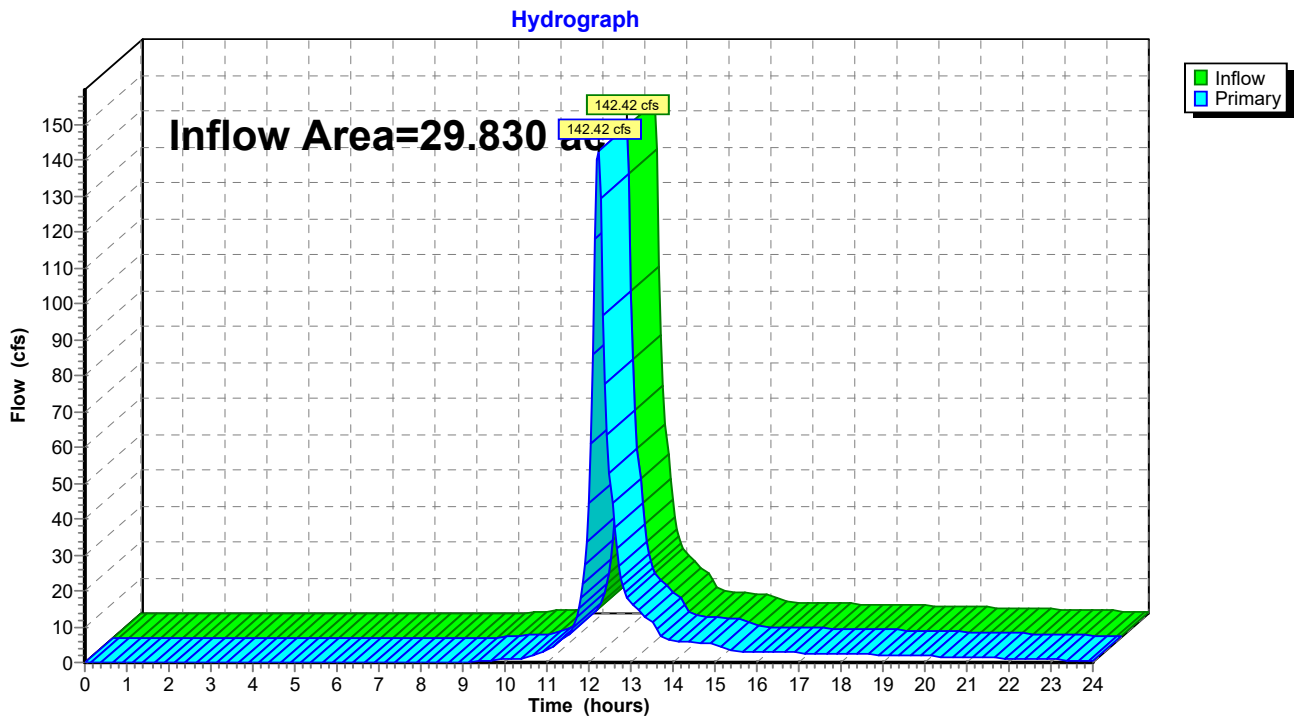


Summary for Link 3L: North Subwatershed (drainage swale)

Inflow Area = 29.830 ac, 0.00% Impervious, Inflow Depth > 3.64" for 100 yr event
Inflow = 142.42 cfs @ 12.22 hrs, Volume= 9.042 af
Primary = 142.42 cfs @ 12.22 hrs, Volume= 9.042 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Pre-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 3L: North Subwatershed (drainage swale)



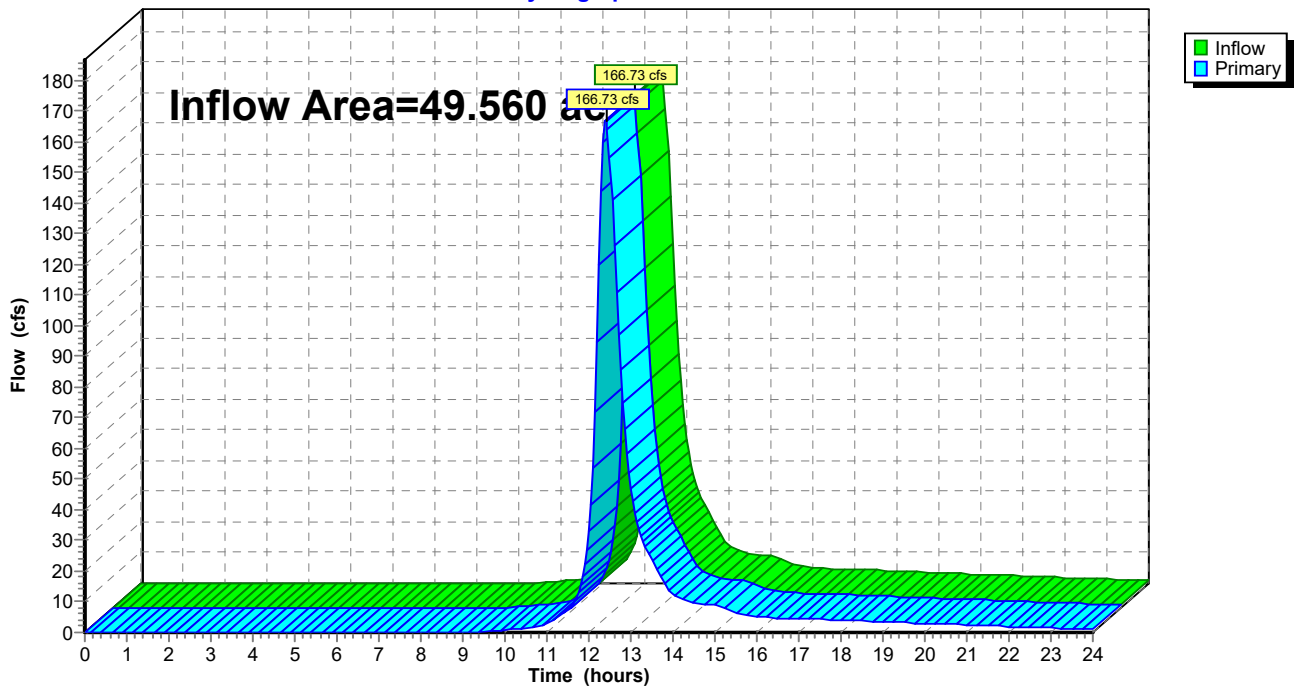
Summary for Link 4L: Southeast Subwatershed

Inflow Area = 49.560 ac, 1.45% Impervious, Inflow Depth > 3.59" for 100 yr event
Inflow = 166.73 cfs @ 12.41 hrs, Volume= 14.825 af
Primary = 166.73 cfs @ 12.41 hrs, Volume= 14.825 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Pre-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Southeast Subwatershed

Hydrograph



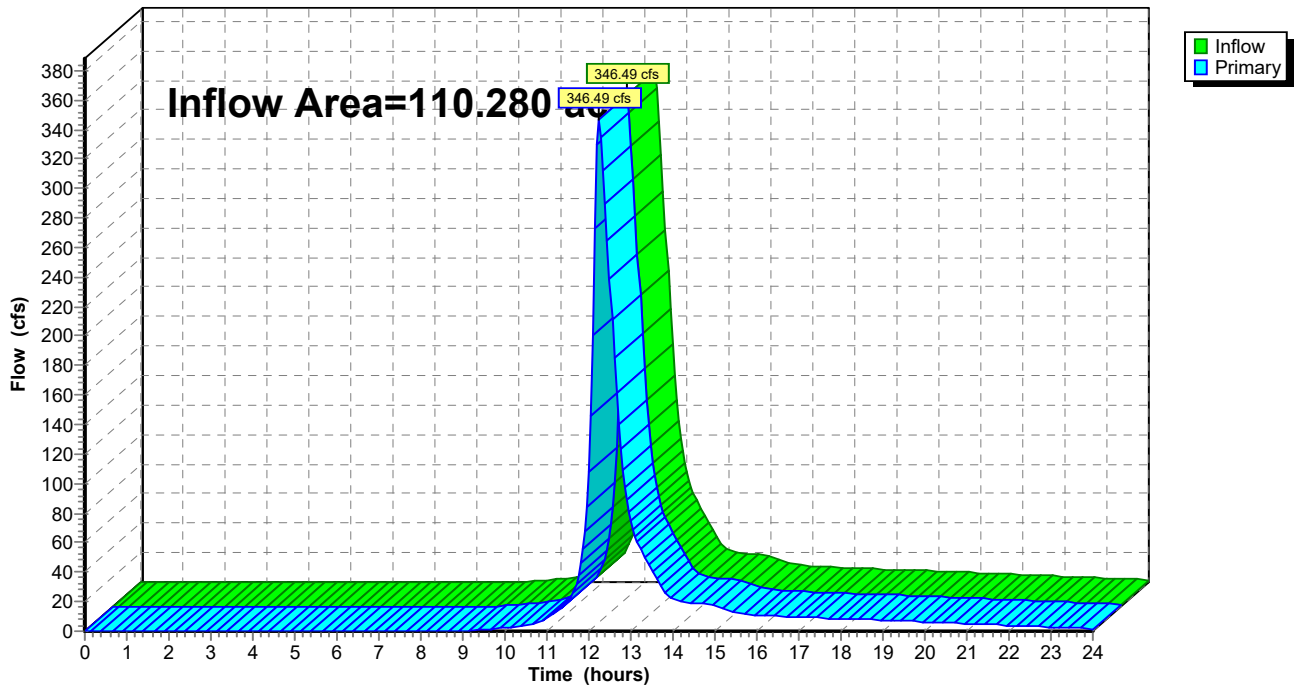
Summary for Link 99L: Pre-Development Conditions

Inflow Area = 110.280 ac, 0.65% Impervious, Inflow Depth > 3.26" for 100 yr event
Inflow = 346.49 cfs @ 12.25 hrs, Volume= 29.939 af
Primary = 346.49 cfs @ 12.25 hrs, Volume= 29.939 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 99L: Pre-Development Conditions

Hydrograph



Events for Subcatchment 1: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	10.95	0.670	0.68
2 yr	2.70	14.33	0.858	0.87
10 yr	3.81	28.30	1.645	1.66
100 yr	6.18	61.73	3.595	3.63

Events for Subcatchment 2: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	13.42	0.871	0.72
2 yr	2.70	17.40	1.108	0.92
10 yr	3.81	33.95	2.091	1.74
100 yr	6.18	72.95	4.501	3.74

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Events for Subcatchment 3: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.51	0.210	0.55
2 yr	2.70	4.76	0.275	0.72
10 yr	3.81	10.07	0.554	1.46
100 yr	6.18	23.21	1.267	3.33

Events for Subcatchment 4: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	1.24	0.066	0.72
2 yr	2.70	1.61	0.084	0.92
10 yr	3.81	3.10	0.159	1.74
100 yr	6.18	6.62	0.343	3.74

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Events for Subcatchment 5: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	24.05	1.622	0.68
2 yr	2.70	31.52	2.077	0.87
10 yr	3.81	62.42	3.982	1.66
100 yr	6.18	136.66	8.700	3.63

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Events for Subcatchment 6: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	7.84	0.647	0.72
2 yr	2.70	10.20	0.823	0.92
10 yr	3.81	19.95	1.553	1.73
100 yr	6.18	43.17	3.344	3.73

Events for Subcatchment 7: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	21.91	2.188	0.68
2 yr	2.70	28.83	2.802	0.87
10 yr	3.81	57.65	5.371	1.66
100 yr	6.18	127.63	11.738	3.63

Events for Pond 1D: Existing Depression

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	10.95	0.19	0.19	0.00	0.000	938.58	0.511
2 yr	14.33	0.23	0.23	0.00	0.000	938.68	0.670
10 yr	28.30	0.35	0.35	0.00	0.000	939.00	1.347
100 yr	61.73	1.14	0.49	0.66	0.303	939.53	2.909

Events for Pond 6D: Existing Depression

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	7.84	4.14	0.09	4.05	0.410	917.60	0.223
2 yr	10.20	6.65	0.09	6.56	0.585	917.63	0.247
10 yr	19.95	17.11	0.12	17.00	1.309	917.74	0.332
100 yr	43.17	39.45	0.15	39.30	3.087	917.90	0.486

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Events for Link 1L: West Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	13.42	13.42	0.871
2 yr	17.40	17.40	1.108
10 yr	33.95	33.95	2.091
100 yr	72.95	72.95	4.804

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Events for Link 2L: Northwest Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	3.51	3.51	0.210
2 yr	4.76	4.76	0.275
10 yr	10.07	10.07	0.554
100 yr	23.21	23.21	1.267

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Events for Link 3L: North Subwatershed (drainage swale)

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	24.95	24.95	1.689
2 yr	32.69	32.69	2.162
10 yr	64.72	64.72	4.141
100 yr	142.42	142.42	9.042

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Events for Link 4L: Southeast Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	24.37	24.37	2.598
2 yr	34.61	34.61	3.386
10 yr	74.65	74.65	6.681
100 yr	166.73	166.73	14.825

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Events for Link 99L: Pre-Development Conditions

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	53.93	53.93	5.368
2 yr	71.26	71.26	6.931
10 yr	151.92	151.92	13.466
100 yr	346.49	346.49	29.939

APPENDIX B

Pre-Development Hydrologic Analysis

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 yr	MSE 24-hr	3	Default	24.00	1	2.40	2
2	2 yr	MSE 24-hr	3	Default	24.00	1	2.70	2
3	10 yr	MSE 24-hr	3	Default	24.00	1	3.81	2
4	100 yr	MSE 24-hr	3	Default	24.00	1	6.18	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.960	98	impervious (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17)
70.450	74	lawn - C (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17)
0.180	98	offsite impervious (16)
1.170	74	offsite lawn - C (16)
1.650	70	offsite woods - C (16)
2.470	98	water or effective infiltration area (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13)
5.400	70	woods - C (1, 3, 6, 7, 8, 10, 12, 14)
110.280	81	TOTAL AREA

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MSE 24-hr 3 1 yr Rainfall=2.40"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea	Runoff Area=11.050 ac 30.86% Impervious Runoff Depth>0.87" Tc=10.0 min CN=81 Runoff=14.43 cfs 0.802 af
Subcatchment2: Subarea	Runoff Area=1.620 ac 48.15% Impervious Runoff Depth>1.16" Tc=6.0 min CN=86 Runoff=3.38 cfs 0.157 af
Subcatchment3: Subarea	Runoff Area=13.360 ac 44.31% Impervious Runoff Depth>1.10" Tc=15.0 min CN=85 Runoff=18.90 cfs 1.223 af
Subcatchment4: Subarea	Runoff Area=4.390 ac 17.31% Impervious Runoff Depth>0.72" Tc=10.0 min CN=78 Runoff=4.65 cfs 0.265 af
Subcatchment5: Subarea	Runoff Area=2.590 ac 12.36% Impervious Runoff Depth>0.68" Tc=10.0 min CN=77 Runoff=2.54 cfs 0.146 af
Subcatchment6: Subarea	Runoff Area=8.800 ac 35.68% Impervious Runoff Depth>0.92" Tc=10.0 min CN=82 Runoff=12.26 cfs 0.678 af
Subcatchment7: Subarea	Runoff Area=11.600 ac 26.38% Impervious Runoff Depth>0.82" Tc=15.0 min CN=80 Runoff=11.92 cfs 0.792 af
Subcatchment8: Subarea	Runoff Area=4.610 ac 19.09% Impervious Runoff Depth>0.72" Tc=10.0 min CN=78 Runoff=4.88 cfs 0.278 af
Subcatchment9: Subarea	Runoff Area=10.820 ac 36.23% Impervious Runoff Depth>0.98" Tc=6.0 min CN=83 Runoff=19.06 cfs 0.884 af
Subcatchment10: Subarea	Runoff Area=2.040 ac 18.63% Impervious Runoff Depth>0.72" Tc=10.0 min CN=78 Runoff=2.16 cfs 0.123 af
Subcatchment11: Subarea	Runoff Area=7.980 ac 39.47% Impervious Runoff Depth>0.98" Tc=6.0 min CN=83 Runoff=14.06 cfs 0.652 af
Subcatchment12: Subarea	Runoff Area=7.030 ac 28.59% Impervious Runoff Depth>0.82" Tc=10.0 min CN=80 Runoff=8.59 cfs 0.480 af
Subcatchment13: Subarea	Runoff Area=5.250 ac 24.38% Impervious Runoff Depth>0.82" Tc=10.0 min CN=80 Runoff=6.41 cfs 0.359 af
Subcatchment14: Subarea	Runoff Area=0.410 ac 7.32% Impervious Runoff Depth>0.59" Tc=10.0 min CN=75 Runoff=0.34 cfs 0.020 af
Subcatchment15: Subarea	Runoff Area=4.280 ac 17.06% Impervious Runoff Depth>0.72" Tc=10.0 min CN=78 Runoff=4.53 cfs 0.258 af
Subcatchment16: Subarea	Runoff Area=10.890 ac 10.84% Impervious Runoff Depth>0.63" Tc=10.0 min CN=76 Runoff=9.88 cfs 0.576 af

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MSE 24-hr 3 1 yr Rainfall=2.40"

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Subcatchment 17: Subarea	Runoff Area=3.560 ac 18.54% Impervious Runoff Depth>0.72" Tc=10.0 min CN=78 Runoff=3.77 cfs 0.215 af
Pond 1B: Basin	Peak Elev=934.49' Storage=0.479 af Inflow=14.43 cfs 0.802 af Discarded=0.06 cfs 0.052 af Primary=0.89 cfs 0.476 af Outflow=0.94 cfs 0.528 af
Pond 2B: Basin	Peak Elev=931.59' Storage=0.058 af Inflow=3.38 cfs 0.633 af Discarded=0.01 cfs 0.015 af Primary=1.20 cfs 0.594 af Outflow=1.21 cfs 0.609 af
Pond 3P: Pond	Peak Elev=925.29' Storage=0.847 af Inflow=18.90 cfs 1.289 af Outflow=0.90 cfs 0.573 af
Pond 4B: Basin	Peak Elev=936.95' Storage=0.188 af Inflow=4.65 cfs 0.265 af Discarded=0.03 cfs 0.031 af Primary=0.11 cfs 0.066 af Outflow=0.14 cfs 0.097 af
Pond 5B: Rain Garden	Peak Elev=923.32' Storage=0.059 af Inflow=2.54 cfs 0.146 af Discarded=0.01 cfs 0.007 af Primary=0.54 cfs 0.108 af Outflow=0.54 cfs 0.115 af
Pond 6P: Pond	Peak Elev=912.65' Storage=0.537 af Inflow=12.25 cfs 0.786 af Outflow=0.38 cfs 0.357 af
Pond 7P: Pond	Peak Elev=920.22' Storage=0.413 af Inflow=11.92 cfs 0.792 af Outflow=1.29 cfs 0.691 af
Pond 8B: Basin	Peak Elev=917.52' Storage=0.182 af Inflow=4.88 cfs 0.278 af Discarded=0.03 cfs 0.028 af Primary=0.19 cfs 0.099 af Outflow=0.21 cfs 0.127 af
Pond 9P: Pond	Peak Elev=899.64' Storage=0.740 af Inflow=19.06 cfs 0.984 af Outflow=0.29 cfs 0.278 af
Pond 10B: Basin	Peak Elev=912.72' Storage=0.103 af Inflow=2.16 cfs 0.123 af Discarded=0.02 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.022 af
Pond 11P: Pond	Peak Elev=914.10' Storage=0.456 af Inflow=14.06 cfs 0.652 af Outflow=0.32 cfs 0.300 af
Pond 12P: Pond	Peak Elev=923.89' Storage=0.309 af Inflow=8.59 cfs 0.480 af Outflow=0.31 cfs 0.289 af
Pond 13P: Pond	Peak Elev=896.37' Storage=0.206 af Inflow=6.41 cfs 0.359 af Outflow=0.40 cfs 0.303 af
Link 1L: West Subwatershed	Inflow=5.01 cfs 1.381 af Primary=5.01 cfs 1.381 af
Link 2L: Northwest Subwatershed	Inflow=0.58 cfs 0.323 af Primary=0.58 cfs 0.323 af
Link 3L: North Subwatershed(drainage swale)	Inflow=5.14 cfs 1.124 af Primary=5.14 cfs 1.124 af

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MSE 24-hr 3 1 yr Rainfall=2.40"

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Link 4L: Southeast Subwatershed

Inflow=10.38 cfs 1.624 af
Primary=10.38 cfs 1.624 af

Link 99L: Post-DevelopmentConditions

Inflow=21.10 cfs 4.453 af
Primary=21.10 cfs 4.453 af

Total Runoff Area = 110.280 ac Runoff Volume = 7.908 af Average Runoff Depth = 0.86"
71.34% Pervious = 78.670 ac 28.66% Impervious = 31.610 ac

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MSE 24-hr 3 2 yr Rainfall=2.70"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea	Runoff Area=11.050 ac 30.86% Impervious Runoff Depth>1.09" Tc=10.0 min CN=81 Runoff=18.14 cfs 1.001 af
Subcatchment2: Subarea	Runoff Area=1.620 ac 48.15% Impervious Runoff Depth>1.41" Tc=6.0 min CN=86 Runoff=4.08 cfs 0.190 af
Subcatchment3: Subarea	Runoff Area=13.360 ac 44.31% Impervious Runoff Depth>1.34" Tc=15.0 min CN=85 Runoff=23.09 cfs 1.490 af
Subcatchment4: Subarea	Runoff Area=4.390 ac 17.31% Impervious Runoff Depth>0.92" Tc=10.0 min CN=78 Runoff=6.01 cfs 0.336 af
Subcatchment5: Subarea	Runoff Area=2.590 ac 12.36% Impervious Runoff Depth>0.87" Tc=10.0 min CN=77 Runoff=3.32 cfs 0.187 af
Subcatchment6: Subarea	Runoff Area=8.800 ac 35.68% Impervious Runoff Depth>1.15" Tc=10.0 min CN=82 Runoff=15.29 cfs 0.841 af
Subcatchment7: Subarea	Runoff Area=11.600 ac 26.38% Impervious Runoff Depth>1.03" Tc=15.0 min CN=80 Runoff=15.16 cfs 0.994 af
Subcatchment8: Subarea	Runoff Area=4.610 ac 19.09% Impervious Runoff Depth>0.92" Tc=10.0 min CN=78 Runoff=6.31 cfs 0.353 af
Subcatchment9: Subarea	Runoff Area=10.820 ac 36.23% Impervious Runoff Depth>1.21" Tc=6.0 min CN=83 Runoff=23.51 cfs 1.090 af
Subcatchment10: Subarea	Runoff Area=2.040 ac 18.63% Impervious Runoff Depth>0.92" Tc=10.0 min CN=78 Runoff=2.79 cfs 0.156 af
Subcatchment11: Subarea	Runoff Area=7.980 ac 39.47% Impervious Runoff Depth>1.21" Tc=6.0 min CN=83 Runoff=17.34 cfs 0.804 af
Subcatchment12: Subarea	Runoff Area=7.030 ac 28.59% Impervious Runoff Depth>1.03" Tc=10.0 min CN=80 Runoff=10.89 cfs 0.603 af
Subcatchment13: Subarea	Runoff Area=5.250 ac 24.38% Impervious Runoff Depth>1.03" Tc=10.0 min CN=80 Runoff=8.13 cfs 0.450 af
Subcatchment14: Subarea	Runoff Area=0.410 ac 7.32% Impervious Runoff Depth>0.77" Tc=10.0 min CN=75 Runoff=0.46 cfs 0.026 af
Subcatchment15: Subarea	Runoff Area=4.280 ac 17.06% Impervious Runoff Depth>0.92" Tc=10.0 min CN=78 Runoff=5.86 cfs 0.328 af
Subcatchment16: Subarea	Runoff Area=10.890 ac 10.84% Impervious Runoff Depth>0.82" Tc=10.0 min CN=76 Runoff=13.06 cfs 0.742 af

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MSE 24-hr 3 2 yr Rainfall=2.70"

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Subcatchment 17: Subarea	Runoff Area=3.560 ac 18.54% Impervious Runoff Depth>0.92" Tc=10.0 min CN=78 Runoff=4.88 cfs 0.273 af
Pond 1B: Basin	Peak Elev=934.79' Storage=0.591 af Inflow=18.14 cfs 1.001 af Discarded=0.07 cfs 0.057 af Primary=1.17 cfs 0.648 af Outflow=1.24 cfs 0.705 af
Pond 2B: Basin	Peak Elev=931.71' Storage=0.072 af Inflow=4.06 cfs 0.839 af Discarded=0.02 cfs 0.016 af Primary=1.64 cfs 0.798 af Outflow=1.66 cfs 0.814 af
Pond 3P: Pond	Peak Elev=925.64' Storage=0.964 af Inflow=23.09 cfs 1.624 af Outflow=1.92 cfs 0.886 af
Pond 4B: Basin	Peak Elev=937.07' Storage=0.216 af Inflow=6.01 cfs 0.336 af Discarded=0.03 cfs 0.032 af Primary=0.26 cfs 0.134 af Outflow=0.29 cfs 0.165 af
Pond 5B: Rain Garden	Peak Elev=923.58' Storage=0.075 af Inflow=3.32 cfs 0.187 af Discarded=0.01 cfs 0.007 af Primary=0.72 cfs 0.148 af Outflow=0.73 cfs 0.156 af
Pond 6P: Pond	Peak Elev=913.23' Storage=0.699 af Inflow=15.44 cfs 0.989 af Outflow=0.42 cfs 0.400 af
Pond 7P: Pond	Peak Elev=920.42' Storage=0.520 af Inflow=15.16 cfs 0.994 af Outflow=1.80 cfs 0.882 af
Pond 8B: Basin	Peak Elev=917.67' Storage=0.213 af Inflow=6.31 cfs 0.353 af Discarded=0.03 cfs 0.028 af Primary=0.39 cfs 0.171 af Outflow=0.42 cfs 0.200 af
Pond 9P: Pond	Peak Elev=900.12' Storage=0.978 af Inflow=23.51 cfs 1.261 af Outflow=0.33 cfs 0.319 af
Pond 10B: Basin	Peak Elev=912.86' Storage=0.125 af Inflow=2.79 cfs 0.156 af Discarded=0.02 cfs 0.023 af Primary=0.02 cfs 0.014 af Outflow=0.05 cfs 0.037 af
Pond 11P: Pond	Peak Elev=914.50' Storage=0.577 af Inflow=17.34 cfs 0.804 af Outflow=0.35 cfs 0.336 af
Pond 12P: Pond	Peak Elev=924.32' Storage=0.403 af Inflow=10.89 cfs 0.603 af Outflow=0.35 cfs 0.328 af
Pond 13P: Pond	Peak Elev=896.65' Storage=0.268 af Inflow=8.13 cfs 0.450 af Outflow=0.46 cfs 0.367 af
Link 1L: West Subwatershed	Inflow=6.49 cfs 1.957 af Primary=6.49 cfs 1.957 af
Link 2L: Northwest Subwatershed	Inflow=0.75 cfs 0.393 af Primary=0.75 cfs 0.393 af
Link 3L: North Subwatershed(drainage swale)	Inflow=6.56 cfs 1.324 af Primary=6.56 cfs 1.324 af

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Link 4L: Southeast Subwatershed

Inflow=13.79 cfs 2.025 af
Primary=13.79 cfs 2.025 af

Link 99L: Post-DevelopmentConditions

Inflow=27.57 cfs 5.699 af
Primary=27.57 cfs 5.699 af

Total Runoff Area = 110.280 ac Runoff Volume = 9.866 af Average Runoff Depth = 1.07"
71.34% Pervious = 78.670 ac 28.66% Impervious = 31.610 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea	Runoff Area=11.050 ac 30.86% Impervious Runoff Depth>1.96" Tc=10.0 min CN=81 Runoff=32.93 cfs 1.806 af
Subcatchment2: Subarea	Runoff Area=1.620 ac 48.15% Impervious Runoff Depth>2.37" Tc=6.0 min CN=86 Runoff=6.77 cfs 0.321 af
Subcatchment3: Subarea	Runoff Area=13.360 ac 44.31% Impervious Runoff Depth>2.29" Tc=15.0 min CN=85 Runoff=39.32 cfs 2.546 af
Subcatchment4: Subarea	Runoff Area=4.390 ac 17.31% Impervious Runoff Depth>1.74" Tc=10.0 min CN=78 Runoff=11.57 cfs 0.635 af
Subcatchment5: Subarea	Runoff Area=2.590 ac 12.36% Impervious Runoff Depth>1.66" Tc=10.0 min CN=77 Runoff=6.54 cfs 0.359 af
Subcatchment6: Subarea	Runoff Area=8.800 ac 35.68% Impervious Runoff Depth>2.04" Tc=10.0 min CN=82 Runoff=27.25 cfs 1.496 af
Subcatchment7: Subarea	Runoff Area=11.600 ac 26.38% Impervious Runoff Depth>1.88" Tc=15.0 min CN=80 Runoff=28.22 cfs 1.821 af
Subcatchment8: Subarea	Runoff Area=4.610 ac 19.09% Impervious Runoff Depth>1.74" Tc=10.0 min CN=78 Runoff=12.15 cfs 0.667 af
Subcatchment9: Subarea	Runoff Area=10.820 ac 36.23% Impervious Runoff Depth>2.12" Tc=6.0 min CN=83 Runoff=40.89 cfs 1.913 af
Subcatchment10: Subarea	Runoff Area=2.040 ac 18.63% Impervious Runoff Depth>1.74" Tc=10.0 min CN=78 Runoff=5.38 cfs 0.295 af
Subcatchment11: Subarea	Runoff Area=7.980 ac 39.47% Impervious Runoff Depth>2.12" Tc=6.0 min CN=83 Runoff=30.16 cfs 1.411 af
Subcatchment12: Subarea	Runoff Area=7.030 ac 28.59% Impervious Runoff Depth>1.88" Tc=10.0 min CN=80 Runoff=20.14 cfs 1.104 af
Subcatchment13: Subarea	Runoff Area=5.250 ac 24.38% Impervious Runoff Depth>1.88" Tc=10.0 min CN=80 Runoff=15.04 cfs 0.825 af
Subcatchment14: Subarea	Runoff Area=0.410 ac 7.32% Impervious Runoff Depth>1.52" Tc=10.0 min CN=75 Runoff=0.94 cfs 0.052 af
Subcatchment15: Subarea	Runoff Area=4.280 ac 17.06% Impervious Runoff Depth>1.74" Tc=10.0 min CN=78 Runoff=11.28 cfs 0.619 af
Subcatchment16: Subarea	Runoff Area=10.890 ac 10.84% Impervious Runoff Depth>1.59" Tc=10.0 min CN=76 Runoff=26.27 cfs 1.446 af

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Subcatchment 17: Subarea	Runoff Area=3.560 ac 18.54% Impervious Runoff Depth>1.74" Tc=10.0 min CN=78 Runoff=9.38 cfs 0.515 af
Pond 1B: Basin	Peak Elev=935.85' Storage=1.127 af Inflow=32.93 cfs 1.806 af Discarded=0.10 cfs 0.081 af Primary=1.84 cfs 1.339 af Outflow=1.94 cfs 1.420 af
Pond 2B: Basin	Peak Elev=932.06' Storage=0.112 af Inflow=7.47 cfs 1.659 af Discarded=0.02 cfs 0.018 af Primary=4.70 cfs 1.604 af Outflow=4.71 cfs 1.622 af
Pond 3P: Pond	Peak Elev=926.96' Storage=1.453 af Inflow=39.63 cfs 2.963 af Outflow=6.80 cfs 2.186 af
Pond 4B: Basin	Peak Elev=937.75' Storage=0.375 af Inflow=11.57 cfs 0.635 af Discarded=0.04 cfs 0.036 af Primary=0.82 cfs 0.417 af Outflow=0.85 cfs 0.453 af
Pond 5B: Rain Garden	Peak Elev=924.55' Storage=0.156 af Inflow=6.54 cfs 0.359 af Discarded=0.02 cfs 0.009 af Primary=1.47 cfs 0.317 af Outflow=1.49 cfs 0.326 af
Pond 6P: Pond	Peak Elev=913.88' Storage=0.902 af Inflow=28.08 cfs 1.814 af Outflow=4.95 cfs 1.063 af
Pond 7P: Pond	Peak Elev=921.11' Storage=0.937 af Inflow=28.22 cfs 1.821 af Outflow=4.37 cfs 1.672 af
Pond 8B: Basin	Peak Elev=918.48' Storage=0.384 af Inflow=12.15 cfs 0.667 af Discarded=0.03 cfs 0.032 af Primary=0.93 cfs 0.472 af Outflow=0.97 cfs 0.504 af
Pond 9P: Pond	Peak Elev=901.88' Storage=1.976 af Inflow=40.89 cfs 2.385 af Outflow=0.46 cfs 0.440 af
Pond 10B: Basin	Peak Elev=913.31' Storage=0.202 af Inflow=5.38 cfs 0.295 af Discarded=0.03 cfs 0.026 af Primary=0.16 cfs 0.124 af Outflow=0.18 cfs 0.150 af
Pond 11P: Pond	Peak Elev=915.68' Storage=0.999 af Inflow=30.16 cfs 1.411 af Outflow=1.19 cfs 0.541 af
Pond 12P: Pond	Peak Elev=925.17' Storage=0.627 af Inflow=20.14 cfs 1.104 af Outflow=2.62 cfs 0.629 af
Pond 13P: Pond	Peak Elev=897.72' Storage=0.535 af Inflow=15.04 cfs 0.825 af Outflow=0.63 cfs 0.564 af
Link 1L: West Subwatershed	Inflow=13.34 cfs 4.305 af Primary=13.34 cfs 4.305 af
Link 2L: Northwest Subwatershed	Inflow=1.38 cfs 0.616 af Primary=1.38 cfs 0.616 af
Link 3L: North Subwatershed(drainage swale)	Inflow=12.25 cfs 2.353 af Primary=12.25 cfs 2.353 af

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Link 4L: Southeast Subwatershed

Inflow=27.79 cfs 4.181 af

Primary=27.79 cfs 4.181 af

Link 99L: Post-Development Conditions

Inflow=54.42 cfs 11.454 af

Primary=54.42 cfs 11.454 af

Total Runoff Area = 110.280 ac Runoff Volume = 17.830 af Average Runoff Depth = 1.94"
71.34% Pervious = 78.670 ac 28.66% Impervious = 31.610 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea	Runoff Area=11.050 ac 30.86% Impervious Runoff Depth>4.05" Tc=10.0 min CN=81 Runoff=66.94 cfs 3.726 af
Subcatchment2: Subarea	Runoff Area=1.620 ac 48.15% Impervious Runoff Depth>4.58" Tc=6.0 min CN=86 Runoff=12.61 cfs 0.618 af
Subcatchment3: Subarea	Runoff Area=13.360 ac 44.31% Impervious Runoff Depth>4.47" Tc=15.0 min CN=85 Runoff=75.17 cfs 4.976 af
Subcatchment4: Subarea	Runoff Area=4.390 ac 17.31% Impervious Runoff Depth>3.74" Tc=10.0 min CN=78 Runoff=24.71 cfs 1.367 af
Subcatchment5: Subarea	Runoff Area=2.590 ac 12.36% Impervious Runoff Depth>3.63" Tc=10.0 min CN=77 Runoff=14.21 cfs 0.785 af
Subcatchment6: Subarea	Runoff Area=8.800 ac 35.68% Impervious Runoff Depth>4.15" Tc=10.0 min CN=82 Runoff=54.50 cfs 3.044 af
Subcatchment7: Subarea	Runoff Area=11.600 ac 26.38% Impervious Runoff Depth>3.94" Tc=15.0 min CN=80 Runoff=58.56 cfs 3.809 af
Subcatchment8: Subarea	Runoff Area=4.610 ac 19.09% Impervious Runoff Depth>3.74" Tc=10.0 min CN=78 Runoff=25.95 cfs 1.435 af
Subcatchment9: Subarea	Runoff Area=10.820 ac 36.23% Impervious Runoff Depth>4.26" Tc=6.0 min CN=83 Runoff=79.67 cfs 3.839 af
Subcatchment10: Subarea	Runoff Area=2.040 ac 18.63% Impervious Runoff Depth>3.74" Tc=10.0 min CN=78 Runoff=11.48 cfs 0.635 af
Subcatchment11: Subarea	Runoff Area=7.980 ac 39.47% Impervious Runoff Depth>4.26" Tc=6.0 min CN=83 Runoff=58.76 cfs 2.831 af
Subcatchment12: Subarea	Runoff Area=7.030 ac 28.59% Impervious Runoff Depth>3.94" Tc=10.0 min CN=80 Runoff=41.52 cfs 2.309 af
Subcatchment13: Subarea	Runoff Area=5.250 ac 24.38% Impervious Runoff Depth>3.94" Tc=10.0 min CN=80 Runoff=31.01 cfs 1.725 af
Subcatchment14: Subarea	Runoff Area=0.410 ac 7.32% Impervious Runoff Depth>3.43" Tc=10.0 min CN=75 Runoff=2.13 cfs 0.117 af
Subcatchment15: Subarea	Runoff Area=4.280 ac 17.06% Impervious Runoff Depth>3.74" Tc=10.0 min CN=78 Runoff=24.09 cfs 1.333 af
Subcatchment16: Subarea	Runoff Area=10.890 ac 10.84% Impervious Runoff Depth>3.53" Tc=10.0 min CN=76 Runoff=58.22 cfs 3.207 af

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Subcatchment 17: Subarea	Runoff Area=3.560 ac 18.54% Impervious Runoff Depth>3.74" Tc=10.0 min CN=78 Runoff=20.04 cfs 1.108 af
Pond 1B: Basin	Peak Elev=937.46' Storage=2.355 af Inflow=66.94 cfs 3.726 af Discarded=0.15 cfs 0.138 af Primary=5.44 cfs 2.557 af Outflow=5.60 cfs 2.695 af
Pond 2B: Basin	Peak Elev=932.19' Storage=0.129 af Inflow=14.39 cfs 3.175 af Discarded=0.02 cfs 0.022 af Primary=14.02 cfs 3.076 af Outflow=14.04 cfs 3.098 af
Pond 3P: Pond	Peak Elev=927.99' Storage=1.891 af Inflow=76.27 cfs 6.064 af Outflow=50.55 cfs 5.209 af
Pond 4B: Basin	Peak Elev=938.97' Storage=0.780 af Inflow=24.71 cfs 1.367 af Discarded=0.07 cfs 0.052 af Primary=3.49 cfs 1.089 af Outflow=3.56 cfs 1.141 af
Pond 5B: Rain Garden	Peak Elev=925.00' Storage=0.209 af Inflow=14.21 cfs 0.785 af Discarded=0.02 cfs 0.011 af Primary=12.10 cfs 0.739 af Outflow=12.12 cfs 0.750 af
Pond 6P: Pond	Peak Elev=914.93' Storage=1.286 af Inflow=64.42 cfs 3.783 af Outflow=39.76 cfs 2.987 af
Pond 7P: Pond	Peak Elev=922.30' Storage=1.845 af Inflow=58.56 cfs 3.809 af Outflow=13.91 cfs 3.587 af
Pond 8B: Basin	Peak Elev=919.47' Storage=0.640 af Inflow=25.95 cfs 1.435 af Discarded=0.05 cfs 0.039 af Primary=10.98 cfs 1.213 af Outflow=11.03 cfs 1.253 af
Pond 9P: Pond	Peak Elev=902.94' Storage=2.702 af Inflow=80.59 cfs 5.052 af Outflow=12.64 cfs 2.717 af
Pond 10B: Basin	Peak Elev=914.52' Storage=0.450 af Inflow=11.48 cfs 0.635 af Discarded=0.04 cfs 0.038 af Primary=0.36 cfs 0.281 af Outflow=0.40 cfs 0.319 af
Pond 11P: Pond	Peak Elev=916.45' Storage=1.316 af Inflow=58.76 cfs 2.831 af Outflow=24.48 cfs 1.903 af
Pond 12P: Pond	Peak Elev=925.90' Storage=0.857 af Inflow=41.52 cfs 2.309 af Outflow=26.85 cfs 1.772 af
Pond 13P: Pond	Peak Elev=898.76' Storage=0.847 af Inflow=31.01 cfs 1.725 af Outflow=10.27 cfs 1.254 af
Link 1L: West Subwatershed	Inflow=67.98 cfs 9.394 af Primary=67.98 cfs 9.394 af
Link 2L: Northwest Subwatershed	Inflow=10.99 cfs 1.371 af Primary=10.99 cfs 1.371 af
Link 3L: North Subwatershed(drainage swale)	Inflow=69.60 cfs 8.006 af Primary=69.60 cfs 8.006 af

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Link 4L: Southeast Subwatershed

Inflow=94.03 cfs 9.781 af

Primary=94.03 cfs 9.781 af

Link 99L: Post-DevelopmentConditions

Inflow=229.59 cfs 28.552 af

Primary=229.59 cfs 28.552 af

Total Runoff Area = 110.280 ac Runoff Volume = 36.865 af Average Runoff Depth = 4.01"
71.34% Pervious = 78.670 ac 28.66% Impervious = 31.610 ac

Summary for Subcatchment 1: Subarea

Runoff = 66.94 cfs @ 12.17 hrs, Volume= 3.726 af, Depth> 4.05"
 Routed to Pond 1B : Basin

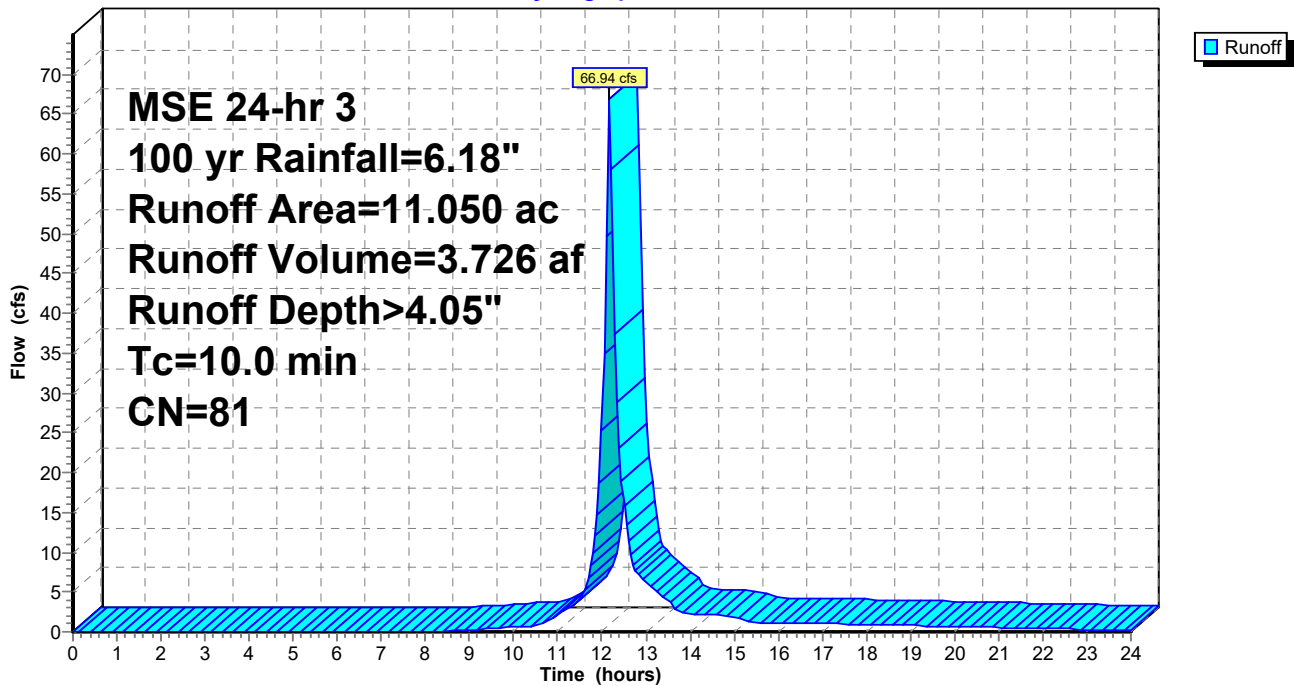
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 3.170	98	impervious
* 6.510	74	lawn - C
* 0.240	98	water or effective infiltration area
* 1.130	70	woods - C
11.050	81	Weighted Average
7.640		69.14% Pervious Area
3.410		30.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 1: Subarea

Hydrograph



Summary for Subcatchment 2: Subarea

Runoff = 12.61 cfs @ 12.13 hrs, Volume= 0.618 af, Depth> 4.58"
Routed to Pond 2B : Basin

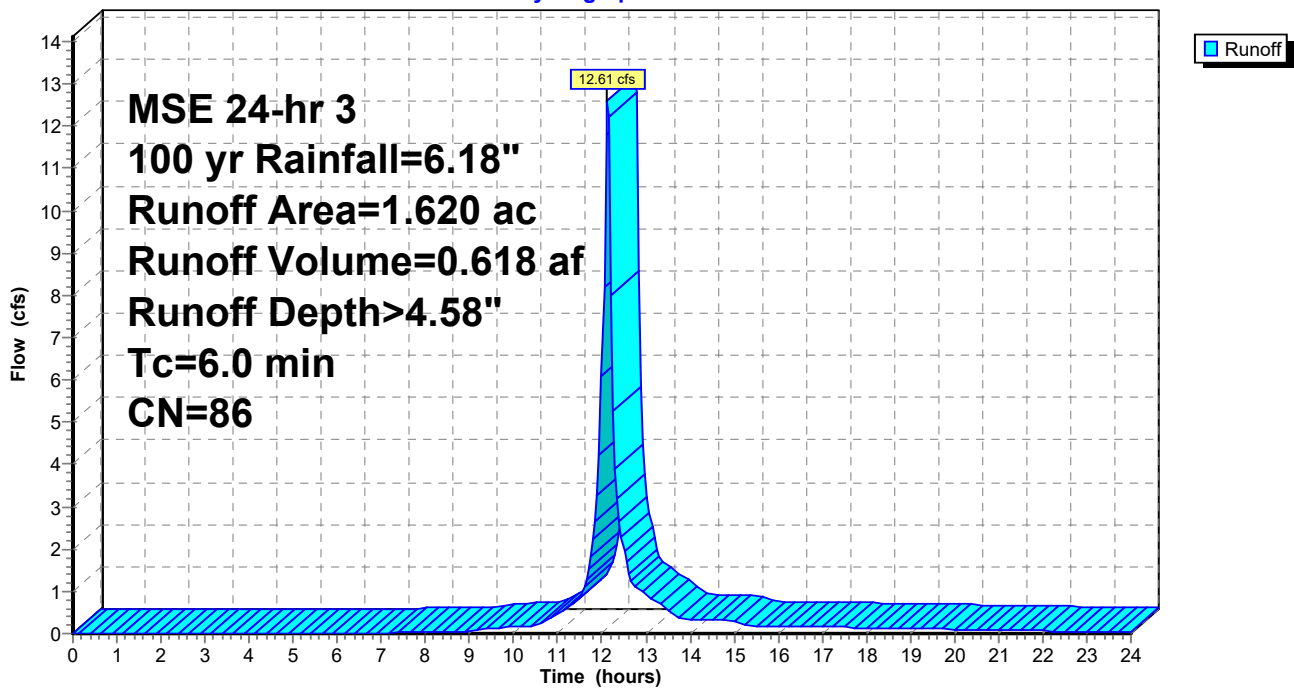
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.690	98	impervious
* 0.840	74	lawn - C
* 0.090	98	water or effective infiltration area
1.620	86	Weighted Average
0.840		51.85% Pervious Area
0.780		48.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 2: Subarea

Hydrograph



Summary for Subcatchment 3: Subarea

Runoff = 75.17 cfs @ 12.23 hrs, Volume= 4.976 af, Depth> 4.47"
 Routed to Pond 3P : Pond

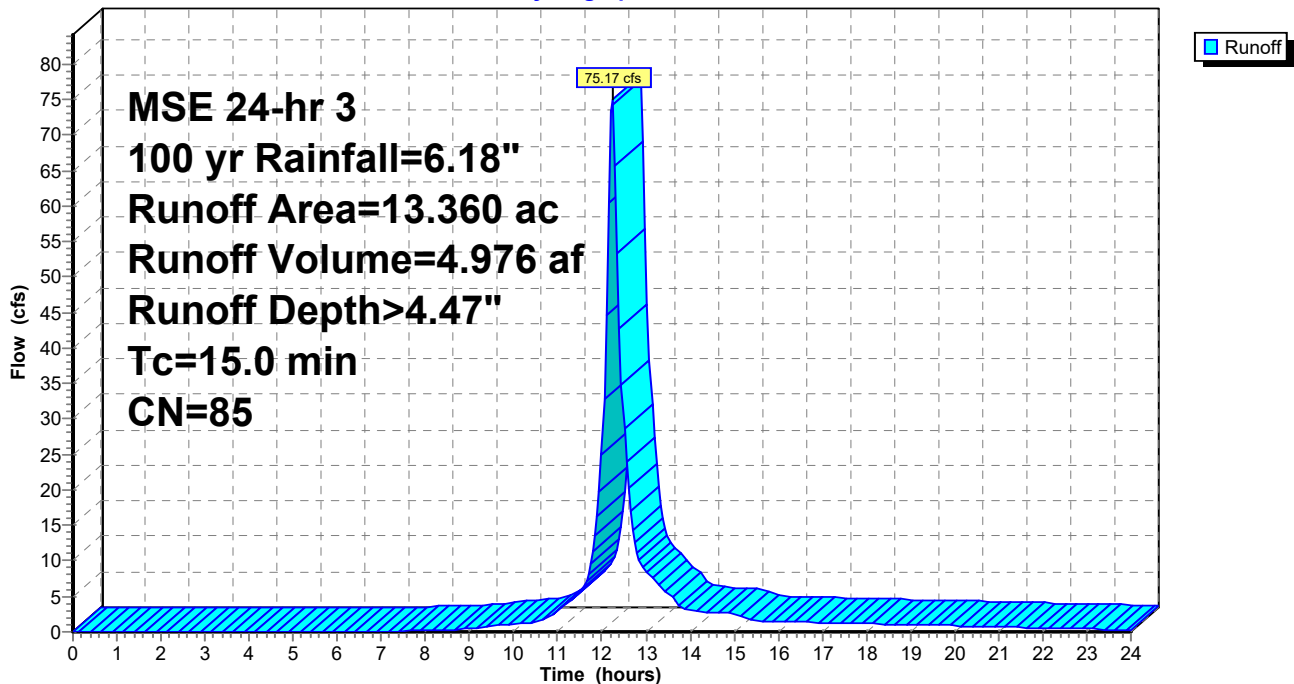
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 5.720	98	impervious
* 7.390	74	lawn - C
* 0.200	98	water or effective infiltration area
* 0.050	70	woods - C
13.360	85	Weighted Average
7.440		55.69% Pervious Area
5.920		44.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 3: Subarea

Hydrograph



Summary for Subcatchment 4: Subarea

Runoff = 24.71 cfs @ 12.18 hrs, Volume= 1.367 af, Depth> 3.74"
 Routed to Pond 4B : Basin

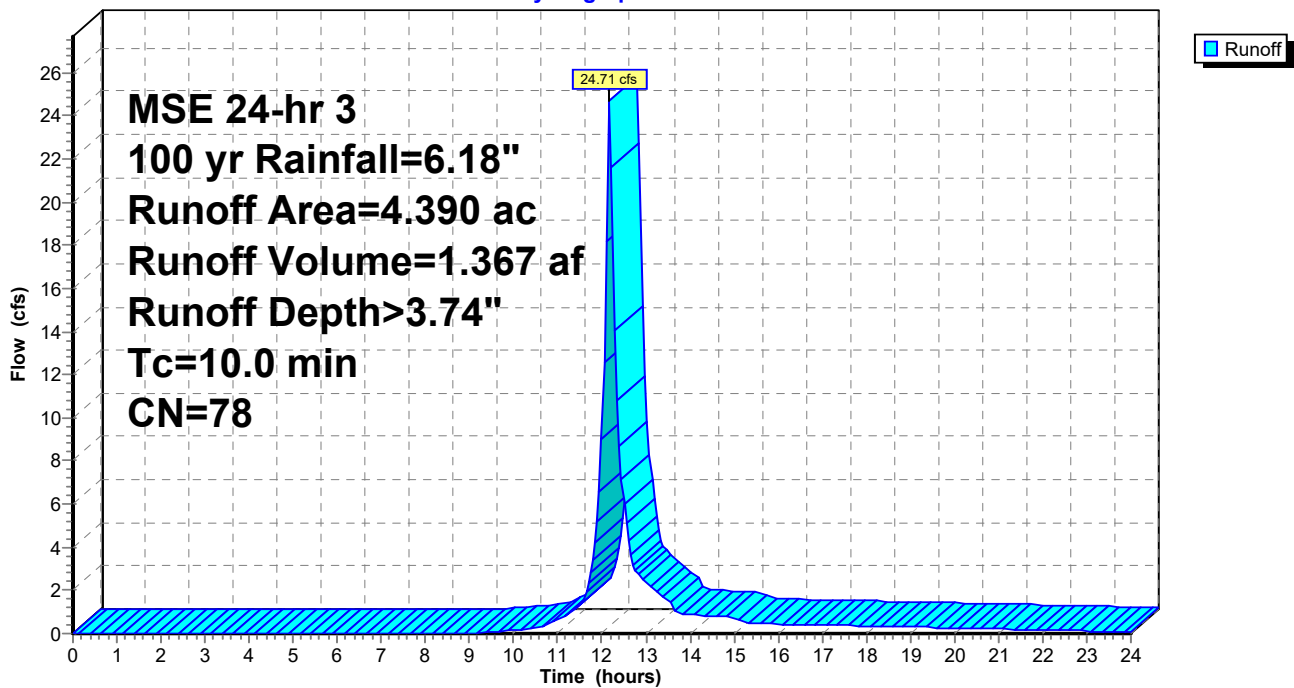
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.580	98	impervious
* 3.630	74	lawn - C
* 0.180	98	water or effective infiltration area
4.390	78	Weighted Average
3.630		82.69% Pervious Area
0.760		17.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 4: Subarea

Hydrograph



Summary for Subcatchment 5: Subarea

Runoff = 14.21 cfs @ 12.18 hrs, Volume= 0.785 af, Depth> 3.63"
Routed to Pond 5B : Rain Garden

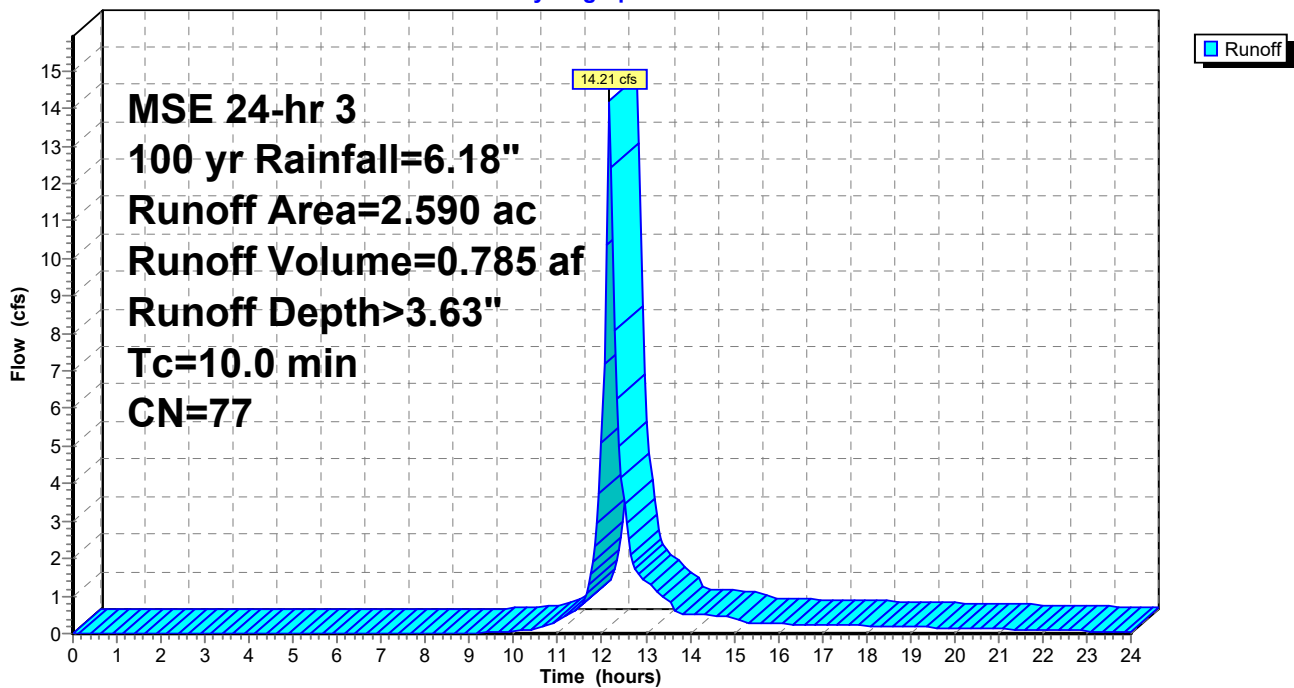
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.290	98	impervious
* 2.270	74	lawn - C
* 0.030	98	water or effective infiltration area
2.590	77	Weighted Average
2.270		87.64% Pervious Area
0.320		12.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 5: Subarea

Hydrograph



Summary for Subcatchment 6: Subarea

Runoff = 54.50 cfs @ 12.17 hrs, Volume= 3.044 af, Depth> 4.15"
 Routed to Pond 6P : Pond

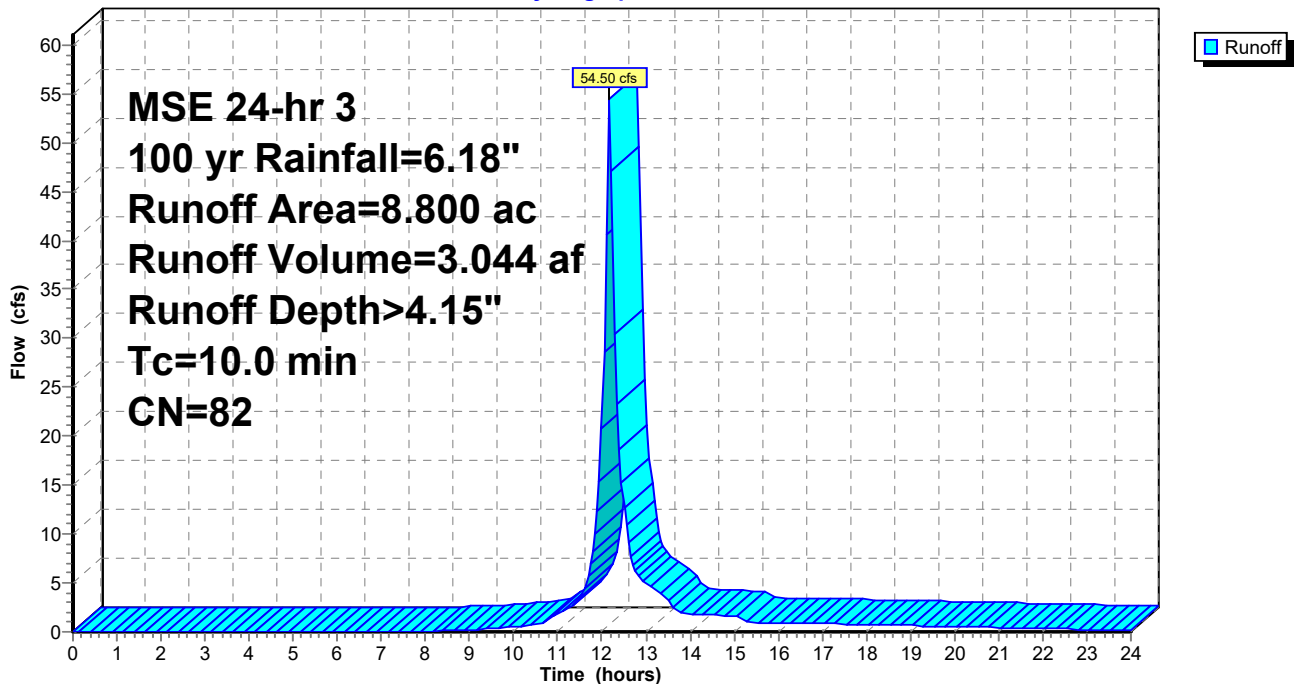
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.990	98	impervious
* 4.250	74	lawn - C
* 0.150	98	water or effective infiltration area
* 1.410	70	woods - C
8.800	82	Weighted Average
5.660		64.32% Pervious Area
3.140		35.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 6: Subarea

Hydrograph



Summary for Subcatchment 7: Subarea

Runoff = 58.56 cfs @ 12.23 hrs, Volume= 3.809 af, Depth> 3.94"
 Routed to Pond 7P : Pond

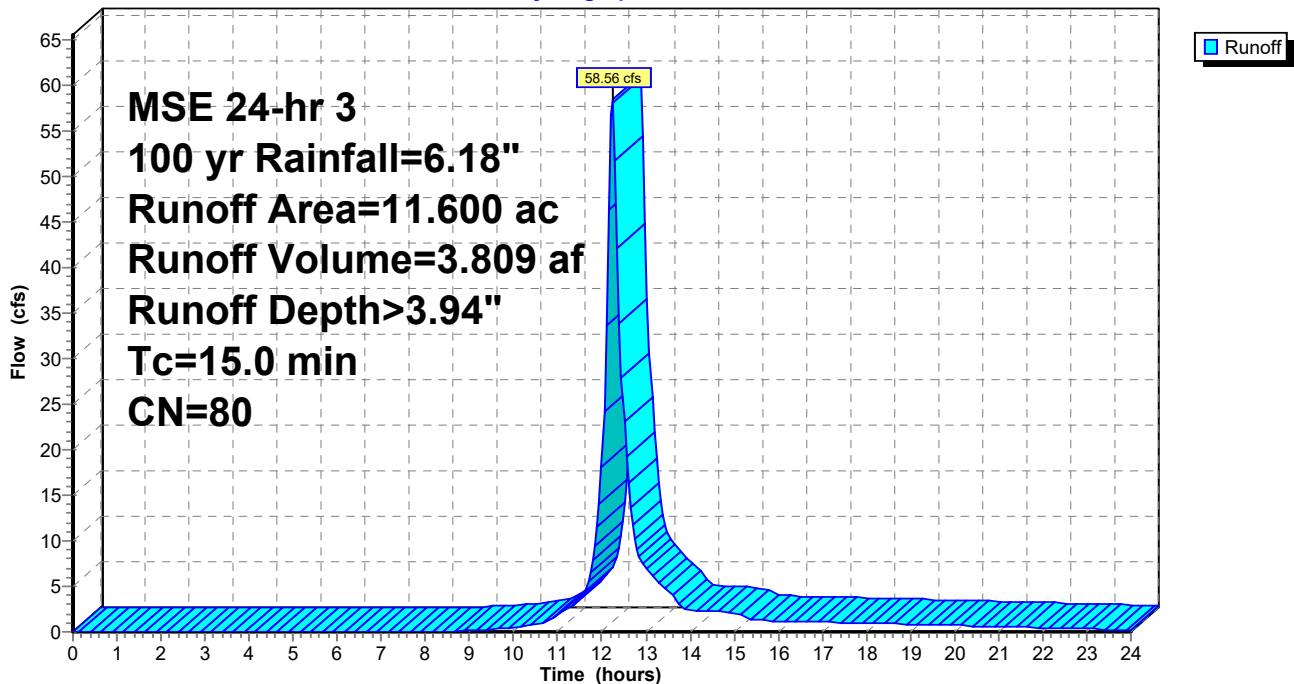
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.670	98	impervious
* 7.820	74	lawn - C
* 0.390	98	water or effective infiltration area
* 0.720	70	woods - C
11.600	80	Weighted Average
8.540		73.62% Pervious Area
3.060		26.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 7: Subarea

Hydrograph



Summary for Subcatchment 8: Subarea

Runoff = 25.95 cfs @ 12.18 hrs, Volume= 1.435 af, Depth> 3.74"
 Routed to Pond 8B : Basin

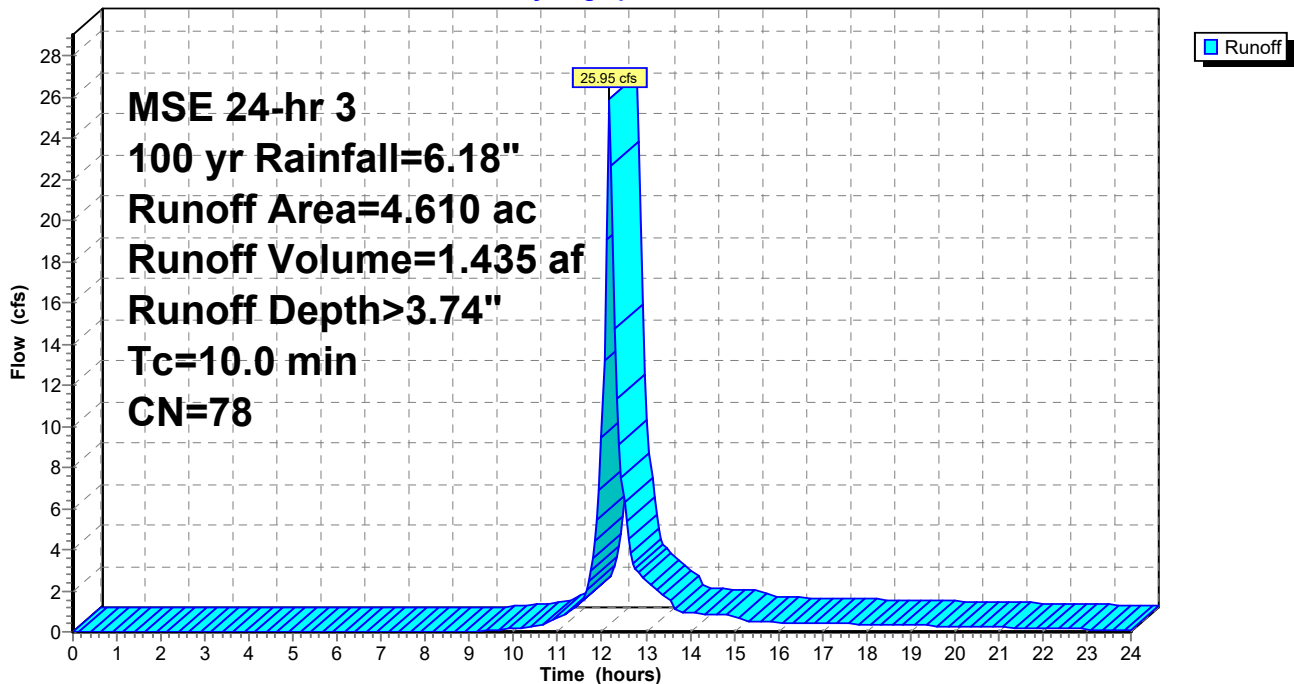
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.720	98	impervious
* 2.940	74	lawn - C
* 0.160	98	water or effective infiltration area
* 0.790	70	woods - C
4.610	78	Weighted Average
3.730		80.91% Pervious Area
0.880		19.09% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 8: Subarea

Hydrograph



Summary for Subcatchment 9: Subarea

Runoff = 79.67 cfs @ 12.13 hrs, Volume= 3.839 af, Depth> 4.26"
 Routed to Pond 9P : Pond

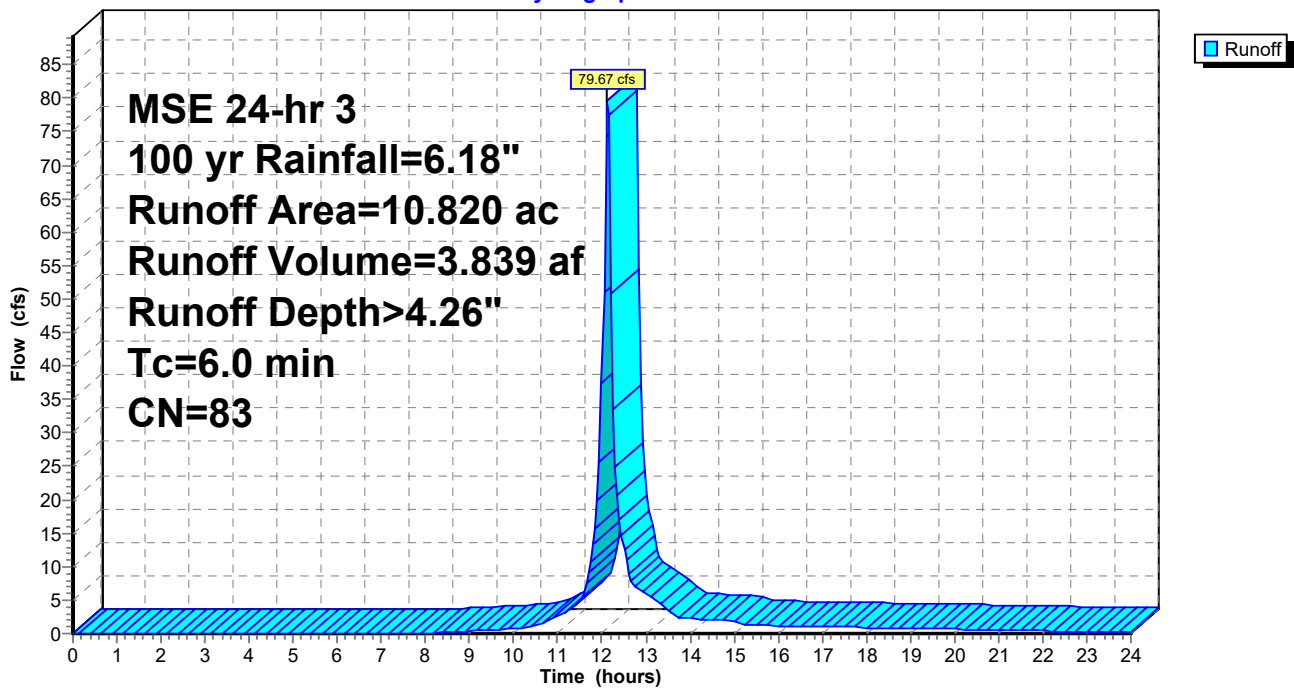
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 3.510	98	impervious
* 6.900	74	lawn - C
* 0.410	98	water or effective infiltration area
10.820	83	Weighted Average
6.900		63.77% Pervious Area
3.920		36.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 9: Subarea

Hydrograph



Summary for Subcatchment 10: Subarea

Runoff = 11.48 cfs @ 12.18 hrs, Volume= 0.635 af, Depth> 3.74"
 Routed to Pond 10B : Basin

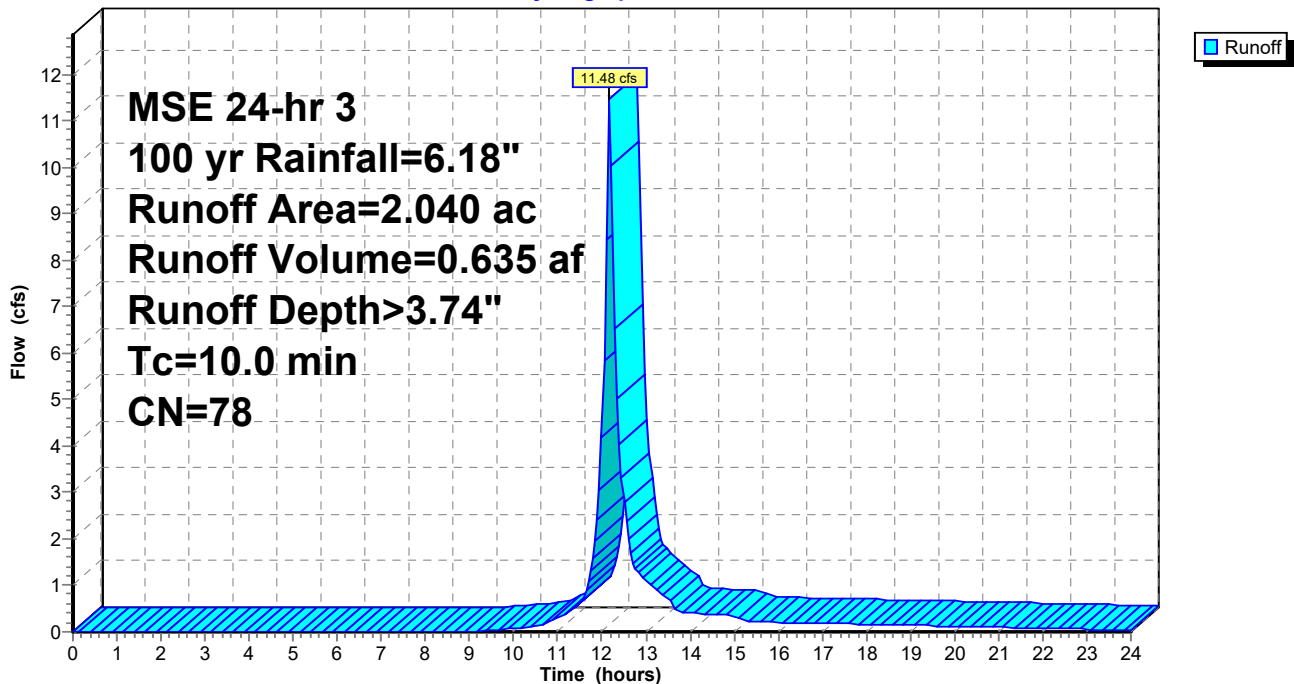
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.250	98	impervious
* 1.500	74	lawn - C
* 0.130	98	water or effective infiltration area
* 0.160	70	woods - C
2.040	78	Weighted Average
1.660		81.37% Pervious Area
0.380		18.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 10: Subarea

Hydrograph



Summary for Subcatchment 11: Subarea

Runoff = 58.76 cfs @ 12.13 hrs, Volume= 2.831 af, Depth> 4.26"
Routed to Pond 11P : Pond

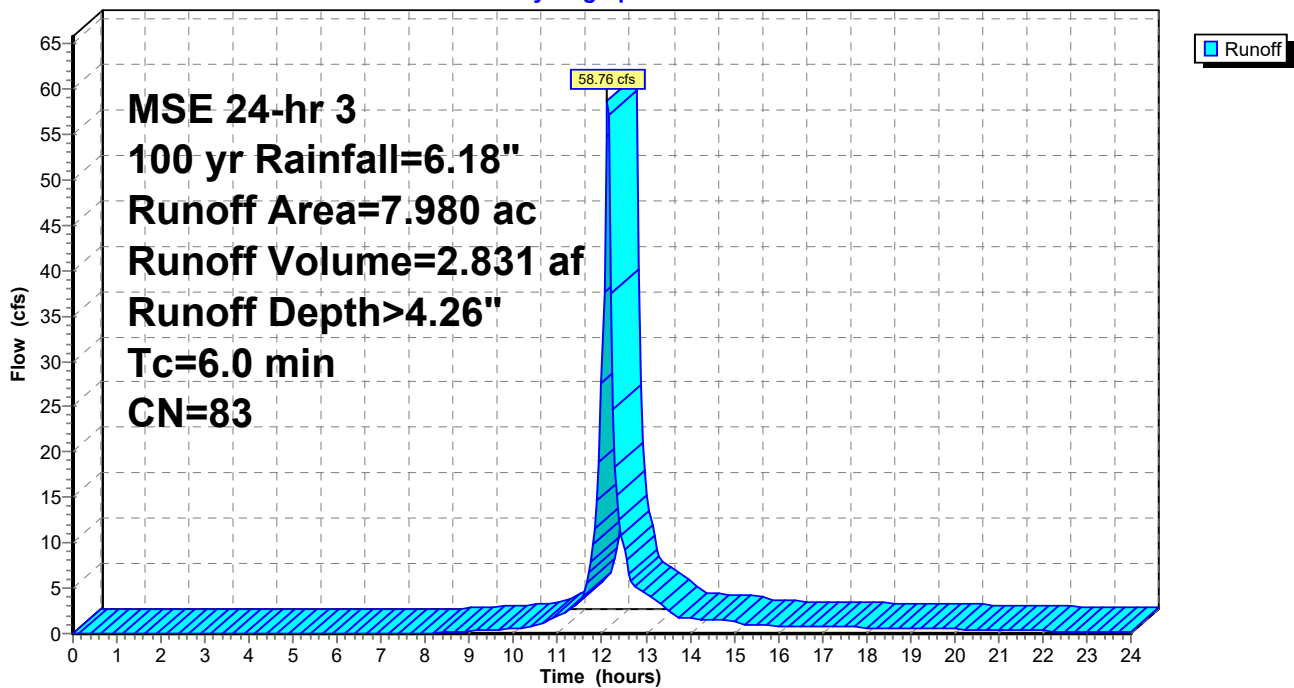
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.960	98	impervious
* 4.830	74	lawn - C
* 0.190	98	water or effective infiltration area
7.980	83	Weighted Average
4.830		60.53% Pervious Area
3.150		39.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment 11: Subarea

Hydrograph



Summary for Subcatchment 12: Subarea

Runoff = 41.52 cfs @ 12.18 hrs, Volume= 2.309 af, Depth> 3.94"
 Routed to Pond 12P : Pond

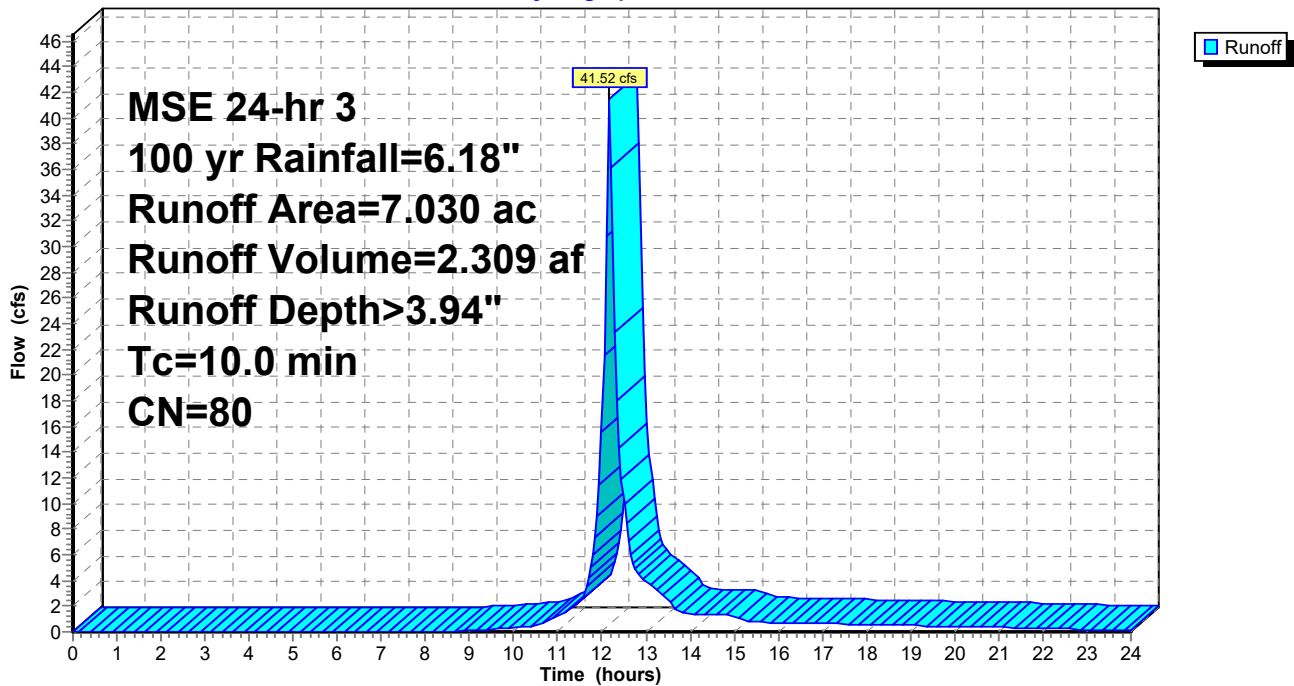
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.880	98	impervious
* 3.960	74	lawn - C
* 0.130	98	water or effective infiltration area
* 1.060	70	woods - C
7.030	80	Weighted Average
5.020		71.41% Pervious Area
2.010		28.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 12: Subarea

Hydrograph



Summary for Subcatchment 13: Subarea

Runoff = 31.01 cfs @ 12.18 hrs, Volume= 1.725 af, Depth> 3.94"
Routed to Pond 13P : Pond

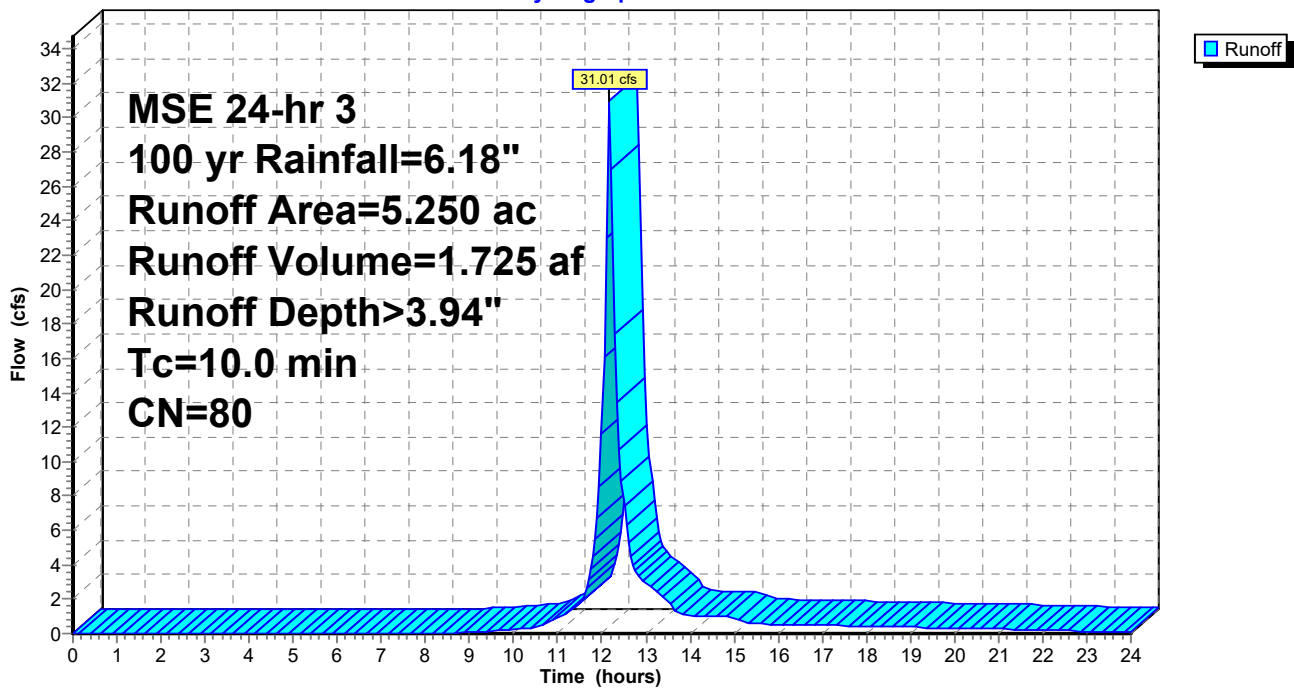
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.110	98	impervious
* 3.970	74	lawn - C
* 0.170	98	water or effective infiltration area
5.250	80	Weighted Average
3.970		75.62% Pervious Area
1.280		24.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 13: Subarea

Hydrograph



Proposed_2023-003

Prepared by HP Inc.

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment 14: Subarea

Runoff = 2.13 cfs @ 12.18 hrs, Volume= 0.117 af, Depth> 3.43"
Routed to Link 2L : Northwest Subwatershed

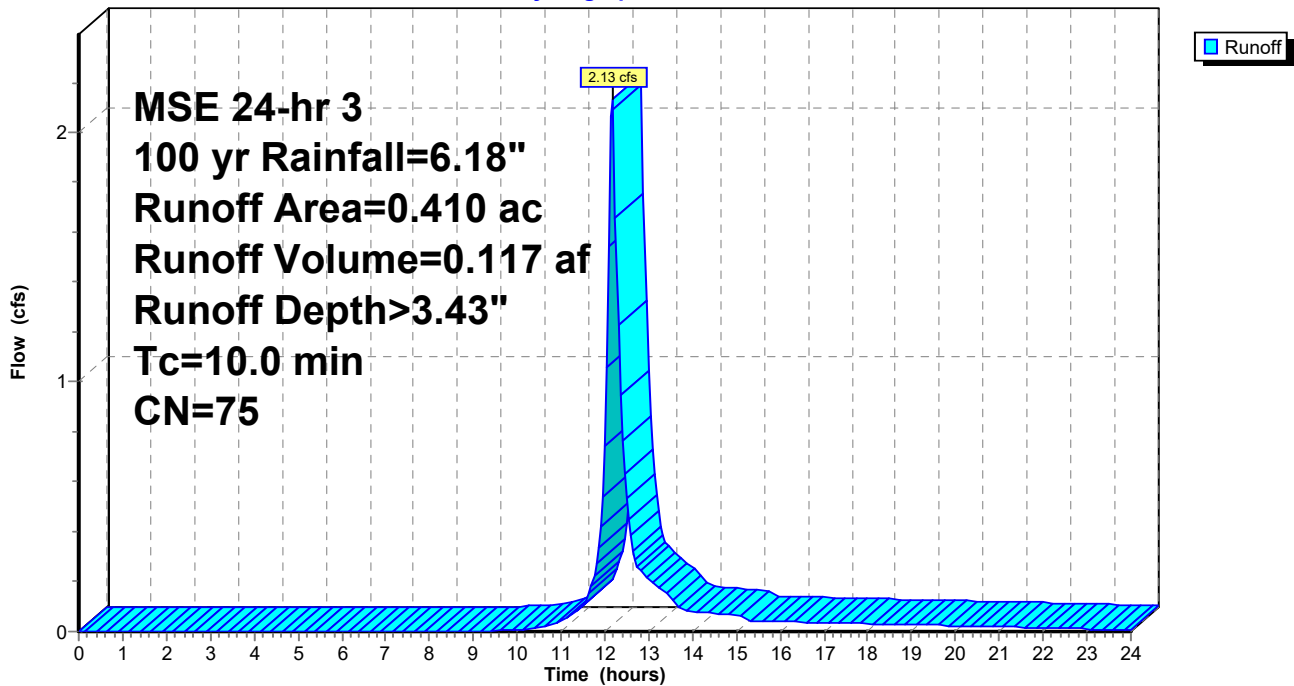
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.030	98	impervious
* 0.300	74	lawn - C
* 0.080	70	woods - C
0.410	75	Weighted Average
0.380		92.68% Pervious Area
0.030		7.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 14: Subarea

Hydrograph



Summary for Subcatchment 15: Subarea

Runoff = 24.09 cfs @ 12.18 hrs, Volume= 1.333 af, Depth> 3.74"

Routed to Link 3L : North Subwatershed (drainage swale)

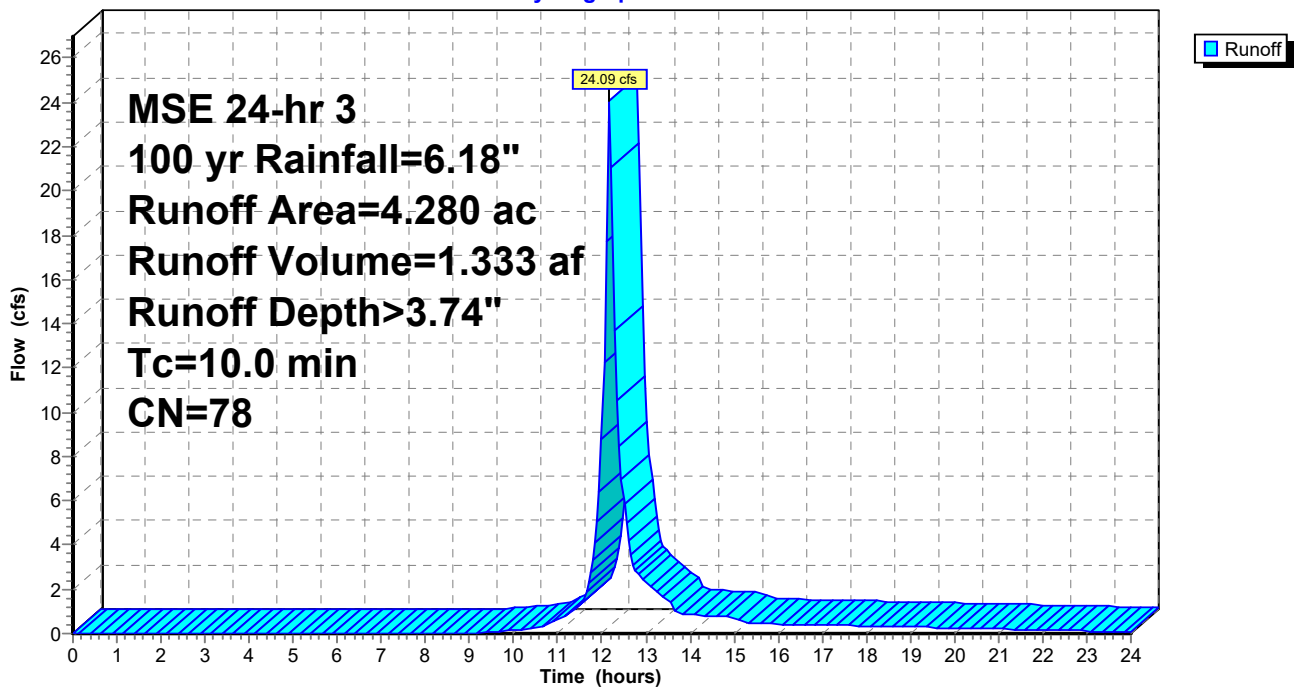
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.730	98	impervious
* 3.550	74	lawn - C
* 0.000	98	water or effective infiltration area
4.280	78	Weighted Average
3.550		82.94% Pervious Area
0.730		17.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 15: Subarea

Hydrograph



Summary for Subcatchment 16: Subarea

Runoff = 58.22 cfs @ 12.18 hrs, Volume= 3.207 af, Depth> 3.53"
 Routed to Link 4L : Southeast Subwatershed

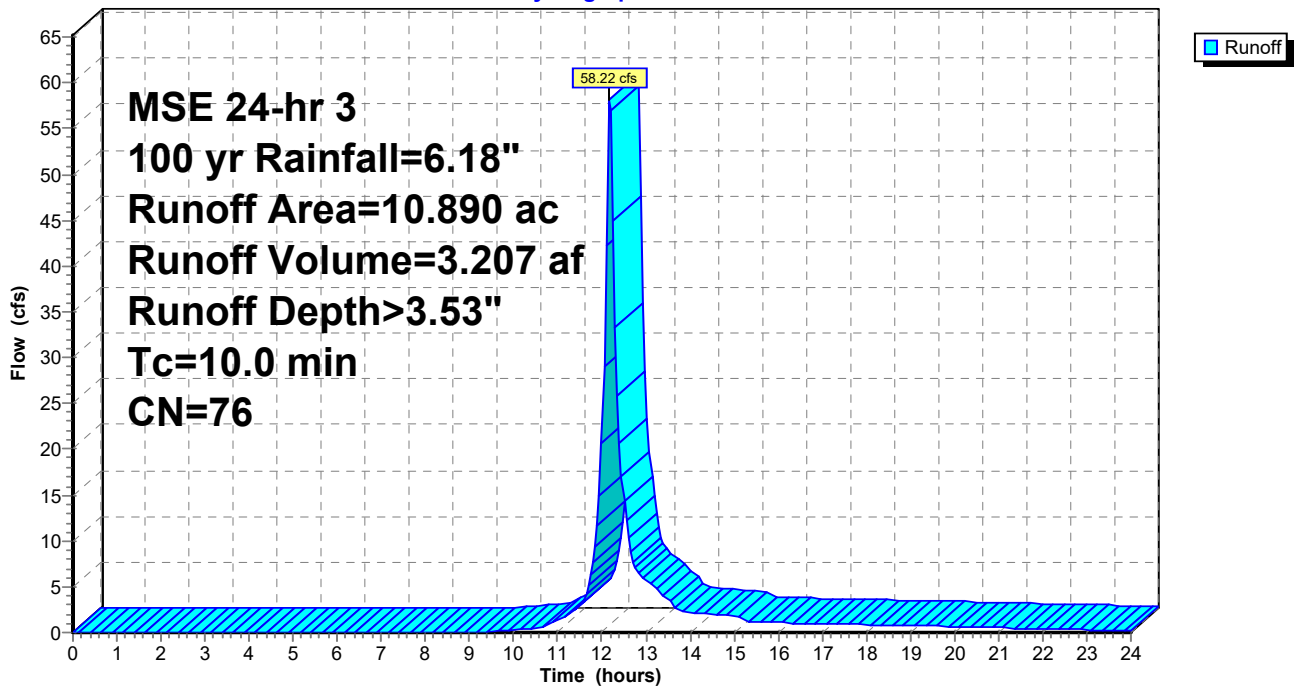
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.000	98	impervious
* 0.180	98	offsite impervious
* 6.890	74	lawn - C
* 1.170	74	offsite lawn - C
* 1.650	70	offsite woods - C
10.890	76	Weighted Average
9.710		89.16% Pervious Area
1.180		10.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 16: Subarea

Hydrograph



Summary for Subcatchment 17: Subarea

Runoff = 20.04 cfs @ 12.18 hrs, Volume= 1.108 af, Depth> 3.74"
Routed to Link 1L : West Subwatershed

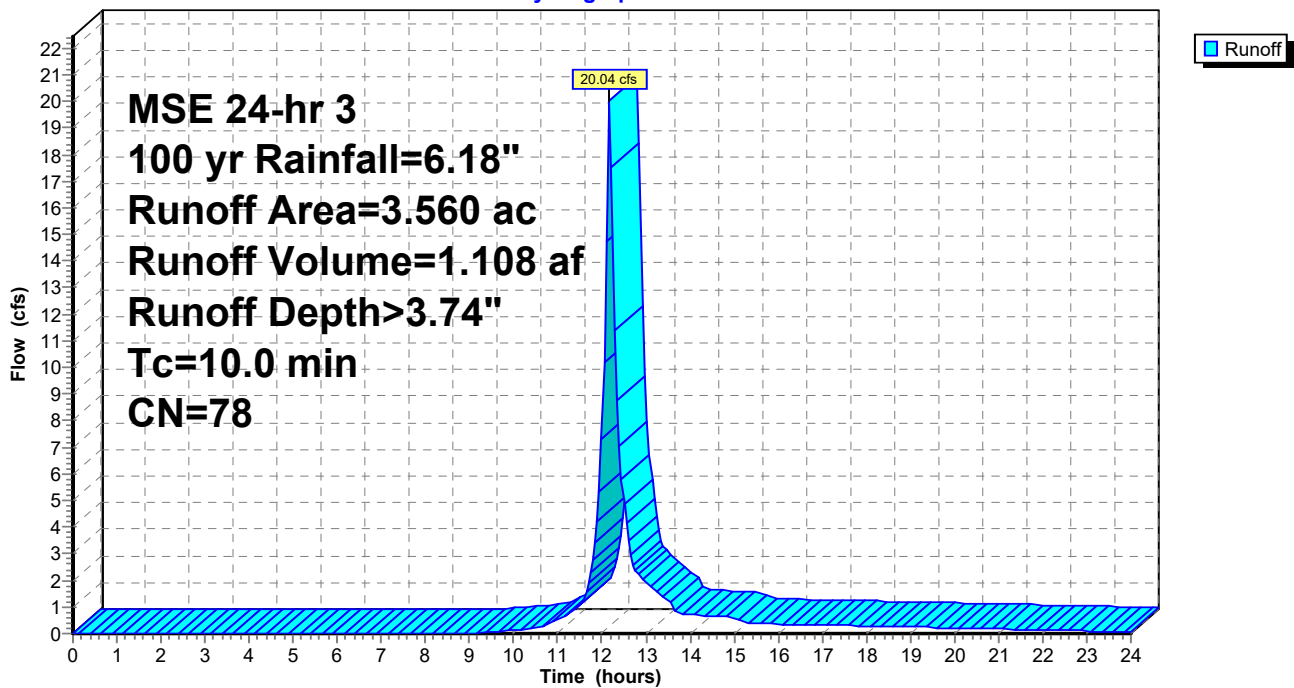
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.660	98	impervious
* 2.900	74	lawn - C
* 0.000	98	water or effective infiltration area
3.560	78	Weighted Average
2.900		81.46% Pervious Area
0.660		18.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Subcatchment 17: Subarea

Hydrograph



Summary for Pond 1B: Basin

Inflow Area = 11.050 ac, 30.86% Impervious, Inflow Depth > 4.05" for 100 yr event
 Inflow = 66.94 cfs @ 12.17 hrs, Volume= 3.726 af
 Outflow = 5.60 cfs @ 13.15 hrs, Volume= 2.695 af, Atten= 92%, Lag= 58.4 min
 Discarded = 0.15 cfs @ 13.15 hrs, Volume= 0.138 af
 Primary = 5.44 cfs @ 13.15 hrs, Volume= 2.557 af
 Routed to Pond 2B : Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 937.46' @ 13.15 hrs Surf.Area= 0.923 ac Storage= 2.355 af

Plug-Flow detention time= 301.1 min calculated for 2.689 af (72% of inflow)
 Center-of-Mass det. time= 232.7 min (1,027.6 - 794.9)

Volume	Invert	Avail.Storage	Storage Description			
#1	930.50'	3.476 af	Custom Stage Data (Conic) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
930.50	0.220	0.0	0.000	0.000	0.220	
931.00	0.220	30.0	0.033	0.033	0.224	
932.00	0.220	30.0	0.066	0.099	0.232	
933.00	0.220	30.0	0.066	0.165	0.240	
933.50	0.220	30.0	0.033	0.198	0.244	
934.00	0.280	100.0	0.125	0.323	0.304	
936.00	0.640	100.0	0.896	1.218	0.665	
938.00	1.040	100.0	1.664	2.882	1.066	
938.50	1.340	100.0	0.593	3.476	1.366	

Device	Routing	Invert	Outlet Devices
#1	Discarded	930.50'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 920.50' Phase-In= 0.01'
#2	Primary	933.50'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 933.50' / 933.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	931.25'	4.0" Vert. Underdrain C= 0.600 Limited to weir flow at low heads
#4	Device 2	934.00'	6.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#5	Device 2	937.25'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#6	Primary	937.50'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.15 cfs @ 13.15 hrs HW=937.46' (Free Discharge)

1=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=5.44 cfs @ 13.15 hrs HW=937.46' TW=932.09' (Dynamic Tailwater)

2=Culvert (Barrel Controls 5.44 cfs @ 6.93 fps)

3=Underdrain (Passes < 0.84 cfs potential flow)

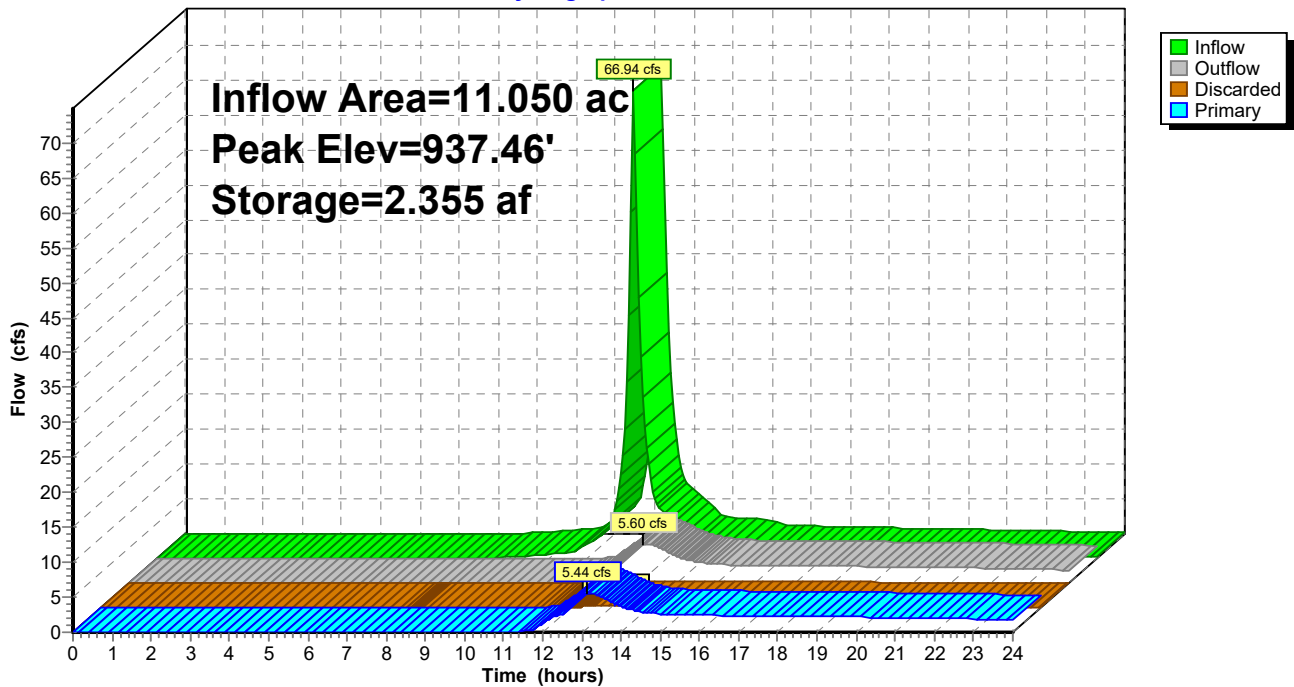
4=Orifice (Passes < 1.69 cfs potential flow)

5=Grate (Passes < 3.02 cfs potential flow)

6=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 1B: Basin

Hydrograph



Summary for Pond 2B: Basin

Inflow Area = 12.670 ac, 33.07% Impervious, Inflow Depth > 3.01" for 100 yr event
 Inflow = 14.39 cfs @ 12.13 hrs, Volume= 3.175 af
 Outflow = 14.04 cfs @ 12.15 hrs, Volume= 3.098 af, Atten= 2%, Lag= 1.0 min
 Discarded = 0.02 cfs @ 12.15 hrs, Volume= 0.022 af
 Primary = 14.02 cfs @ 12.15 hrs, Volume= 3.076 af
 Routed to Link 1L : West Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 932.19' @ 12.15 hrs Surf.Area= 0.129 ac Storage= 0.129 af

Plug-Flow detention time= 23.6 min calculated for 3.098 af (98% of inflow)
 Center-of-Mass det. time= 12.5 min (992.5 - 980.0)

Volume	Invert	Avail.Storage	Storage Description
#1	931.00'	0.249 af	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet) Wet.Area (acres)
931.00	0.090	0.000	0.000 0.090
932.00	0.120	0.105	0.105 0.120
933.00	0.170	0.144	0.249 0.171

Device	Routing	Invert	Outlet Devices
#1	Discarded	931.00'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 921.00' Phase-In= 0.01'
#2	Primary	931.00'	12.0" Round Culvert L= 50.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 931.00' / 930.50' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Primary	932.00'	50.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.02 cfs @ 12.15 hrs HW=932.19' (Free Discharge)

↑1=**Exfiltration** (Controls 0.02 cfs)

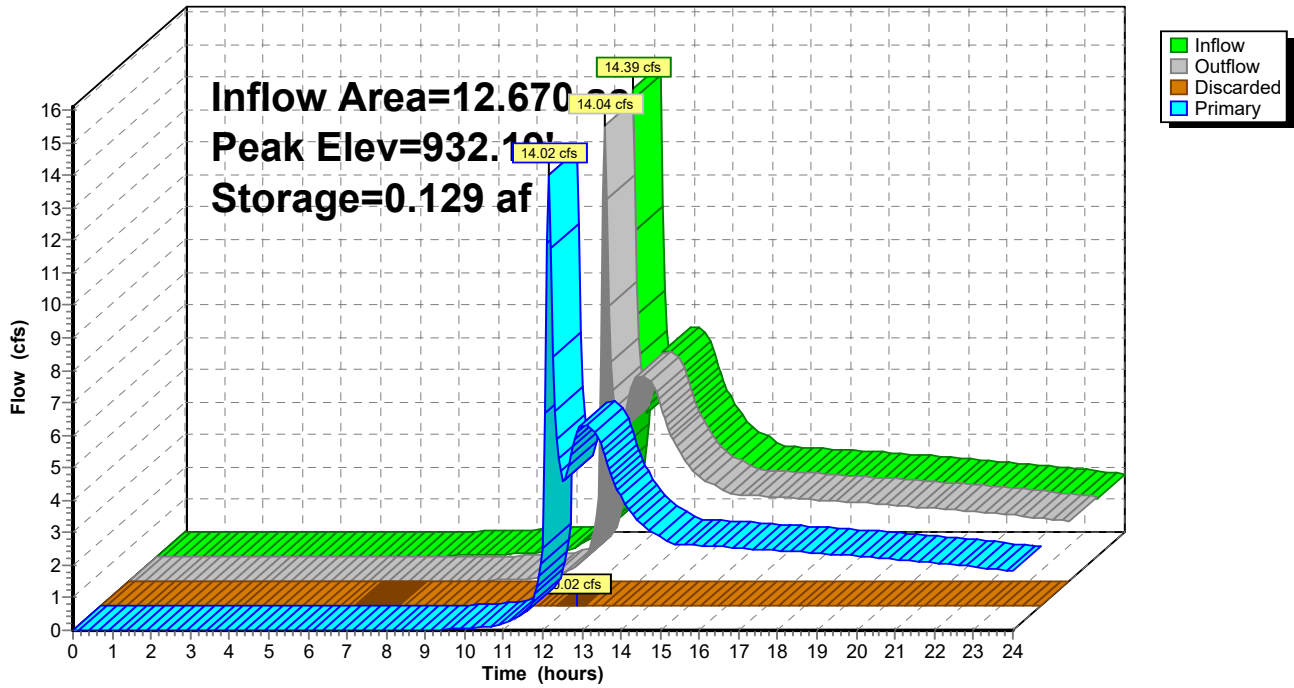
Primary OutFlow Max=13.98 cfs @ 12.15 hrs HW=932.19' TW=0.00' (Dynamic Tailwater)

↑2=**Culvert** (Inlet Controls 3.15 cfs @ 4.01 fps)

↑3=**Broad-Crested Rectangular Weir**(Weir Controls 10.82 cfs @ 1.09 fps)

Pond 2B: Basin

Hydrograph



Summary for Pond 3P: Pond

Inflow Area = 17.750 ac, 37.63% Impervious, Inflow Depth > 4.10" for 100 yr event
 Inflow = 76.27 cfs @ 12.23 hrs, Volume= 6.064 af
 Outflow = 50.55 cfs @ 12.37 hrs, Volume= 5.209 af, Atten= 34%, Lag= 8.3 min
 Primary = 50.55 cfs @ 12.37 hrs, Volume= 5.209 af
 Routed to Link 1L : West Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 927.99' @ 12.37 hrs Surf.Area= 0.450 ac Storage= 1.891 af

Plug-Flow detention time= 122.7 min calculated for 5.198 af (86% of inflow)
 Center-of-Mass det. time= 63.1 min (889.8 - 826.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	922.00'	2.383 af	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
922.00	0.200	0.000	0.000	0.200
923.00	0.230	0.215	0.215	0.231
924.00	0.270	0.250	0.465	0.272
925.00	0.310	0.290	0.754	0.313
926.00	0.360	0.335	1.089	0.364
927.00	0.400	0.380	1.469	0.405
928.00	0.450	0.425	1.894	0.456
929.00	0.530	0.489	2.383	0.537

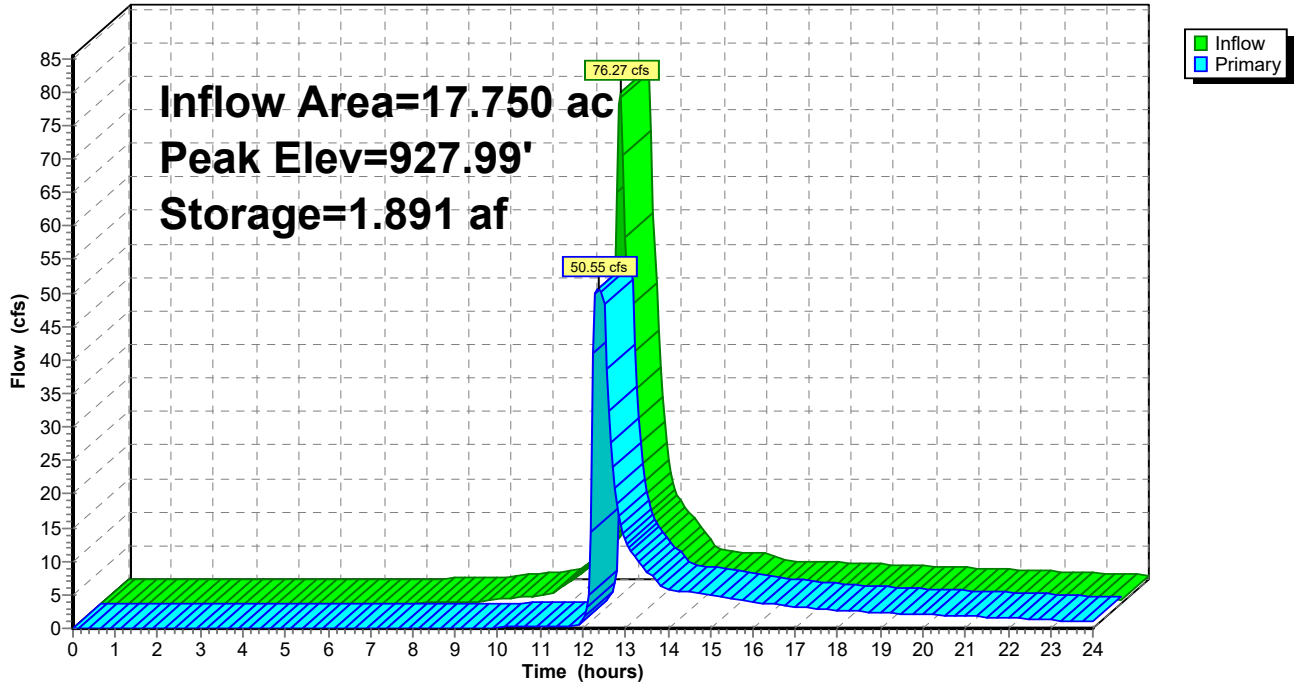
Device	Routing	Invert	Outlet Devices
#1	Primary	922.00'	30.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 922.00' / 921.50' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf
#2	Device 1	922.00'	3.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	925.00'	1.0' long x 1.90' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	926.90'	60.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	928.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=50.47 cfs @ 12.37 hrs HW=927.98' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Barrel Controls 50.47 cfs @ 10.28 fps)
- 2=Orifice (Passes < 0.57 cfs potential flow)
- 3=Sharp-Crested Rectangular Weir (Passes < 8.16 cfs potential flow)
- 4=Grate (Passes < 57.76 cfs potential flow)
- 5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Pond

Hydrograph



Summary for Pond 4B: Basin

Inflow Area = 4.390 ac, 17.31% Impervious, Inflow Depth > 3.74" for 100 yr event
 Inflow = 24.71 cfs @ 12.18 hrs, Volume= 1.367 af
 Outflow = 3.56 cfs @ 12.66 hrs, Volume= 1.141 af, Atten= 86%, Lag= 29.3 min
 Discarded = 0.07 cfs @ 12.66 hrs, Volume= 0.052 af
 Primary = 3.49 cfs @ 12.66 hrs, Volume= 1.089 af
 Routed to Pond 3P : Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 938.97' @ 12.66 hrs Surf.Area= 0.451 ac Storage= 0.780 af

Plug-Flow detention time= 243.2 min calculated for 1.139 af (83% of inflow)
 Center-of-Mass det. time= 186.7 min (986.8 - 800.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	936.00'	1.372 af	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
936.00	0.180	0.000	0.000	0.180	
937.00	0.220	0.200	0.200	0.221	
938.00	0.260	0.240	0.439	0.262	
940.00	0.710	0.933	1.372	0.712	

Device	Routing	Invert	Outlet Devices							
#1	Discarded	936.00'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 926.00' Phase-In= 0.01'							
#2	Primary	936.75'	6.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads							
#3	Primary	938.80'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads							
#4	Primary	939.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64							

Discarded OutFlow Max=0.07 cfs @ 12.66 hrs HW=938.97' (Free Discharge)

↑1=**Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=3.48 cfs @ 12.66 hrs HW=938.97' TW=927.42' (Dynamic Tailwater)

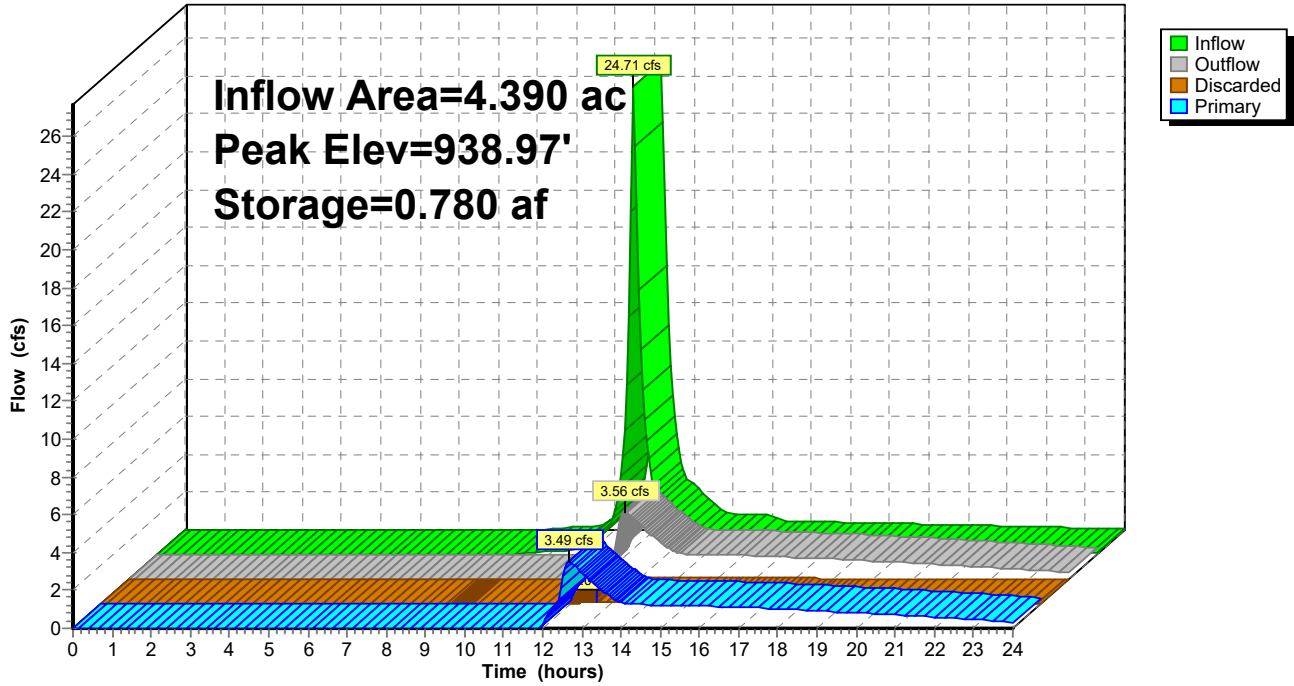
↑2=**Orifice** (Orifice Controls 1.33 cfs @ 6.76 fps)

↑3=**Grate** (Weir Controls 2.16 cfs @ 1.35 fps)

↑4=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 4B: Basin

Hydrograph



Summary for Pond 5B: Rain Garden

Inflow Area = 2.590 ac, 12.36% Impervious, Inflow Depth > 3.63" for 100 yr event
 Inflow = 14.21 cfs @ 12.18 hrs, Volume= 0.785 af
 Outflow = 12.12 cfs @ 12.24 hrs, Volume= 0.750 af, Atten= 15%, Lag= 3.8 min
 Discarded = 0.02 cfs @ 12.24 hrs, Volume= 0.011 af
 Primary = 12.10 cfs @ 12.24 hrs, Volume= 0.739 af
 Routed to Pond 6P : Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 925.00' @ 12.24 hrs Surf.Area= 0.129 ac Storage= 0.209 af

Plug-Flow detention time= 62.5 min calculated for 0.748 af (95% of inflow)
 Center-of-Mass det. time= 40.4 min (842.2 - 801.9)

Volume	Invert	Avail.Storage	Storage Description	
#1	922.00'	0.368 af	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
922.00	0.030	0.000	0.000	0.030
924.00	0.080	0.106	0.106	0.081
926.00	0.190	0.262	0.368	0.191

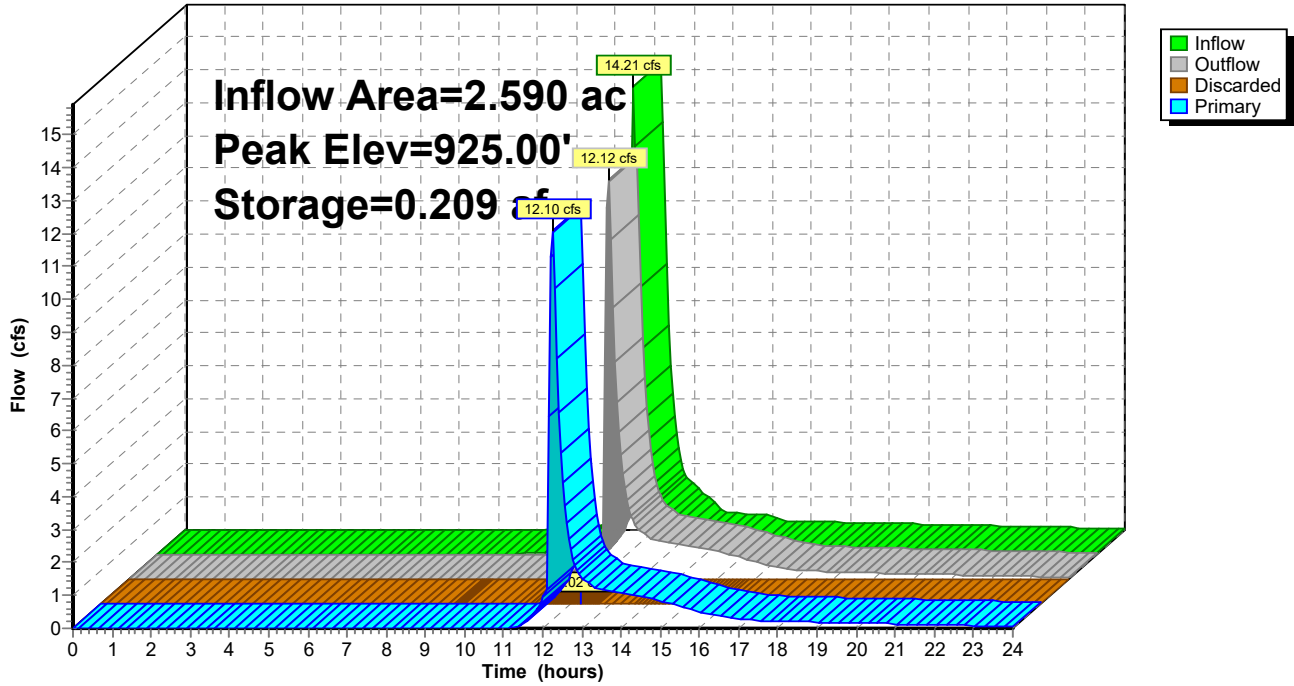
Device	Routing	Invert	Outlet Devices
#1	Discarded	922.00'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 912.00' Phase-In= 0.01'
#2	Primary	922.75'	6.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#3	Primary	924.50'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#4	Primary	925.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.02 cfs @ 12.24 hrs HW=924.99' (Free Discharge)
 ↑1=Exfiltration (Controls 0.02 cfs)

Primary OutFlow Max=11.90 cfs @ 12.24 hrs HW=924.99' TW=914.79' (Dynamic Tailwater)
 ↑2=Orifice (Orifice Controls 1.33 cfs @ 6.79 fps)
 ↓3=Grate (Weir Controls 10.57 cfs @ 2.29 fps)
 ↓4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 5B: Rain Garden

Hydrograph



Summary for Pond 6P: Pond

Inflow Area = 11.390 ac, 30.38% Impervious, Inflow Depth > 3.99" for 100 yr event
 Inflow = 64.42 cfs @ 12.19 hrs, Volume= 3.783 af
 Outflow = 39.76 cfs @ 12.31 hrs, Volume= 2.987 af, Atten= 38%, Lag= 7.2 min
 Primary = 39.76 cfs @ 12.31 hrs, Volume= 2.987 af
 Routed to Link 4L : Southeast Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.93' @ 12.31 hrs Surf.Area= 0.398 ac Storage= 1.286 af

Plug-Flow detention time= 106.8 min calculated for 2.987 af (79% of inflow)
 Center-of-Mass det. time= 42.8 min (845.1 - 802.3)

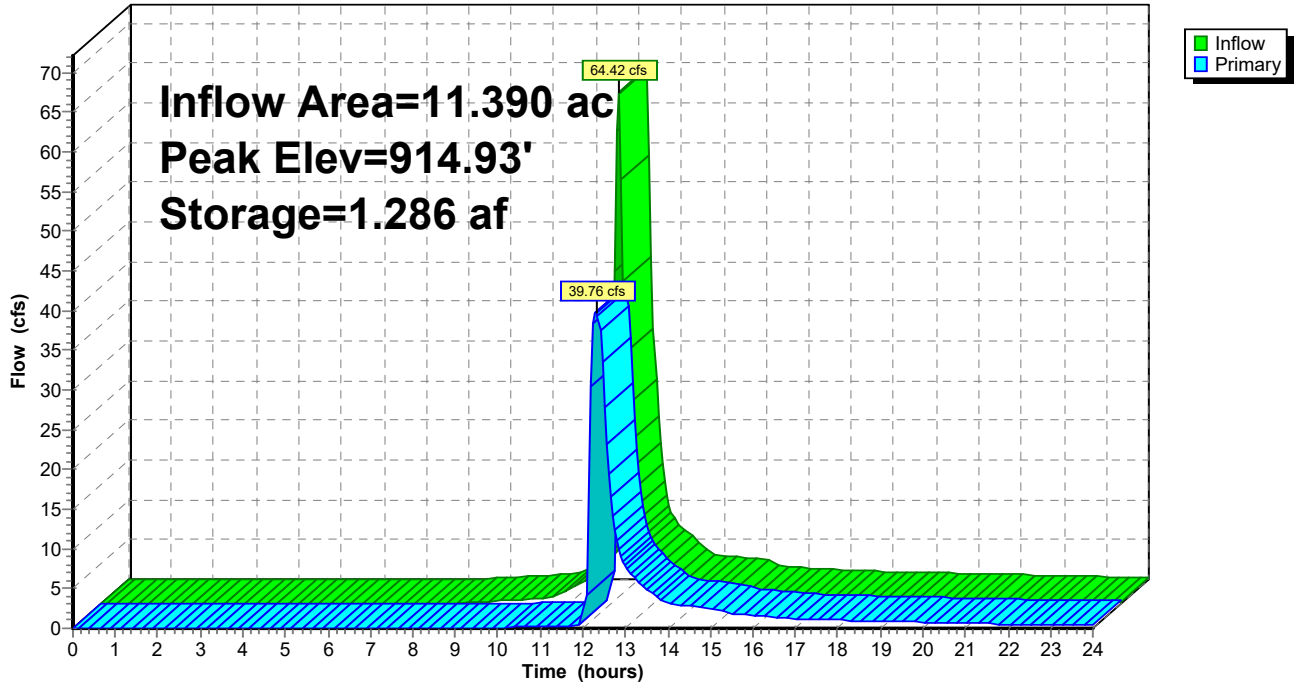
Volume	Invert	Avail.Storage	Storage Description		
#1	910.00'	1.750 af	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
910.00	0.150	0.000	0.000	0.150	
912.00	0.230	0.377	0.377	0.231	
914.00	0.340	0.566	0.944	0.343	
916.00	0.470	0.806	1.750	0.475	

Device	Routing	Invert	Outlet Devices									
#1	Primary	910.00'	3.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads									
#2	Primary	913.60'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads									
#3	Primary	915.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=39.62 cfs @ 12.31 hrs HW=914.92' TW=0.00' (Dynamic Tailwater)
 1=Orifice (Orifice Controls 0.52 cfs @ 10.54 fps)
 2=Grate (Orifice Controls 39.10 cfs @ 5.53 fps)
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 6P: Pond

Hydrograph



Summary for Pond 7P: Pond

Inflow Area = 11.600 ac, 26.38% Impervious, Inflow Depth > 3.94" for 100 yr event
 Inflow = 58.56 cfs @ 12.23 hrs, Volume= 3.809 af
 Outflow = 13.91 cfs @ 12.65 hrs, Volume= 3.587 af, Atten= 76%, Lag= 24.9 min
 Primary = 13.91 cfs @ 12.65 hrs, Volume= 3.587 af
 Routed to Link 4L : Southeast Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 922.30' @ 12.65 hrs Surf.Area= 0.871 ac Storage= 1.845 af

Plug-Flow detention time= 133.2 min calculated for 3.580 af (94% of inflow)
 Center-of-Mass det. time= 105.4 min (906.6 - 801.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	919.30'	2.859 af	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
919.30	0.390	0.000	0.000	0.390
922.30	0.870	1.842	1.842	0.872
923.30	1.170	1.016	2.859	1.172

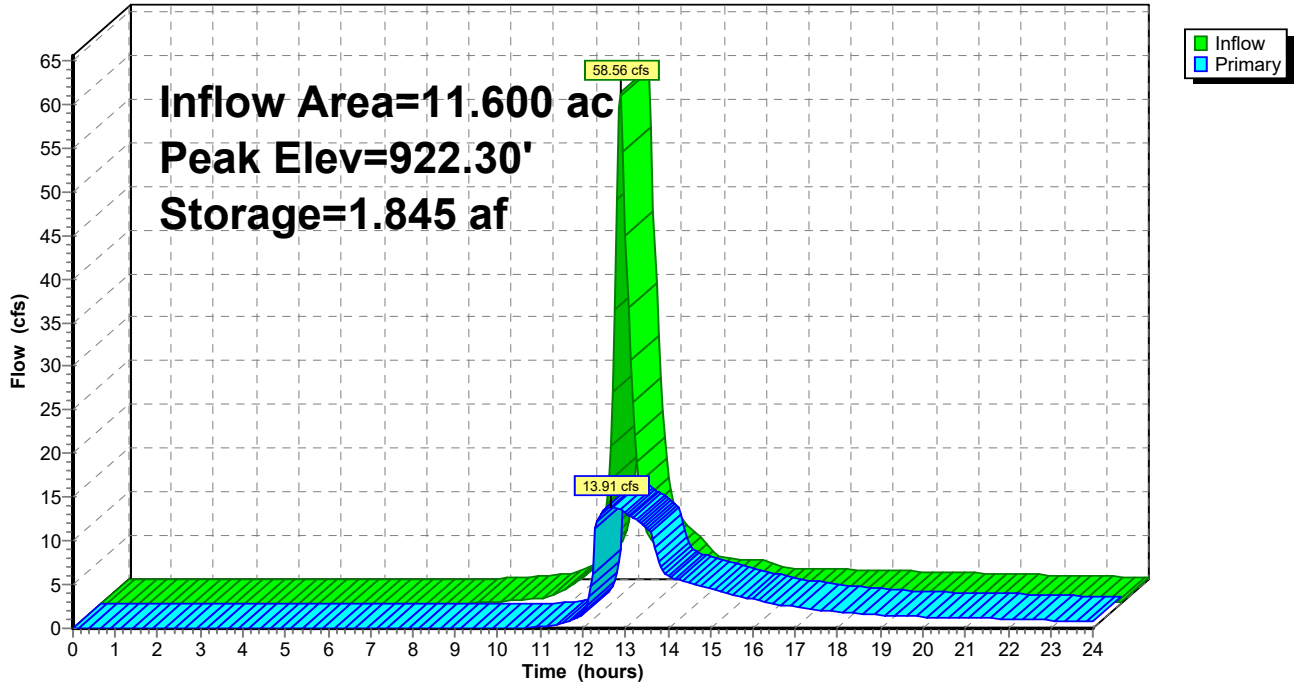
Device	Routing	Invert	Outlet Devices
#1	Primary	919.30'	21.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 919.30' / 919.00' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf
#2	Device 1	919.30'	8.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	920.20'	1.0' long x 1.30' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Device 1	921.50'	48.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	922.30'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=13.91 cfs @ 12.65 hrs HW=922.30' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Barrel Controls 13.91 cfs @ 5.78 fps)
- 2=Orifice (Passes < 2.75 cfs potential flow)
- 3=Sharp-Crested Rectangular Weir (Passes < 5.64 cfs potential flow)
- 4=Grate (Passes < 29.53 cfs potential flow)
- 5=Broad-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.12 fps)

Pond 7P: Pond

Hydrograph



Summary for Pond 8B: Basin

Inflow Area = 4.610 ac, 19.09% Impervious, Inflow Depth > 3.74" for 100 yr event
 Inflow = 25.95 cfs @ 12.18 hrs, Volume= 1.435 af
 Outflow = 11.03 cfs @ 12.37 hrs, Volume= 1.253 af, Atten= 57%, Lag= 11.7 min
 Discarded = 0.05 cfs @ 12.36 hrs, Volume= 0.039 af
 Primary = 10.98 cfs @ 12.37 hrs, Volume= 1.213 af
 Routed to Pond 9P : Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.47' @ 12.36 hrs Surf.Area= 0.309 ac Storage= 0.640 af

Plug-Flow detention time= 167.6 min calculated for 1.253 af (87% of inflow)
 Center-of-Mass det. time= 118.0 min (918.2 - 800.2)

Volume	Invert	Avail.Storage	Storage Description
#1	916.50'	1.034 af	Custom Stage Data (Conic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet) Wet.Area (acres)
916.50	0.160	0.000	0.000 0.160
917.00	0.180	0.085	0.085 0.180
918.00	0.210	0.195	0.280 0.211
919.00	0.250	0.230	0.509 0.252
920.50	0.460	0.525	1.034 0.463

Device	Routing	Invert	Outlet Devices
#1	Discarded	916.50'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 906.50' Phase-In= 0.01'
#2	Primary	916.50'	18.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 916.50' / 916.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#3	Device 2	917.25'	6.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#4	Device 2	919.00'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	919.50'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.05 cfs @ 12.36 hrs HW=919.46' (Free Discharge)

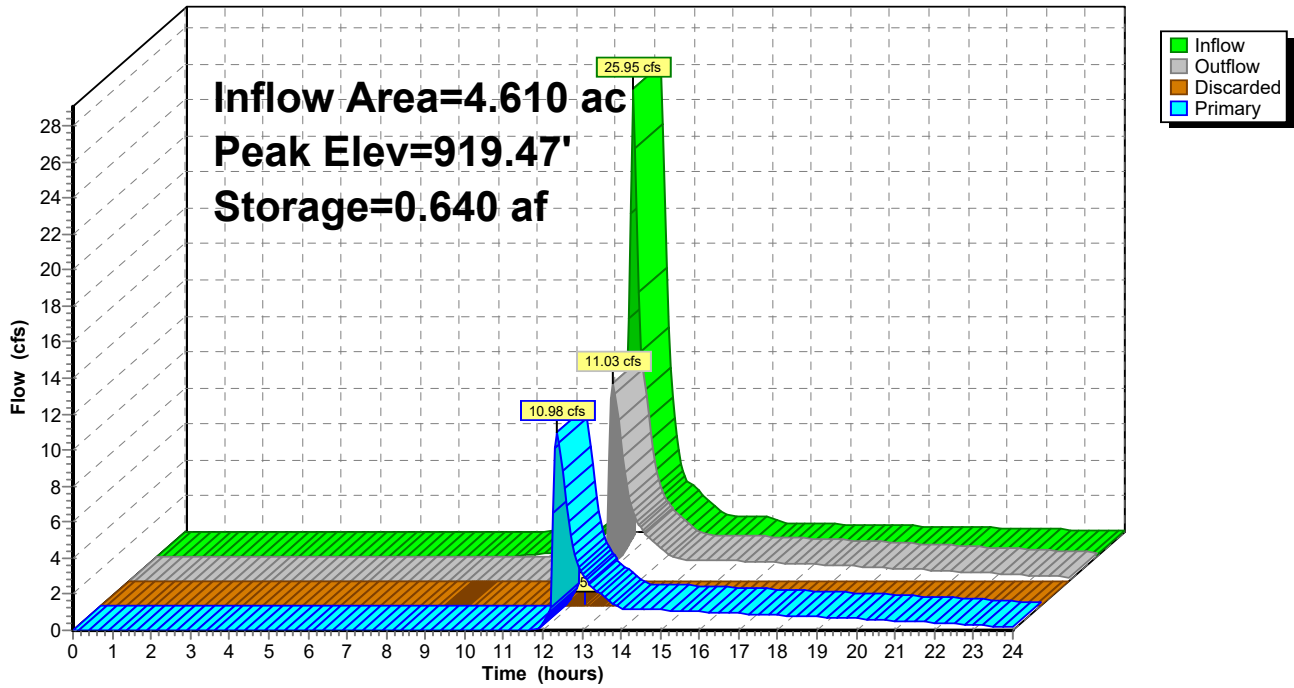
↑1=Exfiltration (Controls 0.05 cfs)

Primary OutFlow Max=10.89 cfs @ 12.37 hrs HW=919.46' TW=902.53' (Dynamic Tailwater)

↑2=Culvert (Barrel Controls 10.89 cfs @ 6.16 fps)
 ↑3=Orifice (Passes < 1.32 cfs potential flow)
 ↑4=Grate (Passes < 9.69 cfs potential flow)
 ↑5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 8B: Basin

Hydrograph



Summary for Pond 9P: Pond

Inflow Area = 15.430 ac, 31.11% Impervious, Inflow Depth > 3.93" for 100 yr event
 Inflow = 80.59 cfs @ 12.13 hrs, Volume= 5.052 af
 Outflow = 12.64 cfs @ 12.71 hrs, Volume= 2.717 af, Atten= 84%, Lag= 34.7 min
 Primary = 12.64 cfs @ 12.71 hrs, Volume= 2.717 af
 Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 902.94' @ 12.71 hrs Surf.Area= 0.734 ac Storage= 2.702 af

Plug-Flow detention time= 217.1 min calculated for 2.717 af (54% of inflow)
 Center-of-Mass det. time= 115.4 min (933.8 - 818.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	898.00'	3.524 af	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
898.00	0.410	0.000	0.000	0.410	
899.00	0.460	0.435	0.435	0.461	
901.00	0.560	1.018	1.453	0.564	
903.00	0.740	1.296	2.749	0.746	
904.00	0.810	0.775	3.524	0.818	

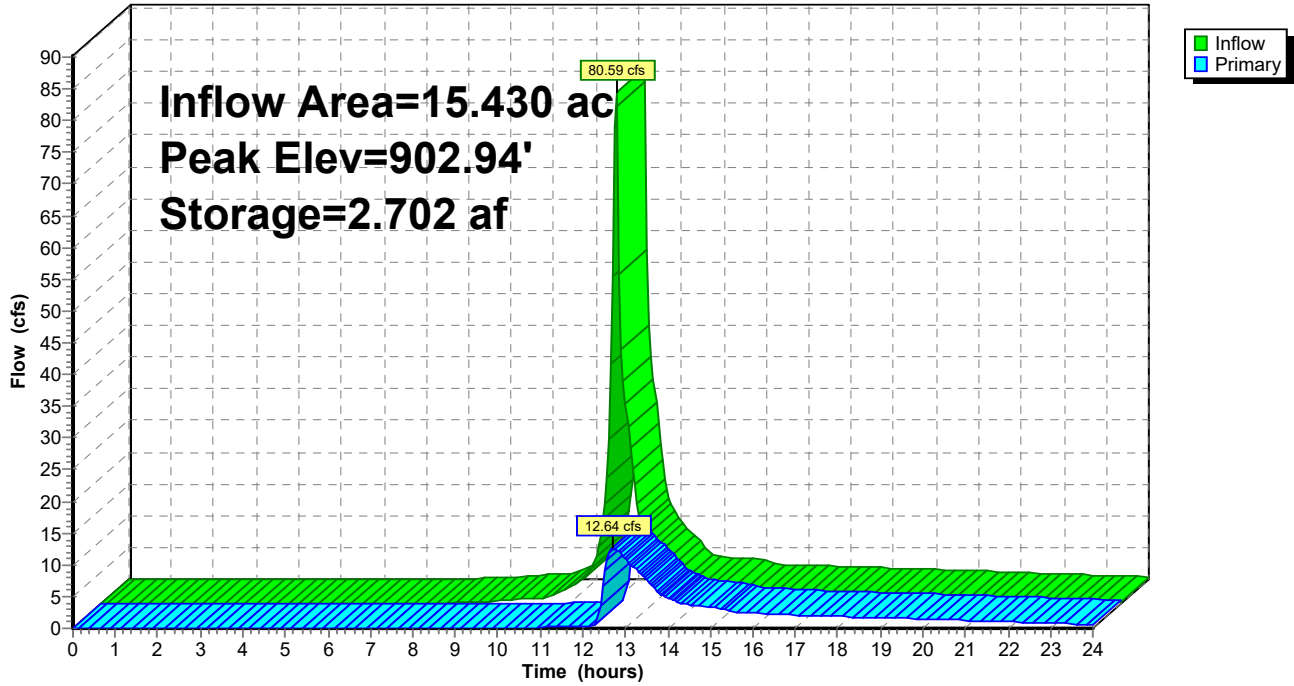
Device	Routing	Invert	Outlet Devices									
#1	Primary	898.00'	3.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads									
#2	Primary	902.40'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads									
#3	Primary	903.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir									
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60									
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64									

Primary OutFlow Max=12.62 cfs @ 12.71 hrs HW=902.94' TW=0.00' (Dynamic Tailwater)

- 1=Orifice (Orifice Controls 0.52 cfs @ 10.56 fps)
- 2=Grate (Weir Controls 12.10 cfs @ 2.39 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 9P: Pond

Hydrograph



Summary for Pond 10B: Basin

Inflow Area = 2.040 ac, 18.63% Impervious, Inflow Depth > 3.74" for 100 yr event
 Inflow = 11.48 cfs @ 12.18 hrs, Volume= 0.635 af
 Outflow = 0.40 cfs @ 14.30 hrs, Volume= 0.319 af, Atten= 97%, Lag= 127.5 min
 Discarded = 0.04 cfs @ 14.30 hrs, Volume= 0.038 af
 Primary = 0.36 cfs @ 14.30 hrs, Volume= 0.281 af
 Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.52' @ 14.30 hrs Surf.Area= 0.229 ac Storage= 0.450 af

Plug-Flow detention time= 347.2 min calculated for 0.318 af (50% of inflow)
 Center-of-Mass det. time= 265.4 min (1,065.6 - 800.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	912.00'	0.835 af	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
912.00	0.130	0.000	0.000	0.130	
914.00	0.210	0.337	0.337	0.211	
916.00	0.290	0.498	0.835	0.293	

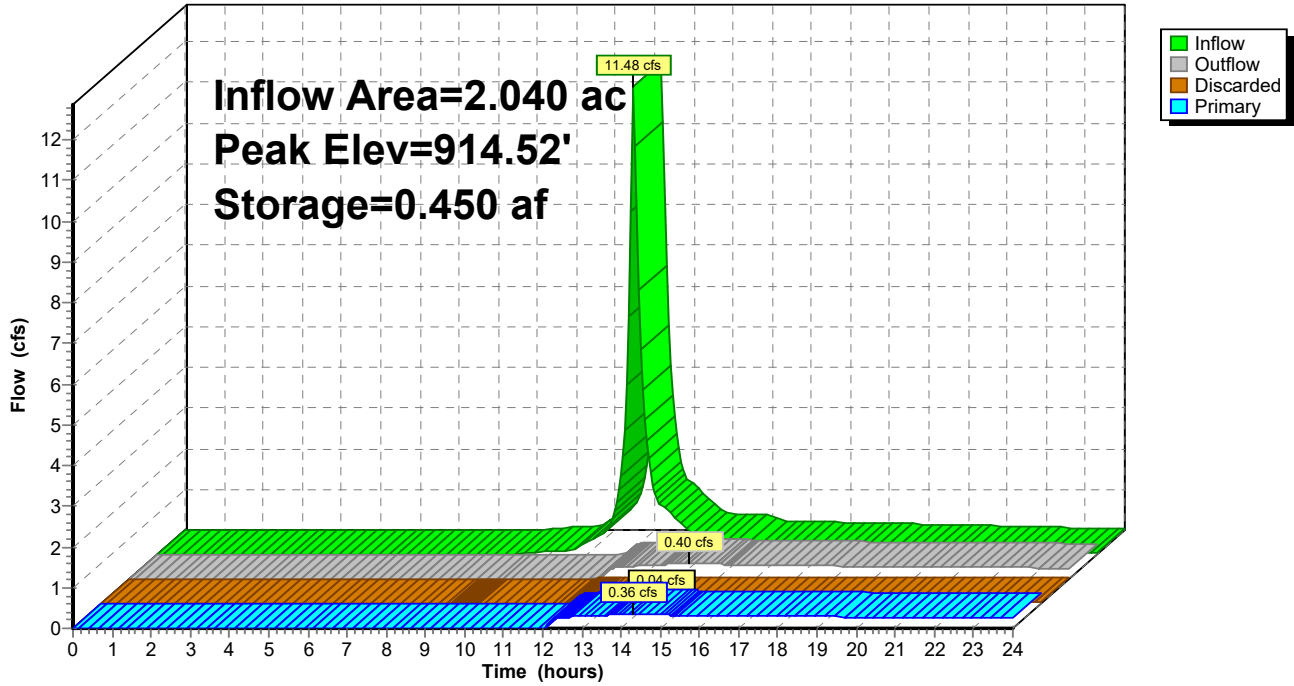
Device	Routing	Invert	Outlet Devices							
#1	Discarded	912.00'	0.130 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 902.00' Phase-In= 0.01'							
#2	Primary	912.75'	3.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads							
#3	Primary	914.50'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads							
#4	Primary	915.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64							

Discarded OutFlow Max=0.04 cfs @ 14.30 hrs HW=914.52' (Free Discharge)
 ↑1=Exfiltration (Controls 0.04 cfs)

Primary OutFlow Max=0.36 cfs @ 14.30 hrs HW=914.52' TW=0.00' (Dynamic Tailwater)
 ↑2=Orifice (Orifice Controls 0.30 cfs @ 6.17 fps)
 ↑3=Grate (Weir Controls 0.06 cfs @ 0.40 fps)
 ↑4=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 10B: Basin

Hydrograph



Summary for Pond 11P: Pond

Inflow Area = 7.980 ac, 39.47% Impervious, Inflow Depth > 4.26" for 100 yr event
 Inflow = 58.76 cfs @ 12.13 hrs, Volume= 2.831 af
 Outflow = 24.48 cfs @ 12.26 hrs, Volume= 1.903 af, Atten= 58%, Lag= 8.0 min
 Primary = 24.48 cfs @ 12.26 hrs, Volume= 1.903 af
 Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 916.45' @ 12.26 hrs Surf.Area= 0.442 ac Storage= 1.316 af

Plug-Flow detention time= 141.0 min calculated for 1.899 af (67% of inflow)
 Center-of-Mass det. time= 70.3 min (857.9 - 787.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	912.20'	1.821 af	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
912.20	0.190	0.000	0.000	0.190
915.00	0.350	0.745	0.745	0.352
917.00	0.480	0.827	1.571	0.484
917.50	0.520	0.250	1.821	0.524

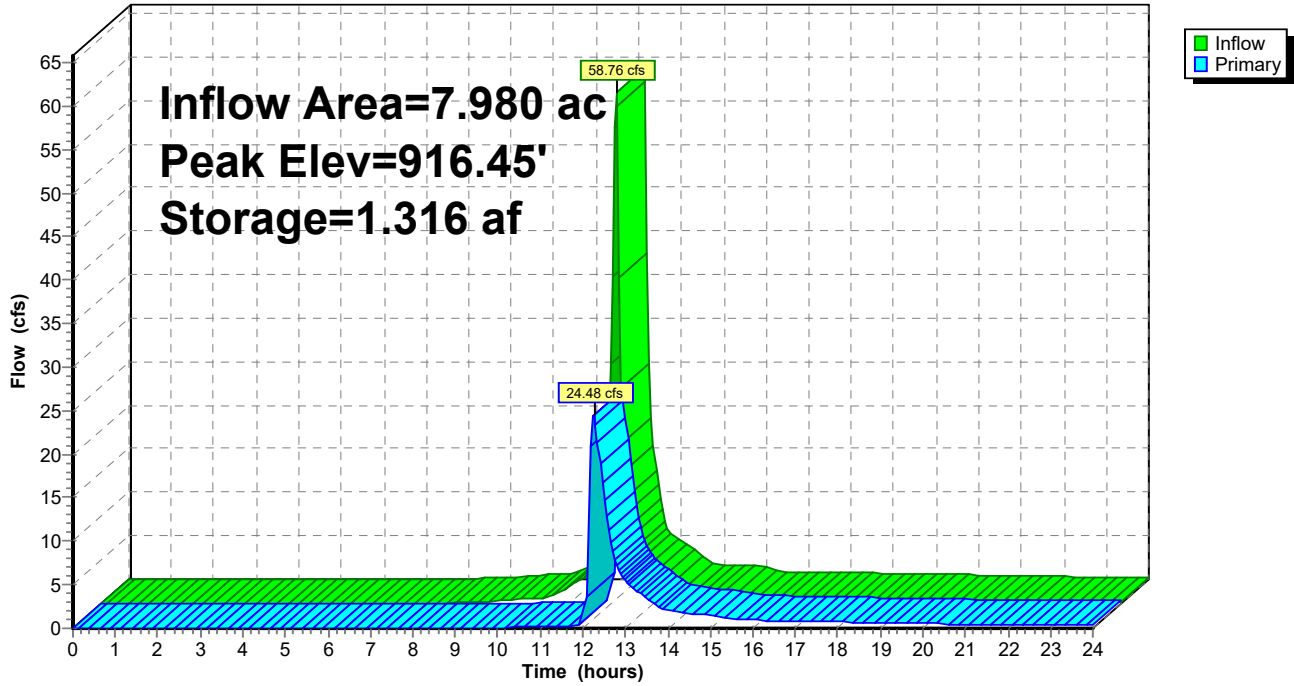
Device	Routing	Invert	Outlet Devices
#1	Primary	912.20'	3.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	915.60'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	916.50'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=24.05 cfs @ 12.26 hrs HW=916.44' TW=0.00' (Dynamic Tailwater)

- 1=Orifice (Orifice Controls 0.48 cfs @ 9.76 fps)
- 2=Grate (Weir Controls 23.57 cfs @ 2.99 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 11P: Pond

Hydrograph



Summary for Pond 12P: Pond

Inflow Area = 7.030 ac, 28.59% Impervious, Inflow Depth > 3.94" for 100 yr event
 Inflow = 41.52 cfs @ 12.18 hrs, Volume= 2.309 af
 Outflow = 26.85 cfs @ 12.28 hrs, Volume= 1.772 af, Atten= 35%, Lag= 6.6 min
 Primary = 26.85 cfs @ 12.28 hrs, Volume= 1.772 af
 Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 925.90' @ 12.28 hrs Surf.Area= 0.343 ac Storage= 0.857 af

Plug-Flow detention time= 119.8 min calculated for 1.772 af (77% of inflow)
 Center-of-Mass det. time= 54.2 min (850.9 - 796.7)

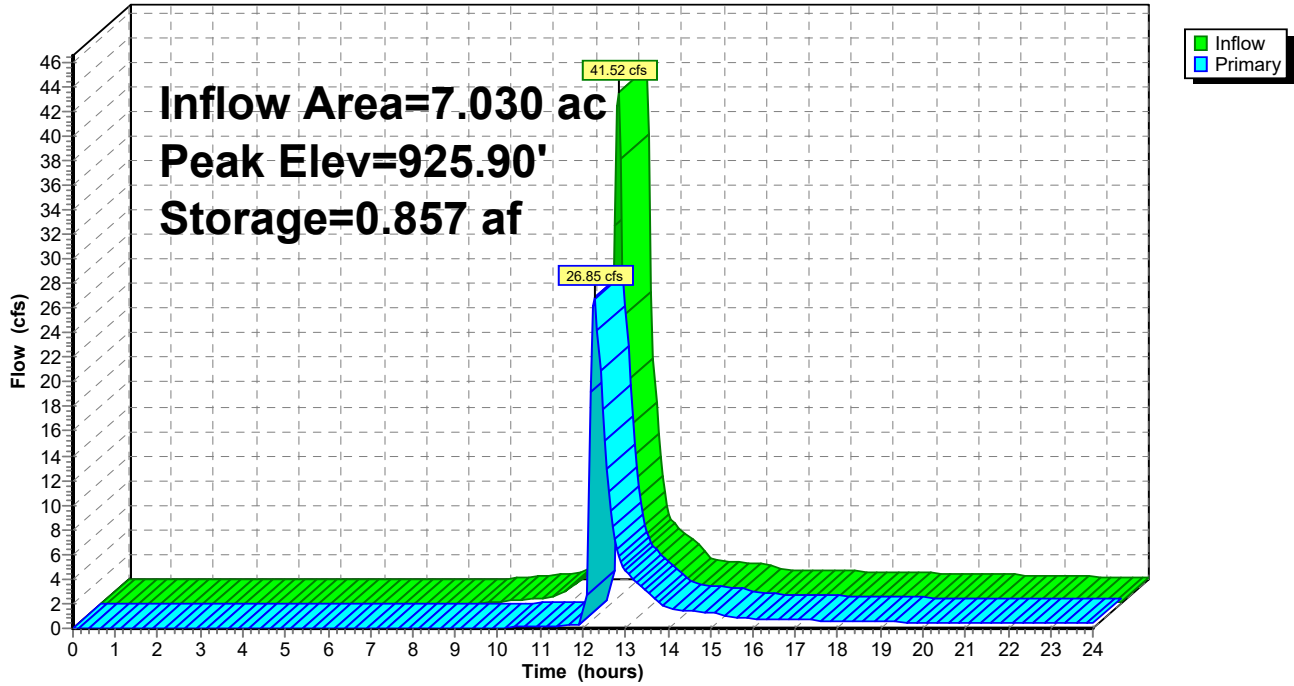
Volume	Invert	Avail.Storage	Storage Description	
#1	922.00'	1.276 af	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
922.00	0.130	0.000	0.000	0.130
923.00	0.160	0.145	0.145	0.161
926.00	0.350	0.747	0.891	0.352
927.00	0.420	0.384	1.276	0.423

Device	Routing	Invert	Outlet Devices
#1	Primary	922.00'	3.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	925.00'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	926.00'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=26.52 cfs @ 12.28 hrs HW=925.89' TW=0.00' (Dynamic Tailwater)
 1=Orifice (Orifice Controls 0.46 cfs @ 9.35 fps)
 2=Grate (Weir Controls 26.06 cfs @ 3.09 fps)
 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 12P: Pond

Hydrograph



Summary for Pond 13P: Pond

Inflow Area = 5.250 ac, 24.38% Impervious, Inflow Depth > 3.94" for 100 yr event
 Inflow = 31.01 cfs @ 12.18 hrs, Volume= 1.725 af
 Outflow = 10.27 cfs @ 12.42 hrs, Volume= 1.254 af, Atten= 67%, Lag= 14.6 min
 Primary = 10.27 cfs @ 12.42 hrs, Volume= 1.254 af
 Routed to Link 2L : Northwest Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 898.76' @ 12.42 hrs Surf.Area= 0.328 ac Storage= 0.847 af

Plug-Flow detention time= 204.4 min calculated for 1.251 af (73% of inflow)
 Center-of-Mass det. time= 136.1 min (932.8 - 796.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	895.30'	1.216 af	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
895.30	0.170	0.000	0.000	0.170
896.00	0.200	0.129	0.129	0.200
897.00	0.240	0.220	0.349	0.241
898.00	0.290	0.265	0.614	0.292
898.80	0.330	0.248	0.861	0.333
899.80	0.380	0.355	1.216	0.384

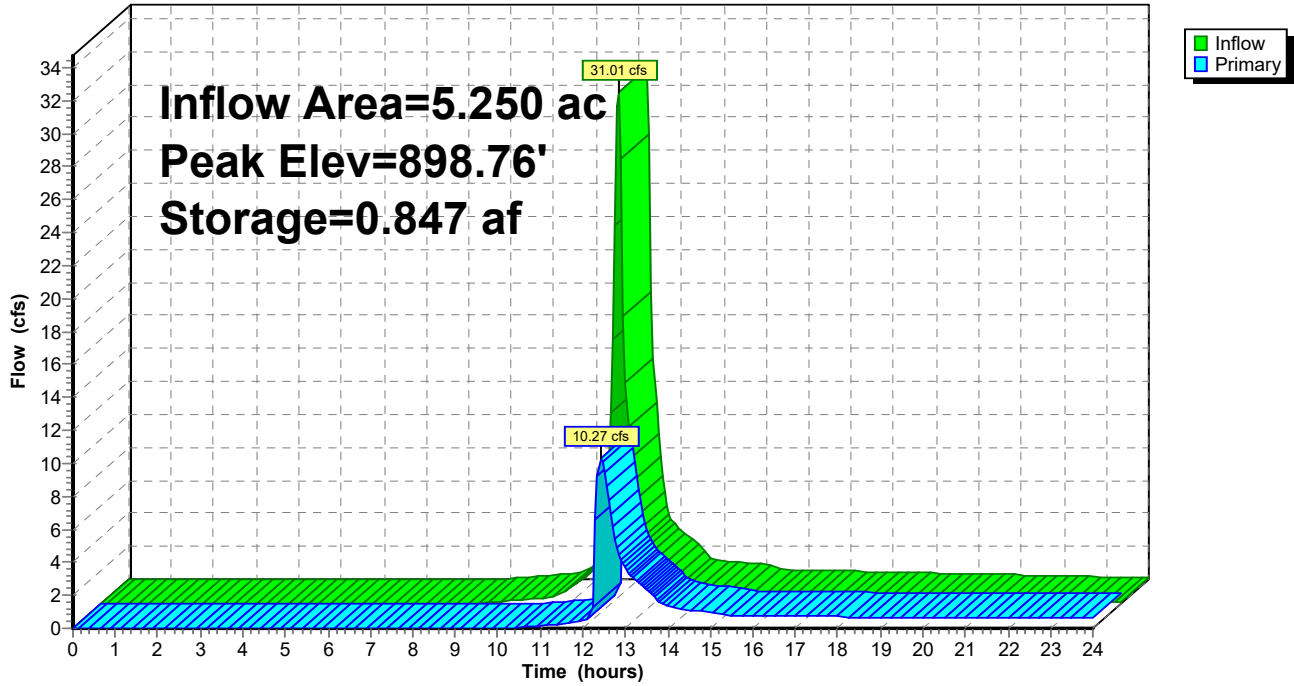
Device	Routing	Invert	Outlet Devices
#1	Primary	895.30'	4.0" Vert. Orifice C= 0.600 Limited to weir flow at low heads
#2	Primary	898.30'	36.0" Horiz. Grate C= 0.600 Limited to weir flow at low heads
#3	Primary	898.80'	10.0' long + 5.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=10.15 cfs @ 12.42 hrs HW=898.75' TW=0.00' (Dynamic Tailwater)

- 1=Orifice (Orifice Controls 0.76 cfs @ 8.73 fps)
- 2=Grate (Weir Controls 9.39 cfs @ 2.20 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 13P: Pond

Hydrograph



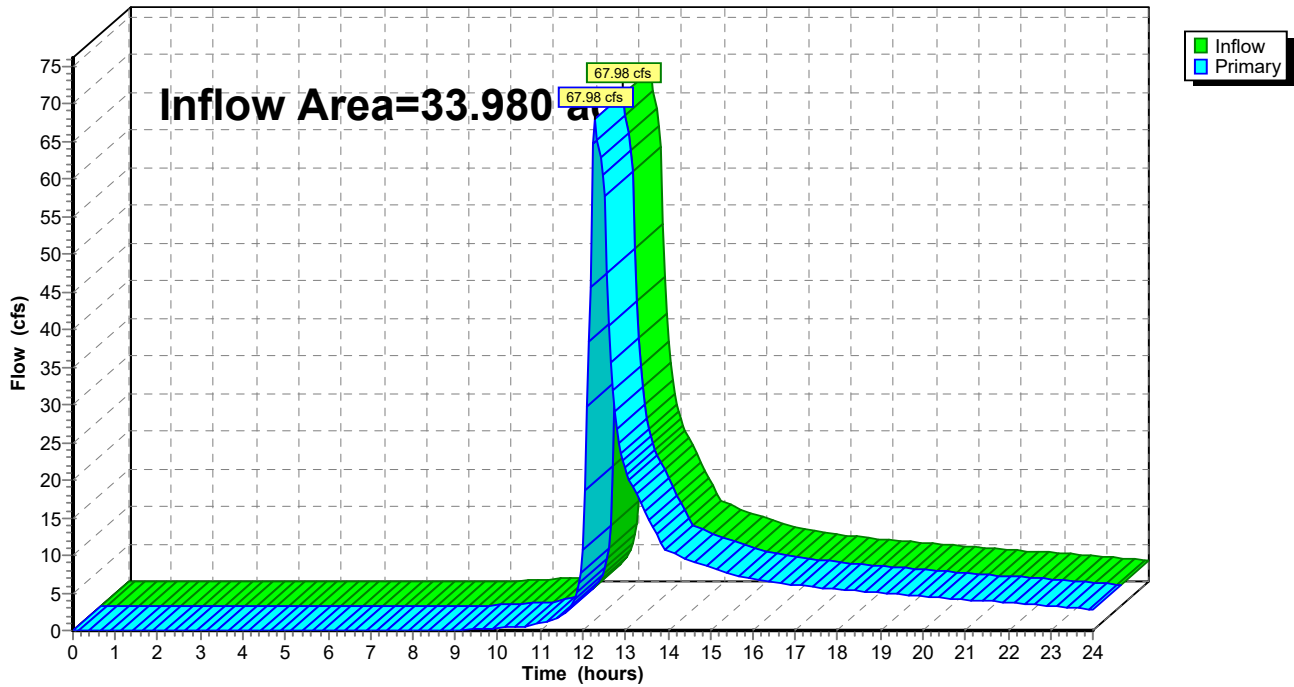
Summary for Link 1L: West Subwatershed

Inflow Area = 33.980 ac, 33.93% Impervious, Inflow Depth > 3.32" for 100 yr event
Inflow = 67.98 cfs @ 12.30 hrs, Volume= 9.394 af
Primary = 67.98 cfs @ 12.30 hrs, Volume= 9.394 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Post-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: West Subwatershed

Hydrograph



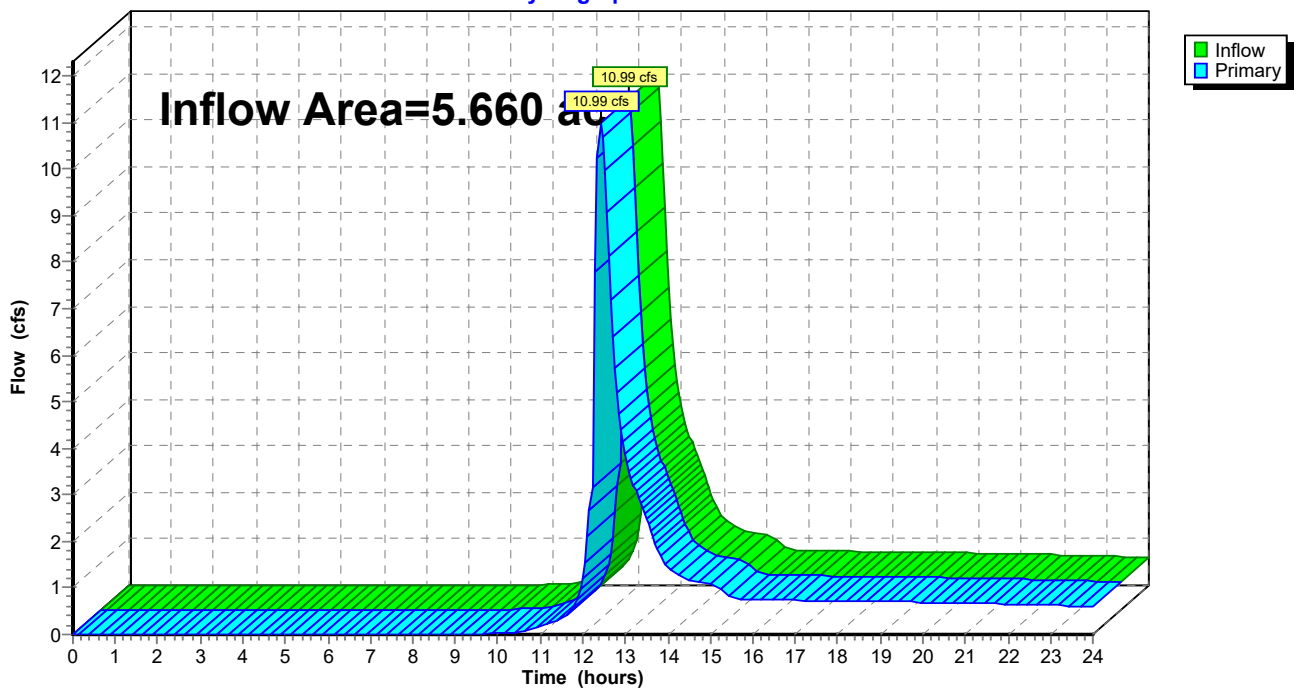
Summary for Link 2L: Northwest Subwatershed

Inflow Area = 5.660 ac, 23.14% Impervious, Inflow Depth > 2.91" for 100 yr event
Inflow = 10.99 cfs @ 12.41 hrs, Volume= 1.371 af
Primary = 10.99 cfs @ 12.41 hrs, Volume= 1.371 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Post-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: Northwest Subwatershed

Hydrograph

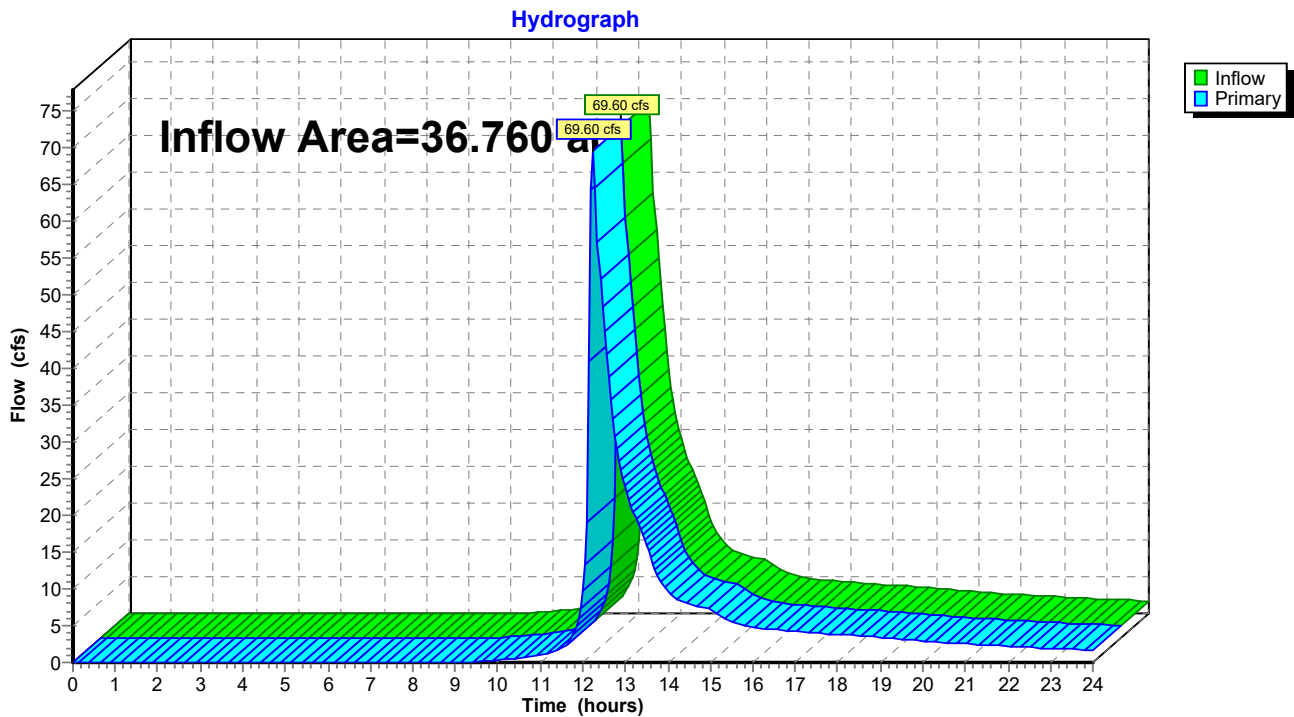


Summary for Link 3L: North Subwatershed (drainage swale)

Inflow Area = 36.760 ac, 30.11% Impervious, Inflow Depth > 2.61" for 100 yr event
Inflow = 69.60 cfs @ 12.25 hrs, Volume= 8.006 af
Primary = 69.60 cfs @ 12.25 hrs, Volume= 8.006 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Post-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 3L: North Subwatershed (drainage swale)



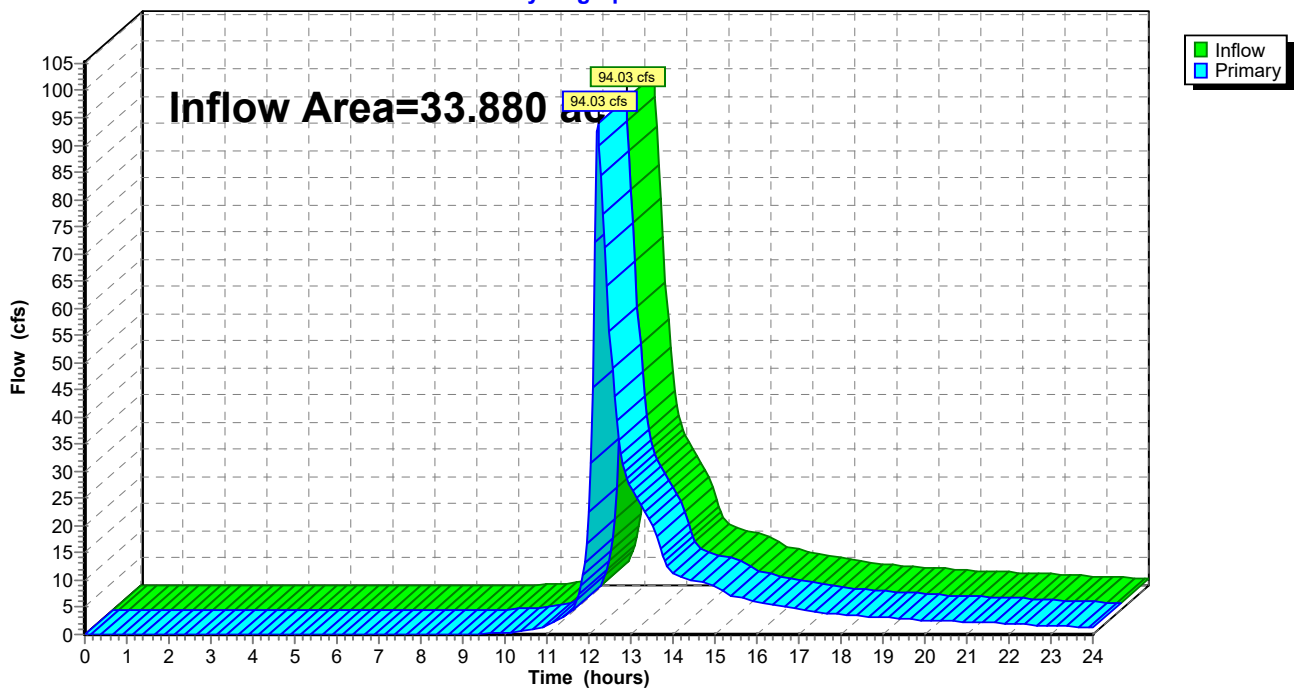
Summary for Link 4L: Southeast Subwatershed

Inflow Area = 33.880 ac, 22.73% Impervious, Inflow Depth > 3.46" for 100 yr event
Inflow = 94.03 cfs @ 12.22 hrs, Volume= 9.781 af
Primary = 94.03 cfs @ 12.22 hrs, Volume= 9.781 af, Atten= 0%, Lag= 0.0 min
Routed to Link 99L : Post-Development Conditions

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Southeast Subwatershed

Hydrograph



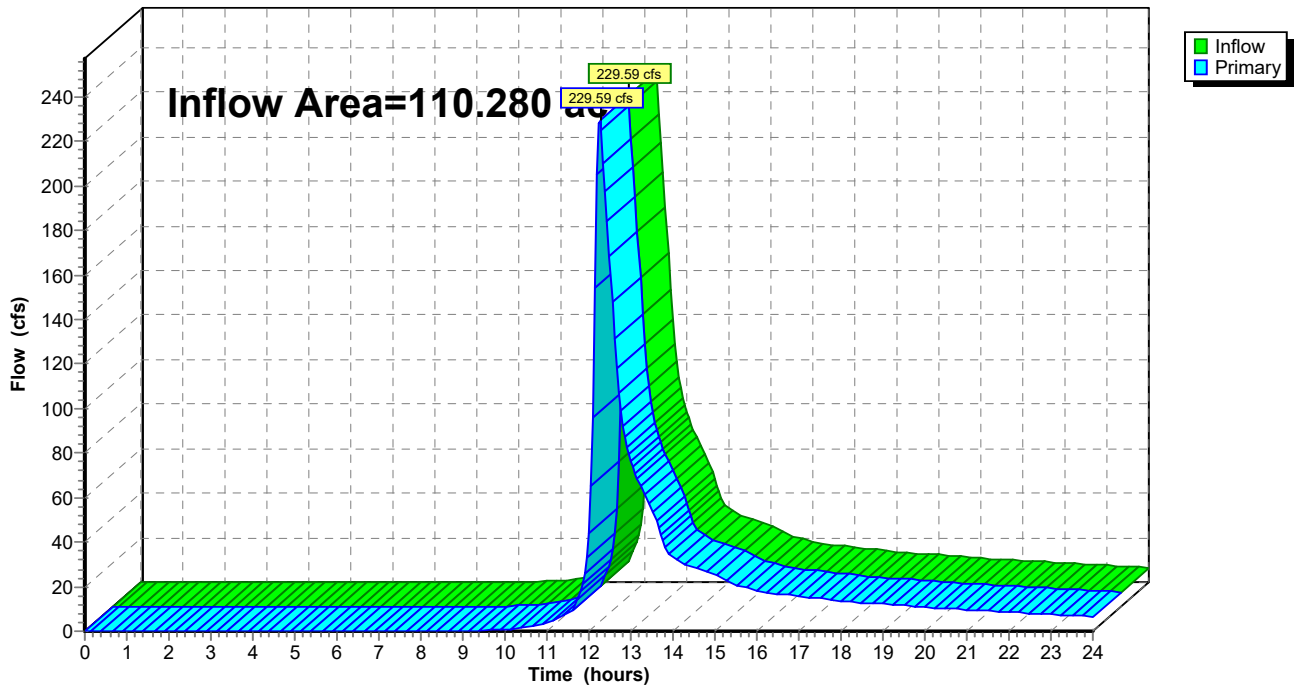
Summary for Link 99L: Post-Development Conditions

Inflow Area = 110.280 ac, 28.66% Impervious, Inflow Depth > 3.11" for 100 yr event
Inflow = 229.59 cfs @ 12.27 hrs, Volume= 28.552 af
Primary = 229.59 cfs @ 12.27 hrs, Volume= 28.552 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 99L: Post-Development Conditions

Hydrograph



Events for Subcatchment 1: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	14.43	0.802	0.87
2 yr	2.70	18.14	1.001	1.09
10 yr	3.81	32.93	1.806	1.96
100 yr	6.18	66.94	3.726	4.05

Events for Subcatchment 2: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.38	0.157	1.16
2 yr	2.70	4.08	0.190	1.41
10 yr	3.81	6.77	0.321	2.37
100 yr	6.18	12.61	0.618	4.58

Events for Subcatchment 3: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	18.90	1.223	1.10
2 yr	2.70	23.09	1.490	1.34
10 yr	3.81	39.32	2.546	2.29
100 yr	6.18	75.17	4.976	4.47

Events for Subcatchment 4: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	4.65	0.265	0.72
2 yr	2.70	6.01	0.336	0.92
10 yr	3.81	11.57	0.635	1.74
100 yr	6.18	24.71	1.367	3.74

Events for Subcatchment 5: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	2.54	0.146	0.68
2 yr	2.70	3.32	0.187	0.87
10 yr	3.81	6.54	0.359	1.66
100 yr	6.18	14.21	0.785	3.63

Events for Subcatchment 6: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	12.26	0.678	0.92
2 yr	2.70	15.29	0.841	1.15
10 yr	3.81	27.25	1.496	2.04
100 yr	6.18	54.50	3.044	4.15

Events for Subcatchment 7: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	11.92	0.792	0.82
2 yr	2.70	15.16	0.994	1.03
10 yr	3.81	28.22	1.821	1.88
100 yr	6.18	58.56	3.809	3.94

Events for Subcatchment 8: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	4.88	0.278	0.72
2 yr	2.70	6.31	0.353	0.92
10 yr	3.81	12.15	0.667	1.74
100 yr	6.18	25.95	1.435	3.74

Events for Subcatchment 9: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	19.06	0.884	0.98
2 yr	2.70	23.51	1.090	1.21
10 yr	3.81	40.89	1.913	2.12
100 yr	6.18	79.67	3.839	4.26

Events for Subcatchment 10: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	2.16	0.123	0.72
2 yr	2.70	2.79	0.156	0.92
10 yr	3.81	5.38	0.295	1.74
100 yr	6.18	11.48	0.635	3.74

Events for Subcatchment 11: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	14.06	0.652	0.98
2 yr	2.70	17.34	0.804	1.21
10 yr	3.81	30.16	1.411	2.12
100 yr	6.18	58.76	2.831	4.26

Events for Subcatchment 12: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	8.59	0.480	0.82
2 yr	2.70	10.89	0.603	1.03
10 yr	3.81	20.14	1.104	1.88
100 yr	6.18	41.52	2.309	3.94

Events for Subcatchment 13: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	6.41	0.359	0.82
2 yr	2.70	8.13	0.450	1.03
10 yr	3.81	15.04	0.825	1.88
100 yr	6.18	31.01	1.725	3.94

Events for Subcatchment 14: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	0.34	0.020	0.59
2 yr	2.70	0.46	0.026	0.77
10 yr	3.81	0.94	0.052	1.52
100 yr	6.18	2.13	0.117	3.43

Events for Subcatchment 15: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	4.53	0.258	0.72
2 yr	2.70	5.86	0.328	0.92
10 yr	3.81	11.28	0.619	1.74
100 yr	6.18	24.09	1.333	3.74

Events for Subcatchment 16: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	9.88	0.576	0.63
2 yr	2.70	13.06	0.742	0.82
10 yr	3.81	26.27	1.446	1.59
100 yr	6.18	58.22	3.207	3.53

Events for Subcatchment 17: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.77	0.215	0.72
2 yr	2.70	4.88	0.273	0.92
10 yr	3.81	9.38	0.515	1.74
100 yr	6.18	20.04	1.108	3.74

Events for Pond 1B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	14.43	0.94	0.06	0.89	0.476	934.49	0.479
2 yr	18.14	1.24	0.07	1.17	0.648	934.79	0.591
10 yr	32.93	1.94	0.10	1.84	1.339	935.85	1.127
100 yr	66.94	5.60	0.15	5.44	2.557	937.46	2.355

Events for Pond 2B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	3.38	1.21	0.01	1.20	0.594	931.59	0.058
2 yr	4.06	1.66	0.02	1.64	0.798	931.71	0.072
10 yr	7.47	4.71	0.02	4.70	1.604	932.06	0.112
100 yr	14.39	14.04	0.02	14.02	3.076	932.19	0.129

Events for Pond 3P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	18.90	0.90	0.573	925.29	0.847
2 yr	23.09	1.92	0.886	925.64	0.964
10 yr	39.63	6.80	2.186	926.96	1.453
100 yr	76.27	50.55	5.209	927.99	1.891

Events for Pond 4B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	4.65	0.14	0.03	0.11	0.066	936.95	0.188
2 yr	6.01	0.29	0.03	0.26	0.134	937.07	0.216
10 yr	11.57	0.85	0.04	0.82	0.417	937.75	0.375
100 yr	24.71	3.56	0.07	3.49	1.089	938.97	0.780

Events for Pond 5B: Rain Garden

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	2.54	0.54	0.01	0.54	0.108	923.32	0.059
2 yr	3.32	0.73	0.01	0.72	0.148	923.58	0.075
10 yr	6.54	1.49	0.02	1.47	0.317	924.55	0.156
100 yr	14.21	12.12	0.02	12.10	0.739	925.00	0.209

Events for Pond 6P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	12.25	0.38	0.357	912.65	0.537
2 yr	15.44	0.42	0.400	913.23	0.699
10 yr	28.08	4.95	1.063	913.88	0.902
100 yr	64.42	39.76	2.987	914.93	1.286

Events for Pond 7P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	11.92	1.29	0.691	920.22	0.413
2 yr	15.16	1.80	0.882	920.42	0.520
10 yr	28.22	4.37	1.672	921.11	0.937
100 yr	58.56	13.91	3.587	922.30	1.845

Events for Pond 8B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	4.88	0.21	0.03	0.19	0.099	917.52	0.182
2 yr	6.31	0.42	0.03	0.39	0.171	917.67	0.213
10 yr	12.15	0.97	0.03	0.93	0.472	918.48	0.384
100 yr	25.95	11.03	0.05	10.98	1.213	919.47	0.640

Events for Pond 9P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	19.06	0.29	0.278	899.64	0.740
2 yr	23.51	0.33	0.319	900.12	0.978
10 yr	40.89	0.46	0.440	901.88	1.976
100 yr	80.59	12.64	2.717	902.94	2.702

Events for Pond 10B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	2.16	0.02	0.02	0.00	0.000	912.72	0.103
2 yr	2.79	0.05	0.02	0.02	0.014	912.86	0.125
10 yr	5.38	0.18	0.03	0.16	0.124	913.31	0.202
100 yr	11.48	0.40	0.04	0.36	0.281	914.52	0.450

Events for Pond 11P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	14.06	0.32	0.300	914.10	0.456
2 yr	17.34	0.35	0.336	914.50	0.577
10 yr	30.16	1.19	0.541	915.68	0.999
100 yr	58.76	24.48	1.903	916.45	1.316

Events for Pond 12P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	8.59	0.31	0.289	923.89	0.309
2 yr	10.89	0.35	0.328	924.32	0.403
10 yr	20.14	2.62	0.629	925.17	0.627
100 yr	41.52	26.85	1.772	925.90	0.857

Events for Pond 13P: Pond

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)	Elevation (feet)	Storage (acre-feet)
1 yr	6.41	0.40	0.303	896.37	0.206
2 yr	8.13	0.46	0.367	896.65	0.268
10 yr	15.04	0.63	0.564	897.72	0.535
100 yr	31.01	10.27	1.254	898.76	0.847

Events for Link 1L: West Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	5.01	5.01	1.381
2 yr	6.49	6.49	1.957
10 yr	13.34	13.34	4.305
100 yr	67.98	67.98	9.394

Events for Link 2L: Northwest Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	0.58	0.58	0.323
2 yr	0.75	0.75	0.393
10 yr	1.38	1.38	0.616
100 yr	10.99	10.99	1.371

Events for Link 3L: North Subwatershed (drainage swale)

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	5.14	5.14	1.124
2 yr	6.56	6.56	1.324
10 yr	12.25	12.25	2.353
100 yr	69.60	69.60	8.006

Events for Link 4L: Southeast Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	10.38	10.38	1.624
2 yr	13.79	13.79	2.025
10 yr	27.79	27.79	4.181
100 yr	94.03	94.03	9.781

Events for Link 99L: Post-Development Conditions

Event	Inflow (cfs)	Primary (cfs)	Volume (acre-feet)
1 yr	21.10	21.10	4.453
2 yr	27.57	27.57	5.699
10 yr	54.42	54.42	11.454
100 yr	229.59	229.59	28.552

APPENDIX C

Treatment Analysis / WinSLAMM

Treatment Analysis Results

FOR: Welshire Farm

LOCATION: Town of Delafield, Wisconsin

Land Use	Total Loading (lbs)	BMP Type	BMP		Total Solids Yield (lbs)	% TSS Removed
			lbs IN	lbs OUT		
Subarea 1	2243	Bioretention Basin 1B and Disconnected roof/patios	2243	238	drains to 2B	89.4%
Subarea 2	506	Infiltration Basin 2B Disconnected roof/patios	744	685	685	8.0%
Subarea 3	4323	Pond 3P	4323	753	753	82.6%
Subarea 4	528	Infiltration Basin 4B and Disconnected roof/patios	528	0	0	100.0%
Subarea 5	312	Rain Garden 5B and Disconnected roof/patios	312	88	drains to 6P	71.7%
Subarea 6	2658	Pond 6P and Disconnected roof/patios	2747	499	499	81.8%
Subarea 7	2043	Pond 7P and Disconnected roof/patios	2043	327	327	84.0%
Subarea 8	515	Infiltration Basin 8B and Disconnected roof/patios	515	31	drains to 9P	94.0%
Subarea 9	3094	Pond 9P and Disconnected roof/patios	3125	241	241	92.3%
Subarea 10	225	Infiltration Basin 10B and Disconnected roof/patios	225	0	0	100.0%
Subarea 11	2530	Pond 11P	2530	409	409	83.8%
Subarea 12	1393	Infiltration Basin 12B and Disconnected roof/patios	1393	220	220	84.2%
Subarea 13	1084	Infiltration Basin 13B and Disconnected roof/patios	1084	164	164	84.9%
Subarea 14	51	-	51	51	51	0.0%
Subarea 15	341	Disconnection of roof/patios	341	165	165	51.5%
Subarea 16	827	Disconnection of roof/patios	827	688	688	16.8%
Subarea 17	288	Disconnection of roof/patios	288	164	164	43.0%
Total	22962	--	--	--	4366	81.0%

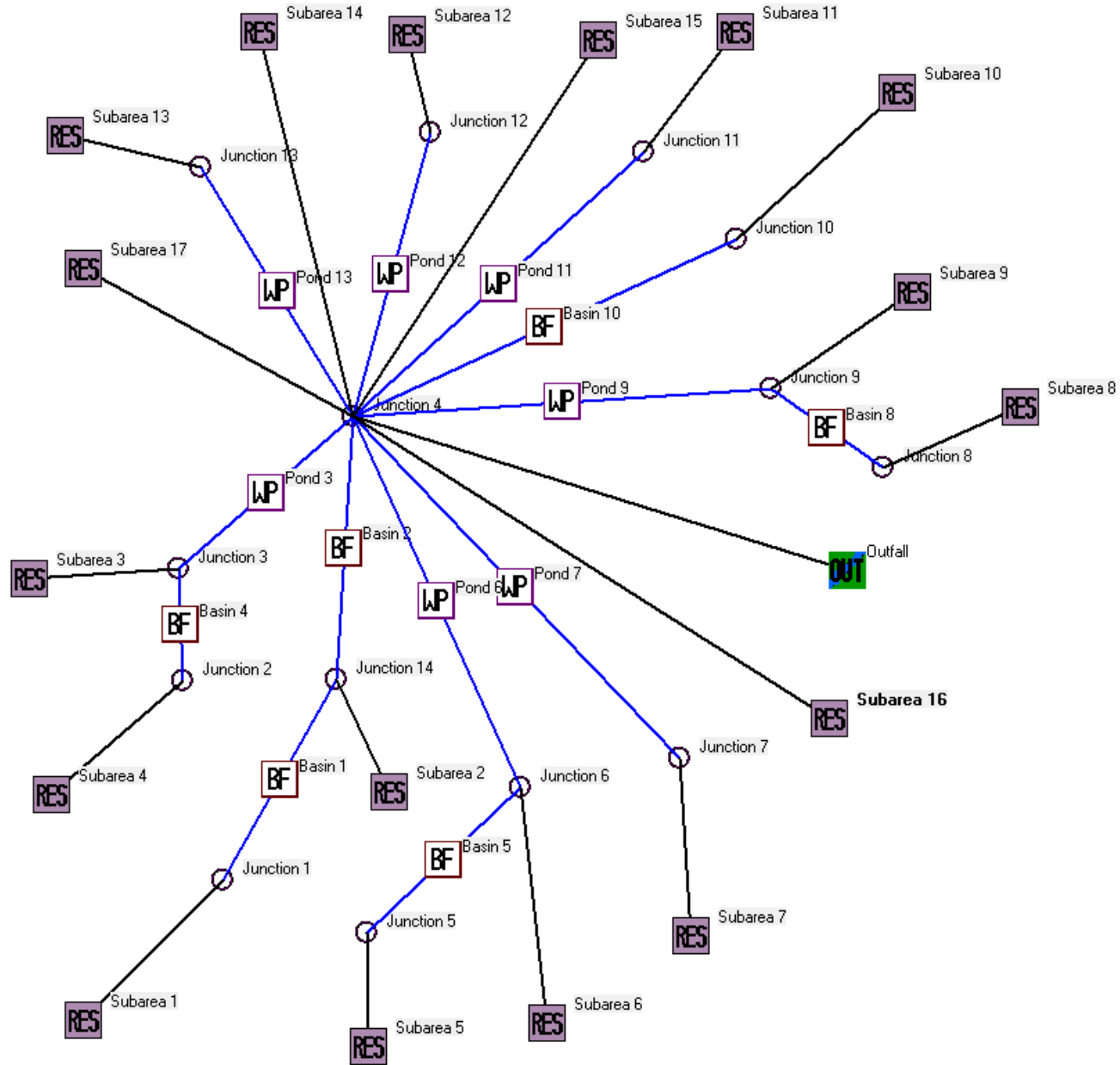
Connected Model Total lbs without Controls = 22962 lbs (from WinSLAMM output)

Disconnected Model Total lbs with Controls = 4366 lbs (from WinSLAMM output)

Total lbs Removed = 22962 - 4366 = 18595 lbs

% TSS Removed = 100 x (18595 / 22962) = 81.0 %

Treatment Analysis - Connected Model



SLAMM for Windows Version 10.4.1

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Data file name: D:\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm -
TRIO\Project_Information\Calcs\SLAMM\Proposed_Connected.mdb

Data file description:

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx

Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Cost Data file name:

If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load
% Reduction calculations

Seed for random number generator: -42

Start of Winter Season: 12/06 End of Winter Season: 03/28

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

Date of run: 03-20-2023 Time of run: 13:51:55

Total Area Modeled (acres): 107.280

Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	3.403E+06	-	108.1	22962	-
Outfall Total with Controls:	2.948E+06	13.37%	29.21	5376	76.59%
Annualized Total After Outfall Controls:	2.989E+06			5451	

Data file name: D:\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Proposed_Connected.mdb
 WinSLAMM Version 10.4.1
 Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
 Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
 Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
 Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
 Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
 Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
 Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
 Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
 Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
 Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
 Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
 Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
 Cost Data file name:
 If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
 Seed for random number generator: -42
 Study period starting date: 01/05/69 Study period ending date: 12/31/69
 Start of Winter Season: 12/06 End of Winter Season: 03/28
 Date: 03-20-2023 Time: 13:52:02
 Site information:

LU# 1 - Residential: Subarea 1 Total area (ac): 11.050
 1 - Roofs 1: 0.820 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.810 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.010 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.080 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 26 - Driveways 2: 0.350 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.130 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.120 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.230 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.620 ac. Smooth Street Length = 0.353 curb-mi Street Width (assuming two curb-mi per street mile) = 28.98017 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 6.510 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.130 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.240 ac. Source Area PSD File:
 LU# 2 - Residential: Subarea 2 Total area (ac): 1.620
 1 - Roofs 1: 0.150 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.140 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.160 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.020 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.020 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.200 ac. Smooth Street Length = 0.114 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.94737 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 0.840 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.090 ac. Source Area PSD File:
 LU# 3 - Residential: Subarea 3 Total area (ac): 13.360
 1 - Roofs 1: 1.120 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 1.120 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.680 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 26 - Driveways 2: 0.610 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.190 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.190 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.050 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.760 ac. Smooth Street Length = 1.001 curb-mi Street Width (assuming two curb-
 mi per street mile) = 29.01099 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 7.390 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.050 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.200 ac. Source Area PSD File:
 LU# 4 - Residential: Subarea 4 Total area (ac): 4.390
 1 - Roofs 1: 0.500 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.080 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.630 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz

70 - Water Body Areas: 0.180 ac. Source Area PSD File:
 LU# 5 - Residential: Subarea 5 Total area (ac): 2.590
 1 - Roofs 1: 0.250 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.040 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 2.270 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.030 ac. Source Area PSD File:
 LU# 6 - Residential: Subarea 6 Total area (ac): 8.800
 1 - Roofs 1: 0.360 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.350 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.260 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.310 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.050 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.200 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.400 ac. Smooth Street Length = 0.797 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.98369 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 4.250 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.410 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.150 ac. Source Area PSD File:
 LU# 7 - Residential: Subarea 7 Total area (ac): 11.600
 1 - Roofs 1: 0.730 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.730 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.330 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.120 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.120 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.210 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.430 ac. Smooth Street Length = 0.245 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.95918 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 7.820 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.720 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.390 ac. Source Area PSD File:

LU# 8 - Residential: Subarea 8 Total area (ac): 4.610
 1 - Roofs 1: 0.470 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.080 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.170 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 2.940 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.790 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.160 ac. Source Area PSD File:
 LU# 9 - Residential: Subarea 9 Total area (ac): 10.820
 1 - Roofs 1: 0.620 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.620 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.640 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.110 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.100 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.030 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.390 ac. Smooth Street Length = 0.791 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.99494 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 6.900 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.410 ac. Source Area PSD File:
 LU# 10 - Residential: Subarea 10 Total area (ac): 2.040
 1 - Roofs 1: 0.190 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.030 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.030 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 1.500 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.160 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.130 ac. Source Area PSD File:
 LU# 11 - Residential: Subarea 11 Total area (ac): 7.980
 1 - Roofs 1: 0.960 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.640 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.170 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.050 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.140 ac. Smooth Street Length = 0.649 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.98305 ft

Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 4.830 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.190 ac. Source Area PSD File:
 LU# 12 - Residential: Subarea 12 Total area (ac): 7.030
 1 - Roofs 1: 0.440 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.430 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.290 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.070 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.190 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.400 ac. Smooth Street Length = 0.228 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.94737 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.960 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.060 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.130 ac. Source Area PSD File:
 LU# 13 - Residential: Subarea 13 Total area (ac): 5.250
 1 - Roofs 1: 0.250 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.250 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.170 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.040 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.040 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.360 ac. Smooth Street Length = 0.205 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.97561 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.970 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.170 ac. Source Area PSD File:
 LU# 14 - Residential: Subarea 14 Total area (ac): 0.410
 37 - Streets 1: 0.030 ac. Smooth Street Length = 0.017 curb-mi Street Width (assuming two curb-
 mi per street mile) = 29.11765 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz

51 - Small Landscaped Areas 1: 0.160 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.220 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 LU# 15 - Residential: Subarea 15 Total area (ac): 4.280
 1 - Roofs 1: 0.340 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.180 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.130 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.020 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 1.230 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 2.320 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 LU# 16 - Residential: Subarea 16 Total area (ac): 7.890
 1 - Roofs 1: 0.500 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.080 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.030 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.330 ac. Smooth Street Length = 0.188 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.96277 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 2.200 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 4.690 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 LU# 17 - Residential: Subarea 17 Total area (ac): 3.560
 1 - Roofs 1: 0.490 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.010 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.100 ac. Smooth Street Length = 5.689655E-02 curb-mi Street Width (assuming
 two curb-mi per street mile) = 29 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 0.220 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 2.680 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

 Control Practice 1: Wet Detention Pond CP# 1 (DS) - Pond 3
 Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered
 Outlet Characteristics:

- Outlet type: Sharp Crested Weir
 - 1. Sharp crested weir length (ft): 1
 - 2. Sharp crested weir height from invert: 4
 - 3. Sharp crested weir invert elevation above datum (ft): 8
- Outlet type: Orifice 1
 - 1. Orifice diameter (ft): 0.25
 - 2. Number of orifices: 1
 - 3. Invert elevation above datum (ft): 5
- Outlet type: Broad Crested Weir
 - 1. Weir crest length (ft): 10
 - 2. Weir crest width (ft): 10
 - 3. Height from datum to bottom of weir opening: 11
- Outlet type: Vertical Stand Pipe
 - 1. Stand pipe diameter (ft): 5
 - 2. Stand pipe height above datum (ft): 9.9

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1500	0.00	0.00
3	5.00	0.2000	0.00	0.00
4	6.00	0.2300	0.00	0.00
5	7.00	0.2700	0.00	0.00
6	8.00	0.3100	0.00	0.00
7	9.00	0.3600	0.00	0.00
8	10.00	0.4000	0.00	0.00
9	11.00	0.4500	0.00	0.00
10	12.00	0.5300	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - Basin 4

- 1. Top area (square feet) = 31089
- 2. Bottom aea (square feet) = 7746
- 3. Depth (ft): 5

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8.6

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0100	0.00	0.00
2	4.00	0.1000	0.00	0.00
3	5.00	0.1500	0.00	0.00
4	7.00	0.2300	0.00	0.00
5	9.00	0.3400	0.00	0.00
6	11.00	0.4700	0.00	0.00

Control Practice 5: Wet Detention Pond CP# 3 (DS) - Pond 7

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir

1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 3.1
3. Sharp crested weir invert elevation above datum (ft): 5.9

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.67
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Saturation water content percent (Porosity) = 0
 Field capacity (%) = 0
 Permanent Wilting Point (%) = 0
 Infiltration rate (in/hr) = 0.13
 Biofilter Outlet/Discharge Characteristics:
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 10
 2. Weir crest width (ft): 10
 3. Height of datum to bottom of weir opening: 4
 Outlet type: Vertical Stand Pipe
 1. Stand pipe diameter (ft): 3
 2. Stand pipe height above datum (ft): 3.5
 Outlet type: Surface Discharge Pipe
 1. Surface discharge pipe outlet diameter (ft): 0.5
 2. Pipe invert elevation above datum (ft): 1.75
 3. Number of surface pipe outlets: 1

Control Practice 7: Wet Detention Pond CP# 4 (DS) - Pond 9

Particle Size Distribution file name: Not needed - calculated by program
 Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered
 Outlet Characteristics:

Outlet type: Orifice 1
 1. Orifice diameter (ft): 0.25
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 5
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 10
 2. Weir crest width (ft): 10
 3. Height from datum to bottom of weir opening: 10
 Outlet type: Vertical Stand Pipe
 1. Stand pipe diameter (ft): 3
 2. Stand pipe height above datum (ft): 9.4

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00

Outlet type: Vertical Stand Pipe
 1. Stand pipe diameter (ft): 3
 2. Stand pipe height above datum (ft): 3.5
 Outlet type: Surface Discharge Pipe
 1. Surface discharge pipe outlet diameter (ft): 0.25
 2. Pipe invert elevation above datum (ft): 1.75
 3. Number of surface pipe outlets: 1

Control Practice 9: Wet Detention Pond CP# 5 (DS) - Pond 11
 Particle Size Distribution file name: Not needed - calculated by program
 Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1
 1. Orifice diameter (ft): 0.25
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 5
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 10
 2. Weir crest width (ft): 10
 3. Height from datum to bottom of weir opening: 9.3

Outlet type: Vertical Stand Pipe
 1. Stand pipe diameter (ft): 3
 2. Stand pipe height above datum (ft): 8.4

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1200	0.00	0.00
3	5.00	0.1900	0.00	0.00
4	7.80	0.3500	0.00	0.00
5	9.80	0.4800	0.00	0.00
6	10.30	0.5200	0.00	0.00

Control Practice 10: Wet Detention Pond CP# 6 (DS) - Pond 12
 Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered
 Outlet Characteristics:

- Outlet type: Orifice 1
 - 1. Orifice diameter (ft): 0.25
 - 2. Number of orifices: 1
 - 3. Invert elevation above datum (ft): 5
- Outlet type: Broad Crested Weir
 - 1. Weir crest length (ft): 10
 - 2. Weir crest width (ft): 10
 - 3. Height from datum to bottom of weir opening: 9
- Outlet type: Vertical Stand Pipe
 - 1. Stand pipe diameter (ft): 3
 - 2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0100	0.00	0.00
2	4.00	0.1000	0.00	0.00
3	5.00	0.1300	0.00	0.00
4	6.00	0.1600	0.00	0.00
5	9.00	0.3500	0.00	0.00
6	10.00	0.4200	0.00	0.00

Control Practice 11: Wet Detention Pond CP# 7 (DS) - Pond 13
 Particle Size Distribution file name: Not needed - calculated by program
 Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered
 Outlet Characteristics:

- Outlet type: Orifice 1
 - 1. Orifice diameter (ft): 0.33
 - 2. Number of orifices: 1
 - 3. Invert elevation above datum (ft): 5
- Outlet type: Broad Crested Weir
 - 1. Weir crest length (ft): 10

User-Defined Soil Type 1.000
 Saturation water content percent (Porosity) = 0
 Field capacity (%) = 0
 Permanent Wilting Point (%) = 0
 Infiltration rate (in/hr) = 3.6
 Biofilter Outlet/Discharge Characteristics:
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 10
 2. Weir crest width (ft): 10
 3. Height of datum to bottom of weir opening: 7
 Outlet type: Vertical Stand Pipe
 1. Stand pipe diameter (ft): 3
 2. Stand pipe height above datum (ft): 6.75
 Outlet type: Surface Discharge Pipe
 1. Surface discharge pipe outlet diameter (ft): 0.5
 2. Pipe invert elevation above datum (ft): 3.5
 3. Number of surface pipe outlets: 1
 Outlet type: Drain Tile/Underdrain
 1. Underdrain outlet diameter (ft): 0.33
 2. Invert elevation above datum (ft): 0.75
 3. Number of underdrain outlets: 1

Control Practice 13: Biofilter CP# 6 (DS) - Basin 2

1. Top area (square feet) = 7377
2. Bottom area (square feet) = 4102
3. Depth (ft): 3
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.13
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8

- 16. Number of biofiltration control devices = 1
- 17. Particle size distribution file: Not needed - calculated by program
- 18. Initial water surface elevation (ft): 0

Soil Data	Soil Type Fraction in Eng. Soil
Sands	0.750
Compost as Amendment	0.250

Biofilter Outlet/Discharge Characteristics:

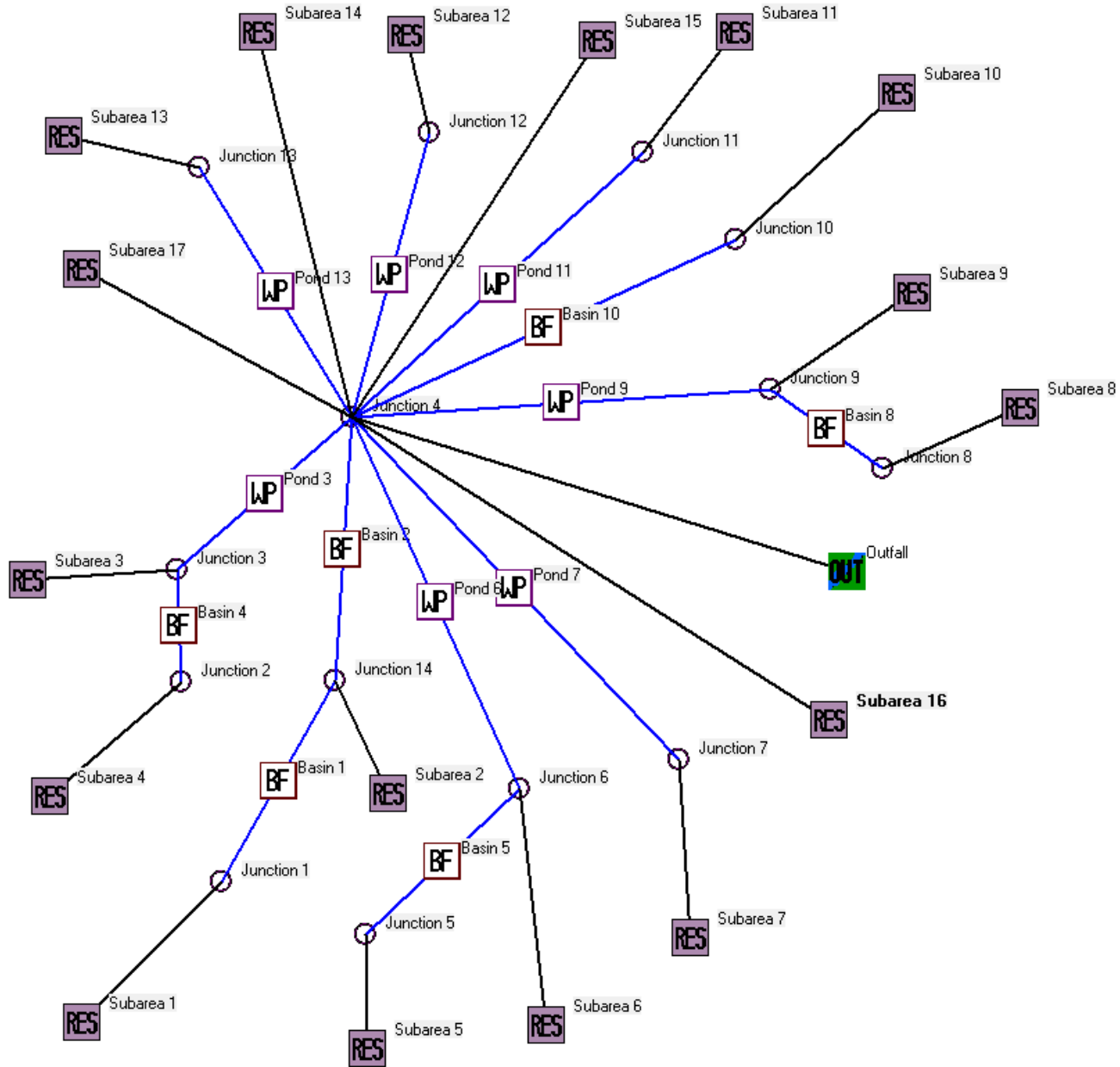
Outlet type: Broad Crested Weir

- 1. Weir crest length (ft): 50
- 2. Weir crest width (ft): 10
- 3. Height of datum to bottom of weir opening: 2

Outlet type: Surface Discharge Pipe

- 1. Surface discharge pipe outlet diameter (ft): 1
- 2. Pipe invert elevation above datum (ft): 1
- 3. Number of surface pipe outlets: 1

Treatment Analysis - Disconnected Model



SLAMM for Windows Version 10.4.1

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Data file name: D:\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm -
TRIO\Project_Information\Calcs\SLAMM\Proposed_Disconnected.mdb

Data file description:

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx

Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Cost Data file name:

If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load
% Reduction calculations

Seed for random number generator: -42

Start of Winter Season: 12/06 End of Winter Season: 03/28

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

Date of run: 03-20-2023 Time of run: 15:00:58

Total Area Modeled (acres): 107.280

Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	2.590E+06	-	128.1	20718	-
Outfall Total with Controls:	2.309E+06	10.85%	30.30	4366	78.93%
Annualized Total After Outfall Controls:	2.341E+06			4427	

Data file name: D:\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Proposed_Disconnected.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 03-20-2023 Time: 15:01:05
Site information:

LU# 1 - Residential: Subarea 1 Total area (ac): 11.050
1 - Roofs 1: 0.820 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - Roofs 2: 0.810 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.010 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.080 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
26 - Driveways 2: 0.350 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.130 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
32 - Sidewalks 2: 0.120 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
33 - Sidewalks 3: 0.230 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz
37 - Streets 1: 0.620 ac. Smooth Street Length = 0.353 curb-mi Street Width (assuming two curb-
mi per street mile) = 28.98017 ft

Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 6.510 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.130 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.240 ac. Source Area PSD File:
 LU# 2 - Residential: Subarea 2 Total area (ac): 1.620
 1 - Roofs 1: 0.150 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.140 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.160 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.020 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.020 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.200 ac. Smooth Street Length = 0.114 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.94737 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 0.840 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.090 ac. Source Area PSD File:
 LU# 3 - Residential: Subarea 3 Total area (ac): 13.360
 1 - Roofs 1: 1.120 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 1.120 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.680 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 26 - Driveways 2: 0.610 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.190 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.190 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.050 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.760 ac. Smooth Street Length = 1.001 curb-mi Street Width (assuming two curb-
 mi per street mile) = 29.01099 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 7.390 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz

57 - Undeveloped Areas 1: 0.050 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.200 ac. Source Area PSD File:
 LU# 4 - Residential: Subarea 4 Total area (ac): 4.390
 1 - Roofs 1: 0.500 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.080 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.630 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.180 ac. Source Area PSD File:
 LU# 5 - Residential: Subarea 5 Total area (ac): 2.590
 1 - Roofs 1: 0.250 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.040 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 2.270 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.030 ac. Source Area PSD File:
 LU# 6 - Residential: Subarea 6 Total area (ac): 8.800
 1 - Roofs 1: 0.360 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.350 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.260 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.310 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.050 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.200 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.400 ac. Smooth Street Length = 0.797 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.98369 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 4.250 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.410 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.150 ac. Source Area PSD File:
 LU# 7 - Residential: Subarea 7 Total area (ac): 11.600
 1 - Roofs 1: 0.730 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

2 - Roofs 2: 0.730 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.330 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.120 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.120 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.210 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.430 ac. Smooth Street Length = 0.245 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.95918 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 7.820 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.720 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.390 ac. Source Area PSD File:
 LU# 8 - Residential: Subarea 8 Total area (ac): 4.610
 1 - Roofs 1: 0.470 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.080 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.170 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 2.940 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.790 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.160 ac. Source Area PSD File:
 LU# 9 - Residential: Subarea 9 Total area (ac): 10.820
 1 - Roofs 1: 0.620 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.620 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.640 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.110 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.100 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.030 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz

37 - Streets 1: 1.390 ac. Smooth Street Length = 0.791 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.99494 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 6.900 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.410 ac. Source Area PSD File:
 LU# 10 - Residential: Subarea 10 Total area (ac): 2.040
 1 - Roofs 1: 0.190 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.030 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.030 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 1.500 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.160 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.130 ac. Source Area PSD File:
 LU# 11 - Residential: Subarea 11 Total area (ac): 7.980
 1 - Roofs 1: 0.960 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.640 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.170 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.050 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.140 ac. Smooth Street Length = 0.649 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.98305 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 4.830 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.190 ac. Source Area PSD File:
 LU# 12 - Residential: Subarea 12 Total area (ac): 7.030
 1 - Roofs 1: 0.440 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.430 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.290 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.070 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.060 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz

33 - Sidewalks 3: 0.190 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.400 ac. Smooth Street Length = 0.228 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.94737 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.960 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.060 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.130 ac. Source Area PSD File:
 LU# 13 - Residential: Subarea 13 Total area (ac): 5.250
 1 - Roofs 1: 0.250 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.250 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.170 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.040 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.040 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.360 ac. Smooth Street Length = 0.205 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.97561 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.970 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 70 - Water Body Areas: 0.170 ac. Source Area PSD File:
 LU# 14 - Residential: Subarea 14 Total area (ac): 0.410
 37 - Streets 1: 0.030 ac. Smooth Street Length = 0.017 curb-mi Street Width (assuming two curb-
 mi per street mile) = 29.11765 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 0.160 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 0.220 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 LU# 15 - Residential: Subarea 15 Total area (ac): 4.280
 1 - Roofs 1: 0.340 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 2 - Roofs 2: 0.180 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz

31 - Sidewalks 1: 0.060 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.130 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 33 - Sidewalks 3: 0.020 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 1.230 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 2.320 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 LU# 16 - Residential: Subarea 16 Total area (ac): 7.890
 1 - Roofs 1: 0.500 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 25 - Driveways 1: 0.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.080 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.030 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.330 ac. Smooth Street Length = 0.188 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.96277 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 2.200 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 4.690 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 LU# 17 - Residential: Subarea 17 Total area (ac): 3.560
 1 - Roofs 1: 0.490 ac. Pitched Disconnected Normal Clayey Low Density Source Area PSD
 File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.010 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 32 - Sidewalks 2: 0.060 ac. Disconnected Normal Clayey Low Density Source Area PSD File:
 C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.100 ac. Smooth Street Length = 5.689655E-02 curb-mi Street Width (assuming
 two curb-mi per street mile) = 29 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 0.220 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 2.680 ac. Normal Clayey Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - Pond 3

Particle Size Distribution file name: Not needed - calculated by program
 Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir

1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 4
3. Sharp crested weir invert elevation above datum (ft): 8

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 11

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 5
2. Stand pipe height above datum (ft): 9.9

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1500	0.00	0.00
3	5.00	0.2000	0.00	0.00
4	6.00	0.2300	0.00	0.00
5	7.00	0.2700	0.00	0.00
6	8.00	0.3100	0.00	0.00
7	9.00	0.3600	0.00	0.00
8	10.00	0.4000	0.00	0.00
9	11.00	0.4500	0.00	0.00
10	12.00	0.5300	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - Basin 4

Particle Size Distribution file name: Not needed - calculated by program
 Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered
 Outlet Characteristics:

- Outlet type: Orifice 1
 - 1. Orifice diameter (ft): 0.25
 - 2. Number of orifices: 1
 - 3. Invert elevation above datum (ft): 5
- Outlet type: Broad Crested Weir
 - 1. Weir crest length (ft): 10
 - 2. Weir crest width (ft): 10
 - 3. Height from datum to bottom of weir opening: 10
- Outlet type: Vertical Stand Pipe
 - 1. Stand pipe diameter (ft): 3
 - 2. Stand pipe height above datum (ft): 8.6

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0100	0.00	0.00
2	4.00	0.1000	0.00	0.00
3	5.00	0.1500	0.00	0.00
4	7.00	0.2300	0.00	0.00
5	9.00	0.3400	0.00	0.00
6	11.00	0.4700	0.00	0.00

Control Practice 5: Wet Detention Pond CP# 3 (DS) - Pond 7

Particle Size Distribution file name: Not needed - calculated by program
 Initial stage elevation (ft): 5
 Peak to Average Flow Ratio: 3.8
 Maximum flow allowed into pond (cfs): No maximum value entered
 Outlet Characteristics:

- Outlet type: Sharp Crested Weir
 - 1. Sharp crested weir length (ft): 1
 - 2. Sharp crested weir height from invert: 3.1
 - 3. Sharp crested weir invert elevation above datum (ft): 5.9
- Outlet type: Orifice 1

1. Orifice diameter (ft): 0.67
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 5
- Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
 2. Weir crest width (ft): 10
 3. Height from datum to bottom of weir opening: 8
- Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
 2. Stand pipe height above datum (ft): 7.2

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.1500	0.00	0.00
2	4.00	0.3000	0.00	0.00
3	5.00	0.3900	0.00	0.00
4	8.00	0.8700	0.00	0.00
5	9.00	1.1700	0.00	0.00

Control Practice 6: Biofilter CP# 3 (DS) - Basin 8

1. Top area (square feet) = 20057
2. Bottom area (square feet) = 7055
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.13
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.13
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program

1. Weir crest length (ft): 10
 2. Weir crest width (ft): 10
 3. Height of datum to bottom of weir opening: 4
- Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
 2. Stand pipe height above datum (ft): 3.5
- Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.25
 2. Pipe invert elevation above datum (ft): 1.75
 3. Number of surface pipe outlets: 1

Control Practice 9: Wet Detention Pond CP# 5 (DS) - Pond 11

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 9.3

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8.4

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1200	0.00	0.00
3	5.00	0.1900	0.00	0.00
4	7.80	0.3500	0.00	0.00
5	9.80	0.4800	0.00	0.00
6	10.30	0.5200	0.00	0.00

Control Practice 10: Wet Detention Pond CP# 6 (DS) - Pond 12

Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 9

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0100	0.00	0.00
2	4.00	0.1000	0.00	0.00
3	5.00	0.1300	0.00	0.00
4	6.00	0.1600	0.00	0.00
5	9.00	0.3500	0.00	0.00
6	10.00	0.4200	0.00	0.00

Control Practice 11: Wet Detention Pond CP# 7 (DS) - Pond 13

Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.33
2. Number of orifices: 1

- 3. Invert elevation above datum (ft): 5
- Outlet type: Broad Crested Weir
 - 1. Weir crest length (ft): 10
 - 2. Weir crest width (ft): 10
 - 3. Height from datum to bottom of weir opening: 8.5
- Outlet type: Vertical Stand Pipe
 - 1. Stand pipe diameter (ft): 3
 - 2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.1000	0.00	0.00
3	5.00	0.1700	0.00	0.00
4	5.70	0.2000	0.00	0.00
5	6.70	0.2400	0.00	0.00
6	7.70	0.2900	0.00	0.00
7	8.50	0.3300	0.00	0.00
8	9.50	0.3800	0.00	0.00

Control Practice 12: Biofilter CP# 5 (DS) - Basin 1

- 1. Top area (square feet) = 58153
- 2. Bottom area (square feet) = 9693
- 3. Depth (ft): 8
- 4. Biofilter width (ft) - for Cost Purposes Only: 10
- 5. Infiltration rate (in/hr) = 0.13
- 6. Random infiltration rate generation? No
- 7. Infiltration rate fraction (side): 0.001
- 8. Infiltration rate fraction (bottom): 1
- 9. Depth of biofilter that is rock filled (ft) 1
- 10. Porosity of rock filled volume = 0.33
- 11. Engineered soil infiltration rate: 3.6
- 12. Engineered soil depth (ft) = 2
- 13. Engineered soil porosity = 0.27
- 14. Percent solids reduction due to flow through engineered soil = 80
- 15. Biofilter peak to average flow ratio = 3.8
- 16. Number of biofiltration control devices = 1

- 13. Engineered soil porosity = 0.27
- 14. Percent solids reduction due to flow through engineered soil = 0
- 15. Biofilter peak to average flow ratio = 3.8
- 16. Number of biofiltration control devices = 1
- 17. Particle size distribution file: Not needed - calculated by program
- 18. Initial water surface elevation (ft): 0

Soil Data	Soil Type Fraction in Eng. Soil
Sands	0.750
Compost as Amendment	0.250

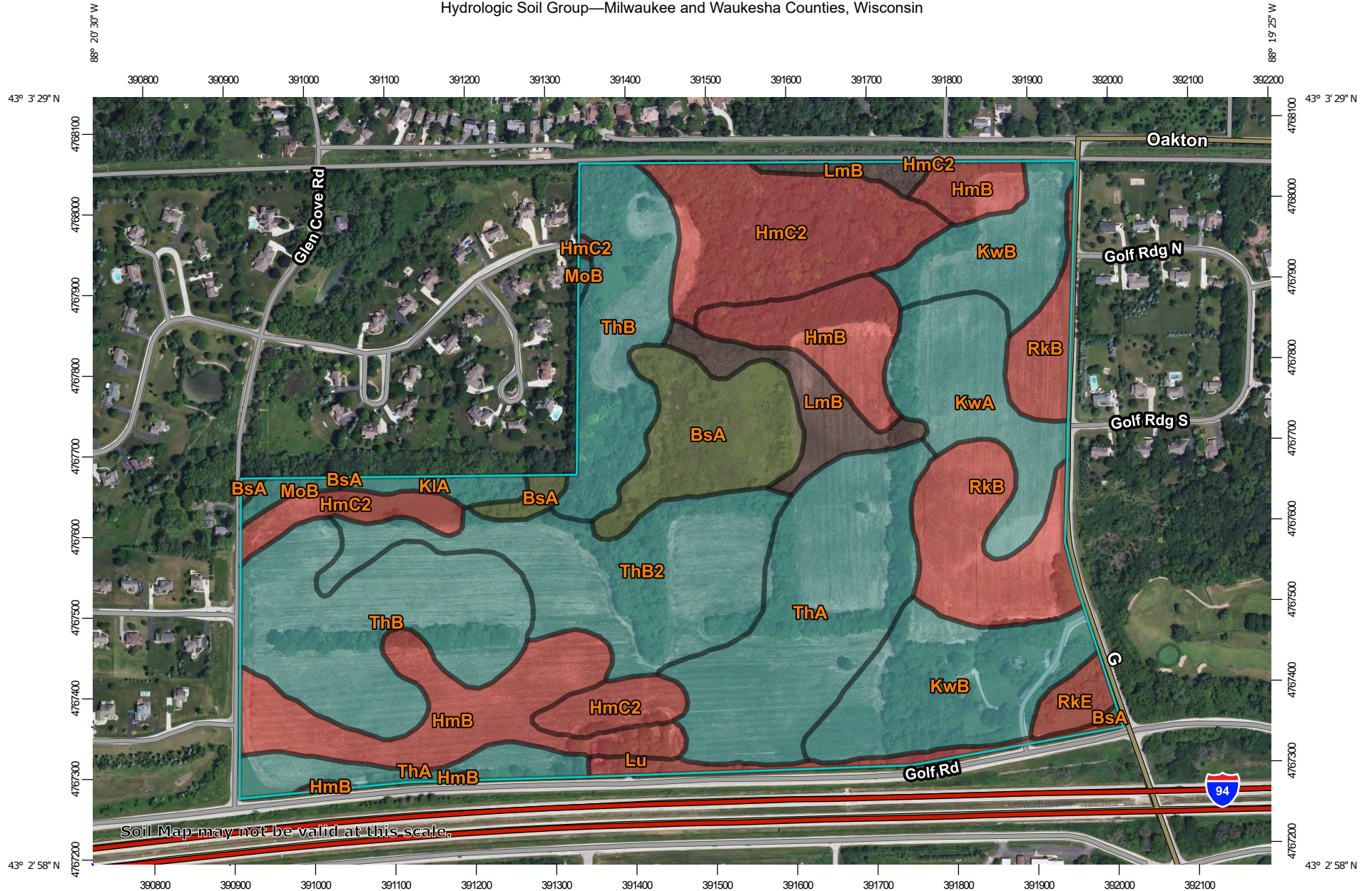
Biofilter Outlet/Discharge Characteristics:

- Outlet type: Broad Crested Weir
 - 1. Weir crest length (ft): 50
 - 2. Weir crest width (ft): 10
 - 3. Height of datum to bottom of weir opening: 2
- Outlet type: Surface Discharge Pipe
 - 1. Surface discharge pipe outlet diameter (ft): 1
 - 2. Pipe invert elevation above datum (ft): 1
 - 3. Number of surface pipe outlets: 1

APPENDIX D

Soil Survey and Soil Boring Logs

Hydrologic Soil Group—Milwaukee and Waukesha Counties, Wisconsin



Map Scale: 1:6,700 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/1/2023
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
 Survey Area Data: Version 18, Sep 7, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 6, 2020—Jun 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BsA	Brookston silt loam, 0 to 2 percent slopes	C/D	9.4	6.0%
HmB	Hochheim loam, 2 to 6 percent slopes	D	18.7	12.1%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	D	16.9	10.9%
KIA	Kendall silt loam, 1 to 3 percent slopes	C	1.4	0.9%
KwA	Knowles silt loam, 0 to 2 percent slopes	C	8.6	5.6%
KwB	Knowles silt loam, 2 to 6 percent slopes	C	17.0	11.0%
LmB	Lamartine silt loam, 0 to 3 percent slopes	B/D	5.2	3.3%
Lu	Loamy land	D	1.9	1.2%
MoB	Mayville silt loam, 2 to 6 percent slopes	C	0.9	0.6%
RkB	Ritchey silt loam, 1 to 6 percent slopes	D	11.2	7.2%
RkE	Ritchey silt loam, 12 to 30 percent slopes	D	1.5	1.0%
ThA	Theresa silt loam, 0 to 2 percent slopes	C	20.6	13.2%
ThB	Theresa silt loam, 2 to 6 percent slopes	C	26.1	16.8%
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	C	15.7	10.1%
Totals for Area of Interest			155.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

**PRELIMINARY GEOTECHNICAL EXPLORATION
REPORT**



For the:

**DELAFIELD PROPERTY
NORTHWEST CORNER OF
GOLF ROAD AND THOMAS ROAD
DELAFIELD, WISCONSIN**

Prepared for:

**IRGENS DEVELOPMENT PARTNERS, LLC
10201 INNOVATION DRIVE
SUITE 600
MILWAUKEE, WI 53226**

Prepared by:

**PROFESSIONAL SERVICE INDUSTRIES, INC.
W228 N727 WESTMOUND DRIVE
SUITE A
WAUKESHA, WISCONSIN 53186**

**PSI PROJECT NO. 052-75062
NOVEMBER 1, 2007**

November 1, 2007

Mr. Dave Merrick
Vice President
Irgens Development Partner, LLC
10201 Innovation Drive
Suite 600
Milwaukee, WI 53226

Re: Preliminary Geotechnical Exploration
Delafield Property
Northwest Corner of Golf Road and Thomas Road
Delafield, Wisconsin
PSI Report No.: 052-75062

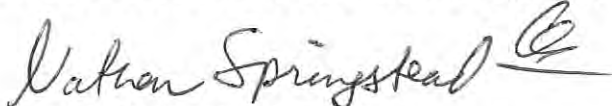
Dear Mr. Merrick:

Professional Service Industries, Inc. is pleased to submit our Preliminary Geotechnical Exploration Report for the referenced project. This report includes the results of field and laboratory testing, and preliminary site development recommendations.

PSI appreciates the opportunity to perform this geotechnical study and look forward to continued participation during the design and construction phases of this project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.



Nathan I. Springstead, E.I.T.
Staff Engineer



Paul J. Koszarek, P.E.
Department Manager
Geotechnical Services

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PROJECT INFORMATION

Project Authorization

Professional Service Industries, Inc. (PSI) has completed a preliminary geotechnical exploration for the proposed Delafield Property at the northwest corner of Golf Road and Thomas Road in Delafield, Wisconsin. PSI's services were conducted in general accordance with PSI Proposal No. PO-052-750103, dated August 9, 2007.

Project Description

PSI understands that Irgens Development Partners, LLC is considering acquiring an approximate 125 acre parcel located at the northwest corner of the intersection of Golf Road and Thomas Road in Delafield, Wisconsin. PSI was provided a copy of a Wetland & Boundary Survey Map dated January 3, 2006 which shows the outline of the site and the designated wetland areas.

Currently the site is vacant with the exception of three homesteads and a few out buildings located along Golf Road and Thomas Road. Reportedly, the majority of the site has been historically utilized for agricultural purposes. As noted above, there are designated wetland areas on the site, mostly confined to the northwest portion of the site.

The project is in the preliminary stages of development and specific building types, sizes and locations have not yet been developed. However, PSI understands that four to five office buildings are proposed to be constructed along southern portion of the site along Golf Road. The north/northeast portion of the site may be developed as a residential subdivision. No development is planned within the wetland areas.

The geotechnical recommendations presented in this report are based on the preliminary project information, and the subsurface conditions described in this report. If any of the noted information is incorrect, please inform PSI in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. PSI will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose and Scope of Services

The purpose of this preliminary geotechnical exploration is to evaluate the general subsurface conditions at the site and evaluate the feasibility for site development and provide preliminary geotechnical recommendations. PSI's scope of services included drilling a total of ten soil test borings, select laboratory testing, and preparation of this geotechnical report.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air on or below, or around this site. Statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes.

As directed by the client, PSI did not provide any service to investigate or detect the presence of moisture, mold or other biological contaminants in or around any structure, or any service that was designed or intended to prevent or lower the risk of the occurrence of the amplification of the same. Client acknowledges that mold is ubiquitous to the environment with mold amplification occurring when building materials are impacted by moisture. Client further acknowledges that site conditions are outside of PSI's control, and that mold amplification will likely occur, or continue to occur, in the presence of moisture. As such, PSI cannot and shall not be held responsible for the occurrence or recurrence of mold amplification.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The project site is located on the northwest corner of Golf Road and Thomas Road in Delafield, Wisconsin. The majority of the site planned to be developed is currently farm fields with the northwest corner of the site consisting of a wooded area. The area between the wooded area and the farm fields are designated as wetlands with a small creek that runs north and drains into Lake Pewaukee. Currently, a couple of farmsteads are located along Golf Road near the southern portion of the site. The site is bounded to the north, east and west by residential subdivisions and to the south by Golf Road and I-94. A WE energies easement separates this northern lot line from Oakton Road. The easement has been converted into a pedestrian trail for recreational use.

The surface of the site has minor rolling hills and gradually slopes downward from the southwest to the northeast. The relief across the site is approximately 50± feet; however, within the farm fields in the southwest portion of the site, the relief is approximately 8± feet.

Subsurface Conditions

The subsurface conditions were explored with ten soil test borings (B-1 to B-10). The borings were planned to be completed to a depth of 20 feet below ground surface; however, due to shallow bedrock on this site, the borings were advanced until practical refusal was observed. Auger refusal was observed between the depths of 3 ½ and 17 feet below ground surface. The borings were located in the field by PSI by using a handheld GPS unit and measuring distances from known site reference points. The borings were advanced utilizing hollow stem auger drilling methods and soil samples were routinely obtained during the drilling process. Drilling and sampling techniques were accomplished generally in accordance with ASTM procedures. Upon completion, the borings were backfilled with bentonite.

Representative soil samples were obtained from the soil borings and were returned to PSI's laboratory where they were visually classified using the Unified Soil Classification System (USCS) as a guideline. Further, PSI conducted limited laboratory testing on select soil samples to aid in identifying and describing the physical characteristics of the soils and to aid in defining the site soil stratigraphy. The results of the field exploration and laboratory tests were used in PSI's engineering analysis and in the formulation of our engineering recommendations.

In general, the subsurface soil profile consisted of 1± to 4± feet of dark brown lean clay or silty clay with organics underlain by clayey sand and sand with gravel to the depth of the borings. The upper clay soils were observed in a moist to very moist condition with moisture contents varying from 12% to 26%, but were more typically in the range of 15% to 25%. Generally soils that have a moisture content exceeding 20% are considered to be very moist. Pocket penetrometer readings of the clay samples varied from 1 ton per square foot (tsf) to 2 ½ tsf indicating stiff to very stiff soil consistencies;

The clayey sand and sand with gravel soils were generally observed below the clay soils and extended to the termination of the borings. The sand soils were observed in a moist condition. The Standard Penetration Test (SPT) performed within the sand soils varied from 9 blows per foot (bpf) to greater than 50 bpf, indicating a loose to very dense relative densities, but more typically values were between 20 bpf and 70 bpf, indicating medium to very dense relative densities.

An exception to the above subsurface profile occurred at boring B-2. This boring was completed within the designated wetland area on the north portion of the site. At this boring, PSI observed 12 inches of black organic clay topsoil over greenish gray organic lean clays to a depth of 4± feet. The greenish gray clays had a moisture content of 47%. Below the thick organic clay deposits were light brown sandy clay with gravel in a very moist condition to a depth of 8± feet. Pocket penetrometer readings within the sandy clay soils varied from ¼ tsf to 1 ½ tsf, indicating soft to stiff soil consistencies. The sandy clay soils were underlain by very dense clayey sand with gravel soils which extended to the depth of the boring.

As stated, practical auger refusal was observed at each boring. Although rock coring was not included in the scope of this investigation, based on the response of the drill rig and field observations, it is likely that the depth of auger refusal represents the surface of the bedrock. The following table summarizes the approximate depth and elevation where auger refusal was observed at each boring location.

Boring Number	Surface Elevation (ft)	Depth of Auger Refusal on Probable Bedrock (ft.)	Elevation of Probable Bedrock (ft.)
B-1	904	8	896
B-2	913	14	899
B-3	920	12	908
B-4	920	4 ½	915
B-5	920	3 ½	916
B-6	932	7	925
B-7	940	12	928
B-8	942	8	934
B-9	947	17	930
B-10	946	17	929

The subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the appendix should be reviewed for specific information at individual boring locations. These

records include soil descriptions, stratifications, penetration resistances, locations of the samples and laboratory test data. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. The borings were widely spaced, and variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual. Water level information obtained during field operations is also shown on these boring logs. The samples which were not altered by laboratory testing will be retained for 60 days from the date of this report and then will be discarded.

Groundwater Information

Groundwater was observed within boring B-2, completed within the wetlands area, at a depth of 4 feet (el. 909 ft). Groundwater was not observed during or at completion of drilling within the remaining borings. According to the wetland and boundary survey completed in January 2006 by Jahnke & Jahnke Associates, Inc. ordinary high water level elevation within the wetlands area is 910± ft. In order to verify the long term water level for this site, longer observation times and or the installation and subsequent monitoring of groundwater monitoring wells would be required. Fluctuations in the groundwater level should be anticipated throughout the year depending on variations in climatological conditions and other factors not apparent at the time the borings were performed. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project. In addition, given the shallow depth to suspected bedrock, zones or areas of seasonal saturation may be encountered as surface waters become perched within the sand soils. PSI recommends that the contractor determine the actual groundwater levels at the site at the time of the construction activities.

EVALUATION AND RECOMMENDATIONS

Geotechnical Discussion

Based upon PSI's interpretation and evaluation of the encountered subsurface conditions and understanding of the project, the site is suitable for the planned construction from a soil mechanics and foundation engineering perspective. However, based upon PSI's interpretation and evaluation of the encountered subsurface conditions and understanding of the planned project, there are two main concerns that may have an impact on the project.

1. Relatively thick organic deposits were observed at boring B-2 which was underlain by saturated and soft non-organic sandy clay soils. PSI recommends that additional soil borings be completed within this area in order to determine the most cost effective method of stabilizing the organic and underlying soft non-organic soils. Based on the limited soil boring information compiled at this time, the moisture content of the underlying clays is considerably above the upper limit conducive to achieving proper compaction. In their present state, these soils will not be suitable for use as engineered fill material. Therefore, overexcavation of

these soils would be required within building and pavement areas. Based upon the moisture conditions of the upper clays at this site, it would be advantageous to perform site preparation and earthwork operations during the warmer summer months. The amount of undercutting or surface stabilization efforts required will be directly related to the moisture conditions at the time of construction.

2. Shallow bedrock was encountered at shallow depth varying from 3 ½ to 17 feet across the site.

Soil Stabilization

The upper soils within the vicinity of the wetlands area will most likely be unstable after stripping the surficial topsoil because of their elevated moisture contents (26%). It is estimated that the upper limit of the range for achieving proper compaction and/or stabilization of these soils will be on the order of 16% to 18%. It is likely that these soils will not be suitable for structural fill within building and pavement areas.

Additionally, if the northwest corner of the project site is planned to be developed with a residential subdivision, PSI recommends additional borings be completed to aid in delineating the areas of unsuitable soils, which would require overexcavation within building and pavement areas.

During site grading, the soils which are silty in texture and high in moisture content will be very susceptible to disturbance in the presence of construction traffic. Therefore, it will be necessary to take precautions to protect the subgrade from pumping and rutting induced by the traffic of construction equipment, including scrapers and other earthmoving equipment.

Shallow Bedrock

In general, the shallower bedrock was observed within the northern and eastern portions of the site at depths ranging from 3 ½ to 12. Due to the relatively shallow depths to bedrock observed, difficult excavation and associated earthwork problems should be expected. Excavation for basements and utilities will likely require blasting. Due to the close proximity of surrounding structures to the project site, PSI recommends that a thorough property assessment of nearby structures be completed prior to blasting. Additionally, vibration and sound monitoring should be completed during blasting operations in order to verify that safe noise and vibration levels are maintained throughout construction.

Preliminary Foundation Recommendations

Based upon the results of the test borings, it is anticipated that after topsoil removal and site preparation, one to two story structures with or without basements could generally be supported upon conventional shallow foundations. Based on the preliminary study, typical shallow spread and strip footings bearing within the non-organic clay soils could be designed for a maximum net allowable soil bearing pressures in the range of 1,500 to 3,000 pounds per square foot (psf). However, if the footings are designed to bear within the medium to very dense clayey sand or sand with gravel soils, much higher bearing

pressures varying from 3,000 psf to 6,000 psf could be used for design. However, higher bearing pressures could be achieved if footings were designed to be placed upon the shallow bedrock. If taller and more heavily loaded structures will be constructed on this site, more rigorous soil improvement (i.e overexcavation of soft clays and replacement with engineered fill) may be required.

In general, once the upper clay subgrade soils are stabilized and placement of new fill has been completed, the prepared subgrades should be suitable for support of slabs on grade and pavements. However, clays containing silt seams and layers are moisture susceptible, meaning that severe decreases in bearing will occur if these soils become wet or saturated. Where these soil types are present at proposed subgrade elevations, the surface may become unstable requiring selective undercutting and/or stabilization. The amount of undercut and/or stabilization required will be directly related to their moisture condition at the time of construction. In addition, given the sensitivity of these soils the action of continual construction traffic will likely cause these soils to become unstable.

When preliminary building and site development plans are more complete, PSI recommends that additional test borings be completed within the proposed construction areas. At that time, specific foundation and site development recommendations can be provided.

Seismic Site Class

The 2003 International Building Code requires a site class for the calculation of earthquake design forces. This class is a function of soils type (ie. depth of soil and strata types). Based on the estimated density of the soils observed within the boring locations, Site Class "C" is recommended. The USGS-NEHRP probabilistic ground motion values near latitude 43.05° N and longitude 88.33° W are as follows:

Period (seconds)	2% Probability of Event in 50-years (% g)	Site Coefficient F_a	Site Coefficient F_v
PGA	5.17	NA	NA
0.2 (S_s)	11.0	1.2	NA
1.0 (S_1)	4.5	NA	1.7

The Site Coefficients, F_a and F_v were interpolated from IBC 2003 Tables 1615.1.2(1) and 1615.1.2(2) as a function of the site classification and the mapped spectral Response acceleration at the short (S_s) and 1 second (S_1) periods.

REPORT LIMITATIONS

PSI's recommendations are based on the subsurface conditions at the test boring locations and the preliminary project details furnished by Irgens Development Partners, LLC. The findings, recommendations, and professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed. This report has been prepared for the exclusive use by Irgens Development Partners, LLC for the preliminary evaluation of the proposed Delafield property site located on the northwest corner of Golf Road and Thomas Road in Delafield, Wisconsin.

APPENDIX

1125 1130 1135



B-1	9'	*
B-2	14'	*
B-3	12'	*
B-4	4 1/2'	*
B-5	3 1/2'	*
B-6	7'	*
B-7	12'	*
B-8	9'	*
B-9	17'	*
B-10	17'	*

Boring Location Plan
 Preliminary Site Investigation
 Thomas Road and Golf Road
 Delafield, Wisconsin

Information
PSI To Build On
 Engineering • Consulting • Planning

Professional Services Inc.
 1000 W. Wisconsin Ave.
 Suite 200
 Delafield, WI 53018
 Phone (262) 471-1111 Fax (262) 471-1112

PROJECT NO. 1025-10002	DRAWN BY	SCALE	DATE	DATE	PROJECT NO.	PROJECT NO.



Professional Services Industries, Inc.
 W228 N727 Westmound Drive, Suite A
 Waukesha, WI 53186
 Telephone: 262-970-9022
 Fax: 262-970-9032

LOG OF BORING B-1

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA		Additional Remarks
									N in blows/ft		
	0					Surface Elev.: 904.0 ft			Moisture, % X Moisture ◉ PL ◉ LL STRENGTH, tsf ▲ Qu * Qp		
				1	17	Dark Brown Silty Clay with Organics, Moist, Stiff	CL	3-4-7 N=11	28	◉ * X	
				2	10	Dark Brown to Brown Clayey Sand with Gravel, Moist, Medium	SC	4-7-8 N=15	14	◉	
	5			3	8	Brown Silty Sand with Gravel, Moist, Very Dense	SM	7-28-34 N=62 50/3"	9	X ◉	
				4	3	End of Boring at 8' due to Auger and Sampler Refusal on Probable Bedrock Cave in at 5 ft					

Completion Depth: 8.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	<input type="checkbox"/> Auger Cutting <input type="checkbox"/> Shelby Tube <input type="checkbox"/> Split-Spoon <input type="checkbox"/> Hand Auger <input type="checkbox"/> Rock Core	
Date Boring Completed: 10/16/07		
Logged By: NE		
Drilling Contractor: PSI		

The stratification lines represent approximate boundaries. The transition may be gradual.



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LOG OF BORING B-10

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA				Additional Remarks
										N in blows/ft @				
	0					Surface Elev.: 946.0 ft				STRENGTH, tsf ▲ Qu * Qp				
945				1	18	Dark Brown Lean Clay with Organics, Very Moist	CL							
						Dark Brown Sandy Clay, Trace Gravel, Moist, Stiff	CL	2-3-4	16	⊗				
						Brown Clayey Sand with Gravel, Moist, Dense	SC	N=7						
	5			2	16	Brown Sand with Gravel, Moist, Dense to Medium to Very Dense		12-19-16						
940								N=35						
				3	11			13-15-14						
								N=29						
	10								5	⊗				
								24-23-24						
935							SP	N=47						
	15			5	4			43-50/4"						
930														
				6	0	End of Boring at 17' due to Auger and Sampler Refusal on Probable Bedrock		50/1"						
						Cave in at 12 ft								

Completion Depth: 17.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	<input checked="" type="checkbox"/> Auger Cutting <input checked="" type="checkbox"/> Shelby Tube <input checked="" type="checkbox"/> Split-Spoon <input checked="" type="checkbox"/> Hand Auger <input checked="" type="checkbox"/> Rock Core	
Date Boring Completed: 10/16/07		
Logged By: NE		
Drilling Contractor: PSI		

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LOG OF BORING B-2

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling 4 ft ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA		Additional Remarks
									N In blows/ft	Moisture, %	
						Surface Elev.: 913.0 ft					
						Topsoil, Black Organic Lean Clay, Moist (12" Thick)	Topsoil				
				1	7	Greenish Gray Organic Clay, Very Moist	OL	2-2-3 N=5	47	⊙ * X	X
						Light Brown Sandy Clay with Gravel, Very Moist to Wet, Soft to Stiff					
				2	8		CL	1-2-2 N=4	26	* ⊙ X	
				3	18			2-3-9 N=12	22	⊙ * X	
						Brown Clayey Sand with Gravel and Weathered Bedrock, Moist, Very Dense					
				4	18		SC	15-35-37 N=72	12	X ⊙ >>	
				5	2	End of Boring at 14' due to Auger and Sampler Refusal on Probable Bedrock		50/5"	5	X	
						Cave in at 5 ft					

Completion Depth: 14.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	<input checked="" type="checkbox"/> Auger Cutting <input checked="" type="checkbox"/> Shelby Tube <input checked="" type="checkbox"/> Split-Spoon <input checked="" type="checkbox"/> Hand Auger <input checked="" type="checkbox"/> Rock Core	
Date Boring Completed: 10/16/07		
Logged By: NE		
Drilling Contractor: PSI		

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LOG OF BORING B-3

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (Inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA		Additional Remarks
									Moisture, %	N in blows/ft	
	0					Surface Elev.: 920.0 ft					
				1	20	Dark Brown Silty Clay with Organics, Moist	CL				
						Brown Lean Clay, Very Moist, Very Stiff	CL	2-4-5 N=9	22	⊗	×
				2	16	Brown Clayey Sand, Trace Gravel, Very Moist, Loose	SC	2-3-6 N=9	11	⊗	×
915	5					Brown Silty Sand with Gravel, Very Moist, Medium to Dense		4-7-13 N=20	15	×	⊗
				3	12						
				4	6		SM	2-12-25 N=37	13	×	⊗
910	10										
				5	0	End of Boring at 12' due to Auger and Sampler Refusal on Probable Bedrock		50/1"			
						Cave in at 8 ft					

Completion Depth: 12.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	▨ Auger Cutting ▨ Shelby Tube ⊗ Split-Spoon ▨ Hand Auger ▨ Rock Core	
Date Boring Completed: 10/16/07		
Logged By: NE		
Drilling Contractor: PSI		

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LOG OF BORING B-4

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS <input type="checkbox"/> While Drilling Not Obsvd. <input checked="" type="checkbox"/> At Completion Not Obsvd. <input checked="" type="checkbox"/> 24 Hr. n/a	
Project: Proposed Delafield Property	Sampling Method: Split Spoon		
Location: Northwest Corner	Hammer Type: Automatic		
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W		

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA			Additional Remarks
										N in blows/ft			
	0					Surface Elev.: 920.0 ft				X Moisture <input checked="" type="checkbox"/> PL <input type="checkbox"/> LL			
				1	10	Dark Brown Silty Clay with Organics, Moist	CL	2-4-9 N=13	14				
				2	7	Brown Silty Sand with Gravel and Weathered Bedrock, Moist, Medium to Very Dense	SM	15-50/5"					
						End of Boring at 4.5' due to Auger and Sampler Refusal on Probable Bedrock							
						Cave in at 3 ft							

Completion Depth: 4.5 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	Auger Cutting	
Date Boring Completed: 10/16/07	Split-Spoon	
Logged By: NE	Rock Core	
Drilling Contractor: PSI	Shelby Tube	
	Hand Auger	

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LOG OF BORING B-5

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ∇ While Drilling Not Obsvd. ∇ At Completion Not Obsvd. ∇ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA		Additional Remarks
									N in blows/ft	Moisture, %	
	0					Surface Elev.: 920.0 ft					
				1	10	Brown Silty Clay, Trace Sand, Gravel and Organics, Moist	CL				
				2	0	Brown Sandy Clay with Gravel, Moist, Stiff	CL	5-4-3 N=7	15	⊙ *X	
						End of Boring at 3.5' due to Auger and Sampler Refusal on Probable Bedrock		50/2"	17	X	No Recovery
						Cave in at 2 ft					

Completion Depth: 3.5 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	Auger Cutting	
Date Boring Completed: 10/16/07	Split-Spoon	
Logged By: NE	Rock Core	
Drilling Contractor: PSI	Shelby Tube	
	Hand Auger	

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LOG OF BORING B-6

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA				Additional Remarks
									N in blows/ft @				
						Surface Elev.: 932.0 ft			Moisture, %				
									STRENGTH, tsf				
									X Moisture ■ PL * LL ▲ Qu * Qp				
930	0			1	10	Dark Brown Silty Clay with Organics, Moist	CL	2-2-31 N=33					Drove Stone
5	5			2	17	Brown Sand with Gravel, Moist, Dense to Medium to Very Dense	SP	8-13-10 N=23					
925	7			3	6	End of Boring at 7' due to Auger and Sampler Refusal on Probable Bedrock Cave in at 4 ft		10-19-50/4"					

Completion Depth: 7.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	Auger Cutting	
Date Boring Completed: 10/16/07	Split-Spoon	
Logged By: NE	Shelby Tube	
Drilling Contractor: PSI	Hand Auger	
	Rock Core	

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LOG OF BORING B-7

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA		Additional Remarks	
									N in blows/ft	Moisture, %		
	0					Surface Elev.: 940.0 ft						
				1	14	Dark Brown Silty Clay with Organics, Very Moist, Very Stiff	CL	3-3-5 N=8	22	⊗	×	*
				2	17	Brown Silty Sand with Gravel, Moist, Medium to Very Dense		5-10-11 N=21	7	×	⊗	
935	5			3	16		SM	5-9-19 N=28	9	×	⊗	
				4	14			3-19-19 N=38	5	×	⊗	
930	10			5	6	End of Boring at 12' due to Auger and Sampler Refusal on Probable Bedrock Cave in at 8 ft		26-50/2"	5	×		

Completion Depth: 12.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	<input checked="" type="checkbox"/> Auger Cutting <input checked="" type="checkbox"/> Shelby Tube <input checked="" type="checkbox"/> Split-Spoon <input checked="" type="checkbox"/> Hand Auger <input checked="" type="checkbox"/> Rock Core	
Date Boring Completed: 10/16/07		
Logged By: NE		
Drilling Contractor: PSI		

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LOG OF BORING B-8

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
	0					Surface Elev.: 942.0 ft					
940		[Hatched]		1	12	Dark Brown Silty Clay with Organics, Moist, Very Stiff	CL	4-3-6 N=9	19	⊙ *	
		[Hatched]		2	17	Brown Sandy Clay with Gravel, Moist, Stiff	CL				
5		[Vertical Lines]		3	17	Brown Sandy Silt, Trace Clay and Gravel, Moist, Medium	ML	4-4-7 N=11	15	⊙ X	
		[Vertical Lines]		4	11	Brown Silty Sand with Gravel, Moist, Medium	SM	8-13-13 N=26	8	X ⊙	
935		[Dotted]		4	4	End of Boring at 8' due to Auger and Sampler Refusal on Probable Bedrock	SM	9-50/1"	9	X	
		[Dotted]				Cave in at 5 ft					

Completion Depth: 8.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	[Hatched] Auger Cutting	
Date Boring Completed: 10/16/07	[X] Split-Spoon	
Logged By: NE	[Vertical Lines] Rock Core	
Drilling Contractor: PSI	[Solid] Shelby Tube	
	[Hand] Hand Auger	

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LOG OF BORING B-9

Sheet 1 of 1

PSI Job No.: 052-75062	Drilling Method: 2 1/4" HSA	WATER LEVELS ▽ While Drilling Not Obsvd. ▽ At Completion Not Obsvd. ▽ 24 Hr. n/a
Project: Proposed Delafield Property	Sampling Method: Split Spoon	
Location: Northwest Corner	Hammer Type: Automatic	
Golf Road and Thomas Road Delafield, WI	Latitude: 43.05°N Longitude: 88.33°W	

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	STANDARD PENETRATION TEST DATA		Additional Remarks
									N in blows/ft @		
						Surface Elev.: 947.0 ft			Moisture, % X Moisture ◻ PL ◼ LL STRENGTH, tsf ▲ Qu * Qp		
945	0	[Hatched]	[X]	1	16	Dark Brown Lean Clay with Organics, Very Moist	CL	2-3-4 N=7	23	⊙ * X	
		[Dotted]	[X]	2	14	Dark Brown Sandy Clay with Gravel, Moist, Stiff	CL				
		[Dotted]	[X]	3	14	Brown Silty Sand with Gravel, Moist, Medium	SM	4-10-12 N=22	7	X ⊙	
940	5	[Dotted]	[X]	4	8	Brown Sand with Gravel, Moist, Medium	SM	6-14-11 N=25	4	X ⊙	
		[Dotted]	[X]	5	6		SP	5-9-12 N=21			
935	10	[Dotted]	[X]	6	0			33-50/4"			
930	15	[Dotted]	[X]	6	0	End of Boring at 17' due to Auger and Sampler Refusal on Probable Bedrock Cave in at 12 ft		50/1"			

Completion Depth: 17.0 ft	Sample Types:	Remarks:
Date Boring Started: 10/16/07	[Hatched] Auger Cutting [Solid] Shelby Tube [X] Split-Spoon [Hand] Hand Auger [Dotted] Rock Core	
Date Boring Completed: 10/16/07		
Logged By: NE		
Drilling Contractor: PSI		

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GENERAL NOTES

SAMPLE IDENTIFICATION

The Unified Soil Classification System and ASTM D2487 and ASTM D2488 are used to identify the soil unless otherwise noted.

SOIL PROPERTY SYMBOLS

- N: Standard "N" penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch O.D. split-spoon.
- Q_u: Unconfined compressive strength, tsf.
- Q_p: Penetrometer value, index value of unconfined compressive strength, tsf.
- W_c: Water content, %.
- PL: Plastic Limit, %.
- LL: Liquid Limit, %.
- PI: Plasticity Index.
- γ_d: Natural dry density, pcf.
- ▼: Groundwater level observed at time noted after completion of boring.

DRILLING AND SAMPLING SYMBOLS

- SS: Split-Spoon – 1 3/8" ID., 2" O.D., except where noted.
- ST: Shelby Tube – 3" O.D., except where noted
- AU: Auger Sample.
- RC: Rock Core (approx. 2" diameter)
- WS: Washed Sample

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION (Terzaghi & Peck, 1948)

TERM (COHESIONLESS SOILS)

STANDARD PENETRATION RESISTANCE

Very Loose	0 – 4
Loose	5 – 10
Medium	11 – 30
Dense	31 – 50
Very Dense	51 and over

TERM (COHESIVE SOILS)

Q_u – (TSF)

Very Soft	0 – 0.24
Soft	0.25 – 0.49
Medium	0.50 – 0.99
Stiff	1.00 – 1.99
Very Stiff	2.00 – 4.00
Hard	4.00+

PARTICLE SIZE (ASTM D2487 AND D422)

Boulders	≥ 12 in. (300mm)	Medium Sand	<2mm (#10 sieve) to 425μm (#40 sieve)
Cobbles	< 12in. (300mm) to 3 in. (75 mm)	Fine Sand	<425μm (#40 sieve) to 75μm (#200 sieve)
Gravel	< 3in. (75mm) to 4.75mm (#4 sieve)	Silt	<75μm (#200 sieve) to 5μm
Coarse Sand	< 4.75mm (#4 sieve) to 2mm (#10 sieve)	Clay	<5μm