AGENDA

PLANNING AND ZONING COMMISSION MEETING

July 16, 2025 - 7:00 PM
Village Hall - Board Room
300 Plaza Circle, Mundelein, IL 60060

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ATTENDANCE

IV. MINUTES APPROVAL

A. Approve the Planning and Zoning Commission Regular meeting minutes from June 18, 2025

V. PUBLIC COMMENTARY

VI. OLD PZC BUSINESS

VII. NEW PZC BUSINESS

A. PUBLIC HEARING - PZ2025-0022 - 900 Tower Road

B. PUBLIC HEARING - PZ2025-0020 - SW Corner of Route 83 and Winchester Road Map Amendment

C. PUBLIC HEARING - PZ2025-0021 - Walnut Ridge

D. PUBLIC HEARING - PZ2025-0027 - Text Amendments – Various Topics

VIII. QUESTIONS AND COMMENTS

IX. ADJOURNMENT

A. Adjourn the Planning and Zoning Commission Meeting

Public comment may be made for all agenda items at the meeting. If you wish to provide testimony or comments prior to the meeting, you may provide them up to 24 hours prior to the scheduled meeting time in one of two ways: (1) by sending an email to planning@mundelein.org; or (2) by dropping it off

directly at Village Hall to the attention of Community Development, 300 Plaza Circle, Mundelein, Illinois. Agenda materials are available at www.mundelein.org/Agendas-Minutes

The Village of Mundelein, in compliance with the Americans with Disabilities Act, requests that persons with disabilities who require certain accommodations to allow them to observe and/or participate in this meeting, or who have questions about the accessibility of the meeting or facilities, to contact the ADA Coordinator at 847-949-3200 to allow the Village to arrange accommodations for those persons.

Planning and Zoning Commission Meeting **June 18, 2025**
Minutes

CALL TO ORDER

The Regular Meeting of the Planning and Zoning Commission of the Village of Mundelein was held on June 18, 2025 at 300 Plaza Circle, Mundelein. Commissioner K. Garesche called the meeting to order at 7:04 PM.

PLEDGE OF ALLEGIANCE

Commissioner K. Garesche led the Pledge of Allegiance.

ATTENDANCE

Commissioner K. Garesche took the roll call. It indicated as follows:

Board Attendance

PRESENT: K. Anderson, K. Garesche, J. Holden, S. Petti
ABSENT: T. Roswick, K. Teehan

Village Attendance

PRESENT: Senior Planner C. Malec, Senior Planner I. Guadarrama, and Recording Secretary Erin Swanson

MINUTES APPROVAL

Approve the Planning and Zoning Commission Regular meeting minutes from May 7, 2025

Commissioner S. Petti moved, seconded by K. Anderson, a **Motion** to approve the Planning and Zoning Commission Meeting minutes from May 7, 2025.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner S. Petti
SECONDER:	Commissioner K. Anderson
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

PUBLIC COMMENTARY

K. Garesche opened the floor to general public commentary.

There was no general public commentary.

K. Garesche closed the floor to general public commentary.

OLD PZC BUSINESS

PUBLIC HEARING - PZC2025-0013 - 1345 Armour Boulevard - Outdoor Storage Special Use Permit and Variations - WITHDRAWN

Commissioner K. Garesche stated that the applicant for 1345 Armour Boulevard sent a letter requesting to withdraw the application. The commission had no further comments or questions.

Close Public Hearing

Commissioner J. Holden moved, seconded by K. Anderson a **Motion** to close Public Hearing PZC2025-0013

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner K. Anderson
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

PUBLIC HEARING - PZC2025-0015 - 1 Carmel Pkwy - International Student Housing - WITHDRAWN

Commissioner K. Garesche stated that the applicant for 1 Carmel Parkway sent a letter requesting to withdraw the application. The commission had no further comments or questions.

Close Public Hearing PZC2025-0015

Commissioner K. Anderson moved, seconded by J. Holden, a **Motion** to close Public Hearing PZC2025-0015

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner K. Anderson
SECONDER:	Commissioner J. Holden
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None

ABSTAIN:	None

NEW PZC BUSINESS

PUBLIC HEARING – PZ2025-0012 – Text Amendment on Home Day Cares

Open Public Hearing

Commissioner J. Holden moved, seconded by S. Petti, a **Motion** to open Public Hearing PZC2025-0012 - Home Daycare Text Amendment

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner S. Petti
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

Staff Presentation

I. Guadarrama reviewed the attached PowerPoint and gave a brief overview and history of the case. The petitioner is requesting a text amendment to change Section 20.68.040 of the Zoning Ordinance to increase the maximum number of children permitted in a home daycare from six (6) children from outside the household to sixteen (16) children from outside the household. There were no other requested changes to the text of the code other than increasing the maximum amount of children.

There were no comments received from the public regarding this petition, however the only notification that was required was published in the newspaper. As this is a text amendment and does not apply to a specific address, letters were not required to go out to residents. I. Guadarrama also noted that the plan was sent forth to all the Village departments for review and all departments responded with no support for the petition.

Petitioner Presentation

Yadira Reyes of 933 Noel Drive was sworn in and gave the attached presentation and a history of their application. Ms. Reyes also gave details on the requirements DCFS has on regulating home daycares. Ms. Reyes spoke of her history of working with the

Village of Vernon Hills on updating their code to allow for more children within home daycares. She also spoke of the DCFS requirements and educational offerings in a home daycare environment.

S. Petti requested clarification on the DCFS requirements. He wanted more information on the frequency of visits from DCFS to home daycares. Ms. Reyes stated that once established, DCFS will stop by unannounced once per year and the home daycare will need to renew their license every 3 years. DCFS checks the size of the house, the safety of the house, the size of the group of children, among other things.

S. Petti stated that according to the application presented, DCFS would only allow a maximum of 12 children in the home daycare. He inquired as to why the petitioner is asking to changed to allow up to 16 children if this surpasses what is allowed by DCFS. Ms. Reyes stated that other counties allow for a group license which would allow for up to 16 children and additional requirements.

S. Petti inquired as to if Ms. Reyes currently has assistants. She stated that she currently has two assistants, her husband and her mother. S. Petti asked if they also need to be licensed. Ms. Reyes stated that they need to have certifications in CPR, first aid, and food handling.

I. Guadarrama stated that she spoke with representatives from DCFS and due to an internal error - the municipality code was not being checked when reviewing home daycares.

K. Anderson addressed staff and department comments. If they approved the text amendments, many of the requests by the departments have a steep financial requirement. He asked the petitioner if they would be prepared for all home based daycare would be ready to accept the financial burden of some of the requirements suggested. Ms. Reyes stated that her house has sprinklers installed, so she had no concern with meeting the requirements.

J. Holden requested to see how many individuals present represented home-based daycares. Several individuals raised their hands and stated they wished to speak further during public commentary.

Public Commentary

K. Garesche opened the floor to public commentary.

Liliana Garcia of 328 N Garfield Avenue was sworn in to speak. She stated that several other homedaycare providers were not able to make it to the hearing. She spoke on the DCFS inspections and requirements. K. Garesche asked how many children she

currently cares for in her home. Ms. Garcia stated that she currently cares for 6 children.

Alandra Guerrero stated that she is currently in the process of getting her daycare license. She stated that each daycare is different and went over all the requirements for getting a license. K. Garesche stated that it has been made clear that DCFS has rigorous requirements to comply.

Liliana Garcia stated that even if the zoning code was updated for 16 children, DCFS may still approve the home for a smaller group.

K. Garesche closed the floor to public commentary.

Commission Discussion

J. Holden asked staff to clarify why department comments related to a specific property when this is intended to be a text amendment that would not apply to any one specific property. I. Guadarrama responded that the example given by the applicant was her property and how they had provided care for the children. The departments took the example and provided feedback for that. However, all homes are different and will have unique challenges. State standards are less strict as they have to apply to the whole state and not the local municipalities.

K. Garesche asked if the current code has inspections done for home daycares. I. Guadarrama stated that the Village does not manage anything or has any list of home daycare within the Village. K. Garesche stated that she would like the Village to make a stronger ordinance for inspections for any number of children in home daycare, regardless of what DCFS currently does.

S. Petti addresses the question K. Anderson raised earlier regarding the cost of regulations. S. Petti stated that if regulations pass, all these regulations would need to apply for all home daycares. K. Anderson added that he felt that a business license should be a requirement for home daycares. S. Petti added that there are requirements for larger daycare facilities and perhaps that should be a starting point that home daycares should follow the same requirements. S. Petti and K. Garesche shared the importance of the need of daycare facilities for families.

C. Malec stated that though it is unusual, if the commission feels strongly that a committee be formed, they have the option to add a secondary motion for review by the Village Board.

J. Holden moved, seconded by S. Petti a **Motion** to recommend denial of the proposed text amendment from Section 20.68.040 of the Zoning Ordinance to increase the maximum number of children permitted in a home day care from six (6) children of

outside households to sixteen (16) with the recommended changes to the Findings of Fact.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner S. Petti
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

Request to Form Committee

There was further discussion on specific parameters and possible tiers of special use permits being allowed. I. Guadarrama let the commission know that if that route is chosen, all home-based daycare would fall under public hearings with notification of homes within 250 feet of the residence. It was also discussed how the commission may want to handle any possible concerns from neighbors of possible future cases presented.

J. Holden moved, seconded by K. Anderson, a **Motion** to authorize staff to draft specific parameters and regulatory conditions for home-based daycares, and to prepare a revised version of the text amendment that would allow for an increase in the maximum number of children permitted with the formation of a committee represented by the Board of Trustees, and optionally with the Planning and Zoning Commission with community input and working with the applicants.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner K. Anderson
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

Close Public Hearing

K. Anderson moved, seconded by S. Petti a **Motion** to close Public Hearing PZC2205-0026.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**

MOVER:	Commissioner K. Anderson
SECONDER:	Commissioner S. Petti
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

PUBLIC HEARING - PZ2025-0026 - Driven Car Wash Special Use Permit Amendment, 301 Townline Road

Open Public Hearing

J. Holden moved, seconded by S. Petti, a **Motion** to Open Public Hearing PZC2025-0026 - 301 Townline Road - Driven Car Wash - Special Use Permit

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner Jennifer Holden
SECONDER:	Commissioner Steven Petti
AYES:	Kevin Anderson, Kerry Garesche, Jennifer Holden, Steven Petti
NAYS:	None
ABSTAIN:	None

Staff Presentation

C. Malec gave a brief overview of the history of the case and the requested material change.

Petitioner Presentation

Chris Nero of Driven Car wash was sworn in. Mr. Nero shared the difficulty of sourcing the original proposed material. They have found a suitable substitute material that is accepted in many other municipalities. The Exterior Insulated Finishing System (EFIS) has made many improvements of the past several years. It is virtually indistinguishable from the other material previously approved. The EFIS material will create additional insulation, increasing energy efficiency. It is not the primary building material and will only be used on the ends of the building.

K. Anderson asked about the substrate that the EFIS will be applied to. Commissioner Anderson stated that the only issue he was aware of was installing EFIS on plywood has created water issues in coastal communities. Mr. Nero confirmed that the EFIS will not be installed on drywall.

C. Males stated that our code does not allow EFIS in large amounts, and this is due to esthetics. Most EFIS to this point simulate stucco and that product has not been found to age well. Ms. Malec stated that she can not speak to the finish of this product or if it is a different coating.

K. Anderson stated that in his experience there are many finishes now offered for the product and it has been around for a long time and can be crafted many different ways. Mr. Nero said it is his intention to make it appear as metallic as possible. Mr. Nero presented samples for review by the Commissioners.

Public Commentary

K. Garesche opened the floor to public commentary.

There was no public commentary.

K. Garesche closed the floor to public commentary.

Commission Discussion

J. Holden asked if there was any staff commentary. There were no comments received from Village Departments.

K. Anderson commented that the footprint of the used material is small, and he feels it is a positive change.

K. Garesche stated that the Village had concerns with the material, but knowing that there had been recent improvements in the quality of the materials made her comfortable accepting the change.

K. Anderson Moved, seconded by S. Petti, a **Motion** to to recommend approval of an amendement to a Special Use Permit, Ordinance No. 22-11-53, regarding changes to materials for Driven Car Wash, 301 Townline Road with the condition that the material simulates a metal finish.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner K. Anderson
SECONDER:	Commissioner S. Petti
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

Close Public Hearing

S. Petti moved, seconded by K. Anderson, a **Motion** to close Public Hearing PZ2025-0026.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner S. Petti
SECONDER:	Commissioner K. Anderson
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

PUBLIC HEARING - PZC2025-0025 - Dream Clean and Dunkin - PUD Amendment

Open Public Hearing

J. Hoden moved, seconded by S. Petti a **Motion** to Open Public Hearing PZC2025-0025 - 0 IL Route 60 - Dream Clean and Dunkin - PUD Amendment

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner S. Petti
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

Staff Presentation

C. Malec gave a brief background and history of the case. The applicant is requesting an amendment to the Sheldon Woods PUD to allow for a Dream Clean carwash and drive-through Dunkin'.

K. Anderson asked why this was not omitted from the PUD. He restated that the PUD pre-dates the Sheldon Woods development. C. Malec confirmed that it did pre-date the Sheldon Woods development so this piece was originally part of the PUD and could not be omitted.

K. Garesche questioned whether this parcel is within the HOA and would be subject to their rules and bylaws. C. Malec did not have information on that at this time.

Petitioner Presentation

Dan Shapiro of Shapiro & Associates was sworn in. Mr. Shapiro stated that this parcel is excluded from the HOA of Sheldon Woods, but is part of the PUD which designated this parcel for commercial use. Mr. Shapiro stated that this project was thoughtfully designed. This project fits the zoning of the property, and is an included use in the current Comprehensive Plan. This project was previously brought forth to the Village Board for a concept presentation. He stated that the Board had been positive in response to that concept presentation but they had concerns with noise, which will be addressed during the presentation.

Mitch Zaveduk, Director of Development for Dream Clean Car Wash was sworn in. Mr. Zaveduk gave a brief summary of the history of Dream Clean. They are currently preparing to re-invest and update their current Dream Clean car wash located within the Village. The concept is an express wash where the customer will remain in the car and vacuums will be available for customer use.

Ed Kusaea of Arc America was sworn in. Mr Kusaea reviewed the architecture and site plan. He discussed the proposed traffic flow and landscaping planned for the site. He reviewed data on conceptual amounts of traffic and the proposed plan for busy days to prevent any overflow onto Schank or Route 60.

Mario Valentini of MRV Architects was sworn in. Mr. Valentini reviewed the Dunkin' site plan. He reviewed the hours of operation and cohesion with that of the operations of the proposed car wash. He shared the overall planned design as well as proposed building materials and color scheme for the building.

Dr. Tom Thunder was sworn in to review the sound studies of the proposed site. He reviewed the 24 hour study that was done to review the current ambient sound levels. According to the current ambient sounds and the proposed hours of operation of the car wash, it was found by Dr. Thunder that the sound levels anticipated from the Car Wash, taken from current car wash locations, would be within acceptable limits for the location.

K. Anderson asked about the traffic study. He inquired if there would be a full access entry from Schank. Mr. Zaveduk stated that there would be full access.

Public Commentary

K. Garesche opened the floor to public commentary.

Pete Feuhan, a representative of Ivanhoe Congregation, was sworn in. He spoke of concerns of the rear of the property where a current detention area exists and if this may affect Ivanhoe Church. Mr. Feuhan requested that the wetland remain.

S. Petti asked the developer how much water runoff there would be. Mr. Kusaea gave details on the proposed water recovery and the stormwater plan. 15-20% of the water will be reclaimed with their system, and the remaining will be filtered and go into the sewer system.

K. Garesche asked Mr. Kusaea about the impact and the public concern with the detention area. Mr. Kusaea stated that this area will be their stormwater management area and should improve the area in terms of drainage.

Ron Salski, Executive Director of the Mundelein Parks and Recreation District, was sworn in. Mr. Salski spoke of a park that is in development for Sheldon Woods that would abut the subject property. He shared concerns on the detention area and possible environmental impacts that may affect the park.

K. Garesche closed the floor to public commentary.

Commission Discussion

J. Holden discussed previous automobile uses and prior plans that had been presented for handling stormwater and water contamination concerns.

K. Garesche commented about how many car washes there seem to be within the Village. She could not recall the last time we had discussed concerns with automotive businesses. K. Garesche asked if Sheldon Woods residents had been notified. C. Malec stated all property owners within 250 feet were notified.

I. Guadarrama stated that a representative for Sheldon Woods had reached out to her asking for the proposed Site Plan and it had been provided to them.

J. Holden moved, seconded by K. Anderson, a **Motion** to recommend Approval of an amendment ot the Final Planned Unit Development for Sheldon Woods, Ordinance No. 21-05-35, to include an accept the preliminary and final plans for a proposed car wash and drive-through restaurant on Lot 193 of the Sheldon Woods Subdivision (0 IL Route 60 or PIN: 10-22-205-030) including the Findings of Fact and following conditions:

- No video gaming shall be permitted on the subject property
- The Certificate of Occupancy for the Dream Clean Car Wash shall not be issued until:
    a. Foundation construction or vertical construction of the Dunkin' building has commenced; and
    b. The applicant provides sufficient evidence that Dunkin' has committed to occupying the site, such as an executed purchase or lease agreement, subject to the review and approval of the Village Administrator.

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner K. Anderson
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

Close Public Hearing

J. Holden moved, seconded by S. Petti, a **Motion** to Close Public Hearing PZ2025-0025

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner S. Petti
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

QUESTIONS AND COMMENTS

There were no further questions or comments

ADJOURNMENT

Adjourn the Planning and Zoning Commission Meeting

J. Holden moved, seconded by K. Anderson, a **Motion** to Adjourn the Planning and Zoning Commission meeting of June 18, 2025

RESULT:	**Passed [Yes 4, No 0, Abstained 0]**
MOVER:	Commissioner J. Holden
SECONDER:	Commissioner K. Anderson
AYES:	K. Anderson, K. Garesche, J. Holden, S. Petti
NAYS:	None
ABSTAIN:	None

The meeting was adjourned at 10:21 PM

VILLAGE OF
Mundelein
300 Plaza Circle, Mundelein IL 60060

Planning and Zoning Commission Meeting
June 18, 2025
Village Hall

Sign-In Sheet

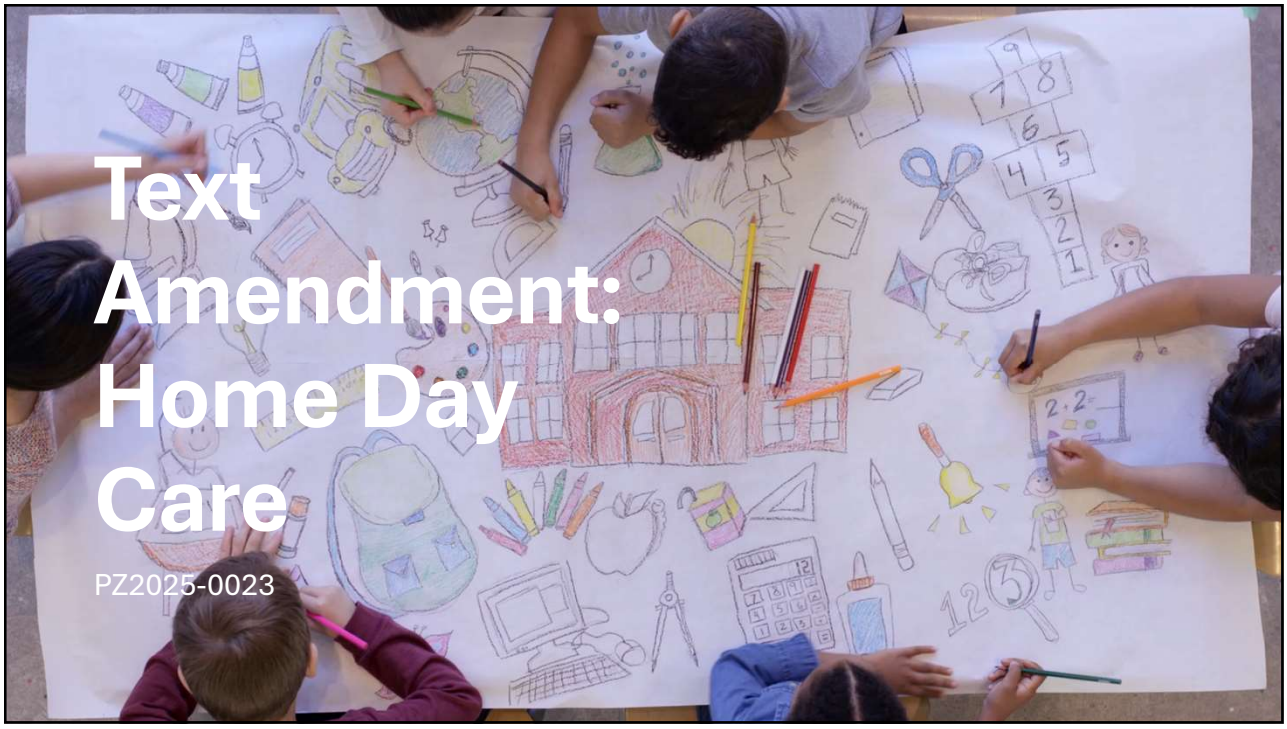
NAME/COMPANY	ADDRESS	PHONE/EMAIL
Name: Ron Salski	1401 N. Midlothian Rd	Phone: 847-388-5460
Company: Mundelein Park District	Mundelein, IL 60060	Email: rsalski@mundeleinparks.org
Name: MARIO VALENTINI	5105 TOLLVIEW DR.	Phone: 224-318-2140
Company: MRV ARCHITECTS, INC	ROLLING MEADOWS	Email: mariov@mrvarch.com
Name: Ben Bussman	2100 Manchester Rd. Wheaton	Phone: 630-648-7620 / bbuss@wm
Company:		Email:
Name: Chris Niro	44 S. Vail Ave	Phone: 312.388.9505
Company: DRIVEN CAR WASH	ARLINGTON HTS, IL 60005	Email: CNIRO@DRIVENCARWASH.COM
Name: Ed Kurzeja	34121 N US 45	Phone: 847-336-6600
Company: ArchAmerica	Grayslake IL	Email: EKurzeja@ArchAmerica.com
Name: PETE FRUEHAN	110 CHANDLER	Phone: 847-281-6386
Company: IVANHOE CHURCH	MUNDELEIN	Email: FRUEHANP@GMAIL
Name: Milen Aguilar	1107 Lawrence Dr.	Phone: (224) 778-0074
Company: Nala's Daycare	Mundelein, IL 60060	Email: milenaguilar19@gmail.com
Name: Estela Medina	722 Longfellow Ln	Phone: (224) 723-2415
Company: Treehouse Daycare	Mundelein IL 60060	Email: estela3corazon@gmail.com
Name: Alondra Guerrero	57 Washington Blvd Apt 2H	Phone: 847 971-9272
Company:		Email:
Name: Liliana Garcia	328 N Garfield Ave	Phone: 847 243 3855
Company:		Email: lilianagarciapedraza328@line.com
Name: Jaide Melo	1010 Thomas Blvd, Mundelein IL 60060	Phone: 847-372-3878
Company:		Email:
Name:		Phone:
Company:		Email:

VILLAGE OF
Mundelein
300 Plaza Circle, Mundelein IL 60060

Planning and Zoning Commission Meeting
June 18, 2025
Village Hall

Sign-In Sheet

NAME/COMPANY	ADDRESS	PHONE/EMAIL
Name: Mitch Zaveduk	2844 Floral	Phone: 847-989-9781
Company: Dream Clean Car Wash	Northbrook, IL 60062	Email: MZaveduk@dreamcleancw.com
Name: Javier Millan		Phone:
Company: KLQA, Inc.	9575 W. Higgins Rd. Rosemont	Email: jmillan@klqainc.com
Name: Tom Thunder	867 Scottsdale	Phone: 847-518-9990
Company: Acoustic Assoc.	Pingree Grove, IL	Email: 847-359-1068 tom@acousticassociates.com
Name: Dan Shapiro	510 Lake Cook Rd #119	Phone: 312.763.9640
Company: Shapiro & Assoc. Law	Deerfield, IL.	Email: dshapiro@shapiroassociateslaw.com
Name: John Gilbert		Phone: 847-726-9434
Company: Ivanhoe UCC church	25185 N ABBY GLENN DR Hawthorn Woods	Email: johng@jmgilbert.com
Name: Martina Roche	2038 N Nicole Ln	Phone: 847 630 1273
Company: Together for childhood	Round lake Beac	Email: bestfriendsdc1@gmail.com
Name: Yadira Reyes		Phone: 224 475 6521
Company: Charm Kids Home D	933 Noel Dr. Mundelein	Email: reyes64y@gmail.com
Name: Barbara		Phone:
Company:		Email:
Name: Heribert Camach	1107 Lawrence Dr Mundelein	Phone:
Company:		Email:
Name: Virginia A Quilar	435 fairhaven Mundelein	Phone: 224-806-9165
Company:		Email:
Name:		Phone:
Company:		Email:
Name:		Phone:
Company:		Email:

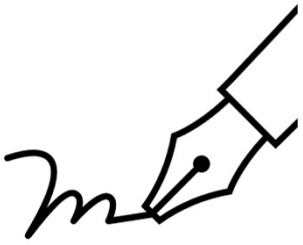


1

Text Amendment Request

Petitioner: Yadira Reyes

Request: Amendment to Section 20.68.040 to increase the maximum number of children permitted in a home day care from 6 children from outside households to 16.*



2

Definition: "*a residential dwelling in which a permanent occupant of the dwelling provides care for up to six (6) children from outside households. The number counted includes the family's natural or adopted children and all other persons under the age of twelve (12). "Child Day Care Home" does not include facilities that receive only children from a single household.*"

*The proposed text amendment solely increases the permitted number of children from six (6) to 16, without introducing any additional language changes or supplementary requirements.

3

Home Day Care Standards

Day care homes shall meet all federal, state and local requirements including, but not limited to, licensing, health, safety and building code requirements. In addition, the following criteria shall be required:

1. Adequate on-site drop-off zones, sidewalks and exterior lighting shall be provided.
2. The amount of traffic or noise to be generated shall not be excessive.
3. Open space and recreational areas shall be provided as required by the State of Illinois licensing requirements.
4. The day care home shall retain a residential character and the effect of the day care home shall not alter the residential character of the neighborhood.
5. The operation of the day care home shall not adversely impact surrounding properties.

4

Background

Vernon Hills

- Yadira Reyes, owner of Charm Kidz Home Daycare, Inc.
- Previously operated her home day care business in Vernon Hills.
  - In **violation** – caring for more than 6 children
  - Received temporary approval to operate with 12 children through June 15, 2025
  - Vernon Hills approved new ordinance allowing to care for up to 12 children through a special use permit. The new ordinance required further review of the following:
    - Drop-off and pick-up procedures
    - Proximity to other home day care facilities
    - Availability of outdoor play space
    - Additional fire safety inspections

5

Mundelein

- Ms. Reyes moved to Mundelein and was denied her request for the **12** children she currently cared for.
- Ms. Reyes organized a group of fellow home day care providers who shared similar concerns about the Village's zoning regulations. Many of the providers expressed the belief that Mundelein's current code is outdated and does not adequately support or reflect the needs of home day care operators.

The Village of Mundelein currently does not regulate home day cares. The Village limits the number of children to allow for DCFS to regulate and monitor home day cares.

6

Public Comments

No public comments, either in support of or opposition to this request, have been received since the application was submitted.

The legal notice was only published in the local newspaper. Individual notices were not sent to surrounding property owners.

7

Department Comments

This request has **not** received support from any Village departments due to concerns related to building codes, safety, and a potential change in use.

8

Administration

1. The current limit of six (6) children in home day cares remains appropriate and should beheld.
2. Additional training and certifications should be required.
3. Federal law mandates that child care programs meet minimum health and safety standards to operate legally.
4. A larger number of children require more indoor and outdoor space.

9

Building

Every address will need to be inspected and verified for code compliance.

933 Noel Dr.

- No permits for deck and patio mentioned
- Should consider installing a fence
- Need a very detailed layout of the basement (inspected by building and fire)
- Plans say that a stroller will be used on steps. Details of the steps will be required to safely use strollers.

10

Community Development

Use changes from residential to commercial.

-more traffic

-more noise

11

Fire

- It is difficult to put a hard number on the amount of people that will be in this home daily.
- There could be more than 20 people in less than 1,600 square-foot residence.
- DCFS standards require using the youngest child's age to determine staff/child ration when mixed-age groups are present.
  - Infants: 4:1
  - Toddlers: 5:1
  - Two-year-olds: 8:1

  Group size and staffing must follow the strictest (youngest age) ratio (4:1).
- Windows will need to be approved as a secondary means of egress.
- Residence will need to be fully sprinkled.

12

Police

PD **strongly** opposes any modification to the current ordinance and **disagrees** with the following claims made by the petitioner:

- "*The positive impact an expansion would have on the community.*"

PD contends that the additional noise and vehicular traffic created by the expansion would negatively affect the residents in the neighborhood.

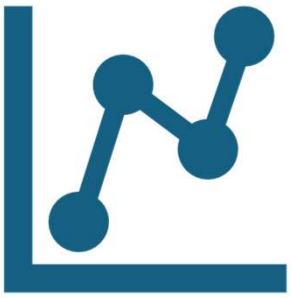
- "*Adding up to 10 additional children to the household affords a safe, educational, and nurturing environment for the children*."

PD contends that the size of the residence, less than1600 square feet, is insufficient to provide a safe and nurturing environment.

- "*Petitioner will be able to meet all of the terms outlined in the safety plan to adequately ensure the well-being, safety, and health of the children.*"

PD contends that even with additional staffing, the petitioner will not be able to satisfy all the terms outlined.

13



Analysis

14

Municipality	Permitted or Special Use/Conditional	Number Allowed	Additional Children	Add. Parking Requirement	Business License Needed?	Cost	Notes
Antioch	P and S/C	12	4				
Grayslake	S/C	5					
Gurnee	P	8					
Lake Villa	S/C	7		Loading Area			
Lake Zurich	P	8		none, but single family dwellings require 3 per unit (one more than VoM)	Y	$70	
Libertyville	P and S/C	7	Y	2 per 1,000 sq ft of floor area	Y		
Waukegan	P	8			Y		
Vernon Hills	P and S/C	6	Y				
Lake Bluff	P	6					
Long Grove	Only Centers	8+					
Village of Round Lake	P	set by DCFS			Y	$50	Max 25% of gross floor area of dwelling unit
North Chicago	P and S/C	8	4		Y	$200+	
Lindenhurst	P	set by DCFS		additional 1 space for any busines vehicle			
Mundelein	P	6	N	N	N	$0	

15

Staff has identified several concerns related to the proposed increase in the number of children permitted in home day cares. The primary concerns include:

1. Safety
2. Traffic
3. Noise

Safety

- State Fire Marshal conducts safety inspections at the time of the application and during the renewal process every three years. No inspections or oversight are conducted at the local level by the Village.
- Dwellings are to be maintained in “good repair.” The Village Building Department does not conduct any inspections and therefore cannot verify if the building is to Village Code.
- Assistance can be provided by individuals as young as 14 years of age and do not require training.

17

Traffic

- Business brings regular traffic and activity throughout the majority of the day. This may negatively affect the residential nature of the surrounding neighborhoods.
- It could provide less street parking available for the residents living in the area.
- Caring for 16 children requires atleast 2 additional employees, which requires more daily parking spaces.
  - Not all dwellings have their own driveway. Some properties have shared driveways.

18

Noise

- Children playing naturally generate noise through talking, yelling, and other activities, potentially disrupting the quiet and residential character of the neighborhood.
  - An increase in the number of children may elevate overall noise levels.
  - Home day cares could be in a townhome or multi-family building.

19

Recommendation

- Administration, Building, Community Development, Fire, and Police are **not** in support of the proposed text amendment as presented.
- If the Planning and Zoning Commission is considering increasing the number of children allowed in a home day care, the Commissioners should direct staff to take on the Text Amendment with established parameters on the number of children allowed and regulatory conditions.

20

Code Change

Presented by Mundelein Home Day Care Providers

This Photo by Unknown Author is licensed under CC BY

Expansion Plan

In Mundelein, the growing demand for childcare has become an increasingly pressing challenge for families who struggle to find available and suitable spaces for their children's care.
Despite the population continuing to rise, the availability of childcare centers remain limited, leaving families with no viable options.
This creates significant distress on parents, who are often forced to seek alternatives that may not meet their expectations in terms of quality or accessibility.
The lack of sufficient childcare facilities is an urgent issue that impacts both the workforce stability of parents and the development and well-being of children in our community.
For this reason, at home childcare providers in Mundelein, are here to support families by offering an alternative that prioritizes high-quality care for children.

Unlike traditional childcare centers, which often have larger and more rigid groups, our programs consist of small groups that are designed to be more flexible and better suited to each family's specific needs.
We strive to create a more personalized environment where each child receives individualized attention, giving parents a peace of mind knowing their children are in a safe, stimulating and developmentally appropriate setting.
This more tailored and flexible approach makes it easier to accommodate families' schedules and specific requirements, providing a solution that better fits their lifestyle and daily needs.

Space for home childcare

We have a designated area within the home dedicated exclusively to childcare, ensuring a safe and appropriate environment for children's development

We strictly follow the protocols established by DCFS (Department of Children and Family Services) to ensure that each child receives the best care possible.

The spaces are organized and adapted to meet the children's needs, with age-appropriate and alphabetized areas. Additionally, we implement a structured daily routine, ensuring that children are always engaged in activities that promote their cognitive and physical development, while minimizing the risk of accidents.

We also have play areas designed to enhance their gross motor skills, providing a setting where children can actively explore and learn. Despite caring for up to 12 children, the quality of service remains unaffected, thanks to the presence of an assistant who provides continuous support, ensuring that each child receives timely attention with respect and affection.

Safety

We strictly follow the safety protocols established by the DCFS to ensure a safe and healthy environment for the children.
Every day, we conduct a routine check where we verify that hazardous products, such as cleaning supplies or medications, are not within children's reach.
We also make sure that evacuation areas are clear and that electrical outlets are covered, among many other safety measures.
Each of us has a detailed evacuation plan in case of a fire or tornado, and we conduct monthly drills to establish an efficient response in case of an emergency.
This proactive and organized approach allows us to always be prepared to act quickly, always ensuring the safety and well-being of the children.

Health

Routine

Daily Schedule

6:00-7:30 AM	Free play
7:45-8:00 AM	School kids brush teeth, get ready for bus
8:00-8:15 AM	Breakfast
8:15-9:00 AM	Free play, Clean Up, Brush Teeth
9:00-9:15 AM	Morning Meeting
9:15-10:30 AM	Guided play, Learning Centers
10:30-11:30 AM	Outdoor play
11:30-12:00 PM	Fine Motor Skills, Lunch Prep
12:00-12:30 PM	Lunch
12:30-1:00 PM	Potty/get mats out/read
1:00-3:00 PM	Quiet time/nap/ books
3:00-4:15 PM	Free play
4:15-4:30 PM	Snack
4:30-6:00 PM	Free play

© 2017 The Super Teacher

NUTRITION

Every day we make sure to serve healthy foods to help children in their growth and development, we participate in food programs and educational organizations that train and guide us to ensure we are offering nutritious and healthy meals and snacks.

Environment
We offer a safe and healthy learning environment daily. Here are some photos of the activities we offer in our programs

Sensory

Legos

Sand

Sensory play is a vital part of a child's development from birth through early childhood. It involves activities that stimulate the child's senses—touch, sight, sound, smell, and taste—helping them explore and make sense of the world around them.

Engaging in sensory play builds nerve connections in the brain's pathways, which supports a child's ability to complete more complex learning tasks. It also promotes the development of language skills, motor skills, and cognitive growth, while encouraging social interaction and creative exploration.

We incorporate sensory play into everyday routines to support the children's overall development, helping them grow into confident, capable learners.

Art

- Art is very important for children, as it has numerous benefits for their emotional, cognitive, social, and creative development and growth.
- Through art, we can also observe how children express their emotions nonverbally, while also stimulating their individual experiences.
- Our programs offer creative activities where children can develop their imagination and perception of the world around them.

Cutting, Gluing, Painting

Painting

Writing

Early childhood literacy is crucial for a child's development, laying the foundation for future academic and social success.

Writing enhances children's cognitive skills; help improve their communication skills and allow them to develop self-expression.

Language shaping cognitive abilities, enhancing communication skills, supporting social interactions, and contributing to better problem-solving.

The children in our programs partake in varies literature activities using different learning styles to provide the best experiences and outcomes

Reading

Reading supports children's imagination and understanding of the world. It enhances vocabulary, memory, concentration, and communication skills, boosting academic performance. It also fosters empathy and emotional expression by helping children better understand themselves and others.

We provide early and age appropriate reading content and material to the children.

Math

Math helps children develop critical thinking and problem-solving skills, preparing them to handle more complex challenges as they progress in school.

We personalize each child's learning based on their current understanding in every subject area.

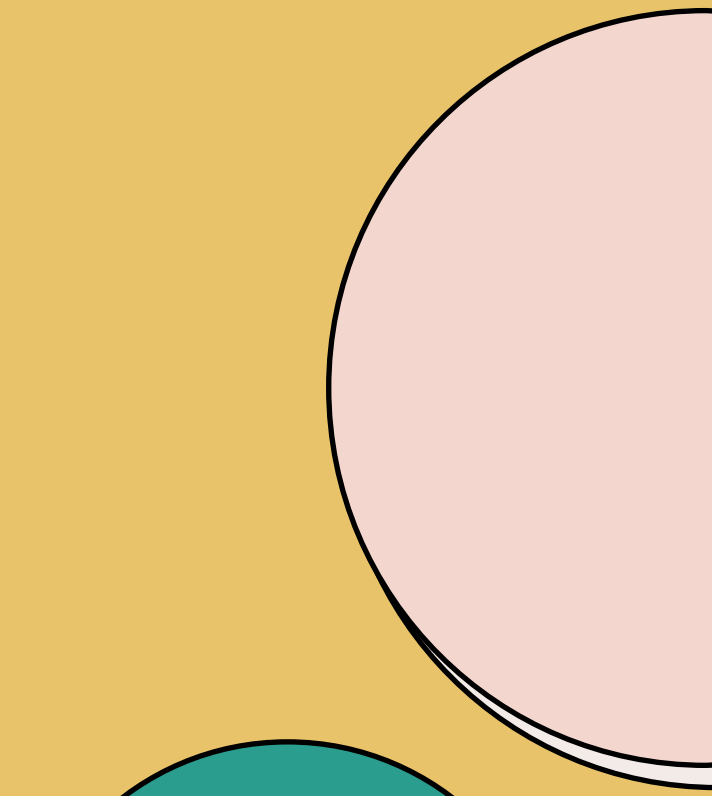
This ensures that the material is neither too difficult nor too easy, allowing each child to grow at their own pace and build the skills they need to succeed.

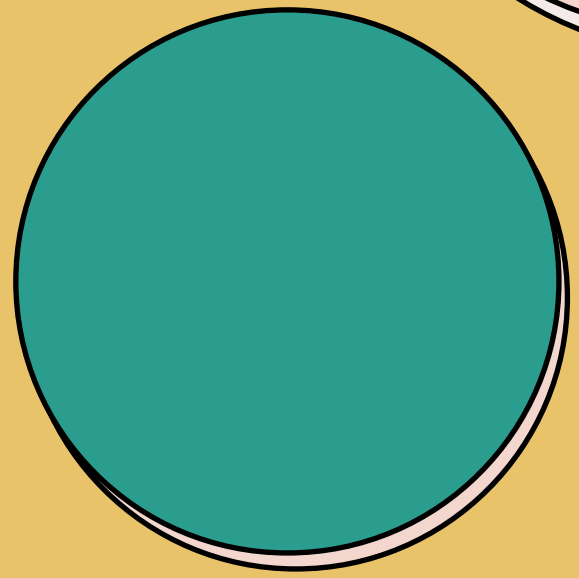
Science

Infants and toddlers naturally explore the world like scientists—through observation, curiosity, and investigation. They solve problems and communicate their findings through sounds, gestures, and expressions.

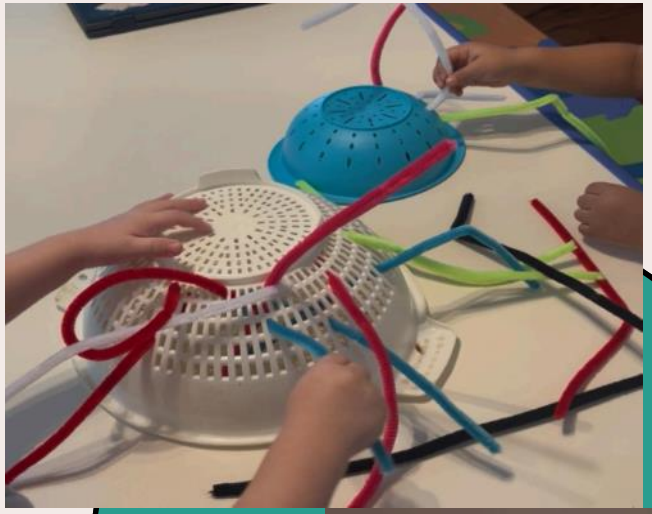
While this exploration comes naturally, adult support is essential.

We simply help deepen children's scientific understanding by engaging with them during discovery with activities and by providing the time, space, materials, and opportunities for exploration.





Manipulation and Motor Skills



- Our programs offer various early childhood activities for them to practice different skills to cultivate their foundational cognitive, social and physical development.
- Manipulation and motor skill early childhood education is critical to helping the children develop and establish:
- **Hand-Eye Coordination** – using hands to guide or throw objects accurately
- **Foot-Eye Coordination** – using feet to kick or move objects precisely
- **Manual Dexterity** – building strength and control in fingers and hands
- **Reaction & Timing** – knowing when to act or respond
- **Aiming Skills** – understanding how much force to use to hit a target
- **Directional Awareness** – recognizing and moving in different directions
- **Velocity Control** – adjusting speed and strength of movement for desired outcomes
- **Motor Planning** – sequencing body movements correctly to complete tasks
- **Teamwork** – building communication and cooperation with others
- **Brain Development** – forming neural connections that support academic learning

Drama

After explaining to you in this presentation some of the many activities we do in our childcare programs.
We want to tell you that these home childcare programs have been operating in Lake County Illinois for many years, and thanks to God and the work done with responsibility, dedication, and love, we have never had any problems with either the children or the families we work with.

On behalf of the childcare providers in the City of Mundelein and on behalf of the families who need our services, we ask that you please help us change the code that you have in this City and allow us to care for up to 16 children with the help of two assistants.

Thank you for your attention and for this opportunity to listen to us and we hope to have good news from you.

FINDINGS OF FACT – TEXT AMENDMENT

CASE NUMBER	PZ2025-0023
PUBLIC HEARING DATE	June 18, 2025
TEXT AMENDMENT	Increase the maximum number of children permitted in a home day care from six (6) children from outside households to 16.
MOTION	**Motion** by J. Holden, second by S. Petti to approve the Findings of Fact for PZ2025-0023 to deny the text amendment to Section 20.68.040 regarding an increase in the maximum number of children permitted in a home day care from six (6) children from outside households to 16.

On June 18, 2025, the Planning and Zoning Commission voted 4 - 0 for **denial** of a text amendment to Section 20.68.040 regarding an increase in the maximum number of children permitted in a home day care from six (6) children from outside households to 16 as submitted with the findings of fact.

The Planning and Zoning Commission's recommendation and the Village Board decision on any zoning amendment, whether text or map amendment, is a matter of legislative discretion that is not controlled by any particular standard; however, in making their recommendation and decision, the Planning and Zoning Commission and the Village Board shall consider the following standards:

a. The extent to which the proposed amendment promotes public health, safety, and welfare of the Village;

The Commission finds that the proposed amendment could impact the public health. Since the Village does not conduct its own inspections of home day cares, there is no Village mechanism to ensure that children are being cared for in facilities that meet local safety standards.

b. The relative gain to the public, as compared to the hardship imposed upon the applicant;

The increase in the number of children and employees has effectively raised awareness that standards need to be considered by the Village.

c. The consistency of the proposed amendment with the Comprehensive Plan;

The Commission finds that the proposed amendment does not support the intent of the Comprehensive Plan. Which is to preserve the residential character of the neighborhoods without standards in place.

d. The consistency of the proposed amendment with the intent and general regulations of this ordinance;

The Commission finds that the proposed amendment is not consistent with the intent and general regulations of the Zoning Ordinance. The Ordinance currently limits the number of children to six in order to promote the public health, safety, and welfare of both the children and surrounding residents.

e. Whether the proposed amendment corrects an error or omission, adds clarification to existing requirements, or reflects a change in policy;

The Commission finds that the proposed amendment reflects a change in policy. However, additional revisions to the policy are necessary to further promote the public health, safety, and welfare of the Village.

f. Whether the proposed amendment provides a more workable way to achieve the intent and purposes of this Ordinance and the Comprehensive Plan;

The Commission finds that the proposed amendment does not provide a more workable way to achieve the intent and purposes of the Zoning Ordinance. Simply increasing the number of children does not promote the health and well-being of the children, nor does it preserve the residential character of the neighborhood.

g. The extent to which the proposed amendment creates nonconformities; and

The Commission finds that the proposed amendment will not create any new nonconformities without standards.

h. The extent to which the proposed amendment is consistent with the overall structure and organization of this Ordinance.

The Commission finds that the proposed amendment is not consistent with the overall structure and organization of the Zoning Ordinance.

VILLAGE OF Mundelein Incorporated in 1909

To: Commission Members

From: Isabel Guadarrama, Senior Planner

For: Planning and Zoning Commission Meeting of July 16, 2025

Subject: PUBLIC HEARING - PZ2025-0022 - 900 Tower Road

Attachments:

1. Location Map
2. Certification of Publication
3. Petitioner's Packet

Background:

The Community Development Department has received a variance application from Andy Samovsky of Toy Barn Inc., proposing the establishment of an auto repair and sales business at 900 Tower Road. The property is located within the M-1 General Manufacturing Zoning District, which currently prohibits the sale of vehicles undergoing repair. Due to the unique nature of the proposed operation, the applicant is requesting a variance to allow the sale of such vehicles and to extend the allowable duration for vehicle storage on the premises.

The Petitioner is currently operating in Bensenville, Illinois, but seeks a location that supports its long-term growth strategy. The Petitioner identified 900 Tower Road, a property formerly occupied by Advantage Material Handling. Given its history of similar industrial and commercial uses, the site is well-suited to accommodate Toy Barn Inc.'s operations. The property includes a 10,000-square-foot building with a loading dock, outdoor parking, and an outdoor storage area.

Toy Barn Inc. specializes in acquiring vehicles at auction, refurbishing them, and reselling them through various online platforms. Unlike a traditional dealership, vehicles are not displayed outdoors for public viewing or test drives. Instead, all inventory is marketed and sold online, with vehicles typically shipped to the buyer. However, there may be occasional instances in which a buyer would prefer to pick up a vehicle directly from the facility.

Variances Requested

Section 20.48.040 (AA) regulates Motor Vehicle Service and Repair, Major and Minor, and Motor Vehicle Aftermarket Enhancements with the following standards:

1. Minor motor vehicle service and repair shops and motor vehicle aftermarket enhancement establishments may not store the same vehicles outdoors on the site for longer than seventy-two hours. Major motor vehicle service and repair shops may not store the same vehicles outdoors on the site for longer than fifteen days. No required off-street parking may be used for vehicle storage.
2. All driveways must be located and designed to ensure that they will not adversely affect the safety and efficiency of traffic circulation on adjoining streets.
3. All operations must be fully enclosed. Only vehicles being serviced at the establishment may be stored outdoors. Wrecked or junked vehicles may not be stored on-site. Where the property abuts a residential use, the facility must install an opaque fence at least six feet high on the property line to buffer the residential use.
4. Minor motor vehicle service and repair shops may also include gas stations as an accessory use. All gas stations that are part of such an establishment must comply with the regulations of this title.
5. The sale of used or new automobiles is not permitted.
6. No motor vehicles may be stored and no repair work may be conducted in the public right-of-way.
7. All equipment and parts must be stored indoors.

The Petitioner is requesting a variance from standard number 1 to allow vehicle storage for more than 15 days and from standard number 5 to permit online vehicle sales.

Department Comments
While none of the comments received were urgent, the Petitioner will be required to address them as part of the business registration and permitting process:

- Police Department: No objections were raised, provided the business operates in accordance with the proposal as submitted.
- Public Works and Engineering: The proposed use requires adequate protection of floor drains. Specifically, the installation of a triple basin or similar oil separator system will be necessary. Additional details regarding the interior plumbing layout will be required for further review.
- Building Department: Any interior alterations must be documented with plans that are designed, drawn, and stamped by a licensed architect registered in the State of Illinois.

Public Comments
No public comments were received prior to the publication of this report.

Comprehensive Plan
The Comprehensive Plan's Future Land Use Plan envisions the Subject Property as Business Park Land Use. The following economic development policies from the Comprehensive Plan are generally applicable to the proposed development:

- Promote the appropriate mix and intensity of non-residential uses in the various districts throughout the Village.

- Strengthen the role, function, and "uniqueness" of each development to maximize its competitive edge and market viability.
- Support and encourage an appropriate mix of retail, office, service commercial, and industrial activities to be organized by use and concentrated within or near areas of complementary uses.
- Ensure that designated industrial areas are prioritized for appropriate industrial and business uses and prevent the encroachment of incompatible development and uses that may weaken the industrial/business functionality of these areas.
- Continue to support the improvement and rehabilitation of older commercial and industrial buildings and areas which are, or are becoming, functionally obsolete including. This may include improvements to loading docks, access, building facades, signage, streetscaping, landscaping, and parking areas to accommodate more appropriate and market viable uses.
- Market the Village's industrial areas as centers of green technology and light industrial.

Analysis
The Petitioner's request for a variance is consistent with the Village's Comprehensive Plan. The proposed facility represents a reasonable and appropriate use of an otherwise vacant property. The primary structure on the site was previously used for storage, repair, and sale of mechanical equipment. The new use is similar, with the key difference being the type of vehicles sold. The previous owner constructed an enclosed storage area where the future user can store vehicles out of public view.

Aside from concerns noted by the Public Works and Building departments, no major improvements to the building are required. While the proposed use does not fully meet the standard parking requirements, the Petitioner has reserved interior space for potential overflow parking. Given that vehicle sales will occur online and the building will not be open to the general public, the existing outdoor parking spaces should be sufficient.

In order to address the Department's concern that the business not exceed what is being requested, the Commission should apply the following standards for granting the Variation:

a. No vehicles or equipment associated with the business shall be stored or displayed outside where they are visible from any public right-of-way.
b. There shall be no storage of vehicles, equipment, or materials unrelated to the business on this property.
c. No other entities or businesses, whether on-site or off-site, shall utilize either building for business or storage purposes other than the applicant.
d. Vehicle and equipment repair, enhancements, and maintenance shall take place within the confines of the buildings. No repair of vehicles or equipment is permitted outdoors.
e. A building permit shall be obtained for any new signage or enhancements to the property.
f. A business registration shall be obtained from the Village of Mundelein.

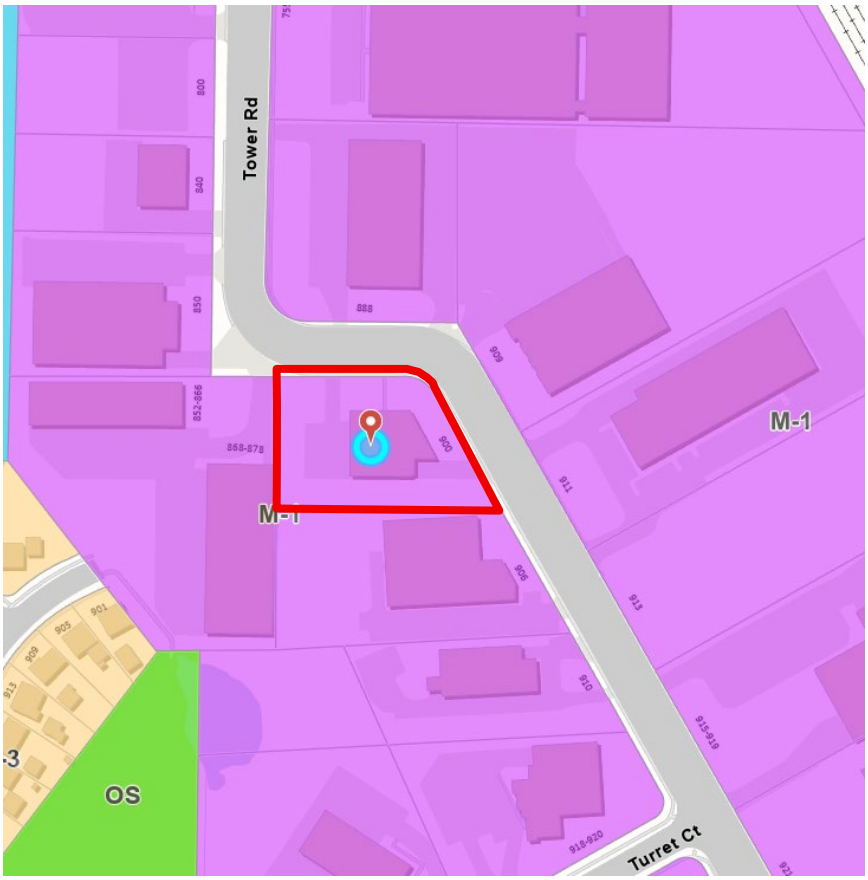
Recommendation:

Motion to recommend approval/denial of a variance request from Section 20.48.040 (AA) of the Zoning Ordinance to allow the sale of automobiles undergoing repair and to extend the allowable storage duration within the M-1 General Manufacturing zoning district at 900 Tower Road.

If the Planning and Zoning Commission chooses to recommend approval of the special use, the following conditions are recommended:

a. No vehicles or equipment associated with the business shall be stored or displayed outside where they are visible from any public right-of-way.
b. There shall be no storage of vehicles, equipment, or materials unrelated to the business on this property.
c. No other entities or businesses, whether on-site or off-site, shall utilize either building for business or storage purposes other than the applicant.
d. Vehicle and equipment repair, enhancements, and maintenance shall take place within the confines of the buildings. No repair of vehicles or equipment is permitted outdoors.
e. A building permit shall be obtained for any new signage or enhancements to the property.
f. A business registration shall be obtained from the Village of Mundelein.

Location Map: 900 Tower Road



Legend:

Subject Property

VILLAGE OF
Mundelein
Incorporated in 1909

NOTICE OF HEARING BEFORE THE VILLAGE OF MUNDELEIN PLANNING & ZONING COMMISSION

NOTICE IS HEREBY GIVEN that on July 16, 2025, at the hour of 7:00 p.m., there will be a public hearing before the Village of Mundelein Planning and Zoning Commission at the Mundelein Village Hall, 300 Plaza Circle, Mundelein, Illinois, concerning a petition by Andy Samovsky of Toy Barn, Inc. The petition requests a Variance from Section 20.48.040 (AA) of the Zoning Ordinance to permit the sale of automobiles undergoing repair and to extend the allowable storage duration within the M-1 General Manufacturing zoning district at 900 Tower Road, Mundelein, Illinois (PIN 11-31-204-001), in accordance with the application on file with the Village of Mundelein.

If you cannot attend the meeting in-person and you wish to submit a question or comment to be provided to the Planning and Zoning Commission, please email your full name and your question or comment to planning@mundelein.org. Please put "Public Commentary" in the subject line. Comments received during the meeting, but after the public commentary portion has ended, will be provided to the Commission Members after the meeting.

CASE NO.: PZ2025-0022

The name and address of the Petitioner:
Andy Samovsky
Toy Barn, Inc.
1081 Entry Drive
Bensenville, IL 60106

This Notice is an invitation to all interested persons to submit oral or written testimony or other evidence concerning the above case to the Village of Mundelein Planning and Zoning Commission to planning@mundelein.org. Comments received by 5:00 p.m. CT on July 10, 2025, will be included in the meeting agenda packet. Comments received after this date will be provided to the Commissioners on the day of the public hearing. Persons with questions are encouraged to call the Village of Mundelein at (847) 949 3282.

The Planning and Zoning Commission's actions are not final for this case. The Planning and Zoning Commission will forward its findings and recommendations to the Village Board of Trustees for final consideration and action.

Dated at Mundelein, Illinois, this 30th day of June, 2025.

Terry Roswick /s/
Chairman
Planning and Zoning Commission

Published in Daily Herald July 1, 2025 (295816)

CERTIFICATE OF PUBLICATION

Paddock Publications, Inc.

Lake County

Daily Herald

Corporation organized and existing under and by virtue of the laws of the State of Illinois, DOES HEREBY CERTIFY that it is the publisher of the **Lake County DAILY HERALD**. That said **Lake County DAILY HERALD** is a secular newspaper, published in Libertyville, Lake County, State of Illinois, and has been in general circulation daily throughout Lake County, continuously for more than 50 weeks prior to the first Publication of the attached notice, and a newspaper as defined by 715 ILCS 5/5.

I further certify that the **Lake County DAILY HERALD** is a newspaper as defined in "an Act to revise the law in relation to notices" as amended in 1992 Illinois Compiled Statutes, Chapter 715, Act 5, Section 1 and 5. That a notice of which the annexed printed slip is a true copy, was published 07/01/2025 in said **Lake County DAILY HERALD**. This notice was also placed on a statewide public notice website as required by 5 ILCS 5/2.1.

BY _____
Designee of the Publisher of the Daily Herald

Control # 295816 *LAKE*

PADDOCK PUBLICATIONS, INC. Corporate SEAL ILLINOIS

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

PROPERTY INFORMATION

Address 900 Tower Rd

Property Index Numbers (PIN) 1131204001

Size of Property 1.25 Acres (sq. ft./acres)

Size of Building Space 10,000 (sq. ft.)

Size of Space Utilized Entire Property

ZONING

Current Zoning M-1 Manufacturing

Proposed Zoning M-1 Manufacturing

Current Use Forklift Sales/Service

Proposed Use Motor Vehicle Service/Sales

PETITIONER INFORMATION

Business/Org. Name Toy Barn Inc

Name Andy Samovsky

Title President

Address 1081 Entry Drive

City, State, Zip Bensenville, Il 60106

Phone 847-873-9649

Email toybarnsales@gmail.com

PROPERTY OWNER INFORMATION

Business/Org. Name Yandyland LLC

Name Andy Samovsky

Title President

Address 1143 Garfrield Ave

City, State, Zip Libertyville, Il 60048/

Phone 8478739649

Email toybarnsales@gmail.com

Petitioner Status: ☒ Owner ☐ Lessee ☐ Contract Purchaser

SECTION OF ZONING ORDINANCE: 20.48.040

DESCRIPTION OF PROPOSED ZONING VARIATION (*Attach additional pages, if necessary*)

Please see attached

STANDARDS FOR GRANTING A VARIATION

In evaluating the proposed variation, the Zoning Administrator, Planning and Zoning Commission and Village Board will make findings based on the standards imposed by Section 20.16.020 of the Zoning Ordinance. **Please provide a detailed response to each of the following criteria** (*attach additional pages, if necessary*):

a. The strict application of the terms of this Ordinance will result in undue hardship.

b. The plight of the owner is due to unique circumstances.

c. The variation, if granted, will not alter the essential character of the locality

The Zoning Administrator, Planning and Zoning Commission, and Village Board, in making its findings, may further inquire into the following evidentiary issues, as well as any others deemed appropriate. **Please provide a detailed response to each of the following criteria** (*attach additional pages, if necessary*):

a. The particular physical surroundings, shape, or topographical conditions of the specific property impose a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of regulations were to be carried out.

b. The alleged difficulty or hardship has not been created by any person presently having a proprietary interest in the property in question.

c. The granting of the variation will not be detrimental to the public welfare in the neighborhood in which the property is located.

d. The proposed variation will not impair an adequate supply of light and air to adjacent property, substantially increase congestion in the public streets, increase the danger of fire, endanger the public safety, or impair property values within the neighborhood.

e. The proposed variation is consistent with the spirit and intent of this Ordinance and Village land use policies.

f. The value of the property in question will be substantially reduced if permitted to be used only under the conditions allowed by the regulations governing the district in which it is located.

Andy Samovsky
Toy Barn Inc
900 Tower Rd
Mundelein, Illinois

My parents came here in the 80s as first generation immigrants. I watched them struggle their entire life working tough jobs, longer hours, and positions that had lower pay. Even while pushing through the position they were in, their hard work allowed me to grow up in Buffalo Grove. While I was going to Buffalo Grove High School, in 2004 that is when my passion for cars started. It started with some introduction Automotive Shop classes that BGHS had offered. For the most part of my academic career, I always did well in classes and testing, however I couldn't stand it most of the time. While I was in high school I picked up a full time time at a body shop in Palatine. That body shop did exactly what my current business Toy Barn does. Purchased cars to repair them, and then sell them. However, the automotive classes that were offered at the High School, I always looked forward to the most. I was positive I was going to be an Auto Tech and was set on going to a trade school right out of high school. However, my mother really wanted me to go to college, and I did. After High School I attended Northeastern Illinois University where I graduated with a bachelors in Finance.

I have been self employed my entire life and in 2018 I opened Toy Barn, a small dealership that started out selling motorcycles, jet ski's and some cars. My current company is located in Bensenville, Illinois. Why did I choose Bensenville? Well, there is no other reason then cost. When I started this company I didn't have a lot of money, (and I still don't have a lot, ha) in 2018, I was about to secure 3800 sqft warehouse for $2200/month, which was extremely affordable. About a year ago I began telling myself I have to move into a better location that fits what I do. My current space is good, but I starting looking for a space that I could secure that I could grow into in the next 10 years.

When I started looking for my next building I was looking in Bensenville, Schiller Park, Addison, Melrose Park, Franklin Park, Elk Grove, Schaumburg. I was on the hunt looking everyday. Checking loopnet, checking facebook, driving around commercial parks. It felt like a full time job looking for a building that I could move to next. Moving to Mundelein wasn't on my radar at all. One day, just for fun, I checked Lake County on Loopnet and bam. The single one listing I looked at on the website was 900 Tower Rd, and from the single picture that I saw. I knew that I had to move to this building. Why did I choose Mundelein? Just like my wife, we met on accident. Some accidents have to be destiny. I had to fight to be able to buy 900 Tower Rd, I had to offer the seller the ability to stay in the building until his construction was finished in his other location that is also in Mundelein. Going back to “why did I choose Bensenville” , this dream property at 900 Tower Rd that I purchased cost me double what my planned budget was for and it's by far the only property in Lake County that I could even consider to “afford”. The crazy part is how all of this has come together, from my agent telling me to call Advia Credit Union to when my family was at the Mundelein Tree Lighting during the holidays and I hear on the speaker that Advia Credit Union is a main sponsor. It all was an accident, but it was all coming together.

While purchasing this building is for the purpose of growing the company, I'm looking forward to more then just that. I'm looking forward to being 5 minutes from my house, 5 minutes from my sons daycare. I would love to get involved with the High School Automotive Department, and bringing my company to my neighborhood would give me a chance to give back more to the local community. Growing a business is fun, sometimes, painful most of the time. But it growing a business in your local community where you reside and where your son goes to school would feel better.

DESCRIPTION OF PROPOSED ZONING VARIATION:

Toy Factory operates as an auto repair shop, however we have a slight unique business model. We do not work on public vehicles. We purchase vehicles from auctions, we repair them, and we sell them back at auctions. We are not seeking for a variance or a special use, but asking for a waiver to be able to sell the vehicles that we purchase and we are asking for a waiver on the 15 day storage limit. We do not operate like a traditional "dealership" that gets units in and out quickly. Our inventory turns "slower" then a normal dealership. Because of this our operation is "quieter" behind closed doors. There is much less in and out traffic from our model as well. Auto repair is currently an approved use for the space. 900 Tower Rd is 10,000 sqft, has 15 parking spaces, and an additional 4,000 sqft fenced and screened yard. Our company currently only has 3 employees, myself and 2 technicians. Because we do not work on public cars, our model allows us to control the amount of vehicles that are on the property. In 2024 we sold a total of 70 vehicles, or less then 6 cars per month. We do not put our vehicles on "display" and we are only available to the "public" by appointment only. All of our vehicles will be stored in the building or in the additional side storage lot that is fenced and screened from public view.

STANDARDS FOR GRANTING A WAIVER

a. If this waiver will not be granted it will be force us to sell the property and try to find a different location. We are not looking to make any physical changes to the property. In order for us to become the new owner of 900 Tower Rd our purchase agreement has very unique offerings to the seller Advantage Material Handling. Because of how we structured out purchase, it has continued to allow them to operate in the space while they move to their new location that is still within Mundelein.

b. The plight of the owner is due to unique circumstances. Our business model is unique. Our day to day operations would look like any auto repair shop, however we are different because we do not work on or offer services to the public. We work on our own vehicles before we sell them.

c. The waiver, if granted, will not alter the essential character of the locality. The character of the local area will not be changed. There are several automotive niche based business on Tower Rd, other that are in equipment sales and service as well. We are not looking to make any physical changes to the property, inside or outside. All of our work would be done inside and all of our vehicles would be stored inside, or they would be stored in the 4,000sqft fenced and screened storage lot that is on the property. Our company currently operates with 3 total people, myself and 2 employees. It will take us 5-10 years to fully grow into the space. Our current operations are in a 3500 sqft building on less then ¼ acre, or to be exact we have only (7) outdoor parking spaces currently. 900 Tower Rd provides 10,000 sqft, 14 outdoor parking spaces, and a 4,000 sqft screened and fenced storage lot.

a. We are not looking to make any physical changes to the building. The property is perfectly setup for what our business needs. There will be zero changes made inside or outside the building. The prior business had a similar business model in the location.

b. The hardship has not been created by anybody interested in the property.

c. Granting this waiver will not be detrimental to the public, or the neighborhood. The building is located in M-1 zoning. Auto repair is an approved use for the zoning. The only difference is we are asking for us to have permission to buy vehicles at auction, fix them, and sell them at auction/through wholesale channels.

d. We are not looking to make any physical changes. The waiver would not impair air or light supply to the neighboring property or increase congestion in the public streets. We are a small company of 3 total employees. Because we work on cars that we own its very easy for us to control the "work flow" our operation gets. As opposed to a traditional auto repair shop, you never know when customers to pick up cars or drop them off. In 2024, which was our biggest year. We transacted 70 vehicles, which is less then 6

cars a month. Our public traffic is to a minimum, on a **monthly** basis, maybe we have 4-8 walk-ins stop by. Most of those walk ins are coming in out of curiosity because of the nice cars we have on our google page. Typically they will walk in to ask if we can fix their car and because we do not work on public vehicles we turn them away. Every now and then, maybe 1 or 2 a month will come pick up a car that they purchased online in person. It will not increase the danger of fire, public safety, or values within the commercial area.

e. This waiver in this location is consistent with the spirit and intent of the ordinance and village land use policies. All of our operations will be inside the building. Nothing will be stored outside in the public view. This property offers a 4,000 sqft fenced and screened side storage lot. This entire area is larger then our current building (3600sqft). If we do need outside storage, we will store in the fenced and screened area only. The other side of the building has a parking lot with 14 parking spaces. Our current staff is a total of 3 (including me). Customer "walk-ins" are near non existent for us, everything is online based.

f. I do not believe the value of the property would be affected. However it would shut down our entire business model, and a result would force us to sell the property and look elsewhere to move to. Moving our company to 900 Tower Rd is much more then moving a business that's growing. This is a homecoming for me, I live 6 minutes from the property, my son goes to daycare down the street. And the thought of being able to see him on a lunch break has been a major driver. Initially when I was looking for a property I was focused on Dupage County, sorted through several properties before I decided to check what was available in my local community. When I found 900 Tower for sale, I had to secure it. Everything about the building was exactly what we were looking for. We opted to accommodate some extreme requests from the seller, Advantage Material Handling. When my family went to the recent Mundelein Tree Lighting, as the sponsors were being announced over the speaker. I had heard "Advia Credit Union", it was almost a sign that I was at the right place. Advia Credit Union is the bank that had financed this property for us. I want my company to be part of the community, this isn't just about moving a business. If Mundelein High School has an auto repair program, in 2026 I would like for us to link up with the High School and see if we can offer a paid summer internship program for students who might show interest in the automotive industry. If anybody has any questions please feel free to call me anytime, 847-873-9649

AFFIDAVIT OF OWNERSHIP AND AUTHORIZATION

COUNTY OF LAKE)
)
STATE OF ILLINOIS)

I, Andy Samorsky, under oath, state that I am

X the sole)
____ an) owner of the property
____ an authorized officer of the)

commonly described as (*Address*) 900 Tower Rd Mundelein and that such property is owned by (*Printed Name*) Andy Samorsky as of this date. As owner of the property, I do hereby authorize Not Applicable (*Printed Name or Not Applicable*) to represent me in the following Planning and Zoning Commission/Village Board matter, zoning variance (*Action*).

Signature

Subscribed and sworn to before me

this 27th day of May, 2025.

DIEM LE BRUMMEL
Official Seal
Notary Public - State of Illinois
My Commission Expires Jan 11, 2027

Diem Le Brummel
Notary Public Signature

SITE VISIT AUTHORIZATION

I hereby grant employees of the Village of Mundelein, their agents, and members of the Mundelein Planning and Zoning Commission permission to enter on the property located at the following address:
(Address) 900 Tower Rd Mundelein, IL

Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

Andy 5-27-25
Signature of Owner Date

By Andy Samorsky

Owner
Title/Full Corporate Name

If Contract Purchaser:

Signature of Contract Purchaser Date

By

Title/Full Corporate Name

If Lessee (Corporate or Partnership):

Signature of Lessee Date

By

Title/Full Corporate Name

REQUIRED SIGNATURES

The undersigned states under oath that he/she/they are the **Legal Owner(s)** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature (Owner): _____ Date: 5-25-25

Printed Name: Andy Samorski Title: owner

Signature (Owner): _____ Date: _____

Printed Name: _____ Title: _____

The undersigned states under oath that he/she/they are the **Contract Purchaser** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

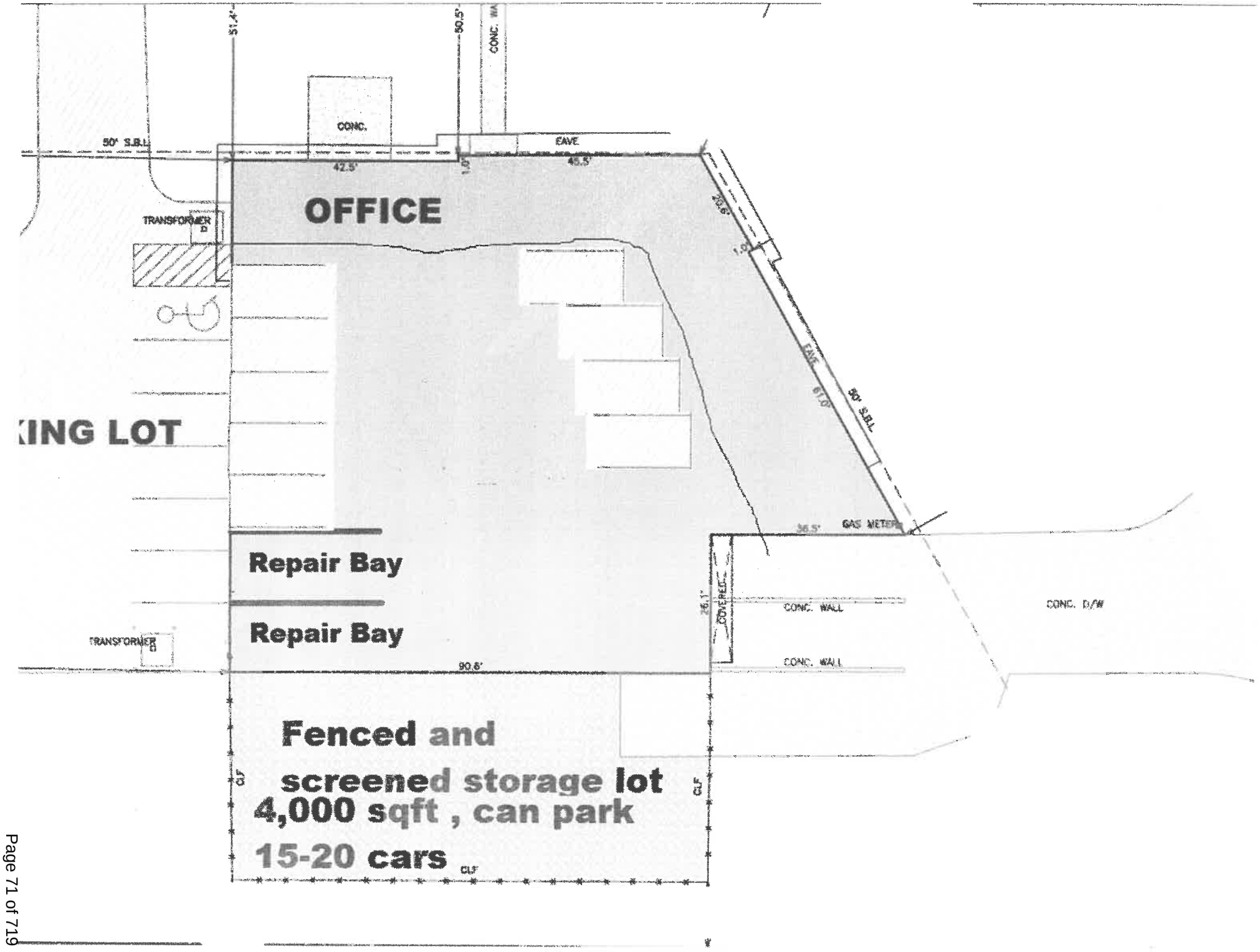
Signature Contract Purchaser: _____ Date: _____

Printed Name: _____ Title: _____

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: _____ Date: _____

Printed Name: _____ Title: _____



OFFICE
Repair Bay
Repair Bay
Fenced and
screened storage lot
4,000 sqft , can park
15-20 cars
KING LOT
CONC.
EAVE
50' S.B.L.
TRANSFORMER
GAS METER
CONC. WALL
CONC. D/W
CLF

ALTA/NSPS LAND TITLE SURVEY

2501.1063
ALTA SURVEY
LAKE COUNTY, ILLINOIS

PROPERTY ADDRESS:
TOWER ROAD, MUNDELEIN, ILLINOIS, 60060

SURVEY NUMBER: 2501.1063

PREPARED FOR:
CHASE, LLC; FIRST AMERICAN TITLE CO.; ADVIA CREDIT UNION

ENTITY: KANDTLAND LLC

ENTITY: ADVIA CREDIT UNION

ENTITY:

PROPERTY DATED: NOT RECEIVED | CLIENT FILE NO.: NOT RECEIVED

LEGAL DESCRIPTION:

NORTH 200 FEET (MEASURED AT RIGHT ANGLES WITH THE NORTH THEREOF) OF LOT 15 IN ARLINGTON

STRIAL PARK, BEING A SUBDIVISION OF PART OF THE NORTHEAST ATER OF SECTION 28, TOWNSHIP 44 NORTH, RANGE 11, EAST OF THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF, ORDED NOVEMBER 18, 1947, AS DOCUMENT 738881, IN BOOK 41 LATS, PAGE 47, IN LAKE COUNTY, ILLINOIS

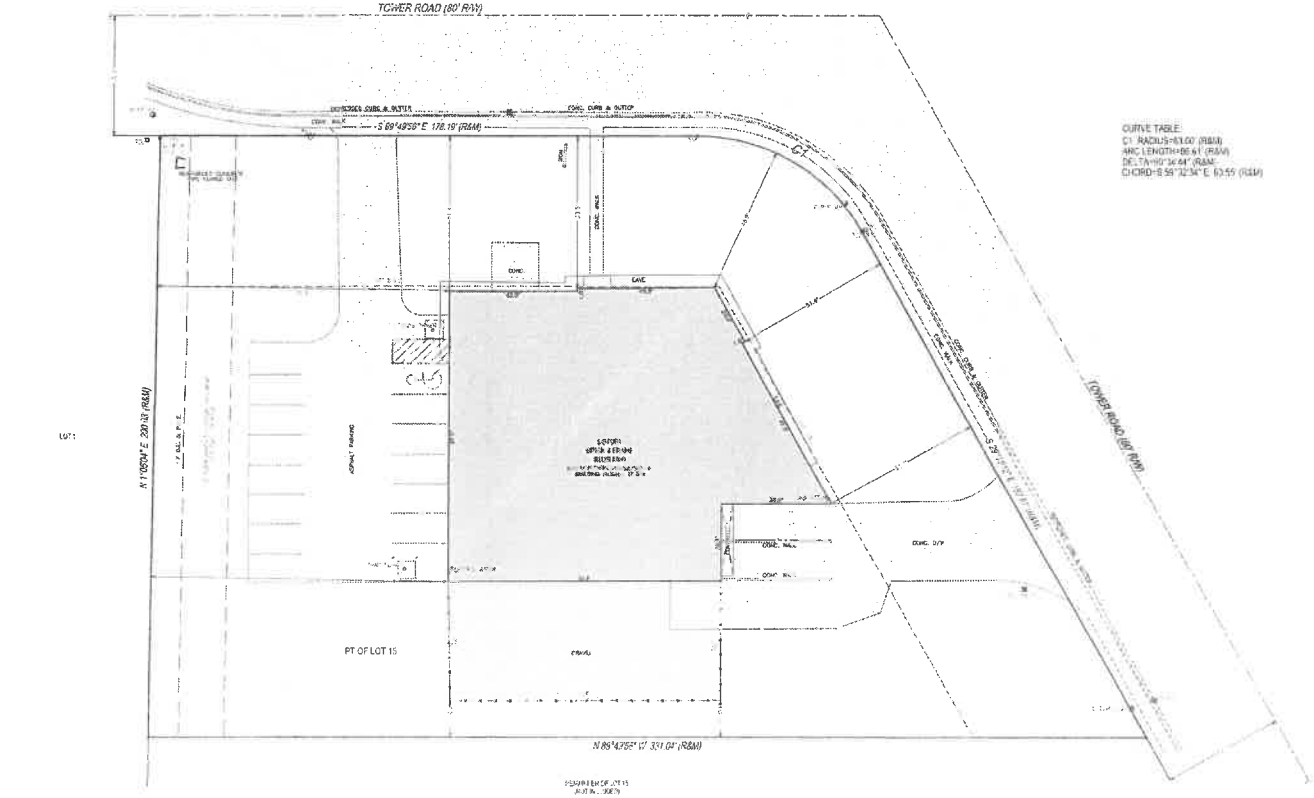
SPECIFIED SURVEYOR NOTES:

SURVEY DATE: 12/2025 | FIELD WORK DATE: 12/2025

SIGNATURE:

ITS OF INTEREST:

SurveySTARS



TO: KANDTLAND LLC; FIRST AMERICAN TITLE CO.; ADVIA CREDIT UNION

This ALTA/NSPS Land Title Survey was made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 6(a), 7(a), 7(b)(1), 8, 9, 11(a), 13, 14, 16, 17, 18, 19 and 20(a) of Table A thereof. The field work was completed on [illegible].

Date of Plat or Map: 01/07/2026

(Signature of Surveyor, Title if none, Professional Affiliation and Seal, if any, Needed Only for Plat or Map)

GENERAL SURVEYOR'S NOTES:

1. The Legal Description used to perform this survey was supplied by others. This survey does not determine ownership, nor does it attempt to resolve any boundary line disputes or ambiguities. Reference to Title Commitment Number and Date is referenced on plat. Further examination of the easements or title matters may be required by others. Current ownership documents should be obtained to verify matters affecting the property.
2. The purpose of this survey is to establish the boundary of the boundaries of and locate the legal parcel described hereon, locate all visible improvements, determine flood zone classification, and show any visible encroachments, rights-of-way, easements, and other matters affecting the property as disclosed by the Title Commitment listed above. This survey does not determine ownership or resolve boundary disputes.
3. Elevations are based on [illegible] datum. Contours are based on [illegible] datum. Benchmark used: [illegible]. Elevations are shown to the nearest [illegible] foot.
4. This survey is prepared for the exclusive use of the entities listed hereon. Use of this survey by any other parties without the express written consent of the undersigned surveyor is prohibited.
5. Underground utilities have not been located as part of this survey. Call JULIE (811) or other applicable utility locating services before excavation.
6. Some of the observed improvements may not be shown due to scale limitations.
7. Access to the property is via [illegible], a dedicated public roadway.
8. The property contains [illegible] square feet or [illegible] acres, more or less.
9. Flood zone classification was determined by graphically plotting the property boundaries on the Flood Insurance Rate Map. The property lies within Zone [illegible] as shown on Community Panel No. [illegible], dated [illegible].
10. Parking striping was [illegible] at the time of the survey. Number of parking spaces observed: [illegible]. Handicap parking spaces: [illegible]. Striping may have been removed or altered since the survey was performed.
11. All [illegible] observed within the property boundaries are shown hereon. Underground utilities were not located as part of this survey.
12. The following [illegible] were noted in the Title Commitment listed above and affect the property: [illegible]. The improvements do not appear to encroach upon any of these easements except as shown.
13. Building setback lines and other zoning restrictions were not researched by the surveyor. Refer to the local zoning ordinance or consult with the local municipality for applicable setback requirements.
14. No evidence of recent earth moving, building construction, or building additions was observed in the process of conducting the fieldwork, except as noted hereon.
15. THIS SURVEY IS A PROFESSIONAL SERVICE CONFORMANCE WITH THE ILLINOIS MINIMUM STANDARDS OF THE STATE OF ILLINOIS AND IS NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS. THE RESALE, REPRODUCTION OR USE OF THIS SURVEY BY ANY PARTY OTHER THAN THE ORIGINAL CLIENT IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SURVEYOR.

SURVEYOR'S LEGEND:

LINETYPES
- Boundary Line
- Centerline
- Chain Link or Wire Fence
- Easement
- Iron Fence
- Overhead Lines
- Retaining Wall
- Setback Lines
- Survey Traverse
- Vinyl Fence
- Water Body/Well
- Wood Fence

SURFACE TYPES
- Asphalt
- Brick or Tile
- Concrete
- Crushed Rock
- Gravel
- Wood

SYMBOLS
- Boundary Line
- Control Point
- Overhead Light or Pole
- Power Pole
- Sanitary Manhole
- Sign
- Storm Manhole
- Telephone Pedestal
- Tree
- Utility Light or Pole
- Other

ABBREVIATIONS
AC - Air Conditioner
BOL - Bollard
CB - Catch Basin
CH - Chord
CLF - Chain Link Fence
CO - Cleanout
DE - Drive Entrance
EL - Elevation
ENT - Entrance
FF - Finish Floor
FH - Fire Hydrant
GM - Gas Meter
GV - Gate Valve
HW - Headwall
INV - Invert
LP - Light Pole
MB - Mailbox
MH - Manhole
PED - Pedestal
PP - Power Pole
SAN MH - Sanitary Manhole
SIG - Traffic Signal
SPK - Spike
TEL MH - Telephone Manhole
TP - Top of Pavement
UP - Utility Pole
WM - Water Meter

PAGE 1 OF 1

VILLAGE OF
Mundelein
Incorporated in 1909

To: Commission Members

From: Isabel Guadarrama, Senior Planner

For: Planning and Zoning Commission Meeting of July 16, 2025

Subject: PUBLIC HEARING - PZ2025-0020 - SW Corner of Route 83 and Winchester Road Map Amendment

Attachments:

1. Location Map
2. Submittal Cover Letter - Winchester Annexation
3. Zoning Map Amendment Application
4. Legal Description
5. Plat of Survey
6. Petition for Annexation
7. Winchester Annexation - Annexation Parcel Plat
8. Response to Standards Petition
9. Response Comments to Staff Comments (May)

Background:

The Village received several zoning applications from Pulte Group Company, LLC. These applications are being processed under two separate cases: PZ2025-0020 and PZ2025-0021. This report will specifically address Case PZ2025-0020, referred to as the SW Corner of Route 83 and Winchester Road.

The subject properties comprise approximately 167.442 acres and are currently located within unincorporated Lake County. Pulte, a developer known for residential subdivisions, is seeking to annex these parcels into the Village of Mundelein to facilitate their next phase of development on an adjacent parcel.

Currently, the proposed location of their residential development is not contiguous with the Village's corporate limits. Since the Village requires that properties be contiguous to the municipality to be eligible for annexation, the Petitioner coordinated with the owner of adjacent land that shares a boundary with the Village. Agreements between the Petitioner and this adjacent property owner have been formalized and are reflected in the map amendment and annexation petition associated with this project. Many of these terms will be incorporated into the formal Annexation Agreement to

be presented to the Village Board.

The specific properties under consideration in this report are commonly known as 29808, 29730, 29508 and 29498 N. IL Route 83. These parcels correspond to the following PINs: 10-14-100-012, 10-14-300-001, 10-15-200-001, and 10-15-200-002.

Map Amendment Requested
Upon annexation into the Village, properties are automatically assigned the R-1 Single-Family Residential Zoning District. However, the Petitioner requests a map amendment to rezone the properties from R-1 to R-3 Single-Family Residential, pending annexation. Surrounding properties are currently zoned R-1 or are located within unincorporated Lake County. The R-3 zoning district allows for single-family residential, parks/playgrounds, and very few special uses such as places of worship. The Annexation Agreement would require any proposed project to seek approval from the Village for site design and architecture.

Department Comments
There are no outstanding comments.

Public Comments
No public comments were received prior to the publication of this report.

Comprehensive Plan
The Village's Comprehensive Plan's vision for housing is to continue to expand high quality housing options for members of the community. The plan designates the subject properties as "Flexible Use" in the Future Land Use Plan. This designation reflects the Village's intention for the area's general use, character, and development density over a 10-year planning horizon, based on land use patterns existing at the time the Plan was adopted.

This portion of the Village's western edge includes a mix of residential, open space, and commercial uses. Recognizing the dynamic nature of development, the Comprehensive Plan intentionally identifies certain unincorporated areas as flexible, allowing for adaptability to unforeseen development opportunities while still aligning with the Village's broader planning goals.

Analysis
Given the limited number of unincorporated parcels bordering the Village, it is important that the Village take a strategic approach to annexation decisions. The Comprehensive Plan supports the development of high-quality housing to serve both current and future residents.

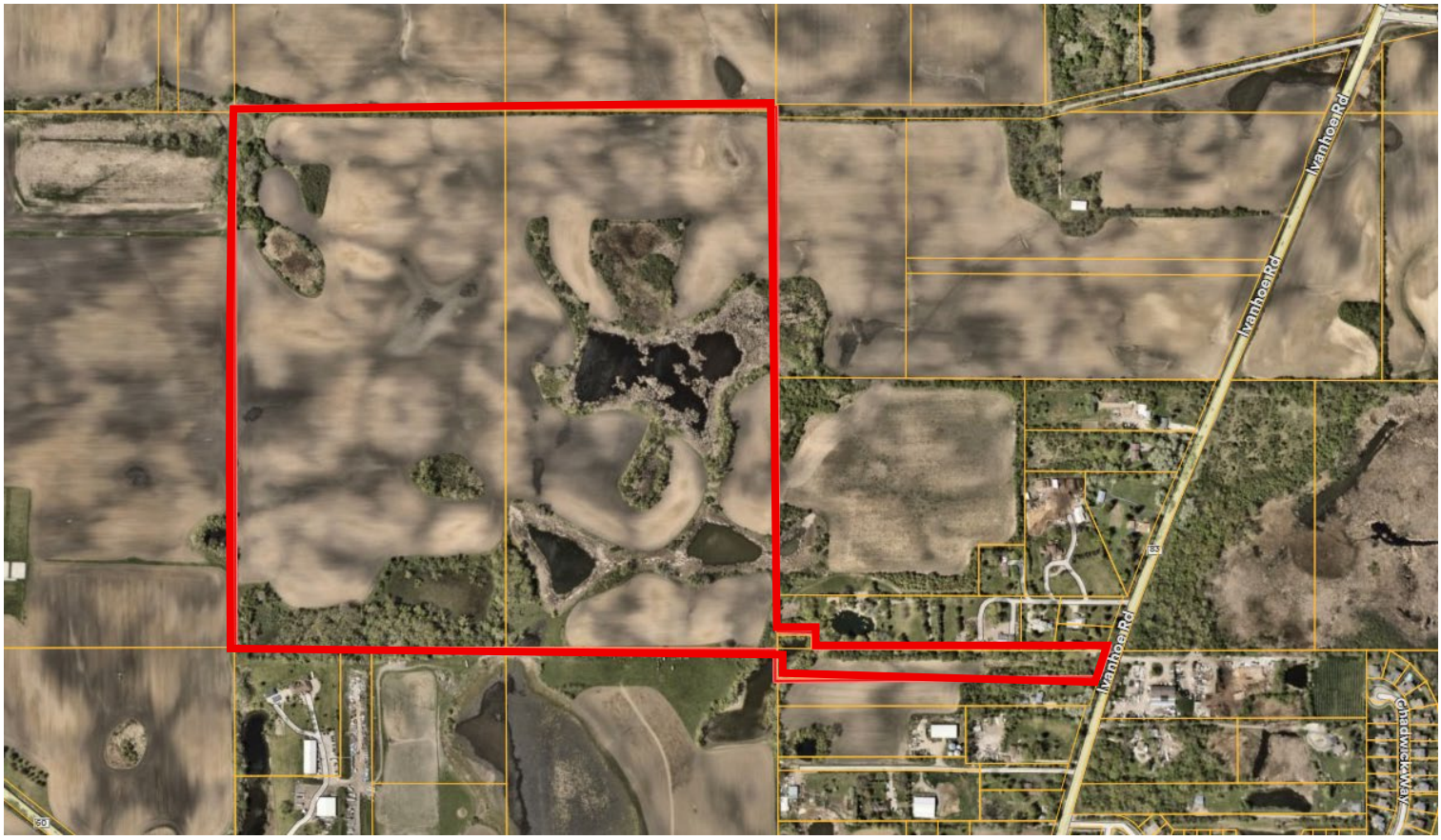
While Pulte has a strong reputation in Mundelein and has completed several successful residential projects, this is an independent zoning request. The second application (Case PZ2025-0021) can be denied on its own, but Pulte's proposed development depends on the approval of this annexation and rezoning. Although a detailed development plan hasn't been submitted yet, that uncertainty may be considered when evaluating the proposed map amendment. Language is included in the Annexation Agreement to requires future proposals seek Village approval for site design and architecture.

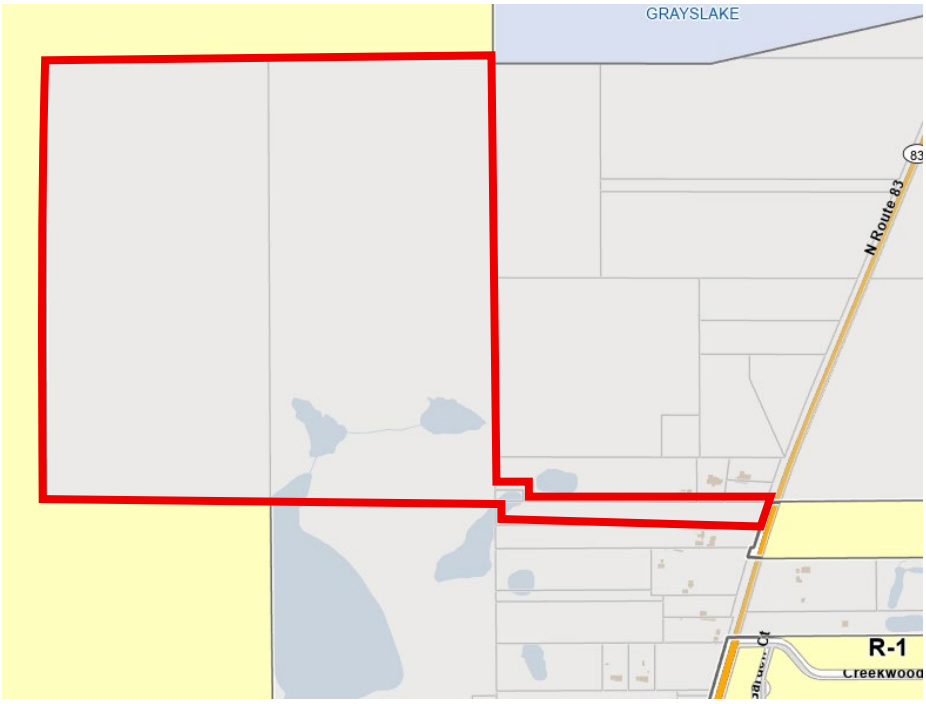
Compared to the R-1 Zoning District, the R-3 Zoning District allows for more moderate density single family neighborhoods by allowing smaller lots. Because the subject properties are currently outside the Village's corporate limits, the Village has full discretion to request development proposals or design standards that align with its planning vision and zoning regulations. This annexation represents a key opportunity to shape the quality and character of future growth at the Village's western edge.

Recommendation:

Motion to recommend approval/denial of a map amendment to rezone the properties located at 29808, 29730, 29508 and 29498 N. IL Route 83 from R-1, Single Family Residential, to R-3, Single Family Residential zoning district, pending annexation approval.

Location Map: SW Corner of Route 83 and Winchester Road





Legend:

Subject Property

VILLAGE OF Mundelein
Incorporated in 1909

Rosanova & Whitaker, Ltd.
445 Jackson Ave., Suite 200
Naperville, Illinois 60540
Phone: 630-355-4600
Fax: 630-352-3610
www.rw-attorneys.com

June 20, 2025

Isabel Guadarrama, Senior Planner
Village of Mundelein
300 Plaza Circle
Mundelein, IL 60060

RE: SECOND SUBMITTAL COVER LETTER
SW CORNER OF ROUTE 83 & WINCHESTER ROAD – *WINCHESTER ANNEXATION*

Dear Isabel,

Enclosed, please find re-submittal documentation associated with the request of Pulte Home Company, LLC ("Applicant"). Shown below are the documents that we are electronically re-submitting (the "Re-Submittal Documents") to the Village in support of our proposed project of the Winchester Annexation.

1. Legal Description *(Word and PDF)*
2. Annexation Plat
3. Zoning Map Amendment Application
4. Response Comments to Staff Comments *(Walnut Ridge and Winchester Annexation combined)*
5. Annexation Agreement* - *We anticipate getting this to you as soon as possible early next week. Thank you for your patience and understanding as we finalize these details to keep us on track for our targeted PZC date of July 16th.*

Should any additional documentation or hard copies be deemed necessary, we are certainly happy to work with the Village to that end. Please do not hesitate to call our office with any questions.

Sincerely,

McKenna Thomas

McKenna Thomas, Paralegal
Rosanova and Whitaker, Ltd.
mckenna@rw-attorneys.com | 630-355-4600 ext. 112

VILLAGE OF
Mundelein
Community Development

PLANNING AND ZONING COMMISSION APPLICATION
ZONING MAP AMENDMENT

TYPICAL PLANNING AND ZONING COMMISSION PROCESS

Meeting Schedule

The Planning and Zoning Commission consists of seven members who act as a recommending body to the Village Board. The Planning and Zoning Commission meets the first and third Wednesday of each month at the Village Hall, 300 Plaza Circle, Mundelein, Illinois. Meetings begin at 7:00 p.m.

Preliminary Conference

Prior to filling out this form you must first meet with a representative of Community Development to discuss the proposal and determine the necessary process for approval. To schedule a preliminary conference contact Community Development at (847) 949-3282.

Action by Planning and Zoning Commission

The Planning and Zoning Commission shall consider the proposed zoning amendment no more than 60 days of receipt of a complete application. If, in the Planning and Zoning Commission's judgment, the application does not contain sufficient information, the Commission may request additional information. In that event, the sixty (60) day period shall be suspended pending receipt of all requested information and/or the public hearing may be continued. Within sixty (60) days of the close of the public hearing, the Planning and Zoning Commission shall forward to the Village Board its recommendation.

Action by the Village Board

The Village Board shall consider the application within sixty (60) days of receiving the findings of fact and recommendation from the Planning and Zoning Commission. The Village Board may also refer the application back to the Planning and Zoning Commission for further consideration.

Limitations on Denials

No application for an amendment that has been denied by the Village Board shall be reconsidered for a period of one (1) year from that date of denial.

The initial submittal must contain:

☐ Completed Application – Pages 3-8

(Write N/A where items do not apply)

☐ Current or accurate Plat of Survey or Preliminary Plat of Subdivision

a. (1) no larger than 11" x 17"

☐ Analysis or Report justifying requested rezoning

☐ Application Fee:

MAP AMENDMENTS/REZONING FEES	
REZONING TYPE	**Fee**
Map Amendment – Residential Single Family	
Less than 2 acres	$150
2 acres, but less than 5 acres	$200
5 acres, but less than 10 acres	$250
10-20 acres	$300
Each additional acre	$15 each
Map Amendment – Residential Developer	
Less than 2 acres	$400
2 acres, but less than 5 acres	$500
5 acres, but less than 10 acres	$1,000
10-20 acres	$1,500
Each additional acre	$15 each
Map Amendment – Non-Residential	
Less than 2 acres	$1,000
2 acres, but less than 5 acres	$1,500
5 acres, but less than 10 acres	$2,000
10-20 acres	$2,500
Each additional acre	$100 each

(Additional fees may apply if additional actions are required)

Additional submittal requirements:

☐ Affidavit of Notification and Certified Mail receipts, return receipts, and undeliverable envelopes
(*See Exhibit A and B. Must be submitted to Community Development prior to public hearing*)

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

PROPERTY INFORMATION

Address: SW Corner of Route 83 & Winchester Road

Property Index Numbers (PIN): 10-14-100-012, 10-14-300-001, 10-15-200-001, 10-15-200-002

Size of Property: +/- 165.45 acres (sq. ft. /acres)

Size of Building Space: N/A - Vacant (sq. ft.)

Size of Space Utilized: N/A

ZONING

Current Zoning: Unincorporated Lake County

Proposed Zoning: R3 - Single-Family Residential

Current Use: Agricultural

Proposed Use: Single-Family Residential

PETITIONER INFORMATION

Business/Org. Name: Pulte Home Company, LLC, a Michigan limited liability company

Name: Eric Friedman

Title: Entitlements Manager

Address: 1900 E Golf Road, Suite 300

City, State, Zip: Schaumburg, IL 60173

Phone: 847-230-5308

Email: eric.friedman@pultegroup.com

Petitioner Status: ☐ Owner ☐ Lessee ☒ Contract Purchaser

PROPERTY OWNER INFORMATION

Business/Org. Name: Winchester Development, LLC*

Name: Brenda Levin

Title: Manager

Address: 3350 Salt Creek Lane #110

City, State, Zip: Arlington Heights, IL 60005

Phone: 312-899-1618

Email: jmays@gouldratner.com

*Winchester Development, L.L.C., an Illinois limited liability company, as the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401

SECTION OF ZONING ORDINANCE: _____

DESCRIPTION OF PROPOSED MAP AMENDMENT: (*Attach sheet if additional space is needed*)

Please see attached Land Use Petition and Findings of Fact.

STANDARDS FOR GRANTING A MAP AMENDMENT

The Planning and Zoning Commission recommendation and the Village Board decision on any zoning amendment is a matter of legislative discretion that is not controlled by any particular standard. However, in making their recommendation and decision, the Planning and Zoning Commission and the Village Board shall consider the following standards. The approval of amendments is based on a balancing of these standards. **Please provide a detailed response to each of the following criteria** (*attach additional pages, if necessary*):

a. The existing use and zoning of nearby property.

b. The extent to which property values of the subject property are diminished by the existing zoning.

c. The extent to which the proposed amendment promotes the public health, safety, and welfare of the Village.

d. The relative gain to the public, as compared to the hardship imposed upon the applicant.

e. The suitability of the property for the purposes for which it is presently zoned, i.e., the feasibility of developing the property in question for one (1) or more uses permitted under the existing zoning classification.

f. The length of time that a property in question has been vacant, as presently zoned, considered in the context of development in the area where the property is located.

g. The evidence, or lack of evidence, of community need for the use proposed by the applicant.

h. The consistency of the proposed amendment with the Comprehensive Plan.

i. That the proposed amendment will benefit the residents of the Village as a whole, and not just the applicant, property owner(s), neighbors of any property under consideration, or other special interest groups, and the extent to which the proposed use would be in the public interest and would not serve solely on the interest of the applicant.

j. The extent to which the proposed amendment creates nonconformities.

k. The trend of development, if any, in the general area of the property in question; and

l. Whether adequate public facilities are available including, but not limited to, schools, parks, police and fire protection, roads, sanitary sewers, storm sewers, and water lines, or are reasonably capable of being provided prior to the development of the uses, which would be permitted on the subject property if the amendment were adopted.

AFFIDAVIT OF OWNERSHIP AND AUTHORIZATION

COUNTY OF LAKE)
)
STATE OF ILLINOIS)

I, Brenda Levin, under oath, state that I am

_____ the sole)
_____ an) owner of the property
_x_ an authorized officer of the)

commonly described as (*Address*) SW Corner of Route 83 & Winchester Road and that such property is owned by (*Printed Name*) Winchester Development, L.L.C * as of this date. As owner of the property, I do hereby authorize Rosanova & Whitaker, Ltd. (*Printed Name or Not Applicable*) to represent me in the following Planning and Zoning Commission/Village Board matter, Annexation and Map Amendment (*Action*).

Brenda Levin
Signature

*Winchester Development, L.L.C., an Illinois limited liability company, as the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401

Subscribed and sworn to before me

this 03 day of April, 2023.

M. L. Kapadia
Notary Public Signature

MANHAR KAPADIA
OFFICIAL SEAL
Notary Public - State Of Illinois
Commission No. 948154
My Commission Expires 09 March 2026

SITE VISIT AUTHORIZATION

I hereby grant employees of the Village of Mundelein, their agents, and members of the Mundelein Planning and Zoning Commission permission to enter on the property located at the following address:

(*Address*) +/- 165.45 acres at the SW Corner of Route 83 & Winchester Road

Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

Brenda Levin 4/3/25

Signature of Owner Date

By Brenda Levin

Manager of Winchester Development, L.L.C., an Illinois limited liability company, as the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401

Title/Full Corporate Name

If Contract Purchaser:

Signature of Contract Purchaser Date

By

Title/Full Corporate Name

If Lessee (Corporate or Partnership):

Signature of Lessee Date

By

SITE VISIT AUTHORIZATION

I hereby grant employees of the Village of Mundelein, their agents, and members of the Mundelein Planning and Zoning Commission permission to enter on the property located at the following address:
(*Address*) +/- 165.45 acres at the SW Corner of Route 83 & Winchester Road

Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

Signature of Owner Date

By

Title/Full Corporate Name

If Contract Purchaser:

Signature of Contract Purchaser Date April 10, 2025

By Robert Getz

Vice President

Title/Full Corporate Name

If Lessee (Corporate or Partnership):

N/A

Signature of Lessee Date

By

Title/Full Corporate Name
REQUIRED SIGNATURES

The undersigned states under oath that he/she/they are the **Legal Owner(s)** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature (Owner): Brenda Levin
Printed Name: Brenda Levin

Date: 4/3/25
Title: Manager of Winchester Development, L.L.C., an Illinois limited liability company, as the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401

Signature (Owner): _____
Printed Name: _____

Date: _____
Title: _____

The undersigned states under oath that he/she/they are the **Contract Purchaser** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Contract Purchaser: _____
Printed Name: _____

Date: _____
Title: _____

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: _____
Printed Name: _____

Date: _____
Title: _____

Title/Full Corporate Name
REQUIRED SIGNATURES

The undersigned states under oath that he/she/they are the **Legal Owner(s)** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature (Owner): _____ Date: _____

Printed Name: _____ Title: _____

Signature (Owner): _____ Date: _____

Printed Name: _____ Title: _____

The undersigned states under oath that he/she/they are the **Contract Purchaser** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Contract Purchaser: [signature] Date: Apr 10 2025

Printed Name: Robert Getz Title: Vice President

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: N/A Date: _____

Printed Name: _____ Title: _____

LEGAL DESCRIPTION

Parcel 1:

The West 165 feet of the South 66 feet of the Northwest 1/4 of Section 14, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

Parcel 2:

The North 1/2 of the following described premises: that part of the North 1/2 of the Southwest 1/4 of Section 14, Township and Range aforesaid, lying West of the center line of Route 83 (except the South 1046.76 feet thereof), in Lake County, Illinois.

Parcel 3:

The Northeast 1/4 of Section 15, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

PINS: 10-14-100-012, 10-14-300-001, 10-15-200-001, 10-15-200-002

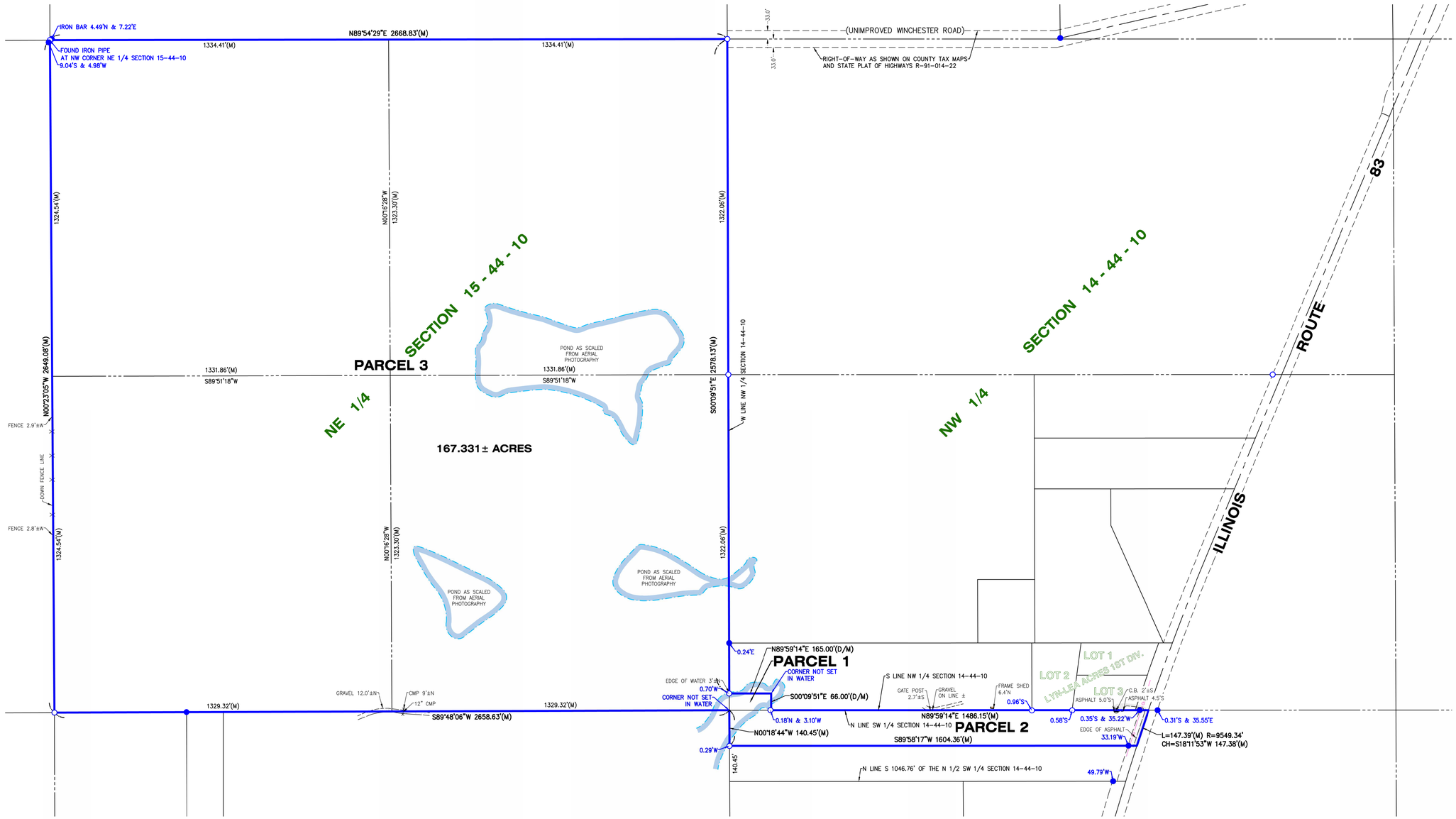
Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

PLAT OF SURVEY

PARCEL 1:
The West 165 feet of the South 66 feet of the Northwest Quarter of Section 14, Township 44 North, Range 10 East of the Third Principal Meridian, in Lake County, Illinois.

PARCEL 2:
The North Half of the following described premises: that part of the North Half of the Southwest Quarter of Section 14, Township and Range aforesaid, lying West of the centerline of Illinois Route 83 (except the South 1046.76 feet thereof), in Lake County, Illinois.

PARCEL 3:
The Northeast Quarter of Section 15, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.



200' 0' 200' 400'
SCALE: 1" = 200'

LEGEND	
◉	CATCH BASIN (C.B.)
●	FOUND IRON BAR
○	FOUND IRON PIPE
⌀	UTILITY POLE
CMP	CORRUGATED METAL PIPE
(D)	DEED
(M)	MEASURE

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: SES CHECKED BY: TVA
SCALE: 1"=200' SEC. 14,15 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: **
JOB NO.: 250273 I.D. MBV
FIELDWORK COMP.: 4/5/25 BK. ___ PG. ___
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: ___

**P.I.N.:
10-14-100-012
10-14-300-001
10-15-200-001
10-15-200-002

NOTE: Only those Building Line Restrictions or Easements shown on a Recorded Subdivision Plat are shown hereon unless the description ordered to be surveyed contains a proper description of the required building lines or easements.

- **No distance should be assumed by scaling.**
- **No underground improvements have been located unless shown and noted.**
- **No representation as to ownership, use, or possession should be hereon implied.**
- **This Survey and Plat of Survey are void without original embossed or colored seal and signature affixed.**

Compare your description and site markings with this plat and AT ONCE report any discrepancies which you may find.

STATE OF ILLINOIS)
) S.S.
COUNTY OF McHENRY)

In my professional opinion, and based on my observations, I hereby certify that we have surveyed the premises above described, and that the plat hereon is a true representation of the said survey. This professional service conforms to the current Illinois minimum standards for a boundary survey.

Dated at Woodstock, McHenry County, Illinois 4/9 A.D., 20 25.

Vanderstappen Land Surveying Inc.
Design Firm No. 184-002792

TERRY L. VAN ALSTINE
035-003055
PROFESSIONAL LAND SURVEYOR
STATE OF ILLINOIS
EXP. 11/30/2026
WOODSTOCK, ILLINOIS

By: ___
Illinois Professional Land Surveyor No. 3055

Y:\PLATS\2025\0200-0399\250273_V-250273\250273-MBV-GRD.dwg-Layout1--4/10/2025 11:54 AM

TO: THE MAYOR AND BOARD OF TRUSTEES
OF THE VILLAGE OF MUNDELEIN
LAKE COUNTY, ILLINOIS

PETITION FOR ANNEXATION

The undersigned, WINCHESTER DEVELOPMENT L.L.C., an Illinois limited liability company, the beneficiary of the CHICAGO TITLE LAND TRUST COMPANY, AS TRUSTEE UNDER TRUST AGREEMENT DATED AUGUST 15, 1995, AND KNOWN AS TRUST NUMBER 12072401 (collectively, the "Petitioner"), hereby respectfully petitions to annex to the Village of Mundelein, Lake County, Illinois (the "Village"), the parcels of land legally described in Exhibit "A" attached hereto and made a part hereof (the "Property"), along with the adjacent rights-of-way not within another municipality, and states the following under oath:

1. The Property is not within the corporate limits of any municipality;

2. The Property is contiguous to the corporate limits of the Village;

3. No electors reside on the Property;

4. The Petitioner is the only owner of record of the Property; and

5. A Plat of Annexation which contains an accurate map of the Property to be annexed hereunder is shown and set forth on Exhibit "B" attached hereto and made a part hereof.

WHEREFORE, PETITIONER RESPECTFULLY REQUESTS THE FOLLOWING:

1. That the corporate authorities of the Village annex the Property along with adjacent rights-of-way which are not part of another municipality to said Village in accordance with the provisions of this Petition by an ordinance of the Mayor and Board of Trustees of the Village pursuant to 65 ILCS 5/7-1-8, as amended.

2. That such other action be taken by the Village as is necessary or appropriate to effect the annexation of the Property to the Village.

3. That the annexation of the Property herein petitioned for shall be subject to and conditioned upon the approval and execution of a mutually satisfactory annexation agreement by and between Petitioner and the corporate authorities of the Village and mutually satisfactory zoning of the Property.

To the best of the undersigned's information and belief, the statements contained herein are true and correct.

BALANCE OF PAGE LEFT INTENTIONALLY BLANK
SIGNATURE PAGE FOLLOWS

I, Rachel Huitsing, being duly sworn on oath, depose and say that I have read the foregoing Petition, that I have the authority to sign this attestation as the Assistant Vice President of Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401, and that I am familiar with the matters therein stated and that the matters therein stated are true in substance and fact.

Dated this 21st day of March, 2025

This instrument is executed by the undersigned Land Trustee, not personally but solely as Trustee in the exercise of the power and authority conferred upon and vested in it as such Trustee. It is expressly understood and agreed that all the warranties, indemnities, representations, covenants, undertakings and agreements herein made on the part of the Trustee are undertaken by it solely in its capacity as Trustee and not personally. No personal liability or personal responsibility is assumed by or shall at any time be asserted or enforceable against the Trustee on account of any warranty, indemnity, representation, covenant, undertaking or agreement of the Trustee in this instrument.

PETITIONER:

CHICAGO TITLE LAND TRUST COMPANY, AS TRUSTEE UNDER TRUST AGREEMENT DATED AUGUST 15, 1995, AND KNOWN AS TRUST NUMBER 12072401

By: Rachel Huitsing
Name: Rachel Huitsing
Title: Assistant Vice President

CHICAGO TITLE LAND TRUST COMPANY CORPORATE SEAL CHICAGO, ILLINOIS

STATE OF ILLINOIS)
) SS
COUNTY OF Cook)

I, the undersigned, a Notary Public in and for said County and State aforesaid, do hereby certify that Rachel Huitsing, personally known to me to be the Assistant Vice President of Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401, appeared before me this day in person and acknowledged that he/she signed the foregoing instrument as a free and voluntary act for the uses and purposes therein set forth and that said instrument is the act and deed of said company.

Subscribed and sworn to before me this 21st day of March, 2025.

Sherrithe Pearson
Notary Public

My commission expires:

"OFFICIAL SEAL"
SHERRITHE PEARSON
Notary Public, State of Illinois
My Commission Expires 08/21/2027

I, Brenda Levin, being duly sworn on oath, depose and say that I have read the foregoing Petition, that I have the authority to sign this attestation as the Manager of Winchester Development L.L.C., an Illinois limited liability company, the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401, and that I am familiar with the matters therein stated and that the matters therein stated are true in substance and fact.

Dated this 19 day of March, 2025

WINCHESTER DEVELOPMENT L.L.C.,
an Illinois limited liability company

By: Brenda Levin
Name: Brenda Levin
Title: Manager

STATE OF ILLINOIS)
) SS
COUNTY OF Lake)

I, the undersigned, a Notary Public in and for said County and State aforesaid, do hereby certify that Brenda Levin, personally known to me to be the Manager of Winchester Development L.L.C., an Illinois limited liability company, appeared before me this day in person and acknowledged that she signed the foregoing instrument as a free and voluntary act for the uses and purposes therein set forth and that said instrument is the act and deed of said limited liability company.

Subscribed and sworn to before me this 19 day of March, 2025.

Notary Public

My commission expires: 10/16/28

OFFICIAL SEAL
RIGOBERTO PARAMO
NOTARY PUBLIC, STATE OF ILLINOIS
COMMISSION NO. 998608
MY COMMISSION EXPIRES OCTOBER 16, 2028

EXHIBIT "A"

LEGAL DESCRIPTION

Parcel 1:

The West 165 feet of the South 66 feet of the Northwest 1/4 of Section 14, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

Parcel 2:

The North 1/2 of the following described premises: that part of the North 1/2 of the Southwest 1/4 of Section 14, Township and Range aforesaid, lying West of the center line of Route 83 (except the South 1046.76 feet thereof), in Lake County, Illinois.

Parcel 3:

The Northeast 1/4 of Section 15, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

PINs: 10-14-100-012, 10-14-300-001, 10-15-200-001, 10-15-200-002

EXHIBIT "B"

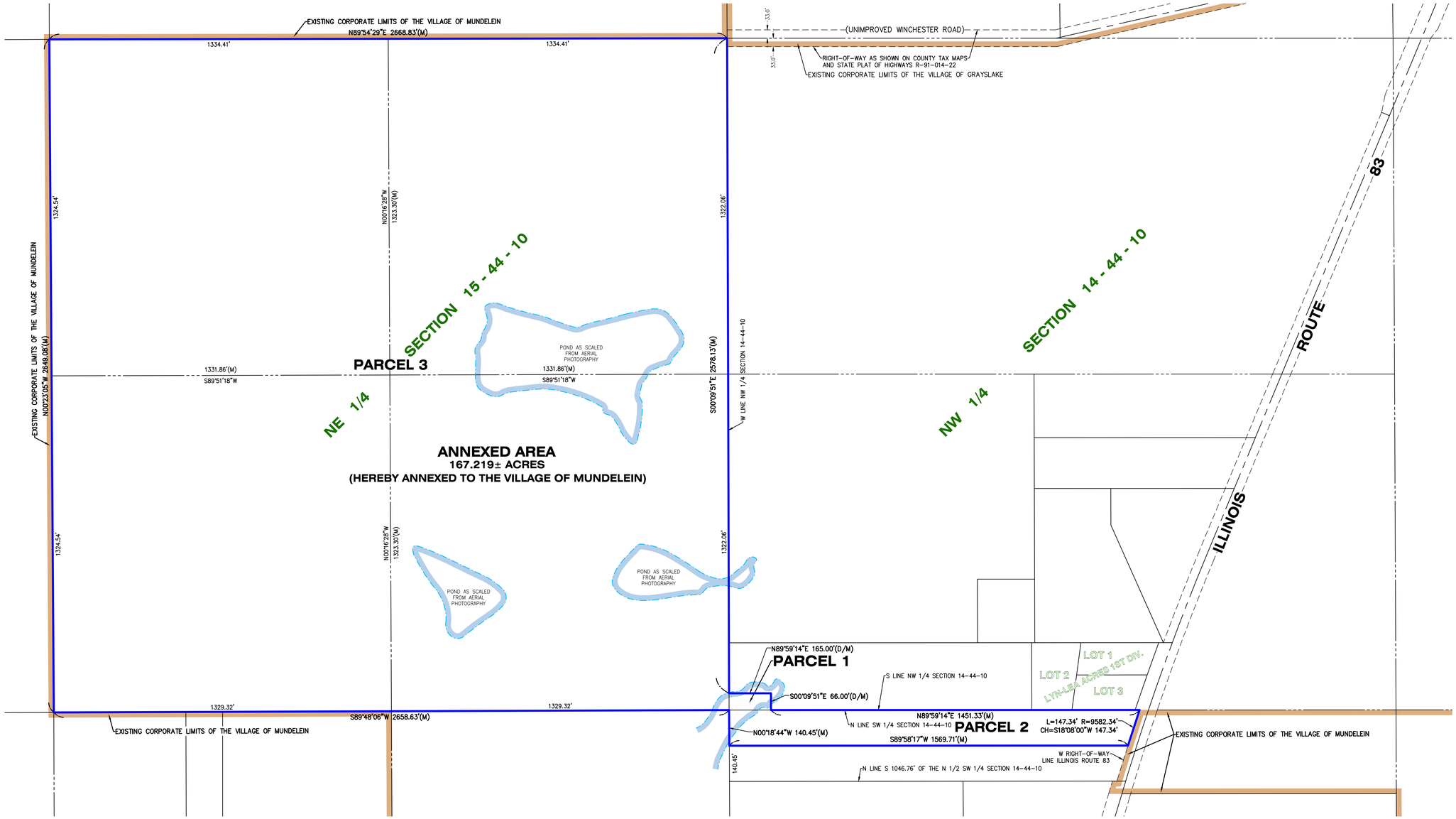
PLAT OF ANNEXATION

[to be attached]

4856-4601-1321, v. 1

PLAT OF ANNEXATION

Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"



PARCEL 1:
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PARCEL 2:
The North Half of the following described premises: that part of the North Half of the Southwest Quarter of Section 14, Township and Range aforesaid, lying West of the West right-of-way line of Illinois Route 83 (except the South 1046.76 feet thereof), in Lake County, Illinois.

PARCEL 3:
The Northeast Quarter of Section 15, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

LEGEND	
◉	CATCH BASIN (C.B.)
●	FOUND IRON BAR
○	FOUND IRON PIPE
	UTILITY POLE
CMP	CORRUGATED METAL PIPE
(D)	DEED
(M)	MEASURE

200' 0' 200' 400'
SCALE: 1" = 200'

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: SES **CHECKED BY:** _____
SCALE: 1"=200' **SEC.** 14,15 **T.** 44 **R.** 10 **E.**
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: **
JOB NO.: 250273-A **I.D.** PAN
FIELDWORK COMP.: 4/5/25 **BK.** ___ **PG.** ___
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. **REF:** _____

**P.I.N.:
10-14-100-012
10-14-300-001
10-15-200-001
10-15-200-002

RECORDER'S CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

This instrument filed for record in the Recorder's Office of Lake County, Illinois,

on this _____ day of _____, 2025, A.D.,

at _____ o'clock____M. and recorded as

Document Number _____

_____
Lake County Recorder

THIS PLAT PRESENTED FOR RECORDING BY:

_____

_____

_____

VILLAGE CLERK'S CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

I _____, Village Clerk of the Village of Mundelein, Illinois hereby certify that the Plat was presented to and by resolution duly approved by the Board of Trustees of said Village at its meeting held on the _____ day of_____, 20_____, that all dedications to the Village of Mundelein, Illinois depicted thereon were accepted by the Village Board of Trustees on said date, and that the required bond or other guaranty has been posted for the completion of the improvements required by the regulations of said Village.

In witness whereof I have hereunder set my hand and seal of the Village of Mundelein, Illinois,

this _____ day of _____, 20__ A.D.

By: _____ _____
Village Clerk Printed name

VILLAGE BOARD CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

Plat approved by the Village Board of Trustees of the Village of Mundelein, Illinois

this _____ day of _____, 20__ A.D.

Signed this _____ day of _____ 20__ A.D.

_____ _____
Village Mayor Attest: Village Clerk

5/30/2025 SES – ADDED CERTIFICATES PER VILLAGE REVIEW
4/14/2025 SES – REVISED PER CLIENT REVIEW

STATE OF ILLINOIS)
) S.S.
COUNTY OF McHENRY)

I hereby state that we have platted the premises above described, and that the plat hereon is a true representation of the said description.

This is not a Boundary Survey

Dated at Woodstock, McHenry County, Illinois 4/9 **A.D., 20** 25.

Vanderstappen Land Surveying, Inc..
Design Firm No. 184-002792

By: _____
Illinois Professional Land Surveyor No.

Y:\PLATS\2025\0200-0399\250273_V-250273\250273-A-PAN-GRD.dwg-Layout1-5/30/2025 3:46 PM

STATE OF ILLINOIS)
)
COUNTY OF LAKE)
)
VILLAGE OF MUNDELEIN)

PETITION TO THE VILLAGE OF MUNDELEIN FOR ZONING APPROVAL

THE UNDERSIGNED Petitioner, Winchester Development L.L.C., an Illinois limited liability company, as the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401 (hereinafter "the Petitioner"), as the owner of the property legally described on **Exhibit A** (the "Subject Property"), respectfully petitions the Village of Mundelein (the "Village") upon annexation of the Subject Property to: (i) approve an amendment to the official zoning map to zone the Subject Property in the R3 District; (ii) approve a variance from 19.16.070 (B) to allow a reduced roadway section of 28' as measured from back-of curb to back-of curb; (iii) approve a variance from Section 19.16.150 of the Code to permit utilities to be located within the parkway; (iv) to approve such other relief from the Village of Mundelein Code of Ordinances (the "Code") as may be deemed necessary and appropriate.

In support of this Petition, the Petitioner states to the Village of Mundelein as follows:

1. Winchester Development L.L.C., an Illinois limited liability company, as the beneficiary of the Chicago Title Land Trust Company, as Trustee under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401 ("Owner") is the owner of the Subject Property.

2. The Subject Property is approximately 165 acres of vacant property currently zoned AG- Agricultural in unincorporated Lake County.

3. The surrounding properties are generally vacant and undeveloped.

4. Though undeveloped, the properties to the north, west, and south of the westernmost parcel of the Subject Property are zoned R1 in Mundelein. The remaining adjacent properties are vacant and zoned AG (Agricultural) in Lake County.

5. The Petitioner now seeks approval to zone the Subject Property R3 upon annexation to the Village of Mundelein.

6. Consistent with the intent of the Code, Petitioner now seeks the relief as outlined above in order to facilitate the future residential redevelopment of the Subject Property.

7. The requests meet all Village and State requirements and will facilitate the beneficial use of the Subject Property as stated below.

REZONING TO R-3 FINDINGS OF FACT

a. The existing use and zoning of nearby property;

The Subject Property consists of +/- 165 acres and is currently zoned Agricultural (AG) in unincorporated Lake County. The Petitioner's request to zone the Subject Property R-3 upon annexation to the Village is consistent with the existing and future land uses anticipated for the area. The surrounding area is predominantly vacant. The Village's comprehensive plan identifies this area as a "flexible use" subarea with the goals to provide (i) new and varied residential opportunities that provide additional housing choices; (ii) increased population to support existing businesses in town; and (iii) new development that will contribute positively to the Village's economic health[1]. The subarea identified in the comprehensive plan consists of hundreds of acres, yielding many different opportunities to develop in accordance with the goals set forth in the future

[1] https://www.mundelein.org/DocumentCenter/View/1046/Comprehensive-Plan---Adopted-February-2021-PDF

land use plan. Property to the north, west, and south of the westernmost parcel of the Subject Property is vacant, but zoned R1 in Mundelein. This area zoned R1 in Mundelein is comprised of over 740 acres and is expected to be developed as the Ivanhoe Village mixed-use development ("Ivanhoe Village") over the next 20-25 years. The conceptual plans for Ivanhoe Village contemplate a walkable community with thousands of single-family homes, townhomes and apartments, an assisted living facility, and designated areas for retail, medical/office, and industrial land uses. The remaining adjacent parcels are vacant and unincorporated County properties. Since the adjacent incorporated property is already zoned R1 and contemplated for a variety of land uses, the Subject Property presents an excellent canvas for R3 zoning which will facilitate future development of additional new residential housing in line with the Comprehensive Plan.

b. The extent to which property values of the subject property are diminished by the existing zoning;

The requested R-3 zoning will enhance the character of the area and actually improve property values in the area. The surrounding area is undeveloped and thus provides no net benefit to property values and the community at large. The current property taxes generated by the Subject Property are minimal. In its fully developed state, we can anticipate an extraordinary influx in tax revenue. The zoning of the Subject Property provides a canvas for future development opportunities that in turn will help the facilitate growth of the other undeveloped and underutilized properties in the vicinity. In essence, the rezoning will kickstart development, generate a significant increase in tax revenue, and ultimately increase the property values in the area.

c. The extent to which the proposed amendment promotes the public health, safety, and welfare of the Village;

The proposed rezoning takes into consideration the underlying goals and objectives set forth in the comprehensive plan. The comprehensive plan specifically notes the Subject Property as

within an area that has the potential to provide opportunities for future growth within the Village. With that, the rezoning will allow the Subject Property to be developed as a residential community in the future, which will bring more rooftops and ongoing activity, which will ultimately spark interest for other development in the general area. In addition, the rezoning will address the Village's need to provide a variety of housing stock to address home buyers in all different ages and stages in life, which will ultimately promote the general welfare. Any future development under the R3 zoning provide for a community of not less than 1.9 dwelling units per acre. The plans specific to a future community on the Subject Property will be reviewed by the requisite boards of authority under Mundelein's development processes to ensure the future project will not be detrimental to the public health, safety, or general welfare of the community at large.

d. The relative gain to the public, as compared to the hardship imposed upon the applicant;

The gain to the public as described above will be significant. If the zoning was not approved, the economic hardship would be considerable as the +/- 165 acre Subject Property would continue to sit vacant and underperforming into the indefinite future alongside the adjacent properties in the vicinity. Not only would the Subject Property sit vacant, but it is likely adjacent properties would also continue to sit vacant and unincorporated if the annexation and zoning of the Subject Property is not approved, which is detrimental to the Village's tax base. In essence, the future growth of this area as set forth in line with the comprehensive plan is reliant on the Subject Property's annexation and zoning request.

e. The suitability of the property for the purposes for which it is presently zoned, i.e. the feasibility of developing the property in question for 1 or more uses permitted under the existing zoning classification;

Currently unincorporated, the Subject Property has never utilized a zoning designation in the Village of Mundelein.

f. The length of time that a property in question has been vacant, as presently zoned, considered in the context of development in the area where the property is located;

This Subject Property has always utilized an Agricultural (AG) zoning classification in the County. As such, development opportunities are not viable under present zoning and unincorporated status.

g. The evidence, or lack of evidence, of community need for the use proposed by the applicant;

Given that there is significant lack of development in the general vicinity, there appears to be a need to revitalize this area. In fact, the comprehensive plan notes the future land use of the Subject Property and the surrounding undeveloped properties are identified as "flexible use". The comprehensive plan specifically notes the potential for annexation of the land to the northwest of Mundelein's municipal boundaries and notes this area should allow for both residential and business parks based upon specific market demands[2]. In today's market, we are faced with a national housing shortage. In response, the Petitioner's proposed rezoning will facilitate future development of the Subject Property and adjacent properties, ultimately helping to bring the supply and demand of housing closer to equilibrium to address this national issue.

h. The consistency of the proposed amendment with the Comprehensive Plan;

The comprehensive plan identifies the Subject Property as "flexible use", which notes this area should be used for residential and business parks based upon specific market demands. The subarea in the comprehensive plan governing the Subject Property sets forth certain goals to provide (i) new and varied residential opportunities that provide housing choices; (ii) increased population to support existing businesses in town; and (iii) new development that will contribute positively to

[2] https://www.mundelein.org/DocumentCenter/View/327/Comprehensive-Plan-Adopted-February-2021-PDF

the Village's economic health[3]. The subarea identified in the comprehensive plan consists of hundreds of acres, yielding many different opportunities to develop in accordance with the goals set forth in the future land use plan. Property to the north, west, and south of the westernmost parcel of the Subject Property is vacant, but zoned R1 in Mundelein. The remaining adjacent parcels are vacant and unincorporated County properties. Since the adjacent incorporated property is already zoned R1 with the Ivanhoe Village concept plans being at the forefront of the focus for this incorporated property, the Subject Property presents an excellent canvas for R3 zoning which will facilitate future development of a variety of new residential housing in line with the Comprehensive Plan. Noting most other adjacent properties are unincorporated, meeting the Village's goals for future development in this area is vastly reliant on the Subject Property's annexation and rezoning.

i. That the proposed amendment will benefit the residents of the Village as a whole, and not just the applicant, property owner(s), neighbors of any property under consideration, or other special interest groups, and the extent to which the proposed use would be in the public interest and would not serve solely on the interest of the applicant;

The rezoning will facilitate future annexations and ultimately future development in this area. As such, the amendment will enhance the Village's housing stock in line with the goals and objectives of the comprehensive plan. With any future residential development here, the Village's residential real estate tax base will be strengthened. In addition, providing an opportunity for future housing will attract a number of other land uses and development in the area, which will be a net positive for the community at large.

j. The extent to which the proposed amendment creates nonconformities;

[3] https://www.mundelein.org/DocumentCenter/View/1046/Comprehensive-Plan---Adopted-February-2021-PDF

This rezoning will not create any non-conformities. At this time, the Petitioner is not aware of any zoning deviations that will be necessary to develop the Subject Property as a residential community in the future.

k. The trend of development, if any, in the general area of the property in question; and

The trend of development in the general area is stagnant. As such, the Village provides a flexible canvas to welcome new development into the community for this specific area based upon market needs. This area is a unique pocket of Mundelein that remains undeveloped and unincorporated. To this end, Petitioner's proposal will allow for the annexation of the Subject Property and kick-start development and activity in this otherwise dormant area.

l. Whether adequate public facilities are available including, but not limited to, schools, parks, police and fire protection, roads, sanitary sewers, storm sewers, and water lines, or are reasonably capable of being provided prior to the development of the uses, which would be permitted on the subject property if the amendment were adopted.

Upon annexation and development, all public services, facilities and utilities will be adequate and available to service the site. All new on-site facilities necessary will be provided as part of the development of the Subject Property. As development plans progress, individual agreements will be reached with the school, park and library districts to ensure that all necessary services can and will be provided.

A DEVIATION TO REDUCE THE ROAD WIDTH

Petitioner seeks a deviation to Section 19.16.070 (B) to reduce the road width from 33' to 28'.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation is compatible with the character of the surrounding area. The reduction in road width is a common request in modern subdivisions such as Maple Hill, Orchard Meadows, and Sheldon Woods. The slight reduction in width provides many benefits such as a

reduction in future maintenance costs and traffic calming aspects.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The requested reduction in pavement width will not be noticeable to the surrounding area.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. The nominal reduction in road width is not a safety issue. Cars will be able to safely traverse the internal roadways, which has been proven to be true in other Mundelein communities.

A DEVIATION TO ALLOW UTILITIES TO BE LOCATED IN PARKWAYS

Petitioner seeks a deviation to Section 19.16.150 to allow certain utilities to be located in parkways rather than under the roadway.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation is compatible with the character of the surrounding area. Many municipalities require utilities such as sanitary systems to be placed in the parkway rather than under the roadways. This deviation will make it easier, less expensive, and less costly for maintenance of certain utilities since the road will not need to be torn up in order to access the facilities. The utilities being placed in the parkway will not be noticeable to the naked eye since everything will be underground.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The placement of the sanitary systems is actually going to be a benefit to the surrounding area. With

the systems being placed under the parkways rather than the roadways, the roads will not need to be obstructed with construction whenever the sanitary systems need maintenance.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. The deviation will not be noticed by anyone in the neighborhood or surrounding area. The utility systems being installed under parkways rather than under roadways will ensure a course of travel that will be unaffected when the systems require maintenance.

WHEREFORE, by reason of the foregoing, the undersigned Petitioner requests the Village approve following upon annexation of the Subject Property to: (i) approve an amendment to the official zoning map to zone the Subject Property in the R3 District; (ii) approve a variance from 19.16.070 (B) to allow a reduced roadway section of 28' as measured from back-of curb to back-of curb; (iii) approve a variance from Section 19.16.150 of the Code to permit utilities to be located within the parkway; and (iv) to approve such other relief from the Village Code as may be deemed necessary and appropriate.

[Remainder of page intentionally left blank; signature page follows]

RESPECTFULLY SUBMITTED this 8 day of April, 2025.

PETITIONER:

Winchester Development, L.L.C., an Illinois Limited liability company, as beneficiary of the Chicago Title Land Trust Company, as Trustee Under Trust Agreement dated August 15, 1995, and known as Trust Number 12072401

By: Brenda Levin
Name: Brenda Levin
Title: Manager

EXHIBIT A
LEGAL DESCRIPTION

Parcel 1:

The West 165 feet of the South 66 feet of the Northwest 1/4 of Section 14, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

Parcel 2:

The North 1/2 of the following described premises: that part of the North 1/2 of the Southwest 1/4 of Section 14, Township and Range aforesaid, lying West of the center line of Route 83 (except the South 1046.76 feet thereof), in Lake County, Illinois.

Parcel 3:

The Northeast 1/4 of Section 15, Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

PINs: 10-14-100-012, 10-14-300-001, 10-15-200-001, 10-15-200-002

4905-2587-7299, v. 2

June 20, 2025

Ms. Isabel Guadarrama
Village of Mundelein
300 Plaza Circle
Mundelein, IL 60060

RE: Walnut Ridge Staff Comments

Dear Ms. Guadarrama:

Please find the following responses to the comments received May 23, 2025, related to our proposed annexation and development of Walnut Ridge at the SWC of Route 83 and Winchester Road.

Regarding annexation of the neighboring parcels:

1. *Please provide a preliminary draft of the Annexation Agreement for review.*
   A draft annexation agreement is being submitted by Rosanova & Whitaker.
2. *There is an error in the PINS listed on the Legal Description document. The last PIN should read: 10-15-200-002.*
   The PIN has been corrected.
3. *There is a typographical error on the first page of the Zoning Map Amendment Application. The last PIN listed should be 10-15-200-002.*
   The PIN has been corrected.
4. *The Plat of Annexation should include all the certificates/signature blocks required for recording.*
   The Plat has been updated.
5. *The limits of the Village of Mundelein are incorrect on the southern end on the Plat of Annexation.*
   The Village limits have been corrected.

6. Parcel 1 and Parcel 2 do not meet the annexation requirements. The annexed area must have at least a 300-foot width.

Per communication with the Village attorney, we do not believe there is an issue with the annexation property. There is an important distinction to be made between a) a long and narrow corridor being used to facilitate annexation of some other property; and b) contiguous properties under uniform ownership that happen to include a narrower segment historically reserved for an access corridor. The first scenario is intended to manipulate state law to extend the limits of the Village. The second scenario is a natural extension of municipal boundaries consistent with state law and resulting case law. The subject property falls into the latter category.

7. Village requests language in the Annexation and/or a plat that provides for potential dedication or easement for roadway access at the northeast corner of the site that may connect the property to the north and the property to the east.

There is no objection to including language regarding future access in the Annexation Agreement. The Annexation Agreement provides a good format to explain the purpose and intent of the provision, allowing appropriate flexibility in future site planning efforts. The actual granting of any easement or dedication of right-of-way for access would appropriately occur at the time that development is proposed and the property is being subdivided. Creation of easements or dedication of right-of-way prior to formalizing a plan for the property would be premature and necessarily lead to future amendments of those easements/dedications.

Regarding annexation and development of Walnut Ridge:

Building

1. All construction should follow the Village of Mundelein Building Codes.

All plans submitted for permit shall comply with applicable codes, and all construction shall follow approved plans.

Community Development

1. Please provide a preliminary draft of the Annexation Agreement for review.

A draft annexation agreement is being submitted by Rosanova & Whitaker.

2. The proposed "Top Selling Point" signs along the right-of-way are excessive and not supported by the Village. A couple of signs may be acceptable, but more than that will appear cluttered.

The number of signs has been reduced to two on each side of the entry road.

3. The Plat of Annexation should include all the certificates/signature blocks required for recording.

The Plat has been updated.

4. Preliminary Engineering Document: At the northwest corner, should the design extend to the hammerhead, or will Street A curve into Street B? Please clarify.
The design intent is for a T-intersection of Street A and Street B in the northwest corner. Street A is designed for future extension.

The site plan has been updated to remove the hammerhead at the NW corner. The intersection of Streets A and B is intended as a T-intersection, accommodating future expansion to the west.

5. Like Sheldon Woods, the Village requests a gateway sign easement. The location should be: 1) large enough area to accommodate a 4' x 12' sign outside of the IDOT right-of-way; 2) relatively flat area; and 3) have relatively close access to electricity.

A gateway sign easement has been added to the Preliminary Plat. The easement will be formally created with the Final Plat of Subdivision.

6. Abbeyville 7 remains as one of the elevations. The developer plans to replace it with a model that places greater emphasis on the entrance.

The elevation package has been updated to replace Elevation 7.

7. There are some lots that do not meet the required minimum lot width of 50 feet. While the Developer is pursuing a PUD and separate variances are not needed, this variance from the Zoning Ordinance should be called out in the Annexation Agreement.

The Zoning Ordinance measures lot width at the front building setback line, and all lots comply with the 50' minimum width at that location.

8. Add labels for planting types and species on the Landscape Plan – currently, the symbols indicate the category of plantings, but do not indicate which varieties are being planted at which locations. Section 20.60.060 of the Municipal Code covers species diversity requirements.

Plant species and details will be provided with the final landscape plans. The design will meet the ordinance and diversity requirements.

9. Need application and fee for Plat of Subdivision (preliminary and final). Will the Preliminary and Final Plat be done separately? The plats should follow the Lake County certification/signature block requirements for recording.

The application has been completed and was turned in by hand to Isabel at our last meeting with staff, on June 2, 2025. The fee will be submitted with our Final application package.

Engineering

1. Provide for roadway extension to the north for potential connection to a Winchester Rd. extension adjacent to this development.

As agreed upon in meetings with staff, a connection to Winchester is not provided within our site plan. As requested for the neighboring parcel, that Owner is agreeable to a future extension north to Winchester, and east into Walnut Ridge, which would allow travel from our community to Winchester.

2. Provide IDOT confirmation on full access for Street G.

This project was submitted for a Geometric Review by IDOT on 3/19/25, but as of correspondence on 6/17/25 it is still in their queue. We understand that full access to Route 83 is a critical component of the proposed plan. The Annexation Agreement can appropriately include conditions associated with IDOT access approval.

3. Driveways are too close for lots 40-46; increase cul-de-sac radius and/or remove an individual lot.

The south cul-de-sac has been significantly revised to remove several lots from the radiused curb.

4. Roadway network is overall too tight. Cul-de-sacs should be 55' radius and linear pavement should be 33' edge to edge.

Noted. We have requested a pavement width deviation pursuant to the PUD application.

5. Provide similar cul-de-sac design for Street A terminus as Street D.

The site plan has been updated with this revision.

6. Extend limits of Street D to southern property line and terminate at cul-de-sac.

The site plan has been updated with this revision.

Fire

1. Fire does not have concerns with having only one access point.

Noted.

2. The current locations of the tornado sirens are sufficient for this development.

Noted.

Police

1. The major area of concern with this project relates to the proposal of only one point of ingress and egress for vehicle traffic. The traffic study indicates that improvements are slated for the intersection of RT 83/Winchester Rd., to include a traffic signal. Should these improvements occur, the single access point for the subdivision is less of a concern. However, without the improvements and the installation of a traffic signal, the safety of the intersection would be concerning.

As of early June, 2025, Lake County DOT indicates the NICOR gas main revisions are nearly complete. The gas main relocation is a precursor to LCDOT's commencement of intersection improvements. LCDOT projects that intersection improvements will commence in mid-July and that construction of the improvements will take approximately four months. Pulte's improvement of Walnut Ridge is slated to commence in 2026, after completion of the Route 83/Winchester Road intersection improvements. If there are additional concerns with respect to timing of improvements, Pulte is happy to address those issues as part of the Annexation Agreement.

We believe the content above, and the materials being resubmitted with this letter, fully address the staff comments received in May for Walnut Ridge. We appreciate the continued collaboration with the Village of Mundelein as we endeavor to bring this project to fruition.

Sincerely,

Eric M. Friedman, AIA
Entitlement Manager

Enclosures: Walnut Ridge Preliminary Resubmittal Package, 6/20/25

1900 E. Golf Road, Suite 300 Schaumburg, Illinois 60173
847.230.5400 pultegroupinc.com

VILLAGE OF Mundelein
Incorporated in 1909

To: Commission Members

From: Isabel Guadarrama, Senior Planner

For: Planning and Zoning Commission Meeting of July 16, 2025

Subject: PUBLIC HEARING - PZ2025-0021 - Walnut Ridge

Attachments:

1. Location Map
2. Map Amendment Application
3. Special Use Application
4. PUD Application
5. Plat Application
6. Petition for Annexation
7. Legal Description
8. ALTA Survey
9. Response to Standards Petition
10. PUD Site Plan
11. Lot Fit Exhibit
12. Lot Width Exhibit
13. Draintile Survey
14. EcoCAT Report
15. Fiscal Impact Anaylsis Report
16. Mundelein Walnut Ridge Elevations
17. Preliminary Landscape Plan
18. Site Photos
19. Submittal Cover Letter
20. Traffic Impact Study
21. Preliminary Plat of Annexation
22. Preliminary Plat of Subdivision
23. Preliminary Storm Report
24. Preliminary Engineering
25. Proposed Signage Plan
26. Wetland PJD
27. Wetland Waters Delineation Report
28. Response Comments to Staff Comments
29. Response Comments from PBA to GHA

Background:
The Village received several zoning applications from Pulte Group Company, LLC dba Pulte Home Company. These applications are being processed under two separate cases: PZ2025-0020 and PZ2025-0021. This report will specifically address Case PZ2025-0021, referred to as Walnut Ridge Subdivision.

The properties in question, commonly known as 20959 and 20575 W. Winchester Road, and 29944, 29909, and 29800 N. IL Route 83 (PINs: 10-14-100-001, 10-14-100-013, 10-14-100-003, 10-14-200-001, and 10-11-300-013), are located on the southwest corner of IL Route 83 and Winchester Road. The properties are currently in unincorporated Lake County and therefore require annexation of these parcels into the Village of Mundelein to facilitate their next phase of development. Pulte Home Company is under contract to purchase the 80.6-acre property to develop a 155-lot single-family residential subdivision. This new development will be modeled after the Sheldon Woods Subdivision, as it has been a very successful development.

These properties are currently not contiguous with the Village's corporate limits. Since the Village requires that properties be contiguous to the municipality to be eligible for annexation, the Petitioner coordinated annexation with the owner of the adjacent land that shares a boundary with the Village and is further reported under PZ2025-0020.

Project Details
The Petitioner is proposing 155 single-family homes featuring two separate home series, similar to that in their current development, Sheldon Woods. The proposal meets the bulk and yard regulations of the R-3 Single-Family Residential zoning district. Key features of the plan include:

- Two separate home series, each with 5 floor plan options:
    - Meadows (91 lots) – Typical lot dimensions 52'x130'
    - Estates (64 lots) – Typical lot dimensions 62'x135'

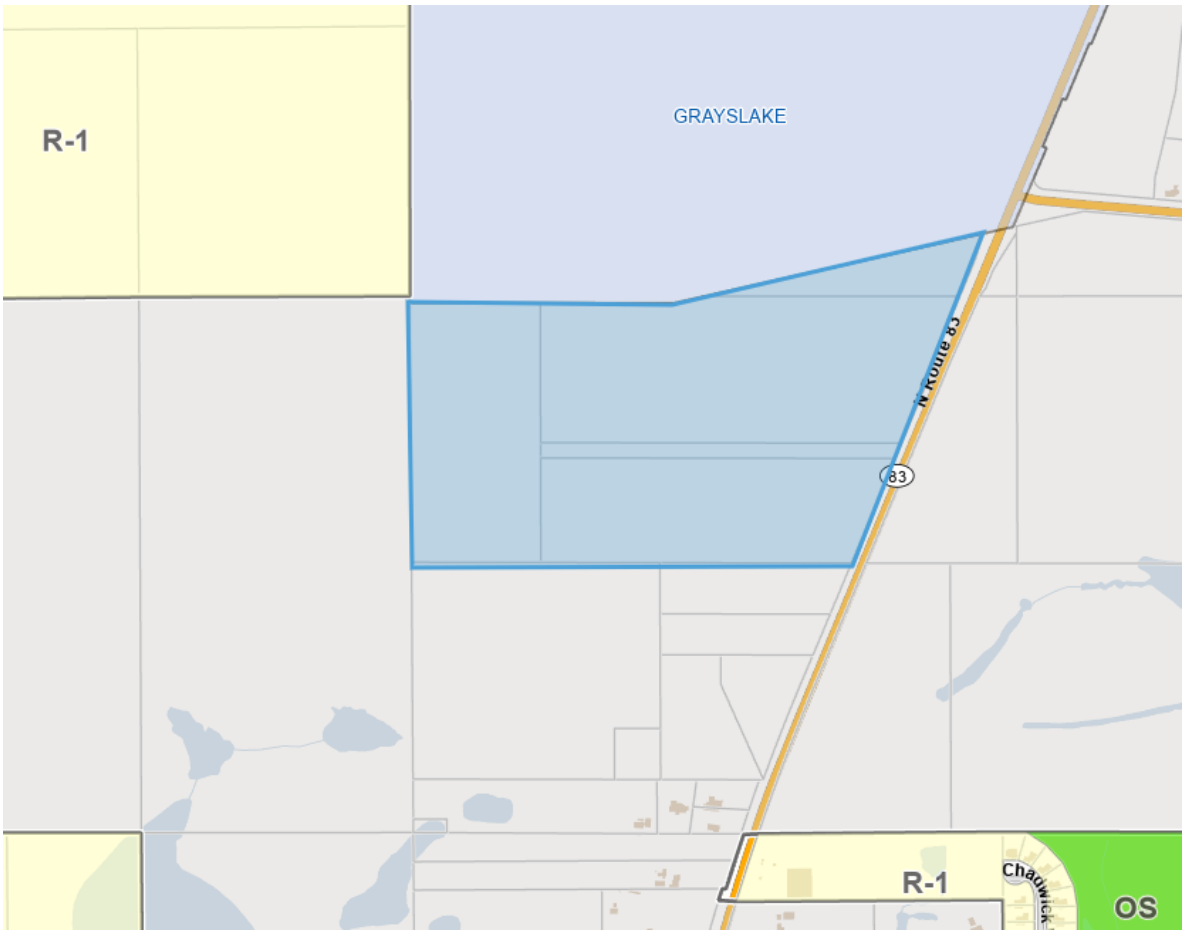
- Proposed homes range in size:
    - Meadows 1,683 - 3471 SF
    - Estates 2,899 – 3,568 SF

- Primary and only access to Walnut Ridge will be on Illinois Route 83, with the ability to connect at two future access points to adjacent developments on the west and south.
- Two cul-de-sacs with 10 homes in each dead end.
- One Public Park and two designated open spaces.

Zoning Requests and other Deviations
The following requests are pending annexation approval:

<u>Map Amendment (Rezoning)</u>
Upon annexation into the Village, properties are automatically assigned the R-1 Single-Family Residential Zoning District. The Petitioner is requesting a map amendment to rezone their project

site from R-1 Single-Family Residential to R-3 Single-Family Residential which will allow for denser development. The proposed zoning district is consistent with their most recent single-family subdivision, Sheldon Woods. Currently, the closest residential district to these parcels is R-1.



Special Use

All Planned Unit Developments in the R-3 Single-Family Residential are special uses. This is a requirement to approve the Planned Unit Development (PUD) request.

Planned Unit Development (PUD)

The PUD is a regulatory procedure intended to permit greater flexibility in land use regulations. A PUD is approved by ordinance and negates the need to apply for individual variations from the Municipal Code that may normally be required. Sheldon Woods also required a PUD. The variations they are looking to implement in this new residential development include the following:

a. Zoning: To increase the maximum allowable lot coverage in the Zoning Ordinance from 50% to 55% for the Meadows Series lots (as identified on the Site Plan);
b. Subdivision Code: To reduce the required road width from 33’ edge of pavement to 28’ back of curb under the Subdivision Code;
c. Subdivision Code: To waive the Subdivision Code requirement that sanitary sewer be located under the roadway and permit sanitary sewer to be located in the parkway;
d. Subdivision Code: To waive the Subdivision Code requirement that utilities be installed in the rear and side yards and to permit the installation of utilities in front yards;

e. Subdivision Code: To increase the permitted number of cul-de-sacs under the Subdivision Code from one per one hundred lots to two per one hundred lots;
f. Building/Landscape Code: To waive the requirement for replacement trees under the Landscape Code.

Preliminary Plat

The Petitioner submitted a Preliminary Plat of Walnut Ridge Subdivision to establish the single-family residential lots and outlots. The Final Plat will be submitted at a later time with Final Engineering.

Traffic Study

A traffic study for the proposed subdivision was conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA). The study concluded that the proposed improvements by Lake County Department of Transportation and surrounding roadway network have sufficient capacity to accommodate the traffic generated by Walnut Ridge.

Public Comments

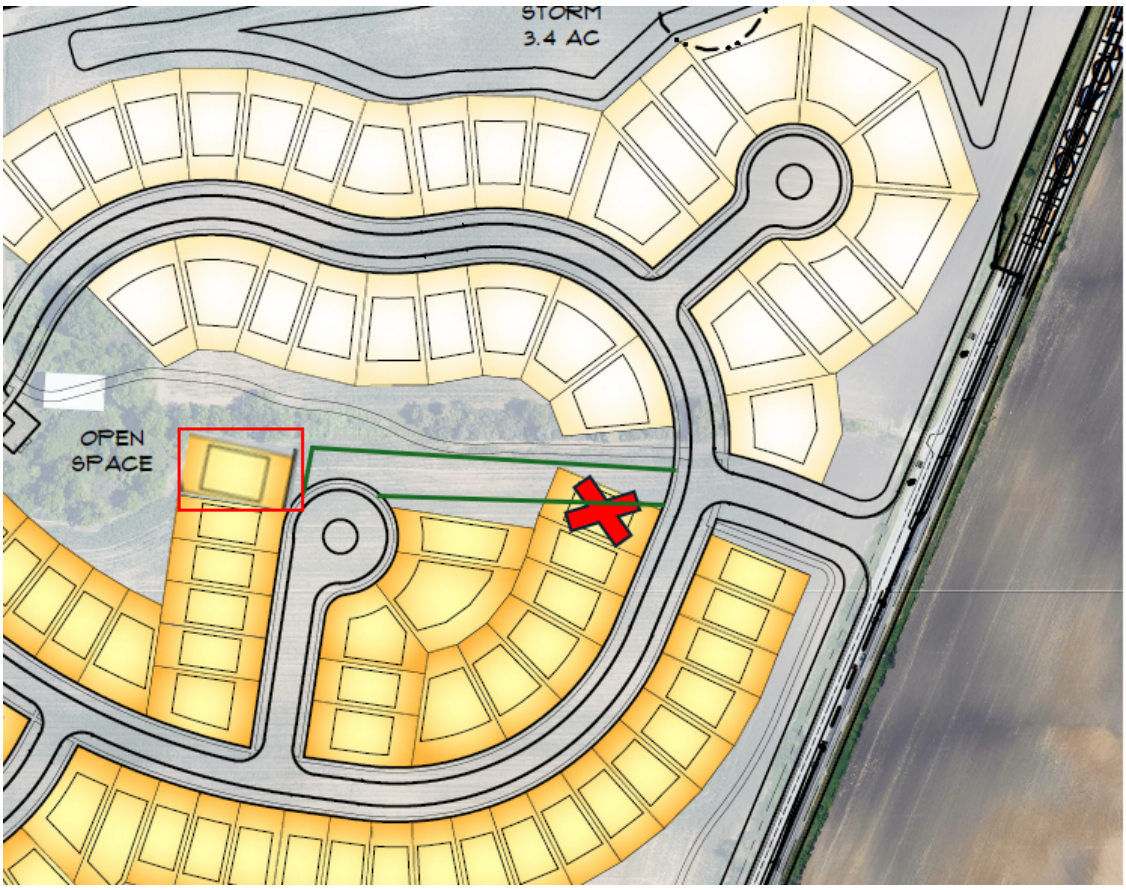
Staff received inquiries for more information, but no formal objections or comments from the public.

Department Comments

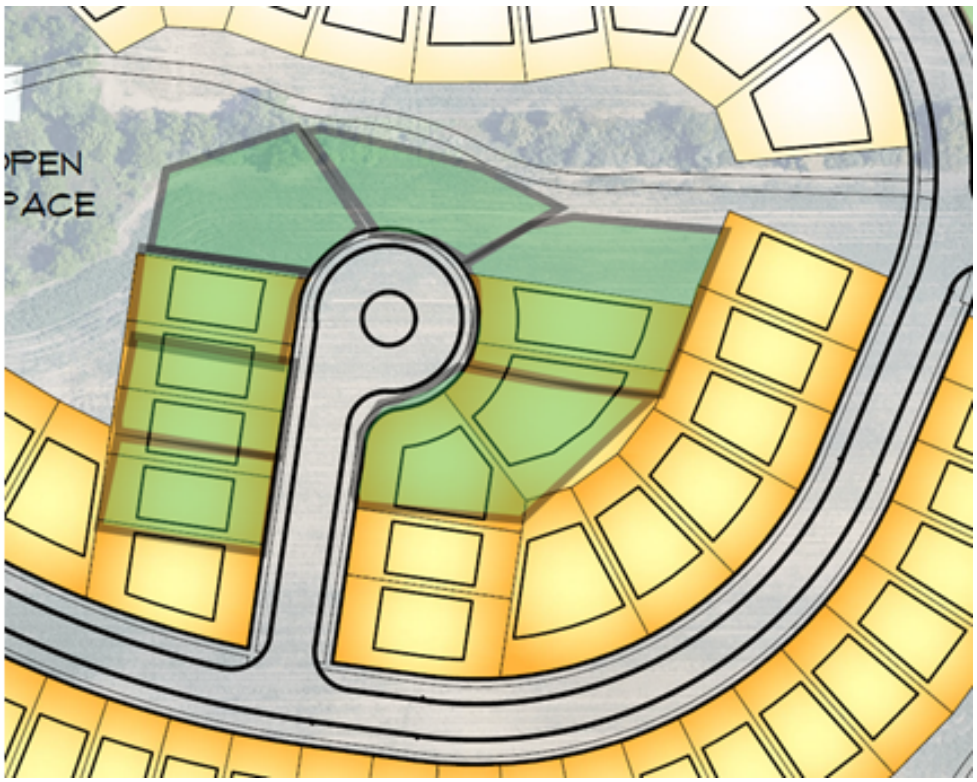
Community Development and Public Works & Engineering staff would like the Commission to consider the following changes to the site plan:

First, Staff recommends eliminating one of the proposed cul-de-sacs by connecting the western cul-de-sac to the main entrance. Per the Municipal Code, only one cul-de-sac is allowed for every 100 lots. Reducing the number of cul-de-sacs to one will improve roadway connectivity for both pedestrians and vehicles and simplify road maintenance.

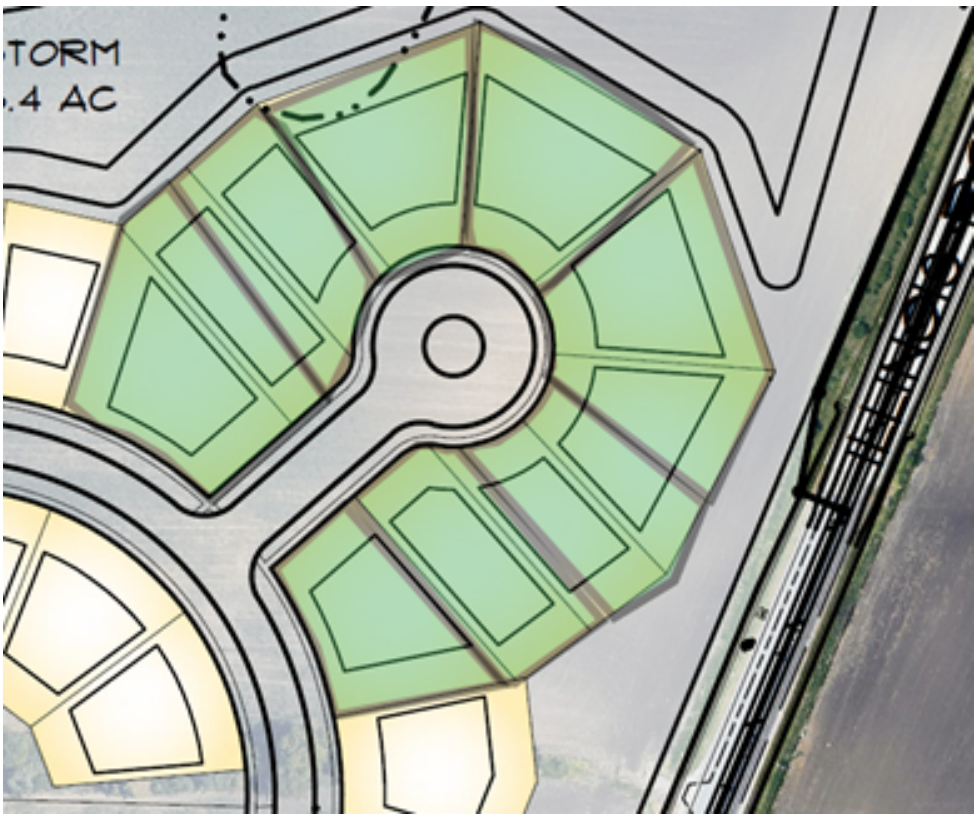
To accommodate this connection, one of the proposed homes may need to be relocated, as illustrated in the image below. Extending the road east, rather than north, will preserve the existing row of trees, which the Village prefers to retain.



As an alternative, staff suggests spreading out the homes within the existing cul-de-sac footprint, as shown in the following layout. This option also preserves the tree row while making full use of the cul-de-sac design.



Lastly, staff recommends reducing the number of homes in the northernmost cul-de-sac. A high number of homes in a cul-de-sac makes it challenging for the Village to maintain, particularly during snow removal operations and has impacts on functionality for future residents with trash collection/mail delivery conflicts, and guest parking. The revised layout, prepared by the Village Engineer, reduces the number of lots by two. However, this adjustment would improve maintenance access and create more practical driveway spacing for residents, enhancing both functionality and livability.



Analysis
The Village's Comprehensive Plan envisions the continued expansion of high-quality housing options for the community. Pulte has established a strong reputation in Mundelein with developing Sheldon Woods. However, due to the limited number of remaining unincorporated parcels adjacent to the Village, it is critical that a strategic annexation decision be made.

The Comprehensive Plan designates the subject properties as "Flexible Use" in the Future Land Use Plan, reflecting the current mix of residential, open space, and commercial uses along the Village's western edge. The proposed Walnut Ridge development is a continuation to Sheldon Woods, and the Village must consider whether it prefers the same development or seek an alternative approach.

Since the subject properties lie outside the Village's corporate limits, the Village has full discretion to request development proposals or design standards that reflect its long-term planning vision and zoning requirements. This annexation represents a key opportunity to shape the quality and character of future growth at the Village's western edge.

The Planning and Zoning Commission has the following actionable options:

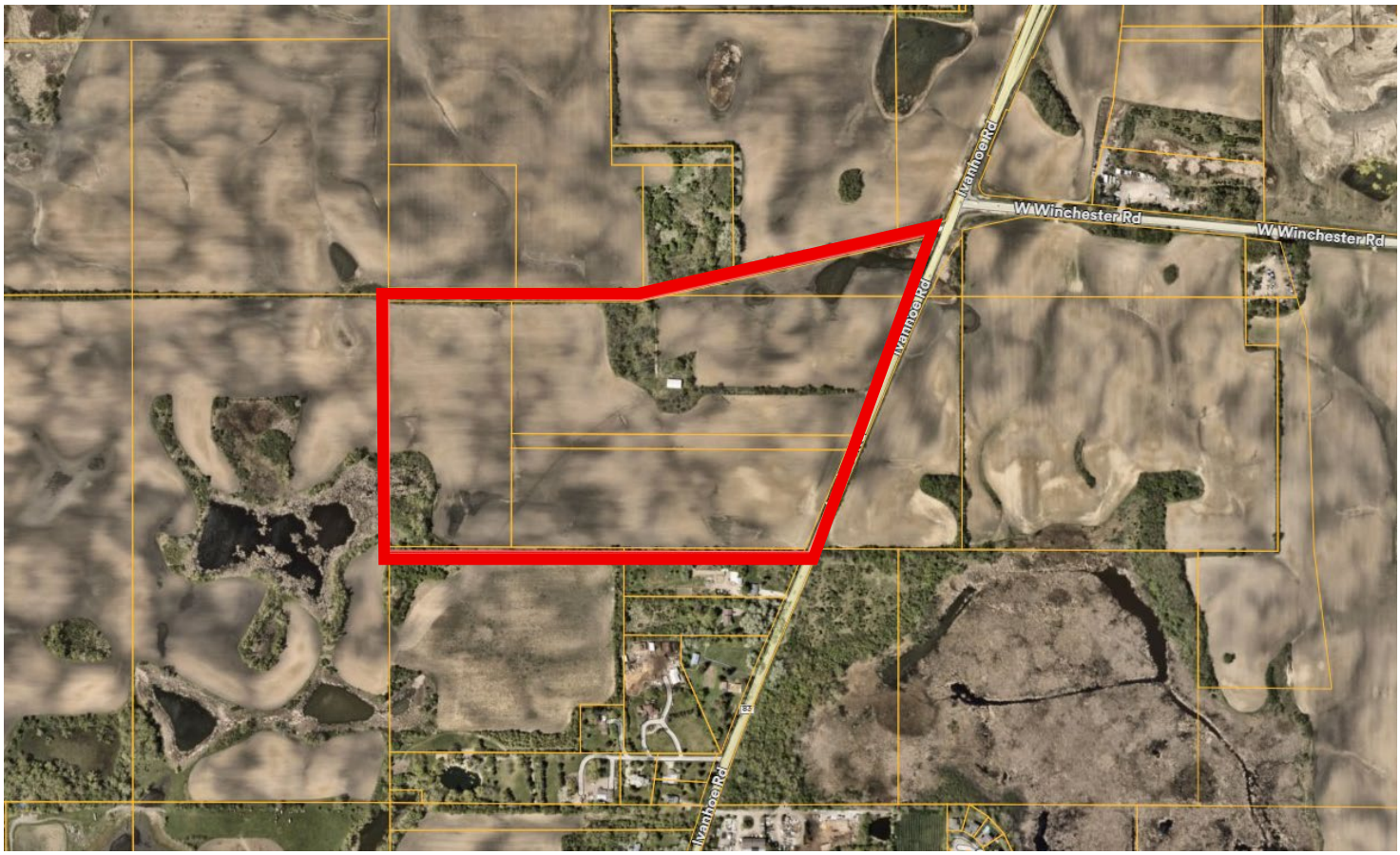
1. Recommend approval of the plan as submitted.
2. Recommend approval of the plan with conditions.
3. Recommend denial of the proposed plan.
4. Hold the item until the Village determines that the layout meets its standards.

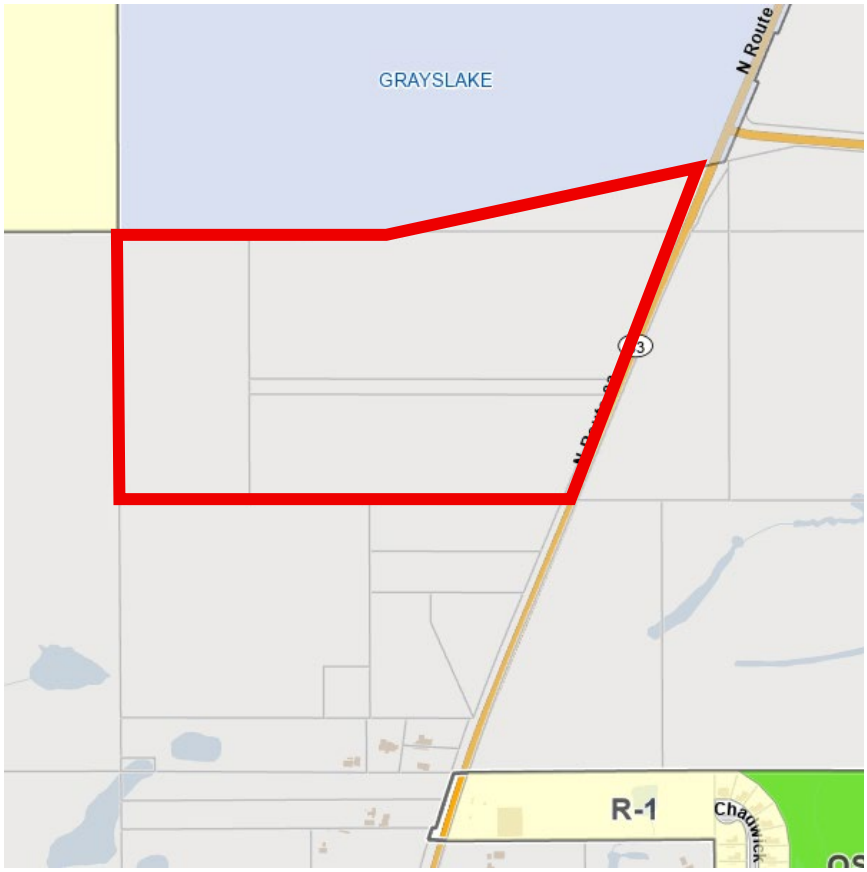
Recommendation:

The following are proposed motions for the Planning and Zoning Commission to consider:

1. **Motion** to recommend approval/denial of a Map Amendment to rezone the properties located at 20959 and 20575 W. Winchester Road, and 29944, 29909, and 29800 N. IL Route 83 from R-1 Single Family Residential to R-3 Single-Family Residential zoning district, pending annexation approval.
2. **Motion** to recommend approval/denial of the Special Use for a Planned Unit Development for the Walnut Ridge Subdivision.
3. **Motion** to recommend approval/denial of a Preliminary Plat of Walnut Ridge Subdivision.

Location Map: Walnut Ridge





Legend:

Subject Property

VILLAGE OF
Mundelein
Incorporated in 1909

PROPERTY INFORMATION

Address SW Corner of Route 83 & Winchester Road

Property Index Numbers (PIN) 10-14-100-001, 10-14-100-013, 10-14-100-003, 10-14-200-001, 10-11-300-013

Size of Property +/- 80.6 ACRES (sq. ft. /acres)

Size of Building Space Metal Utility Shed - 2,800 sq. ft. (sq. ft.)

Size of Space Utilized n/a

ZONING

Current Zoning AG - Agricultural

Proposed Zoning R3 - Single-Family Residential

Current Use Agricultural

Proposed Use Single-Family Residential

PETITIONER INFORMATION

Business/Org. Name Pulte Home Company, LLC, a Michigan limited liability company

Name Eric Friedman

Title Entitlements Manager

Address 1900 E Golf Road, Suite 300

City, State, Zip Schaumburg, IL 60173

Phone 847-230-5308

Email eric.friedman@pultegroup.com

Petitioner Status: ☐ Owner ☐ Lessee ☒ Contract Purchaser

PROPERTY OWNER INFORMATION

Business/Org. Name Chicago Title Land Trust Company*

Name Randy Szczesny

Title Szczensy Builders - Trust Beneficiary

Address N1610 N. Creekside Lane

City, State, Zip Lake Geneva, WI 53147

Phone 847-707-5261

Email lakelab@comcast.net

*Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049

SECTION OF ZONING ORDINANCE: _____

DESCRIPTION OF PROPOSED MAP AMENDMENT: (*Attach sheet if additional space is needed*)

Please see attached Land Use Petition and Findings of Fact.

AFFIDAVIT OF OWNERSHIP AND AUTHORIZATION

COUNTY OF ~~LAKE~~ Washington)
STATE OF ~~ILLINOIS~~ Utah)

I, Randy Szczesny, under oath, state that I am

____ the sole)
____ an) owner of the property
x an authorized officer of the)

commonly described as (*Address*) 10-14-100-001, 10-14-100-013, 10-14-100-003, 10-14-200-001, 10-11-300-013 and that such property is owned by (*Printed Name*) *Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049 as of this date. As owner of the property, I do hereby authorize Rosanova & Whitaker, Ltd. (*Printed Name or Not Applicable*) to represent me in the following Planning and Zoning Commission/Village Board matter, PUD, rezoning, special use, annexation (*Action*).

Signature

Subscribed and sworn to before me

this 1 day of April, 2025.

Notary Public Signature

KATHRYN BRIMLEY
Notary Public - State of Utah
Comm. No. 730512
My Commission Expires on
Apr 10, 2027

SITE VISIT AUTHORIZATION

I hereby grant employees of the Village of Mundelein, their agents, and members of the Mundelein Planning and Zoning Commission permission to enter on the property located at the following address:
(*Address*) +/- 80.6 acres at the Southwest Corner of Route 83 and Winchester Road

Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

Randy Szczesny 4/1/25
Signature of Owner Date

By Randy Szczesny, Owner

Szczesny Builders, LLC
Title/Full Corporate Name

If Contract Purchaser:

Signature of Contract Purchaser Date

By

Pulte Home Company, LLC, a Michigan limited liability company
Title/Full Corporate Name

If Lessee (Corporate or Partnership):

N/A
Signature of Lessee Date

By

Title/Full Corporate Name
REQUIRED SIGNATURES

The undersigned states under oath that he/she/they are the **Legal Owner(s)** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature (Owner): Randall Szczesny Date: 4-10-25
Printed Name: RANDALL SZCZESNY Title: MGR OF SZCZESNY LLC

Signature (Owner): _____ Date: _____
Printed Name: _____ Title: _____

The undersigned states under oath that he/she/they are the **Contract Purchaser** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Contract Purchaser: [signature] Date: April 9, 2025
Printed Name: Robert Getz Title: Vice Pres. Dent

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: N/A Date: _____
Printed Name: _____ Title: _____

INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

PROPERTY INFORMATION

Address SW Corner of Route 83 & Winchester Road

Property Index Numbers (PIN) 10-14-100-001, 10-14-100-013, 10-14-100-003, 10-14-200-001, 10-11-300-013

Size of Property +/- 80.6 ACRES (sq. ft. /acres)

Size of Building Space Metal Utility Shed - 2,800 sq. ft. (sq. ft.)

Size of Space Utilized n/a

ZONING

Current Zoning AG - Agricultural

Proposed Zoning R3 - Single-Family Residential

Current Use Agricultural

Proposed Use Single-Family Residential

PETITIONER INFORMATION

Business/Org. Name Pulte Home Company, LLC, a Michigan limited liability company

Name Eric Friedman

Title Entitlements Manager

Address 1900 E Golf Road, Suite 300

City, State, Zip Schaumburg, IL 60173

Phone 847-230-5308

Email eric.friedman@pultegroup.com

Petitioner Status: ☐ Owner ☐ Lessee ☒ Contract Purchaser

PROPERTY OWNER INFORMATION

Business/Org. Name Chicago Title Land Trust Company*

Name Randy Szczesny

Title Szczensy Builders - Trust Beneficiary

Address N1610 N. Creekside Lane

City, State, Zip Lake Geneva, WI 53147

Phone 847-707-5261

Email lakelab@comcast.net

*Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049

SECTION OF ZONING ORDINANCE: _____

DESCRIPTION OF PROPOSED SPECIAL USE *(Attach sheet if additional space, if necessary)*

Please see attached Land Use Petition and Findings of Fact.

AFFIDAVIT OF OWNERSHIP AND AUTHORIZATION

COUNTY OF ~~LAKE~~ Washington)
Utah)
STATE OF ~~ILLINOIS~~)

I, Randy Szczesny, under oath, state that I am

_____ the sole)
_____ an) owner of the property
_x_ an authorized officer of the)

commonly described as (*Address*) 10-14-100-001, 10-14-100-013, 10-14-100-003, 10-14-200-001, 10-11-300-013 and that such property is owned by (*Printed Name*) *Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049 as of this date. As owner of the property, I do hereby authorize Rosanova & Whitaker, Ltd. (*Printed Name or Not Applicable*) to represent me in the following Planning and Zoning Commission/Village Board matter, PUD, rezoning, special use, annexation (*Action*).

Signature

Subscribed and sworn to before me

this 1 day of April, 2025.

KATHRYN BRIMLEY
Notary Public - State of Utah
Comm. No. 730512
My Commission Expires on
Apr 10, 2027

Notary Public Signature

SITE VISIT AUTHORIZATION

I hereby grant employees of the Village of Mundelein, their agents, and members of the Mundelein Planning and Zoning Commission permission to enter on the property located at the following address:

(*Address*) +/- 80.6 acres at the Southwest Corner of Route 83 and Winchester Road

Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

Randy Szczesny 4/1/25

Signature of Owner Date

By Randy Szczesny, Owner

Szczesny Builders, LLC

Title/Full Corporate Name

If Contract Purchaser:

Signature of Contract Purchaser Date

By

Pulte Home Company, LLC, a Michigan limited liability company

Title/Full Corporate Name

If Lessee (Corporate or Partnership):

N/A

Signature of Lessee Date

By

Title/Full Corporate Name

REQUIRED SIGNATURES

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Signature (Owner): Randall Szczesny Date: 4-10-25
Printed Name: RANDALL SZCZESNY Title: MGR OF SZCZESNY LLC

Signature (Owner): _____ Date: _____
Printed Name: _____ Title: _____

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Signature Contract Purchaser: _____ Date: April 9, 2025
Printed Name: Robert Goetz Title: Vice President

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: N/A Date: _____
Printed Name: _____ Title: _____

PROPERTY INFORMATION

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Size of Property +/- 80.6 ACRES (sq. ft./acres)

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Current Use Agricultural

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PETITIONER INFORMATION

Business/Org. Name Pulte Home Company, LLC, a Michigan limited liability company

Name Eric Friedman

Title Entitlements Manager

Address 1900 E Golf Road, Suite 300

City, State, Zip Schaumburg, IL 60173

Phone 847-230-5308

Email eric.friedman@pultegroup.com

Petitioner Status: ☐ Owner ☐ Lessee ☒ Contract Purchaser

PROPERTY OWNER INFORMATION

Business/Org. Name Chicago Title Land Trust Company*

Name Randy Szczesny

Title Szczensy Builders - Trust Beneficiary

Address N1610 N. Creekside Lane

City, State, Zip Lake Geneva, WI 53147

Phone 847-707-5261

Email lakelab@comcast.net

*Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049

SECTION OF ZONING ORDINANCE:

DESCRIPTION OF PROPOSED SPECIAL USE (*Attach sheet if additional space is needed*)

Please see attached Land Use Petition and Findings of Fact.

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COUNTY OF ~~LAKE~~ Washington)
Utah)
STATE OF ~~ILLINOIS~~)

I, Randy Szczesny, under oath, state that I am

_____ the sole)
_____ an) owner of the property
__x__ an authorized officer of the)

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Randy Szczesny
Signature

Subscribed and sworn to before me

this 1 day of April, 2025.

KATHRYN BRIMLEY
Notary Public - State of Utah
Comm. No. 730512
My Commission Expires on
Apr 10, 2027

Kathryn Brimley
Notary Public Signature

SITE VISIT AUTHORIZATION

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Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

Randy Szczesny 4/1/25

Signature of Owner Date

By Randy Szczesny, Owner

Szczesny Builders, LLC

Title/Full Corporate Name

If Contract Purchaser:

Signature of Contract Purchaser Date

By

Pulte Home Company, LLC, a Michigan limited liability company

Title/Full Corporate Name

If Lessee (Corporate or Partnership):

N/A

Signature of Lessee Date

By

Title/Full Corporate Name

REQUIRED SIGNATURES

The undersigned states under oath that he/she/they are the **Legal Owner(s)** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature (Owner): Randall Szczesny Date: 4-10-25

Printed Name: RANDALL SZCZESNY Title: MGR OF SZCZESNY LLC.

Signature (Owner): _____ Date: _____

Printed Name: _____ Title: _____

The undersigned states under oath that he/she/they are the **Contract Purchaser** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Contract Purchaser: _____ Date: April 9, 2025

Printed Name: Robert Getz Title: Vice President

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: N/A Date: _____

Printed Name: _____ Title: _____

VILLAGE OF
Mundelein
Community Development

PLAT APPLICATION

PROPERTY INFORMATION

Address SW Corner of Route 83 & Winchester Road

Property Index Numbers (PIN) 10-14-100-001, 10-14-100-013
10-14-100-003, 10-14-200-001, 10-11-300-013

Size of Property +/- 80.6 ACRES (sq. ft. /acres)

Size of Building Space Metal Utility Shed - 2,800 sq. ft. (sq. ft.)

Size of Space Utilized N/A

PLAT REQUEST – Please attach plat(s)

- ☒ Preliminary Plat of Subdivision
- ☐ Final Plat of Subdivision
- ☐ Preliminary and Final Plat of Subdivision
- ☐ Plat of Vacation
- ☐ Plat of Consolidation

PETITIONER INFORMATION

Business/Org. Name Pulte Home Company, LLC a Michigan limited liability company

Name Eric Friedman

Title Entitlements Manager

Address 1900 E Golf Road, Suite 300

City, State, Zip Schaumburg, IL 60173

Phone 847-230-5308

Email eric.friedman@pultegroup.com

Petitioner Status: ☐ Owner ☐ Lessee ☒ Contract Purchaser

PROPERTY OWNER INFORMATION

Business/Org. Name Chicago Title Land Trust Company*

Name Randy Szczesny

Title Szczensy Builders - Trust Beneficiary

Address N1610 N. Creekside Lane

City, State, Zip Lake Geneva, WI 53147

Phone 847-707-5261

Email lakelab@comcast.net

*Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049

PLAT APPLICATION FILING FEE (Preliminary Plats Exempt)

☐ **Five Acres or Less: $500**

☐ **Over Five Acres: $1,000**

Preliminary - N/A

AFFIDAVIT OF OWNERSHIP AND AUTHORIZATION

COUNTY OF LAKE)
)
STATE OF ILLINOIS)

I, Randy Szczesny, under oath, state that I am

_____ the sole)

_____ an) owner of the property

_x____ an authorized officer of the)

commonly described as (*Address*) 10-14-100-001, 10-14-100-013, 10-14-100-003, 10-14-200-001, 10-11-300-013 and that such property is owned by (*Printed Name*) *Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 by virtue of that certain Warranty Deed recorded June 7, 1973 in Document No. 1618049 as of this date. As owner of the property, I do hereby authorize Rosanova & Whitaker, Ltd. (*Printed Name or Not Applicable*) to represent me in the following Planning and Zoning Commission/Village Board matter, PUD, rezoning, special use, annexation (*Action*).

X _____
Signature

Subscribed and sworn to before me

this 29th day of May, 2025.

_____
Notary Public Signature

YASMIN BAHENA
Official Seal
Notary Public - State of Illinois
My Commission Expires Mar 9, 2027

SITE VISIT AUTHORIZATION

I hereby grant employees of the Village of Mundelein, their agents, and members of the Mundelein Planning and Zoning Commission permission to enter on the property located at the following address:

(*Address*) +/- 80.6 acres at the Southwest Corner of Route 83 and Winchester Road

Visual inspection of the site shall be accomplished during reasonable hours to examine only those portions of the property relating to this application. This permission is granted in regards to the Mundelein Planning and Zoning Commission Petition for the above-cited property.

If Owner or if Owner is a Corporation or Partnership:

X Randy Szczesny 5/28/25
Signature of Owner Date

By Randy Szczesny, Owner

Szczesny Builders, LLC
Title/Full Corporate Name

If Contract Purchaser:

5/29/25
Signature of Contract Purchaser Date

By Robert Getz, Vice President

Pulte Home Company, LLC, a Michigan limited liability company
Title/Full Corporate Name

If Lessee (Corporate or Partnership):

N/A
Signature of Lessee Date

By

Title/Full Corporate Name

REQUIRED SIGNATURES

The undersigned states under oath that he/she/they are the **Legal Owner(s)** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature (Owner): Randy Szczesny Date: 5/28/2025

Printed Name: RANDY SZCZESNY Title: TRUST BENEFICIARY

Signature (Owner): _____ Date: _____

Printed Name: _____ Title: _____

The undersigned states under oath that he/she/they are the **Contract Purchaser** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Contract Purchaser: _____ Date: 5/29/2025

Printed Name: Robert Getz Title: Vice President

The undersigned states under oath that he/she/they are the **Lessee** of record of the realty described in this Planning and Zoning Commission Application, and the statements that he/she/they made in the foregoing application are true in substance and in fact.

Signature Lessee: N/A Date: _____

Printed Name: _____ Title: _____

STATE OF ILLINOIS)
) SS.
COUNTY OF LAKE)

PETITION FOR ANNEXATION

TO: Mayor & Village Board
Village of Mundelein
Lake County, Illinois

THE PETITIONER, **Chicago Title Land Trust Company**, as Trustee under Trust Agreement dated March 26, 1969, and known as Trust Number 33992, as the owner approximately 80.6 acres located at the southwest corner of Route 83 and Winchester Road, in unincorporated Lake County, Illinois, which property is legally described on **Exhibit A**, attached hereto and made a part hereof (the "Property"), hereby requests that the Village of Mundelein take the necessary and appropriate action, pursuant to state and local law, to annex the Property to the Village of Mundelein subject to the terms of a mutually agreeable annexation agreement.

In support of this Petition for Annexation, the undersigned hereby swears to the following under oath and penalty of perjury:

1. The Petitioner is the sole owner of the Property legally described on Exhibit A, attached hereto;
2. The Property is unincorporated and is not presently located in the jurisdiction of any other municipality;
3. The Property is contiguous or will be contiguous to the Village of Mundelein at the time of annexation, lies within the planning jurisdiction of the Village of Mundelein, and is identified in the Village's Comprehensive Plan for development within the corporate limits of the Village of Mundelein; and
4. There are no electors residing on the Property.

WHEREFORE, The Petitioner, hereby respectfully requests that the Village take such action as is necessary and appropriate to annex the Property to the Village of Mundelein subject to the terms of an annexation agreement, which annexation agreement shall: i) be drawn by and between the Village of Mundelein and Pulte Home Company, LLC a Michigan limited liability company or its assignee ("Developer"); ii) become effective only upon Petitioner's conveyance of the Property to Developer; iii) set forth the terms upon which the Property shall be annexed to the Village of Mundelein; and iv) set forth such other rights and obligations with respect to the Property as the Village and Developer may mutually agree.

[SIGNATURE PAGE FOLLOWS]

PETITIONER/OWNER

Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969, and known as Trust Number 33992

By: _____

Name: CAROLYN PAMPENELLA

Title: VICE PRESIDENT

CHICAGO TITLE LAND TRUST COMPANY CORPORATE SEAL CHICAGO, ILLINOIS

This instrument is executed by the undersigned Land Trustee, not personally but solely as Trustee in the exercise of the power and authority conferred upon and vested in it as such Trustee. It is expressly understood and agreed that all the warranties, indemnities, representations, covenants, undertakings and agreements herein made on the part of the Trustee are undertaken by it solely in its capacity as Trustee and not personally. No personal liability or personal responsibility is assumed by or shall at any time be asserted or enforceable against the Trustee on account of any warranty, indemnity, representation, covenant, undertaking or agreement of the Trustee in this instrument.

STATE OF ILLINOIS)
) SS.
COUNTY OF Cook)

I, the undersigned, a Notary Public in and for the County and State aforesaid, DO HEREBY CERTIFY THAT CAROLYN PAMPENELLA, personally known to me to be the same person whose name is subscribed to the foregoing document, appeared before me this day in person and acknowledged to me that, as the VICE PRESIDENT of **Chicago Title Land Trust Company**, as Trustee under Trust Agreement dated March 26, 1969, and known as Trust Number 33992, he/she was duly authorized and signed and delivered the foregoing document as his/her free and voluntary act by and on behalf of **Chicago Title Land Trust Company**, as Trustee under Trust Agreement dated March 26, 1969, and known as Trust Number 33992, for the uses and purpose therein set forth.

Given under my hand and Notarial Seal as of this 1st day of April, 2025.

_____
Notary Public

"OFFICIAL SEAL"
YULIEANNA HERNANDEZ
Notary Public, State of Illinois
My Commission Expires 04/15/2026

My Commission expires: _____

EXHIBIT A
LEGAL DESCRIPTION

THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14, LYING WEST OF THE CENTER LINE OF ILLINOIS ROUTE 83 (EXCEPT THE WEST 638.0 FEET HEREOF AND EXCEPT THE SOUTH 586.0 FEET THEREOF); ALSO THAT PART OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 14 LAYING WEST OF ILLINOIS ROUTE 83; ALSO THAT PART OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 11 LYING SOUTH OF THE CENTER LINE OF WINCHESTER ROAD; ALSO THAT PART OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 11 LYING WEST OF THE CENTER LINE OF ILLINOIS ROUTE 83 AND SOUTH OF THE CENTER LINE OF WINCHESTER ROAD, ALL BEING IN TOWNSHIP 44 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS.

LEGAL DESCRIPTION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, ALL IN TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, BEARINGS AND DISTANCES BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD83 (2011), WITH A COMBINED SCALE FACTOR OF 0.99994782; BEING DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF THE SAID NORTHWEST QUARTER OF SECTION 14; THENCE SOUTH 89 DEGREES 59 MINUTES 40 SECONDS EAST ALONG THE NORTH LINE THEREOF, 1,310.88 FEET TO THE SOUTHWEST CORNER OF THE SAID EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11; THENCE NORTH 00 DEGREES 34 MINUTES 23 SECONDS WEST ALONG THE WEST LINE THEREOF, 3.70 FEET TO THE CENTERLINE OF WINCHESTER ROAD; THENCE NORTH 77 DEGREES 08 MINUTES 10 SECONDS EAST ALONG SAID CENTERLINE, 1,528.05 FEET TO THE WEST RIGHT-OF—WAY LINE OF STATE ROUTE 83 PER TRUSTEE DEED RECORDED AS DOCUMENT NO. 7946018; THENCE SOUTH 21 DEGREES 11 MINUTES 00 SECONDS WEST ALONG SAID WEST RIGHT—OF—WAY LINE, 39.83 FEET; THENCE SOUTH 12 DEGREES 49 MINUTES 01 SECOND WEST ALONG SAID WEST RIGHT—OF—WAY LINE, 135.03 FEET; THENCE SOUTH 22 DEGREES 37 MINUTES 27 SECONDS WEST ALONG SAID WEST RIGHT-OF—WAY LINE, 430.00 FEET; THENCE SOUTH 11 DEGREES 18 MINUTES 53 SECONDS WEST ALONG SAID WEST RIGHT-OF—WAY LINE, 71.39 FEET; THENCE SOUTH 67 DEGREES 22 MINUTES 33 SECONDS EAST ALONG THE SOUTHERLY LINE OF THE LANDS DESCRIBED IN SAID DOCUMENT NO. 7946018, A DISTANCE OF 33.00 FEET TO EAST HALF CENTERLINE OF SAID STATE ROUTE 83; THENCE SOUTH 22 DEGREES 37 MINUTES 27 SECONDS WEST ALONG SAID CENTERLINE, 1,102.09 FEET TO THE SOUTH LINE OF THE SAID NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14; THENCE SOUTH 89 DEGREES 59 MINUTES 47 SECONDS WEST ALONG SAID SOUTH LINE, 2,179.49 FEET TO THE SOUTHWEST CORNER THEREOF; THENCE NORTH 00 DEGREES 09 MINUTES 51 SECONDS WEST ALONG THE WEST LINE THEREOF, 1,322.06 FEET TO THE PLACE OF BEGINNING IN LAKE COUNTY, ILLINOIS.

PINs
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

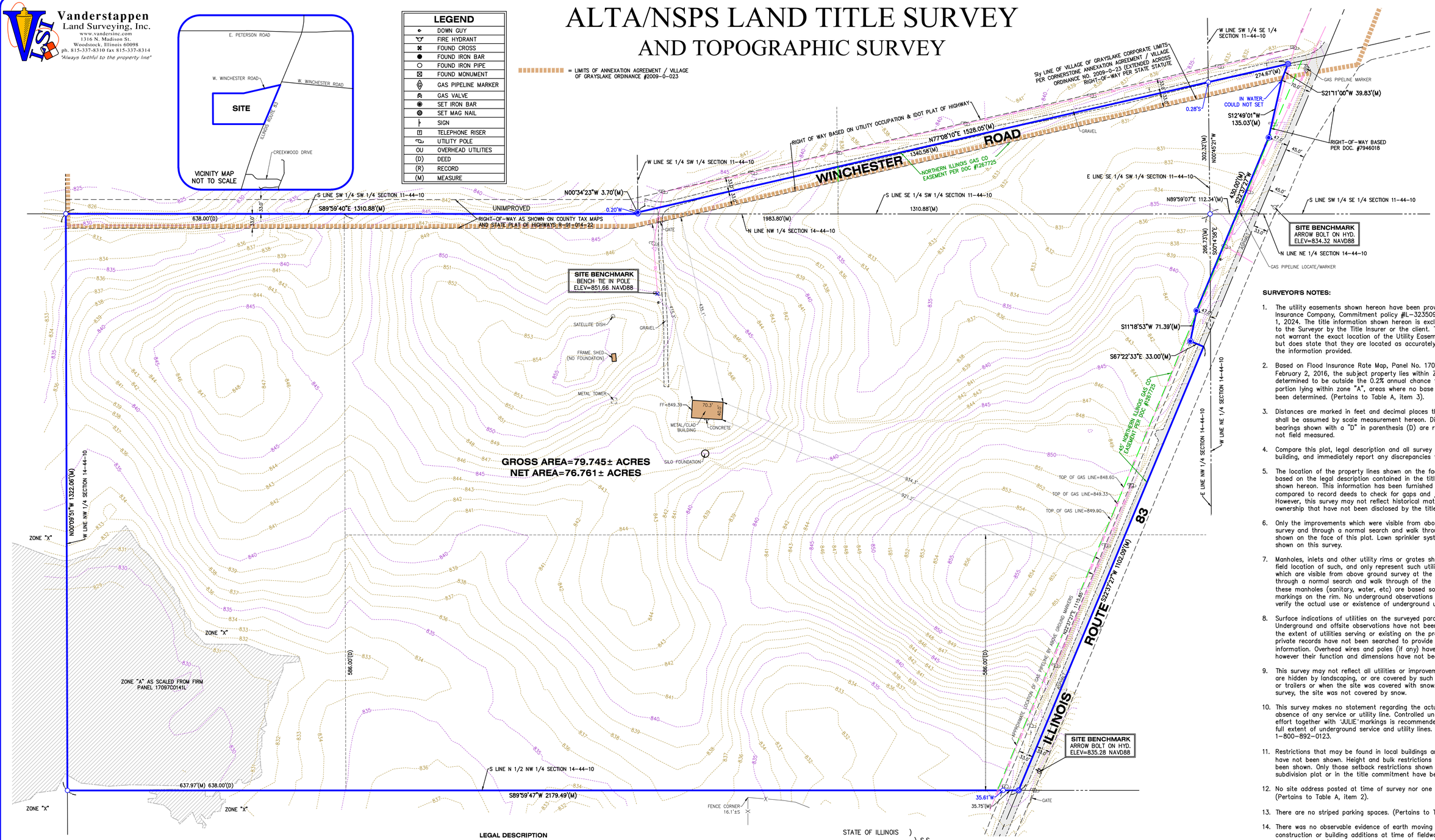
ALTA/NSPS LAND TITLE SURVEY
AND TOPOGRAPHIC SURVEY

Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

VICINITY MAP
NOT TO SCALE

LEGEND	
	DOWN GUY
	FIRE HYDRANT
	FOUND CROSS
	FOUND IRON BAR
	FOUND IRON PIPE
	FOUND MONUMENT
	GAS PIPELINE MARKER
	GAS VALVE
	SET IRON BAR
	SET MAG NAIL
	SIGN
	TELEPHONE RISER
	UTILITY POLE
OU	OVERHEAD UTILITIES
(D)	DEED
(R)	RECORD
(M)	MEASURE

= LIMITS OF ANNEXATION AGREEMENT / VILLAGE OF GRAYSLAKE ORDINANCE #2009-O-023



SURVEYOR'S NOTES:

1. The utility easements shown hereon have been provided by Chicago Title Insurance Company, Commitment policy #IL-323509-ANC dated August 1, 2024. The title information shown hereon is exclusively that provided to the Surveyor by the Title Insurer or the client. The Surveyor does not warrant the exact location of the Utility Easements shown hereon, but does state that they are located as accurately as possible from the information provided.
2. Based on Flood Insurance Rate Map, Panel No. 17097C0141L, dated February 2, 2016, the subject property lies within Zone "X", areas determined to be outside the 0.2% annual chance floodplain. Also a portion lying within zone "A", areas where no base flood elevations have been determined. (Pertains to Table A, item 3).
3. Distances are marked in feet and decimal places thereof, no dimension shall be assumed by scale measurement hereon. Distances and/or bearings shown with a "D" in parenthesis (D) are record or deed values, not field measured.
4. Compare this plat, legal description and all survey monuments before building, and immediately report any discrepancies to the surveyor.
5. The location of the property lines shown on the face of this plat are based on the legal description contained in the title commitment and shown hereon. This information has been furnished by the client and compared to record deeds to check for gaps and /or overlaps. However, this survey may not reflect historical matters of title and ownership that have not been disclosed by the title commitment.
6. Only the improvements which were visible from above ground at time of survey and through a normal search and walk through of the site are shown on the face of this plat. Lawn sprinkler systems, if any, are not shown on this survey.
7. Manholes, inlets and other utility rims or grates shown hereon are from field location of such, and only represent such utility improvements which are visible from above ground survey at the time of survey, through a normal search and walk through of the site. The labeling of these manholes (sanitary, water, etc) are based solely on the "stamped" markings on the rim. No underground observations have been made to verify the actual use or existence of underground utilities.
8. Surface indications of utilities on the surveyed parcel have been shown. Underground and offsite observations have not been made to determine the extent of utilities serving or existing on the property, public and/or private records have not been searched to provide additional information. Overhead wires and poles (if any) have been shown, however their function and dimensions have not been shown.
9. This survey may not reflect all utilities or improvements, if such items are hidden by landscaping, or are covered by such items as dumpsters or trailers or when the site was covered with snow. At the time of survey, the site was not covered by snow.
10. This survey makes no statement regarding the actual presence or absence of any service or utility line. Controlled underground exploratory effort together with "JULIE"markings is recommended to determine the full extent of underground service and utility lines. Contact J.U.L.I.E. at 1-800-892-0123.
11. Restrictions that may be found in local buildings and/or zoning codes have not been shown. Height and bulk restrictions (if any) have not been shown. Only those setback restrictions shown on the recorded subdivision plat or in the title commitment have been shown.
12. No site address posted at time of survey nor one provided to surveyor (Pertains to Table A, item 2).
13. There are no striped parking spaces. (Pertains to Table A, item 9).
14. There was no observable evidence of earth moving work, building construction or building additions at time of fieldwork. (Pertains to Table A, item 16).
15. The title commitment referenced in note #1 does not indicate any recorded dedication for Winchester Road. The location of the center of the road is only an opinion and is based on a 66' right-of-way using the centerline as traveled. Also does not indicate any recorded dedication for Illinois Route 83. The location of the center of the road is based on Lake County Division of Transportation right of way plans Plat of Highways plan for Illinois Route 83 job no. R-91-014-22. Net areas were calculated using this information and removing any area located within the prescriptive right-of-ways.

SCHEDULE B, PART II EXCEPTIONS:

16. Exceptions: 1, 4, 5, 6, 7, 8, 9, 10, 11, 12 are not survey related.
17. Exceptions: 2, 3, 13, 14, 15, 16 are blanket in nature.

04/03/25 PJD – ADDED GAS EASEMENT
2/27/25 SES – ADDITIONAL TOPOGRAPHY ALONG IL83
10/4/24 APG – REVISED METES AND BOUNDS LEGAL, ANNEXATION ORDINANCE SHOWN
9/11/24 APG – REVISED WINCHESTER ROAD RIGHT-OF-WAY

PROJECT BENCHMARK
NATIONAL GEODETIC CONTROL STATION "LD010"
ELEV=662.36 NAVD88

100' 0' 100' 200'
SCALE: 1" = 100'

DISTANCES SHOWN ON THIS PLAT ARE GRID DISTANCES BASED ON THE NOTED STATE PLANE COORDINATE SYSTEM AT THE LOWER LEFT HAND CORNER OF THIS PLAT. TO OBTAIN GROUND LEVEL DISTANCES DIVIDE BY THE COMBINED SCALE FACTOR OF 0.9999478227.

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: SES CHECKED BY: APG
SCALE: 1"=100' SEC. 10,11 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: **
JOB NO.: 240667 I.D. TPA
FIELDWORK COMP.: 09/05/24 BK. ___ PG. ___
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: _____

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

LEGAL DESCRIPTION

Part of the North Half of the Northwest Quarter of Section 14 and part of the East Half of the Southwest Quarter of Section 11, all in Township 44 North, Range 10 East of the Third Principal Meridian, bearings and distances based on Illinois State Plane Coordinate System, East Zone, NAD83 (2011), with a combined scale factor of 0.99994782; being described as follows: Beginning at the Northwest corner of the said Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 40 seconds East along the North line thereof, 1,310.88 feet to the Southwest corner of the said East Half of the Southwest Quarter of Section 11; thence North 00 degrees 34 minutes 23 seconds West along the West line thereof, 3.70 feet to the centerline of Winchester Road; thence North 77 degrees 08 minutes 10 seconds East along said centerline, 1,528.05 feet to the West right-of-way line of State Route 83 per Trustee Deed recorded as Document No. 7946018; thence South 21 degrees 11 minutes 00 seconds West along said West right-of-way line, 39.83 feet; thence South 12 degrees 49 minutes 01 second West along said West right-of-way line, 135.03 feet; thence South 22 degrees 37 minutes 27 seconds West along said West right-of-way line, 430.00 feet; thence South 11 degrees 18 minutes 53 seconds West along said West right-of-way line, 71.39 feet; thence South 67 degrees 22 minutes 33 seconds East along the Southerly line of the lands described in said Document No. 7946018, a distance of 33.00 feet to East Half centerline of said State Route 83; thence South 22 degrees 37 minutes 27 seconds West along said centerline, 1,102.09 feet to the South line of the said North Half of the Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 47 seconds West along said South line, 2,179.49 feet to the Southwest corner thereof; thence North 00 degrees 09 minutes 51 seconds West along the West line thereof, 1,322.06 feet to the Place of Beginning in Lake County, Illinois.

STATE OF ILLINOIS)
) S.S.
COUNTY OF McHENRY)

Certified to: 1) Chicago Title Insurance Company
2) Pulte Home Company, LLC, a Michigan limited liability company
3) Chicago Title Land Trust Company

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 5, 7a, 8, 9, 11a, 16, & 19 of Table A thereof. The field work was completed on September 5th 2024.

Dated this 6th day of September, A.D., 2024.

VANDERSTAPPEN LAND SURVEYING INC.
Design Firm No. 184-002792

_____ (seal)
ARTHUR P. GRITMACKER, 035-003857
PROFESSIONAL LAND SURVEYOR

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STATE OF ILLINOIS)
)
COUNTY OF LAKE)
)
VILLAGE OF MUNDELEIN)

PETITION TO THE VILLAGE OF MUNDELEIN FOR DEVELOPMENT APPROVAL

THE UNDERSIGNED Petitioner, Pulte Home Company, LLC, a Michigan limited liability company (hereinafter "the Petitioner"), as the contract purchaser of the property legally described on **Exhibit A** (the "Subject Property"), respectfully petitions the Village of Mundelein (the "Village") upon annexation to: (i) approve a special use for a planned unit development comprised of a 155 unit single-family detached residential development with associated deviations as depicted on the preliminary planned unit development plat attached hereto as **Exhibit B** (the "PUD Plat"); (ii) approve an amendment to the official zoning map to zone the Property in the R-3 District; (iii) approve a preliminary plat of subdivision, a copy of which is attached hereto as **Exhibit C** (the "Subdivision Plat"); and (iv) to approve such other relief from the Village of Mundelein Code of Ordinances (the "Code") as may be deemed necessary and appropriate to develop the Subject Property consistent with the plans submitted herewith.

In support of this Petition, the Petitioner states to the Village of Mundelein as follows:

1. Chicago Title Land Trust Company, as Trustee under Trust Agreement dated March 26, 1969 known as trust number 33992 ("Owner") is the owner of the Subject Property.

2. Pulte Home Company, LLC, a Michigan limited liability company with offices located at 1900 E. Golf Road, Suite 300, Schaumburg, IL 60173, is the contract purchaser of the Subject Property and the Petitioner.

3. The Subject Property is approximately 80 acres of vacant property currently

zoned AG- Agricultural in unincorporated Lake County.

4. The surrounding land uses are as follows:

   a. North: Vacant land - zoned Mixed Use (MX) in Grayslake

   b. South: Vacant land and Single Family Residential - Unincorporated Lake County – zoned Agricultural (AG)

   c. East: Vacant land – Unincorporated Lake County zoned Agricultural (AG)

   d. West: Vacant land - Pending annexation request in Mundelein. Presently unincorporated Lake County zoned Agricultural (AG).

5. The Petitioner now seeks to develop a single-family residential community in this otherwise undeveloped area.

6. Consistent with the intent of the Code, Petitioner now seeks the zoning relief as outlined above in order to facilitate the residential redevelopment of the Subject Property.

7. The proposed entitlement requests meet all Village and State requirements for the development of property and will facilitate the beneficial use of the Subject Property as stated below.

SUMMARY OF DEVELOPMENT

The Subject Property consists of approximately 80 acres located on the southwest corner of IL Route 83 and Winchester Road. The surrounding land uses are primarily undeveloped, with the exception of the single-family homes developed to the south of the Subject Property. In addition, a solar farm has been approved in Lake County immediately south of the Subject Property, but has not yet been developed. The Petitioner is the Pulte Home Corporation ("Pulte"). Pulte is a multi-brand homebuilding company capable of serving homeowners during all phases

of life through three distinct brands. Pulte brings decades of construction and development experience to each project and has been building homes in the Chicagoland area since the 1960s. In recent years, Pulte received approvals from the Village of Mundelein to develop Sheldon Woods in 2021, a 192-unit single-family community in the R-3 district ("Sheldon Woods"). Sheldon Woods has been immensely successful and has proven to be an excellent addition to the Village.

Pulte now seeks to expand its footprint here in Mundelein. As such, Pulte proposes to develop the Subject Property as a one hundred and fifty-five (155) home-site single-family subdivision. The community will be known as Walnut Ridge. Walnut Ridge will include two distinct home series, over 36 acres of open space, wetland and stormwater management, and a park site to be dedicated to the park district. Building on the success of Sheldon Woods, Pulte seeks to continue selling the same series of homes, on similar designed lots. At 155 homes spread over 80 acres, the overall gross density is only 1.94 units per acre, which also allows for the preservation of existing natural features. Pulte believes that Walnut Ridge will appeal to a variety of home buyers, including those who are seeking move-up options. The proposed homes will range in size from 1,680 square feet to 3,500 square feet. Pulte anticipates that the proposed lots will meet and exceed all R-3 zoning district requirements, including all requirements relating to height, setbacks, and lot widths. The lots will vary in size and dimension to create a variety of options for future homeowners. Access to the community will be provided off Route 83. With approximately 45% of the Subject Property proposed as open space resulting from stormwater management facilities, existing wetlands, and a park site dedication, the site plan favors public open spaces over private open space, which is consistent with the trends in the marketplace. The proposed development will consist of two (2) separate housing lines to accommodate the diversity of the Village's housing stock and meet the various needs and desires of a broad buyer pool. Specifically, 91 of the

proposed homes will be identified as the Meadows Series and will be located on 52' wide lots, which we believe will be particularly attractive to a younger demographic of homebuyers who are now leaving more urban locations and seeking the limited maintenance associated with a new home and smaller yards, and the abundance of open space within and around the project. The remaining 64 homes will be known as the Estates Series and will be slightly larger homes located on slightly larger 62' wide lots. Both series of homes will separately feature not less than five different floor plans with each floor plan offering no less than five different elevations to avoid monotony throughout the community.

The proposed architecture will further ensure lasting value through the use of quality materials that all require low maintenance and withstand the test of time. Considerable community variety will also be achieved through the use of two home series – each with 5 different floor plans, including 3-car garage options for certain larger lots. Landscape treatments will also be utilized to enhance the visual appeal of the community. The landscape design enhancements will also include individual home site landscaping and decorative plantings around the on-site stormwater management facility, an upscale entrance monument, and multi-use paths to offer future residents both a recreational and social opportunity. Pulte has enjoyed being part of the Mundelein community with its successful development of Grand Dominion and Sheldon Woods communities and anticipates a strong demand for Walnut Ridge to provide a move-up housing option for Mundelein's existing residents as well as those that would like to live in a well-respected municipality with excellent schools.

A SPECIAL USE FOR A PLANNED UNIT DEVELOPMENT

a. The establishment, maintenance and operation of the special use in the specific location proposed will not endanger the public health, safety or general welfare of any portion of the community.

The special use allowing for the planned unit development does not endanger the public health, safety or general welfare of any portion of the community. In fact, the planned unit development allows for a residential community, which residential use is complementary to the surrounding area to the south. The proposed residential use will also include over 36 acres of open space and a new park site, which will complement the overall area. At only 1.94 homes per acre, the new community will be low-density and will generate more Mundelein residents in this otherwise relatively undeveloped area.

b. The proposed special use is compatible with adjacent properties and other property within the immediate vicinity of the special use.

The Subject Property consists of +/- 80 acres and is currently zoned in the agricultural district in unincorporated Lake County. The Subject Property is surrounded by unincorporated vacant land to the east and west. However, the property to the west ("Adjacent Property") has an application on file with the Village, seeking annexation and approval to zone its property R-3. The Adjacent Property is contiguous to R1 zoned property in Mundelein comprised of approximately 740 acres which is expected to be developed as the Ivanhoe Village mixed-use development ("Ivanhoe Village") over the next 20-25 years. The conceptual plans for Ivanhoe Village contemplate a walkable community with thousands of single-family homes, townhomes, and apartments, an assisted living facility, and designated areas for retail, medical/office, and industrial land uses. Property to the south of the Subject Property is improved with county residential properties and one parcel is approved for a future solar farm. Property incorporated into Grayslake to the north is presently vacant, though zoned for mixed-use and an industrial development may be contemplated for that property. The Petitioner's planned unit development is consistent with the surrounding area in the sense that (i) the community is consistent with the Village's future land

use goals and objectives to provide a mix of land uses to support this area; (ii) the zoning request and land use is consistent with application on file with the Village to the west of the Subject Property; and (iii) the mixed-use zoning in Grayslake supports a mix of uses for this general area, including residential uses should an industrial development not move forward. In this case, Petitioner's proposal presents an excellent canvas to kick-start more development opportunities within this generally unincorporated and vacant corridor of properties.

c. The special use in the specific location proposed is consistent with the spirit and intent of this title and the village land use policies.

Acknowledging the vacancies in the area, the Petitioner's proposed development will kickstart development in this general area, which will have a positive impact on Mundelein tax revenues. Under the comprehensive plan, the future land use for Subject Property is identified as "flexible use". The comprehensive plan specifically notes the potential for annexation of the land to the northwest of Mundelein's municipal boundaries and notes this area should allow for both residential and business parks based upon specific market demands[1]. In today's market, we are faced with a national housing shortage. This need for additional housing is not unique to Mundelein. Although there was a construction boom during and after the Pandemic, the number of US families increased by 1.8 million, while only 1.4 million homes were built.[2] These numbers yield overall higher price points and historically high interest rates, ultimately pricing home buyers out of the housing market. Petitioner's proposal will develop historically unincorporated and vacant property, which provides no net benefit to the community and helps Mundelein do its part in bringing the housing supply closer to demand to address the national housing shortage. Accordingly, the market has proven there is a need for additional residential housing and the

[1] https://www.mundelein.org/DocumentCenter/View/327/Comprehensive-Plan-Adopted-February-2021-PDF
[2] https://zillow.mediaroom.com/2024-06-18-The-U-S-is-now-short-4-5-million-homes-as-the-housing-deficit-grows

Subject Property presents an excellent canvas for addressing this market need.

d. The special use conforms to the applicable regulations of the zoning district in which it is to be located.

The special use for the planned unit development conforms to the applicable regulations of the R-3 zoning district. In fact, the planned unit development meets and exceeds all R-3 zoning district setback and lot size requirements. The planned unit development also allows for a quality residential development consistent with the Village's R-3 zoning district requirements, comprehensive plans, and land use goals of improving the Village's housing stock.

PLANNED UNIT DEVELOPMENT FINDINGS OF FACT

a. *The entire property proposed for the planned unit development shall be in single ownership or under such unified control as to ensure that the entire property will be developed as a unified whole. All owners of the property shall be included as joint applicants on all applications and all approvals shall bind all owners. The violation of any owner as to any tract shall be deemed a violation as to all owners of all tracts.*

The entire property will be developed as a unified whole. All owners have consented to this submission.

b. *The applicant shall have the burden of establishing that the subject property is of sufficient size and shape to be planned and developed as a unified whole capable of meeting the objectives for which planned unit developments may be established pursuant to this section.*

The Subject Property is approximately 80 acres. Upon development, the community will only have a gross density of 1.94 units per acre, which represents a low-density community. The remaining 45% of the Property will be reserved for open spaces such as the preservation of the site's natural features and wetlands, stormwater detention, and a park site. The design of the community is thoughtfully planned to allow for two distinct housing lines and recreational features that are intertwined with the preserved natural features of the site. The overall design results in aesthetic amenities that enhance the character of the development in line with the intent of the

Village's Planned Unit Development regulations. The Petitioner has submitted findings of fact consistent with the objectives required for planned unit developments.

c. *All covenants, deed restrictions, easements and similar restrictions to be recorded in connection with the planned unit development shall stipulate that they may not be modified, removed or released without the express consent of the Village Board and that they may be enforced by future landowners within the proposed development.*

Petitioner and Owner will comply with this requirement.

d. *The applicant may be required to submit a proposed development agreement as part of the planned unit development application. As part of the planned unit development approval, the Village must approve the development agreement.*

Petitioner will cooperate with the Village of Mundelein to develop a mutually acceptable Annexation Agreement to govern the development of the Subject Property and which agreement shall be approved by the Village Board.

e. *Any area of a planned unit development not used for structures, streets, or parking lots, shall be landscaped. The perimeter of the planned unit development shall be designed to ensure compatibility with uses surrounding the planned unit development by including uses within the planned unit development that are compatible with such surrounding uses, including setbacks, screening, or natural or man-made buffers within such perimeter.*

Petitioner has submitted a landscape plan for the Village's review and approval. Additionally, the proposed planned unit development is either compatible with current land uses or will be compatible with the future land uses of adjacent properties. Properties to the south were developed for single-family residential use. Property to the north is within the Grayslake jurisdictional boundaries and is zoned for mixed use, concluding said property is appropriate for a mix of uses, including residential land uses. The owner of the Adjacent Property to the west has an application on file with the Village for annexation approval and approval to zone the property R-3 upon annexation to facilitate future residential development. In addition, the 740-acres of R1-zoned property contiguous to the Adjacent Property is planned for Ivanhoe Village, which is comprised of thousands of homes & townhomes, apartments, senior living facilities, retail, office,

and industrial development. We can reasonably conclude a residential land use is compatible in this general area. Lastly, the Petitioner will meet and exceed all setback requirements of the Village.

f. *Private streets are prohibited unless expressly approved by the Village Board. If so approved, they shall meet all construction standards applicable to public streets. No such streets shall be approved except upon the condition that they shall be owned and maintained by a property owners' association meeting the requirements set forth in this section.*

No private streets are proposed for this development.

g. *Whenever the Village Board determines that development of a planned unit development will create a need for land for public purposes of the Village within the proposed planned unit development, the Village Board may require that such land be designated and dedicated to the Village for such use. In addition, the Village Board may require evidence that all requirements of Village ordinances pertaining to the dedication of land or the contribution of cash in connection with subdivisions or developments of land have been met with respect to the proposed planned unit development.*

In addition to 35 acres of open space that will be preserved as part of the community, the Petitioner is also donating a park site comprised of approximately 1-acre. Petitioner is compliant with all requirements pertaining to the dedication of land or contribution of cash.

h. Thirty percent (30%) of the area of a residential-only planned unit development is required to be set aside and maintained as common open space. This thirty percent (30%) shall be calculated based on the net area of the site, which is the total area of a site available for development, excluding street rights-of-way and other publicly dedicated improvements, excluding public rights-of-way. The location of common open space shall be consistent with its intended function as set forth in the application and planned unit development plans. No such open space shall be used for the construction of any structure or improvement except such structures and improvements as may be approved in the final plan as appropriate to the intended leisure or recreational uses for which such open space is intended.

1. *The following uses shall be considered common open space:*

a. Parks and playgrounds, including skate parks and dog parks.
b. Indoor or outdoor active recreation facilities, including basketball courts, ball fields, swimming pools and tennis courts.
c. Jogging trails, bike trails and fitness courses.
d. Nature preserves, bird sanctuaries, natural water features and similar

conservation areas.
e. Detention/retention ponds may be counted toward common open space but must be accessible to the public via nature trails, boardwalks, and/or perimeter walkways and they must be designed as natural water features and landscaped with native vegetation. Detention/retention ponds may only count toward twelve percent (12%) of the common open space area requirement.

This development is compliant with the open space requirements. In fact, Petitioner's proposal far-exceeds the open space requirement at 45% by virtue of providing a 1-acre park site, an extensive path system around certain open space areas, as well as open space buffers for storm water management and the preservation of existing wetlands along the west, south and north property lines.

2. *Adequate safeguards, including recorded covenants or dedication of development rights, shall be provided to prevent the subsequent use of common open space for any use, structure, improvement, or development other than that shown on the approved final plan. The safeguards must be perpetual and must run with the land. Such safeguards may be released, but only with the express written consent of the Village Board.*

Petitioner will agree upon terms set forth in an Annexation Agreement by and between the Petitioner and the Village. In addition, the Petitioner will have a declaration of covenants, conditions, and restrictions for the Homeowner's Association (HOA) which will be recorded against the Property and bind all future owners and residents.

3. *The final plan shall include such provisions for the ownership and maintenance of such open space and improvements as are reasonably necessary to ensure their continuity, care, conservation, maintenance, and operation in accordance with predetermined standards and to ensure that remedial measures will be available to the Village if such open space or improvements are permitted to deteriorate or are not maintained in a condition consistent with the best interests of the planned unit development or the Village.*

The Declaration for the HOA will include the provisions for ownership and maintenance of the open space. Petitioner would be agreeable to enacting a dormant SSA as well.

4. *When the requirements of this section are to be satisfied by the ownership or maintenance of such open space or improvements by a property owners'*

association, such association shall meet each of the following standards:

a. The by-laws and rules of the association and all declarations, covenants, and restrictions to be recorded must be included as part of the final plan prior to the final plan becoming effective.
Each such document shall provide that it shall not be amended in any manner that would result in it being in violation of the requirements of this chapter.
b. The association must be established and all covenants and restrictions must be recorded prior to the sale or lease of any property within the area of the planned unit development designated to have the use of the proposed open space or improvements.
c. The association must be responsible for casualty and liability insurance, taxes, and the maintenance of the open space and improvements to be deeded to it.
d. Membership in the association must be mandatory for each property owner and any successive owner having a right to the use or enjoyment of such open space or improvements.
e. Every property owner having a right to the use or enjoyment of such open space or improvements must pay its pro rata share of the cost of the association by means of an assessment to be levied by the association that meets the requirements for becoming a lien on the property in accordance with state statutes.
f. The association must have the right to adjust the assessment to meet changed needs. The membership vote required to authorize such adjustment shall not be fixed at more than two-thirds (2/3) of the members voting on the issue.
g. The Village must be given the right to enforce the declarations, covenants and restrictions.
h. The Village must be given the right, after ten (10) days written notice to the association, to perform any maintenance or repair work that the association has neglected to perform, to assess the membership for such work and to have a lien against the property of any member for the cost of such maintenance and work. For this purpose alone, the Village shall have all the rights and powers of the association and its governing body under the agreements and declarations creating the association.

The Declaration for the HOA will incorporate these provisions.

i. *Planned unit developments shall not adversely affect the natural environment of the community as a whole. Natural assets and features, such as existing trees and native vegetation, shall be protected and preserved to the greatest extent practical.*

The wetlands on the Subject Property are identified as "Emergent Wetlands" and "Farmed Wetlands" and are not under the jurisdiction of the Army Corps of Engineers (ACOE). As such, these areas will be permitted through the Lake County process. Additionally, there will be more than 36 acres of open space preservation along with walking paths to ensure enjoyment of open

space areas. The Petitioner will also incorporate attractive landscaping around the perimeter of the Subject Property. Lastly, the proposed park site will be dedicated to the Mundelein Park District to allow for additional recreational activities.

j. The site shall be accessible to public streets that are adequate to carry the traffic that will be generated by the proposed development. The streets and driveways within the proposed development shall be adequate to serve the uses within the development. The applicant shall be responsible for the cost and installation of additional traffic controls and regulating devices that are required.

The community will be accessed from IL Route 83. Route 83 is a state highway that has sufficient capacity to accommodate traffic generated by the community. The Petitioner has submitted a comprehensive traffic study to both the Village and Illinois Department of Transportation (IDOT). The Petitioner shall be responsible to construct all internal roadways as well as to construct any improvements to the perimeter roadways as mandated by IDOT.

k. *The pedestrian circulation system and its related walkways shall be located to provide for separation of pedestrian and vehicular movement and for maximum pedestrian safety.*

In addition to installing sidewalks internal to the community, the Petitioner will also install a path system and connection points to enhance pedestrian and bicycle activity. The path improvements include a contiguous path system around certain open space areas.

l. *All planned unit developments shall provide for underground installation of utilities, including electricity, cable and telephone. Provisions shall be made for acceptable design and construction of storm sewer facilities and appropriate storm retention and detention devices. The construction and maintenance of all utilities, roadways, parking facilities and other site improvements shall be in accordance with the requirements of this Ordinance and other regulations of the Village.*

Development will be compliant with code requirements. The Petitioner is seeking approval to locate utilities within the right-of-way instead of under the pavement and to locate ComEd electric utilities in the front yards consistent with ComEd requirements.

REZONING TO R-3 FINDINGS OF FACT

a. The existing use and zoning of nearby property;

The Subject Property consists of +/- 80 acres and is currently zoned Agricultural (AG) in unincorporated Lake County. The Petitioner's request to zone the property R-3 upon annexation to the Village is consistent with the existing and future land uses anticipated for the area. Property to the south includes County residential homes and vacant land proposed as a solar farm. The remaining surrounding properties are vacant. However, property to the north is zoned Mixed-Use (MX) in Grayslake, which said designation acknowledges a mix of uses, including residential, is appropriate in this general area. In addition, the property to the west is currently seeking annexation to the Village of Mundelein and R-3 zoning upon annexation, which is consistent with the Petitioner's request. As such, the proposed R-3 residential zoning is considerably more in character with the nearby zoning and the future land uses we can reasonably anticipate for this area.

b. The extent to which property values of the subject property are diminished by the existing zoning;

The requested R-3 zoning will enhance the character of the area and actually improve property values in the area. With the exception of the county residential lots to the south, the surrounding area is vastly undeveloped, thus providing no net benefit to property values and the community at large. The total taxes due for the Subject Property in its unincorporated and undeveloped state is under $3,500 annually. In its fully developed state, we can anticipate approximately $3,032,000 of tax revenue, which is extraordinary. The zoning of the Subject Property and the development resulting therefrom provides an opportunity for undeveloped properties in the vicinity. In essence, the project will kickstart development, generate a significant increase in tax revenue, and ultimately increase the property values in the area.

c. The extent to which the proposed amendment promotes the public health, safety, and welfare of the Village;

The proposed rezoning will provide for a new residential community which is more compatible with neighboring properties, will enhance neighboring property values, and be more sensitive to the natural features of the site, thereby promoting public health, safety and welfare. In addition, the proposed amendment will provide additional housing opportunities for those that want to reside in Mundelein, as well as improve upon the existing housing stock.

d. The relative gain to the public, as compared to the hardship imposed upon the applicant;

The proposed residential zoning will provide for the immediate development of the Subject Property as a new residential community to be known as the Walnut Ridge subdivision. Walnut Ridge will provide a new housing opportunity and improve the Village's current housing stock. Enhancing the Village's housing stock will provide for the improvement of the Village's real estate tax base while also bringing new families to the community to live and work. The gain to the public as described above will be significant. If the zoning was not approved, the economic hardship would be considerable as the +/- 80 acre portion of the Subject Property would continue to sit vacant and underperforming into the indefinite future alongside the adjacent properties in the vicinity.

e. The suitability of the property for the purposes for which it is presently zoned, i.e. the feasibility of developing the property in question for 1 or more uses permitted under the existing zoning classification;

Currently unincorporated, the Subject Property has never utilized a zoning designation in the Village of Mundelein.

f. The length of time that a property in question has been vacant, as presently zoned, considered in the context of development in the area where the property is located;

This Subject Property has always utilized an Agricultural (AG) zoning classification in the County. As such, development opportunities are not viable under present zoning and unincorporated status.

g. The evidence, or lack of evidence, of community need for the use proposed by the applicant;

Given that there is significant lack of development in the general vicinity, there appears to be a need to spur development in this area. In fact, the comprehensive plan notes the future land use of the Subject Property and the surrounding undeveloped properties are identified as "flexible use". The comprehensive plan specifically notes the potential for annexation of the land to the northwest of Mundelein's municipal boundaries and notes this area should allow for both residential and business parks based upon specific market demands[3]. In today's market, we are faced with a national housing shortage. In response, the Petitioner's proposal helps to bring the supply and demand of housing closer to equilibrium to address this national issue which helps to solve issues and meet goals on a national and local level.

h. The consistency of the proposed amendment with the Comprehensive Plan;

The comprehensive plan identifies the Subject Property as "flexible use", which notes this area should be used for residential and business parks based upon specific market demands. The comprehensive plan sets forth goals for the "flexible use" subarea with the hope of providing (i) new and varied residential opportunities that provide housing choices; (ii) increased population to support existing businesses in town; and (iii) new development that will contribute positively to the Village's economic health[4]. The subarea identified in the comprehensive plan consists of hundreds of acres, yielding many different opportunities to develop in accordance with the goals

[3] https://www.mundelein.org/DocumentCenter/View/327/Comprehensive-Plan-Adopted-February-2021-PDF
[4] https://www.mundelein.org/DocumentCenter/View/1046/Comprehensive-Plan---Adopted-February-2021-PDF

set forth in the future land use plan. As noted, Petitioner's proposal helps to address the national housing shortage and as such, a single-family community is appropriate based upon those specific market demands.

i. That the proposed amendment will benefit the residents of the Village as a whole, and not just the applicant, property owner(s), neighbors of any property under consideration, or other special interest groups, and the extent to which the proposed use would be in the public interest and would not serve solely on the interest of the applicant;

While this re-zoning will benefit the immediate neighbors, it will also benefit the larger community since it will provide additional households that will help support the Village. In addition, the Village's housing stock will be enhanced, and the Village's residential real estate tax base will be strengthened. Lastly, the Petitioner will be providing additional park areas and pathways to the benefit of both the future residents of Walnut Ridge and the residents of the Village at large. Petitioner hopes this project is just the start of what can be exciting new development opportunities in this otherwise underperforming area.

j. The extent to which the proposed amendment creates nonconformities;

This re-zoning will not create any non-conformities. Aside from the request to increase the maximum lot coverage for The Meadows lots as prescribed herein, the Petitioner is not aware of any zoning deviations that will be necessary to develop the Subject Property as residential community.

k. The trend of development, if any, in the general area of the property in question; and

The trend of development in the general area is stagnant. As such, the Village provides a flexible canvas to welcome new development into the community for this specific area based upon market needs. This area is a unique pocket of Mundelein that remains undeveloped and

unincorporated. To this end, Petitioner's proposal will allow for the annexation of the Subject Property and kick-start development and activity in this otherwise dormant area.

l. Whether adequate public facilities are available including, but not limited to, schools, parks, police and fire protection, roads, sanitary sewers, storm sewers, and water lines, or are reasonably capable of being provided prior to the development of the uses, which would be permitted on the subject property if the amendment were adopted.

Upon annexation, all public services, facilities and utilities will be adequate and available to service the site. All new on-site facilities necessary will be provided as part of the development of the Subject Property. As necessary, individual agreements will be reached with the school, park and library districts to ensure that all necessary services can and will be provided.

A DEVIATION FROM THE TREE REMOVAL AND REPLACEMENT ORDINANCE

Petitioner seeks a deviation to Section 16.23.060 to eliminate the required number of replacement trees or allow for credit for replacing dead or dying trees.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

As part of the Walnut Ridge community, the Petitioner will be installing a significant amount of new landscaping materials to enhance the aesthetics of the overall community and greater area. Additionally, the Petitioner will be preserving over 35 acres of open space areas to preserve natural features and dedicate a one (1) acre park site. The end result is a new residential community with an overall density of less than two (2) homes per acre. The total of the improvements will ensure a first class community which is compatible with the character of the surrounding uses.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The

removal of unsightly or dying trees along with the significant landscaping enhancements, park improvements, open space preservation and creation of a path system will have a positive impact on the surrounding area.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. On the contrary, the extensive improvements, park sites, landscape enhancements and path system will be a healthy addition to the development and will enhance the neighborhood and surrounding areas.

A DEVIATION TO REDUCE THE ROAD WIDTH

Petitioner seeks a deviation to Section 19.16.070 (B) to reduce the road width from 33' to 28'.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation is compatible with the character of the surrounding area. The reduction in road width is a common request in modern subdivisions such as Maple Hill, Orchard Meadows, and Sheldon Woods. The slight reduction in width provides many benefits such as a reduction in future maintenance costs, traffic calming aspects and additional green space within the prescribed right-of-way.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The requested reduction in pavement width will not be noticeable to the surrounding area.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. The nominal reduction in road width is not a safety issue. All vehicles, including service vehicles, delivery trucks, and emergency vehicles will be able to safely traverse the internal roadways.

A DEVIATION TO ALLOW SANITARY TO BE LOCATED IN PARKWAYS

Petitioner seeks a deviation to Section 19.16.150 to allow all sanitary systems to be located in parkways rather than under the roadway.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation is compatible with the character of the surrounding area. Many municipalities require the sanitary systems to be placed in the parkway rather than under the roadways. This deviation will make it easier and less expensive for maintenance of the sanitary sewer system since the road will not need to be torn up in order to access the facilities. The sanitary systems being placed in the parkway will not even be noticed since everything will be underground.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The placement of the sanitary systems is actually going to be a benefit to the surrounding area. With the systems being placed under the parkways rather than the roadways, the roads will not need to be obstructed with construction whenever the sanitary systems need maintenance.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. The deviation is not even going to be noticed by anyone in the neighborhood or surrounding area. The systems being installed under parkways rather than under roadways will ensure a course of travel that will be unaffected when the systems require maintenance.

A DEVIATION TO ALLOW ELECTRIC UTILITY INSTALLATIONS IN FRONT YARDS

Petitioner seeks a deviation to Section 19.16.120 (B) to allow the ComEd electric utility to install its equipment in the front yards rather than side yards or rear yards.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation or structure is compatible with the character of the surrounding area. ComEd requires that all electric utility installations be located in the front yard.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The installation in the front yards is similar to other recent development projects and will not diminish the appearance of the neighborhood. It will provide an easier access for maintenance which is a positive attribute of this request.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. The installation of electrical equipment is necessary in any subdivision. The equipment is installed and maintained in a safe manner and will not pose any threat to the health, safety, and welfare of the neighborhood or surrounding area.

A DEVIATION TO ALLOW ADDITIONAL CUL-DE-SACS

Petitioner seeks a deviation to Section 19.16.070 (E)(2) to increase the number of cul-de-sacs from 1.55 to 2.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation is compatible with the character of the surrounding area. Under Code Section 19.16.070(E)(2), one (1) cul-de-sac is permitted per one hundred (100) lots. Walnut Ridge is comprised of one hundred fifty-five (155) lots. The deviation request is a technicality in

that Petitioner is technically permitted more than one (1) cul-de-sac, but less than two (2.) While the site plan depicts four (4) cul-de-sacs, two of the depicted cul-de-sacs are intended as stub roads to facilitate roadway connections to future residential development. Walnut Ridge incorporates two roads intentionally designed as (2) cul-de-sacs due to the site/topographic, grading conditions, and Developer's strong desire to maximize common open space and available trail connections. The two (2) permanent cul-de-sacs requested by the Petitioner is the minimum adjustment needed to accommodate the design intent of the proposed Walnut Ridge subdivision. The proposed deviation will not negatively affect the overall look and feel of the 155-unit neighborhood, in fact, it will allow Petitioner to maximize open space, reduce overall pavement coverage, and create beneficial pedestrian connections. The proposed deviation will also allow for logical travel within the subdivision while maximizing the effective placement of homes.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area. The additional cul-de-sac in a 155-unit community will be an enhancement to the neighborhood and will not have a negative impact on the surrounding area.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. To the contrary, the proposed cul-de-sac design is beneficial to the public health, safety, and welfare because it facilitates a safe an efficient roadway network while maximizing open space and improving the walkability of the community.

A DEVIATION TO INCREASE THE MAXIMUM ALLOWABLE LOT COVERAGE TO 55% FOR THE MEADOWS SERIES

Petitioner seeks a deviation to Section 20.28.030 to increase the maximum allowable lot coverage

from 50% to 55% as applied to The Meadows series.

a. The proposed deviation or structure is compatible with the character of the surrounding area.

The proposed deviation is compatible with the character of the surrounding area. As noted above, the layout of Walnut Ridge is intended to maximize common open space and facilitate beneficial tree preservation. To maximize open space and tree preservation Petitioner proposes smaller lots. While Petitioner could increase lot sizes to eliminate the Lot Coverage deviation, doing so would undermine the purpose and intent of the development while serving no practical purpose. The proposed deviation will allow future homeowners more flexibility to expand patios or other outdoor spaces as necessary without requiring an additional variance from the Village after they've closed on their home. The deviation represents a worst-case scenario by considering all floor plans that will be offered, all options/upgrades selected, and on the smallest lot size, thereby taking into consideration all possibilities and future circumstances. Ultimately, granting the deviation request will create a smoother process for future residents and is compatible with the trend of development. This request follows Village feedback from Sheldon Woods, where particular models in The Meadows series have had multiple requests for expanded patios hindered by the standard limitation.

b. The proposed deviation is not detrimental to the development of the surrounding area.

The proposed deviation is not detrimental to the development of the surrounding area and will only be applicable to The Meadows series in Walnut Ridge. In addition, the proposed deviation is not detrimental as applied to other homes within the subdivision. Bulk standards in the zoning districts are in place to ensure that adequate setbacks are provided and a development will not impact the light or air to adjacent properties. Walnut Ridge will meet all other zoning and

bulk regulations set forth for the R-3 district and greatly exceeding open space requirements. In effect, Petitioner has simply allocated space differently- favoring common open space and tree preservation over larger private yards. Therefore, light and air to adjacent properties will not be impacted and there will be no detrimental effect by virtue of allowing a slight increase in the maximum allowable lot coverage. Furthermore, the submitted storm water management report and related design has taken into account the additional impervious area with the increased lot coverage on the select lots.

c. *The proposed deviation is not detrimental to the public health, safety, and welfare.*

The proposed deviation is not detrimental to the public health, safety, and welfare. The Meadows Series is comprised of 5 different floor plans with 5, 6, or 7 elevations offered on each floor plan. Each floor plan will have different options for upgrades. As such, the Petitioner is considering a worst-case scenario to allow flexibility for the residents to make modifications to their outdoor patios or other entertaining spaces. Please note, the Petitioner will have certain covenants, conditions, and restrictions recorded against the Subject Property and will governed by an HOA. With these covenants, there will be certain restrictions as to allowable accessory structures in each yard and thus, will not be detrimental to the public health, safety, and welfare.

WHEREFORE, by reason of the foregoing, the undersigned Petitioner requests the Village Board and Planning and Zoning Commission take the necessary and appropriate action to (i) approve a special use for a planned unit development comprised of a 155 unit single-family detached residential development with associated deviations as depicted on the PUD Plat; (ii) approve an amendment to the official zoning map to zone the Property in the R-3 District; (iii) approve a preliminary Subdivision Plat; and (iv) to approve such other relief from the Village of Mundelein Code of Ordinances as may be deemed necessary and appropriate to develop the

Subject Property consistent with the plans submitted herewith.

RESPECTFULLY SUBMITTED this 20th day of June, 2025.

PETITIONER:
PULTE HOME COMPANY, LLC,
a Michigan limited liability company

Rosanova & Whitaker, Ltd.
Attorneys for the Petitioner

EXHIBIT A
LEGAL DESCRIPTION

The North half of the Northwest quarter of Section 14, lying West of the center line of Illinois Route 83 (except the West 638.0 feet hereof and except the South 586.0 feet thereof); also that part of the Northwest quarter of the Northeast quarter of Section 14 laying West of Illinois Route 83; also that part of the Southeast quarter of the Southwest quarter of Section 11 lying South of the center line of Winchester Road; also that part of the Southwest quarter of the Southeast quarter of Section 11 lying West of the center line of Illinois Route 83 and South of the center line of Winchester Road, all being in Township 44 North, Range 10, East of the Third Principal Meridian, in Lake County, Illinois.

PIN(s): 10-14-100-001; 10-14-100-013; 10-14-100-003; 10-14-200-001; 10-11-300-013

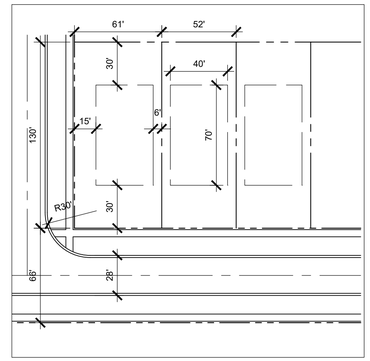
EXHIBIT B
PUD PLAT

SITE DATA

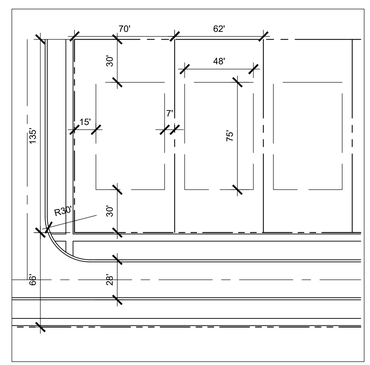
	AC	%
ESTATES LOTS	15.0	18.8%
MEADOWS LOTS	16.0	20.0%
STORM / OPEN SPACE	33.9	42.6%
RIGHT OF WAY	14.8	18.6%
TOTAL PROJECT SITE	79.7 AC	100%
ESTATES LOTS	64	(41%)
MEADOWS LOTS	91	(59%)
TOTAL UNITS	155	
DENSITY	1.94 DU/AC	
TYPICAL LOT DIMENSIONS	52'x130' (Meadows) 62'x135' (Estates)	
FRONT YARD SETBACK	30'	
REAR YARD SETBACK	30'	
INTERIOR SIDE SETBACK	6' (MEAD.) 7' (EST.)	
CORNER SIDE SETBACK	15'	
LINEAR FT OF ROADWAY	7,338	

MEADOWS LOTS

ESTATES LOTS



TYPICAL LOTTING PLAN- MEADOWS



TYPICAL LOTTING PLAN- ESTATES

NORTH

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

DRAWN BY:
REVISIONS
DATE

Manhard CONSULTING LTD
700 Springer Drive, Lombard, IL 60148 ph:630.691.8500 fx:630.691.8585 manhard.com
Civil Engineers • Water Resource Engineers • Surveyors • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

WALNUT RIDGE
MUNDELEIN, ILLINOIS
CONCEPTUAL SITE PLAN

PROJ. MGR.:	MN
PROJ. ASSOC.:	MN
DRAWN BY:	MN
DATE:	06/11/25
SCALE:	1" = 150'

SHEET 1 OF 1

PUL.MUIL03

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June 6, 2025 - 09:56 Dwg Name: P:\Pulmuil03\Dwg\Landdsn\01-Preliminary\X00-SITE PLAN.dwg Updated By: mlburns

EXHIBIT C
SUBDIVISION PLAT

Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

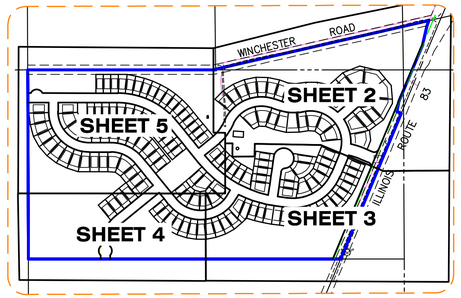
PRELIMINARY PLAT OF SUBDIVISION

WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN



SHEET INDEX

OWNER:LAKE COUNTY LAND HOLDINGS LLC
PIN:10-11-300-008

UNSUBDIVIDED
OWNER: AA-BELL VENTURE, LLC
PIN:10-11-300-012

OWNER: AA-BELL VENTURE, LLC
PIN:10-11-300-005

UNSUBDIVIDED
OWNER: AA-BELL VENTURE, LLC
PIN:10-11-300-003

UNSUBDIVIDED
OWNER:AA-BELL VENTURE, LLC
PIN:10-11-400-043

OWNER:LA SALE NATIONAL BANK
PIN:10-11-400-057

OWNER:LA SALE NATIONAL BANK
PIN:10-14-200-001

OWNER:LA SALE NATIONAL BANK
PIN:10-14-100-001

UNSUBDIVIDED

OWNER:LA SALE NATIONAL BANK
PIN:10-14-100-001, 003
10-14-200-001, 003

UNSUBDIVIDED

UNSUBDIVIDED

UNSUBDIVIDED

S LINE SW 1/4 SW 1/4 SECTION 11-44-10
638.00'(D)
S89°59'40"E 1310.88'(M)
(UNIMPROVED)
N00°34'23"W 3.70'(M)
RIGHT-OF-WAY AS SHOWN ON COUNTY TAX MAPS AND STATE PLAT OF HIGHWAYS R-91-014-22
W LINE SE 1/4 SW 1/4 SECTION 11-44-10
RIGHT OF WAY BASED ON UTILITY OCCUPATION & IDOT PLAT OF HIGHWAY
N77°08'10"E 1528.05'(M)
WINCHESTER ROAD
NORTHERN ILLINOIS GAS CO EASEMENT PER DOC #1267725
GRAVEL DRIVE
1983.80'(M)
N LINE NW 1/4 SECTION 14-44-10
S LINE SE 1/4 SW 1/4 SECTION 11-44-10
1310.88'(M)
S LINE OF VILLAGE OF GRAYSLAKE CORPORATE LIMITS PER CORNERSTONE ANNEXATION AGREEMENT / VILLAGE ORDINANCE NO. 2009-O-23 (EXTENDED ACROSS RIGHT-OF-WAY PER STATE STATUTE
S21°11'00"W 39.83'(M)
RIGHT-OF-WAY BASED PER DOC. #7946018
E LINE SE 1/4 SW 1/4 SECTION 11-44-10
302.32'(M)
N00°43'21"W
W LINE SW 1/4 SE 1/4 SECTION 11-44-10
135.03'(M)
S12°49'01"W
N89°59'07"E 112.34'(M)
S LINE SW 1/4 SE 1/4 SECTION 11-44-10
N LINE NE 1/4 SECTION 14-44-10
S22°37'27"W 430.00'(M)
285.73'(M)
S00°14'58"E
S11°18'53"W 71.39'(M)
S67°22'33"E 33.00'(M)
ILLINOIS ROUTE 83
E LINE NW 1/4 SECTION 14-44-10
S22°37'27"W 1102.09'(M)
586.00'(D)
N00°09'51"W 1322.06'(M)
W LINE NW 1/4 SECTION 14-44-10
504.96'
637.97'(M) 638.00'(D)
S LINE N 1/2 NW 1/4 SECTION 14-44-10
S89°59'47"W 2179.49'(M)

OUTLOT A
OUTLOT B
OUTLOT C
OUTLOT D
OUTLOT E

STREET "A"
STREET "B"
STREET "D"
STREET "E"
STREET "F"
STREET "G"
STREET "H"

EXISTING FRAME SHED
EXISTING METAL/CLAD BUILDING
EXISTING SILO FOUNDATION

ZONE "X"
ZONE "A" AS SCALED FROM FIRM PANEL 17097C0141L DATED: February 2, 2016

LEGEND	
	DOWN GUY
	FIRE HYDRANT
	GAS PIPELINE MARKER
	GAS VALVE
T	TELEPHONE RISER
	UTILITY POLE
OU	OVERHEAD UTILITIES
(D)	DEED
(R)	RECORD
(M)	MEASURE

DISTANCES SHOWN ON THIS PLAT ARE GRID DISTANCES BASED ON THE NOTED STATE PLANE COORDINATE SYSTEM AT THE LOWER LEFT HAND CORNER OF THIS PLAT. TO OBTAIN GROUND LEVEL DISTANCES DIVIDE BY THE COMBINED SCALE FACTOR OF 0.9999478227.

EXISTING PROPERTY AREA

GROSS AREA: 79.745± ACRES
NET AREA: 76.761± ACRES

PROPOSE PROPERTY AREA

RESIDENTIAL LOTS 1-155: 30.928± ACRES
OUTLOTS A, B, C, D, E: 36.134± ACRES
IDOT ROW DEDICATION:1.323± ACRES
VILLAGE OF MUNDELEIN ROW DEDICATION: 11.360± ACRES
TOTAL=79.745± ACRE+

100' 0' 100' 200'
SCALE: 1" = 100'

PROJECT BENCHMARK
NATIONAL GEODETIC CONTROL STATION "LD010"
ELEV=662.36 NAVD88

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: *
JOB NO.: 250149 I.D. PPS
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: 240667

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

PLANNING AND ZONING COMMISSION CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

I, _____ Chairman of the Village of Mundelein, Plan Commission, do certify that on this _____ day of _____, 20_____ this Preliminary Plat of Subdivision was duly approved by the Plan Commission of the Village of Mundelein

_____ _____
Chairman (print name of signer)

_____ _____
Secretary (print name of signer)

VILLAGE BOARD CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

Approved by the Mayor and Board of Trustees of the Village of Mundelein, Lake County Illinois,

Dated at Mundelein, Lake County, Illinois this _____ day of_____,

A.D., 20_____.

_____
Mayor

_____
Attest, Village Clerk

SURVEYOR'S CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF McHENRY)

I, _____ an Illinois Registered Land Surveyor, do hereby certify that we have surveyed and subdivided the following described property, and that the Plat as drawn represents said survey and subdivision;

Part of the North Half of the Northwest Quarter of Section 14 and part of the East Half of the Southwest Quarter of Section 11, all in Township 44 North, Range 10 East of the Third Principal Meridian, bearings and distances based on Illinois State Plane Coordinate System, East Zone, NAD83 (2011), with a combined scale factor of 0.99994782; being described as follows: Beginning at the Northwest corner of the said Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 40 seconds East along the North line thereof, 1,310.88 feet to the Southwest corner of the said East Half of the Southwest Quarter of Section 11; thence North 00 degrees 34 minutes 23 seconds West along the West line thereof, 3.70 feet to the centerline of Winchester Road; thence North 77 degrees 08 minutes 10 seconds East along said centerline, 1,528.05 feet to the West right-of-way line of State Route 83 per Trustee Deed recorded as Document No. 7946018; thence South 21 degrees 11 minutes 00 seconds West along said West right-of-way line, 39.83 feet; thence South 12 degrees 49 minutes 01 second West along said West right-of-way line, 135.03 feet; thence South 22 degrees 37 minutes 27 seconds West along said West right-of-way line, 430.00 feet; thence South 11 degrees 18 minutes 53 seconds West along said West right-of-way line, 71.39 feet; thence South 67 degrees 22 minutes 33 seconds East along the Southerly line of the lands described in said Document No. 7946018, a distance of 33.00 feet to East Half centerline of said State Route 83; thence South 22 degrees 37 minutes 27 seconds West along said centerline, 1,102.09 feet to the South line of the said North Half of the Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 47 seconds West along said South line, 2,179.49 feet to the Southwest corner thereof; thence North 00 degrees 09 minutes 51 seconds West along the West line thereof, 1,322.06 feet to the Place of Beginning in Lake County, Illinois.

I, further certify, that Property contains: 79.745± Acres.

I, further certify; that based upon examination of the Flood Insurance Rate Map of McHenry County, Illinois, Panel #17097C0229K with an effective date of September 18, 2013 indicates subject property residing within Zone "X" an area determined to be outside the 0.2% chance of annual flooding.

I, further certify; that upon completion of construction, concrete monuments, as shown, and 5/8" iron bars are/will be set at all lot corners and points of change in alignment, as required by the Plat Act (765 ILCS 205/1).

I, further certify, that these professional service conforms to the current Illinois Minimum Standards applicable to a Boundary Survey, as it applies to a Final Plat of Subdivision. All distances are given in feet and decimal thereof.

Given under my hand and seal at, Woodstock, Illinois this the 3rd day of April, 2025.

_____
Illinois Registered Professional Land Survey No.
Vanderstappen Land Surveying, Inc.
Design Firm No. 184-002792

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD

WALNUT RIDGE SUBDIVISION SHEET NO. 1 OF 5

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Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

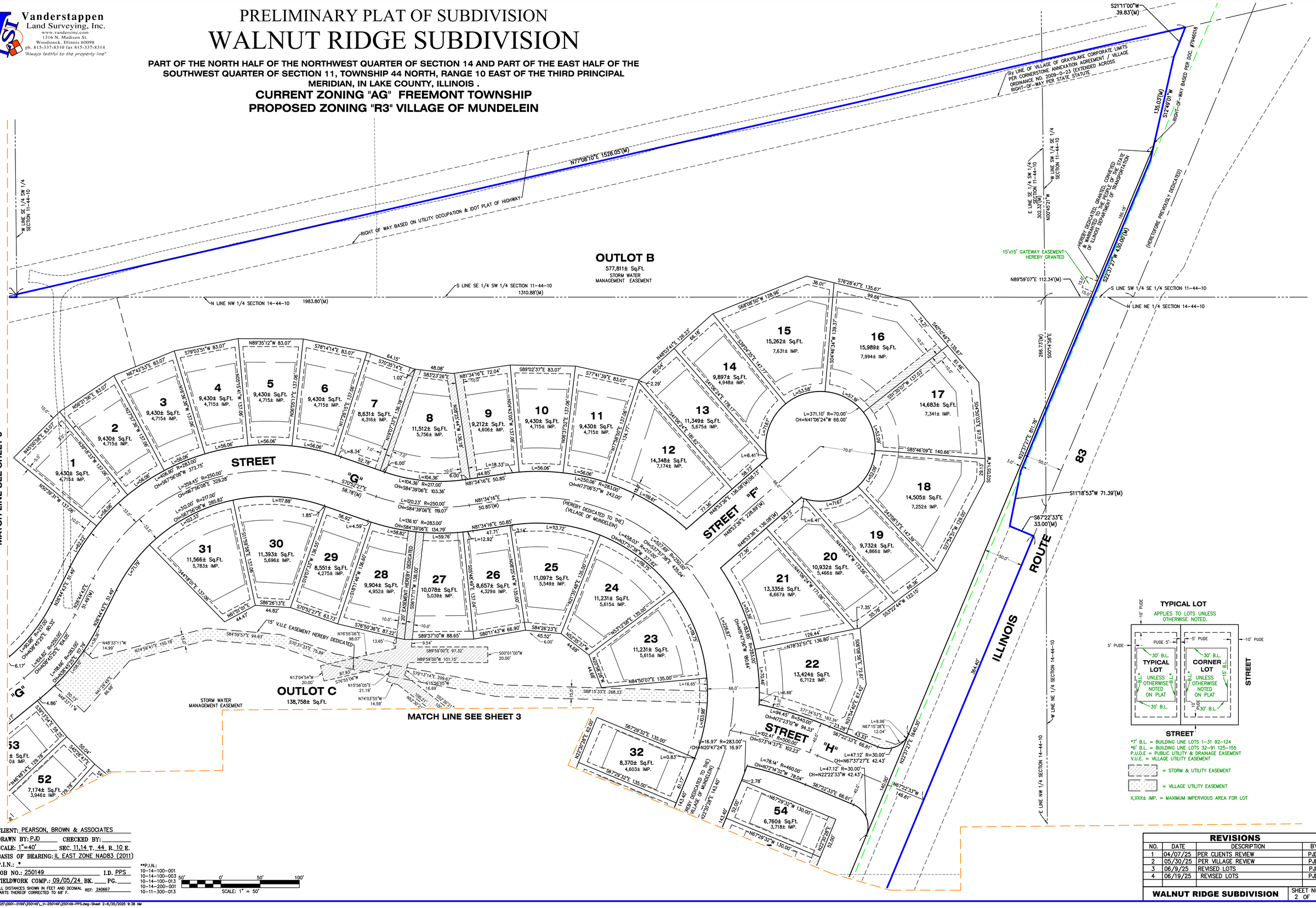
PRELIMINARY PLAT OF SUBDIVISION

WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN



CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
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**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

SCALE: 1" = 50'

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD
WALNUT RIDGE SUBDIVISION		SHEET NO. 2 OF 5	

Y:\PLATS\2025\0001-0199\250149_V-250149\250149-PPS.dwg-Sheet 2-6/20/2025 9:38 AM

Vanderstappen
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PRELIMINARY PLAT OF SUBDIVISION

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CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN

MATCH LINE SEE SHEET 2

MATCH LINE SEE SHEET 4

STREET "A"

STREET "B"

STREET "E"

STREET

Lots 31–54, 57–61, 63–65, 67–76, 86, 87

OUTLOT E
411,905± Sq.Ft.
STORM WATER MANAGEMENT EASEMENT

S89°59'47"W 1554.35'

N23°27'27"E 698.53'

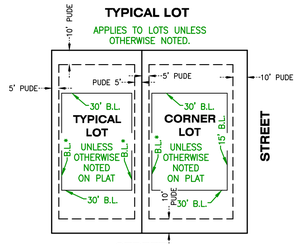
S23°27'27"W 1102.09'(M)

586.00'(D)

HEREBY DEDICATED, GRANTED, CONVEYED TO THE PEOPLE OF THE STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

TYPICAL LOT

APPLIES TO LOTS UNLESS OTHERWISE NOTED.



*7' B.L. = BUILDING LINE LOTS 1–31 92–124
*6' B.L. = BUILDING LINE LOTS 32–91 125–155
P.U.D.E = PUBLIC UTILITY & DRAINAGE EASEMENT
V.U.E. = VILLAGE UTILITY EASEMENT

= STORM & UTILITY EASEMENT

= VILLAGE UTILITY EASEMENT

X,XXX± IMP. = MAXIMUM IMPERVIOUS AREA FOR LOT

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: *
JOB NO.: 250149 I.D. PPS
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: 240667

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

SCALE: 1" = 50'

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD
WALNUT RIDGE SUBDIVISION		SHEET NO. 3 OF 5	

Y:\PLATS\2025\0001-0199\250149_V-250149\250149-PPS.dwg-Sheet 3-6/20/2025 9:38 AM

Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

PRELIMINARY PLAT OF SUBDIVISION

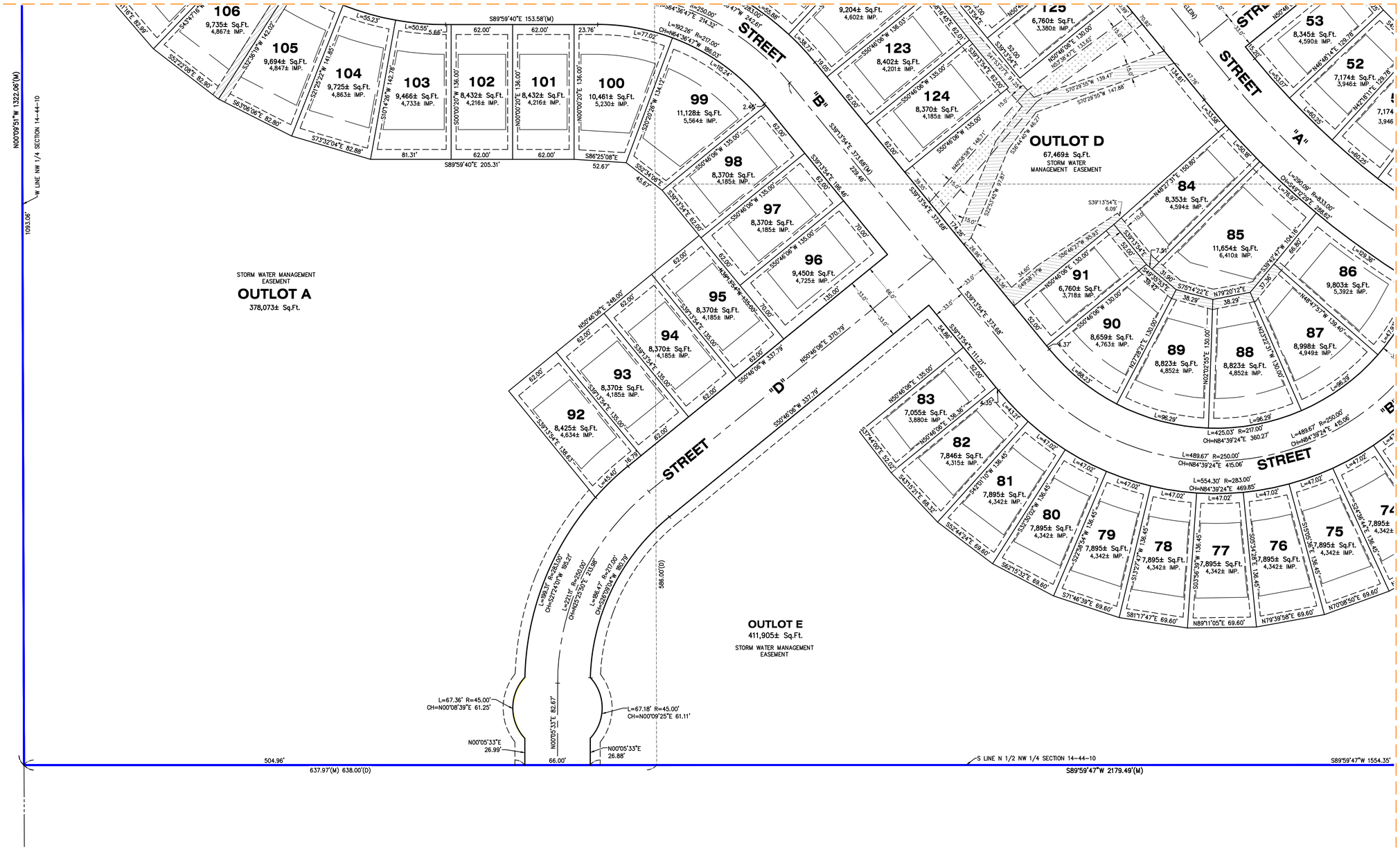
WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

CURRENT ZONING "AG" FREEMONT TOWNSHIP

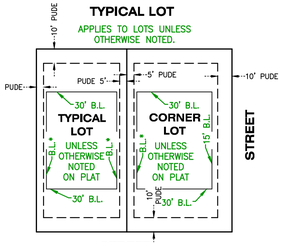
PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN

MATCH LINE SEE SHEET 5



TYPICAL LOT

APPLIES TO LOTS UNLESS OTHERWISE NOTED.



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= VILLAGE UTILITY EASEMENT

X,XXX± IMP. = MAXIMUM IMPERVIOUS AREA FOR LOT

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: *
JOB NO.: 250149 I.D. PPS
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: 240667

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

50' 0' 50' 100'
SCALE: 1" = 50'

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD
WALNUT RIDGE SUBDIVISION		SHEET NO. 4 OF 5	

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CURRENT ZONING "AG" FREEMONT TOWNSHIP

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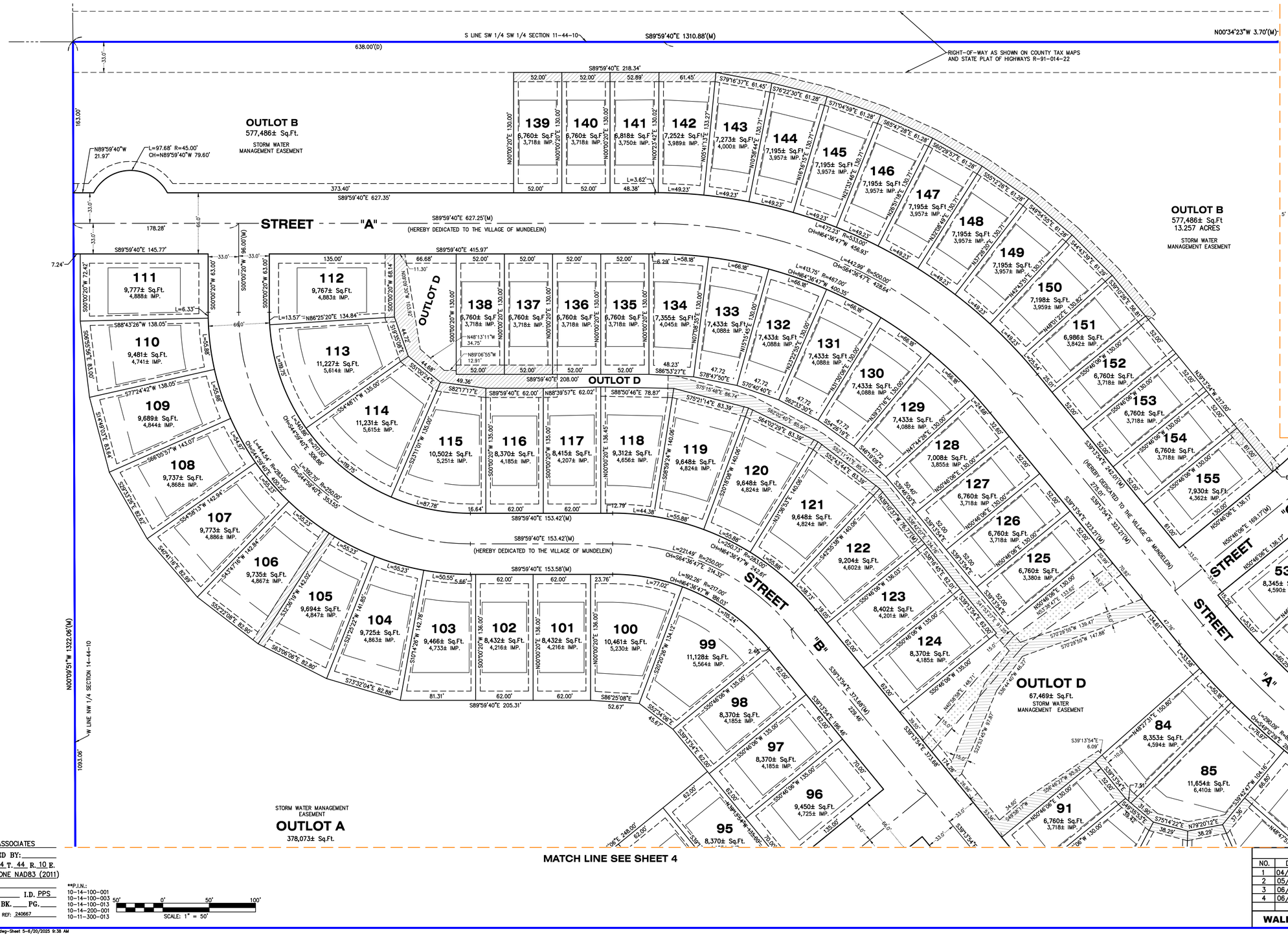

TYPICAL LOT

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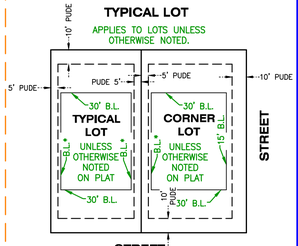

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10-14-100-013
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50' 0' 50' 100'
SCALE: 1" = 50'

REVISIONS			
NO.	DATE	DESCRIPTION	BY
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2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD
WALNUT RIDGE SUBDIVISION		SHEET NO. 5 OF 5	

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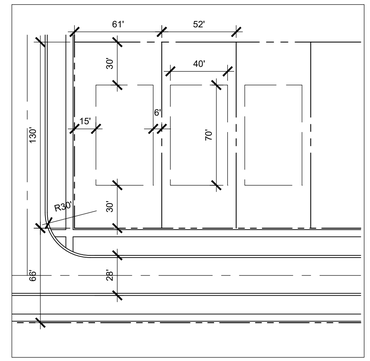
SITE DATA

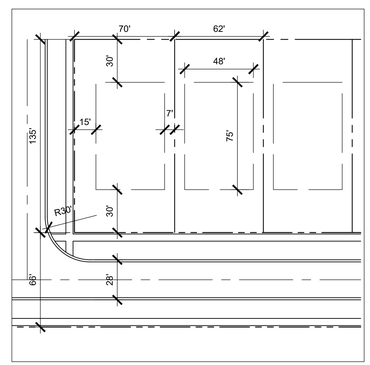
	AC	%
ESTATES LOTS	15.0	18.8%
MEADOWS LOTS	16.0	20.0%
STORM / OPEN SPACE	33.9	42.6%
RIGHT OF WAY	14.8	18.6%
TOTAL PROJECT SITE	79.7 AC	100%
ESTATES LOTS	64	(41%)
MEADOWS LOTS	91	(59%)
TOTAL UNITS	155	
DENSITY	1.94 DU/AC	
TYPICAL LOT DIMENSIONS	52'x130' (Meadows) 62'x135' (Estates)	
FRONT YARD SETBACK	30'	
REAR YARD SETBACK	30'	
INTERIOR SIDE SETBACK	6' (MEAD.) 7' (EST.)	
CORNER SIDE SETBACK	15'	
LINEAR FT OF ROADWAY	7,338	

MEADOWS LOTS

ESTATES LOTS



TYPICAL LOTTING PLAN- MEADOWS



TYPICAL LOTTING PLAN- ESTATES

NORTH

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.

DRAWN BY

REVISIONS

DATE

Manhard CONSULTING LTD

700 Springer Drive, Lombard, IL 60148 ph:630.891.8500 fx:630.891.8585 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

WALNUT RIDGE

MUNDELEIN, ILLINOIS

CONCEPTUAL SITE PLAN

PROJ. MGR.: MN
PROJ. ASSOC.: MN
DRAWN BY: MN
DATE: 06/11/25
SCALE: 1" = 150'

SHEET 1 OF 1

PUL.MUIL03

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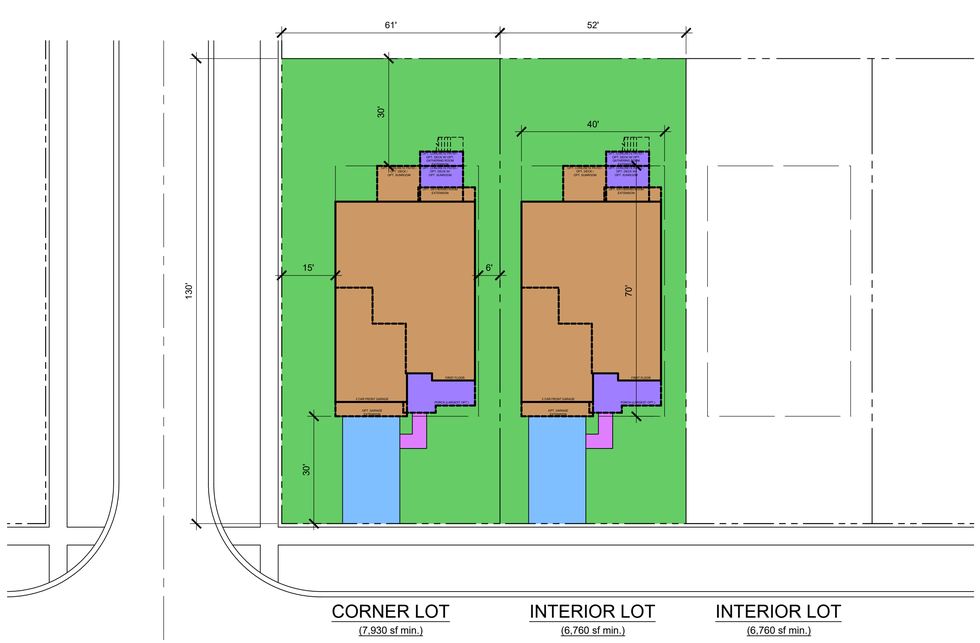
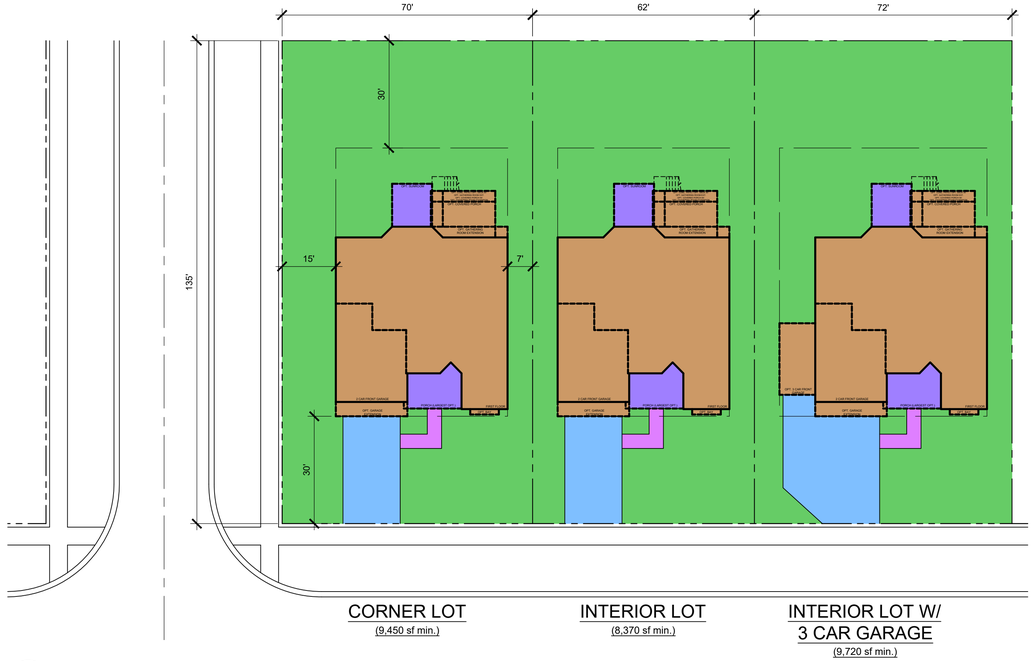
June 6, 2025 - 09:06 Dwg Name: P:\Pulmuil03\dwg\Landplan\01-Preliminary\00-SITE PLAN.dwg Updated By: maburto



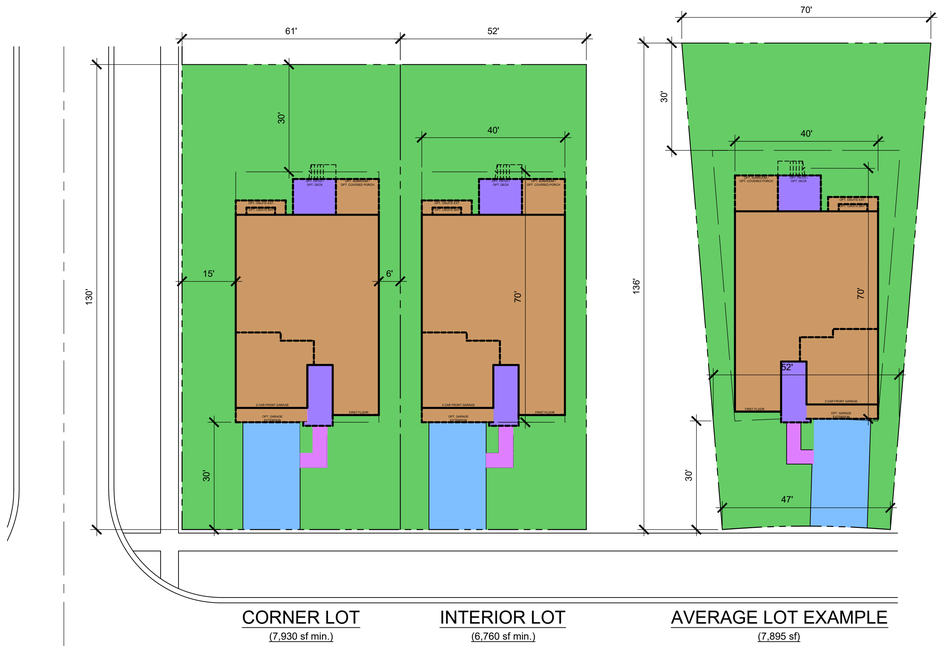
1 WAVERLY LOT FIT - LARGEST 2 - STORY MEADOWS SERIES FOOTPRINT

1" = 20'-0"



3 CASTLETON LOT FIT - LARGEST ESTATE SERIES FOOTPRINT

1" = 20'-0"



2 ABBEYVILLE LOT FIT - RANGE MEADOWS SERIES FOOTPRINT

1" = 20'-0"

WAVERLY SUMMARY - CORNER

MAX. BUILDING STRUCTURE	2,317 SF
TYP. DRIVEWAY	480 SF
MAX. PORCH / PATIO	283 SF
TYP. WALK	54 SF
MIN. LOT AREA	7,930 SF
TOTAL IMPERVIOUS	3,134 SF (39.5%)
TOTAL OPEN SPACE	4,796 SF (60.5%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (60%)	1,624 SF

WAVERLY SUMMARY - INTERIOR

MAX. BUILDING STRUCTURE	2,317 SF
TYP. DRIVEWAY	480 SF
MAX. PORCH / PATIO	283 SF
TYP. WALK	54 SF
MIN LOT AREA	6,760 SF
TOTAL IMPERVIOUS	3,134 SF (46.4%)
TOTAL OPEN SPACE	3,626 SF (53.6%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (55%)	584 SF

LEGEND

- BUILDING
- DRIVEWAY
- PORCH / PATIO
- WALK
- OPEN SPACE / LANDSCAPE

ABBEYVILLE SUMMARY - CORNER

MAX. BUILDING STRUCTURE	2,357 SF
TYP. DRIVEWAY	560 SF
MAX. PORCH / PATIO	251 SF
TYP. WALK	50 SF
MIN. LOT AREA	7,930 SF
TOTAL IMPERVIOUS	3,218 SF (40.6%)
TOTAL OPEN SPACE	4,712 SF (59.4%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (60%)	1,540 SF

ABBEYVILLE SUMMARY - INTERIOR

MAX. BUILDING STRUCTURE	2,357 SF
TYP. DRIVEWAY	560 SF
MAX. PORCH / PATIO	251 SF
TYP. WALK	50 SF
MIN. LOT AREA	6,760 SF
TOTAL IMPERVIOUS	3,218 SF (47.6%)
TOTAL OPEN SPACE	3,542 SF (52.4%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (55%)	500 SF

ABBEYVILLE SUMMARY - AVERAGE LOT

MAX. BUILDING STRUCTURE	2,357 SF
TYP. DRIVEWAY	560 SF
MAX. PORCH / PATIO	251 SF
TYP. WALK	50 SF
LOT AREA	7,895 SF
TOTAL IMPERVIOUS	3,142 SF (39.8%)
TOTAL OPEN SPACE	4,753 (60.2%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (55%)	1,200 SF

CASTLETON SUMMARY - CORNER

MAX. BUILDING STRUCTURE	2,473 SF
TYP. DRIVEWAY	480 SF
MAX. PORCH / PATIO	292 SF
TYP. WALK	75 SF
MIN. LOT AREA	9,450 SF
TOTAL IMPERVIOUS	3,320 SF (35.1%)
TOTAL OPEN SPACE	6,130 SF (64.9%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (60%)	2,350 SF

CASTLETON SUMMARY - INTERIOR

MAX. BUILDING STRUCTURE	2,473 SF
TYP. DRIVEWAY	480 SF
MAX. PORCH / PATIO	292 SF
TYP. WALK	75 SF
MIN. LOT AREA	8,370 SF
TOTAL IMPERVIOUS	3,320 SF (39.7%)
TOTAL OPEN SPACE	5,050 SF (60.3%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (50%)	865 SF

CASTLETON SUMMARY - INTERIOR 3-CAR

MAX. BUILDING STRUCTURE	2,673 SF
TYP. DRIVEWAY	809 SF
MAX. PORCH / PATIO	292 SF
TYP. WALK	75 SF
MIN. LOT AREA	9,720 SF
TOTAL IMPERVIOUS	3,849 SF (39.6%)
TOTAL OPEN SPACE	5,871 SF (60.4%)
REMAINING COVERAGE FOR FUTURE IMPROVEMENTS (50%)	1,011 SF

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
06/06/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

Manhard CONSULTING
333 East Butterfield Road, Suite 600, Lombard, IL 60148
ph (630) 691-8300 fax (630) 691-8301 manhard.com
Civil Engineers • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
LOT FIT AND COVERAGE ANALYSIS

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	05/29/25
SCALE:	1"=20'

SHEET 1 OF 1

PUL.MUIL03

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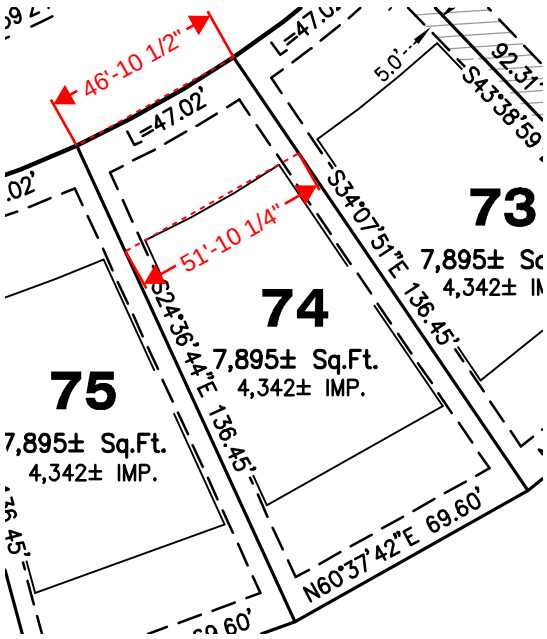
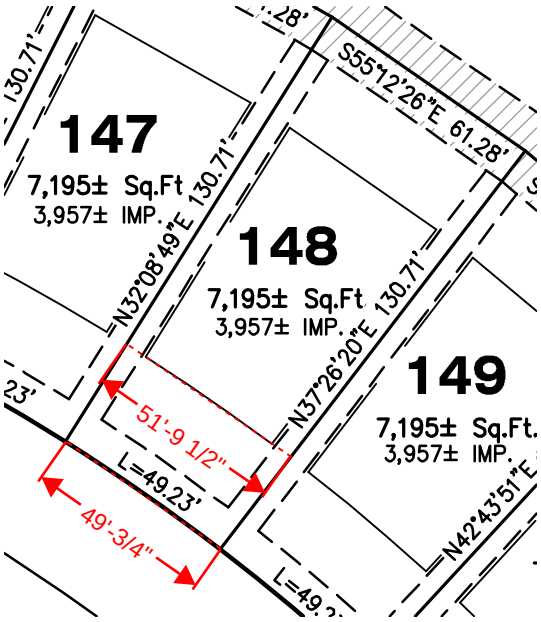
June 19, 2025 - 16:21 Dwg Name: P:\Pulmuil03\dwg\Landplan\02-final\04- LOT FIT EXHIBITS\01- Lot Fit Exhibit.dwg Updated By: mcburto

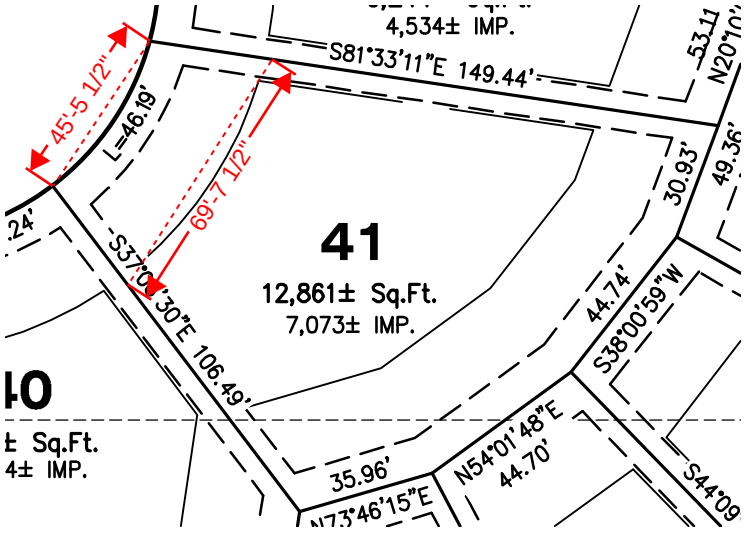
Lot Width Exhibit



Lot 74:
Front Lot Line, along arc - 47.02'
Front Lot Line, straight line - 46'-10.5"
@ Building Line, straight line - 51'-10.25"



Lot 148:
Front Lot Line, along arc - 49.23'
Front Lot Line, straight line - 49'-0.75"
@ Building Line, straight line - 51'-9.5"



Lot 41:
Front Lot Line, along arc - 46.19'
Front Lot Line, straight line - 45'-5.5"
@ Building Line, straight line - 69'-7.5"

As described by the exhibits on this page, the lots on our Plat of Subdivision which indicate a front lot line below the 50 foot minimum lot width are at least 50 feet when measured at the building line, as prescribed by the zoning ordinance.

EXISTING AGRICULTURAL DRAIN TILE INVESTIGATION PLAN

MUNDELEIN WALNUT RIDGE

Prepared for: PULTE GROUP

Section no. 14, Fremont Twp., Lake Co., IL

EXISTING SUBSURFACE AGRICULTURAL DRAIN TILE INVESTIGATION REPORT

MUNDELEIN WALNUT RIDGE

PULTE GROUP

MUNDELEIN WALNUT RIDGE / PULTE GROUP , FIELD FILE NO. 10-7-14, DATE: 5/19/25 .
IN ACCORDANCE WITH LAKE COUNTY STORM WATER COMMISSION DRAIN TILE INVESTIGATION STANDARDS

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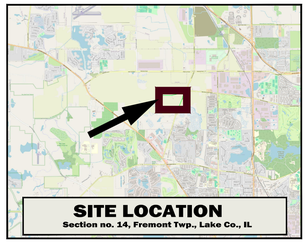
DESCRIPTION CHART NO. 1A : INVESTIGATION SLIT TRENCH LOCATIONS

ID NO.	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH GRD/INV	FIELD NOTES:
A	--	--	--	--	--	NO DRAIN TILE LOCATED
B1	5"	CLAY / GOOD	10%	CLEAN	33"	ACTIVE FLOW RVW/ GUD CAPADTY
C1	5"	CLAY / GOOD	FLOODED	10%	45"	RESTRICTED FLOW AND SURCHARGED
D1	4"	CLAY / FAIR	FLOODED	10%	45"	RESTRICTED FLOW AND SURCHARGED
E	--	--	--	--	--	NO DRAIN TILE LOCATED
F1	5"	CLAY / GOOD	FLOODED	10%	54"	RESTRICTED FLOW AND SURCHARGED
G	--	--	--	--	--	NO DRAIN TILE LOCATED
H	--	--	--	--	--	NO DRAIN TILE LOCATED
I	--	--	--	--	--	NO DRAIN TILE LOCATED
J	--	--	--	--	--	NO DRAIN TILE LOCATED
K1	5"	CLAY / GOOD	FLOODED	SLIGHT	65"	RESTRICTED FLOW AND SURCHARGED
L1	4"	CLAY / FAIR	NONE	20%	40"	SILT RESTRICTED / PARTIAL CAPACITY
M1	5"	CLAY / POOR	FLOODED	SLIGHT	62"	RESTRICTED FLOW AND SURCHARGED
N	--	--	--	--	--	NO DRAIN TILE LOCATED
O1	4"	CLAY / FAIR	10%	90%	40"	SILT RESTRICTED / PARTIAL CAPACITY

DESCRIPTION CHART NO. 1B : SURVEY DATA POINT LOCATIONS

DATA POINT	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH HUB/INV	FIELD NOTES:
1	5"	CLAY / GOOD	10%	CLEAN	33"	LATERAL AT PROPERTY EGRESS
2	4"	CLAY / FAIR	FLOODED	10%	41"	LATERAL AT PROPERTY INGRESS
3	8"	CLAY / POOR	FLOODED	FULL	60"	MAINLINE AT PROPERTY EGRESS
4	8"	CLAY / GOOD	FLOODED	SLIGHT	69"	MAINLINE AT PROPERTY EGRESS
5	5"	CLAY / GOOD	FLOODED	SLIGHT	80"	LATERAL AT PROPERTY EGRESS
6	8"	CLAY / GOOD	FLOODED	SLIGHT	72"	MAINLINE AT PROPERTY EGRESS
7	5"	CLAY / FAIR	FLOODED	20%	34"	MAINLINE AT PROPERTY EGRESS



SITE LOCATION
Section no. 14, Fremont Twp., Lake Co., IL

MAP LEGEND :

- EXISTING DRAIN TILE FLOW DIRECTION
- EX. POLYETHYLENE MAINLINE OR SYSTEM PART
- EX. CLAY DRAIN TILE MAINLINE OR SYSTEM PARTS
- EX. CONCRETE DRAIN TILE MAINLINE OR SYSTEM PART
- EXISTING DRAIN TILE CONTINUES TO UPLAND WATERSHED
- EXISTING DRAIN TILE OUTLETS TO SURFACE
- EXIST. DRAIN TILE (1) INSPECTION STRUCTURE / (2) CATCH BASIN
- EXIST. DRAIN TILE (1) LOCATED END / (2) ASSUMED END
- EXISTING DRAIN TILE CONTINUES TO OFF-SITE OUTLET SYSTEM
- EXISTING DRAIN TILE FAILURE / FLOW SURCHARGE TO SURFACE
- EXISTING DRAIN TILE MAPPED BY SPECULATION AND ASSUMPTION
- EXISTING DRAIN TILE ABANDONED (NOT FUNCTIONAL)
- EXISTING DRAIN TILE "BLOWOUT" OR FAILURE
- HAND PROBE OR ELECTRONIC SCAN FOR DRAIN TILE LOCATION
- INVESTIGATION SLIT TRENCH FOR INVESTIGATION
- SPECIFIC PIT EXCAVATION FOR INVESTIGATION
- SURVEY DATA POINTS
- REPORT IDENTIFICATION NUMBER

REPORT LEGEND :

ID NO.	POINT OF EXCAVATION FOR SPECIFIC DRAIN TILE INVESTIGATION.
SZ. (SIZE)	DRAIN TILE INTERNAL DIAMETER IN INCHES.
MATERIAL / QUALITY	TYPE OF TILE MATERIALS, PIPE QUALITY - GOOD, FAIR & POOR.
FLOW %	PERCENTAGE OF TILE DIAMETER OCCUPIED BY ACTIVE FLOW.
	RESTRICTED OR BACKED UP FLOW, SURCHARGED CONDITION
SILT %	PERCENTAGE OF TILE DIAMETER OCCUPIED BY RESTRICTIVE SILT.
	ABANDONED, FILLED WITH SILT BLOCKAGE, NO FLOW POTENTIAL
DEPTH	MEASUREMENT FROM EXISTING GROUND LEVEL TO PIPE INVERT.

(GENERAL NOTES)

MAINLINE TILE	TRUNK LINE OR MUTUAL DRAIN, COLLECTOR OF SUB-SYSTEMS.
SUB-MAIN TILE	SECONDARY TRUNK LINE OR RANDOM SYSTEM COLLECTOR.
LATERAL TILE	FEEDER LINE, SERVICE TILE OR SYSTEM SPUR.
"BLOWOUT"	EXISTING SYSTEM PIPE FAILURE OR RESTRICTION.
DRAIN TILE ENDS	MAINLINE, SUB-MAIN OR LATERAL PLANNED TERMINATION,
SLIT TRENCH	INVESTIGATION TRENCH, TYPICAL 2'- 0" WIDE x 6'- 0" DEPTH.

SPECIAL NOTES :

- *ALL EXISTING AGRICULTURAL DRAIN TILES LOCATED DURING THIS INVESTIGATION SURVEY HAVE BEEN IDENTIFIED ON THIS PLAN AND FIELD STAKED AT < 50' INTERVALS, IN SOME OCCASIONS CERTAIN EXISTING LOCAL DRAIN TILE SECTIONS MAY BE SPECULATED AND CONSIDERED AS AN ASSUMED ROUTE WHICH SHALL BE DELINEATED ON THIS PLAN.*
- *ANY EXISTING DRAIN TILE NOT ENDOUNTERED DURING SLIT TRENCHING OR PROBE TRANSECT PROCEDURES WILL REMAIN UNKNOWN.*
- *ALL EXISTING DRAIN TILES DAMAGED DURING THE INVESTIGATION PROCESS SHALL BE REPAIRED TO THEIR ORIGINAL STATE IN ACCORDANCE WITH NATURAL RESOURCE CONSERVATION SERVICE STANDARDS FOR DRAIN TILE INSTALLATION AND REPAIR. (HUDDLESTON DRAINAGE (EDA) TYPICAL STANDARD "A").*
- *ALL EXISTING DRAIN TILE LOCATION DIMENSIONS HAVE BEEN SURVEYED BY AGRICULTURAL GRADE GPS SURVEY SYSTEMS AND INCLUDE SUB METER ACCURACY. ALL LOCATIONS PERTINENT TO FINAL DESIGN SHALL BE VERIFIED BY THE PROJECT SURVEYOR.*
- *THIS DRAIN TILE INVESTIGATION REPORT IS INTENDED TO IDENTIFY EXISTING DRAIN TILE MAINLINE SYSTEMS ONLY INCLUDING ADDITIONAL PRIORITY ON DRAIN TILES WHICH MAY SERVICE THE UPLAND PROPERTY OF OTHERS OR WITH MUTUAL DRAINAGE STATUS.*
- *THIS DRAIN TILE INVESTIGATION REPORT SHALL BE FILED WITH HUDDLESTON DRAINAGE LAND DRAINAGE CO., AND WILL BE REPRODUCED AND DISBURSED ONLY BY PERMISSION OF THE CONTRACT PRINCIPALS.*

WINCHESTER RD
HWY 83 / N IVANHOE RD
NOTE: EXISTING 5" CLAY DRAIN TILE EGRESS PROPERTY LIMIT AND CONTINUE TO OFF-SITE OUTFALL SYSTEM.
NOTE: EXISTING 4" CLAY DRAIN TILE CONTINUES TO UPLAND WATERSHED AS A MUTUAL DRAIN.
NOTE: EXISTING (3) 8" CLAY AND (4) 8" CLAY DRAIN TILES EGRESS PROPERTY LIMIT AND CONTINUE TO OFF SITE OUTFALL SYSTEM.
EXISTING 8" CLAY DRAIN TILE
INVESTIGATION TRENCH - B
INVESTIGATION TRENCH - C
INVESTIGATION TRENCH - D
INVESTIGATION TRENCH - E
INVESTIGATION TRENCH - F
INVESTIGATION TRENCH - G
INVESTIGATION TRENCH - H
INVESTIGATION TRENCH - I
INVESTIGATION TRENCH - J
INVESTIGATION TRENCH - K
INVESTIGATION TRENCH - L
INVESTIGATION TRENCH - M
INVESTIGATION TRENCH - N
INVESTIGATION TRENCH - O
DRAIN TILE INVESTIGATION WORK AREA
EXISTING DRAIN TILE SECTION HAS BEEN DAMAGED, PROVIDING NO BENEFIT AND SHALL BE CONSIDERED ABANDONED.
NOTE: EXISTING 5" CLAY DRAIN TILE EGRESS PROPERTY LIMIT AND CONTINUE TO OFF-SITE OUTFALL SYSTEM.
NOTE: EXISTING 5" CLAY DRAIN TILE EGRESS PROPERTY LIMIT AND CONTINUE TO OFF-SITE OUTFALL SYSTEM.
NOTE: EXISTING 5" CLAY DRAIN TILE EGRESS PROPERTY LIMIT AND CONTINUE TO OFF-SITE OUTFALL SYSTEM.
<<EXIST. 8" CLAY DRAIN TILE>>
<<EXIST. 5" CLAY DRAIN TILE>>
<<EXIST. 4" CLAY DRAIN TILE>>
<<EXIST. 8" CLAY DRAIN TILE>>
<<EXIST. 5" CLAY DRAIN TILE>>
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<<EXIST. 5" CLAY DRAIN TILE>>
<<EXIST. 8" CLAY DRAIN TILE>>
<<EXIST. 8" CLAY DRAIN TILE>>
<<EXIST. 8

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant:	V3 Comapnies	*IDNR Project Number:*	2502333
Contact:	Caden LaFond	*Date:*	08/16/2024
Address:	7325 Janes Avenue, Woodridge IL Woodridge, IL 60517	*Alternate Number:*	240994

Project: Route 83 and Winchester Road
Address: Southwest corner of Route 83 and W Winchester road, Mundelein

Description: Potential site for residential development.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

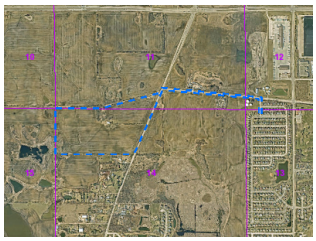
Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Lake

Township, Range, Section:
44N, 10E, 11
44N, 10E, 12
44N, 10E, 13
44N, 10E, 14



IL Department of Natural Resources Contact
Isabella Newingham
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency
Bureau of Water Quality
1021 N. Grand Ave. E. P.O. 19276
Springfield, Illinois 62794

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

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THE FISCAL IMPACT OF THE PROPOSED WALNUT RIDGE DEVELOPMENT ON THE VILLAGE OF MUNDELEIN TREASURY

To

PULTEGROUP, INC.

From

GRUEN GRUEN + ASSOCIATES
Urban Economists, Market Strategists & Land Use/Public Policy Analysts

April 2025

C1683

Gruen Gruen + Associates

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CHAPTER I

INTRODUCTION AND KEY FINDINGS AND CONCLUSIONS

INTRODUCTION

This report summarizes the evaluation by Gruen Gruen + Associates ("GG+A") of the fiscal impact of the proposed Walnut Ridge development ("Walnut Ridge") on the village of Mundelein treasury (General Fund plus several other funds). Walnut Ridge is proposed to include 155 for-sale detached single-family housing units on approximately 80 acres of land at the southwest corner of Route 83 and Winchester Road in unincorporated Lake County**.** The development is approximately one mile north of Sheldon Woods, a nearly completed Pulte Homes community in Mundelein. Walnut Ridge is anticipated to be annexed into the village of Mundelein.

Because the fiscal analysis addresses long-term rather than short-term fiscal effects of the proposed development on the village's General and other funds, the analysis excludes fee revenue associated with infrastructure or other capital items. Revenues collected on a cost-recovery basis and other fees-for-service (e.g., permit and plan checking fees, and inspection fees, etc.) are assumed to be set at rates that will adequately offset municipal costs.

To evaluate the net fiscal impact, GG+A estimated the annual revenue likely to be generated by Walnut Ridge for the General Fund and other funds. GG+A also estimated the General Fund municipal expenditures likely to be induced by the proposed development. GG+A then compared the estimated annual revenues and annual operating costs to estimate the net fiscal impact on the treasury of the village of Mundelein associated with the proposed development. The net fiscal impact is estimated at the build-out of Walnut Ridge.

KEY FINDINGS AND CONCLUSIONS

Increased Housing Opportunities and Total Household Income

In addition to providing expanded housing opportunities in Mundelein the proposed Walnut Ridge development will generate fiscal benefits (tax revenues) for the village of Mundelein. The net positive fiscal impacts associated with Walnut Ridge are summarized below and described in more detail in the body of this report.

The occupants of the housing units are expected to add total annual income to the household base of Mundelein of approximately $31,500,000.

Estimated Annual Property Tax Revenue

At build-out, GG+A estimates the proposed Walnut Ridge development will generate annual property tax revenue of approximately $490,300 for the village of Mundelein. At build-out, GG+A estimates the Walnut Ridge development will generate annual property tax revenue of over $1,011,000 for the Fremont School District #79; and approximately $828,300 of annual property tax revenue for the Mundelein High School District #120. As summarized in

Appendix A, the proposed Walnut Ridge development is estimated to generate total annual property tax revenue of approximately $3,032,000 for all taxing districts.

Estimated Increase in Annual Property Tax Revenue Relative to the Property Tax Associated with the Existing Land Use

The 2023 property taxes for the existing property were nearly $3,600. At build-out, property tax revenues are estimated to increase by approximately $3,028,400 relative to the existing property taxes. According to the Lake County Assessor, the 2024 total assessed value is $49,187 compared to a much higher estimated assessed value of $33,316,700 for the proposed Walnut Ridge development.

Village Revenue Resulting from Walnut Ridge Development

Table I-1 presents a summary of the annual revenues estimated to be generated by the proposed Walnut Ridge development at build-out for the village of Mundelein.

TABLE I-1

Estimated Annual Revenues Generated by the Proposed Walnut Ridge Development at Build-Out for Village of Mundelein[1]

Revenue	$	% of Total
Property Tax	490,300	64.8
State Income and Use Tax	114,100	15.1
Sales Tax[2]	97,200	12.9
Cable TV Franchise Fees	5,000	0.7
Telecommunications Tax	5,400	0.7
Subtotal – General Fund Revenue	712,000	94.2
Electric & Natural Gas Utility Tax – Road & Bridge Fund	20,800	2.8
Motor Fuel Tax[3] - Motor Fuel Tax Fund	23,300	3.0
TOTAL	**756,100**	**100.0**

[1]Figures have been rounded.
[2] Includes home rule sales tax revenue.
[3] Includes Transportation Renewal Fund distribution from the state of Illinois.

Sources: Village of Mundelein; Gruen Gruen + Associates.

Upon full build-out, Walnut Ridge is forecast to generate approximately $756,100 of annual revenue for the village of Mundelein. This total annual revenue equates to approximately $4,878 per housing unit.

Estimated property tax revenue of $490,300 is expected to comprise approximately 65 percent of all revenue generated by the planned Walnut Ridge development. Annual state income and use tax revenue of $114,100 is forecast to comprise an additional 15 percent of total revenue upon full build-out. Annual sales tax revenue of $97,200 is forecast to comprise about 13 percent of revenue upon full build-out. Other revenues totaling $54,500 including electric and natural gas utility tax ($20,800), cable TV franchise fees ($5,000), telecommunication tax ($5,400), and motor fuel tax ($23,300) are forecast to comprise 7.2 percent of annual revenue.

General Fund Expenditures Required to Serve Walnut Ridge

Table I-2 summarizes the annual General Fund costs estimated to be induced by Walnut Ridge and its occupants upon full build-out.

TABLE I-2

Estimate of Annual General Fund Costs Upon Build-out

	Annual Costs Upon Full Build-out $
General Government	11,700
Building	2,600
Community Development	1,700
Police	124,200
Fire	74,200
Public Works	20,700
General Fund Total	**235,000**

Source: Gruen Gruen + Associates

Upon full build-out, Walnut Ridge is estimated to induce approximately $235,000 of annual General Fund costs. Annual police service costs estimated at $124,200 and annual fire service costs estimated at $74,200 for a total of nearly $198,400 are estimated to comprise 84 percent of the total General Fund costs at build-out. The costs of general government, public works, building department, and community development services are estimated to total an additional $36,600 or 16 percent of estimated total service costs.

Net Fiscal Impact on the Village of Mundelein

As shown on Table I-3, at full build-out, Walnut Ridge is forecast to produce an annual operating surplus of approximately $521,100, given an estimated $756,100 of annual revenues and estimated annual service costs of $235,000.

TABLE I-3

Estimate of Annual Net Fiscal Impact on the Village of Mundelein[1]

	Annual Upon Full Build-out $
Village Revenues	756,100
Village Costs	235,000
Net Fiscal Impact	**521,100**

[1]Figures are rounded.

Source: Gruen Gruen + Associates

METHODOLOGICAL APPROACH

This fiscal analysis is based on a review of the village of Mundelein 2025 fiscal year budget and information obtained from representatives of PulteGroup, Inc., and a review and analysis of secondary data sources. Property tax rate information was obtained from the Lake County Treasurer's and Lake County Clerk's website about current assessments, property tax rates, and existing allocations to taxing districts. This information was necessary to estimate future property tax revenue for the village of Mundelein General Fund and other funds.

GG+A drew on the specific characteristics of the proposed development (e.g., property values) to estimate revenues such as property taxes which are affected by the development characteristics. The specific methodologies used to estimate each revenue and service cost item are discussed in the appropriate sections of this report. We have assumed the current tax and fee structures will remain constant. No estimates of the number of households new to Mundelein as opposed to relocating to the project from within Mundelein are available. The impacts presented in this report are made on a gross basis. To the extent households within Mundelein relocate to the development, this will free up housing at other locations in Mundelein which can be expected to be re-occupied given the limited inventory of available housing units in Mundelein.[1]

2025 CONSTANT DOLLARS

All cost and revenue projections in this report are expressed in constant 2025 dollars. That is, the possible effects of inflation or deflation on revenues in the future are not quantified.

[1] According to Zillow's website as of March 12, 2025, only 62 homes are for sale in Mundelein.

CHAPTER II

BASELINE ASSUMPTIONS AND PROJECT CHARACTERISTICS

INTRODUCTION

This chapter summarizes the baseline demographic estimates for the village of Mundelein upon which some revenue estimates are based. It also describes the anticipated characteristics of the proposed Walnut Ridge development program, household size and income, and per-unit market value estimates.

DEMOGRAPHIC AND ECONOMIC PROFILE OF MUNDELEIN

Table II-1 shows the baseline demographic and employment estimates for the village of Mundelein upon which some revenue and cost estimates are based.

TABLE II-1

Baseline Demographic and Employment Estimates for the Village of Mundelein

	2023[1] #
Total Population	31,632
Households	11,546
Average Household Size	2.72
Total Employment (Jobs Estimated for Non-resident Workers)	13,785
Total Resident Equivalents[2]	38,525

[1] Population and household estimates are from 2023 American Community Survey, 5-Year Estimates. Employment estimates are for 2022.
[2] Assumes two jobs located in Mundelein generate the same revenues as one resident.

Sources: U.S. Census Bureau; U.S. Census Bureau Longitudinal Employer- Household Dynamic, OnTheMap; Gruen Gruen + Associates.

According to the U.S. Census Bureau, the village of Mundelein's population was estimated at 31,632 in 2023. The number of occupied housing units, or households, is estimated at 11,546. The average household size in Mundelein is estimated at 2.72 persons per household. According to data from the U.S. Census Bureau, the number of jobs in Mundelein held by workers which reside outside of the village of Mundelein in 2022 (most recent year available) total approximately 13,785 jobs. To estimate a resident equivalent (population plus workers in the community) upon which some estimates of revenues and service costs are calculated, it is assumed that two jobs equal the equivalent of one resident. Total resident equivalents are estimated at 38,525 in the village of Mundelein.

WALNUT RIDGE PROJECT CHARACTERISTICS AND ASSUMPTIONS

We have relied upon the information PulteGroup, Inc. provided about the project characteristics including number and type of units, and average sale price per unit. Table II-2 summarizes the anticipated characteristics of the planned residential units and occupants of Walnut Ridge.

TABLE II-2

Residential Development Assumptions and Characteristics

DETACHED SINGLE-FAMILY RESIDENTIAL:	
Meadows Series Units	90
Estates Series Units	65
Single-Family Housing Units	155
Average Household Size (Persons) for Single-Family Housing Units[1]	3.45
Average Sale Price Per Unit – Meadows Series	$629,000
Average Sale Price per Unit – Estates Series	$724,000
Average Sale Price per Unit – All Series	$668,800
Average Household Income[2]	$203,400

[1] Estimate of average household size from Pulte Group.
[2] Weighted average household income of the households for the housing units based on assumptions: (a) 20% down payment, (b) 30-year mortgage at 7% annual interest, and (c) monthly mortgage payments equal to 21% of before-tax income.

Sources: PulteGroup, Inc.; Village of Mundelein; U.S. Census Bureau; Gruen Gruen + Associates.

As summarized above, Walnut Ridge is planned to include 155 for-sale detached single-family housing units consisting of four- to six-bedroom units. The average household size for the single-family units is anticipated to be 3.45 persons per household. According to PulteGroup, Inc., the average sales prices are expected to be $629,000 for the "Meadows" series units and $724,000 for the "Estates" series units. The overall average sales price per single-family housing unit is estimated at $668,800.

As summarized in Table II-2, the average household income of project households is estimated at $203,400.[2]

[2] According to the U.S. Census Bureau, average household income in 2023 for Mundelein is estimated at $128,940. S1901 - Census Bureau Tables

Project Population

Based on the estimates of household size, Table II-3 summarizes the expected residential population of the Walnut Ridge development upon full build-out.

TABLE II-3

Projected Walnut Ridge Population at Build-out

	#
Number of Units	155
Average Household Size	3.45 persons
Estimated Population of Walnut Ridge at Build-out	535
Sources: PulteGroup, Inc.; Gruen Gruen + Associates.	

At full build-out, based on an average household size assumption of 3.45 persons per household, the proposed Walnut Ridge development is expected to include a total population of 535 residents.

CHAPTER III

FORECAST OF VILLAGE REVENUE

INTRODUCTION

This chapter presents a forecast of the tax revenue estimated to accrue to the village of Mundelein from the development and occupancy of Walnut Ridge. The following sources of revenue are estimated:

- Property tax - The assessed value of new development will generate property tax revenue for the General Fund, Road and Bridge Fund, Illinois Municipal Retirement Fund, and Social Security Fund;

- Income and use taxes – The state of Illinois redistributes income taxes and sales use taxes to municipalities on a per capita basis;

- Sales tax - The sale of taxable retail goods to households living in Walnut Ridge will generate revenue for the General Fund through the one percent local sales tax rate shared by the state of Illinois. The village of Mundelein also imposes a home rule sales tax of 1.25 percent;

- Electric and natural gas utility tax – To help fund street projects, Mundelein enacted an electric and natural gas utility tax in 2022 which is deposited in the Road and Bridge Fund;

- Cable TV franchise fees - Mundelein imposes a franchise tax on cable and gas service providers;

- Telecommunications tax – Mundelein imposes a 6.0 percent telecommunications tax on the use of telecommunications; and

- Motor fuel tax – Mundelein receives a share of the state-imposed tax on gasoline which is deposited into the Motor Fuel Tax Fund.

Table III-1 presents a summary of the annual revenues estimated the proposed Walnut Ridge development is estimated to generate at build-out for the village of Mundelein.

TABLE III-1

Estimated Annual Revenues Generated by the Proposed Walnut Ridge Development at Build-Out for Village of Mundelein[1]

Revenue	$	% of Total
Property Tax	490,300	64.8
State Income and Use Tax	114,100	15.1
Sales Tax[2]	97,200	12.9
Electric & Natural Gas Utility Tax	20,800	2.8
Cable TV Franchise Fees	5,000	0.7
Telecommunications Tax	5,400	0.7
Motor Fuel Tax[3]	23,300	3.0
TOTAL	**756,100**	**100.0**

[1]Figures have been rounded.
[2] Includes home rule sales tax revenue.
[3] Includes Transportation Renewal Fund distribution from State of Illinois.

Sources: Village of Mundelein; Gruen Gruen + Associates.

Upon build-out, Walnut Ridge is forecast to generate approximately $756,100 of annual revenue for the village of Mundelein. The estimated total annual revenue equates to approximately $4,878 per housing unit.

Estimated property tax revenue of $490,300 is expected to comprise approximately 65 percent of all revenue generated by the planned Walnut Ridge development. Annual state income and use tax revenue of $114,100 is forecast to comprise an additional 15 percent of total revenue upon full build-out. Annual sales tax revenue of $97,200 is forecast to comprise about 13 percent of revenue at build-out. Other revenues totaling $54,500 including electric and natural gas utility tax ($20,800), cable TV franchise fees ($5,000), telecommunication tax ($5,400), and motor fuel tax ($23,300) are forecast at build-out to comprise 7.2 percent of annual revenue.

PROPERTY TAX REVENUE

Table III-2 presents an estimate of annual property tax revenue at build-out of the planned Walnut Ridge development for the village of Mundelein

.

TABLE III-2

Estimated Annual Property Tax Revenue at Build-out[1]

	Total $
Estimated Market Value[2]	103,670,000
Equalized Assessed Value[3]	33,316,700
Annual Property Tax Revenue @ Build-out[4]	**490,300**

[1] Figures are rounded.
[2] Based on an overall average sales price of the housing units of approximately $668,800.
[3] Equalized assessed value is calculated at 33.33% of market value. Adjusted equalized assessed value factor of 1.0000. Net of homeowner's exemption of $8,000 per unit for all units
[4] Village of Mundelein 2023 property tax rate is $1.47158 per $100 of equalized assessed value. Tax rate includes levies for debt, operations, and road and bridge.

Sources: PulteGroup, Inc.; Lake County Assessor; Village of Mundelein Fiscal Year 2025 Budget; Gruen Gruen + Associates.

At build-out, the residential market value of the planned Walnut Ridge development is estimated at $103,670,000. At build-out, the equalized assessed value (net of homeowner's exemption on all units) of Walnut Ridge is estimated to total $33,316,700. Based on the 2023 property tax rate, annual property tax revenue for the village of Mundelein General Fund and other funds at build-out is estimated to total $490,300.

STATE INCOME AND USE TAX

The state of Illinois redistributes income and use tax to municipalities on a per capita basis. As summarized in Table III-3, according to the Mundelein Budget and the Illinois Municipal league, the redistribution is estimated at $171.00 per resident for income tax and $42.18 per resident for use tax.[3]

TABLE III-3

Estimated Annual State Income and Use Tax Revenue Generated by Walnut Ridge Development at Build-out

	Annual
State Income and Use Tax Revenue Per Capita	$213.18[1]
Estimated Number of Walnut Ridge Residents	535
Tax Revenue @ Build-out	**$114,051**

[1] Based on Illinois Municipal League revenue estimates for Municipal Fiscal Year 2025.

Sources : Village of Mundelein; Illinois Municipal League; Gruen Gruen + Associates.

At build-out, the proposed Walnut Ridge development is estimated to include 535 residents. Annual state income and use tax revenue to the Mundelein General Fund, then, is estimated to total approximately $114,100 ($213.18 tax revenue per capita multiplied by 535 residents).

SALES TAX

The village of Mundelein receives state of Illinois sales tax revenue equal to one percent of taxable purchases within the Village. Mundelein also imposes a 1.25 percent home rule sales tax.

[3] Illinois Municipal League, Revenue Estimates, State Shared Municipal Revenues, file.cfm (iml.org)

Table III-4 summarizes the estimate of sales tax revenue associated with households of the Walnut Ridge development.

TABLE III-4

Estimated Annual Sales Tax Revenue
Attributable to Residents of the Walnut Ridge Development at Build-out

	Annual
Sales Tax Revenue[1]	$9,997,000
Number of Mundelein Resident Equivalents	38,525
Tax Revenue Per Resident Equivalent[2]	$181.65
Estimated Number of Walnut Ridge Residents	535
Tax Revenue @ Build-out	**$97,182**

[1] Retail sales tax revenue estimate of $9,997,000 includes municipal sales tax and home rule sales tax but is discounted from the total budgeted $12,800,000 sales tax revenue in the fiscal year 2025 budget to account for elimination of statewide tax on groceries beginning in January 2026 and does not include sales tax revenue from automotive, agricultural, and manufacturing categories.
[2]Discounted by 30 percent because village is estimated to generate a retail sales surplus – i..e, retail sales exceed sales supported by expenditures of households and workers alone in Mundelein. Mundelein captures sales dollars from consumers which live and work outside of Mundelein.

Sources: Village of Mundelein; Gruen Gruen + Associates.

To estimate the sales tax revenue attributable to residents of the proposed Walnut Ridge development, GG+A made a per resident equivalent estimate by dividing the estimated budgeted sales tax revenue for retail expenditures of $9,997,000 by the estimated 38,525 resident equivalents (residents and one-half of workers) in Mundelein. This results in an average resident equivalent sales tax revenue estimate of $259.50. We discounted this per resident equivalent by 30 percent because Mundelein's retail sales are estimated to exceed the retail sales supported solely by expenditures from households and workers in Mundelein (i.e., retail sales are made to customers who live or work outside of Mundelein). This results in a net per resident equivalent sales tax revenue estimate of $181.65. The sales tax revenue estimate of $9,997,000 excludes sales tax revenue from non-retail categories (i.e., automotive, agricultural, and manufacturing) and excludes about $800,000 budgeted for sales tax revenues due to the state of Illinois eliminating sales tax on groceries beginning in 2026.[4]

At build-out, the proposed Walnut Ridge development is estimated to include 535 residents. Annual sales tax revenue to the Mundelein General Fund, then, is estimated to total approximately $97,200 ($181.65 per resident multiplied by 535 residents).

[4] file.cfm Estimated Annual Financial Impact of the Proposed Elimination of the 1% Grocery Tax on Illinois' Municipalities; Mayors suggest grocery tax elimination was for 'good headline' in election year | WGIL 93.7 FM - 1400 AM.

ELECTRIC AND NATURAL GAS UTILITY TAX

Mundelein imposes an electric and natural gas utility tax which is allocated to the Road and Bridge Fund. Table III-5 presents an estimate of the annual municipal utility tax revenue generated by the residential population of the proposed Walnut Ridge development.

TABLE III-5

Estimated Annual Electric and Natural Gas Utility Tax Revenue Attributable to Residents of the Walnut Ridge Development at Build-out

	Annual
Municipal Utility Tax Revenue[1]	$1,500,000
Number of Mundelein Resident Equivalents	38,525
Tax Revenue Per Resident Equivalent	$38.94
Estimated Number of Walnut Ridge Resident Equivalents (Residential Population)	535
Tax Revenue @ Build-out	**$20,831**

[1] Based on Mundelein's fiscal year 2025 budget.

Sources: Village of Mundelein; Gruen Gruen + Associates.

GG+A used budgeted municipal utility tax revenues for the 2025 fiscal year of $1,500,000 and divided the budgeted revenues by the number of resident equivalents of 38,525 to obtain a utility tax revenue estimate of nearly $39 per resident equivalent. Multiplying this figure by the estimated population in the Walnut Ridge development of 535 at build-out produces an estimate of electric and natural gas revenues attributable to the development of approximately $20,800 ($38.94 multiplied by 535 residents of the development).

CABLE TV FRANCHISE FEES

Table III-6 summarizes the forecast of cable TV franchise fee revenue generated by households of the Walnut Ridge development.

TABLE III-6

Estimated Annual Cable TV Franchise Fee Revenue Generated by Walnut Ridge Development at Build-out

	Annual
Cable TV Franchise Fee Revenue[1]	$375,000
Number of Mundelein Households	11,546
Cable TV Franchise Fee Revenue Per Household	$32.48
Number of Walnut Ridge Households @ Build-out	155
Tax Revenue @ Build-out	**$5,034**

[1] Based on Village's FY 2025 budget.

Sources: Village of Mundelein; Gruen Gruen + Associates.

Utilizing a per-household approach, GG+A estimated the cable TV franchise fee revenue associated with the development of Walnut Ridge. Budgeted cable franchise fee revenue for the 2025 fiscal year of $375,000 is divided by 11,546 households in Mundelein to obtain a cable TV franchise fee revenue per household of about $32. Multiplying the per household estimate by the anticipated 155 households of Walnut Ridge produces an estimate of total annual cable TV franchise fee revenue at build-out of approximately $5,000 ($32.48 multiplied by the 155 households anticipated to occupy Walnut Ridge homes).

TELECOMMUNICATIONS TAX

Mundelein imposes a telecommunications tax of 6.0 percent on the use of telecommunications. Table III-7 presents an estimate of the annual telecommunications tax revenue generated by the households of the proposed Walnut Ridge development.

TABLE III-7

Estimated Annual Telecommunications Tax Revenue Generated by Walnut Ridge Development at Build-out

	Annual
Telecommunications Tax Revenue	$400,000
Number of Mundelein Households	11,546
Telecommunications Tax Revenue Per Household	$34.64
Number of Walnut Ridge Households @ Build-out	155
Tax Revenue @ Build-out	**$5,370**

Sources: Village of Mundelein; Gruen Gruen + Associates.

To estimate the telecommunications tax revenue attributable to households of the proposed Walnut Ridge development, GG+A derived a per household estimate by dividing the 2024-2025 budgeted telecommunications tax revenue of $400,000 by the estimated 11,546 households in Mundelein. This results in an average household telecommunications tax revenue estimate of $34.64. Multiplying the per household estimate by the 155 households of the proposed Walnut Ridge development at build-out results in annual telecommunications tax revenue of approximately $5,400 ($34.64 multiplied by the 155 households anticipated to occupy Walnut Ridge homes).

MOTOR FUEL TAX

Mundelein receives a share of the tax on gasoline imposed by the state which is accounted for in Mundelein's Motor Fuel Tax Fund. In 2019, the state doubled the cost of motor fuel taxes which are placed in a Transportation Renewal Fund. Motor fuel taxes and Transportation Renewal Funds are distributed to municipalities on a per capita basis. The Illinois Municipal League estimates municipal distributions for municipal fiscal year 2025 of $22.53 per capita for motor fuel tax and $21.07 per capita for Transportation Renewal Fund.

Table III-8 presents an estimate of the annual motor fuel tax revenue (including Transportation Renewal Fund revenue) generated by the residential population of the proposed Walnut Ridge development.

TABLE III-8

Estimated Annual Motor Fuel Tax Fund Revenue Generated by Walnut Ridge Development at Build-out

	Annual
Motor Fuel Tax Fund Revenue Per Capita[1]	$43.60
Estimated Number of Walnut Ridge Residents	535
Tax Revenue @ Build-out	**$23,326**

[1] Based on Illinois Municipal League revenue estimates for Municipal Fiscal Year 2025 of $22.53 per capita for motor fuel taxes and $21.07 per capita for Transportation Renewal Fund.

Sources: Village of Mundelein; Illinois Municipal League; Gruen Gruen + Associates.

At build-out, the proposed Walnut Ridge development is estimated to include 535 residents. Annual motor fuel tax revenue (including Transportation Renewal Fund revenue) to the Village of Mundelein is estimated to total approximately $23,300 ($43.60 multiplied by the 535 residents anticipated to occupy Walnut Ridge homes).

CHAPTER IV

FORECAST GENERAL FUND EXPENDITURES

INTRODUCTION

This chapter presents an estimate of General Fund expenditures potentially incurred to provide municipal services to the proposed development and its residents. General Fund costs that the village of Mundelein may incur to serve Walnut Ridge can be grouped into the following categories:

- General Government (boards & commissions, administration, finance, and legal);
- Building
- Community Development;
- Police;
- Fire; and
- Public Works.
-

The 2025 budget estimates are the basis upon which expenditures of the proposed Walnut Ridge development are estimated. Estimated General Fund expenditures for fiscal year 2025 for each department are summarized in Table IV-1.

TABLE IV-1

Village of Mundelein General Fund Expenditures by Department

Department	Estimate Fiscal Year 2025 $
General Government[1]	5,597,497
Building	1,256,081
Community Development	802,323
Police	13,346,413
Fire	7,122,554
Public Works[2]	2,260,342
TOTAL GENERAL FUND	**30,385,210**

[1]Administration Department, Finance Department, and Legal Department. Excludes boards & commissions expenditures which are not likely to be impacted by a change in population.
[2] Streets expenditures.

Sources: Village of Mundelein Fiscal Year 2025 Budget; Gruen Gruen + Associates.

Total General Fund expenditures upon which service costs for police, fire, general government, public works (the streets portion only), building, and community development departments are estimated to total approximately $30,385,000 for the Fiscal Year 2025. Expenditures shown for public works relate to the portion of that department's budget related

to maintenance of street miles. Walnut Ridge will add 1.08 public street miles to the village of Mundelein. The General Fund Expenditures upon which the costs of service to Walnut Ridge are estimated are conservative because they do not net out revenues received from such items as building permits and building inspections and development fees and ambulance services.

It is evident that a high percentage of the village of Mundelein General Fund expenditure total is attributable to public safety. The expenditures of the police and fire departments represent the majority - 67 percent - of total General Fund expenditures shown on Table IV-1.

Table IV-2 presents a summary of the annual General Fund expenditures potentially induced by the proposed Walnut Ridge development at build-out.

TABLE IV-2

Estimated Annual General Fund Expenditures Generated by Walnut Ridge Development at Build-Out[1]

Expenditures	Annual $
General Government	11,700
Building	2,600
Community Development	1,700
Police	124,200
Fire	74,200
Public Works	20,700
TOTAL GENERAL FUND	**235,000**

[1] Figures have been rounded.

Sources: Village of Mundelein; Gruen Gruen + Associates.

Upon full build-out, Walnut Ridge is estimated to induce approximately $235,000 of annual General Fund costs. Annual police service costs estimated at $124,200 and annual fire service costs estimated at $74,200 for a total of nearly $198,400 are estimated to comprise 84 percent of total General Fund costs at build-out. The costs of general government, public works, building department, and community development services are estimated to total an additional $36,600 or 16 percent of estimated total service costs.

GENERAL GOVERNMENT

The cost of providing general government services to the proposed development is a function of the increased burden placed on the village's administrative and support services. Typically, general government services contain a significant fixed cost that does not change as the result of new development. For example, even as the village's population grows, its high-level managerial and administrative personnel costs tend to remain fixed (e.g. the village only needs one Village Manager, one Finance Director, etc., irrespective of the size of the service population). Based on our review of the Budget, GG+A estimates that a high proportion of the general government costs are likely fixed and will not vary with changes in the population. We assume most Administration Department, Finance Department, and Legal Department General Fund expenditures are fixed and will not change as the result of the Walnut Ridge development. For this analysis GG+A assumes 85 percent of General Government costs are fixed and that 15 percent changes as a function of the growth in resident equivalents.

Table IV-3 presents a forecast of annual general government service costs at build-out.

TABLE IV-3

Estimated Annual Cost of Providing General Government Service to Walnut Ridge Development at Build-out

	Annual
2025 General Government Budgeted Expenditures (General Fund)	$5,597,497
2025 Variable General Government Department Operating Costs	15.0% / $839,625
2025 Village of Mundelein Resident Equivalent Population	38,525
2025 Variable Cost Per Resident Equivalent	**$21.79**
Planned Walnut Ridge Resident Equivalent Population @ Build-out	535
General Government Operating Cost @ Build-out	**$11,660**

Sources: PulteGroup, Inc.; Village of Mundelein; Gruen Gruen + Associates.

The village Budget indicates that estimated Fiscal Year 2025 general government expenditures for the administration, finance, and legal departments total $5,597,497. Variable costs, at 15 percent, are accordingly estimated at approximately $839,625 or $21.79 per resident equivalent. At full build-out of the proposed development, annual general government costs are estimated at approximately $11,700 (the 535 residents of the development multiplied by $21.79 variable cost per resident equivalent).

BUILDING

Table IV-4 presents an estimate of the costs of providing building department services to the Walnut Ridge development upon full build-out. The General Fund cost estimate assumes Building Department operating expenditures related to code enforcement funded by the General Fund vary based on the resident equivalent population served. For this analysis GG+A assumes 85 percent of Building Department costs are fixed and that 15 percent changes as a function of the growth in resident equivalents.

TABLE IV-4

Estimated Annual Operating Cost of Providing Building Department Services to Walnut Ridge Development at Build-out

	Annual
2025 Building Department Estimated Expenditures (General Fund)[1]	$1,256,081
2025 Variable Building Department Operating Costs	15.0% / $188,412
Village of Mundelein Resident Equivalent Population	38,525
2025 Cost Per Resident Equivalent	**$4.89**
Planned Walnut Ridge Resident Equivalent Population @ Build-out	535
Building Department Operating Cost @ Build-out	**$2,617**

[1] Code enforcement expenses.

Sources: PulteGroup, Inc. Village of Mundelein; Gruen Gruen + Associates.

Given code enforcement expenditures of about $188,000 and the resident equivalent population within the village of 38,525, the cost per resident equivalent totals $4.89. Based on the population of 535 for Walnut Ridge, the total annual cost of providing Building Department Services to Walnut Ridge at build-out is estimated at approximately $2,600 (the 535 residents of the development multiplied by $4.89 variable cost per resident equivalent).

COMMUNITY DEVELOPMENT

Table IV-5 presents an estimate of the costs of providing community development services to the Walnut Ridge development during the development process and upon full build-out. The Fiscal Year 2025 Budget indicates that Community Development expenditures are expected to total $802,323. GG+A assumes that variable costs, at 15 percent, would be appropriate to use for estimating Community Development costs induced by the Walnut Ridge development. This assumption equates to variable costs of $120,348 or $3.12 per resident equivalent.

TABLE IV-5

Estimated Annual Operating Cost of Providing Community Development Services to Walnut Ridge Development at Build-out

	Annual
2025 Community Development Department Estimated Expenditures (General Fund)	$802,323
2025 Variable Community Development Department Operating Costs	15.0% / $120,348
Village of Mundelein Resident Equivalent Population	38,525
2025 Cost Per Resident Equivalent	**$3.12**
Planned Walnut Ridge Resident Equivalent Population @ Build-out	535
Community Development Department Operating Cost @ Build-out	**$1,671**

Sources: PulteGroup, Inc. Village of Mundelein; Gruen Gruen + Associates.

Based on the resident equivalent population of 535 for Walnut Ridge, the total annual cost of providing community development services to Walnut Ridge at build-out is estimated at approximately $1,700 (the 535 residents of the development multiplied by $3.12 variable cost per resident equivalent).

POLICE

Table IV-6 presents an estimate of providing police service to Walnut Ridge upon full build-out. The cost estimate assumes that the portion of the department's budget related to administration expenditures (including significant pension expenditures contracted and budgeted for in 2025) will not vary with population (i.e., for example, only one Police Chief is needed in the village). Approximately 67 percent of Police Department operating expenditures (for patrol, communications, investigations, community service, and records) funded by the General Fund are assumed to vary with the resident equivalent population. In other words, approximately $8.9 million of the nearly $13.3 million budget is assumed to be affected by changes in service population.

TABLE IV-6

Estimated Annual Cost of Providing Police Service to Walnut Ridge Development at Build-out

	Annual
2025 Police Department Estimated Expenditures (General Fund)	$13,346,413
2025 Variable Police Department Operating Costs[1]	67.0% / $8,942,097
Village of Mundelein Resident Equivalent Population	38,525
2025 Cost Per Resident Equivalent	**$232.11**
Planned Walnut Ridge Resident Equivalent Population @ Build-out	535
Police Department Operating Cost @ Build-out	**$124,181**

[1] Patrol, communications, investigations, community service, and records expenses.

Sources: PulteGroup, Inc. Village of Mundelein; Gruen Gruen + Associates.

Based on police service cost of approximately $232 per resident equivalent, the total annual cost to serve Walnut Ridge at build-out is estimated at approximately $124,200 (the 535 residents of the development multiplied by the $232.11 average cost per resident equivalent).

FIRE

Table IV-7 presents an annual cost estimate of providing fire service to Walnut Ridge upon full build-out. Similar to police services expenditures, the cost estimate assumes that the portion of the department's budget related to administration expenditures (including significant pension expenditures contracted and budgeted for in 2025) will not vary with population (i.e., for example, only one Fire Chief is needed in the village).

TABLE IV-7

Estimated Annual Operating Cost of Providing Fire Service to Walnut Ridge Development at Build-out

	Annual
2023 Fire Department Estimated Expenditures (General Fund)	$7,122,154
2025 Variable Fire Department Operating Costs[1]	75.0% / $5,341,916
Village of Mundelein Resident Equivalent Population	38,525
2025 Cost Per Resident Equivalent	**$138.66**
Planned Walnut Resident Equivalent Population @ Build-out	535
Fire Department Operating Cost @ Build-out	**$74,185**

[1] Operations, fire prevention, rescue operations, and emergency management expenditures.

Sources: PulteGroup, Inc. Village of Mundelein; Gruen Gruen + Associates.

The cost estimate assumes that approximately 75 percent of Fire Department operating expenditures (operations, fire prevention, rescue operations, and emergency management expenditures) funded by the General Fund vary with the resident equivalent population. In other words, approximately $5.3 million of the $7.1 million budget is assumed to be affected by changes in service population.

Given the resident equivalent population of 38,525, the variable costs of fire service are estimated at $138.66 per resident equivalent. Multiplying this metric by the anticipated 535 residents of Walnut Ridge results in an estimate of the total annual cost to serve Walnut Ridge at build-out of approximately $74,200.

PUBLIC WORKS

Table IV-8 presents an annual per-mile cost estimate of providing public works services for snow and ice and street maintenance to Walnut Ridge upon full build-out. The General Fund cost estimate is for the portion of Public Works Department operating expenditures budgeted for street operations which will vary based on the number of street miles served. According to PulteGroup, Inc., Walnut Ridge will have 1.08 street miles served by the village of Mundelein.

TABLE IV-8

Estimated Annual Operating Cost of Providing Public Works Service to Walnut Ridge Development at Build-out

	Annual
2025 Public Works Department Estimated Expenditures (General Fund)[1]	$2,260,342
2025 Village of Mundelein Street Miles	118
2025 Cost Per Mile	**$19,155**
Planned Walnut Ridge Public Street Miles	1.08
Public Works Department Operating Cost @ Build-out	**$20,688**

[1] Streets expenditures portion of budget.

Source: PulteGroup, Inc.; Village of Mundelein; Gruen Gruen + Associates.

Based on a public works service cost of approximately $19,155 per mile ($2,260,342 of street expenditures for public works services divided by 118 village-wide street miles), the total annual cost to serve Walnut Ridge at build-out is estimated at approximately $20,700 (given an estimate of 1.08 public street miles associated with the development).

APPENDIX A

TOTAL ANNUAL PROPERTY TAX REVENUE FOR ALL TAXING ENTITIES

Table A-1 presents the estimated total property tax revenue associated with the Walnut Ridge development at build-out assuming the property is annexed into the village of Mundelein.

TABLE A-1

Total Annual Property Tax Revenue Estimated by Taxing District
Assuming the Walnut Ridge Development is Annexed to Village of Mundelein

Taxing District	Total Development $
College of Lake County #532	98,033
Village of Mundelein Bonds Ser 2010-2013	4
Village of Mundelein	490,281
County of Lake	195,320
Forest Preserve	55,959
Fremont Elementary School District #79	1,011,481
Fremont Public Library District	117,474
Mundelein High School District #120	828,254
Road And Bridge-Fremont	47,442
Township of Fremont	32,693
Mundelein Park & Recreation District	155,438
TOTAL PROPERTY TAXES[1]	3,032,380

[1]Based on 2023 property tax rate for Village Mundelein and 2023 property tax rate for other taxing districts.

Sources: Lake County Treasurer; Gruen Gruen + Associates.

Total annual property taxes are estimated at over $3,032,000 from the development for all taxing entities. The Fremont Elementary School District #79 is estimated to receive nearly $1,011,500 or about 33 percent of total property tax revenue. The Mundelein High School District #120 is estimated to receive approximately $828,250 or about 27 percent of total property tax revenue. Mundelein is estimated to receive approximately $490,300 in annual property or about 16 percent of total property tax revenue.

Gruen Gruen + Associates (GG+A) is a firm of economists, sociologists, statisticians and market, financial and fiscal analysts. Developers, public agencies, attorneys and others involved in real estate asset management utilize GG+A research and consulting to make and implement investment, marketing, product, pricing and legal support decisions. The firm's staff has extensive experience and special training in the use of demographic analysis, survey research, econometrics, psychometrics and financial analysis to describe and forecast markets for a wide variety of real estate projects and economic activities.

Since its founding in 1970, GG+A has pioneered the integration of behavioral research and econometric analysis to provide a sound foundation for successful land use policy and economic development actions. GG+A has also pioneered the use of economic, social and fiscal impact analysis. GG+A impact studies accurately and comprehensively portray the effects of public and private real estate developments, land use plans, regulations, annexations and assessments on the affected treasuries, taxpayers, consumers, other residents and property owners.

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Walnut Ridge – Mundelein, IL
Proposed Elevations

Pulte HOMES™

June 20, 2025

Confidential and Proprietary

Walnut Ridge Product Matrix

Meadows Series – Single Family					
	Square Footage	**Bedrooms**	**Bathrooms**	**Garage**	**Elevations**
Abbeyville	1,683 – 2,445	2 - 4	2 - 3	2	6
Newberry	2,390 – 2,571	3 - 4	2.5	2	7
Mercer	2,508 – 2,628	3 - 5	2.5 - 4	2	7
Continental	3,008 – 3,187	4 - 5	2.5 - 3	2	7
Waverly (*)	3,290 – 3,471	4 - 6	2.5 - 4	2	5

(*) Addition post-Sheldon Woods

Estates Series – Single Family					
	Square Footage	**Bedrooms**	**Bathrooms**	**Garage**	**Elevations**
Hilltop	2,899 – 3,104	4 - 5	2.5 - 4	3 (T)	6
Riverton	3,126 – 3,335	4	2.5 – 3.5	3 (T)	6
Westchester	3,300 – 3,496	4 - 6	2.5 - 3	3	6
Woodside	3,277	4 - 5	2.5 - 4	2 (3 Opt)	5
Castleton	3,366 – 3,568	4 - 5	2.5 - 4	2 (3 Opt)	5

Proprietary and Confidential

Meadows Series Elevations

Abbeyville

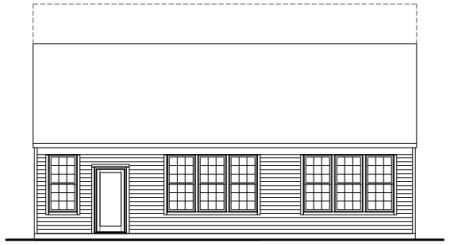
Example Only - Proprietary and Confidential

Abbeyville

Higher Roof Line w/ Optional Loft

Right Elevation

Left Elevation



Rear Elevation

Newberry

Example Only - Proprietary and Confidential

Newberry

Right Elevation

Left Elevation

Rear Elevation

Mercer

Example Only - Proprietary and Confidential

Mercer

Right Elevation

Left Elevation

Rear Elevation

Continental

Example Only - Proprietary and Confidential

Continental

Right Elevation

Left Elevation

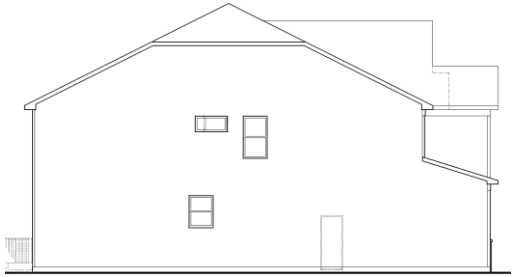
Rear Elevation

Waverly

Example Only - Proprietary and Confidential

Waverly

Right Elevation



Left Elevation

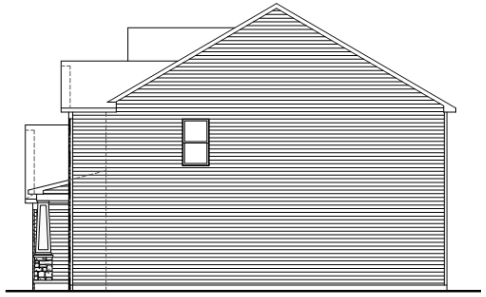
Rear Elevation

Estate Series Elevations

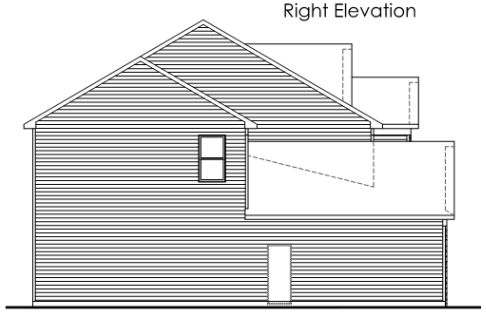
Hilltop

Example Only - Proprietary and Confidential

Hilltop



Right Elevation



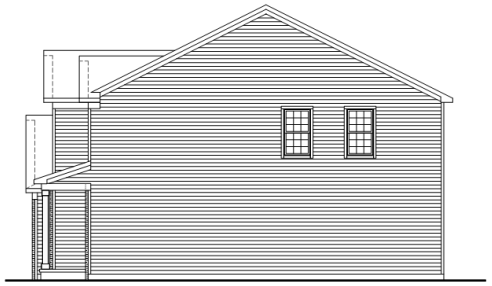
Left Elevation

Rear Elevation

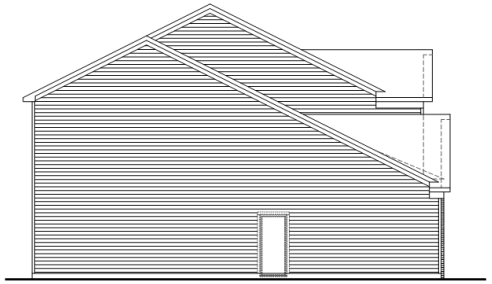
Riverton

Example Only - Proprietary and Confidential

Riverton



Right Elevation



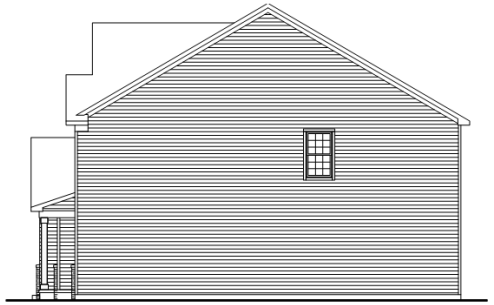
Left Elevation

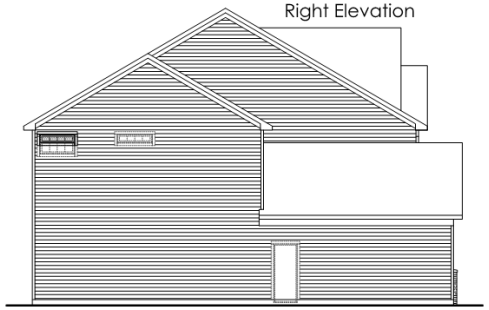
Rear Elevation

Westchester

Example Only - Proprietary and Confidential

Westchester


Right Elevation


Left Elevation

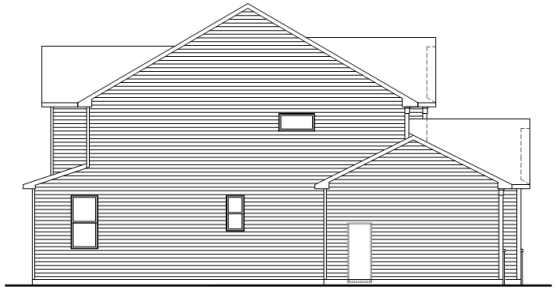
Rear Elevation

Woodside

Example Only - Proprietary and Confidential

Woodside

Right Elevation



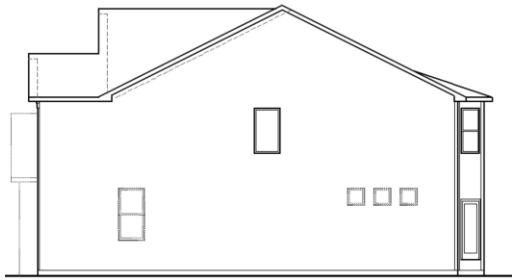
Left Elevation

Rear Elevation

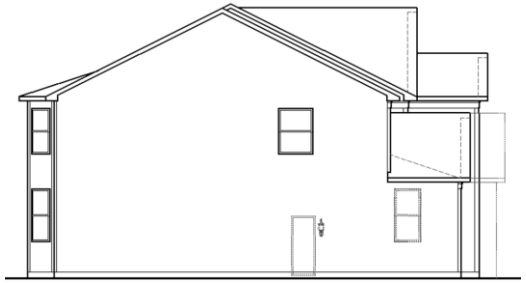
Castleton

Example Only - Proprietary and Confidential

Castleton



Right Elevation



Left Elevation

Rear Elevation

Additional Obligations

Base Architectural Requirements

All Homesites shall feature:

1. Vinyl siding of upgraded thickness of 0.42”
2. Architectural shingles
3. 12” roof overhang (rake) on all four sides
4. All window trim (as shown herein or required below) shall be 3” minimum width
5. All J-Channel surrounding windows to be Pulte standard integral to minimize visibility

Meadows Series Homesites shall feature:

1. 32 panel garage door upgraded with top row of windows as standard
2. Upgraded garage doors (beyond #1 above) will be offered as an option
3. Band board on all four sides

Estates Series Homesites shall feature:

1. Vinyl trim around windows and doors on all four sides

Key Lot Homesites shall feature:

1. Upgraded landscape package on key side
2. Masonry wainscot (30” height) on key side elevation
3. One additional window (with trim) on key side elevation

Sound Attenuation

For homes along the north and east property lines, sound attenuating windows with enhanced STC ratings shall be provided on those elevations facing the respective property line.

* In the event submitted renderings differ from the above list, the above list shall govern.

Unique Lots

Legend
Sound Abatement Window Lot
Key Lot
WETLAND #7 (IWLC)
50' WETLAND BUFFER
NORTHWEST BASIN
STREET A
STREET B
STREET C
STREET D
STREET E
STREET F
STREET G
NORTHEAST BASIN
WETLAND #2 (IWLC)
50' WETLAND BUFFER
SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. - 834.32 NAVD88
LIFT STATION COMPLEX
PARK SITE
SOUTHWEST (WEST ZONE) BASIN
SOUTHWEST (EAST ZONE) BASIN
SOUTHEAST BASIN
WETLAND #1 (IWLC)
50' WETLAND BUFFER
ROUTE 83
IL
SEE "IL. ROUTE 83 IMPROVEMENT PLANS"
PREPARED BY;
PEARSON, BROWN AND ASSOCIATES, INC.
FOR WORK WITHIN THE IDOT RIGHT OF WAY
SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. - 835.28

Key Lot Side Elevation

Proposed Side Elevation Landscaping at Key Lots

Anti-Monotony Restrictions

Elevation and Color Package Restrictions

As implemented w/ Sheldon Woods sales team:

This approach required the full set of submitted elevations to be deemed adequately unique per the Village's criteria list, such that lot separation was the only factor remaining for implementation.

Monotony Code Restrictions

I. Single Family Detached Communities

a. The following criteria apply to homes on straight or curved streets, cul-de-sacs and corner lots.

1. No house shall have the same configuration that is within three (3) houses on either side **or** on the one house most directly across the street from the subject house.
2. No house shall have the same color package that is within three (3) houses on either side **or** on the one house directly across the street from the subject house.

II. Definitions

a. Configuration – a combination of product type, elevation, exterior fenestration (siding or stone), and/or color package.

b. Color Package – a combination of siding, stone, trim / gutter, accent and roof colors incorporated into the exterior color fenestration of a single house.

Pulte Group Monotony - Village of Mundelein - Sheldon Woods

			X			
X	X	X	Sold Home Elevation or Color Package	X	X	X

PRELIMINARY LANDSCAPE PLAN
for
WALNUT RIDGE
SOUTH WEST CORNER OF ROUTE 83 AND WINCHESTER ROAD
VILLAGE OF MUNDELEIN, ILLINOIS

INDEX OF SHEETS	
SHEET NO.	SHEET TITLE
L1	TITLE SHEET AND LANDSCAPE SUMMARY
L2	TREE PRESERVATION PLAN- WEST
L3	TREE PRESERVATION PLAN- EAST
L4	PRELIMINARY LANDSCAPE PLAN
L5	PRELIMINARY LANDSCAPE PLAN
L6	PRELIMINARY LANDSCAPE PLAN
L7	PRELIMINARY LANDSCAPE PLAN
L8	PRELIMINARY LANDSCAPE PLAN
L9	PRELIMINARY LANDSCAPE PLAN
L10	PRELIMINARY LANDSCAPE PLAN
L11	PRELIMINARY LANDSCAPE PLAN
L12	ENTRANCE FEATURE ENLARGEMENT
L14	PARK ENLARGEMENT
L15	TYPICAL LOT LANDSCAPE PLAN
L16	LANDSCAPE DETAILS
L17	LANDSCAPE SPECIFICATIONS

Village of Mundelein Required Landscaping

STREET TREE REQUIREMENT

Requirement: One canopy tree per 50 feet of street frontage in parkway. If remainder greater, the additional part to be rounded up (ie. 60' req. 2 trees). 2.5" Cal. DBH.
Provided: Requirement is met. Shade Trees have been provided outside the ROW along Rte. 83 to provide screening and help meet the intent of the parkway tree requirement in these areas.

ON-LOT REQUIREMENT

Requirement: Non-residential lots require 4 trees per lot. Residential projects require a minimum of two trees per lot on the property.
See Typical Foundation Planting Plans. Two (2) trees minimum will be required for each residential lot.

PARKING LOT PERIMETER/INTERIOR LANDSCAPING

Not Required, No Parking Lots on Plan

FOUNDATION LANDSCAPING

Requirement: Not required on single family homes. Typical Foundation Planting Plan included in this set provides plantings that exceed ordinance requirements.

BUFFER YARD LANDSCAPING

Requirement: Buffer yards required in rear or interior side yards where R5 abuts an R1-R4 district, and where non-residential abuts a residential district. Minimum buffer yard width of 5' with one shade tree per 25 lf, an opaque fence installed along entire length, and one shrub per 3' of length.
Required: Adjacent properties agricultural in use. No buffer required.

SIGN LANDSCAPING

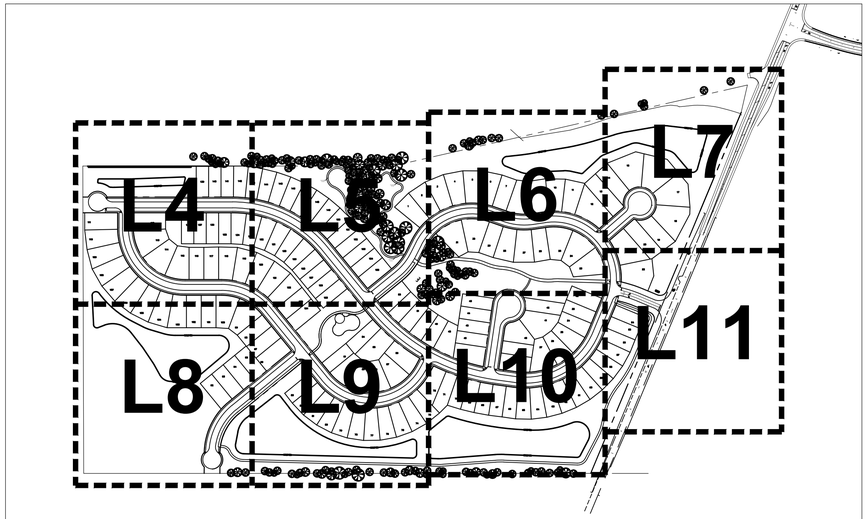
Requirement: 2' Landscape area min from base. Plants to be spaced linearly. Number of shrubs planted towards the side must equal the number that would be required based on 24" spacing. Remainder to be planted with perennials and other groundcovers.
Provided: Requirement is met.

GENERAL LANDSCAPING REQUIREMENTS

Shade Trees-2.5" cal., Evergreen Trees- 6' ht., Ornamental Trees- 8' ht or 2.5" cal., Shrubs, large- 36" ht, small- 18" ht.

Diversity Requirements:

5-10 Plants	Max 60%	Min 40%	2 Species Min.
11-15 Plants	Max 45%	Min 20%	3 Species Min.
16-75 Plants	Max 40%	Min 10%	5 Species Min.
76-500 Plants	Max 25%	Min 5%	8 Species Min.
501-1000 Plants	Max 30%	Min 5%	10 Species Min.
1000 + Plants	Max 15%	Min 4%	15 Species Min.



KEY MAP

GRAPHIC SCALE
300 0 150 300 600 1200
(IN FEET)
1 inch = 300 ft.

NORTH

Landscape Notes:

1. Seed/ Sod limit line is approximate. Seed/ Sod to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized disruption outside of designated construction area.
2. Contractor responsible for erosion control in all seeded/ sodded areas.
3. Tree mulch rings in turf areas are 5' diameter. Contractor shall provide a mulch ring around all existing trees within the limits of work. Remove all existing grass from area to be mulched and provide a typical spade cut edge. Landscape Fabric shall not be installed under mulch.
4. Bedlines are to be spade cut to a minimum depth of 3". Curved bedlines are to be smooth and not segmented.

All planting, beds shall receive top dressing of mulch. Landscape fabric shall not be installed under mulch. Root flares shall be at or above grade, per specifications, and all rope/cord shall be removed from the base of tree trunks.

5. Do not locate plants within 10' of utility structures or within 5' horizontally of underground utility lines unless otherwise shown on plans. Consult with Landscape Architect if these conditions exist.
6. For Lump Sum Contracts, plants and other materials are quantified and summarized for the convenience of the Owner and jurisdictional agencies only. Confirm and install sufficient quantities to complete the work as drawn and specified. No additional payments will be made for materials required to complete the work as drawn and specified.
7. For Unit Price Contracts, payments will be made based on actual quantities installed as measured in place by the Owner's Representative.
8. It is the responsibility of the contractor to locate and provide plant material as specified on this plan. The contractor may submit a request to provide substitutions for the specified plant material under the following conditions:
   a. Any substitutions proposed shall be submitted to the project owner's representative within two weeks of the award of contract. Substitutions must meet equivalent design and functional goals of the original materials as determined by the owner's representative. Any changes must have the approval of the owner's representative,
   b. The request will be accompanied by at least three notices from plant material suppliers that the plant material specified is not available and will not be available prior to construction.
10. Verify site conditions and information on drawings. Promptly report any concealed conditions, mistakes, discrepancies or deviations from the information shown in the Contract Documents. The Owner is not responsible for unauthorized changes or extra work required to correct unreported discrepancies. Commencement of work shall constitute acceptance of conditions and responsibility for corrections
11. A minimum of two working days before performing any digging, call underground service alert for information on the location of natural gas lines, electric cables, telephone cables, etc. The contractor shall be responsible for location and protection of all utilities, and repair of any damage resulting from his work at no additional cost to the owner.
12. Contractor shall promptly repair all damages to existing site at no cost to owner.
13. Refer to landscape specifications for additional conditions, standards, and notes.

CONCEPT PLANT SCHEDULE

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	UNDISTURBED/ GROUNDCOVER TREATMENT TBD	30,264 sf
	TURF-SOD	238,978 sf

Call Before You Dig
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ILLINOIS ONE-CALL SYSTEM
Simply Call 811

LICENSED LANDSCAPE ARCHITECT
JAMES MATTHEW NELSON
157-001644
STATE OF ILLINOIS

SEAL Date: 01/10/25

James Matthew Nelson, ASLA, PLA, LEED
Illinois Registered Landscape Architect
157-001644
Expires 08/31/2027

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
06/05/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
TITLE SHEET AND LANDSCAPE SUMMARY

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	NTS

SHEET
L1 OF L17
PUL.MUIL03

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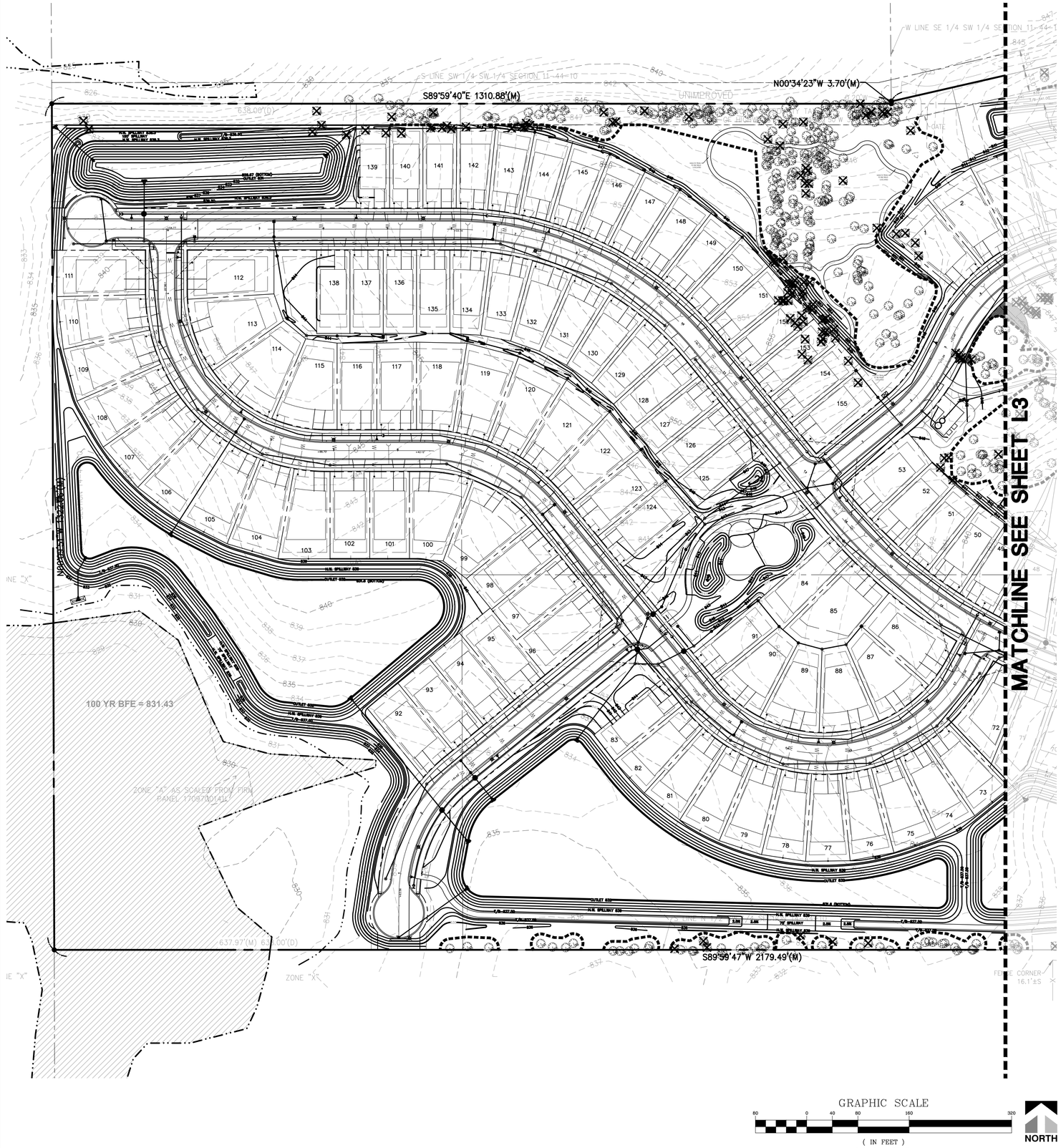
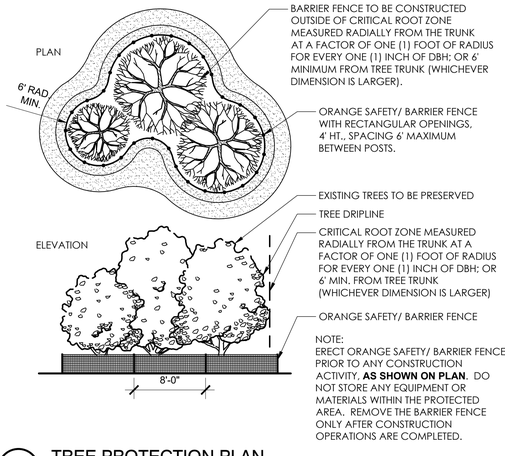




1 TREE PROTECTION PLAN

N.T.S. 320190.33-01

Root Pruning

Existing tree roots greater than one (1) inch in diameter, measured at the edge of excavation, shall be pruned within 24 hours of the time they have been damaged by construction activity. The severed root shall be pruned at the edge of excavation, or one (1) inch beyond the entire damaged portion of the tree root, if damaged root extends beyond the edge of excavation into undisturbed soil.

All cuts shall be cleanly made with sharp tools.

The excavated area around the existing tree roots shall be backfilled as soon as construction activities permit.

Amended existing soil shall be used as backfill material within the disturbed root zone areas not receiving drainage or subbase stone items. Amended existing soil shall be amended with peat or compost in the ratio of one part organic to seven parts existing soil.

Vulnerable Area Protection Methods

All tree root zones designated as "Vulnerable" shall receive special care and attention during construction. These areas contain roots for large trees that are within the construction area. Since these trees have high value to the project, efforts shall be made to preserve these trees, however the property owner will not be held liable if the trees do not survive.

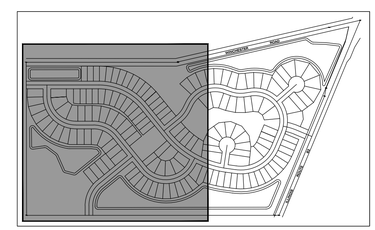
An arborist should be consulted prior to construction to provide advice on preservation techniques. Each tree and construction condition is unique so an arborist is best qualified to provide a recommendation for each tree. Preservations may include root pruning, crown pruning, hormone treatment, fertilizers, soil amendments, excavation techniques, etc.

Legend

21" Tree to be Removed

21" Protective Fencing for Tree to be Preserved

Vulnerable Area



KEYMAP

DATE	REVISIONS	DRAWN BY
06/05/25	REVISED PER VILLAGE COMMENTS	MA
06/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
TREE PRESERVATION PLAN- WEST

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=80'

SHEET L2 OF L17

PUL.MUIL03

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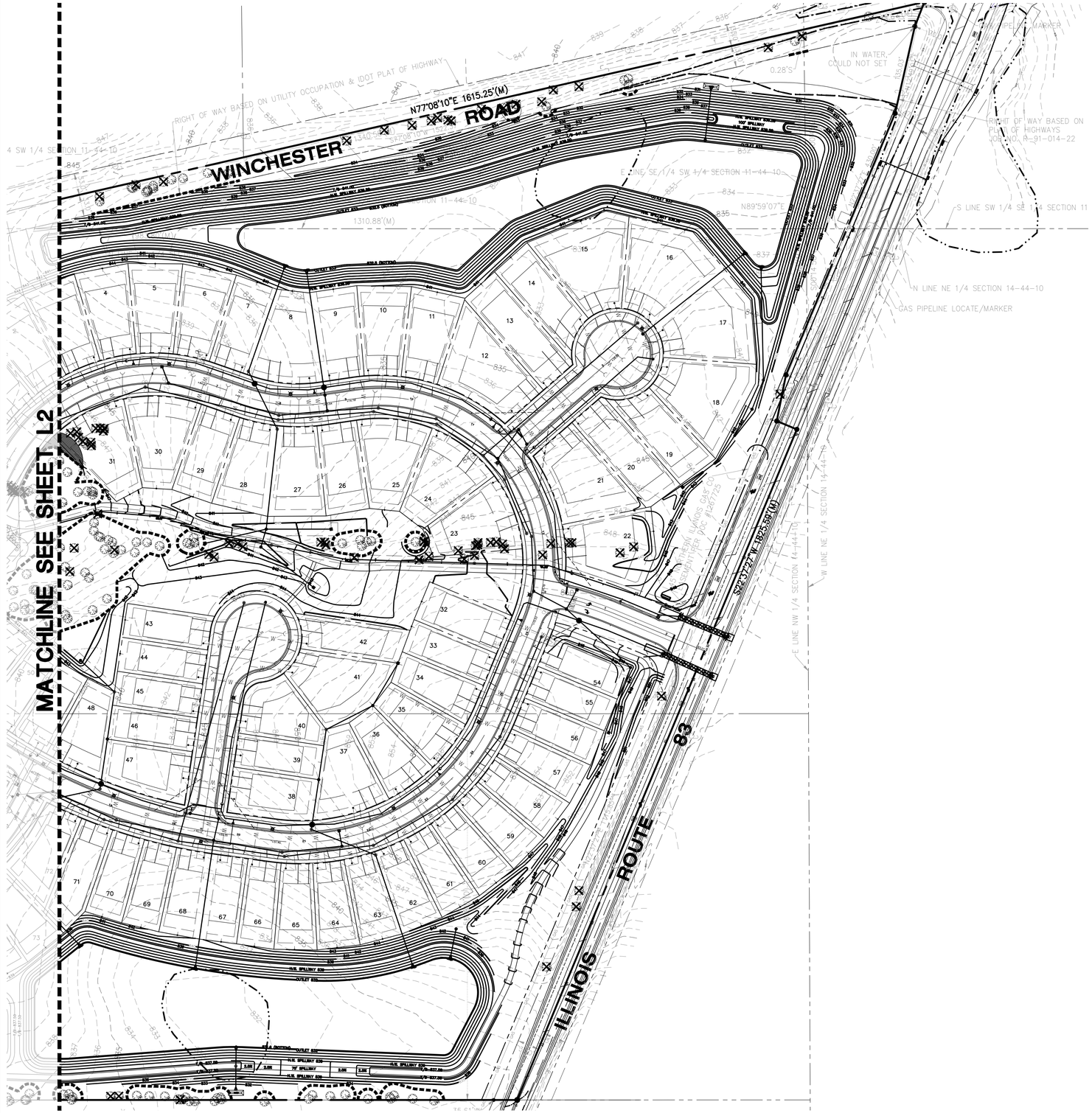

GRAPHIC SCALE

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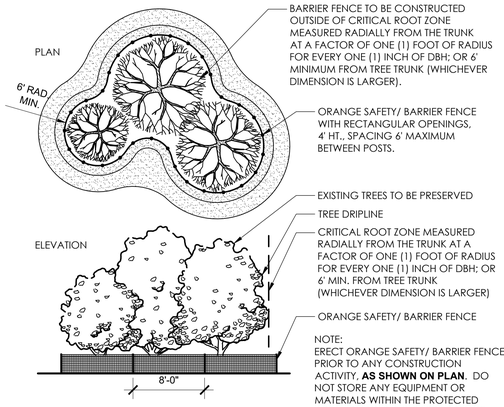
(IN FEET)
1 inch = 80 ft.

NORTH



NOTE:
ERECT ORANGE SAFETY/ BARRIER FENCE PRIOR TO ANY CONSTRUCTION ACTIVITY, **AS SHOWN ON PLAN.** DO NOT STORE ANY EQUIPMENT OR MATERIALS WITHIN THE PROTECTED AREA. REMOVE THE BARRIER FENCE ONLY AFTER CONSTRUCTION OPERATIONS ARE COMPLETED.

1 TREE PROTECTION PLAN
N.T.S. 320190.33-01

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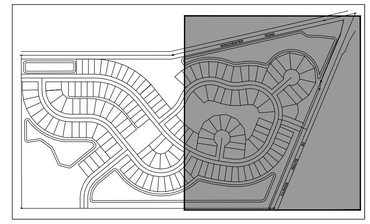

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
TREE PRESERVATION PLAN- EAST

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=80'

SHEET
L3 OF L17
PUL.MUIL03

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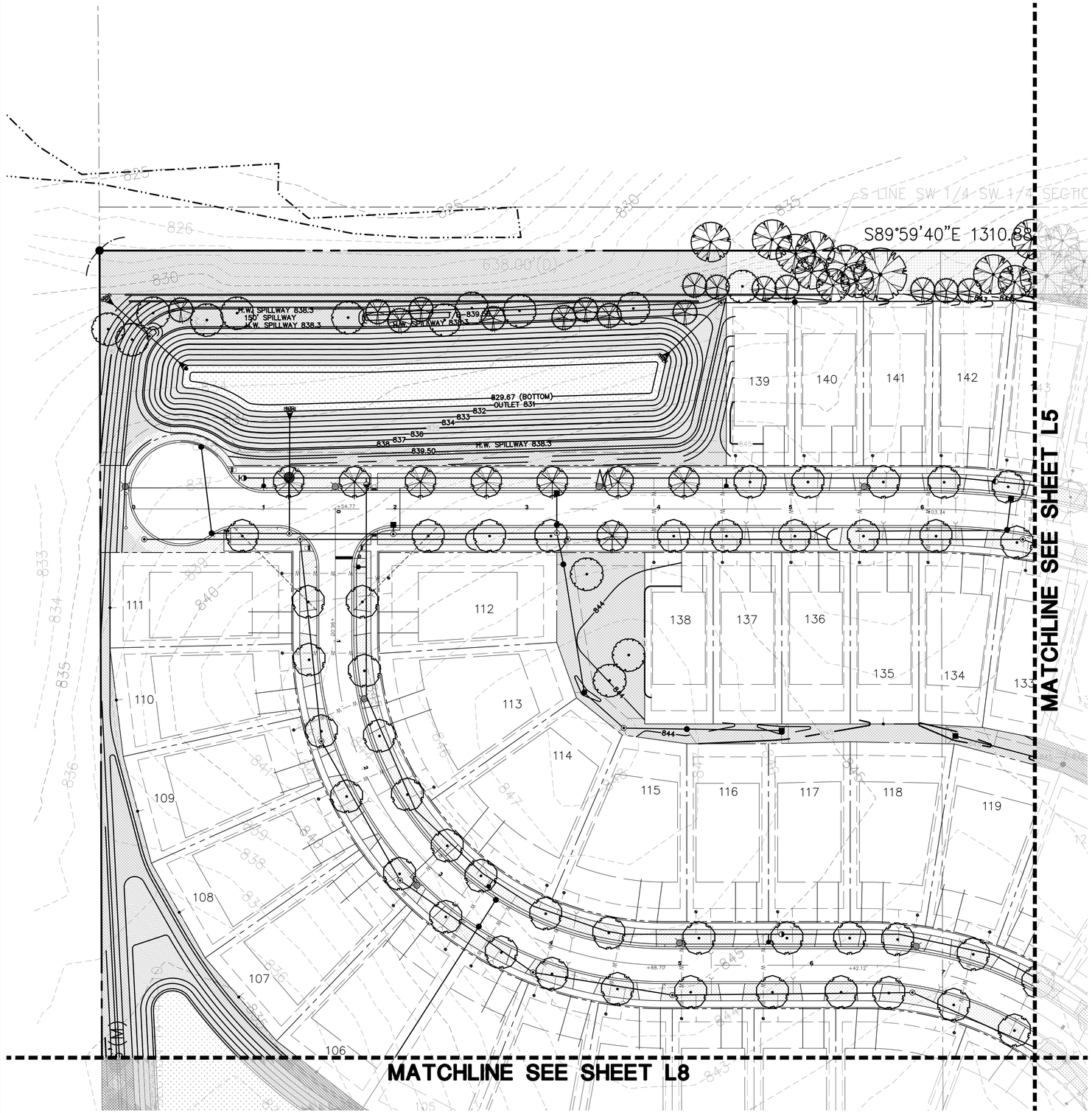

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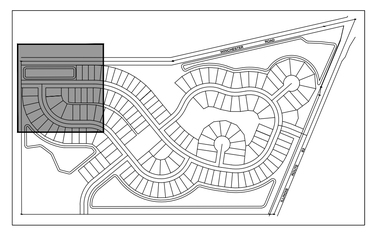

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.: MN
PROJ. ASSOC.: MUA
DRAWN BY: MN
DATE: 01/14/25
SCALE: 1"=40'

SHEET
L4 OF L17
PUL.MUIL03

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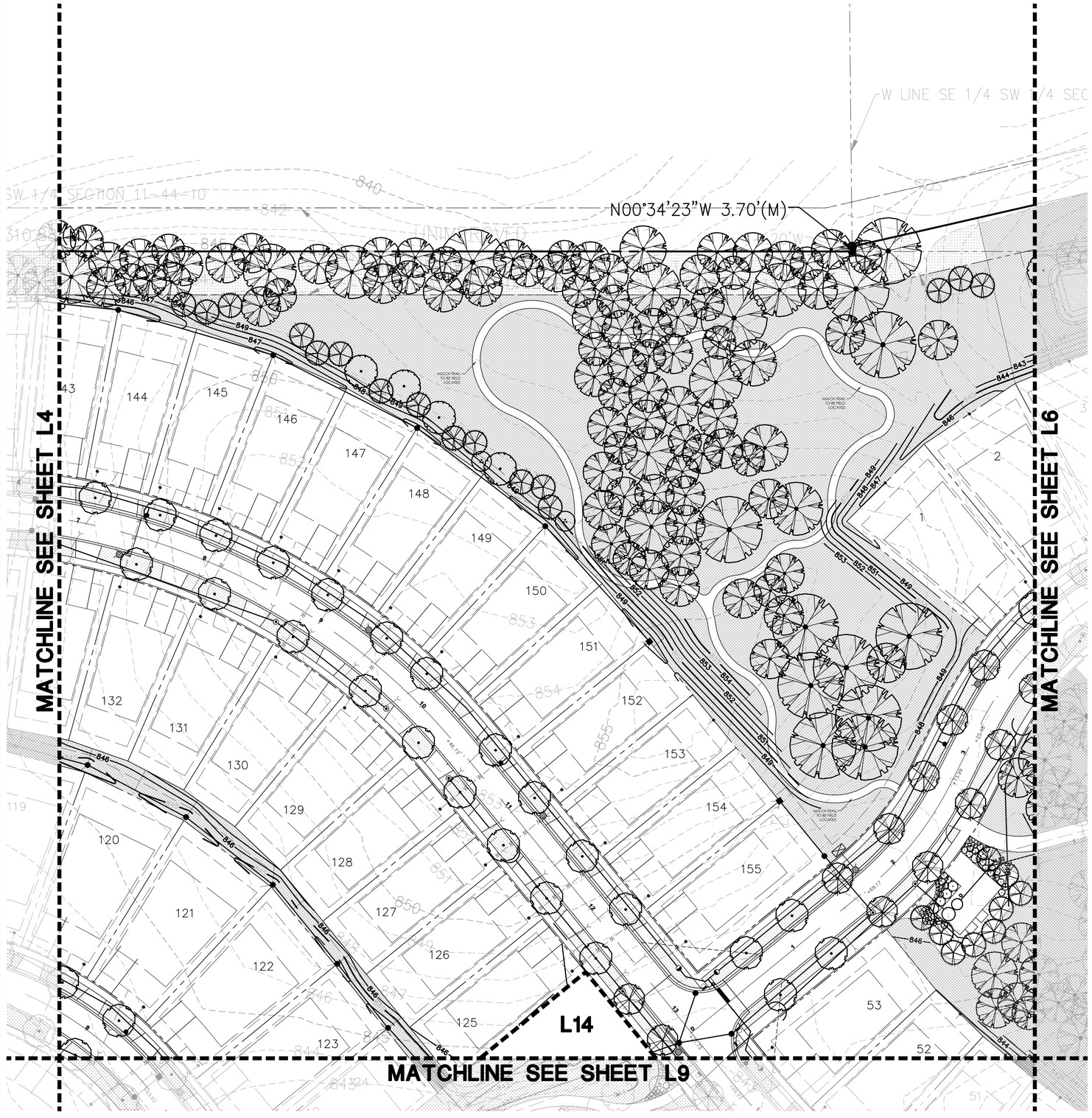

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NORTH

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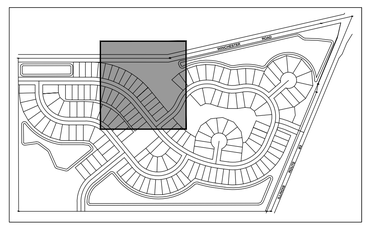
TURF-SOD	238,978 sf

EXISTING TREE TO BE PRESERVED



KEYMAP

DRAWN BY	REVISIONS	DATE
MN	1 REVISED PER VILLAGE COMMENTS & PLAN REV.	06/20/25
MA	2 REVISED PER VILLAGE COMMENTS	06/05/25
MN	3 REVISED PER VILLAGE COMMENTS	05/30/25

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=40'

SHEET
L5 OF L17
PUL.MUIL03

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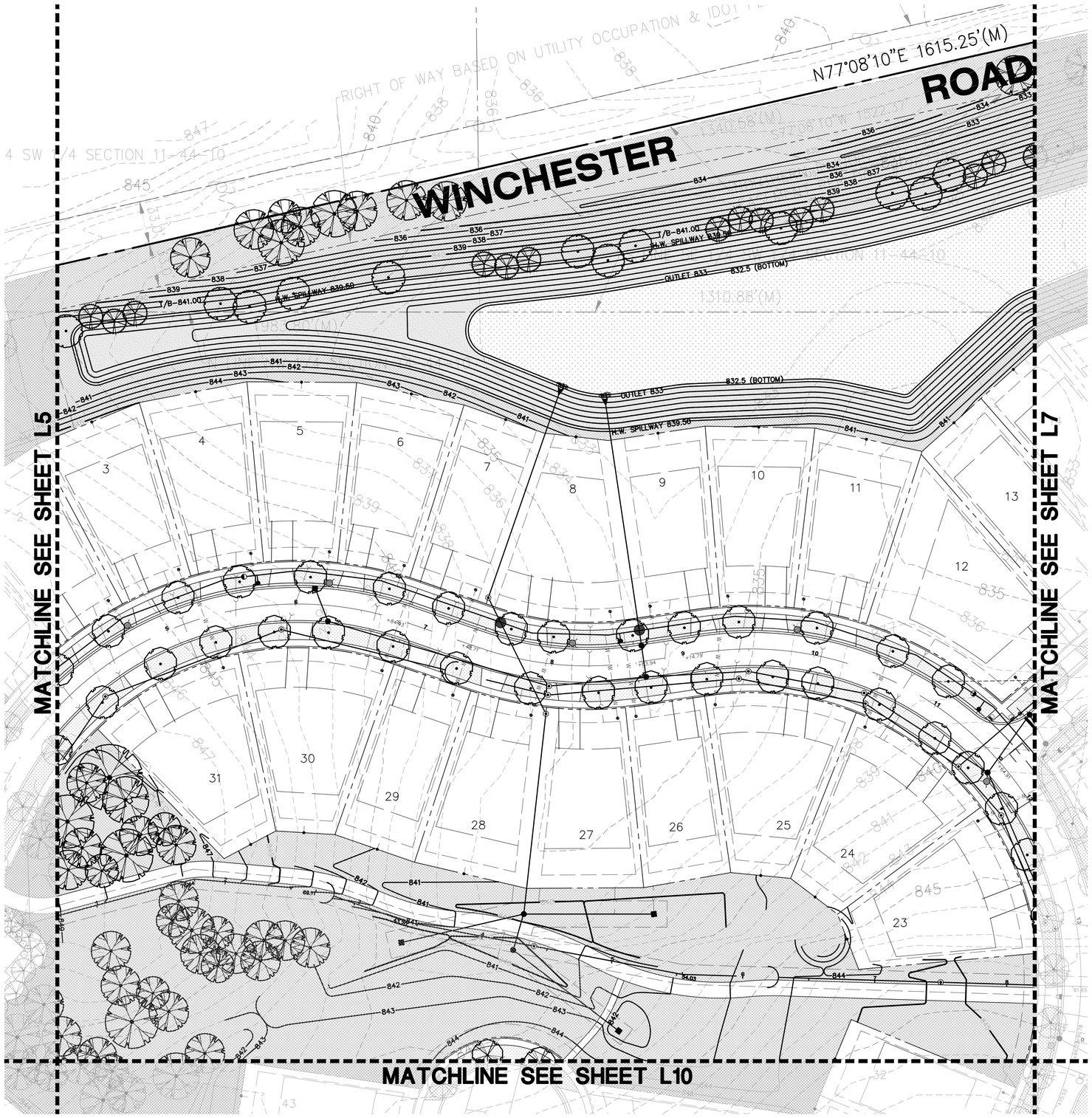
June 19, 2025 - 14:35 Dwg Name: P:\Mundel03\Dwg\Landdsn\01-Preliminary\Landscape Plan.dwg Updated By: MNelson



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

NORTH

CONCEPT PLANT SCHEDULE

INDIVIDUAL LOT PARKWAY TREE TO BE PLANTED AT THE TIME OF INDIVIDUAL HOUSE CONSTRUCTION	210
COMMON AREA PARKWAY TREE PLANTED WITH INITIAL SITE IMPROVEMENTS	88
PARK SHADE TREE	15
PARK ORNAMENTAL TREE	4
PARK EVERGREEN TREE	4
NON-REQUIRED SHADE TREE	45
NON-REQUIRED EVERGREEN TREE	96
NON-REQUIRED EVERGREEN TREE- COLUMNAR	3
NON-REQUIRED ORNAMENTAL TREE	12
PARK SHRUB	19
PARK SHRUB- SMALL	18
PARK ORNAMENTAL GRASS	87
NON-REQUIRED SHRUB-LARGE	6
NON-REQUIRED SHRUB-MEDIUM	43
NON-REQUIRED SHRUB-SMALL	19
NON-REQUIRED ORNAMENTAL GRASS	77
SIGN SHRUB- LARGE	8
SIGN SHRUB-MEDIUM	17
SIGN SHRUB-MEDIUM 2	8
SIGN SHRUB- SMALL	82
SIGN SHRUB- SMALL 2	7
SIGN ORNAMENTAL GRASS	30
SIGN ORNAMENTAL GRASS 2	35
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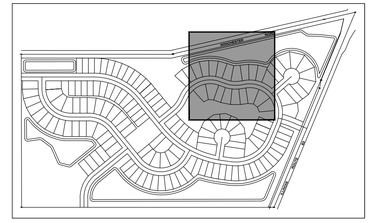
SIGN PERENNIALS	311 sf
NON-REQUIRED PERENNIALS	167 sf
ECONOMY PRAIRIE SEED MIX	780,724 sf
STORMWATER SEED MIX	179,601 sf
EMERGENT WETLAND SEED MIX	328,535 sf
UNDISTURBED/ GROUNDCOVER TREATMENT TBD	30,264 sf
TURF-SOD	238,978 sf

EXISTING TREE TO BE PRESERVED



KEYMAP

DATE	REVISIONS	DRAWN BY
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06/05/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE

VILLAGE OF MUNDELEIN, ILLINOIS

PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=40'

SHEET

L6 OF L17

PUL.MUIL03

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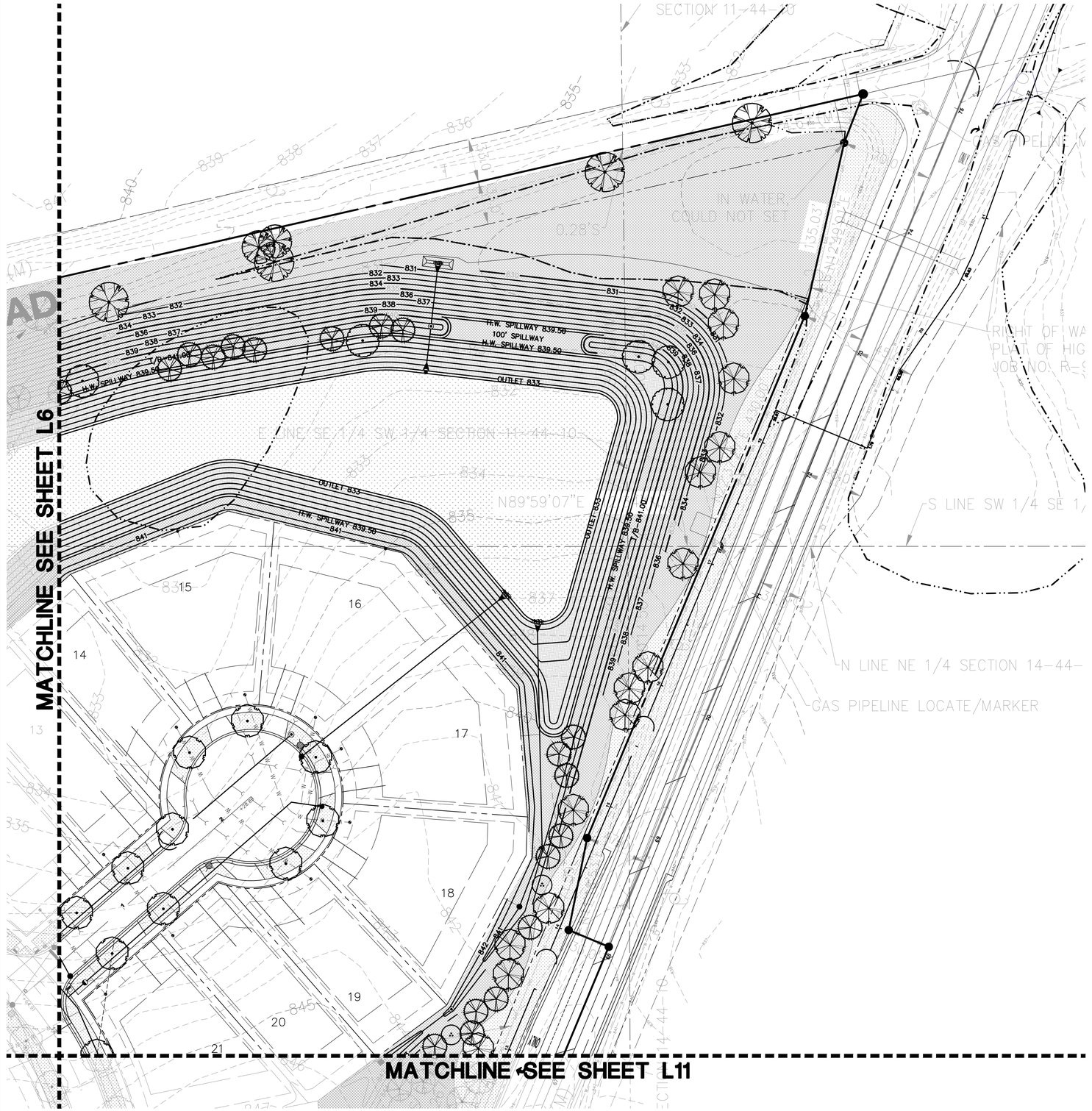
June 19, 2025 - 14:35 Dwg Name: P:\Projects\03\dwg\Landdiv\01-Preliminary\05-Preliminary Landscape Plan.dwg Updated By: MNelson



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NORTH

CONCEPT PLANT SCHEDULE

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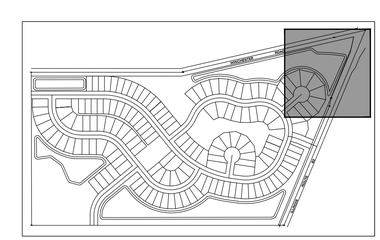

KEYMAP

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
06/06/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.: MN
PROJ. ASSOC.: MUA
DRAWN BY: MN
DATE: 01/14/25
SCALE: 1"=40'

SHEET
L7 OF L17
PUL.MUIL03

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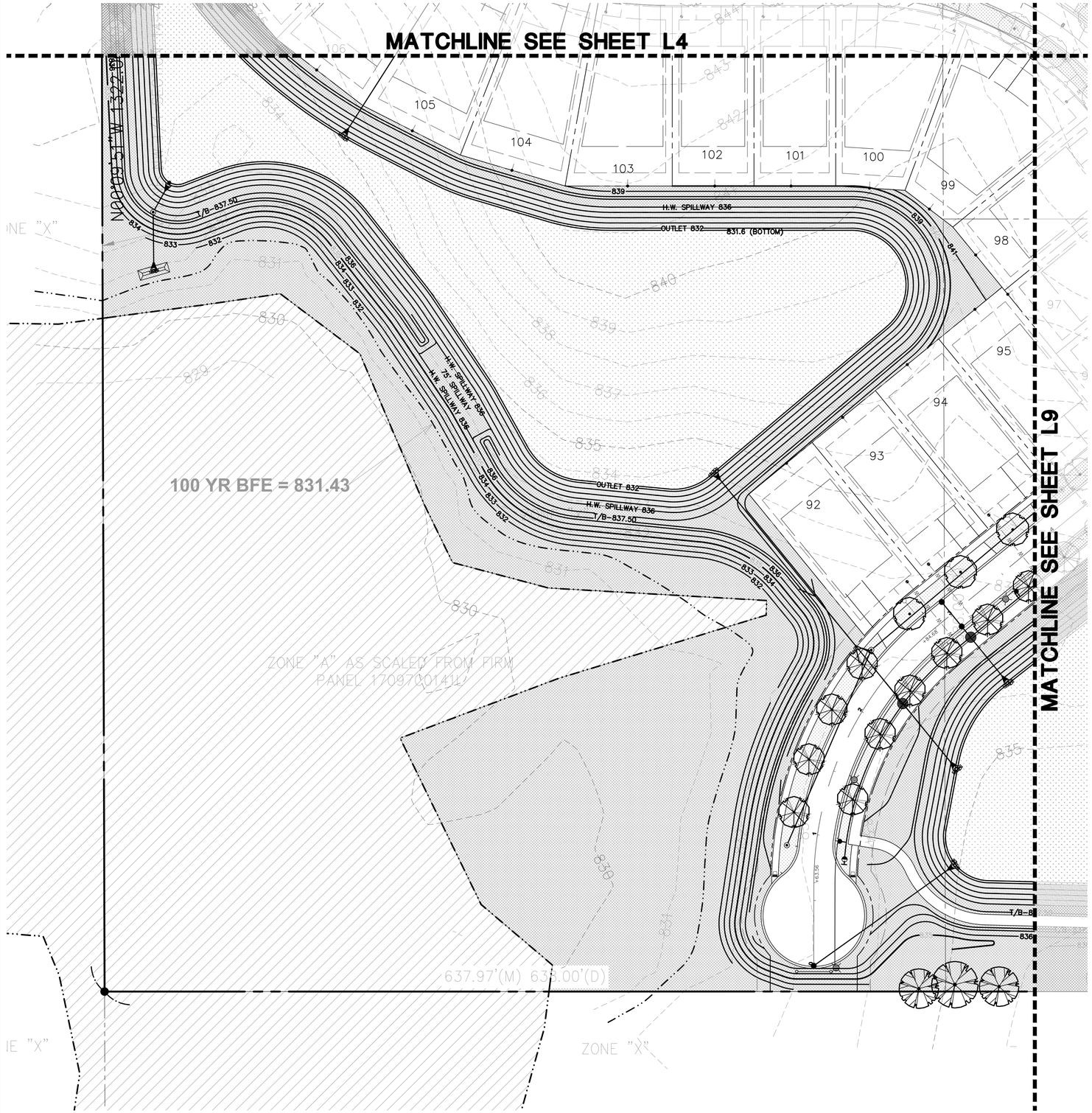
June 19, 2025 - 14:35 Dwg Name: P:\Pulmuil03\dwg\Landplan\01-Preliminary\01-Preliminary Landscape Plan.dwg Updated By: MNelson



CONCEPT PLANT SCHEDULE

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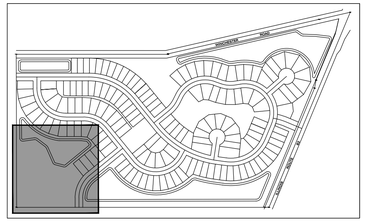
EXISTING TREE TO BE PRESERVED



KEYMAP

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE

VILLAGE OF MUNDELEIN, ILLINOIS

PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.: MN
PROJ. ASSOC.: MUA
DRAWN BY: MN
DATE: 01/14/25
SCALE: 1"=40'

SHEET L8 OF L17

PUL.MUIL03

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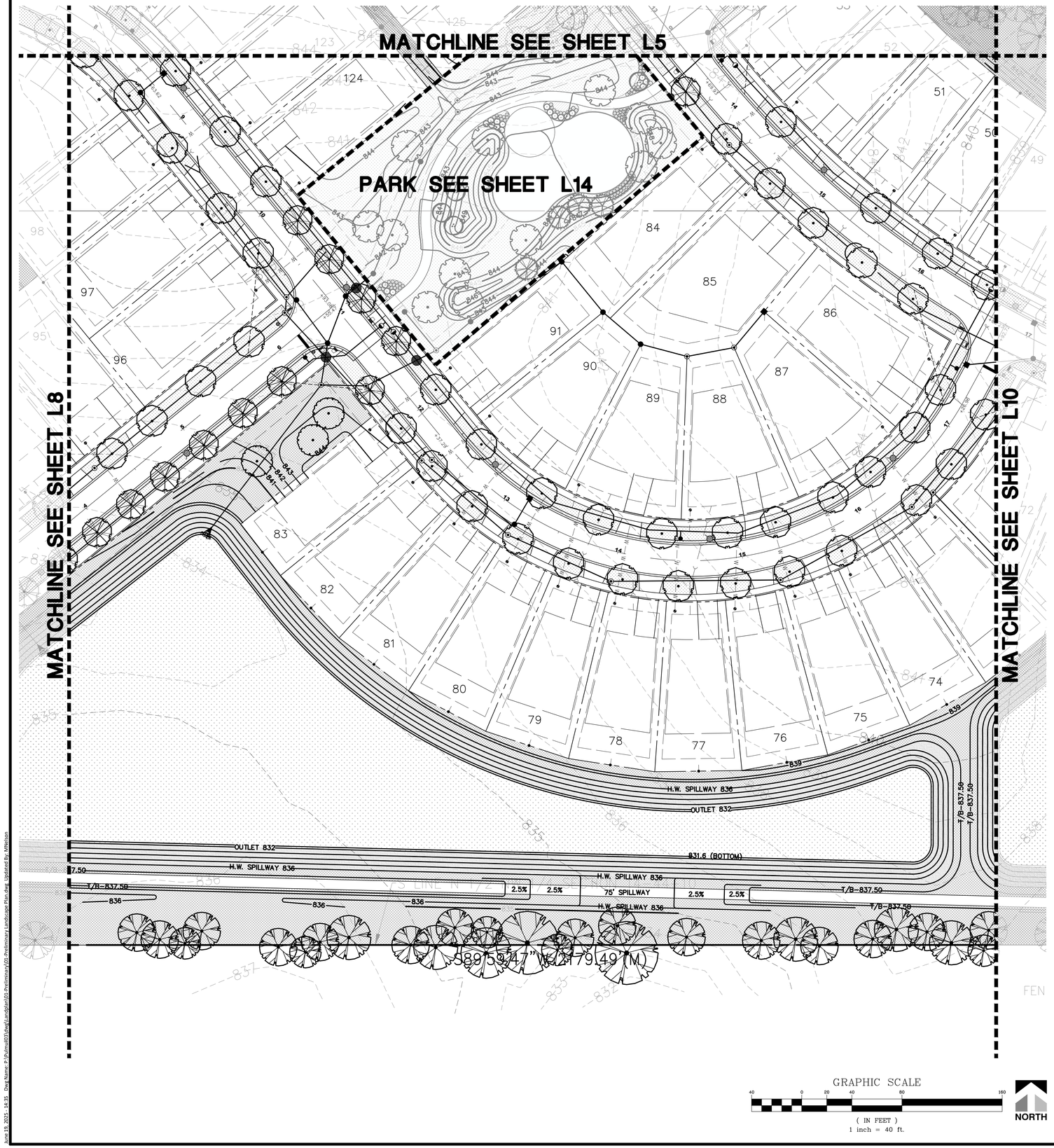

CONCEPT PLANT SCHEDULE

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	SIGN SHRUB-MEDIUM 2	8
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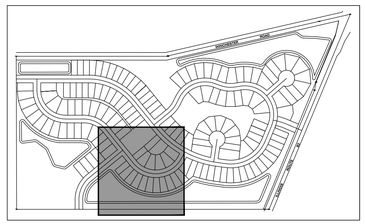

KEYMAP

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
06/05/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=40'

SHEET
L9 OF L17
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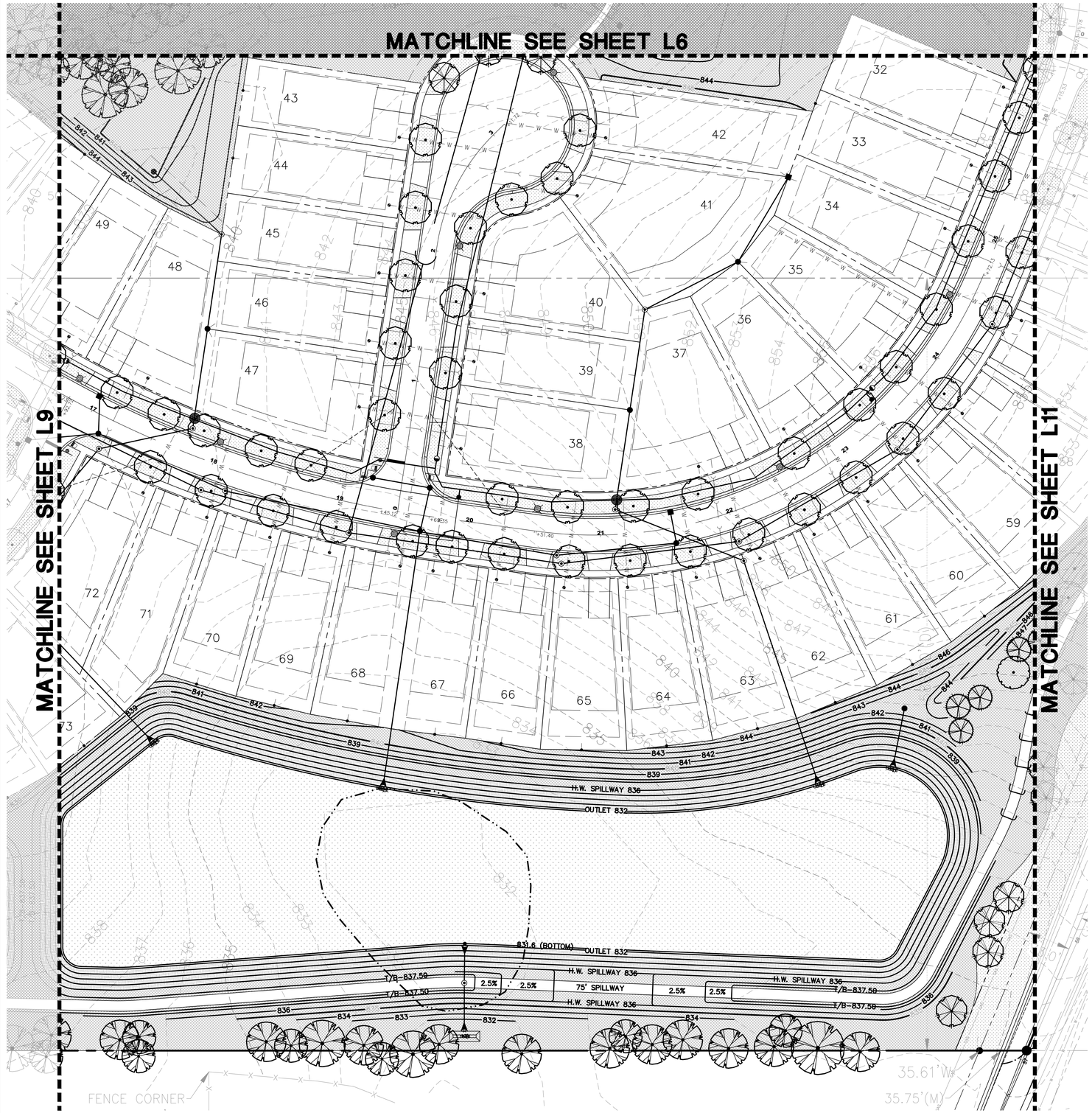
June 19, 2025 - 14:35 Dwg Name: P:\Active\03\dwg\Landplan\03-Preliminary\01-Preliminary Landscape Plan.dwg Updated By: MNelson



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

NORTH

CONCEPT PLANT SCHEDULE

INDIVIDUAL LOT PARKWAY TREE TO BE PLANTED AT THE TIME OF INDIVIDUAL HOUSE CONSTRUCTION	210
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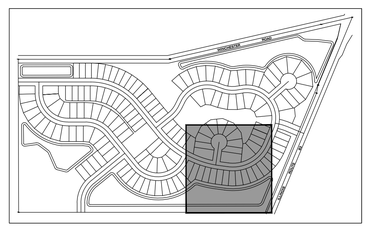

KEYMAP

DRAWN BY	DATE	REVISIONS
MN	06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.
MA	06/05/25	REVISED PER VILLAGE COMMENTS
MN	05/30/25	REVISED PER VILLAGE COMMENTS

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=40'

SHEET
L10 OF L17
PUL.MUIL03

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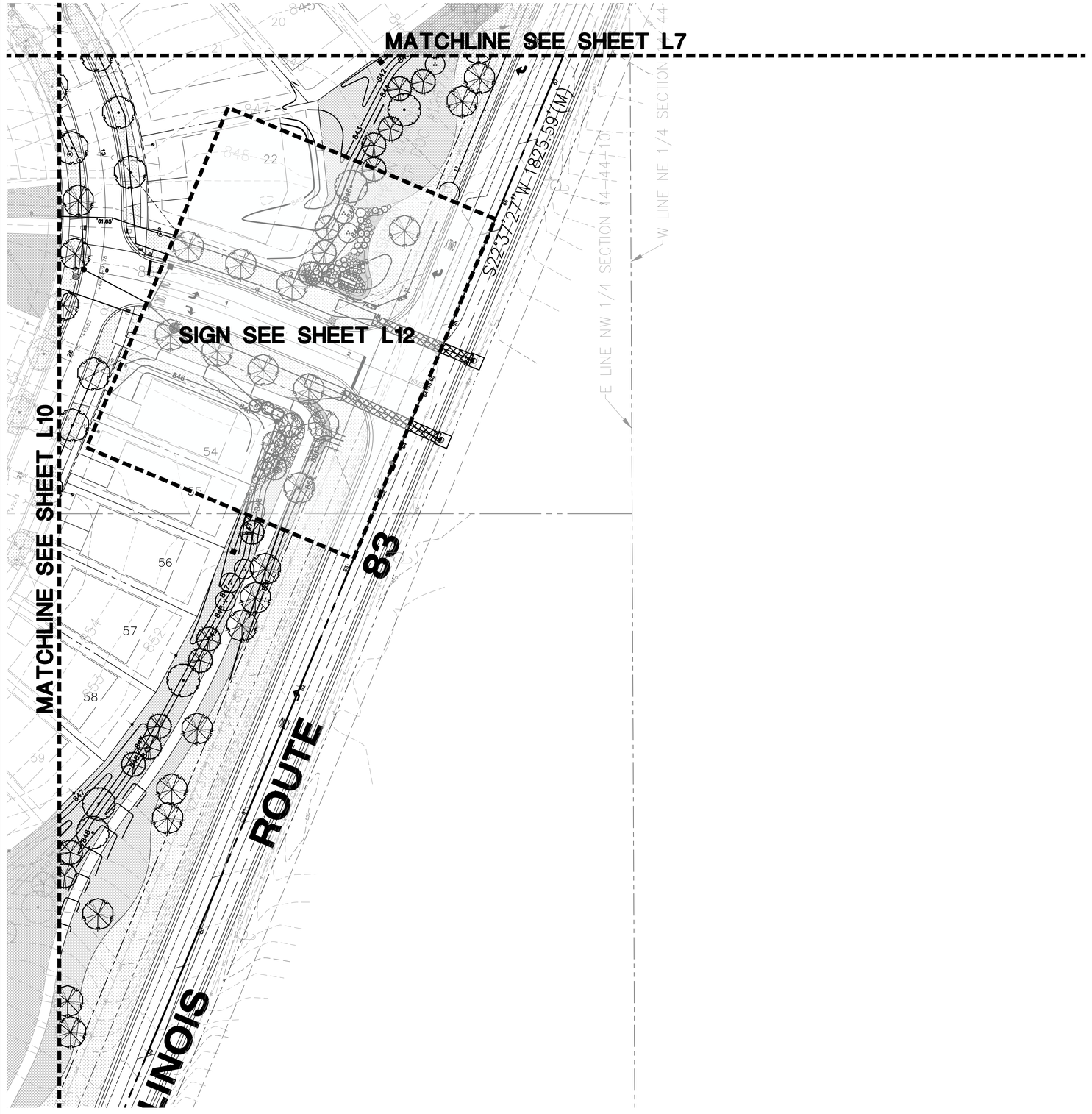
June 19, 2025 - 14:35 Dwg Name: P:\Pulmui\03\dwg\Landplan\03 Preliminary\01 Preliminary Landscape Plan.dwg Updated By: MNelson



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
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NORTH

CONCEPT PLANT SCHEDULE

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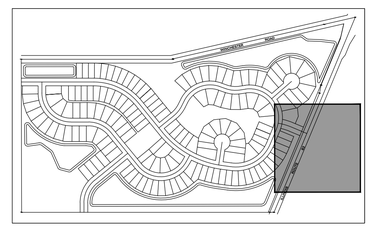

KEYMAP

DRAWN BY	REVISIONS	DATE
MN	06/20/25 REVISED PER VILLAGE COMMENTS & PLAN REV.	
MA	06/05/25 REVISED PER VILLAGE COMMENTS	
MN	05/30/25 REVISED PER VILLAGE COMMENTS	

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PRELIMINARY LANDSCAPE PLAN

PROJ. MGR.: MN
PROJ. ASSOC.: MUA
DRAWN BY: MN
DATE: 01/14/25
SCALE: 1"=40'

SHEET
L11 OF L17
PUL.MUIL03

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June 19, 2025 - 14:35 Dwg Name: P:\Pulmuil03\dwg\Landplan\01-Preliminary\01-Preliminary Landscape Plan.dwg Updated By: MNolton

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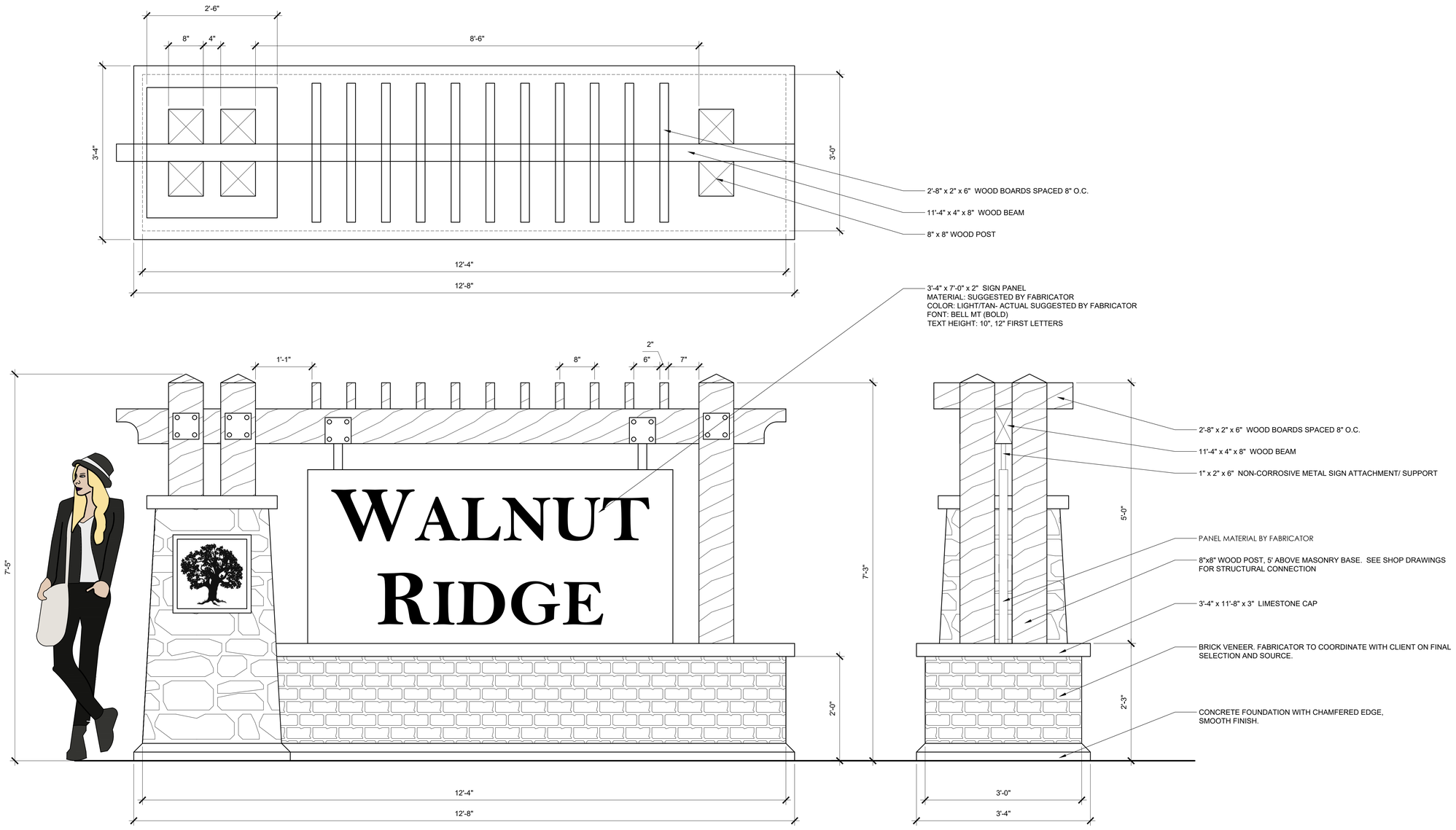

NOTE: PLANS PROVIDED FOR VISUAL UNDERSTANDING OF SIGN MATERIALS, LAYOUT AND GENERAL DIMENSIONS. SHOP DRAWINGS AND STRUCTURAL VERIFICATION TO BE PROVIDED BY FABRICATOR PRIOR TO CONSTRUCTION.

2 ENTRANCE MONUMENT

1" = 1'-0"

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
06/06/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE

VILLAGE OF MUNDELEIN, ILLINOIS

ENTRANCE MONUMENT

PROJ. MGR.: MN
PROJ. ASSOC.: MUA
DRAWN BY: MN
DATE: 01/14/25
SCALE: AS NOTED

SHEET

L13 OF L17

PUL.MUIL03

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June 19, 2025 - 14:35 Dwg Name: P:\Pulmuil03\dwg\Landplan\01-Preliminary\01-Preliminary Landscape Plan.dwg Updated By: MNelson

PLAYGROUND AREA DESIGN TO BE DETERMINED

GRAPHIC SCALE
20 0 10 20 40 60
(IN FEET)
1 inch = 20 ft.

NORTH

CONCEPT PLANT SCHEDULE

INDIVIDUAL LOT PARKWAY TREE TO BE PLANTED AT THE TIME OF INDIVIDUAL HOUSE CONSTRUCTION	210
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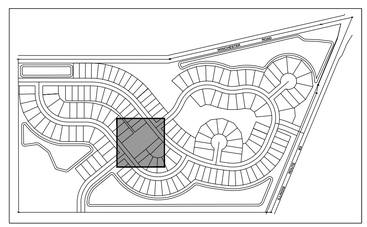
NON-REQUIRED SHRUB-MEDIUM	43
NON-REQUIRED SHRUB-SMALL	19
NON-REQUIRED ORNAMENTAL GRASS	77
SIGN SHRUB- LARGE	8
SIGN SHRUB-MEDIUM	17
SIGN SHRUB-MEDIUM 2	8
SIGN SHRUB- SMALL	82
SIGN SHRUB- SMALL 2	7
SIGN ORNAMENTAL GRASS	30
SIGN ORNAMENTAL GRASS 2	35
PARK PERENNIALS	233 sf
SIGN PERENNIALS	311 sf
NON-REQUIRED PERENNIALS	167 sf
ECONOMY PRAIRIE SEED MIX	780,724 sf
STORMWATER SEED MIX	179,601 sf
EMERGENT WETLAND SEED MIX	328,535 sf
UNDISTURBED/ GROUNDCOVER TREATMENT TBD	30,264 sf
TURF-SOD	238,978 sf

EXISTING TREE TO BE PRESERVED



KEYMAP

REVISIONS	DATE	DRAWN BY
REVISED PER VILLAGE COMMENTS & PLAN REV.	06/20/25	MN
REVISED PER VILLAGE COMMENTS	06/05/25	MA
REVISED PER VILLAGE COMMENTS	05/30/25	MN

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
PARK ENLARGEMENT

PROJ. MGR.: MN
PROJ. ASSOC.: MUA
DRAWN BY: MN
DATE: 01/14/25
SCALE: 1"=20'

SHEET
L14 OF L17
PUL.MUIL03

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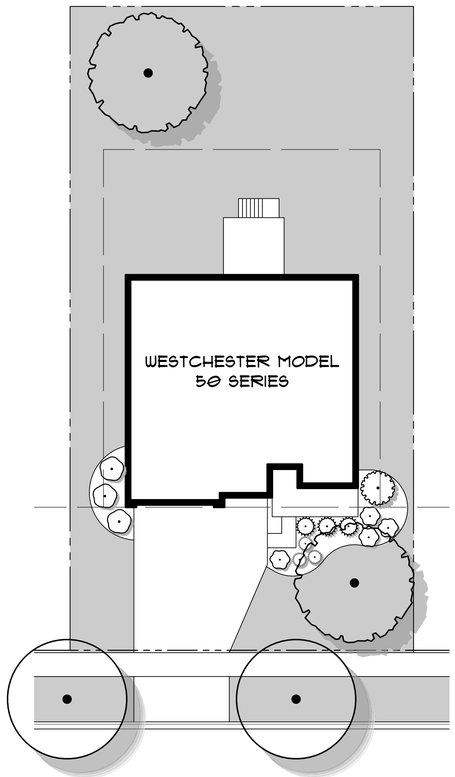
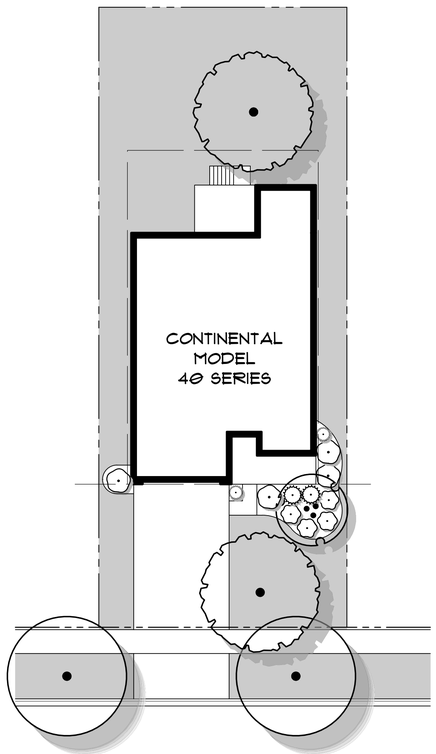
June 19, 2025 - 14:35 Dwg Name: P:\Plumu\033\dwg\Landplan\101 Preliminary\01-Preliminary Landscape Plan.dwg Updated By: MNelson

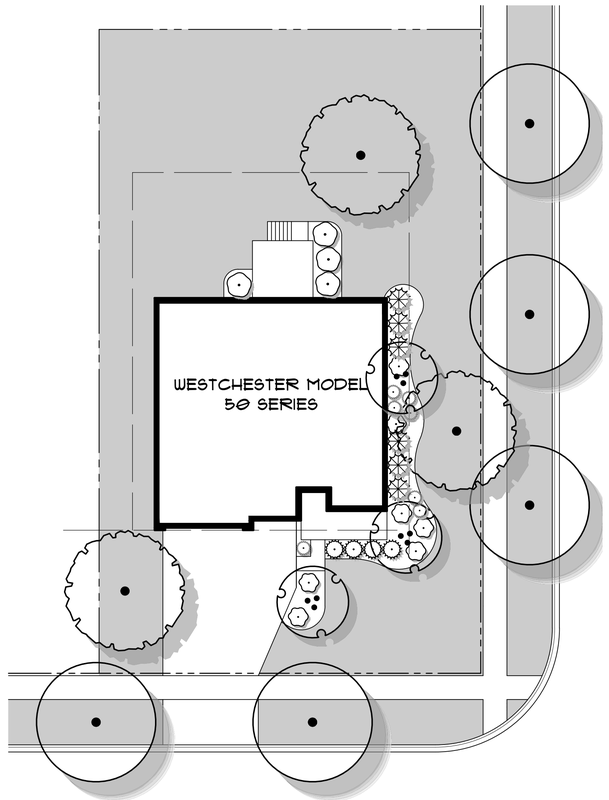
NOTE: All above ground utility structure locations to be verified in field and planting plans adjusted to provide sufficient screening from public view (of A/C Condenser).



1 TYPICAL 50 SERIES PLAN - INTERIOR LOT
1" = 15'-0"



2 TYPICAL 40 SERIES PLAN - INTERIOR LOT
1" = 15'-0"



3 TYPICAL KEY LOT ENHANCEMENT PLAN
1" = 15'-0"

Planting Requirements

INTERIOR LOT MIN. PLANTING
Requirement:

1. Two (2) 2.5" Cal. Shade Trees or Two (2) 6' Ht. Evergreen/ Conifer Trees (or a mix), and;
2. One (1) 6' ht. Ornamental Tree (Meadows Lots Only), &;
3. One (1) Large Deciduous or Evergreen Shrub (or mix), Mature width 7'-8', 24" ht. at time of planting (None required for Meadows Lots), &;
4. Three (3) Medium Deciduous Shrubs, Mature width ±5', 24" ht. at time of planting (Meadows Lots Require (4) four), &;
5. Four (4) Small Deciduous Shrubs, Mature width 3-4', 18" ht. at time of planting, &;
6. Three (3) Evergreen Shrubs, 24" at time of planting (Meadows Lots Require (2) two), &;
7. Three (3) Ornamental Grasses, Ferns or Large Perennials (or mix), 1 gal. container at time of planting (Meadows Lots Require (2) two).

KEY LOT / CORNER LOT MIN. PLANTING
Requirement:

1. Three (3) 2.5" Cal. Shade Trees or Three (3) 6' Ht. Evergreen/ Conifer Trees (or a mix), &;
2. Three (3) 6' ht. Ornamental Trees, &;
3. Six (6) Large Deciduous or Evergreen Shrubs (or mix), Mature width 7'-8', 24" ht. at time of planting, &;
4. Four (4) Medium Deciduous Shrubs, Mature width ±5', 24" ht. at time of planting, &;
5. Seven (7) Small Deciduous or Evergreen Shrubs (or mix), Mature width 3-4', 18" ht. at time of planting, &;
6. Four (4) Evergreen Shrubs, 24" at time of planting, &;
7. Seven (7) Ornamental Grass, Fern or Large Perennials, 1 gal. container at time of planting.

NOTE: All Parkways shall have min. 4" topsoil and sod

NOTE: Adjacent common area landscaping trees, shrubs, etc. are not shown on this exhibit. See Landscape plans for additional plantings.

NOTE: Typical Foundation Planting Plans show the general layout, plant material suggestions, and design intent. Contractor to adjust as required for unit mix, front and sideyard setback requirements, and adjacent plantings. Minimum plantings as noted above must be provided.

Construction Notes:

1. Sod all turf areas as noted with an approved blend of improved Kentucky Bluegrass sod with a mineral soil back.
2. Fine grading shall provide slopes which are smooth and continuous. Positive drainage shall be provided in all areas.
3. Prior to turf installation all areas shall be fertilized with a 12-12-12 granular fertilizer at a rate of 400 lbs. per acre.
4. Prepare perennial, ornamental grass, groundcover and annual flower beds with 1 CY of mushroom compost per 100 sf. rototilled to an 8" depth.
5. Mulch all trees, shrub, perennial, & ornamental grass beds per "Landscape Details" sheet.
6. All bed lines and tree saucers require a spade edge per "Landscape Details" sheet.
7. All conifer trees and shrubs must be grown in a natural shape and not sheared.
8. See "Landscape Specifications" sheet for all other planting requirements.

N

0 8 15 30
SCALE: 1"=15'

Suggested Plant List

SHADE TREES:

Acer rubrum	RED MAPLE
Acer saccharum	SUGAR MAPLE
Acer x freemanii	FREEMAN MAPLE
Aesculus glabra	OHIO BUCKEYE
Betula nigra 'Cully Improved'	RIVER BIRCH
Celtis occidentalis	HACKBERRY
Gleditsia tricanthos inermis	HONEY LOCUST
Gymnocladus dioicus	KENTUCKY COFFEETREE
Liriodendron tulipifera	TULIP POPLAR
Quercus alba	WHITE OAK
Quercus bicolor	SWAMP WHITE OAK
Quercus macrocarpa	BUR OAK
Quercus rubra	RED OAK
Tilia americana	AMERICAN LINDEN
Ulmus americana 'Princeton'	PRINCETON AMERICAN ELM

EVERGREEN/ CONIFER TREES:

Juniperus viriniana	EASTERN RED CEDAR
Picea abies*	NORWAY SPRUCE
Picea glauca densata*	BLACK HILLS SPRUCE
Picea pungens*	COLORADO BLUE SPRUCE
Pinus strobus	WHITE PINE
Taxodium distichum*	BALD CYPRESS
Thuja occidentalis	ARBORVITAE
Tsuga canadensis	EASTERN HEMLOCK**

ORNAMENTAL TREES:

Amelanchier x grandiflora	APPLE SERVICEBERRY
Carpinus caroliniana	AMERICAN HORNBEAM
Cercis canadensis	REDBUD
Crataegus crus-galli inermis	COCKSPUR HAWTHORN
Hamamelis virginiana	COMMON WITCH HAZEL**
Malus spp.*	CRABAPPLE VARIETIES
Ostrya virginiana	AMERICAN HOPHORNBEAM
Syringa reticulata*	JAPANESE TREE LILAC
Viburnum prunifolium	BLACKHAW VIBURNUM

LARGE DECIDUOUS SHRUBS:

Aronia melanocarpa	BLACK CHOKEBERRY
Cornus sericea	RED TWIG DOGWOOD
Hydrangea paniculata*	PANICLE HYDRANGEA
Hydrangea quercifolia*	OAKLEAF HYDRANGEA**
Ilex verticillata	WINTERBERRY
Myrica pensylvanica*	NORTHERN BAYBERRY
Physocarpus opulifolius	NINEBARK
Viburnum carlesii*	KOREANSPICE VIBURNUM
Viburnum dentatum*	ARROWWOOD VIBURNUM
Viburnum lentago	NANNYBERRY

LARGE EVERGREEN SHRUBS:

Juniperus ch. 'Sea Green'*	SEA GREEN JUNIPER
Juniperus ch. 'Fairview'*	FAIRVIEW UPRIGHT JUNIPER
Thuja occidentalis	ARBORVITAE

MEDIUM DECIDUOUS SHRUBS:

Clethra alnifolia*	SUMMERSWEET
Cotoneaster lucidus*	HEDGE COTONEASTER
Diervilla x	KODIAK HONEYSUCKLE
Fothergilla major*	FOTHERGILLA**
Hydrangea arborescens	HYDRANGEA**
Hypericum prolificum	ST. JOHN'S WORT
Itea virginica*	SWEETSPIRE
Rhus aromatica 'Gro-Low'	GRO-LOW SUMAC
Rosa x*	ROSE VARIETIES
Sorbaria sorbifolia 'Sem' *	SEM FALSE SPIRAEA **
Syringa spp*	LILAC
Weigela florida*	WEIGELA

SMALL EVERGREEN SHRUBS:

Buxus x 'Glencoe'*	BOXWOOD
Juniperus chinensis 'Kallay'*	KALLAY'S COMPACT JUNIPER
Juniperus horizontalis	CREEPING JUNIPER
Pinus mugo*	MUGO PINE
Taxus x media*	DENSE YEW

SMALL DECIDUOUS SHRUBS:

Ceanothus americanus	NEW JERSEY TEA
Fothergilla gardenii*	DWARF FOTHERGILLA**
Potentilla fruticosa	CINQUEFOIL

ORNAMENTAL GRASSES & FERNS:

Athyrium filix-femina	LADY FERN**
Bouteloua curtipendula	SIDE OATS GRAMMA
Calamagrostis 'Karl Foerster'*	FEATHER REED GRASS
Chasmanthium latifolium	NORTHERN SEA OATS**
Deschampsia cespitosa	TUFTED HAIR GRASS
Matteuccia struthiopteris	OSTRICH FERN
Miscanthus sinensis*	MAIDEN GRASS
Osmunda cinnamomea	CINNAMON FERN
Panicum virgatum	SWITCH GRASS
Polystichum acrostichoides	CHRISTMAS FERN
Schizachyrium scoparium	LITTLE BLUESTEM
Sorghastrum nutans	INDIAN GRASS
Sporobolus heterolepis	PRAIRIE DROPSEED
Sesleria autumnalis*	AUTUMN MOOR GRASS

PERENNIALS:

Asarum canadense	WILD GINGER**
Allium cernuum	NODDING ONION
Asclepias tuberosa	BUTTERFLY MILKWEED
Callirhoe involucrta*	PURPLE POPPY MALLOW
Coreopsis spp.	COREOPSIS
Echinace spp.	PURPLE CONE FLOWER
Geranium spp.*	GERANIUM
Helianthus spp.	SUNFLOWER
Hemerocallis spp.*	DAYLILY
Heuchera spp*	CORAL BELLS**
Hibiscus spp.*	HIBISCUS
Hosta spp. *	HOSTA**
Iris virginica	IRIS
Lavandula spp.*	LAVENDER
Liatris spp.	BLAZING STAR
Monarda spp.	BEE BALM
Nepeta spp.*	CATMINT
Penstemon spp.	BEARDTONGUE
Perovskia atriplicifolia*	RUSSIAN SAGE
Phlox divaricata/paniculata	WOODLAND/GARDEN PHLOX
Physostegia virginiana	OBEDIENT PLANT
Rudbeckia spp.	BLACK EYED SUSAN
Salvia nemorosa*	SALVIA
Sedum spp.*	SEDUM
Symphyotrichum spp.	ASTER

* Not Native to Chicagoland Region
** Shade Tolerant

Legend

Street Trees
2.5" Caliper

Shade Trees or Evergreen/ Conifer Trees
2.5" Caliper (Shade Tree) or 6' Height (Evergreen Tree)

Ornamental Trees
6' Height or 2" Caliper

Large Deciduous or Evergreen Shrub: 24" Height

Medium Deciduous Shrub: 24" Height

Small Deciduous Shrub: 18" Height

Large Evergreen Shrub: 5' Height

Small Evergreen Shrub: 24" Height

Ornamental Grass, Fern or Perennial: 1 Gallon Container

Turf: Sod (All residential lots and parkways)

DATE	REVISIONS	DRAWN BY
06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.	MN
06/05/25	REVISED PER VILLAGE COMMENTS	MA
05/30/25	REVISED PER VILLAGE COMMENTS	MN

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
TYPICAL LOT LANDSCAPE PLAN

PROJ. MGR.:	MN
PROJ. ASSOC.:	MUA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	1"=10'

SHEET
L15 OF L17
PUL.MUIL03

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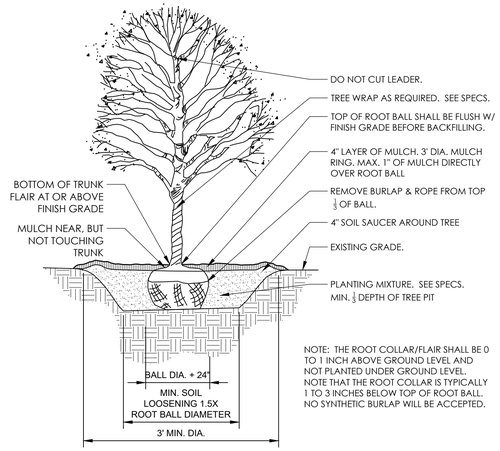
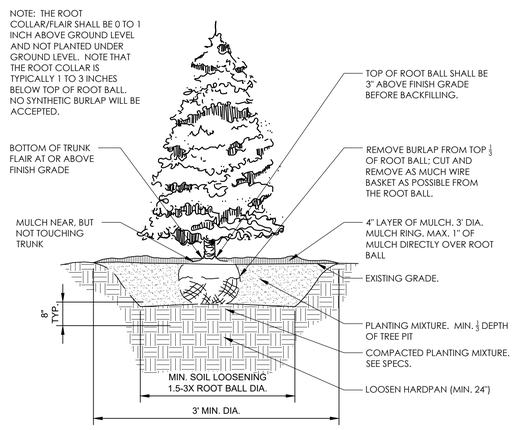
May 29, 2025 - 09:45 Dwg Name: P:\Mundi\03\Dwg\Landplan\03-Preliminary\02-Typical Lot Landscape.dwg Updated By: mallcurto



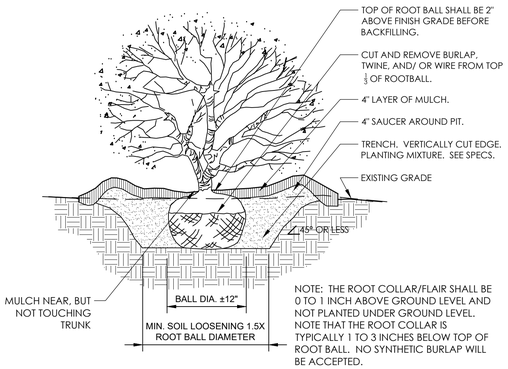
1 DECIDUOUS TREE PLANTING - ANSI A300

1/4" = 1'-0" 329343.33-23



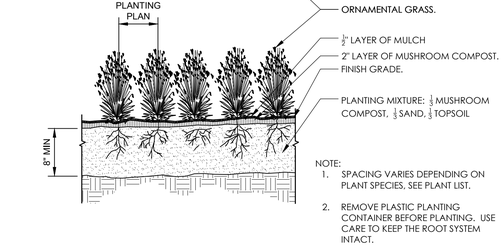
2 CONIFER TREE PLANTING- ANSI A300

1/4" = 1'-0" 329343.23-03



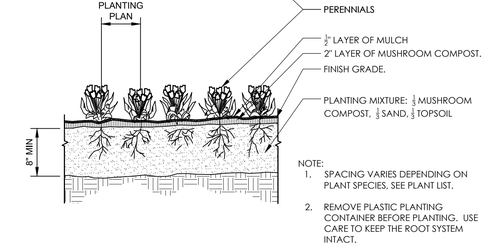
3 SHRUB PLANTING DETAIL - ANSI A300

3/4" = 1'-0" 329333.16-07



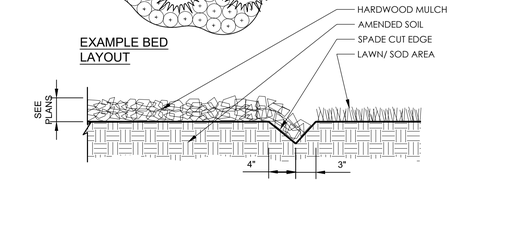
4 ORNAMENTAL GRASS PLANTING

1" = 1'-0" 329313-01



5 PERENNIAL / ANNUAL PLANTING

1" = 1'-0" 329313-02



6 CONTINUOUS MULCH EDGING

1" = 1'-0" 329113.26-01

DRAWN BY	DATE	REVISIONS
MN	06/20/25	REVISED PER VILLAGE COMMENTS & PLAN REV.
MA	06/05/25	REVISED PER VILLAGE COMMENTS
MN	05/30/25	REVISED PER VILLAGE COMMENTS

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WALNUT RIDGE
VILLAGE OF MUNDELEIN, ILLINOIS
LANDSCAPE DETAILS

PROJ. MGR.:	MN
PROJ. ASSOC.:	MJA
DRAWN BY:	MN
DATE:	01/14/25
SCALE:	AS NOTED

SHEET
L16 OF L17
PUL.MUIL03

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June 19, 2025 - 14:35 Dwg Name: P:\Projects\033\Dwg\Landdpln\03-Preliminary\01-Preliminary Landscape Plan.dwg Updated By: MNelson

GENERAL PLANTING SPECIFICATIONS:

PART 1 - GENERAL

1-01 DESCRIPTION:

A. PROVIDE TREES, SHRUBS, PERENNIALS AND GROUNDCOVERS AS SHOWN AND SPECIFIED. THIS WORK INCLUDES:
   1. SPREADING OF TOPSOIL OR SOIL PREPARATION
   2. TREES, SHRUBS, PERENNIALS AND GROUNDCOVERS
   3. PLANTING MIXES
   4. MULCH AND PLANTING ACCESSORIES
   5. FERTILIZER AND HERBICIDE
   6. MAINTENANCE
   7. WARRANTY OF PLANT MATERIAL

B. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO BIDDING AND REPORT ANY DISCREPANCIES TO THE OWNER OR HIS/HER REPRESENTATIVE.

1-02 QUALITY ASSURANCE:

A. COMPLY WITH SITE WORK REQUIREMENTS

B. PLANT NAMES INDICATED MUST COMPLY WITH 'STANDARDIZED PLANT NAMES' AS ADOPTED BY THE LATEST EDITION OF THE AMERICAN JOINT COMMITTEE OF HORTICULTURAL NOMENCLATURE. NAMES OF VARIETIES WHICH ARE NOT LISTED SHOULD CONFORM WITH THOSE GENERALLY ACCEPTED BY THE NURSERY TRADE. STOCK SHOULD BE LEGIBLY TAGGED.

C. ALL PLANT MATERIALS SHALL CONFORM TO THE 'AMERICAN STANDARDS FOR NURSERY STOCK' (ASNS), LATEST EDITION, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, WASHINGTON, D.C.

D. ALL PLANT MATERIAL SHALL BE GROWN AND SUPPLIED WITHIN A 50 MILE RADIUS OF THE PROJECT FOR A MINIMUM OF TWO FULL GROWING SEASONS.

E. ADHERE TO SIZING REQUIREMENTS AS LISTED IN THE PLANT LIST AND/OR BID FORM FOR THE PROJECT. A PLANT SHALL BE MEASURED IN ITS NATURAL STANDING POSITION.

F. STOCK THAT IS FURNISHED SHALL BE AT LEAST THE MINIMUM SIZE SHOWN. WITH PERMISSION OF THE LANDSCAPE ARCHITECT, SUBSTITUTION FROM THE SPECIFIED PLANT LIST WILL BE ACCEPTED ONLY WHEN SATISFACTORY EVIDENCE IN WRITING IS SUBMITTED TO THE LANDSCAPE ARCHITECT, SHOWING THAT THE PLANT SPECIFIED IS NOT AVAILABLE. REQUESTS FOR APPROVAL OF SUBSTITUTE PLANT MATERIAL SHALL INCLUDE COMMON AND BOTANICAL NAMES AND SIZE OF SUBSTITUTE MATERIAL. ONLY THOSE SUBSTITUTIONS OF AT LEAST EQUIVALENT SIZE AND CHARACTER TO THAT OF THE SPECIFIED MATERIAL WILL BE APPROVED. STOCK WHICH IS LARGER THAN THAT WHICH IS SPECIFIED IS ACCEPTABLE WITH PERMISSION OF THE LANDSCAPE ARCHITECT, PROVIDING THERE IS NO ADDITIONAL COST AND THAT THE LARGER PLANT MATERIAL WILL NOT BE CUT DOWN IN ORDER TO CONFORM TO THE SIZE INDICATED.

G. ALL SHRUBS SHALL BE DENSE IN FORM. SHRUB LINERS DO NOT MEET THESE SPECIFICATIONS. SHRUBS SPECIFIED BY HEIGHT SHALL HAVE A SPREAD THAT IS EQUAL TO THE HEIGHT MEASUREMENT. SHRUBS WHICH ARE SPECIFIED BY SPREAD SHALL EXHIBIT THE NATURAL GROWTH HABIT OF THE PLANT BY HAVING A GREATER SPREAD THAN HEIGHT.

H. ALL PLANT MATERIALS ARE SUBJECT TO INSPECTION AND APPROVAL. THE LANDSCAPE ARCHITECT AND OWNER RESERVE THE RIGHT TO SELECT AND TAG ALL PLANT MATERIAL AT THE NURSERY PRIOR TO PLANTING. THE LANDSCAPE ARCHITECT AND OWNER RESERVE THE RIGHT TO INSPECT PLANT MATERIAL FOR SIZE AND CONDITION OF ROOT SYSTEMS, THE PRESENCE OF INSECTS AND DISEASES, INJURIES AND LATENT DEFECTS (DUE TO CONTRACTOR NEGLIGENCE OR OTHERWISE), AND TO REJECT UNACCEPTABLE PLANT MATERIAL AT ANY TIME DURING PROGRESS OF THE PROJECT.

I. CONTAINER GROWN DECIDUOUS AND/OR EVERGREEN SHRUBS WILL BE ACCEPTABLE IN LIEU OF BALLED AND BURLAPPED SHRUBS SUBJECT TO SPECIFIED LIMITATIONS FOR CONTAINER GROWN STOCK. SIZE OF CONTAINER GROWN MATERIAL MUST CONFORM TO SIZE/HEIGHT REQUIREMENTS OF PLANT LIST.

1-03 DELIVERY, STORAGE & HANDLING:

A. FERTILIZER SHALL BE DELIVERED IN ORIGINAL, UNOPENED AND UNDAMAGED PACKAGING. CONTAINERS SHALL DISPLAY WEIGHT, ANALYSIS AND MANUFACTURER'S NAME. STORE FERTILIZER IN A MANNER THAT WILL PREVENT WETTING AND DETERIORATION.

B. TAKE ALL PRECAUTIONS CUSTOMARY CONCERNING PROPER TRADE PRACTICE IN PREPARING PLANTS FOR TRANSPORT. PLANTS SHALL BE DUG, PACKED AND TRANSPORTED WITH CARE TO ENSURE PROTECTION AGAINST INJURY. INSPECTION CERTIFICATES REQUIRED BY LAW SHALL ACCOMPANY EACH SHIPMENT INVOICE OR ORDER TO STOCK AND ON ARRIVAL, THE CERTIFICATE SHALL BE FILED WITH THE LANDSCAPE ARCHITECT . ALL PLANTS MUST BE PROTECTED FROM DRYING OUT. IF PLANT MATERIAL CANNOT BE PLANTED IMMEDIATELY UPON DELIVERY, SAID MATERIAL SHOULD BE PROPERLY PROTECTED IN A MANNER THAT IS ACCEPTABLE TO THE LANDSCAPE ARCHITECT . HEELED-IN PLANTS MUST BE WATERED DAILY. NO PLANT SHALL BE BOUND WITH ROPE OR WIRE IN A MANNER THAT COULD STRIP BARK OR BREAK OR SHEAR BRANCHES.

C. PLANT MATERIAL TRANSPORTED ON OPEN VEHICLES SHOULD BE COVERED WITH A PROTECTIVE COVERING TO PREVENT WIND BURN.

D. DRY, LOOSE TOPSOIL SHALL BE PROVIDED FOR PLANTING BED MIXES. MUDDY OR FROZEN TOPSOIL IS UNACCEPTABLE AS WORKING WITH MEDIUM IN THIS CONDITION WILL DESTROY ITS STRUCTURE, MAKING ROOT DEVELOPMENT MORE DIFFICULT.

1-04 PROJECT CONDITIONS:

A. NOTIFY LANDSCAPE ARCHITECT AT LEAST SEVEN (7) WORKING DAYS PRIOR TO INSTALLATION OF PLANT MATERIAL.

B. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING ABOVE AND BELOW GROUND UTILITIES. UTILITIES CAN BE LOCATED AND MARKED (IN ILLINOIS) BY CALLING J.U.L.I.E. AT (800)892-0123.

C. THE CONTRACTOR SHALL PROVIDE, AT HIS/HER OWN EXPENSE, PROTECTION AGAINST TRESPASSING AND DAMAGE TO SEEDED AREAS, PLANTED AREAS, AND OTHER CONSTRUCTION AREAS UNTIL THE PRELIMINARY ACCEPTANCE. THE CONTRACTOR SHALL PROVIDE BARRICADES, TEMPORARY FENCING, SIGNS, AND WRITTEN WARNING OR POLICING AS MAY BE REQUIRED TO PROTECT SUCH AREAS. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY THE OWNER AFTER SUCH WARNING HAS BEEN ISSUED.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF CROWNS, TRUNKS AND ROOTS OF EXISTING TREES, PLUS SHRUBS, LAWNS, PAVED AREAS AND OTHER LANDSCAPED AREAS THAT ARE TO REMAIN INTACT. EXISTING TREES, WHICH MAY BE SUBJECT TO CONSTRUCTION DAMAGE, SHALL BE BOXED, FENCED OR OTHERWISE PROTECTED BEFORE ANY WORK IS STARTED. THE OWNER DESIRES TO PRESERVE THOSE TREES WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION EXCEPT THOSE SPECIFICALLY INDICATED TO BE REMOVED ON THE DRAWINGS. THE CONTRACTOR SHALL ERECT PROTECTIVE TREE FENCING AND TREE ARMOR AT LOCATIONS INDICATED ON THE DRAWINGS AND AROUND ALL TREES ON SITE WHICH ARE TO BE PRESERVED. PROTECTIVE FENCING SHALL BE ERECTED BETWEEN THE LIMITS OF CONSTRUCTION AND ANY TREE PRESERVATION AREAS SHOWN ON THE DRAWINGS.

E. A COMPLETE LIST OF PLANTS INCLUDING A SCHEDULE OF SIZES, QUANTITIES AND OTHER REQUIREMENTS IS SHOWN ON THE DRAWINGS AND ON THE BID FORM. IN THE EVENT THAT QUANTITY DISCREPANCIES OR MATERIAL OMISSIONS OCCUR IN THE PLANT MATERIALS LIST, THE PLANTING PLANS SHALL GOVERN.

1-05 PRELIMINARY ACCEPTANCE:

A. ALL PLANTINGS SHALL BE MAINTAINED BY THE CONTRACTOR FOR A PERIOD OF 90 DAYS AFTER PRELIMINARY ACCEPTANCE BY THE OWNER OR HIS/HER REPRESENTATIVE. MAINTENANCE SHALL INCLUDE, BUT IS NOT LIMITED TO: MOWING AND EDGING TURF, PULLING WEEDS, WATERING TURF AND PLANT MATERIAL AND ANNUAL FLOWER MAINTENANCE.

1-06 WARRANTY:

A. ALL PLANT MATERIAL (EXCLUDING ANNUAL COLOR), SHALL BE WARRANTEED FOR ONE (1) YEAR AFTER THE END OF THE 90 DAY MAINTENANCE PERIOD. THE END OF THE MAINTENANCE PERIOD IS MARKED BY THE FINAL ACCEPTANCE OF THE CONTRACTOR'S WORK BY THE OWNER OR HIS/HER REPRESENTATIVE. PLANT MATERIALS WILL BE WARRANTEED AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND THE CONTROL OF THE CONTRACTOR. THE WARRANTY COVERS A MAXIMUM OF ONE REPLACEMENT PER ITEM.

PART 2 - PRODUCTS

2-01 PLANT MATERIALS:

A. PLANTS: PROVIDE TYPICAL OF THEIR SPECIES OR VARIETY, WITH NORMAL, DENSELY DEVELOPED BRANCHES AND VIGOROUS, FIBROUS ROOT SYSTEMS. ONLY SOUND, HEALTHY, VIGOROUS PLANTS WHICH ARE FREE FROM SUNSCALD INJURIES, DISFIGURING KNOTS, FROST CRACKS, ABRASIONS OF THE BARK, PLANT DISEASES, INSECT EGGS, BORERS, AND ALL FORMS OF INFESTATION SHALL BE PROVIDED. ALL PLANTS SHALL HAVE A FULLY DEVELOPED FORM WITHOUT VOIDS AND OPEN PATCHES.
   1. BALLED AND BURLAPPED PLANTS SHALL HAVE A FIRM NATURAL BALL OF EARTH OF SUFFICIENT DIAMETER AND DEPTH TO ENCOMPASS A ROOT SYSTEM NECESSARY FOR A FULL RECOVERY OF THE PLANT. ROOT BALL SIZES SHALL COMPLY WITH THE LATEST EDITION OF THE 'AMERICAN STANDARDS FOR NURSERY STOCK' (ASNS). ROOT BALLS THAT ARE CRACKED OR MUSHROOMED ARE UNACCEPTABLE.
   2. CONTAINER GROWN STOCK SHOULD BE GROWN FOR AN AMOUNT OF TIME THAT IS OF SUFFICIENT LENGTH FOR THE ROOT SYSTEM TO HAVE DEVELOPED ENOUGH TO HOLD ITS SOIL TOGEHTER, FIRM AND WHOLE. PLANTS WILL NOT BE LOOSE IN THEIR CONTAINERS, NOR SHALL THEY BE POT-BOUND AND ALL CONTAINER GROWN STOCK WILL COMPLY WITH THE SIZES STATED ON THE PLANT LIST.
   3. NO EVIDENCE OF WOUNDS OR PRUNING CUTS SHALL BE ALLOWED UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.
   4. EVERGREEN TREES SHALL BE BRANCHED TO THE GROUND. THE HEIGHT OF EVERGREEN TREES ARE DETERMINED BY MEASURING FROM THE GROUND TO THE FIRST LATERAL BRANCH CLOSEST TO THE TOP. HEIGHT AND/OR WIDTH OF OTHER TREES ARE MEASURED BY THE MASS OF THE PLANT NOT THE VERY TIP OF THE BRANCHES.
   5. SHRUBS AND SMALL PLANTS SHALL MEET THE REQUIREMENTS FOR SPREAD AND/OR HEIGHT INDICATED IN THE PLANT LIST. THE HEIGHT MEASUREMENT SHALL BE TAKEN FROM GROUND LEVEL TO THE AVERAGE HEIGHT OF THE TOP OF THE PLANT, NOT THE LONGEST BRANCH. SINGLE STEM OR THIN PLANTS WILL NOT BE ACCEPTED. SIDE BRANCHES SHALL BE FLUSHED WITH GROWTH AND HAVE GOOD FORM TO THE GROUND. PLANTS SHALL BE IN A MOIST, VIGOROUS CONDITION, FREE FROM DEAD WOOD, BRUISES OR OTHER ROOT OR BRANCH INJURIES.

2-02 ACCESSORIES:

A. TOPSOIL:
   1. TOPSOIL SHALL BE FERTILE, NATURAL TOPSOIL OF A LOAMY CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL. TOPSOIL SHALL BE REASONABLY FREE FROM CLAY, LUMPS, COARSE SAND, STONES, PLANTS, ROOTS, STICKS AND OTHER FOREIGN MATERIALS WITH A PH BETWEEN 6.5 TO 7.0.

B. TOPSOIL FOR SEED AREAS SHALL BE A MINIMUM OF 6".

C. SOIL AMENDMENTS SHALL BE AS FOLLOWS:
   1. FOR TREES AND SHRUBS THE PLANT PIT WILL BE BACKFILLED WITH PULVERIZED BLACK DIRT.
   2. FOR PERENNIALS AND ORNAMENTAL GRASSES THE SOIL MIXTURE WILL BE AS FOLLOWS: CM-63 GENERAL PURPOSE PEAT BASED MIX AS SUPPLIED BY MIDWEST TRADING. TOP BEDS WITH 8" OF CM-63 AND TILL INTO EXISTING BEDS TO A DEPTH OF 8". SOIL MIXTURES ARE AVAILABLE FROM MIDWEST TRADING. MIDWEST TRADING, ST. CHARLES, IL 60174 (630) 365-1990

D. FERTILIZER:
   1. FOR TREES AND SHRUBS USE: 14-4-6 BRIQUETTES 17 G OR EQUIVALENT AVAILABLE FROM ARTHUR CLESEN, INC. FOLLOW MANUFACTURER'S RECOMMENDATION FOR APPLICATION. ARTHUR CLESEN, INC. 543 DIENS DRIVE, WHEELING, IL 60090 (847)537-2177
   2. FOR TURF AREAS USE 6-24-16 CLESEN FAIRWAY WITH MICRONUTRIENTS WITH MINOR ELEMENTS 3.0 % S, .02% B, .05% CU, 1.0% FE, .0006% MO, .10% MN AVAILABLE FROM ARTHUR CLESEN OR APPROVED EQUAL.

E. HERBICIDE:
   1. ROUND-UP OR APPROVED EQUAL

F. MULCH:
   1. BARK MULCH SHALL BE FINELY SHREDDED HARDWOOD BARK WHICH HAS BEEN SCREENED AND IS FREE OF ANY GREEN FOLIAGE, TWIGS, ROCKS, SAWDUST, WOOD SHAVINGS, GROWTH OR GERMINATION INHIBITING INGREDIENTS, OR OTHER FOREIGN MATERIALS. BARK MULCH IS AVAILABLE FROM MIDWEST TRADING.
   2. MUSHROOM COMPOST AS AVAILABLE FROM MIDWEST TRADING.

G. WATER:
   1. WATER SERVICE WILL BE AVAILABLE ON THE SITE, WITH THE COST OF WATER BEING PAID BY THE OWNER. TRANSPORTING OF THE WATER FROM THE SOURCE TO THE WORK AREAS SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. ALL NECESSARY HOSE, PIPING, TANK TRUCK, ETC. SHALL BE SUPPLIED BY THE LANDSCAPE CONTRACTOR.

H. GUYING:
   1. STAKES: 5/8" X 40" STEEL EYE ANCHOR WITH 4" HELIX
   2. CABLE:
      a. TREES UNDER 5": FLEXIBLE 1/8" GALVANIZED AIRCRAFT CABLE, 7X7 STRAND OR APPROVED EQUAL
      b. TREES 5" AND OVER: FLEXIBLE 3/16" GALVANIZED AIRCRAFT CABLE, 7X7 STRAND OR APPROVED EQUAL.
   3. TURNBUCKLES: 5/16", EYE AND EYE, WITH 4" TAKEUP.
   4. HOSE: NEW TWO-PLY REINFORCED RUBBER HOSE, MINIMUM 1/2" I.D.

I. TREE WRAP: BURLAP TREE WRAP 4" WIDE.

J. TWINE: SOFT NURSERY JUTE.

PART 3 - INSTALLATION OF PLANT MATERIAL

3-01 FIELD VERIFICATION:

A. EXAMINE PROPOSED PLANTING AREAS AND CONDITIONS OF INSTALLATION. DO NOT START PLANTING WORK UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED.

3-02 PREPARATION:

A. ALL PLANTING TECHNIQUES AND METHODS SHALL BE CONSISTENT WITH THE LATEST EDITION OF 'HORTICULTURE STANDARDS OF NURSERYMEN, INC.' AND AS DETAILED ON THESE DRAWINGS.

B. PLANTING SHALL BE PERFORMED BY EXPERIENCED WORKMEN FAMILIAR WITH PLANTING PROCEDURES UNDER THE SUPERVISION OF A QUALIFIED SUPERVISOR.

C. ALL UNDERGROUND UTILITIES MUST BE LOCATED AND MARKED CLEARLY.

D. APPLY ROUND-UP OR APPROVED EQUIVALENT TO KILL ANY EXISTING VEGETATION IN ALL AREAS TO BE PLANTED. CONFIRM LENGTH OF WAITING PERIOD BETWEEN CHEMICAL APPLICATION AND PLANT INSTALLATION WITH MANUFACTURER. DO NOT BEGIN PLANTING OPERATIONS UNTIL PRESCRIBED POST-APPLICATION WAITING PERIOD HAS ELAPSED. TAKE EXTREME CARE TO AVOID CHEMICAL DRIFT TO ADJOINING PROPERTIES OF LANDSCAPE PLANTINGS.

E. PRIOR TO ALL PLANTING, ROTOTILL ALL AREAS TO BE LANDSCAPED TO PREPARE FOR PLANT INSTALLATION TO A MINIMUM DEPTH OF 12". ELIMINATE UNEVEN AREAS AND LOW SPOTS. MAINTAIN LINES, LEVELS, PROFILES AND CONTOUR. CHANGES IN GRADE ARE TO BE GRADUAL. BLEND SLOPES INTO LEVEL AREAS. REMOVE ALL DEBRIS, WEEDS AND UNDESIRABLE PLANTS AND THEIR ROOTS FROM AREAS TO BE PLANTED. REMOVE ALL CONCRETE SLAG LARGER THAN 2" IN DIAMETER.

F. TOPSOIL SHALL BE SPREAD OVER THE SITE AT A MINIMUM DEPTH OF 6". FOR THOSE AREAS WHICH ARE INDICATED AS PRAIRIE OR NATURAL AREAS ON THE DRAWINGS, A TOPSOIL DEPTH OF 18" IS RECOMMENDED WHERE POSSIBLE.

G. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO PREPARE ALL SEEDED AREAS BY DISKING AND RAKING PRIOR TO PLANTING SEED. SOIL SHALL BE LOOSENED AND SCARIFIED TO A MINIMUM DEPTH OF 6". FINE GRADING OF ALL SEEDED AREAS IS REQUIRED. MAXIMUM SIZE OF STONE OR TOPSOIL LUMP IS 1".

H. LOCATE ALL PLANT MATERIAL AS INDICATED OR AS APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT. IF OBSTRUCTIONS ARE ENCOUNTERED WHICH ARE NOT SHOWN ON THE DRAWINGS, THEN DO NOT PROCEED WITH PLANTING OPERATIONS UNTIL ALTERNATE PLANT LOCATIONS HAVE BEEN SELECTED.

I. PLANTING HOLES SHALL BE CONSTRUCTED AS SHOWN ON THE PLANTING DETAILS. HOLES SHALL BE HAND DUG OR MACHINE DUG. GREAT CARE WILL BE TAKEN TO NOT EXCAVATE THE HOLE DEEPER THAN THE ROOT BALL AND THE DIAMETER SHALL BE A MINIMUM OF TWO TIMES THE ROOT BALL WIDTH. REMOVE ANY MATERIALS ENCOUNTERED IN EXCAVATION THAT MAY BE INJURIOUS TO PLANT GROWTH, INCLUDING STONES LARGER THAN 2" IN DIAMETER OR OTHER DEBRIS. SOIL TO BE USED AS BACKFILL SHOULD BE PULVERIZED.

J. PROVIDE PRE-MIXED PLANTING MIXTURE FOR USE AROUND ROOT SYSTEMS AND ROOT BALLS OF THE PLANTS. THE MIXTURES ARE OUTLINED IN SECTION B OF PART 2-02.

K. PRIOR TO PLANTING, PROVIDE ADDITIONAL TOPSOIL TO ALL PLANTING BEDS TO BRING THE FINISH GRADE OF THE BED TO 2" ABOVE LAWN GRADE AND TO FINISH GRADE OF ADJACENT HARD SURFACE GRADES.

L. ADD 2" THICKNESS OF MUSHROOM COMPOST TO ALL ANNUAL, PERENNIAL AND GROUNDCOVER BEDS. FINISH GRADE BED AND INSTALL PLANTS.

3-03 PLANTING PROCEDURES:

A. SET PLANT MATERIAL IN THE PLANTING HOLE TO PROPER GRADE AND ALIGNMENT. SET PLANTS UPRIGHT AND PLUMB. SET PLANT MATERIAL 2" ABOVE THE ADJACENT FINISH GRADE. REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL. REMOVE TREATED BURLAP (GREEN). CUT AND REMOVE OR CUT AND FOLD DOWN UPPER HALF OF WIRE BASKET, DEPENDENT UPON TREE SIZE. BACKFILL HOLE BY FIRMLY TAMPING SOIL TO AVOID ANY AIR POCKETS OR VOIDS.

B. SET BALLED AND BURLAPPED PLANTS IN THE PLANTING HOLE AND COMPACT 8" OF SOIL AROUND THE BASE OF THE BALL. BACKFILL REMAINING SPACE WITH PLANTING MIXTURE. WATER PLANTS IMMEDIATELY AFTER PLANTING TO ELIMINATE ALL VOIDS AND THOROUGHLY SOAK THE PLANT ROOT BALL.

C. SPACE GROUNDCOVER PLANTS ACCORDING TO DIMENSIONS GIVEN ON THE PLANS. ADJUST SPACING AS NECESSARY TO EVENLY FILL PLANTING BED WITH INDICATED NUMBER OF PLANTS. PLANT TO WITHIN 18" OF THE TRUNKS OF TREES AND SHRUBS OR AT THE EDGE OF THE PLANT BALL, WHICHEVER IS CLOSEST. PLANT TO WITHIN 12" OF EDGE OF BED.

D. MULCHING:
   1. INSTALL 4" DEPTH OF MULCH AROUND ALL TREE AND SHRUB BEDS AS INDICATED ON DRAWINGS OR PLANTING DETAILS. MULCH SHRUB PLANTING AREAS AS CONTINUOUS BEDS. DO NOT PLACE MULCH DIRECTLY AGAINST TREE TRUNK; FORM MULCH TO CREATE AN INVERTED CONE AROUND TRUNK.
   2. MULCH PERENNIAL, GROUNDCOVER AND ANNUAL PLANTING BEDS WITH 2" MUSHROOM COMPOST. WATER MULCHED AREAS THOROUGHLY AFTER PLACING MULCH.

E. TREE WRAPPING IS NOT REQUIRED, UNLESS THE CONTRACTOR FEELS IT IS NECESSARY DUE TO CHARACTERISTICS OF A PARTICULAR SPECIES OR PAST EXPERIENCE WITH THE SPECIES. THE LANDSCAPE ARCHITECT WILL BE NOTIFIED AS TO WHICH TREES ARE TO BE WRAPPED AND SHALL INSPECT THE TRUNK(S) BEFORE WRAPPING. TREE WRAP WILL NOT BE USED TO COVER DAMAGE OR DEFECTS. WHEN WRAPPING IS DONE, TRUNKS WILL BE WRAPPED SPIRALLY WITH APPROVED TREE WRAPPING TAPE THAT IS NOT LESS THAN 4" WIDE, AND SECURELY TIED WITH SUITABLE CORD AT THE TOP, BOTTOM AND 2" INTERVALS ALONG THE TRUNK. WRAP FROM GROUND TO THE HEIGHT OF THE FIRST BRANCH.

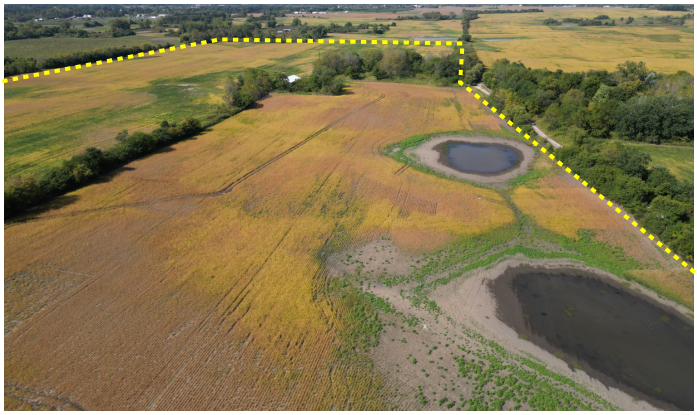
F. STAKING AND GUYING OF TREES IS OPTIONAL. IF THE CONTRACTOR CHOOSES TO STAKE ALL OR PART OF THE TREES, HE/SHE SHALL USE THE METHOD SPECIFIED IN THE PLANTING DETAILS. ONE (1) STAKE IS TO BE USED ON TREES OF 1" CALIPER AND UNDER, OR 4' HEIGHT AND UNDER. TWO (2) STAKES ARE TO BE USED ON TREES OF 1" TO 2 3/4" CALIPER. GUY TREES OF 3" CALIPER OR LARGER AT THREE (3) PER TREE. THE ROOT BALL WILL NOT BE PIERCED WITH A STAKE. STAKES ARE TO BE DRIVEN AT LEAST EIGHTEEN (18) INCHES INTO SUBSOIL BELOW THE PLANTING HOLE. STAKES AND WIRE ATTACHMENTS SHALL BE REMOVED AFTER THREE MONTHS FOR SPRING PLANTED MATERIAL AND BY THE FOLLOWING MAY FOR FALL PLANTED STOCK BY THE CONTRACTOR. STAKING AND GUYING SHOULD BE DONE IMMEDIATELY AFTER LAWN SEEDING OR SODDING OPERATIONS.

G. SEEDING OF SPECIFIED LAWN AREAS ON PLANS WILL BE TREATED AS FOLLOWS:
   1. TOPSOIL SHALL BE SPREAD OVER ALL AREAS TO BE SEEDED TO A MINIMUM DEPTH OF 6" WHEN COMPACTED (TO BE PERFORMED BY OTHERS).
   2. SEED MIXTURE AND APPLICATION RATE - USE PREMIUM SEED MIX AS SUPPLIED BY ARTHUR CLESEN, INC. APPLY AT A RATE OF 5 LBS./1000 S.F.
   3. APPLY FERTILIZERS AND CONDITIONERS AT THE RATE SPECIFIED PER SOIL TEST FINDINGS. IN LIEU OF SOIL TEST RESULTS, APPLY TWO (2) TONS OF GROUND AGRICULTURAL LIMESTONE AND 1000 LBS. 10-10-10 OR EQUIVALENT ANALYSIS FERTILIZER PER ACRE. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE OF AN ORGANIC ORIGIN.
   4. SOIL PREPARATION AREAS WHERE VEHICULAR TRAFFIC HAS COMPACTED THE SOIL SHALL BE LOOSENED/SCARIFIED TO A MINIMUM DEPTH OF 6" BEFORE FERTILIZING AND SEEDING. FINE GRADING OF ALL SEEDED AREAS IS REQUIRED. MAXIMUM SIZE OF STONE OR TOPSOIL LUMP IS 1".
   5. WATERING SEEDED AREAS SHALL BE DONE TO ENSURE PROPER GERMINATION. ONCE SEEDS HAVE GERMINATED, WATERING MAY BE DECREASED BUT THE SEEDLINGS MUST NEVER BE ALLOWED TO DRY OUT COMPLETELY. FREQUENT WATERING SHOULD BE CONTINUED APPROXIMATELY FOUR (4) WEEKS AFTER GERMINATION OR UNTIL GRASS HAS BECOME SUFFICIENTLY ESTABLISHED TO WARRANT WATERING ON AN 'AS NEEDED' BASIS.
   6. TURF IS BEING ESTABLISHED ON A VARIETY OF SLOPE CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND IMPLEMENT WHATEVER PROCEDURES HE/SHE DEEMS NECESSARY TO ESTABLISH THE TURF AS PART OF HIS/HER WORK. SEEDED AREAS WILL BE ACCEPTED WHEN ALL AREAS SHOW A UNIFORM STAND OF THE SPECIFIED GRASS IN HEALTHY CONDITION AND AT LEAST 90 DAYS HAVE ELAPSED SINCE THE COMPLETION OF THIS WORK. THE CONTRACTOR SHALL SUBMIT WITH HIS/HER BID A DESCRIPTION OF THE METHODS AND PROCEDURES HE/SHE INTENDS TO USE.

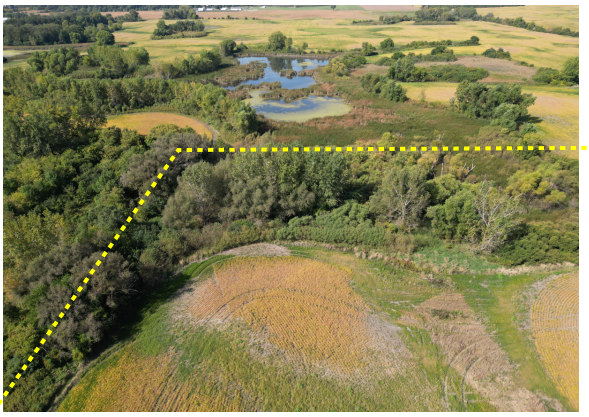
H. EROSION CONTROL BLANKET
   1. EROSION CONTROL BLANKET SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION IN ALL AREAS SHOWN ON THE PLAN.
   2. INSTALL S-75 EROSION CONTROL BLANKET AS MANUFACTURED BY NORTH AMERICAN GREEN OR APPROVED EQUAL.
   3. BLANKET SHOULD BE PREMARKED WITH STAPLE PATTERN.
   4. STAPLES SHOULD BE 8" WIRE STAPLES, APPLIED AT TWO (2) PER SQUARE YARD MINIMUM.
   5. SUITABLE EROSION CONTROL PRACTICES SHALL BE MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH ILLINOIS URBAN MANUAL AND ALL APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCES AND THE PLANS.

I. SODDING OF SPECIFIED LAWN AREAS ON PLANS WILL BE COMPLETED AS FOLLOWS:
   1. RAKE SOIL SURFACE TO RECEIVE SOD TO COMPLETELY REMOVE ANY SOIL CRUST NO MORE THAN ONE DAY PRIOR TO LAYING SOD.
   2. MOISTEN PREPARED SURFACE IMMEDIATELY PRIOR TO LAYING SOD. WATER THOROUGHLY AND ALLOW SURFACE MOISTURE TO DRY BEFORE PLANTING LAWNS. DO NOT CREATE A MUDDY SOIL CONDITION.
   3. SOD SHALL BE LAID WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT PLANT DORMANT SOD OR IF THE GROUND IS FROZEN.
   4. LAY SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS; DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES. WORK FROM BOARDS TO AVOID DAMAGE TO SUBGRADE OR SOD. WORK SIFTED SOIL INTO MINOR CRACKS BETWEEN PIECES OF SOD; REMOVE EXCESS TO AVOID SMOTHERING OF ADJACENT SOD.
   5. PLACE TOP ELEVATION OF SOD 1/2 INCH BELOW ADJOINING EDGING OR PAVING.
   6. WATER SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING.
   7. AFTER SOD AND SOIL HAVE DRIED, ROLL SEEDED AREAS TO ENSURE A GOOD BOND BETWEEN THE SOD AND SOIL, AND TO REMOVE MINOR DEPRESSIONS AND IRREGULARITIES.
   8. SODDED SLOPES 3:1 OR GREATER SHALL BE STAKED TO PREVENT EROSION AND WASHOUT.
   9. WARRANTY SODDING FOR A PERIOD OF ONE (1) YEAR FROM THE END OF THE 90 DAY MAINTENANCE PERIOD. IF SOD FAILS OR LACKS VIGOR AND FULL GROWTH AS DETERMINED BY THE LANDSCAPE ARCHITECT, THE CONTRACTOR WILL REPEAT SITE PREPARATION OPERATIONS AND RE-SOD AFFECTED AREAS AT THE CONTRACTOR'S EXPENSE.
   10. NOTE: SOD SHALL BE A PREMIUM KENTUCKY BLUEGRASS BLEND, AND IS REQUIRED IN ALL AREAS INDICATED ON THE PLANS AS WELL AS AREAS WHICH HAVE BEEN AFFECTED BY CONSTRUCTION. SOD CAN BE PLACED AS LONG AS WATER IS AVAILABLE AND THE GROUND SURFACE CAN BE PROPERLY PREPARED. SOD SHALL NOT BE LAID ON FROZEN OR SNOW-COVERED GROUND. SOD SHALL BE STRONGLY ROOTED, NOT LESS THAN TWO (2) YEARS OLD AND FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. SOD SHOULD BE MACHINE CUT TO PAD THICKNESS OF 3/4" (PLUS OR MINUS 1/4"), EXCLUDING TOP GROWTH AND THATCH. PROVIDE ONLY SOD CAPABLE OF VIGOROUS GROWTH AND DEVELOPMENT WHEN PLANTED (VIABLE, NOT DORMANT). PROVIDE SOD OF UNIFORM PAD SIZES WITH MAXIMUM 5% DEVIATION IN EITHER LENGTH OR WIDTH. BROKEN PADS OR PADS WITH UNEVEN ENDS WILL NOT BE ACCEPTABLE. SOD PADS INCAPABLE OF SUPPORTING THEIR OWN WEIGHT WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10% OF PAD WILL NOT BE ACCEPTABLE.

J. TIMING OF PLANT MATERIAL AND SEEDING OPERATIONS:
   1. SEEDING OF SPECIFIED AREAS SHALL OCCUR WHEN THE SOIL TEMPERATURE IS ABOVE 55° F. NO SEED SHALL BE SOWN DURING PERIODS OF HIGH WINDS, OR WHEN THE GROUND IS NOT IN PROPER CONDITION FOR SEEDING (SEE SECTION 3-02 (G)). SEEDING OPERATIONS FOR THE SPECIFIED MIXES SHALL OCCUR IN THE SPRING TIME FRAME OF APRIL 15 THROUGH JUNE 30 AND IN THE SUMMER TIME FRAME OF AUGUST 15 THROUGH DECEMBER 1. THE MIXES CONTAINING BLUEGRASS AND FESCUE SEED MUST HAVE SIX WEEKS TO HARDEN OFF FOR WINTER SURVIVAL.
   2. SOD SHALL BE INSTALLED WHEN THE GROUND IS NOT FROZEN OR SNOW COVERED AND TEMPERATURES ARE LESS THAN 80° F. IT SHALL NOT BE PLACED DURING A PERIOD OF EXTENDED DROUGHT.
   3. HERBACEOUS ORNAMENTAL PLANTS SHALL BE PLANTED BETWEEN MAY 1 AND JUNE 15 OR BETWEEN AUGUST 15 AND DECEMBER 1.
   4. SPRING PLANTING OF WOODY ORNAMENTAL PLANTS SHALL BE PERFORMED FROM THE TIME THE SOIL CAN BE EASILY WORKED UNTIL JUNE 1, EXCEPT THAT EVERGREEN PLANTING SHALL END ON MAY 15. OAK, HAWTHORN AND RED MAPLE SPECIES WILL ONLY BE PLANTED DURING THIS SPRING PLANTING PERIOD. FALL PLANTING WILL BEGIN AUGUST 15 AND WILL CONTINUE UNTIL THE GROUND CANNOT BE WORKED SATISFACTORILY, EXCEPT THAT EVERGREEN PLANTING SHALL BE PERFORMED BETWEEN AUGUST



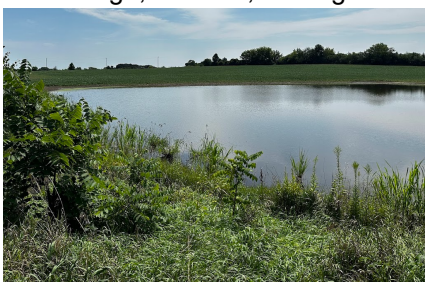
Above Rt 83, looking west, along Winchester



Wetlands, SW corner, looking west

North edge, mid-site, looking east to Rt 83

Winchester Rd, looking east, development to right



North edge, mid-site, looking SE

Exist. pole barn

Exist. tree, mid-site

Photo 1

Area 7 – Off-Site to Northwest

Photo 2

Area 1 – West View

Photo 3

Area 3 -Farmed Wetland in Southeast Area of Site

Photo 4

Area 9 – Farmed Wetland in Northeast Area of Site

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June 20, 2025

Isabel Guadarrama, Senior Planner
Village of Mundelein
300 Plaza Circle
Mundelein, IL 60060

RE: SECOND SUBMITTAL COVER LETTER
SW CORNER OF ROUTE 83 & WINCHESTER ROAD - *WALNUT RIDGE*

Dear Isabel,

Enclosed, please find re-submittal documentation associated with the request of Pulte Home Company, LLC ("Applicant"). Shown below are the documents that we are electronically re-submitting (the "Re-Submittal Documents") to the Village in support of our proposed project of Walnut Ridge.

1. Draintile Survey
2. Lot Fix Exhibit
3. Lot Width Exhibit
4. Elevations
5. Plat Application *(original delivered to Village June 2nd)*
6. Preliminary Landscape Plan
7. PUD Site Plan
8. Response Comments from PBA to GHA
9. Response Comments to May Staff Comments (*Walnut Ridge and Winchester Annexation combined)*
10. Response to Standards Petition
11. Prelim Plat of Annexation
12. Prelim Plat of Subdivision
13. Prelim Storm Report
14. Prelim Engineering Plans
15. Proposed Signage Plan
16. Wetland PDJ
17. Wetland Water Delineation Report
18. Annexation Agreement* - *We anticipate getting this to you as soon as possible early next week. Thank you for your patience and understanding as we finalize these details to keep us on track for our targeted PZC date of July 16th.*

Should any additional documentation or hard copies be deemed necessary, we are certainly happy to work with the Village to that end. Please do not hesitate to call our office with any questions.

Sincerely,

McKenna Thomas

McKenna Thomas, Paralegal
Rosanova and Whitaker, Ltd.
mckenna@rw-attorneys.com | 630-355-4600 ext. 112

Traffic Impact Study
Proposed Residential Development
Mundelein, Illinois

Prepared For:

PULTE GROUP

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

March 18, 2025

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed residential development to be located in Mundelein, Illinois. The site, which is currently vacant, is located in the southwest corner of the intersection of IL 83 with Winchester Road. As proposed, the development will consist of 155 single-family homes. Access to the development will be provided via a new roadway intersecting with IL 83.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development.

Figure 1 shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes from traffic counts conducted in 2025.

2. No-Build Conditions – Analyzes the capacity of the future roadway system using existing traffic volumes increased by an ambient area growth factor as well as the traffic expected to be generated by other area developments.

3. Total Projected Conditions – Analyzes the capacity of the future roadway system using no-build traffic volumes increased by the traffic estimated to be generated by the proposed development.

Site Location **Figure 1**

Aerial View of Site **Figure 2**

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

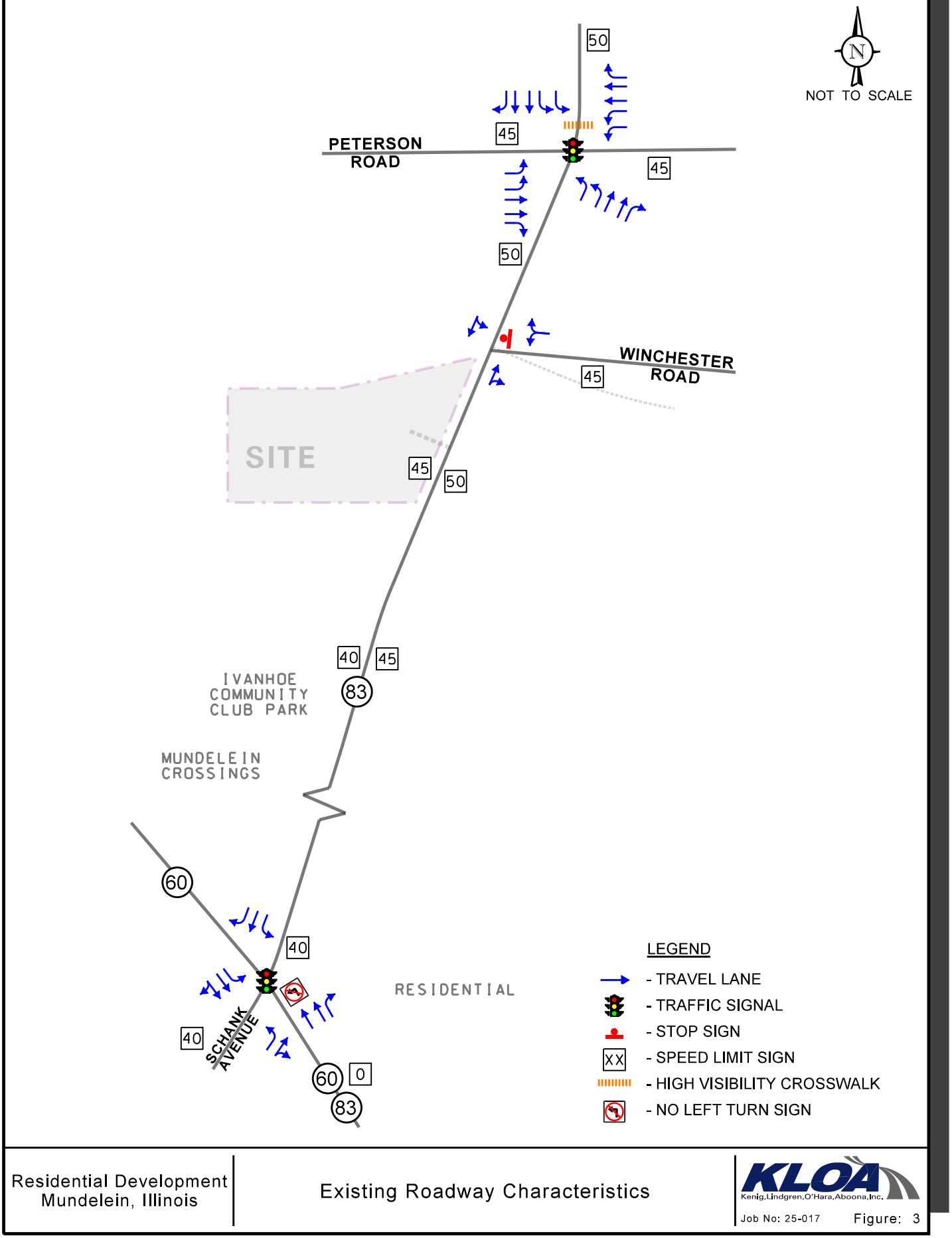
The development site is bounded by IL 83 to the east, agricultural/undeveloped land to the west and north, and residential properties to the south. Land uses in the immediate vicinity of the site are primarily agricultural and residential.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below and illustrated in **Figure 3**.

Illinois Route 83 (IL 83)/Schank Avenue is a north-south other principal arterial roadway that provides one lane in each direction, widening to two lanes through its intersection with Peterson Road. At its signalized intersection with IL 60, IL 83 runs concurrently with IL 60 on the east leg of the intersection. The south leg of the intersection is known as Schank Avenue. On the northbound approach, Schank Avenue provides left-turn lane and a combined through/right-turn lane. On the southbound approach, IL 83 provides a left-turn lane, a through lane, and a right-turn lane. At its signalized intersection with Peterson Road, IL 83 provides dual left turn lanes, two through lanes, and an exclusive right-turn lane on both approaches. A high-visibility crosswalk is provided on the north leg of the intersection. At its unsignalized intersection with Winchester Road, IL 83 provides one through in each direction and no exclusive turn lanes. IL 83 carries an annual average daily traffic (AADT) volume of 5,750 vehicles north of Peterson Road and 12,200 vehicles south of Peterson Road (IDOT 2023). Schank Avenue carries an AADT volume of 20,900 vehicles south of IL 60. IL 83 is under the jurisdiction of the Illinois Department of Transportation (IDOT) and is not designated as a Strategic Regional Arterial (SRA) Route. IL 83 has a posted speed limit of 50 miles per hour north of the proposed site frontage, 45 miles per hour between the proposed site frontage and Ivanhoe Community Club Park, and 40 miles per hour south of Ivanhoe Community Club Park.

Illinois Route 60 (IL 60) is an east-west other principal arterial roadway that provides two through lanes in each direction in the vicinity of the site. At its signalized intersection with IL 83/Schank Avenue, IL 60 provides two through lanes and a right-turn lane on the westbound approach and westbound left-turns are prohibited. On the eastbound approach, IL 60 provides a left-turn lane, a through lane, and a combined through/right-turn lane. IL 83 runs concurrently with IL 60 on the east leg of this intersection. IL 60 carries an AADT volume of 21,000 vehicles east of IL 83 and 17,400 vehicles west of IL 83 (IDOT 2023). IL 60 is under the jurisdiction of IDOT and has a posted speed limit of 40 miles per hour. IL 60 is not designated as an SRA route.



Residential Development
Mundelein, Illinois

Existing Roadway Characteristics

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Job No: 25-017 Figure: 3

Peterson Road (Lake County Highway A33) is an east-west roadway that provides two through lanes in each direction, generally divided by a landscaped median. East of IL 83, Peterson Road is classified as an other principal arterial, while west of IL 83 it is classified as a minor arterial. At its signalized intersection with IL 83, Peterson Road provides dual left-turn lanes, two through lanes, and an exclusive right-turn lane on both approaches. Peterson Road is under the jurisdiction of the Lake County Division of Transportation (LCDOT), is designated as a Strategic Regional Arterial (SRA) route east of IL 83 and has a posted speed limit of 45 miles per hour. According to the Illinois Department of Transportation (IDOT), Peterson Road carries an AADT volume of 18,700 vehicles east of IL 83 and 14,200 vehicles west of IL 83 (2023).

Winchester Road (Lake County Highway A34) is an east-west minor arterial roadway that extends east from IL 83 and provides one lane in each direction. At its unsignalized T-intersection with IL 83, Winchester Road provides a shared left-turn/right-turn lane on the westbound approach and is under stop sign control. Winchester Road is under the jurisdiction of LCDOT, is not classified as an SRA route, and has a posted speed limit of 45 miles per hour. Winchester Road carries an AADT volume of 6,250 vehicles (IDOT 2019). It should be noted that a no-outlet west leg of Winchester Road previously existed approximately 160 feet south of the east leg. This roadway is no longer a public road, Winchester Road signage has been removed and this roadway is now under private jurisdiction.

Planned IL 83 and Winchester Road Intersection Improvements

LCDOT is planning to improve the intersection of IL 83 with Winchester Road in 2025. These improvements will include the following:

- Realigning Winchester Road east of IL 83 such that it intersects IL 83 at an improved angle
- Providing a northbound right-turn lane on IL 83
- Providing a southbound left-turn lane on IL 83
- Widening Winchester Road east of IL 83 to provide sperate right-turn and left-turn lanes
- Installation of a traffic signal

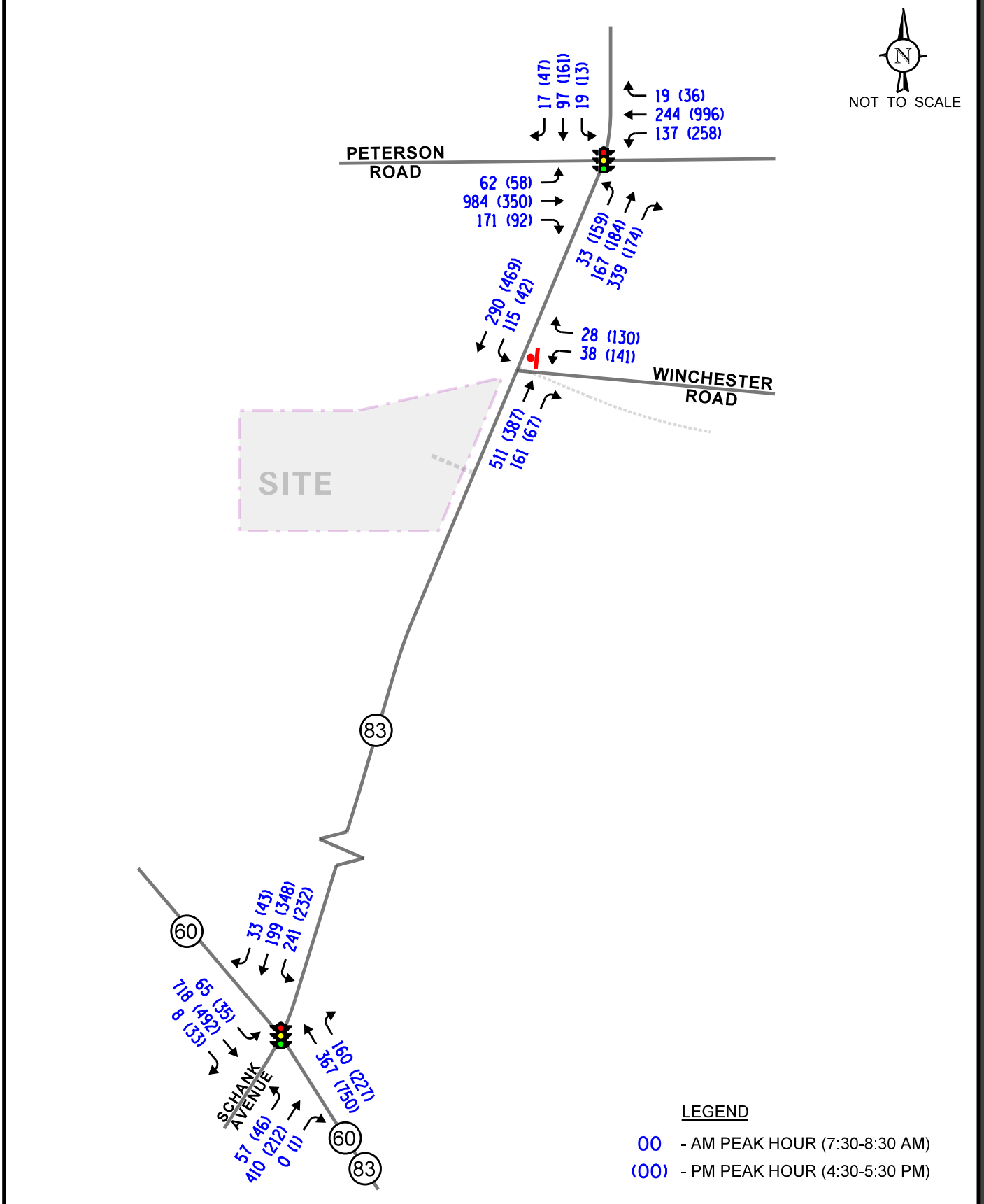
Per LCDOT, construction of these improvements are scheduled to start this year.

Existing Traffic Volumes

In order to determine current traffic conditions within the study area, peak period traffic classification counts were conducted at the following intersections:

- IL 83/Schank Avenue with IL 60
- IL 83 with Peterson Road
- IL 83 with Winchester Road

The traffic counts were conducted on Thursday, January 30, 2025, during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods. It should be noted that Fremont School District 79 was in session on the day the counts were conducted. The results of the traffic counts show that the peak hours of traffic generally occur from 7:30 to 8:30 A.M. during the weekday morning peak period and from 4:30 to 5:30 P.M. during the weekday evening peak period. The existing traffic volumes are illustrated in **Figure 4**.



Residential Development
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Existing Traffic Volumes

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Crash Data Summary

KLOA, Inc. obtained crash data[1] for the most recent available five years for the study area intersections. The crash data is summarized in **Tables 1** through **3**. A review of the crash data indicated that one crash during the review period was fatal. This crash occurred at IL 83 with Peterson Road in July 2022 in which an SUV hit a cyclist during darkness when conditions were clear and the roadway was dry.

TABLE 1
IL 83 WITH IL 60 – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	1	0	2	4	0	2	0	9
2020	0	0	2	3	0	2	0	7
2021	0	0	1	4	4	4	0	13
2022	0	0	0	5	0	3	1	9
2023	1	0	0	3	0	1	1	7
Total	**2**	**0**	**5**	**19**	**4**	**12**	**2**	**45**
Average	**<1.0**	**0.0**	**1.0**	**3.8**	**<1.0**	**2.2**	**<1.0**	**8.0**

TABLE 2
IL 83 WITH PETERSON ROAD – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	4	0	2	3	0	1	0	10
2020	1	0	0	2	0	2	0	5
2021	1	0	0	4	0	2	0	7
2022	0	0	0	2	0	3	2	7
2023	0	0	0	5	0	1	0	6
Total	**6**	**0**	**2**	**16**	**0**	**9**	**2**	**35**
Average	**1.2**	**0.0**	**<1.0**	**3.2**	**0.0**	**1.8**	**<1.0**	**7.0**

[1] IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. The author is responsible for any data analyses and conclusions drawn.

TABLE 3
IL 83 WITH WINCHESTER ROAD – CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Head On	Object	Rear End	Sideswipe	Turning	Other	Total
2019	0	0	0	3	0	5	0	8
2020	0	0	0	0	0	4	0	4
2021	0	0	3	1	0	1	1	6
2022	0	0	0	1	0	1	0	2
2023	0	0	1	2	0	1	0	4
Total	**0**	**0**	**4**	**7**	**0**	**12**	**1**	**24**
Average	**0.0**	**0.0**	**<1.0**	**1.4**	**0.0**	**2.4**	**<1.0**	**4.8**

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As proposed, the development will consist of 155 single-family homes. Access to the site will be provided via a new roadway intersecting IL 83 approximately 1225 feet south of Winchester Road. The access road will be designed to provide one inbound lane and two outbound lanes striped to indicate an exclusive left turn lane and an exclusive right turn lane. The outbound movements will be under stop sign control. As discussed later in this report, turn lanes on IL 83 at this access roadway will be warranted. It should be noted that the plans call for the extension of the internal roadway system to the west and south to provide for cross access connections to the future developments of the adjacent parcels.

A copy of the preliminary site plan and geometrics plan is included in the Appendix.

Directional Distribution

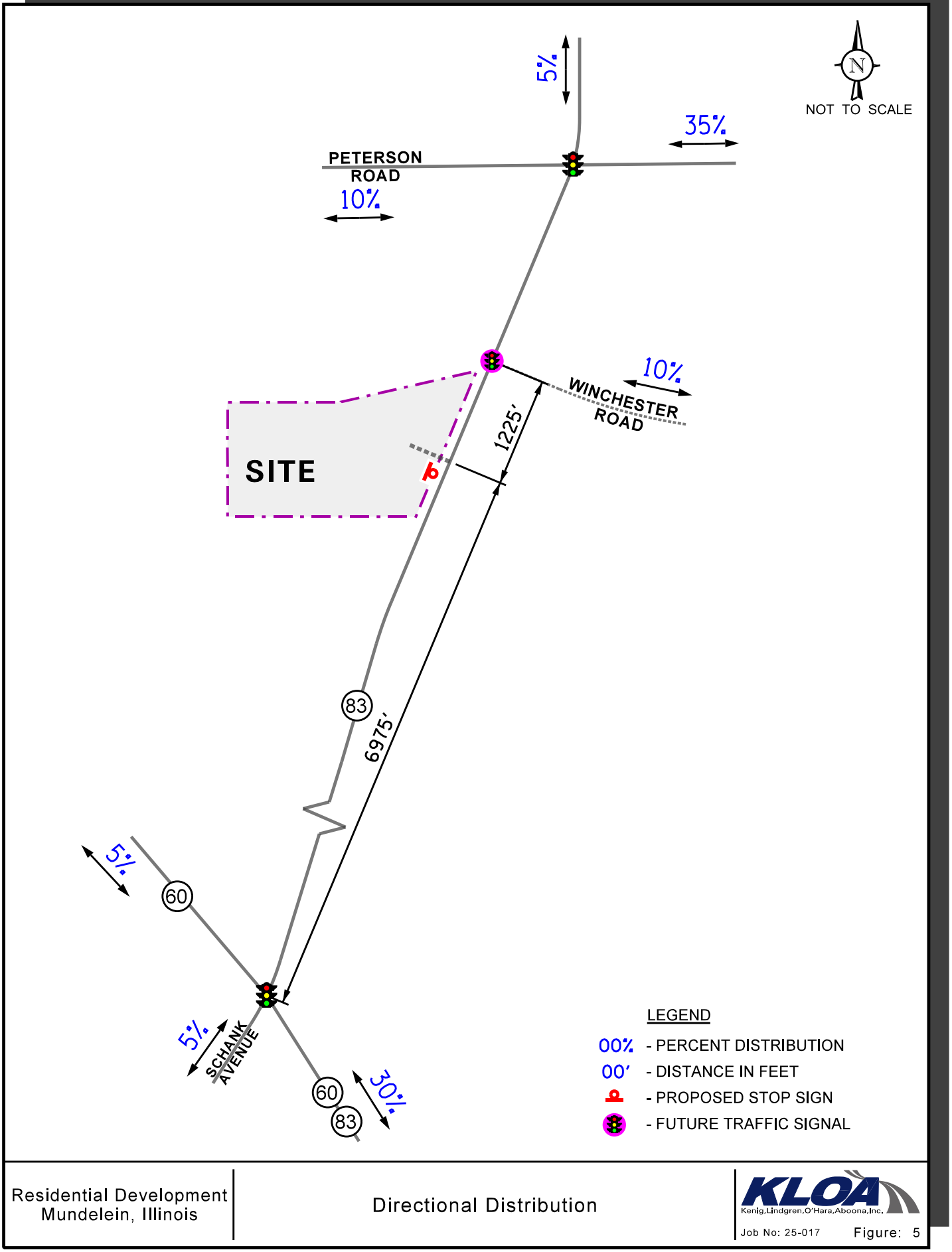
The directions from which employees and trucks will approach and depart the development were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 5** illustrates the directional distribution of the development-generated traffic. Figure 6 also shows the distance, in feet, between Winchester Road and the proposed site access roadway.

Peak Hour Traffic Volumes

The total number of vehicle trips to be generated by the proposed facility was estimated using trip rates published by the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition. The "Single-Family Detached Housing" rate (ITE Land-Use Code 210) was used for the proposed development. Copies of the ITE trip generation sheets are included in the Appendix. The projected peak hour trips estimated to be generated by the development are shown in **Table 4**.

Table 4
ESTIMATED PEAK HOUR AND DAILY TRIP GENERATION

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		In	Out	Total	In	Out	Total
210	Single-Family Detached Housing (155 units)	28	83	111	95	55	150



Residential Development
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Directional Distribution

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4. Projected Traffic Conditions

The total projected traffic volumes take into consideration the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

The estimated weekday morning and weekday evening traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). **Figure 6** illustrates the traffic assignment of the estimated trips.

Background (No-Build) Traffic Conditions

The Year 2031 no-build traffic volumes include the following:

- The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any planned development). Based on a letter provided by CMAP dated January 22, 2025, projections indicate the existing traffic volumes will increase by an annually compounded growth rate of 0.4 percent per year or approximately three percent over six years.
- The buildout of the Cornerstone development including the following uses:
    - The traffic that will be generated by a future warehouse/distribution building to be located on the north side of William Alter Drive.
    - The traffic that will be generated by the future residential development to be located in the northwest corner of Peterson Road with Alleghany Road.
- The traffic that will be generated by the occupancy of the warehouse/distribution development located in the northeast corner of Peterson Road with US 45.
- The traffic that will be generated by the proposed industrial development that will be located in the northeast corner of Peterson Road with Midlothian Road.
- The traffic that will be generated by the under-construction warehouse development located in the northeast corner of Peterson Road with Cornerstone Parkway.
- The traffic that will be generated by the proposed warehouse/distribution development located in the southwest corner of IL 83 with Peterson Road.

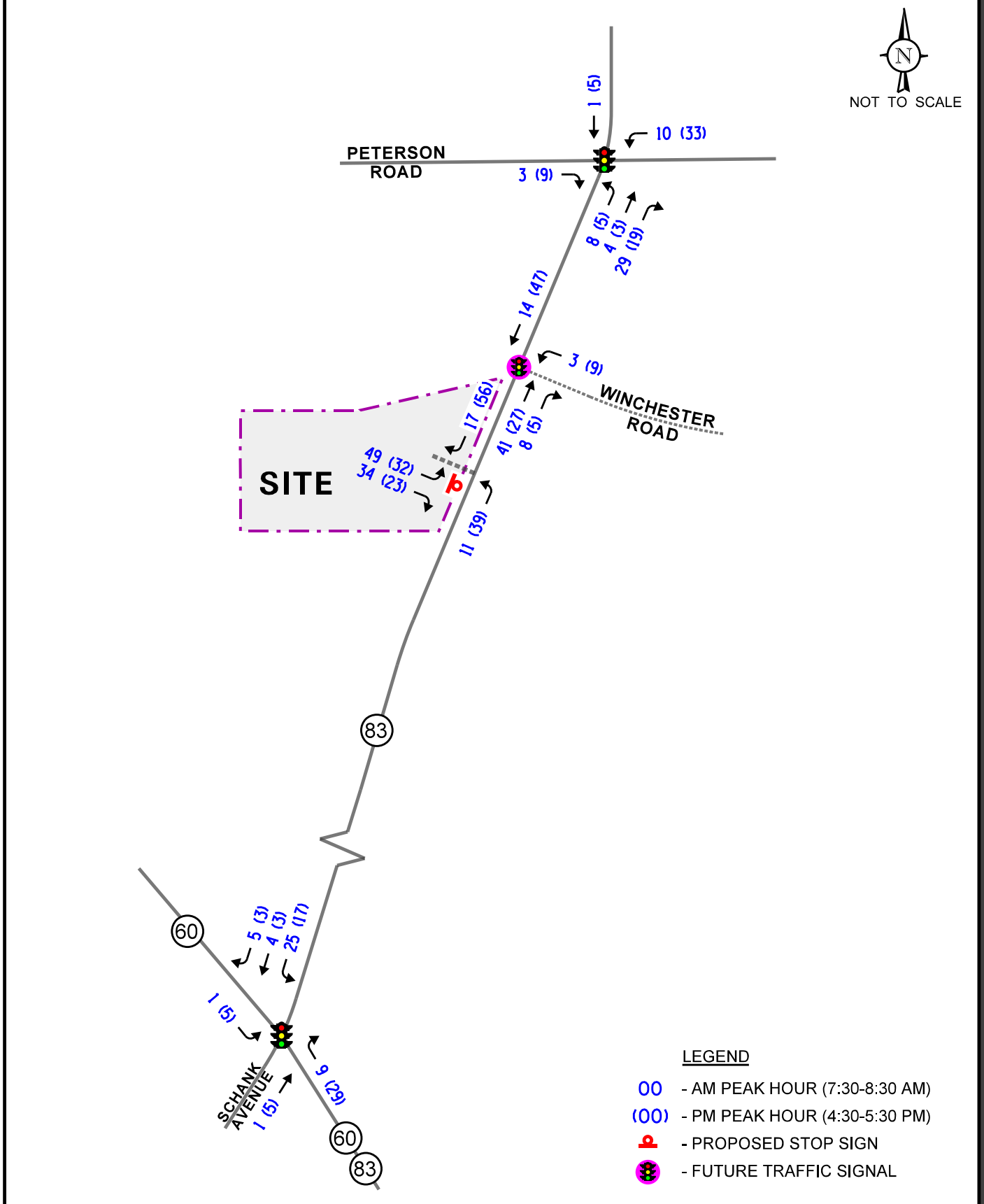
- The traffic that will be generated by the proposed baseball training facility that will be located south of the Ivanhoe Community Club Park.

- The traffic that will be generated by the under-construction Sheldon Woods residential development located on the south side of IL 60 west of IL 83.

The Year 2031 no-build traffic volumes are illustrated in **Figure 7**.

Total Projected Traffic Volumes

The development-generated traffic (Figure 6) was added to the no-build traffic volumes (Figure 7) to determine the Year 2031 total projected traffic volumes, as shown in **Figure 8**.



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Site-Generated Traffic Volumes

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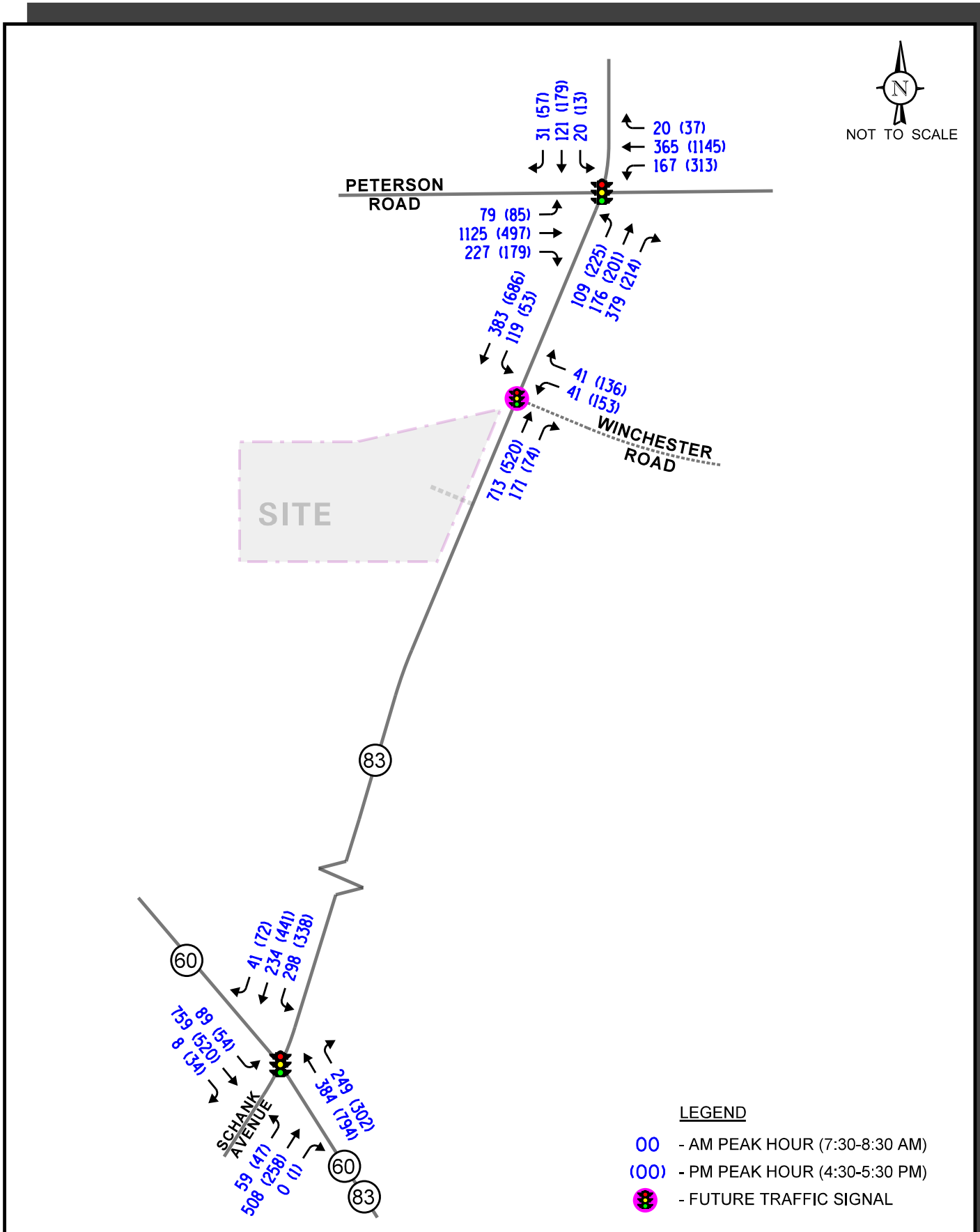

Residential Development
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Year 2031 No-Build Traffic Volumes

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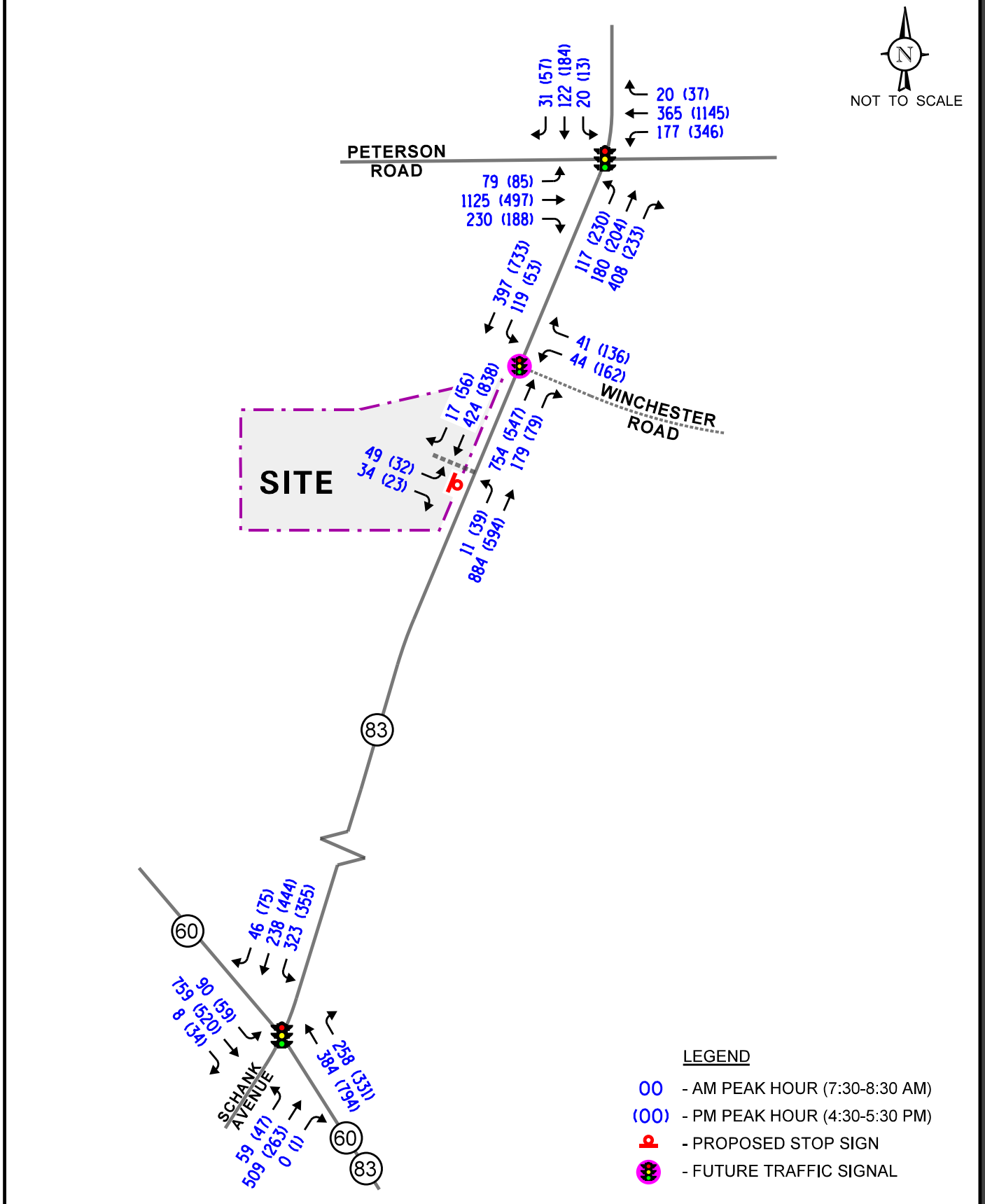

Residential Development
Mundelein, Illinois

Year 2031 Total Traffic Volumes

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Job No: 25-017 Figure: 8

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and evening peak hours for the existing, no-build, and total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM),* 6th Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the traffic signal-controlled intersections were performed using actual cycle lengths, phasings, and offsets to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing, no-build, and total projected conditions are presented in **Tables 5** through **9**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 5
SIGNALIZED – IL 83 WITH PETERSON ROAD

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	D 51.4	C 30.9	B 15.1	E 61.2	B 10.6	A 6.4	D 50.6	D 40.9	C 31.8	D 50.7	D 42.3	C 28.5	C 31.5
		C – 29.7			C – 27.8			D – 35.8			D – 41.7			
	Weekday Evening	D 53.1	C 22.2	A 8.7	D 49.9	C 21.4	A 9.4	D 52.4	D 38.3	C 23.5	D 50.2	D 44.1	C 29.9	C 29.6
		C – 23.4			C – 26.8			D – 37.7			D – 41.4			
No-Build Conditions	Weekday Morning	D 52.4	D 42.8	B 16.2	E 56.1	B 11.2	A 6.0	D 50.6	C 30.9	C 24.4	D 50.7	D 44.1	C 29.4	C 34.4
		D – 39.1			C – 24.6			C – 30.4			D – 42.2			
	Weekday Evening	D 54.4	C 28.9	B 10.9	D 50.0	C 28.0	B 10.9	D 54.8	C 32.4	B 18.8	D 50.2	D 44.0	C 28.9	C 32.5
		C – 27.5			C – 32.2			D – 35.7			D – 40.9			
Projected Conditions	Weekday Morning	D 52.4	D 49.1	B 17.5	D 46.7	B 11.5	A 6.2	D 51.1	C 31.1	C 22.2	D 50.7	D 44.1	C 29.4	D 36.2
		D – 44.2			C – 22.4			C – 29.3			D – 42.2			
	Weekday Evening	D 54.3	C 31.1	B 12.1	D 50.1	C 28.2	B 11.0	E 57.3	C 33.7	B 17.0	D 50.2	D 44.0	C 28.8	C 33.2
		C – 29.0			C – 32.7			D – 36.0			D – 40.9			

Letter denotes Level of Service L – Left Turn R – Right Turn
Delay is measured in seconds. T – Through

Table 6
UNSIGNALIZED – EXISTING CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
IL 83 with Winchester Road[1]				
• Westbound Approach	E	40.3	E	41.4
• Southbound Left Turn	B	10.4	A	8.5

LOS = Level of Service
Delay is measured in seconds.
1 – Two-way stop control

Table 7
SIGNALIZED – IL 83 WITH WINCHESTER ROAD WITH 2025 IMPROVEMENTS

	Peak Hour	Westbound		Northbound		Southbound		Overall
		L	R	T	R	L	T	
No-Build Conditions	**Weekday Morning**	E 55.4	D 38.9	B 12.1	A 1.9	A 4.3	A 3.2	A 9.9
		D – 47.1		B – 10.1		A – 3.5		
	Weekday Evening	D 53.4	D 37.1	B 11.3	A 1.4	A 2.1	A 6.1	B 14.5
		D – 45.7		B – 10.1		A – 5.8		
Total Projected Conditions	**Weekday Morning**	E 57.5	D 39.3	B 12.8	A 1.9	A 4.8	A 3.3	B 10.5
		D – 48.7		B – 10.7		A – 3.7		
	Weekday Evening	D 53.4	D 36.4	B 12.0	A 1.4	A 2.7	A 7.3	B 15.1
		D – 45.6		B – 10.7		A – 7.0		

Includes planned intersection improvements.
Letter denotes Level of Service
Delay is measured in seconds.
L – Left Turns
R – Right Turns
T – Through

Table 8
IL 83/SCHANK AVENUE WITH IL 60 – SIGNALIZED

	Peak Hour	Eastbound		Westbound		Northbound		Southbound			Overall
		L	T/R	T	R	L	T/R	L	T	R	
Existing Conditions	Weekday Morning	B 19.7	C 25.9	C 22.9	A 9.9	B 18.4	E 58.7	C 26.4	C 27.9	B 16.6	C 30.0
		C – 25.4		B – 19.0		D – 53.7		C – 26.4			
	Weekday Evening	B 12.3	B 14.5	B 16.2	A 4.9	C 27.0	E 68.1	D 35.5	D 49.7	C 25.6	C 26.3
		B – 14.4		B – 13.6		E – 60.7		D – 42.8			
No-Build Conditions	Weekday Morning	C 21.0	C 28.8	C 26.3	B 10.9	B 18.6	F 99+	D 47.4	C 28.0	B 17.0	D 41.7
		C – 28.0		C – 20.2		F – 90.7		D – 37.3			
	Weekday Evening	B 13.6	B 17.1	C 21.2	A 5.6	C 27.2	F 89.0	D 47.8	D 49.8	C 24.7	C 32.5
		B – 16.8		B – 16.9		E – 79.5		D – 46.9			
Projected Conditions	Weekday Morning	C 21.1	C 28.8	C 25.6	B 11.0	B 18.7	F 99+	D 49.4	C 28.1	B 17.0	D 45.2
		C – 28.0		B – 19.7		F – 99+		D – 38.6			
	Weekday Evening	B 13.9	B 17.1	C 22.2	A 6.3	C 27.2	F 99+	D 54.4	D 50.2	C 24.5	D 35.1
		B – 16.8		B – 17.5		F – 93.7		D – 49.7			

Letter denotes Level of Service L – Left Turn R – Right Turn
Delay is measured in seconds. T – Through

Table 9
UNSIGNALIZED – YEAR 2031 TOTAL CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
IL 83 with Proposed Site Access Road[1]				
• Eastbound Approach	C	16.2	C	19.5
• Northbound Left Turn	A	8.2	B	11.5

LOS = Level of Service
Delay is measured in seconds.
1 – Two-way stop control

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development.

IL 83 with Peterson Road

The results of the capacity analysis indicate that this intersection currently operates at an overall Level of Service (LOS) C during the weekday morning peak and weekday evening peak hours. It should be noted that some of the left-turn movements operate at LOS E during the peak hours. This is due primarily to the fact that the left-turn movements operate on a protected left-turn phase only and receive a limited amount of green time. Under Year 2031 no-build conditions this intersection is projected to continue to operate at an overall LOS C during the peak hours.

Under Year 2031 total projected conditions, this intersection is projected to operate at LOS D during the weekday morning peak hour and LOS C during the weekday evening peak hour with an increase in delay of approximately two seconds or less over the no-build conditions. In addition, all movements are projected to operate at LOS D or better except for the left-turn movements which will continue to operate at LOS D or E. Further, 95th percentile queues for all movements will continue to be accommodated within the existing turn lanes. As such, this intersection has sufficient reserve capacity to accommodate the proposed development and no roadway improvements, or traffic control modifications are recommended or required.

IL 83 with Winchester Road

The results of the capacity analysis indicate that the westbound approach from Winchester Road currently operates at LOS E during the weekday morning and weekday evening peak hours.

As previously mentioned, LCDOT is planning to improve this intersection starting this year to include the following:

- Realigning Winchester Road east of IL 83 such that it intersects IL 83 at an improved angle
- Providing a northbound right-turn lane on IL 83
- Providing a southbound left-turn lane on IL 83
- Widening Winchester Road east of IL 83 to provide separate right-turn and left-turn lanes
- Installation of a traffic signal

Assuming the completion of the planned improvements, this intersection is projected to operate at LOS B or better during the weekday morning and weekday evening peak hours under Year 2031 no-build and total projected conditions. Further, the westbound approach is projected to operate at an acceptable LOS D during both peak hours. The northbound and southbound approaches are projected to operate at LOS B or better during the peak hours. 95th percentile queues for the northbound approach are projected to be approximately 405 feet or less during the peak hours, which does not extend to the proposed site access roadway, which is approximately 1,225 feet south of Winchester Road. Additionally, the traffic signal is expected to create gaps in the traffic flow on IL 83, allowing vehicles to turn onto the roadway from the site.

Overall, the planned LCDOT intersection improvements are necessary to accommodate existing and future traffic volumes with or without the proposed development. Assuming the planned improvements, this intersection will have sufficient reserve capacity to accommodate existing and projected traffic volumes.

IL 83/Schank Avenue with IL 60

The results of the capacity analysis indicate that this intersection currently operates at an overall Level of Service (LOS) C during the weekday morning and weekday evening peak hours. All approaches currently operate at LOS D or better during the peak hours, with the exception of the northbound approach during the weekday evening peak hour, which operates at LOS E. Under Year 2031 no-build conditions, the intersection is projected to operate at LOS D during the weekday morning peak hour and at LOS C during the weekday evening peak hour. The northbound approach is projected to operate at LOS F or E during the weekday morning and weekday evening peak hours. The level of service can be attributed to the fact that all other approaches are assigned a majority of the green time of the cycle length and the increase in traffic due to background growth and other area developments.

Under Year 2031 total projected conditions, the intersection and approaches are projected to continue to operate at LOS D or better during the peak hours, with the exception of the northbound approach, which is projected to operate at LOS F during both peak hours, consistent with the no-build conditions. The overall delay of the intersection is projected to increase by only three seconds or less over the no-build conditions. The proposed residential development is projected to only increase traffic traversing the intersection by approximately two percent. As such, this intersection will not be significantly affected by the traffic estimated to be generated by the proposed residential development and no roadway or traffic signal modifications are required as a result of the development.

IL 83 with the Site Access Roadway

As proposed, access to the development will be provided via a new access roadway off IL 83 located approximately 1225 feet south of Winchester Road.

- This roadway will provide one inbound lane and two outbound lanes, striped to provide an exclusive left-turn lane and an exclusive right-turn lane. Outbound movements will be under stop sign control.

- When the total projected volumes at this access roadway are compared to turn lane guidelines in Chapter 36 of IDOT's *Bureau of Design and Environment (BDE) Manual* (included in the Appendix), a northbound left-turn lane is warranted on IL 83 serving this access roadway and should be provided. This turn lane should provide 240 feet of storage and a 240-foot taper.

- When the total projected volumes at this access roadway are compared to turn lane guidelines in Chapter 36 of IDOT's BDE Manual (included in the Appendix), a southbound right-turn lane is warranted on IL 83 serving this access roadway and should be provided to be consistent with other residential developments off IL 83 south of the site. This turn lane should provide 240 feet of storage and a 240-foot taper.

Under Year 2031 total projected conditions, the eastbound approach from the site is projected to operate at LOS C during the weekday morning and weekday evening peak hours. The northbound left-turn movement is projected to operate at LOS B or better during the peak hours. Vehicles will be able exit the site efficiently given the following:

- This intersection will be located between two coordinated traffic signals on IL 83. These signals will create gaps in the traffic stream during which vehicles will be able to exit.

- Vehicles may be able to utilize the median on IL 83 to perform a two-part left turn.

- Outbound movements are projected to operate with a volume to capacity ratio (v/c) of less than one and 95th percentile queues of one to two vehicles.

As such, the proposed access roadway will be able to adequately accommodate site-generated traffic.

6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- As proposed, the site will be developed with 155 single-family homes.
- The signalized intersections of IL 83 with IL 60 and Peterson Road do not require roadway or traffic signal modifications as a result of the proposed residential development.
- The intersection of IL 83 with Winchester Road is planned to be improved by LCDOT including the provision of traffic signal. These improvements are necessary to accommodate exiting traffic. With the proposed improvement, this intersection will have sufficient reserve capacity to accommodate the traffic that will be generated by the proposed development.
- A proposed site access roadway off IL 83 will be provided approximately 1,225 feet south of Winchester Road.
    - This access roadway will provide one inbound lane and two outbound lanes at IL 83. Outbound movements will be under stop sign control.
    - A northbound left-turn lane will be warranted and will be provided on IL 83.
    - A southbound right-turn lane will be warranted and will be provided on IL 83.
- The proposed access system can adequately accommodate site-generated traffic.

Appendix

Traffic Count Summary Sheets
Site Plan
Geometrics Plan
ITE Trip Generation Sheets
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets
Turn Lane Warrants

Traffic Count Summary Sheets

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 kpachowicz@kloainc.com

Count Name: IL+60+with+IL+83 TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Data

Start Time	IL 83 Eastbound						IL 83 Westbound						IL 60 Northbound						IL 60 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	8	75	0	0	83	0	63	37	4	0	104	0	0	69	29	0	98	0	10	160	3	0	173	458
7:15 AM	0	10	99	0	0	109	0	63	34	6	0	103	0	1	72	34	0	107	0	18	167	3	0	188	507
7:30 AM	0	16	116	0	0	132	0	57	38	8	0	103	0	0	95	51	0	146	0	25	174	3	0	202	583
7:45 AM	0	12	104	0	0	116	0	51	48	16	0	115	0	0	83	38	0	121	0	18	198	2	0	218	570
Hourly Total	0	46	394	0	0	440	0	234	157	34	0	425	0	1	319	152	0	472	0	71	699	11	0	781	2118
8:00 AM	0	17	84	0	0	101	0	61	49	1	0	111	0	0	98	44	0	142	0	8	178	2	0	188	542
8:15 AM	0	12	106	0	0	118	0	72	64	8	0	144	0	0	91	27	0	118	0	14	168	1	0	183	563
8:30 AM	0	11	80	1	0	92	0	41	49	15	0	105	0	0	127	56	0	183	0	16	146	2	0	164	544
8:45 AM	0	17	67	1	0	85	0	54	44	10	0	108	0	0	105	39	0	144	0	19	151	3	0	173	510
Hourly Total	0	57	337	2	0	396	0	228	206	34	0	468	0	0	421	166	0	587	0	57	643	8	0	708	2159
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	11	58	0	0	69	0	75	95	6	0	176	0	1	198	78	0	277	0	6	111	9	0	126	648
4:15 PM	0	11	42	0	0	53	0	59	86	13	0	158	0	0	141	42	0	183	0	10	142	6	0	158	552
4:30 PM	0	9	44	0	0	53	0	56	82	15	0	153	0	0	154	47	0	201	0	9	120	5	0	134	541
4:45 PM	0	15	52	0	0	67	0	60	89	14	0	163	0	0	193	54	0	247	0	9	134	10	0	153	630
Hourly Total	0	46	196	0	0	242	0	250	352	48	0	650	0	1	686	221	0	908	0	34	507	30	0	571	2371
5:00 PM	0	12	46	0	0	58	0	74	105	5	0	184	0	0	187	52	0	239	0	12	119	15	0	146	627
5:15 PM	0	10	70	1	0	81	0	42	72	9	0	123	0	0	216	74	0	290	0	5	119	3	0	127	621
5:30 PM	0	8	50	1	0	59	0	78	66	8	0	152	0	0	186	45	0	231	0	8	136	2	0	146	588
5:45 PM	0	5	57	0	0	62	0	54	64	3	0	121	0	0	180	56	0	236	0	5	133	6	0	144	563
Hourly Total	0	35	223	2	0	260	0	248	307	25	0	580	0	0	769	227	0	996	0	30	507	26	0	563	2399
Grand Total	0	184	1150	4	0	1338	0	960	1022	141	0	2123	0	2	2195	766	0	2963	0	192	2356	75	0	2623	9047
Approach %	0.0	13.8	85.9	0.3	-	-	0.0	45.2	48.1	6.6	-	-	0.0	0.1	74.1	25.9	-	-	0.0	7.3	89.8	2.9	-	-	-
Total %	0.0	2.0	12.7	0.0	-	14.8	0.0	10.6	11.3	1.6	-	23.5	0.0	0.0	24.3	8.5	-	32.8	0.0	2.1	26.0	0.8	-	29.0	-
Lights	0	180	1100	4	-	1284	0	923	966	128	-	2017	0	2	2149	719	-	2870	0	182	2312	72	-	2566	8737
% Lights	-	97.8	95.7	100.0	-	96.0	-	96.1	94.5	90.8	-	95.0	-	100.0	97.9	93.9	-	96.9	-	94.8	98.1	96.0	-	97.8	96.6
Buses	0	0	5	0	-	5	0	6	1	8	-	15	0	0	12	6	-	18	0	3	14	0	-	17	55
% Buses	-	0.0	0.4	0.0	-	0.4	-	0.6	0.1	5.7	-	0.7	-	0.0	0.5	0.8	-	0.6	-	1.6	0.6	0.0	-	0.6	0.6
Single-Unit Trucks	0	4	34	0	-	38	0	18	36	3	-	57	0	0	22	13	-	35	0	6	14	3	-	23	153
% Single-Unit Trucks	-	2.2	3.0	0.0	-	2.8	-	1.9	3.5	2.1	-	2.7	-	0.0	1.0	1.7	-	1.2	-	3.1	0.6	4.0	-	0.9	1.7
Articulated Trucks	0	0	11	0	-	11	0	13	19	2	-	34	0	0	12	28	-	40	0	1	16	0	-	17	102
% Articulated Trucks	-	0.0	1.0	0.0	-	0.8	-	1.4	1.9	1.4	-	1.6	-	0.0	0.5	3.7	-	1.3	-	0.5	0.7	0.0	-	0.6	1.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0

% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: IL+60+with+IL+83 TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Peak Hour Data (7:30 AM)

Start Time	IL 83 Eastbound						IL 83 Westbound						IL 60 Northbound						IL 60 Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	0	16	116	0	0	132	0	57	38	8	0	103	0	0	95	51	0	146	0	25	174	3	0	202	583
7:45 AM	0	12	104	0	0	116	0	51	48	16	0	115	0	0	83	38	0	121	0	18	198	2	0	218	570
8:00 AM	0	17	84	0	0	101	0	61	49	1	0	111	0	0	98	44	0	142	0	8	178	2	0	188	542
8:15 AM	0	12	106	0	0	118	0	72	64	8	0	144	0	0	91	27	0	118	0	14	168	1	0	183	563
Total	0	57	410	0	0	467	0	241	199	33	0	473	0	0	367	160	0	527	0	65	718	8	0	791	2258
Approach %	0.0	12.2	87.8	0.0	-	-	0.0	51.0	42.1	7.0	-	-	0.0	0.0	69.6	30.4	-	-	0.0	8.2	90.8	1.0	-	-	-
Total %	0.0	2.5	18.2	0.0	-	20.7	0.0	10.7	8.8	1.5	-	20.9	0.0	0.0	16.3	7.1	-	23.3	0.0	2.9	31.8	0.4	-	35.0	-
PHF	0.000	0.838	0.884	0.000	-	0.884	0.000	0.837	0.777	0.516	-	0.821	0.000	0.000	0.936	0.784	-	0.902	0.000	0.650	0.907	0.667	-	0.907	0.968
Lights	0	56	402	0	-	458	0	235	182	26	-	443	0	0	355	146	-	501	0	61	695	6	-	762	2164
% Lights	-	98.2	98.0	-	-	98.1	-	97.5	91.5	78.8	-	93.7	-	-	96.7	91.3	-	95.1	-	93.8	96.8	75.0	-	96.3	95.8
Buses	0	0	1	0	-	1	0	2	0	6	-	8	0	0	3	3	-	6	0	2	7	0	-	9	24
% Buses	-	0.0	0.2	-	-	0.2	-	0.8	0.0	18.2	-	1.7	-	-	0.8	1.9	-	1.1	-	3.1	1.0	0.0	-	1.1	1.1
Single-Unit Trucks	0	1	7	0	-	8	0	2	8	0	-	10	0	0	5	5	-	10	0	2	7	2	-	11	39
% Single-Unit Trucks	-	1.8	1.7	-	-	1.7	-	0.8	4.0	0.0	-	2.1	-	-	1.4	3.1	-	1.9	-	3.1	1.0	25.0	-	1.4	1.7
Articulated Trucks	0	0	0	0	-	0	0	2	9	1	-	12	0	0	4	6	-	10	0	0	9	0	-	9	31
% Articulated Trucks	-	0.0	0.0	-	-	0.0	-	0.8	4.5	3.0	-	2.5	-	-	1.1	3.8	-	1.9	-	0.0	1.3	0.0	-	1.1	1.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: IL+60+with+IL+83 TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Peak Hour Data (4:30 PM)

Start Time	IL 83 Eastbound						IL 83 Westbound						IL 60 Northbound						IL 60 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	9	44	0	0	53	0	56	82	15	0	153	0	0	154	47	0	201	0	9	120	5	0	134	541
4:45 PM	0	15	52	0	0	67	0	60	89	14	0	163	0	0	193	54	0	247	0	9	134	10	0	153	630
5:00 PM	0	12	46	0	0	58	0	74	105	5	0	184	0	0	187	52	0	239	0	12	119	15	0	146	627
5:15 PM	0	10	70	1	0	81	0	42	72	9	0	123	0	0	216	74	0	290	0	5	119	3	0	127	621
Total	0	46	212	1	0	259	0	232	348	43	0	623	0	0	750	227	0	977	0	35	492	33	0	560	2419
Approach %	0.0	17.8	81.9	0.4	-	-	0.0	37.2	55.9	6.9	-	-	0.0	0.0	76.8	23.2	-	-	0.0	6.3	87.9	5.9	-	-	-
Total %	0.0	1.9	8.8	0.0	-	10.7	0.0	9.6	14.4	1.8	-	25.8	0.0	0.0	31.0	9.4	-	40.4	0.0	1.4	20.3	1.4	-	23.2	-
PHF	0.000	0.767	0.757	0.250	-	0.799	0.000	0.784	0.829	0.717	-	0.846	0.000	0.000	0.868	0.767	-	0.842	0.000	0.729	0.918	0.550	-	0.915	0.960
Lights	0	46	200	1	-	247	0	229	338	41	-	608	0	0	749	222	-	971	0	35	491	33	-	559	2385
% Lights	-	100.0	94.3	100.0	-	95.4	-	98.7	97.1	95.3	-	97.6	-	-	99.9	97.8	-	99.4	-	100.0	99.8	100.0	-	99.8	98.6
Buses	0	0	0	0	-	0	0	1	0	1	-	2	0	0	0	0	-	0	0	0	1	0	-	1	3
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.4	0.0	2.3	-	0.3	-	-	0.0	0.0	-	0.0	-	0.0	0.2	0.0	-	0.2	0.1
Single-Unit Trucks	0	0	8	0	-	8	0	1	4	0	-	5	0	0	1	3	-	4	0	0	0	0	-	0	17
% Single-Unit Trucks	-	0.0	3.8	0.0	-	3.1	-	0.4	1.1	0.0	-	0.8	-	-	0.1	1.3	-	0.4	-	0.0	0.0	0.0	-	0.0	0.7
Articulated Trucks	0	0	4	0	-	4	0	1	6	1	-	8	0	0	0	2	-	2	0	0	0	0	-	0	14
% Articulated Trucks	-	0.0	1.9	0.0	-	1.5	-	0.4	1.7	2.3	-	1.3	-	-	0.0	0.9	-	0.2	-	0.0	0.0	0.0	-	0.0	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 kpachowicz@kloainc.com

Count Name: Peterson Road with IL 83 TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Data

Start Time	Peterson Road Eastbound						Peterson Road Westbound						IL 83 Northbound						IL 83 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	9	246	0	0	255	0	30	40	8	0	78	0	10	24	69	0	103	0	7	26	0	0	33	469
7:15 AM	0	5	250	0	0	255	0	28	35	5	0	68	0	11	30	78	0	119	0	5	38	3	0	46	488
7:30 AM	1	16	289	0	0	306	0	31	55	3	0	89	0	16	55	104	0	175	0	3	18	6	0	27	597
7:45 AM	0	22	265	0	0	287	0	38	61	5	0	104	0	4	39	89	0	132	0	5	29	1	0	35	558
Hourly Total	1	52	1050	0	0	1103	0	127	191	21	0	339	0	41	148	340	0	529	0	20	111	10	0	141	2112
8:00 AM	0	16	201	0	0	217	0	33	66	8	0	107	0	6	38	71	0	115	0	4	29	3	0	36	475
8:15 AM	0	7	229	0	0	236	0	35	62	3	0	100	0	7	35	75	0	117	0	7	21	7	0	35	488
8:30 AM	0	9	174	0	0	183	0	27	44	5	0	76	0	9	46	82	0	137	1	10	34	23	0	68	464
8:45 AM	0	10	164	0	0	174	1	34	66	5	0	106	0	13	41	68	0	122	0	14	42	21	0	77	479
Hourly Total	0	42	768	0	0	810	1	129	238	21	0	389	0	35	160	296	0	491	1	35	126	54	0	216	1906
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	7	88	0	0	95	0	63	227	6	0	296	0	36	47	40	0	123	0	4	46	16	0	66	580
4:15 PM	0	14	100	0	0	114	0	58	253	14	0	325	0	39	46	35	0	120	0	4	38	15	0	57	616
4:30 PM	0	14	102	0	0	116	0	55	239	11	0	305	0	34	33	36	0	103	0	3	42	13	0	58	582
4:45 PM	0	18	89	0	0	107	0	55	197	14	0	266	0	42	41	41	0	124	0	2	41	13	0	56	553
Hourly Total	0	53	379	0	0	432	0	231	916	45	0	1192	0	151	167	152	0	470	0	13	167	57	0	237	2331
5:00 PM	1	11	88	0	0	100	0	82	285	5	0	372	0	45	45	43	0	133	0	6	41	14	0	61	666
5:15 PM	0	14	71	0	0	85	0	66	275	6	0	347	0	38	56	54	0	148	0	2	37	7	0	46	626
5:30 PM	0	1	73	0	0	74	0	69	224	9	0	302	0	34	35	33	0	102	0	2	32	7	0	41	519
5:45 PM	0	5	106	0	0	111	0	50	181	5	0	236	0	19	40	42	0	101	0	6	22	7	0	35	483
Hourly Total	1	31	338	0	0	370	0	267	965	25	0	1257	0	136	176	172	0	484	0	16	132	35	0	183	2294
Grand Total	2	178	2535	0	0	2715	1	754	2310	112	0	3177	0	363	651	960	0	1974	1	84	536	156	0	777	8643
Approach %	0.1	6.6	93.4	0.0	-	-	0.0	23.7	72.7	3.5	-	-	0.0	18.4	33.0	48.6	-	-	0.1	10.8	69.0	20.1	-	-	-
Total %	0.0	2.1	29.3	0.0	-	31.4	0.0	8.7	26.7	1.3	-	36.8	0.0	4.2	7.5	11.1	-	22.8	0.0	1.0	6.2	1.8	-	9.0	-
Lights	2	156	2470	0	-	2628	1	725	2230	77	-	3033	0	354	597	929	-	1880	1	55	494	132	-	682	8223
% Lights	100.0	87.6	97.4	-	-	96.8	100.0	96.2	96.5	68.8	-	95.5	-	97.5	91.7	96.8	-	95.2	100.0	65.5	92.2	84.6	-	87.8	95.1
Buses	0	1	8	0	-	9	0	0	4	5	-	9	0	2	1	2	-	5	0	2	1	1	-	4	27
% Buses	0.0	0.6	0.3	-	-	0.3	0.0	0.0	0.2	4.5	-	0.3	-	0.6	0.2	0.2	-	0.3	0.0	2.4	0.2	0.6	-	0.5	0.3
Single-Unit Trucks	0	12	36	0	-	48	0	14	47	17	-	78	0	3	38	18	-	59	0	15	28	18	-	61	246
% Single-Unit Trucks	0.0	6.7	1.4	-	-	1.8	0.0	1.9	2.0	15.2	-	2.5	-	0.8	5.8	1.9	-	3.0	0.0	17.9	5.2	11.5	-	7.9	2.8
Articulated Trucks	0	9	21	0	-	30	0	15	29	13	-	57	0	4	15	11	-	30	0	12	13	5	-	30	147
% Articulated Trucks	0.0	5.1	0.8	-	-	1.1	0.0	2.0	1.3	11.6	-	1.8	-	1.1	2.3	1.1	-	1.5	0.0	14.3	2.4	3.2	-	3.9	1.7
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0

% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
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Rosemont, Illinois, United States 60018
(847)518-9990 kpachowicz@kloainc.com

Count Name: Peterson Road with IL 83 TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Peterson Road Eastbound						Peterson Road Westbound						IL 83 Northbound						IL 83 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:30 AM	1	16	289	0	0	306	0	31	55	3	0	89	0	16	55	104	0	175	0	3	18	6	0	27	597
7:45 AM	0	22	265	0	0	287	0	38	61	5	0	104	0	4	39	89	0	132	0	5	29	1	0	35	558
8:00 AM	0	16	201	0	0	217	0	33	66	8	0	107	0	6	38	71	0	115	0	4	29	3	0	36	475
8:15 AM	0	7	229	0	0	236	0	35	62	3	0	100	0	7	35	75	0	117	0	7	21	7	0	35	488
Total	1	61	984	0	0	1046	0	137	244	19	0	400	0	33	167	339	0	539	0	19	97	17	0	133	2118
Approach %	0.1	5.8	94.1	0.0	-	-	0.0	34.3	61.0	4.8	-	-	0.0	6.1	31.0	62.9	-	-	0.0	14.3	72.9	12.8	-	-	-
Total %	0.0	2.9	46.5	0.0	-	49.4	0.0	6.5	11.5	0.9	-	18.9	0.0	1.6	7.9	16.0	-	25.4	0.0	0.9	4.6	0.8	-	6.3	-
PHF	0.250	0.693	0.851	0.000	-	0.855	0.000	0.901	0.924	0.594	-	0.935	0.000	0.516	0.759	0.815	-	0.770	0.000	0.679	0.836	0.607	-	0.924	0.887
Lights	1	59	965	0	-	1025	0	128	214	15	-	357	0	32	157	332	-	521	0	13	91	14	-	118	2021
% Lights	100.0	96.7	98.1	-	-	98.0	-	93.4	87.7	78.9	-	89.3	-	97.0	94.0	97.9	-	96.7	-	68.4	93.8	82.4	-	88.7	95.4
Buses	0	0	4	0	-	4	0	0	1	0	-	1	0	0	1	0	-	1	0	1	0	0	-	1	7
% Buses	0.0	0.0	0.4	-	-	0.4	-	0.0	0.4	0.0	-	0.3	-	0.0	0.6	0.0	-	0.2	-	5.3	0.0	0.0	-	0.8	0.3
Single-Unit Trucks	0	1	12	0	-	13	0	3	19	3	-	25	0	1	7	6	-	14	0	3	3	2	-	8	60
% Single-Unit Trucks	0.0	1.6	1.2	-	-	1.2	-	2.2	7.8	15.8	-	6.3	-	3.0	4.2	1.8	-	2.6	-	15.8	3.1	11.8	-	6.0	2.8
Articulated Trucks	0	1	3	0	-	4	0	6	10	1	-	17	0	0	2	1	-	3	0	2	3	1	-	6	30
% Articulated Trucks	0.0	1.6	0.3	-	-	0.4	-	4.4	4.1	5.3	-	4.3	-	0.0	1.2	0.3	-	0.6	-	10.5	3.1	5.9	-	4.5	1.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Peterson Road with IL 83 TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Peterson Road Eastbound						Peterson Road Westbound						IL 83 Northbound						IL 83 Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	14	102	0	0	116	0	55	239	11	0	305	0	34	33	36	0	103	0	3	42	13	0	58	582
4:45 PM	0	18	89	0	0	107	0	55	197	14	0	266	0	42	41	41	0	124	0	2	41	13	0	56	553
5:00 PM	1	11	88	0	0	100	0	82	285	5	0	372	0	45	45	43	0	133	0	6	41	14	0	61	666
5:15 PM	0	14	71	0	0	85	0	66	275	6	0	347	0	38	56	54	0	148	0	2	37	7	0	46	626
Total	1	57	350	0	0	408	0	258	996	36	0	1290	0	159	175	174	0	508	0	13	161	47	0	221	2427
Approach %	0.2	14.0	85.8	0.0	-	-	0.0	20.0	77.2	2.8	-	-	0.0	31.3	34.4	34.3	-	-	0.0	5.9	72.9	21.3	-	-	-
Total %	0.0	2.3	14.4	0.0	-	16.8	0.0	10.6	41.0	1.5	-	53.2	0.0	6.6	7.2	7.2	-	20.9	0.0	0.5	6.6	1.9	-	9.1	-
PHF	0.250	0.792	0.858	0.000	-	0.879	0.000	0.787	0.874	0.643	-	0.867	0.000	0.883	0.781	0.806	-	0.858	0.000	0.542	0.958	0.839	-	0.906	0.911
Lights	1	44	339	0	-	384	0	251	980	23	-	1254	0	158	162	169	-	489	0	11	157	44	-	212	2339
% Lights	100.0	77.2	96.9	-	-	94.1	-	97.3	98.4	63.9	-	97.2	-	99.4	92.6	97.1	-	96.3	-	84.6	97.5	93.6	-	95.9	96.4
Buses	0	1	0	0	-	1	0	0	1	3	-	4	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	0.0	1.8	0.0	-	-	0.2	-	0.0	0.1	8.3	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.2
Single-Unit Trucks	0	7	5	0	-	12	0	3	10	7	-	20	0	0	6	3	-	9	0	1	0	1	-	2	43
% Single-Unit Trucks	0.0	12.3	1.4	-	-	2.9	-	1.2	1.0	19.4	-	1.6	-	0.0	3.4	1.7	-	1.8	-	7.7	0.0	2.1	-	0.9	1.8
Articulated Trucks	0	5	6	0	-	11	0	4	5	3	-	12	0	1	7	2	-	10	0	1	4	2	-	7	40
% Articulated Trucks	0.0	8.8	1.7	-	-	2.7	-	1.6	0.5	8.3	-	0.9	-	0.6	4.0	1.1	-	2.0	-	7.7	2.5	4.3	-	3.2	1.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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(847)518-9990 kpachowicz@kloainc.com

Count Name: IL 83 with Winchester Road (north)
TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Data

Start Time	Winchester Road Westbound					IL 83 Northbound					IL 83 Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
7:00 AM	0	7	7	0	14	0	107	28	0	135	0	23	66	0	89	238
7:15 AM	0	6	4	0	10	0	117	33	0	150	0	39	76	0	115	275
7:30 AM	0	10	11	0	21	0	167	56	0	223	0	36	63	0	99	343
7:45 AM	0	7	8	0	15	0	117	42	0	159	0	32	70	0	102	276
Hourly Total	0	30	30	0	60	0	508	159	0	667	0	130	275	0	405	1132
8:00 AM	0	9	5	0	14	0	118	25	0	143	0	19	79	0	98	255
8:15 AM	0	12	4	0	16	0	106	38	0	144	0	28	78	0	106	266
8:30 AM	0	9	6	0	15	0	132	34	0	166	0	23	65	0	88	269
8:45 AM	0	9	8	0	17	0	80	30	0	110	0	16	91	0	107	234
Hourly Total	0	39	23	0	62	0	436	127	0	563	0	86	313	0	399	1024
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	30	32	0	62	0	111	22	0	133	0	8	138	0	146	341
4:15 PM	0	32	31	0	63	0	82	22	0	104	0	10	118	0	128	295
4:30 PM	0	42	39	0	81	0	84	13	0	97	0	10	127	0	137	315
4:45 PM	0	44	29	0	73	0	87	28	0	115	0	9	111	0	120	308
Hourly Total	0	148	131	0	279	0	364	85	0	449	0	37	494	0	531	1259
5:00 PM	0	30	24	0	54	0	102	13	0	115	0	11	132	0	143	312
5:15 PM	0	25	38	0	63	0	114	13	0	127	0	12	99	0	111	301
5:30 PM	0	18	29	0	47	0	89	10	0	99	0	12	119	0	131	277
5:45 PM	0	15	14	0	29	0	92	17	0	109	0	7	91	0	98	236
Hourly Total	0	88	105	0	193	0	397	53	0	450	0	42	441	0	483	1126
Grand Total	0	305	289	0	594	0	1705	424	0	2129	0	295	1523	0	1818	4541
Approach %	0.0	51.3	48.7	-	-	0.0	80.1	19.9	-	-	0.0	16.2	83.8	-	-	-
Total %	0.0	6.7	6.4	-	13.1	0.0	37.5	9.3	-	46.9	0.0	6.5	33.5	-	40.0	-
Lights	0	294	284	-	578	0	1614	416	-	2030	0	287	1438	-	1725	4333
% Lights	-	96.4	98.3	-	97.3	-	94.7	98.1	-	95.3	-	97.3	94.4	-	94.9	95.4
Buses	0	4	1	-	5	0	6	4	-	10	0	1	5	-	6	21
% Buses	-	1.3	0.3	-	0.8	-	0.4	0.9	-	0.5	-	0.3	0.3	-	0.3	0.5
Single-Unit Trucks	0	7	1	-	8	0	53	2	-	55	0	2	45	-	47	110
% Single-Unit Trucks	-	2.3	0.3	-	1.3	-	3.1	0.5	-	2.6	-	0.7	3.0	-	2.6	2.4
Articulated Trucks	0	0	3	-	3	0	32	2	-	34	0	5	35	-	40	77
% Articulated Trucks	-	0.0	1.0	-	0.5	-	1.9	0.5	-	1.6	-	1.7	2.3	-	2.2	1.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Winchester Road Westbound					IL 83 Northbound					IL 83 Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
7:30 AM	0	10	11	0	21	0	167	56	0	223	0	36	63	0	99	343
7:45 AM	0	7	8	0	15	0	117	42	0	159	0	32	70	0	102	276
8:00 AM	0	9	5	0	14	0	118	25	0	143	0	19	79	0	98	255
8:15 AM	0	12	4	0	16	0	106	38	0	144	0	28	78	0	106	266
Total	0	38	28	0	66	0	508	161	0	669	0	115	290	0	405	1140
Approach %	0.0	57.6	42.4	-	-	0.0	75.9	24.1	-	-	0.0	28.4	71.6	-	-	-
Total %	0.0	3.3	2.5	-	5.8	0.0	44.6	14.1	-	58.7	0.0	10.1	25.4	-	35.5	-
PHF	0.000	0.792	0.636	-	0.786	0.000	0.760	0.719	-	0.750	0.000	0.799	0.918	-	0.955	0.831
Lights	0	33	27	-	60	0	488	159	-	647	0	112	268	-	380	1087
% Lights	-	86.8	96.4	-	90.9	-	96.1	98.8	-	96.7	-	97.4	92.4	-	93.8	95.4
Buses	0	2	0	-	2	0	2	2	-	4	0	1	3	-	4	10
% Buses	-	5.3	0.0	-	3.0	-	0.4	1.2	-	0.6	-	0.9	1.0	-	1.0	0.9
Single-Unit Trucks	0	3	0	-	3	0	16	0	-	16	0	1	8	-	9	28
% Single-Unit Trucks	-	7.9	0.0	-	4.5	-	3.1	0.0	-	2.4	-	0.9	2.8	-	2.2	2.5
Articulated Trucks	0	0	1	-	1	0	2	0	-	2	0	1	11	-	12	15
% Articulated Trucks	-	0.0	3.6	-	1.5	-	0.4	0.0	-	0.3	-	0.9	3.8	-	3.0	1.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: IL 83 with Winchester Road (north)
TMC
Site Code:
Start Date: 01/30/2025

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Winchester Road Westbound					IL 83 Northbound					IL 83 Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	Int. Total
4:30 PM	0	42	39	0	81	0	84	13	0	97	0	10	127	0	137	315
4:45 PM	0	44	29	0	73	0	87	28	0	115	0	9	111	0	120	308
5:00 PM	0	30	24	0	54	0	102	13	0	115	0	11	132	0	143	312
5:15 PM	0	25	38	0	63	0	114	13	0	127	0	12	99	0	111	301
Total	0	141	130	0	271	0	387	67	0	454	0	42	469	0	511	1236
Approach %	0.0	52.0	48.0	-	-	0.0	85.2	14.8	-	-	0.0	8.2	91.8	-	-	-
Total %	0.0	11.4	10.5	-	21.9	0.0	31.3	5.4	-	36.7	0.0	3.4	37.9	-	41.3	-
PHF	0.000	0.801	0.833	-	0.836	0.000	0.849	0.598	-	0.894	0.000	0.875	0.888	-	0.893	0.981
Lights	0	140	129	-	269	0	371	67	-	438	0	40	457	-	497	1204
% Lights	-	99.3	99.2	-	99.3	-	95.9	100.0	-	96.5	-	95.2	97.4	-	97.3	97.4
Buses	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Buses	-	0.7	0.0	-	0.4	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.1
Single-Unit Trucks	0	0	0	-	0	0	9	0	-	9	0	0	6	-	6	15
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	2.3	0.0	-	2.0	-	0.0	1.3	-	1.2	1.2
Articulated Trucks	0	0	1	-	1	0	7	0	-	7	0	2	6	-	8	16
% Articulated Trucks	-	0.0	0.8	-	0.4	-	1.8	0.0	-	1.5	-	4.8	1.3	-	1.6	1.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Site Plan

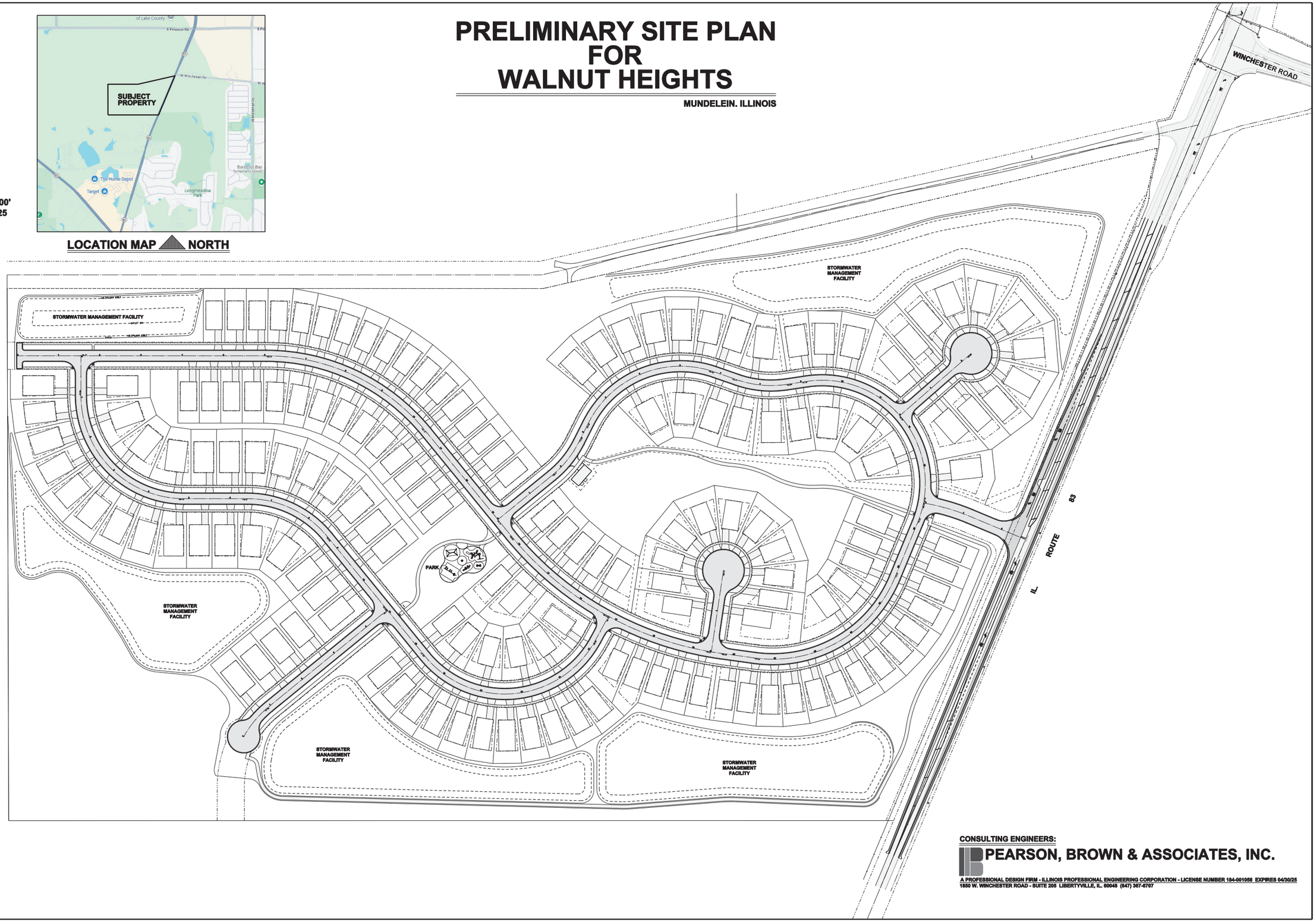
PRELIMINARY SITE PLAN
FOR
WALNUT HEIGHTS

MUNDELEIN. ILLINOIS

NORTH

SCALE: 1" = 100'
DATE: 03-07-25

LOCATION MAP **NORTH**



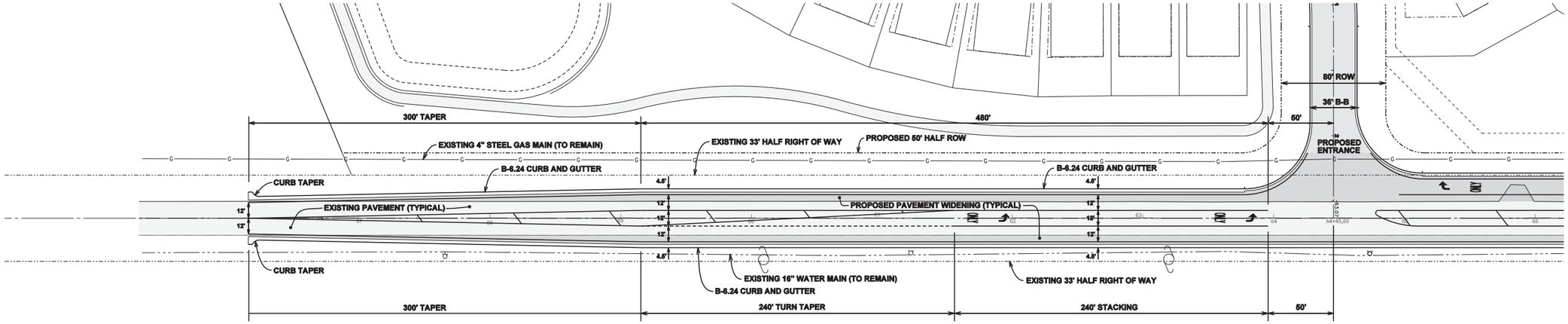
CONSULTING ENGINEERS:

PEARSON, BROWN & ASSOCIATES, INC.

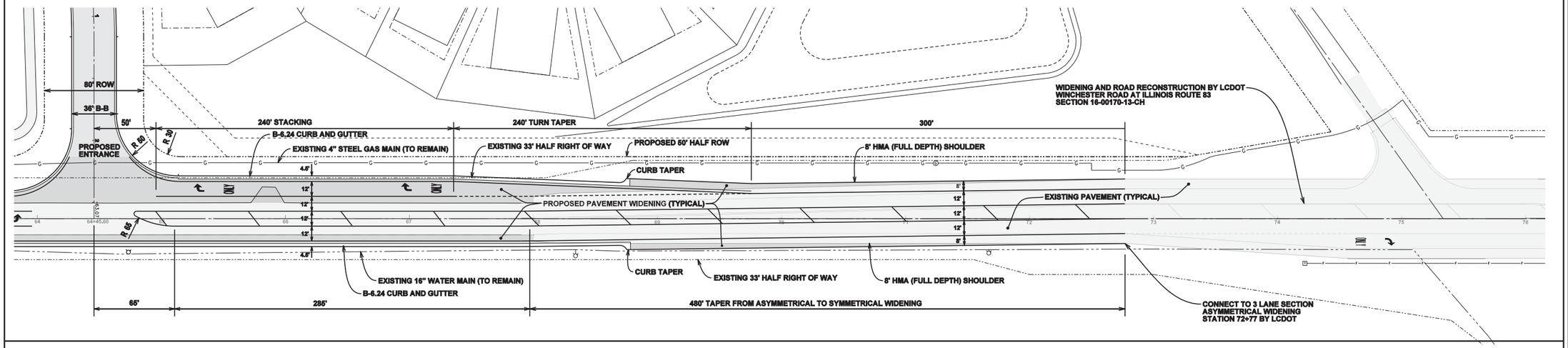
A PROFESSIONAL DESIGN FIRM - ILLINOIS PROFESSIONAL ENGINEERING CORPORATION - LICENSE NUMBER 184-001058 EXPIRES 04/30/25
1850 W. WINCHESTER ROAD - SUITE 205 LIBERTYVILLE, IL. 60048 (847) 367-5707

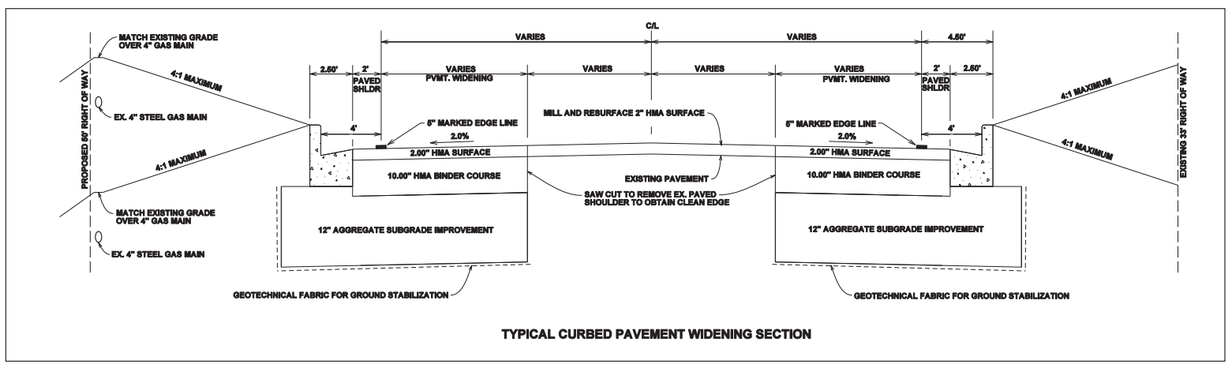
Geometrics Plan

ILLINOIS ROUTE 83 - POSTED SPEED LIMIT 50 MPH



ILLINOIS ROUTE 83 - POSTED SPEED LIMIT 50 MPH





TYPICAL CURBED PAVEMENT WIDENING SECTION

NORTH

SCALE: 1" = 40'

WALNUT HEIGHTS

MUNDELEIN, ILLINOIS

PEARSON,BROWN & ASSOCIATES,INC.
CONSULTING ENGINEERS
1859 W. WINCHESTER ROAD - SUITE 205
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DRAWN BY: A.K.Z.
CHECKED BY: D.S.H.
ORIGINAL ISSUE: 03/07/25

DESCRIPTION	DATE	BY

REVISIONS

GEOMETRICS PLAN

SHEET NUMBER 1 OF 1 SHEETS

JOB No. 2535

ITE Trip Generation Sheets

Single-Family Detached Housing
(210)

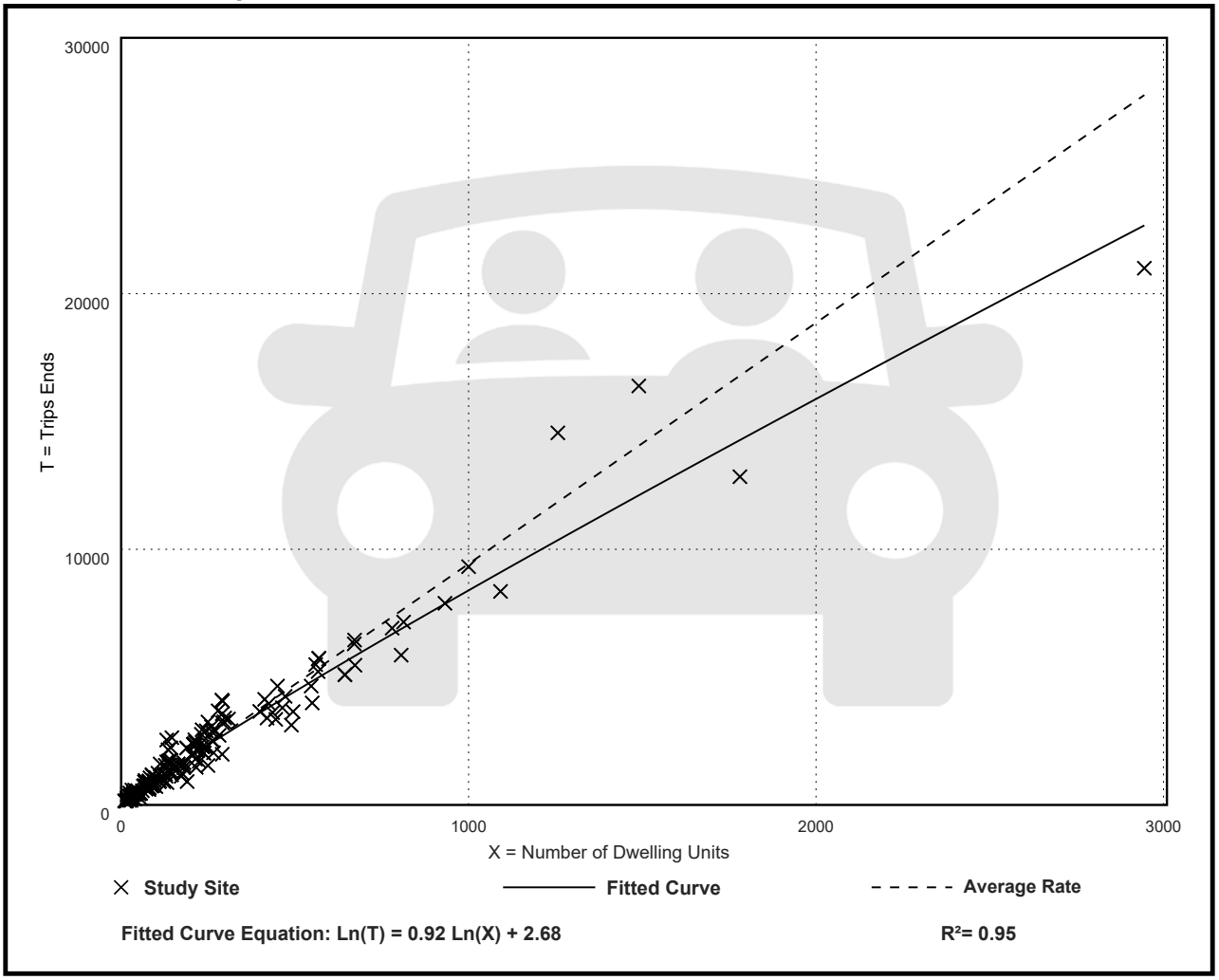
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.92 Ln(X) + 2.68

R^2= 0.95

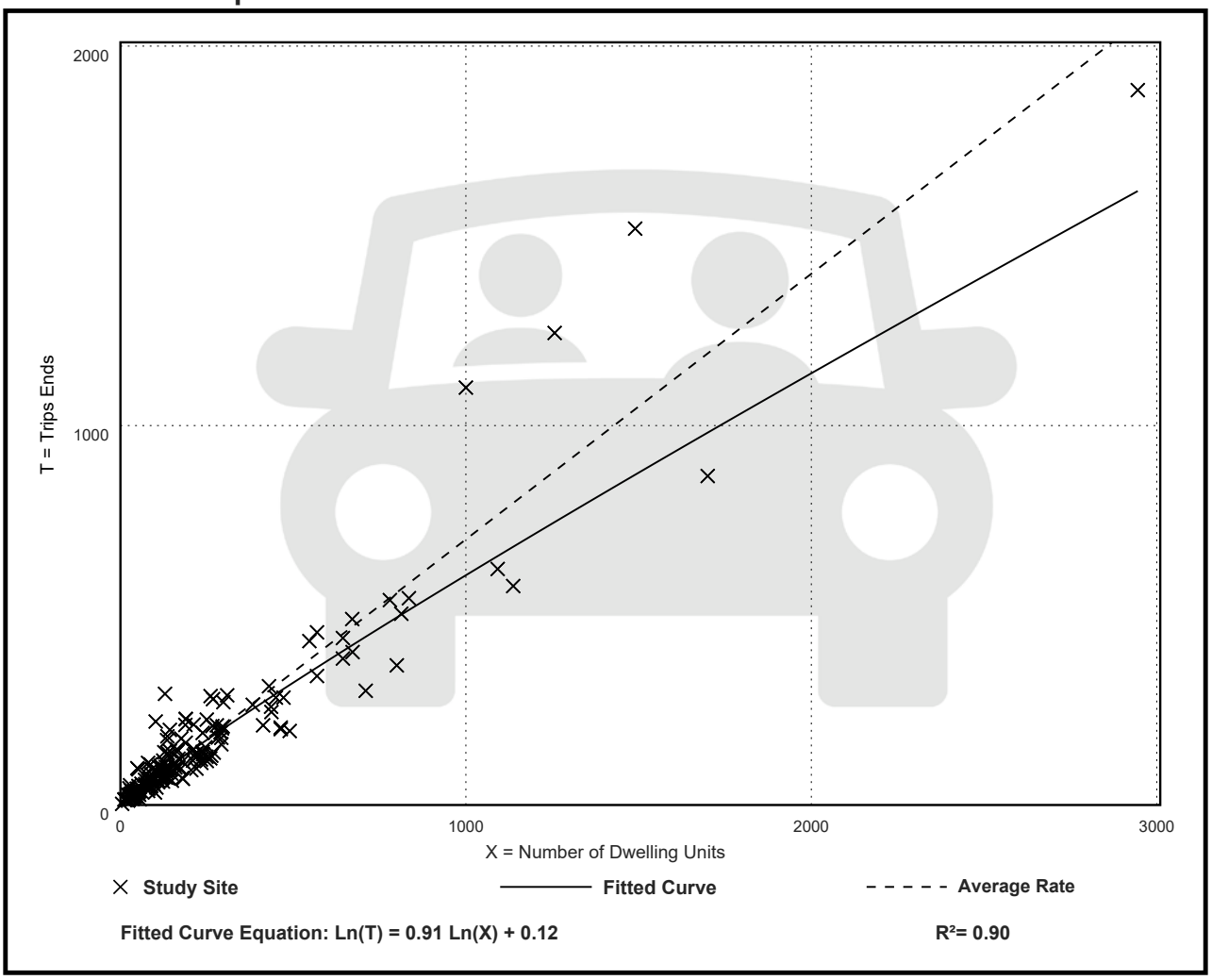
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



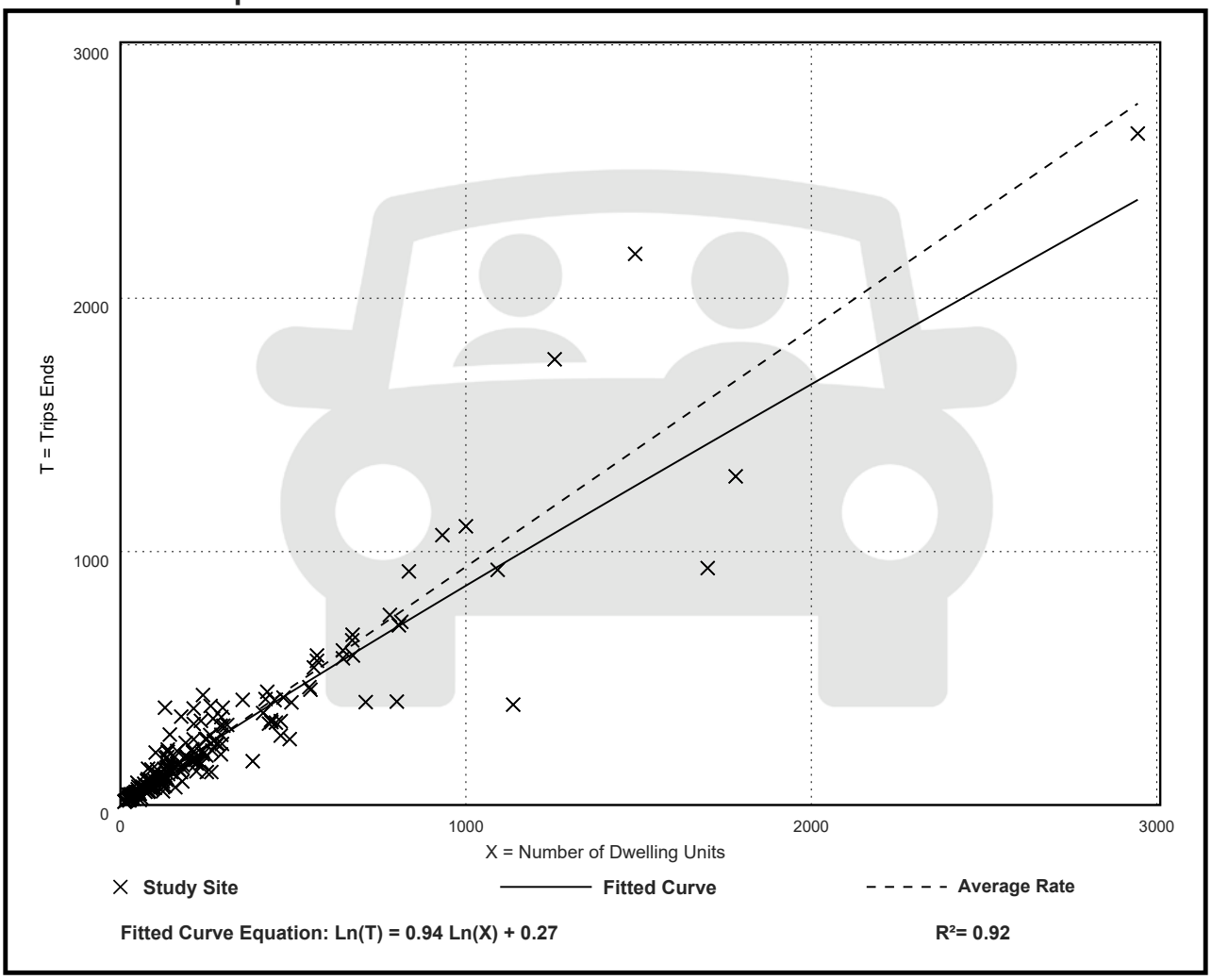
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



CMAP 2050 Projections Letter

Chicago Metropolitan Agency for Planning

433 West Van Buren Street, Suite 450
Chicago, IL 60607
cmap.illinois.gov | 312-454-0400

January 22, 2025

Ryan May
Project Coordinator
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: IL 83 - Peterson Road - Winchester Road - IL 60
IDOT

Dear Ms. May:

In response to a request made on your behalf and dated January 16, 2025, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
Winchester Rd at IL 83	6,250 (2019)	7,100
IL 83 at Winchester Rd	12,200 (2023)	13,800
IL 83 south of Winchester Rd	20,900 (2023)	23,600
IL 60 west of IL 83	17,400 (2023)	19,700
IL 60 east of IL 83	21,000 (2023)	23,700

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2024 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806 or email me at jrodriguez@cmap.illinois.gov

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Rios (IDOT)
2025_trafficForecasts\Mundelein\la-03-25\la-03-25.docx

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	**Interpretation**	**Average Control Delay (seconds per vehicle)**
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	> 10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	> 35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	> 55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80

Unsignalized Intersections	
Level of Service	**Average Total Delay (sec/veh)**
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 6th Edition.

Capacity Analysis Summary Sheets

Existing Weekday Morning Peak Hour

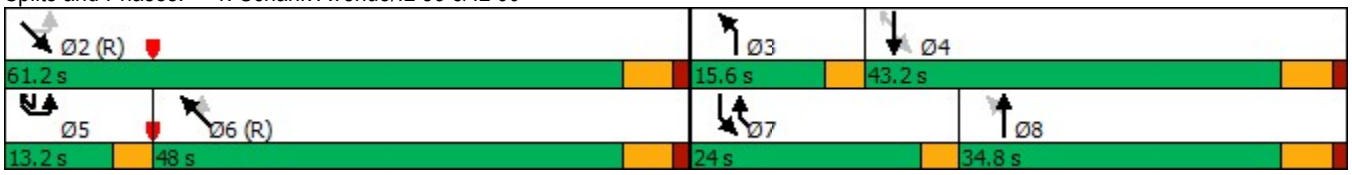
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	57	410	0	241	199	33	65	718	8	0	367	160
Future Volume (vph)	57	410	0	241	199	33	65	718	8	0	367	160
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	420		140	210		0	0		410
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	185			150			190			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1711	1801	0	1770	1835	1335	1703	3490	0	0	3566	1432
Flt Permitted	0.629			0.187			0.441					
Satd. Flow (perm)	1133	1801	0	348	1835	1335	790	3490	0	0	3566	1432
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		748			8201			2690			800	
Travel Time (s)		12.8			139.8			45.9			13.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	0%	2%	9%	21%	6%	3%	25%	0%	3%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	423	0	248	205	34	67	748	0	0	378	165
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA			NA	pm+ov
Protected Phases	3	8		7	4	5	5	2			6	7
Permitted Phases	8			4		4	2					6
Detector Phase	3	8		7	4	5	5	2			6	7
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0	3.0	3.0	15.0			15.0	3.0
Minimum Split (s)	6.5	18.0		6.5	18.0	6.5	6.5	21.0			21.0	6.5
Total Split (s)	15.6	34.8		24.0	43.2	13.2	13.2	61.2			48.0	24.0
Total Split (%)	13.0%	29.0%		20.0%	36.0%	11.0%	11.0%	51.0%			40.0%	20.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	3.5	3.5	4.5			4.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5			1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	3.5	3.5	6.0			6.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead				Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes				Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min			C-Min	None
Act Effct Green (s)	43.4	33.2		58.3	46.5	60.5	54.7	52.2			42.5	67.6
Actuated g/C Ratio	0.36	0.28		0.49	0.39	0.50	0.46	0.44			0.35	0.56

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.13	0.85		0.63	0.29	0.05	0.16	0.49			0.30	0.20
Control Delay	18.4	58.7		26.4	27.9	16.6	19.7	25.9			22.9	9.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	18.4	58.7		26.4	27.9	16.6	19.7	25.9			22.9	9.9
LOS	B	E		C	C	B	B	C			C	A
Approach Delay		53.7			26.4			25.4			19.0	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	21	293		100	102	12	31	234			136	48
Queue Length 95th (ft)	50	#533		179	187	34	54	258			90	69
Internal Link Dist (ft)		668			8121			2610			720	
Turn Bay Length (ft)	300			420		140	210					410
Base Capacity (vph)	509	498		418	710	691	433	1615			1337	829
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.12	0.85		0.59	0.29	0.05	0.15	0.46			0.28	0.20

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 115.2 (96%), Referenced to phase 2:SETL and 6:NWT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 30.0 Intersection LOS: C
Intersection Capacity Utilization 68.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Schank Avenue/IL 83 & IL 60



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	984	171	137	244	19	33	167	339	19	97	17
Future Volume (vph)	62	984	171	137	244	19	33	167	339	19	97	17
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	520		500	415		175	645		500	245		245
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	295			300			300			300		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	3601	1583	3273	3280	1335	3400	3585	1583	2653	3585	1369
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	3601	1583	3273	3280	1335	3400	3585	1583	2653	3585	1369
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		3045			2697			1131			2544	
Travel Time (s)		46.1			40.9			15.4			34.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	2%	2%	7%	12%	21%	3%	6%	2%	32%	6%	18%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1106	192	154	274	21	37	188	381	21	109	19
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5
Total Split (s)	14.3	26.4	18.7	14.3	26.4	15.4	18.7	53.9	14.3	15.4	50.6	14.3
Total Split (%)	13.0%	24.0%	17.0%	13.0%	24.0%	14.0%	17.0%	49.0%	13.0%	14.0%	46.0%	13.0%
Yellow Time (s)	3.5	5.0	3.5	3.5	5.0	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.0	5.5	5.5	7.0	5.5	5.5	6.5	5.5	5.5	6.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	7.7	47.3	61.1	15.6	57.5	70.9	6.7	20.6	42.7	6.4	15.9	30.0
Actuated g/C Ratio	0.07	0.43	0.56	0.14	0.52	0.64	0.06	0.19	0.39	0.06	0.14	0.27

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.30	0.71	0.22	0.33	0.16	0.02	0.18	0.28	0.62	0.14	0.21	0.05
Control Delay	51.4	30.9	15.1	61.2	10.6	6.4	50.6	40.9	31.8	50.7	42.3	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	30.9	15.1	61.2	10.6	6.4	50.6	40.9	31.8	50.7	42.3	28.5
LOS	D	C	B	E	B	A	D	D	C	D	D	C
Approach Delay		29.7			27.8			35.8			41.7	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	24	329	65	59	29	3	12	64	230	7	36	10
Queue Length 95th (ft)	46	#538	132	82	45	9	29	95	279	20	60	27
Internal Link Dist (ft)		2965			2617			1051			2464	
Turn Bay Length (ft)	520		500	415		175	645		500	245		245
Base Capacity (vph)	277	1549	972	470	1714	902	408	1544	617	238	1437	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.71	0.20	0.33	0.16	0.02	0.09	0.12	0.62	0.09	0.08	0.05

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 49.5 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 65.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: IL 83 & Peterson Road

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	38	28	511	161	115	290
Future Vol, veh/h	38	28	511	161	115	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	13	4	4	1	3	8
Mvmt Flow	46	34	616	194	139	349

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1340	713	0	0	810	0
Stage 1	713	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Critical Hdwy	6.53	6.24	-	-	4.13	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.336	-	-	2.227	-
Pot Cap-1 Maneuver	159	428	-	-	811	-
Stage 1	466	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	125	428	-	-	811	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	403	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.3	0	2.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	179	811	-
HCM Lane V/C Ratio	-	-	0.444	0.171	-
HCM Control Delay (s)	-	-	40.3	10.4	0
HCM Lane LOS	-	-	E	B	A
HCM 95th %tile Q(veh)	-	-	2.1	0.6	-

Capacity Analysis Summary Sheets

Existing Weekday Evening Peak Hour

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	46	212	1	232	348	43	35	492	33	0	750	227
Future Volume (vph)	46	212	1	232	348	43	35	492	33	0	750	227
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	420		140	210		0	0		410
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	185			150			190			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.999				0.850		0.991				0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1745	1731	0	1787	1942	1538	1805	3578	0	0	3673	1531
Flt Permitted	0.400			0.320			0.263					
Satd. Flow (perm)	735	1731	0	602	1942	1538	500	3578	0	0	3673	1531
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		748			8201			2690			800	
Travel Time (s)		17.0			186.4			61.1			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	0%	1%	3%	5%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	222	0	242	363	45	36	547	0	0	781	236
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA			NA	pm+ov
Protected Phases	3	8		7	4	5	5	2			6	7
Permitted Phases	8			4		4	2					6
Detector Phase	3	8		7	4	5	5	2			6	7
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0	3.0	3.0	15.0			15.0	3.0
Minimum Split (s)	6.5	18.0		6.5	18.0	6.5	6.5	21.0			21.0	6.5
Total Split (s)	13.2	24.0		25.2	36.0	13.2	13.2	70.8			57.6	25.2
Total Split (%)	11.0%	20.0%		21.0%	30.0%	11.0%	11.0%	59.0%			48.0%	21.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	3.5	3.5	4.5			4.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5			1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	3.5	3.5	6.0			6.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead				Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes				Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min			C-Min	None
Act Effct Green (s)	29.8	19.7		43.1	31.3	43.9	69.9	67.4			59.1	82.6
Actuated g/C Ratio	0.25	0.16		0.36	0.26	0.37	0.58	0.56			0.49	0.69

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.20	0.78		0.62	0.72	0.08	0.10	0.27			0.43	0.22
Control Delay	27.0	68.1		35.5	49.7	25.6	12.3	14.5			16.2	4.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.0	68.1		35.5	49.7	25.6	12.3	14.5			16.2	4.9
LOS	C	E		D	D	C	B	B			B	A
Approach Delay		60.7			42.8			14.4			13.6	
Approach LOS		E			D			B			B	
Queue Length 50th (ft)	23	162		133	254	22	12	116			162	64
Queue Length 95th (ft)	50	#307		202	374	49	28	151			200	42
Internal Link Dist (ft)		668			8121			2610			720	
Turn Bay Length (ft)	300			420		140	210					410
Base Capacity (vph)	276	286		430	508	602	396	2009			1809	1107
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.17	0.78		0.56	0.71	0.07	0.09	0.27			0.43	0.21

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104.4 (87%), Referenced to phase 2:SETL and 6:NWT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 26.3 Intersection LOS: C
Intersection Capacity Utilization 63.8% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Schank Avenue/IL 83 & IL 60

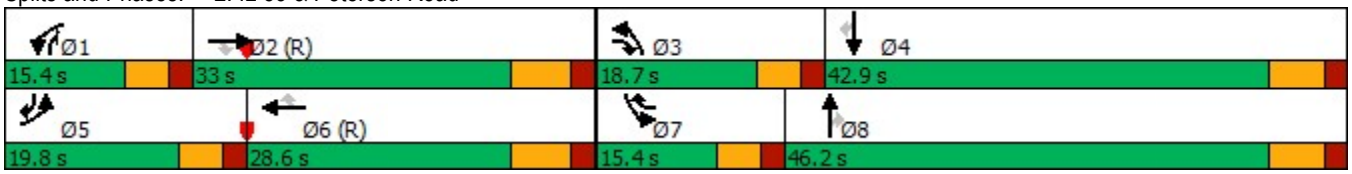
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	350	92	258	996	36	159	184	174	13	161	47
Future Volume (vph)	58	350	92	258	996	36	159	184	174	13	161	47
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	520		500	415		175	645		500	245		245
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	295			300			300			300		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	3566	1568	3400	3601	1188	3467	3551	1568	3045	3725	1524
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2870	3566	1568	3400	3601	1188	3467	3551	1568	3045	3725	1524
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		3045			2697			1131			2544	
Travel Time (s)		46.1			40.9			15.4			34.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	22%	3%	3%	3%	2%	36%	1%	7%	3%	15%	2%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	385	101	284	1095	40	175	202	191	14	177	52
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5
Total Split (s)	19.8	33.0	18.7	15.4	28.6	15.4	18.7	46.2	15.4	15.4	42.9	19.8
Total Split (%)	18.0%	30.0%	17.0%	14.0%	26.0%	14.0%	17.0%	42.0%	14.0%	14.0%	39.0%	18.0%
Yellow Time (s)	3.5	5.0	3.5	3.5	5.0	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.0	5.5	5.5	7.0	5.5	5.5	6.5	5.5	5.5	6.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	7.8	43.6	61.3	15.5	53.5	66.5	10.7	22.6	44.6	6.0	15.7	30.0
Actuated g/C Ratio	0.07	0.40	0.56	0.14	0.49	0.60	0.10	0.21	0.41	0.05	0.14	0.27

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.32	0.27	0.12	0.59	0.63	0.06	0.52	0.28	0.30	0.08	0.33	0.13
Control Delay	53.1	22.2	8.7	49.9	21.4	9.4	52.4	38.3	23.5	50.2	44.1	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	22.2	8.7	49.9	21.4	9.4	52.4	38.3	23.5	50.2	44.1	29.9
LOS	D	C	A	D	C	A	D	D	C	D	D	C
Approach Delay		23.4			26.8			37.7			41.4	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	23	85	22	102	191	9	61	65	93	5	60	28
Queue Length 95th (ft)	45	124	44	m143	330	m18	94	96	135	15	92	56
Internal Link Dist (ft)		2965			2617			1051			2464	
Turn Bay Length (ft)	520		500	415		175	645		500	245		245
Base Capacity (vph)	373	1412	909	478	1749	759	416	1281	635	274	1232	505
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.27	0.11	0.59	0.63	0.05	0.42	0.16	0.30	0.05	0.14	0.10

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 66.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: IL 83 & Peterson Road



Intersection	
Int Delay, s/veh	9.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	141	130	387	67	42	469
Future Vol, veh/h	141	130	387	67	42	469
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	4	0	5	3
Mvmt Flow	144	133	395	68	43	479

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	994	429	0	0	463	0
Stage 1	429	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.15	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.245	-
Pot Cap-1 Maneuver	273	628	-	-	1083	-
Stage 1	659	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	258	628	-	-	1083	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	540	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.4	0	0.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	360	1083	-
HCM Lane V/C Ratio	-	-	0.768	0.04	-
HCM Control Delay (s)	-	-	41.4	8.5	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	6.2	0.1	-

Capacity Analysis Summary Sheets

Year 2031 No-Build Weekday Morning Peak Hour

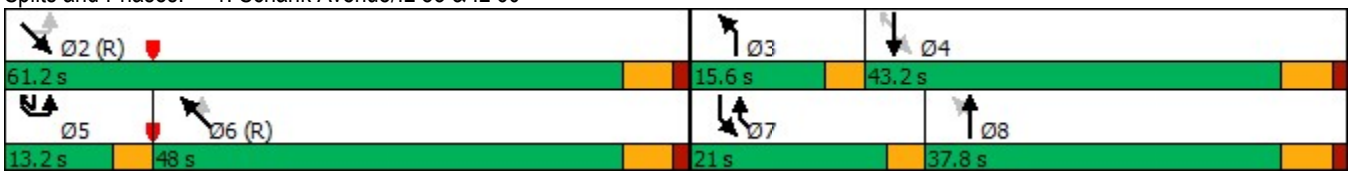
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	59	508	0	298	234	41	89	759	8	0	384	249
Future Volume (vph)	59	508	0	298	234	41	89	759	8	0	384	249
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	420		140	210		0	0		410
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	185			150			190			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1711	1783	0	1671	1786	1335	1703	3490	0	0	3566	1446
Flt Permitted	0.609			0.107			0.404					
Satd. Flow (perm)	1097	1783	0	188	1786	1335	724	3490	0	0	3566	1446
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		748			8201			3114			800	
Travel Time (s)		12.8			139.8			53.1			13.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	0%	8%	12%	21%	6%	3%	25%	0%	3%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	524	0	307	241	42	92	790	0	0	396	257
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA			NA	pm+ov
Protected Phases	3	8		7	4	5	5	2			6	7
Permitted Phases	8			4		4	2					6
Detector Phase	3	8		7	4	5	5	2			6	7
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0	3.0	3.0	15.0			15.0	3.0
Minimum Split (s)	6.5	18.0		6.5	18.0	6.5	6.5	21.0			21.0	6.5
Total Split (s)	15.6	37.8		21.0	43.2	13.2	13.2	61.2			48.0	21.0
Total Split (%)	13.0%	31.5%		17.5%	36.0%	11.0%	11.0%	51.0%			40.0%	17.5%
Yellow Time (s)	3.5	4.5		3.5	4.5	3.5	3.5	4.5			4.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5			1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	3.5	3.5	6.0			6.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead				Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes				Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min			C-Min	None
Act Effct Green (s)	43.6	33.4		62.3	50.3	65.1	50.7	48.2			36.0	64.9
Actuated g/C Ratio	0.36	0.28		0.52	0.42	0.54	0.42	0.40			0.30	0.54

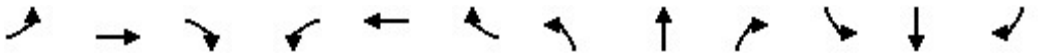
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.14	1.06		0.81	0.32	0.06	0.24	0.56			0.37	0.33
Control Delay	18.6	99.1		47.4	28.0	17.0	21.0	28.8			26.3	10.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	18.6	99.1		47.4	28.0	17.0	21.0	28.8			26.3	10.9
LOS	B	F		D	C	B	C	C			C	B
Approach Delay		90.7			37.3			28.0			20.2	
Approach LOS		F			D			C			C	
Queue Length 50th (ft)	23	~464		177	129	15	42	241			70	36
Queue Length 95th (ft)	52	#678		#385	221	40	69	276			96	91
Internal Link Dist (ft)		668			8121			3034			720	
Turn Bay Length (ft)	300			420		140	210					410
Base Capacity (vph)	500	495		380	749	734	385	1605			1248	782
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.12	1.06		0.81	0.32	0.06	0.24	0.49			0.32	0.33

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 115.2 (96%), Referenced to phase 2:SETL and 6:NWT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 41.7 Intersection LOS: D
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Schank Avenue/IL 83 & IL 60





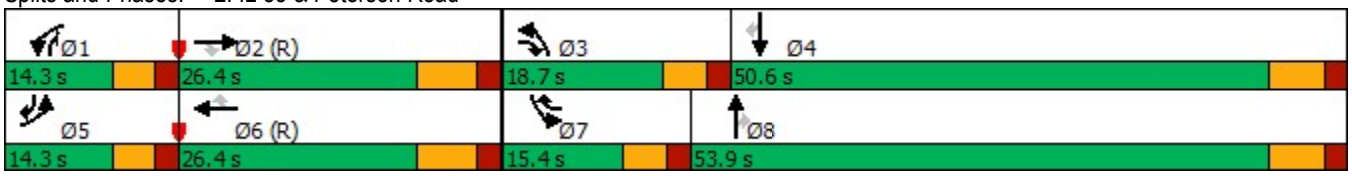
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1125	227	167	365	20	109	176	379	20	121	31
Future Volume (vph)	79	1125	227	167	365	20	109	176	379	20	121	31
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	520		500	415		175	645		500	245		245
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	295			300			300			300		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	3498	1568	3213	3251	1346	3335	3585	1583	2694	3519	1357
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2943	3498	1568	3213	3251	1346	3335	3585	1583	2694	3519	1357
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		3045			2697			1131			2544	
Travel Time (s)		46.1			40.9			15.4			34.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	5%	3%	9%	13%	20%	5%	6%	2%	30%	8%	19%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	1264	255	188	410	22	122	198	426	22	136	35
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5
Total Split (s)	14.3	26.4	18.7	14.3	26.4	15.4	18.7	53.9	14.3	15.4	50.6	14.3
Total Split (%)	13.0%	24.0%	17.0%	13.0%	24.0%	14.0%	17.0%	49.0%	13.0%	14.0%	46.0%	13.0%
Yellow Time (s)	3.5	5.0	3.5	3.5	5.0	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.0	5.5	5.5	7.0	5.5	5.5	6.5	5.5	5.5	6.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	8.7	44.1	60.5	16.8	54.6	68.0	9.4	22.6	45.9	6.4	15.2	30.4
Actuated g/C Ratio	0.08	0.40	0.55	0.15	0.50	0.62	0.09	0.21	0.42	0.06	0.14	0.28

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.38	0.90	0.30	0.38	0.25	0.03	0.43	0.27	0.64	0.14	0.28	0.09
Control Delay	52.4	42.8	16.2	56.1	11.2	6.0	50.6	30.9	24.4	50.7	44.1	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	42.8	16.2	56.1	11.2	6.0	50.6	30.9	24.4	50.7	44.1	29.4
LOS	D	D	B	E	B	A	D	C	C	D	D	C
Approach Delay		39.1			24.6			30.4			42.2	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	31	427	90	72	42	3	41	66	269	7	46	18
Queue Length 95th (ft)	55	#727	177	78	59	8	m60	82	301	20	75	42
Internal Link Dist (ft)		2965			2617			1051			2464	
Turn Bay Length (ft)	520		500	415		175	645		500	245		245
Base Capacity (vph)	253	1401	916	493	1612	874	400	1544	661	242	1410	384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.90	0.28	0.38	0.25	0.03	0.30	0.13	0.64	0.09	0.10	0.09

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 49.5 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 34.4 Intersection LOS: C
Intersection Capacity Utilization 71.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: IL 83 & Peterson Road

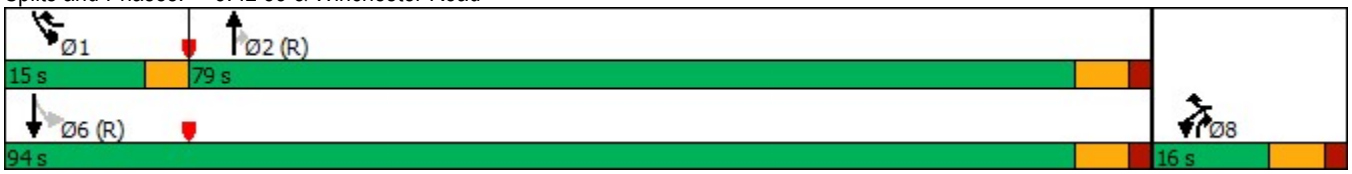


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	41	41	713	171	119	383
Future Volume (vph)	41	41	713	171	119	383
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	380	0		240	240	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1597	1583	1905	1599	1752	1770
Flt Permitted	0.950				0.229	
Satd. Flow (perm)	1597	1583	1905	1599	422	1770
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	45		50			50
Link Distance (ft)	2416		8201			1171
Travel Time (s)	36.6		111.8			16.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	13%	2%	5%	1%	3%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	49	859	206	143	461
Turn Type	Prot	pt+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	8 1	2	8	1	6
Permitted Phases				2	6	
Detector Phase	8	8 1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.5		14.5	7.5	3.0	14.5
Minimum Split (s)	14.0		21.0	14.0	6.5	21.0
Total Split (s)	16.0		79.0	16.0	15.0	94.0
Total Split (%)	14.5%		71.8%	14.5%	13.6%	85.5%
Yellow Time (s)	4.5		4.5	4.5	3.5	4.5
All-Red Time (s)	2.0		2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5		6.5	6.5	3.5	6.5
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Min	None	None	C-Min
Act Effct Green (s)	9.2	20.0	77.0	92.8	90.8	87.8
Actuated g/C Ratio	0.08	0.18	0.70	0.84	0.83	0.80

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.37	0.17	0.64	0.15	0.33	0.33
Control Delay	55.4	38.9	12.1	1.9	4.3	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	38.9	12.1	1.9	4.3	3.2
LOS	E	D	B	A	A	A
Approach Delay	47.1		10.1			3.5
Approach LOS	D		B			A
Queue Length 50th (ft)	33	29	298	18	7	28
Queue Length 95th (ft)	66	58	368	30	37	108
Internal Link Dist (ft)	2336		8121			1091
Turn Bay Length (ft)	380			240	240	
Base Capacity (vph)	143	320	1334	1357	487	1418
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.15	0.64	0.15	0.29	0.33

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 39 (35%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: IL 83 & Winchester Road



Capacity Analysis Summary Sheets

Year 2031 No-Build Weekday Evening Peak Hour

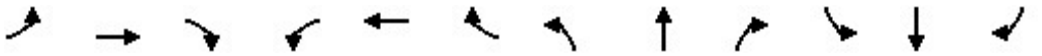
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	47	258	1	338	441	72	54	520	34	0	794	302
Future Volume (vph)	47	258	1	338	441	72	54	520	34	0	794	302
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	420		140	210		0	0		410
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	185			150			190			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.999				0.850		0.991				0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1745	1684	0	1719	1923	1553	1805	3578	0	0	3673	1459
Flt Permitted	0.349			0.238			0.219					
Satd. Flow (perm)	641	1684	0	431	1923	1553	416	3578	0	0	3673	1459
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		748			8201			3114			800	
Travel Time (s)		17.0			186.4			70.8			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	0%	5%	4%	4%	0%	0%	0%	0%	0%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	270	0	352	459	75	56	577	0	0	827	315
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA			NA	pm+ov
Protected Phases	3	8		7	4	5	5	2			6	7
Permitted Phases	8			4		4	2					6
Detector Phase	3	8		7	4	5	5	2			6	7
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0	3.0	3.0	15.0			15.0	3.0
Minimum Split (s)	6.5	18.0		6.5	18.0	6.5	6.5	21.0			21.0	6.5
Total Split (s)	13.2	24.0		25.2	36.0	13.2	13.2	70.8			57.6	25.2
Total Split (%)	11.0%	20.0%		21.0%	30.0%	11.0%	11.0%	59.0%			48.0%	21.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	3.5	3.5	4.5			4.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5			1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	3.5	3.5	6.0			6.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead				Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes				Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min			C-Min	None
Act Effct Green (s)	30.7	20.6		49.1	37.3	50.4	63.9	61.4			52.6	81.0
Actuated g/C Ratio	0.26	0.17		0.41	0.31	0.42	0.53	0.51			0.44	0.68

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.21	0.93		0.84	0.77	0.12	0.18	0.31			0.51	0.32
Control Delay	27.2	89.0		47.8	49.8	24.7	13.6	17.1			21.2	5.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.2	89.0		47.8	49.8	24.7	13.6	17.1			21.2	5.6
LOS	C	F		D	D	C	B	B			C	A
Approach Delay		79.5			46.9			16.8			16.9	
Approach LOS		E			D			B			B	
Queue Length 50th (ft)	24	~232		210	343	38	19	123			167	74
Queue Length 95th (ft)	51	#402		#366	#559	73	38	160			238	59
Internal Link Dist (ft)		668			8121			3034			720	
Turn Bay Length (ft)	300			420		140	210					410
Base Capacity (vph)	264	289		417	597	685	333	1932			1617	985
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.19	0.93		0.84	0.77	0.11	0.17	0.30			0.51	0.32

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104.4 (87%), Referenced to phase 2:SETL and 6:NWT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 32.5 Intersection LOS: C
Intersection Capacity Utilization 73.2% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Schank Avenue/IL 83 & IL 60



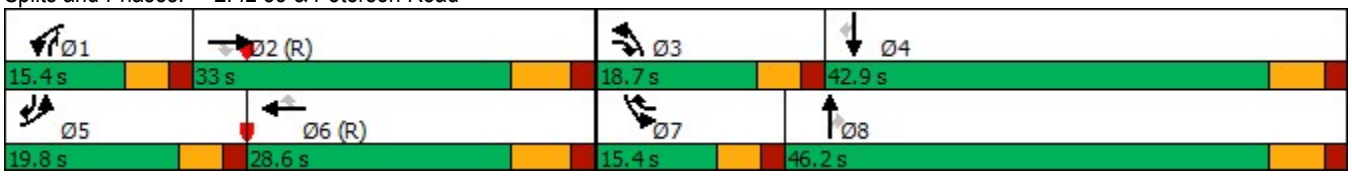
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	497	179	313	1145	37	225	201	214	13	179	57
Future Volume (vph)	85	497	179	313	1145	37	225	201	214	13	179	57
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	520		500	415		175	645		500	245		245
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	295			300			300			300		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2757	3401	1568	3335	3532	1196	3400	3551	1553	3045	3585	1369
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2757	3401	1568	3335	3532	1196	3400	3551	1553	3045	3585	1369
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		3045			2697			1131			2544	
Travel Time (s)		46.1			40.9			15.4			34.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	8%	3%	5%	4%	35%	3%	7%	4%	15%	6%	18%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	546	197	344	1258	41	247	221	235	14	197	63
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5
Total Split (s)	19.8	33.0	18.7	15.4	28.6	15.4	18.7	46.2	15.4	15.4	42.9	19.8
Total Split (%)	18.0%	30.0%	17.0%	14.0%	26.0%	14.0%	17.0%	42.0%	14.0%	14.0%	39.0%	18.0%
Yellow Time (s)	3.5	5.0	3.5	3.5	5.0	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.0	5.5	5.5	7.0	5.5	5.5	6.5	5.5	5.5	6.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	9.1	36.4	55.6	20.5	47.9	61.0	12.2	24.7	51.7	6.0	16.3	31.9
Actuated g/C Ratio	0.08	0.33	0.51	0.19	0.44	0.55	0.11	0.22	0.47	0.05	0.15	0.29

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.48	0.25	0.55	0.82	0.06	0.66	0.28	0.32	0.08	0.37	0.16
Control Delay	54.4	28.9	10.9	50.0	28.0	10.9	54.8	32.4	18.8	50.2	44.0	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	28.9	10.9	50.0	28.0	10.9	54.8	32.4	18.8	50.2	44.0	28.9
LOS	D	C	B	D	C	B	D	C	B	D	D	C
Approach Delay		27.5			32.2			35.7			40.9	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	34	124	46	125	225	10	89	74	131	5	67	34
Queue Length 95th (ft)	60	193	82	m172	#581	m19	130	68	106	15	100	63
Internal Link Dist (ft)		2965			2617			1051			2464	
Turn Bay Length (ft)	520		500	415		175	645		500	245		245
Base Capacity (vph)	358	1126	807	622	1538	704	408	1281	730	274	1186	461
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.48	0.24	0.55	0.82	0.06	0.61	0.17	0.32	0.05	0.17	0.14

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 32.5 Intersection LOS: C
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: IL 83 & Peterson Road



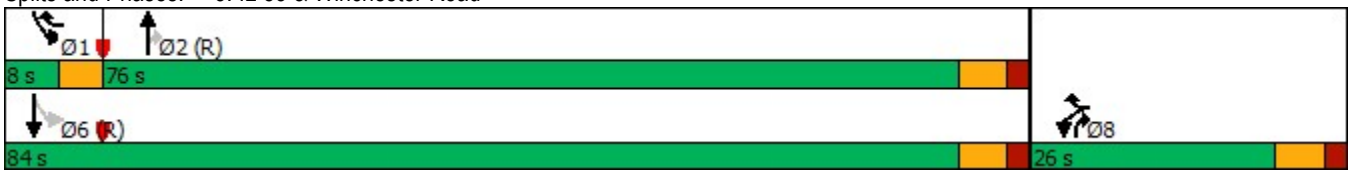
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	153	136	520	74	53	686
Future Volume (vph)	153	136	520	74	53	686
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	380	0		240	240	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1599	1852	1615	1736	1905
Flt Permitted	0.950				0.385	
Satd. Flow (perm)	1787	1599	1852	1615	703	1905
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			50
Link Distance (ft)	2416		8201			1171
Travel Time (s)	54.9		186.4			16.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	8%	0%	4%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	156	139	531	76	54	700
Turn Type	Prot	pt+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	8 1	2	8	1	6
Permitted Phases				2	6	
Detector Phase	8	8 1	2	8	1	6
Switch Phase						
Minimum Initial (s)	8.0		15.0	8.0	3.0	15.0
Minimum Split (s)	14.0		21.0	14.0	6.5	21.0
Total Split (s)	26.0		76.0	26.0	8.0	84.0
Total Split (%)	23.6%		69.1%	23.6%	7.3%	76.4%
Yellow Time (s)	4.0		4.0	4.0	3.5	4.0
All-Red Time (s)	2.0		2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	3.5	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Min	None	None	C-Min
Act Effct Green (s)	15.9	25.8	72.2	94.1	84.6	82.1
Actuated g/C Ratio	0.14	0.23	0.66	0.86	0.77	0.75

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.60	0.37	0.44	0.06	0.09	0.49
Control Delay	53.4	37.1	11.3	1.4	2.1	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	37.1	11.3	1.4	2.1	6.1
LOS	D	D	B	A	A	A
Approach Delay	45.7		10.1			5.8
Approach LOS	D		B			A
Queue Length 50th (ft)	105	83	163	5	3	95
Queue Length 95th (ft)	163	129	286	12	m9	239
Internal Link Dist (ft)	2336		8121			1091
Turn Bay Length (ft)	380			240	240	
Base Capacity (vph)	331	359	1232	1447	601	1428
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.39	0.43	0.05	0.09	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 48 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: IL 83 & Winchester Road



Capacity Analysis Summary Sheets

Year 2031 Total Projected Weekday Morning Peak Hour

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	47	263	1	355	444	75	59	520	34	0	794	331
Future Volume (vph)	47	263	1	355	444	75	59	520	34	0	794	331
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	420		140	210		0	0		410
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	185			150			190			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt		0.999				0.850		0.991				0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1745	1684	0	1719	1923	1553	1805	3578	0	0	3673	1459
Flt Permitted	0.356			0.206			0.214					
Satd. Flow (perm)	654	1684	0	373	1923	1553	407	3578	0	0	3673	1459
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		748			7042			2895			800	
Travel Time (s)		17.0			160.0			65.8			18.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	9%	0%	5%	4%	4%	0%	0%	0%	0%	0%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	275	0	370	463	78	61	577	0	0	827	345
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA			NA	pm+ov
Protected Phases	3	8		7	4	5	5	2			6	7
Permitted Phases	8			4		4	2					6
Detector Phase	3	8		7	4	5	5	2			6	7
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0	3.0	3.0	15.0			15.0	3.0
Minimum Split (s)	6.5	18.0		6.5	18.0	6.5	6.5	21.0			21.0	6.5
Total Split (s)	13.2	24.0		25.2	36.0	13.2	13.2	70.8			57.6	25.2
Total Split (%)	11.0%	20.0%		21.0%	30.0%	11.0%	11.0%	59.0%			48.0%	21.0%
Yellow Time (s)	3.5	4.5		3.5	4.5	3.5	3.5	4.5			4.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5			1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	3.5	3.5	6.0			6.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead				Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes				Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min			C-Min	None
Act Effct Green (s)	29.7	19.6		49.0	37.2	50.6	64.0	61.5			50.6	80.0
Actuated g/C Ratio	0.25	0.16		0.41	0.31	0.42	0.53	0.51			0.42	0.67

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.21	1.00		0.89	0.78	0.12	0.20	0.31			0.53	0.35
Control Delay	27.2	105.6		54.4	50.2	24.5	13.9	17.1			22.2	6.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	27.2	105.6		54.4	50.2	24.5	13.9	17.1			22.2	6.3
LOS	C	F		D	D	C	B	B			C	A
Approach Delay		93.7			49.7			16.8			17.5	
Approach LOS		F			D			B			B	
Queue Length 50th (ft)	24	~240		224	347	39	21	123			162	76
Queue Length 95th (ft)	51	#412		#418	#565	75	41	160			241	75
Internal Link Dist (ft)		668			6962			2815			720	
Turn Bay Length (ft)	300			420		140	210					410
Base Capacity (vph)	261	275		415	596	685	330	1932			1611	972
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.19	1.00		0.89	0.78	0.11	0.18	0.30			0.51	0.35

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104.4 (87%), Referenced to phase 2:SETL and 6:NWT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 35.1 Intersection LOS: D
Intersection Capacity Utilization 74.4% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Schank Avenue/IL 83 & IL 60

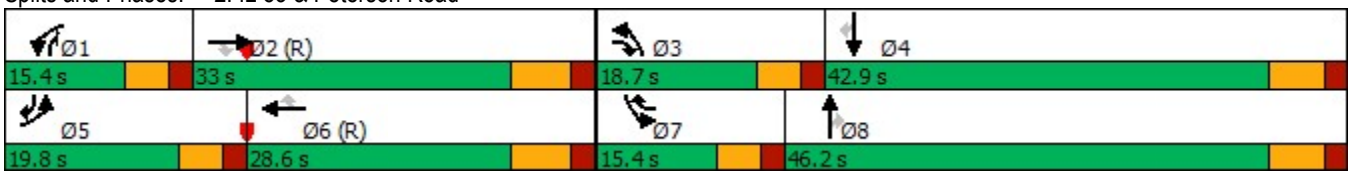
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	497	188	346	1145	37	230	204	233	13	184	57
Future Volume (vph)	85	497	188	346	1145	37	230	204	233	13	184	57
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	520		500	415		175	645		500	245		245
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	295			300			300			300		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2757	3401	1568	3335	3532	1196	3400	3551	1553	3045	3585	1369
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2757	3401	1568	3335	3532	1196	3400	3551	1553	3045	3585	1369
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		3045			2697			1131			2544	
Travel Time (s)		46.1			40.9			15.4			34.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	27%	8%	3%	5%	4%	35%	3%	7%	4%	15%	6%	18%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	546	207	380	1258	41	253	224	256	14	202	63
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5
Total Split (s)	19.8	33.0	18.7	15.4	28.6	15.4	18.7	46.2	15.4	15.4	42.9	19.8
Total Split (%)	18.0%	30.0%	17.0%	14.0%	26.0%	14.0%	17.0%	42.0%	14.0%	14.0%	39.0%	18.0%
Yellow Time (s)	3.5	5.0	3.5	3.5	5.0	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.0	5.5	5.5	7.0	5.5	5.5	6.5	5.5	5.5	6.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	9.1	33.4	52.7	23.4	47.8	60.8	12.2	24.8	54.7	6.0	16.4	32.0
Actuated g/C Ratio	0.08	0.30	0.48	0.21	0.43	0.55	0.11	0.23	0.50	0.05	0.15	0.29

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.53	0.28	0.54	0.82	0.06	0.67	0.28	0.33	0.08	0.38	0.16
Control Delay	54.3	31.1	12.1	50.1	28.2	11.0	57.3	33.7	17.0	50.2	44.0	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	31.1	12.1	50.1	28.2	11.0	57.3	33.7	17.0	50.2	44.0	28.8
LOS	D	C	B	D	C	B	E	C	B	D	D	C
Approach Delay		29.0			32.7			36.0			40.9	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	34	127	52	141	226	10	90	75	140	5	69	34
Queue Length 95th (ft)	60	207	89	m189	#583	m18	141	79	86	15	102	63
Internal Link Dist (ft)		2965			2617			1051			2464	
Turn Bay Length (ft)	520		500	415		175	645		500	245		245
Base Capacity (vph)	358	1033	764	710	1534	703	408	1281	772	274	1186	463
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.53	0.27	0.54	0.82	0.06	0.62	0.17	0.33	0.05	0.17	0.14

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 44 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 33.2 Intersection LOS: C
Intersection Capacity Utilization 72.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: IL 83 & Peterson Road



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	162	136	547	79	53	733
Future Volume (vph)	162	136	547	79	53	733
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	380	0		240	240	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1599	1852	1615	1736	1905
Flt Permitted	0.950				0.366	
Satd. Flow (perm)	1787	1599	1852	1615	669	1905
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	30		30			50
Link Distance (ft)	2416		1174			1171
Travel Time (s)	54.9		26.7			16.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	8%	0%	4%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	165	139	558	81	54	748
Turn Type	Prot	pt+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	8 1	2	8	1	6
Permitted Phases				2	6	
Detector Phase	8	8 1	2	8	1	6
Switch Phase						
Minimum Initial (s)	8.0		15.0	8.0	3.0	15.0
Minimum Split (s)	14.0		21.0	14.0	6.5	21.0
Total Split (s)	26.0		76.0	26.0	8.0	84.0
Total Split (%)	23.6%		69.1%	23.6%	7.3%	76.4%
Yellow Time (s)	4.0		4.0	4.0	3.5	4.0
All-Red Time (s)	2.0		2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	3.5	6.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Min	None	None	C-Min
Act Effct Green (s)	16.4	26.4	71.6	94.1	84.1	81.6
Actuated g/C Ratio	0.15	0.24	0.65	0.86	0.76	0.74

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.62	0.36	0.46	0.06	0.09	0.53
Control Delay	53.4	36.4	12.0	1.4	2.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	36.4	12.0	1.4	2.7	7.3
LOS	D	D	B	A	A	A
Approach Delay	45.6		10.7			7.0
Approach LOS	D		B			A
Queue Length 50th (ft)	111	82	178	6	3	106
Queue Length 95th (ft)	170	128	312	13	m23	549
Internal Link Dist (ft)	2336		1094			1091
Turn Bay Length (ft)	380			240	240	
Base Capacity (vph)	333	363	1227	1440	573	1421
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.38	0.45	0.06	0.09	0.53

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 48 (44%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: IL 83 & Winchester Road

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	23	39	594	838	56
Future Vol, veh/h	32	23	39	594	838	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	240	-	-	240
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	7	4	0
Mvmt Flow	34	24	41	625	882	59

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1589	882	941	0	-	0
Stage 1	882	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	*120	*395	*593	-	-	-
Stage 1	*373	-	-	-	-	-
Stage 2	*493	-	-	-	-	-
Platoon blocked, %		1	1	-	-	-
Mov Cap-1 Maneuver	*112	*395	*593	-	-	-
Mov Cap-2 Maneuver	*235	-	-	-	-	-
Stage 1	*347	-	-	-	-	-
Stage 2	*493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	* 593	-	235	395	-	-
HCM Lane V/C Ratio	0.069	-	0.143	0.061	-	-
HCM Control Delay (s)	11.5	-	22.9	14.7	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Capacity Analysis Summary Sheets

Year 2031 Total Projected Weekday Evening Peak Hour

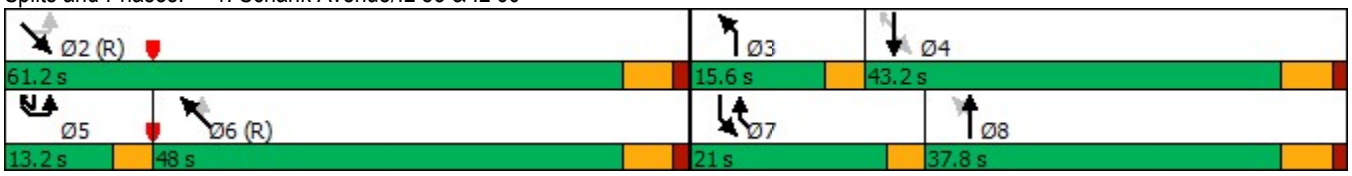
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	59	509	0	323	238	46	90	759	8	0	384	258
Future Volume (vph)	59	509	0	323	238	46	90	759	8	0	384	258
Ideal Flow (vphpl)	1900	1900	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Lane Width (ft)	11	11	12	12	12	12	12	12	12	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		0	420		140	210		0	0		410
Storage Lanes	1		0	1		1	1		0	0		1
Taper Length (ft)	185			150			190			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor												
Frt						0.850		0.998				0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1711	1783	0	1671	1786	1335	1703	3490	0	0	3566	1446
Flt Permitted	0.607			0.111			0.404					
Satd. Flow (perm)	1093	1783	0	195	1786	1335	724	3490	0	0	3566	1446
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		748			7042			2895			800	
Travel Time (s)		12.8			120.0			49.3			13.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	0%	8%	12%	21%	6%	3%	25%	0%	3%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	525	0	333	245	47	93	790	0	0	396	266
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA			NA	pm+ov
Protected Phases	3	8		7	4	5	5	2			6	7
Permitted Phases	8			4		4	2					6
Detector Phase	3	8		7	4	5	5	2			6	7
Switch Phase												
Minimum Initial (s)	3.0	12.0		3.0	12.0	3.0	3.0	15.0			15.0	3.0
Minimum Split (s)	6.5	18.0		6.5	18.0	6.5	6.5	21.0			21.0	6.5
Total Split (s)	15.6	37.8		21.0	43.2	13.2	13.2	61.2			48.0	21.0
Total Split (%)	13.0%	31.5%		17.5%	36.0%	11.0%	11.0%	51.0%			40.0%	17.5%
Yellow Time (s)	3.5	4.5		3.5	4.5	3.5	3.5	4.5			4.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5			1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	3.5	6.0		3.5	6.0	3.5	3.5	6.0			6.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead				Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes				Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Min			C-Min	None
Act Effct Green (s)	42.1	31.8		62.3	50.3	65.1	50.7	48.2			35.9	66.4
Actuated g/C Ratio	0.35	0.26		0.52	0.42	0.54	0.42	0.40			0.30	0.55

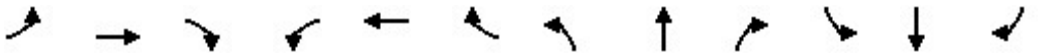
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
v/c Ratio	0.14	1.11		0.83	0.33	0.06	0.25	0.56			0.37	0.33
Control Delay	18.7	117.0		49.4	28.1	17.0	21.1	28.8			25.6	11.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	18.7	117.0		49.4	28.1	17.0	21.1	28.8			25.6	11.0
LOS	B	F		D	C	B	C	C			C	B
Approach Delay		106.7			38.6			28.0			19.7	
Approach LOS		F			D			C			B	
Queue Length 50th (ft)	23	~465		198	131	17	42	241			68	31
Queue Length 95th (ft)	52	#680		#427	224	43	70	276			101	99
Internal Link Dist (ft)		668			6962			2815			720	
Turn Bay Length (ft)	300			420		140	210					410
Base Capacity (vph)	484	472		402	749	734	385	1605			1248	800
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0
Storage Cap Reductn	0	0		0	0	0	0	0			0	0
Reduced v/c Ratio	0.13	1.11		0.83	0.33	0.06	0.24	0.49			0.32	0.33

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 115.2 (96%), Referenced to phase 2:SETL and 6:NWT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 45.2 Intersection LOS: D
Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Schank Avenue/IL 83 & IL 60





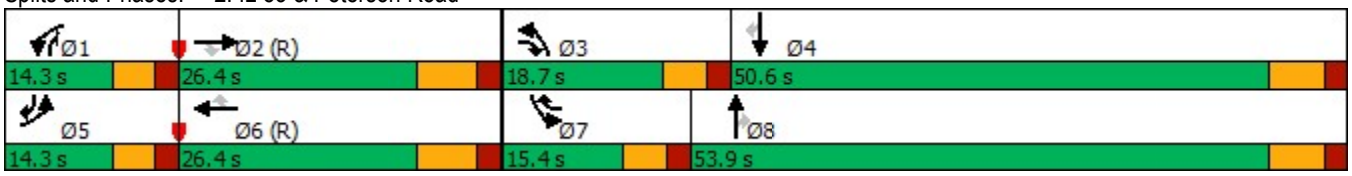
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1125	230	177	365	20	117	180	408	20	122	31
Future Volume (vph)	79	1125	230	177	365	20	117	180	408	20	122	31
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	520		500	415		175	645		500	245		245
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	295			300			300			300		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	3498	1568	3213	3251	1346	3335	3585	1583	2694	3519	1357
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2943	3498	1568	3213	3251	1346	3335	3585	1583	2694	3519	1357
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		3045			2697			1131			2544	
Travel Time (s)		46.1			40.9			15.4			34.7	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	19%	5%	3%	9%	13%	20%	5%	6%	2%	30%	8%	19%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	1264	258	199	410	22	131	202	458	22	137	35
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5	9.5	22.5	9.5
Total Split (s)	14.3	26.4	18.7	14.3	26.4	15.4	18.7	53.9	14.3	15.4	50.6	14.3
Total Split (%)	13.0%	24.0%	17.0%	13.0%	24.0%	14.0%	17.0%	49.0%	13.0%	14.0%	46.0%	13.0%
Yellow Time (s)	3.5	5.0	3.5	3.5	5.0	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	7.0	5.5	5.5	7.0	5.5	5.5	6.5	5.5	5.5	6.5	5.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	None	None	None	None	None
Act Effct Green (s)	8.7	42.2	58.9	18.4	54.2	67.7	9.7	22.9	47.9	6.4	15.2	30.4
Actuated g/C Ratio	0.08	0.38	0.54	0.17	0.49	0.62	0.09	0.21	0.44	0.06	0.14	0.28

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.38	0.94	0.31	0.37	0.26	0.03	0.45	0.27	0.67	0.14	0.28	0.09
Control Delay	52.4	49.1	17.5	46.7	11.5	6.2	51.1	31.1	22.2	50.7	44.1	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	49.1	17.5	46.7	11.5	6.2	51.1	31.1	22.2	50.7	44.1	29.4
LOS	D	D	B	D	B	A	D	C	C	D	D	C
Approach Delay		44.2			22.4			29.3			42.2	
Approach LOS		D			C			C			D	
Queue Length 50th (ft)	31	448	97	63	42	3	40	67	276	7	46	18
Queue Length 95th (ft)	55	#753	185	72	61	8	m61	m84	313	20	75	42
Internal Link Dist (ft)		2965			2617			1051			2464	
Turn Bay Length (ft)	520		500	415		175	645		500	245		245
Base Capacity (vph)	253	1340	888	538	1602	870	400	1544	688	242	1410	384
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.94	0.29	0.37	0.26	0.03	0.33	0.13	0.67	0.09	0.10	0.09

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 49.5 (45%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 36.2 Intersection LOS: D
Intersection Capacity Utilization 73.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: IL 83 & Peterson Road

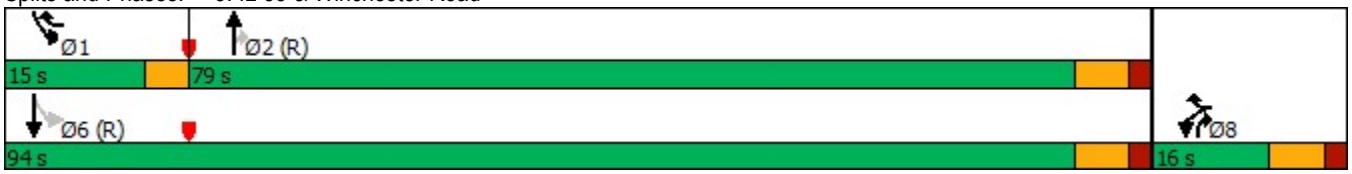


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	44	41	754	179	119	397
Future Volume (vph)	44	41	754	179	119	397
Ideal Flow (vphpl)	1900	1900	2000	1900	1900	2000
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	380	0		240	240	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1597	1583	1905	1599	1752	1770
Flt Permitted	0.950				0.205	
Satd. Flow (perm)	1597	1583	1905	1599	378	1770
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	45		50			50
Link Distance (ft)	2416		1174			1171
Travel Time (s)	36.6		16.0			16.0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	13%	2%	5%	1%	3%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	49	908	216	143	478
Turn Type	Prot	pt+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	8 1	2	8	1	6
Permitted Phases				2	6	
Detector Phase	8	8 1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.5		14.5	7.5	3.0	14.5
Minimum Split (s)	14.0		21.0	14.0	6.5	21.0
Total Split (s)	16.0		79.0	16.0	15.0	94.0
Total Split (%)	14.5%		71.8%	14.5%	13.6%	85.5%
Yellow Time (s)	4.5		4.5	4.5	3.5	4.5
All-Red Time (s)	2.0		2.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5		6.5	6.5	3.5	6.5
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None		C-Min	None	None	C-Min
Act Effct Green (s)	9.0	19.7	77.3	92.8	91.0	88.0
Actuated g/C Ratio	0.08	0.18	0.70	0.84	0.83	0.80

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
v/c Ratio	0.41	0.17	0.68	0.16	0.36	0.34
Control Delay	57.5	39.3	12.8	1.9	4.8	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	39.3	12.8	1.9	4.8	3.3
LOS	E	D	B	A	A	A
Approach Delay	48.7		10.7			3.7
Approach LOS	D		B			A
Queue Length 50th (ft)	36	29	334	19	6	97
Queue Length 95th (ft)	71	58	406	31	33	110
Internal Link Dist (ft)	2336		1094			1091
Turn Bay Length (ft)	380			240	240	
Base Capacity (vph)	139	316	1338	1357	456	1417
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.16	0.68	0.16	0.31	0.34

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 39 (35%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 64.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: IL 83 & Winchester Road



Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	34	11	884	424	17
Future Vol, veh/h	49	34	11	884	424	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	240	-	-	240
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	4	13	0
Mvmt Flow	52	36	12	931	446	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1401	446	464	0	-	0
Stage 1	446	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	*156	*747	*1120	-	-	-
Stage 1	*704	-	-	-	-	-
Stage 2	*377	-	-	-	-	-
Platoon blocked, %		1	1	-	-	-
Mov Cap-1 Maneuver	*154	*747	*1120	-	-	-
Mov Cap-2 Maneuver	*285	-	-	-	-	-
Stage 1	*696	-	-	-	-	-
Stage 2	*377	-	-	-	-	-

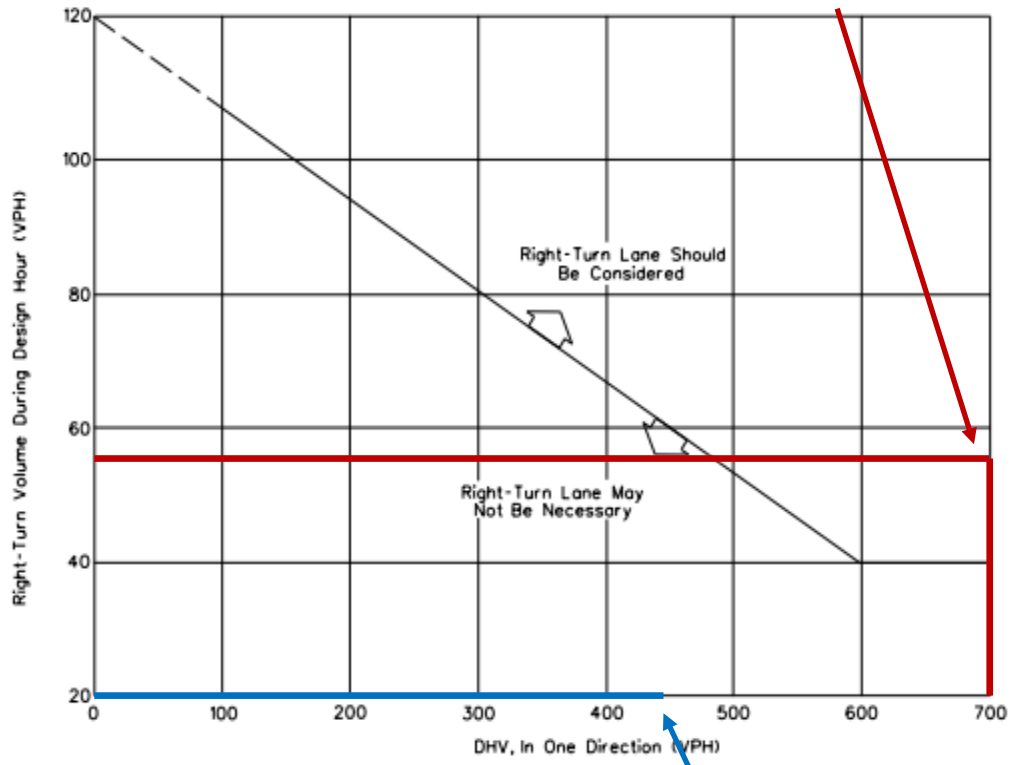
Approach	EB	NB	SB
HCM Control Delay, s	16.2	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	* 1120	-	285	747	-	-
HCM Lane V/C Ratio	0.01	-	0.181	0.048	-	-
HCM Control Delay (s)	8.2	-	20.4	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.6	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Turn Lane Warrants

PM Peak Hour (894, 56)



Note: For highways with a design speed below 50 mph (80 km/hr), with a DHV in one direction of less than 300, and where right turns are greater than 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given:	Design Speed	=	35 mph (60 km/hr)
	DHV (in one direction)	=	250 vph
	Right Turns	=	100 vph

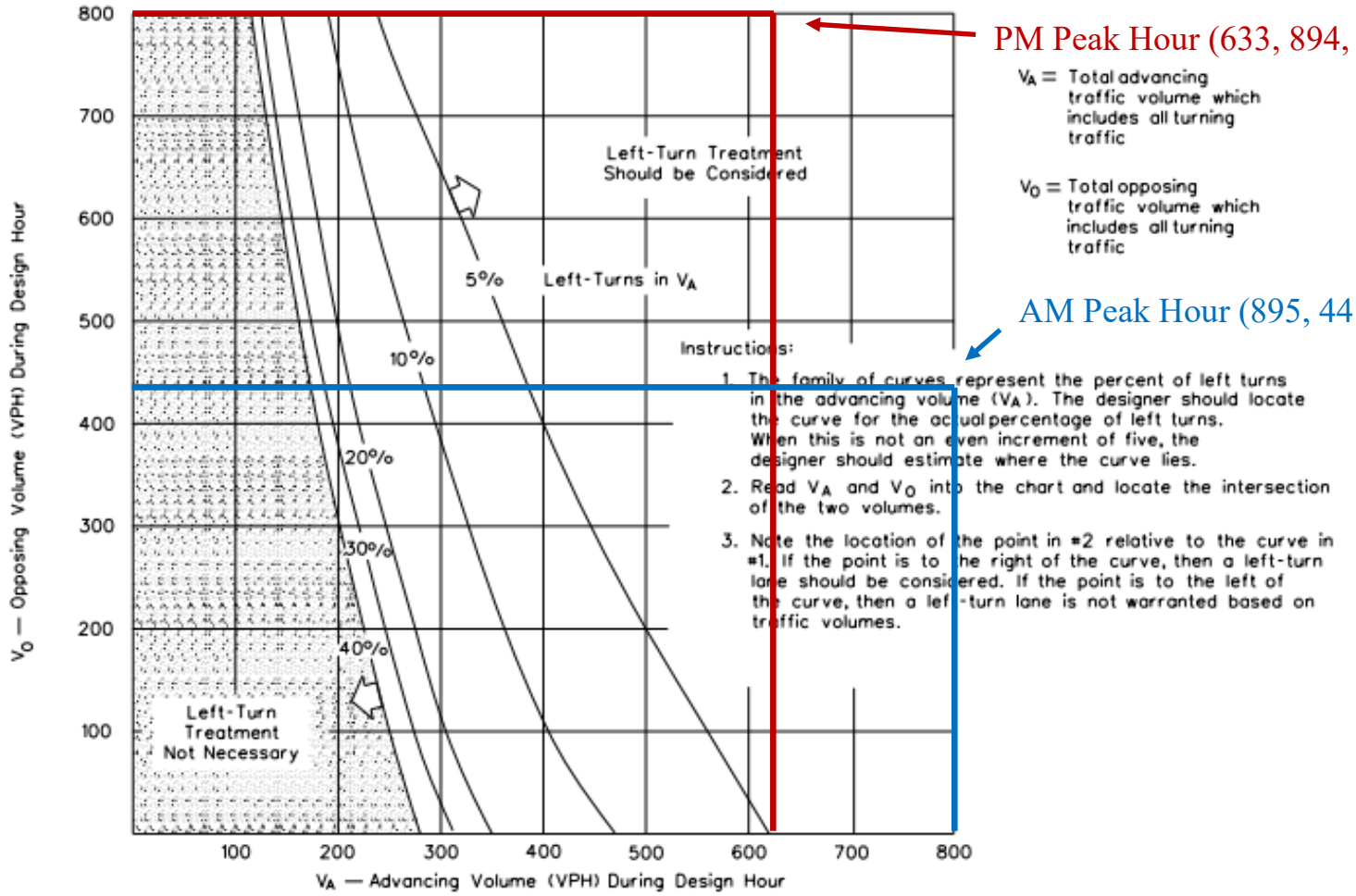
AM Peak Hour (438, 17)

Problem: Determine if a right-turn lane is warranted.

Solution: To read the vertical axis, use 100 - 20 = 80 vph. The figure indicates that right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 36-3.A



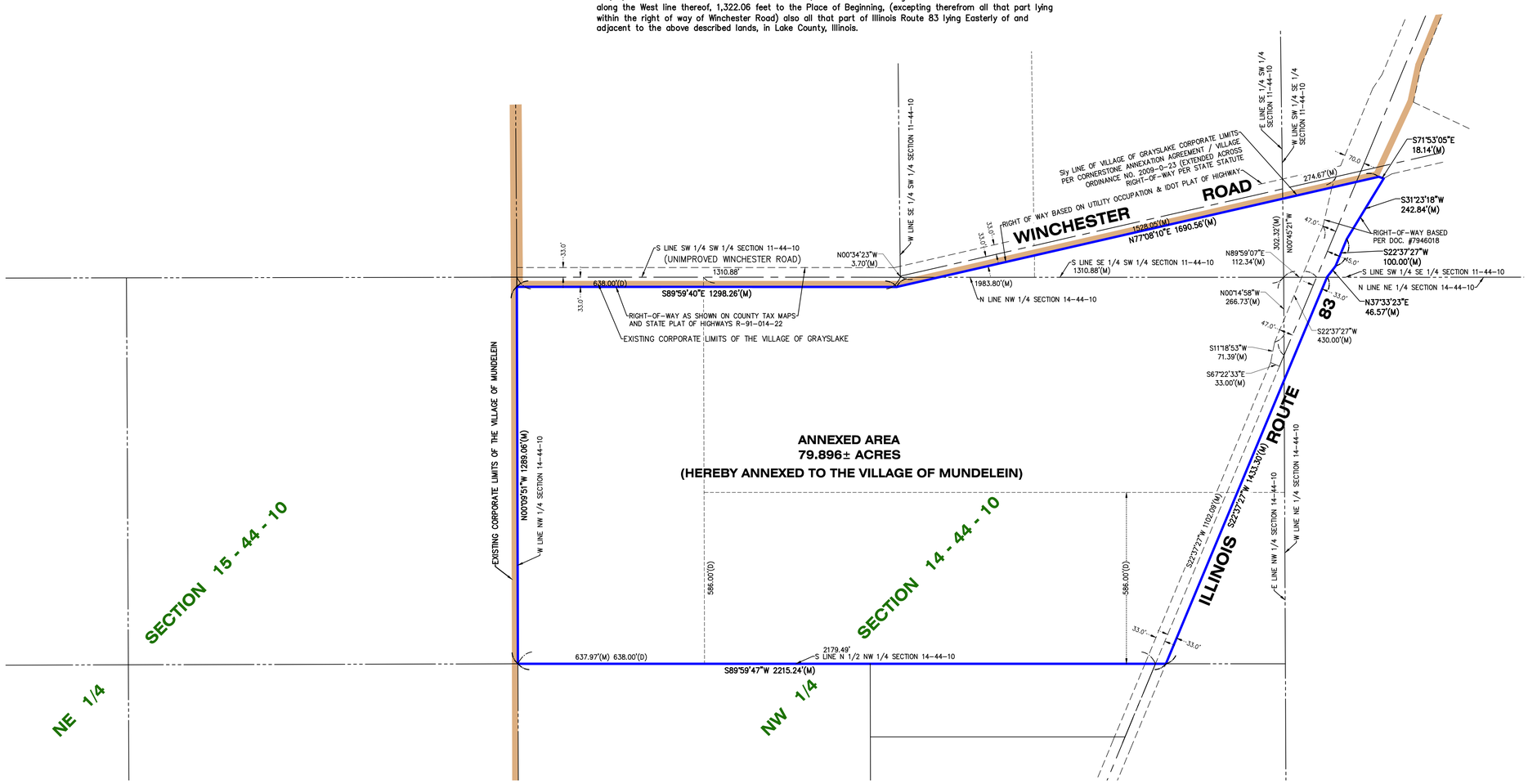
VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (55 mph Design Speed)

Figure 36-3.D

Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

PLAT OF ANNEXATION

Part of the North Half of the Northwest Quarter of Section 14 and part of the East Half of the Southwest Quarter of Section 11, all in Township 44 North, Range 10 East of the Third Principal Meridian, bearings and distances based on Illinois State Plane Coordinate System, East Zone, NAD83 (2011), with a combined scale factor of 0.99994782; being described as follows: Beginning at the Northwest corner of the said Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 40 seconds East along the North line thereof, 1,310.88 feet to the Southwest corner of the said East Half of the Southwest Quarter of Section 11; thence North 00 degrees 34 minutes 23 seconds West along the West line thereof, 3.70 feet to the centerline of Winchester Road; thence North 77 degrees 08 minutes 10 seconds East along said centerline, 1,528.05 feet to the West right-of-way line of State Route 83 per Trustee Deed recorded as Document No. 7946018; thence South 21 degrees 11 minutes 00 seconds West along said West right-of-way line, 39.83 feet; thence South 12 degrees 49 minutes 01 second West along said West right-of-way line, 135.03 feet; thence South 22 degrees 37 minutes 27 seconds West along said West right-of-way line, 430.00 feet; thence South 11 degrees 18 minutes 53 seconds West along said West right-of-way line, 71.39 feet; thence South 67 degrees 22 minutes 33 seconds East along the Southerly line of the lands described in said Document No. 7946018, a distance of 33.00 feet to East Half centerline of said State Route 83; thence South 22 degrees 37 minutes 27 seconds West along said centerline, 1,102.09 feet to the South line of the said North Half of the Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 47 seconds West along said South line, 2,179.49 feet to the Southwest corner thereof; thence North 00 degrees 09 minutes 51 seconds West along the West line thereof, 1,322.06 feet to the Place of Beginning, (excepting therefrom all that part lying within the right of way of Winchester Road) also all that part of Illinois Route 83 lying Easterly of and adjacent to the above described lands, in Lake County, Illinois.



LEGEND

◉	CATCH BASIN (C.B.)
●	FOUND IRON BAR
○	FOUND IRON PIPE
☜	UTILITY POLE
CMP	CORRUGATED METAL PIPE
(D)	DEED
(M)	MEASURE

200' 0' 200' 400'
SCALE: 1" = 200'

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=200' SEC. 10,11 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: **
JOB NO.: 240667-B I.D. PAN
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF:

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

RECORDER'S CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

This instrument filed for record in the Recorder's Office of Lake County, Illinois,

on this _____ day of _____, 2025, A.D.,

at _____ o'clock_____M. and recorded as

Document Number _____

_____
Lake County Recorder

THIS PLAT PRESENTED FOR RECORDING BY:

_____
_____
_____

VILLAGE CLERK'S CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

I _____, Village Clerk of the Village of Mundelein, Illinois hereby certify that the Plat was presented to and by resolution duly approved by the Board of Trustees of said Village at its meeting held on the _____ day of_____, 20_____, that all dedications to the Village of Mundelein, Illinois depicted thereon were accepted by the Village Board of Trustees on said date, and that the required bond or other guaranty has been posted for the completion of the improvements required by the regulations of said Village.

In witness whereof I have hereunder set my hand and seal of the Village of Mundelein, Illinois,

this _____ day of _____, 20___ A.D.

By: _____ _____
Village Clerk Printed name

VILLAGE BOARD CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

Plat approved by the Village Board of Trustees of the Village of Mundelein, Illinois

this _____ day of _____, 20___ A.D.

Signed this _____ day of _____ 20___ A.D.

_____ _____
Village Mayor Attest: Village Clerk

DISTANCES SHOWN ON THIS PLAT ARE GRID DISTANCES BASED ON THE NOTED STATE PLANE COORDINATE SYSTEM AT THE LOWER LEFT HAND CORNER OF THIS PLAT. TO OBTAIN GROUND LEVEL DISTANCES DIVIDE BY THE COMBINED SCALE FACTOR OF 0.9999478227.

5/30/2025 SES – ADDED CERTIFICATES PER VILLAGE REVIEW

STATE OF ILLINOIS)
) S.S.
COUNTY OF McHENRY)

I hereby state that we have platted the premises above described, and that the plat hereon is a true representation of the said description.

This is not a Boundary Survey

Dated at Woodstock, McHenry County, Illinois 4/10 **A.D., 20** 25.

Vanderstappen Land Surveying, Inc..
Design Firm No. 184-002792

By: _____
Illinois Professional Land Surveyor No.

Y:\PLATS\2024\0600-0799\240667_V-240667\240667-B-PAN-GRD.dwg-Layout15/30/2025 3:47 PM-

Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

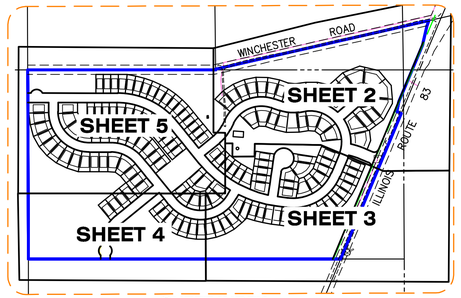
PRELIMINARY PLAT OF SUBDIVISION

WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN



SHEET INDEX

OWNER:LAKE COUNTY LAND HOLDINGS LLC
PIN:10-11-300-008

UNSUBDIVIDED
OWNER: AA-BELL VENTURE, LLC
PIN:10-11-300-012

S LINE SW 1/4 SW 1/4 SECTION 11-44-10
638.00'(D)
S89°59'40"E 1310.88'(M)
(UNIMPROVED)
N00°34'23"W 3.70'(M)
RIGHT-OF-WAY AS SHOWN ON COUNTY TAX MAPS AND STATE PLAT OF HIGHWAYS R-91-014-22

OWNER: AA-BELL VENTURE, LLC
PIN:10-11-300-005
UNSUBDIVIDED
W LINE SE 1/4 SW 1/4 SECTION 11-44-10
RIGHT OF WAY BASED ON UTILITY OCCUPATION & IDOT PLAT OF HIGHWAY
N77°08'10"E 1528.05'(M)
WINCHESTER ROAD
NORTHERN ILLINOIS GAS CO EASEMENT PER DOC #1267725
GRAVEL DRIVE

UNSUBDIVIDED
OWNER: AA-BELL VENTURE, LLC
PIN:10-11-300-003
SLY LINE OF VILLAGE OF GRAYSLAKE CORPORATE LIMITS PER CORNERSTONE ANNEXATION AGREEMENT / VILLAGE ORDINANCE NO. 2009-O-23 (EXTENDED ACROSS RIGHT-OF-WAY PER STATE STATUTE

UNSUBDIVIDED
OWNER: AA-BELL VENTURE, LLC
PIN:10-11-400-043
S21°11'00"W 39.83'(M)
RIGHT-OF-WAY BASED PER DOC. #7946018
135.03'(M)
S12°49'01"W
E LINE SE 1/4 SW 1/4 SECTION 11-44-10
302.32'(M)
N00°43'21"W
W LINE SW 1/4 SE 1/4 SECTION 11-44-10

OWNER:LA SALE NATIONAL BANK
PIN:10-11-400-057
N89°59'07"E 112.34'(M)
S LINE SW 1/4 SE 1/4 SECTION 11-44-10
N LINE NE 1/4 SECTION 14-44-10
S22°37'27"W 430.00'(M)
83
ROUTE
ILLINOIS

OWNER:LA SALE NATIONAL BANK
PIN:10-14-200-001
286.73'(M)
S00°14'58"E
S11°18'53"W 71.39'(M)
S67°22'33"E 33.00'(M)

OUTLOT B
OUTLOT B
OUTLOT B
OUTLOT C
OUTLOT D
OUTLOT A
OUTLOT E

STREET "A"
STREET "B"
STREET "C"
STREET "D"
STREET "E"
STREET "F"
STREET "G"
STREET "H"

EXISTING FRAME SHED
EXISTING METAL/CLAD BUILDING
EXISTING SILO FOUNDATION

ZONE "X"
ZONE "A" AS SCALED FROM FIRM PANEL 17097C0141L DATED: February 2, 2016

N LINE NW 1/4 SECTION 14-44-10
1983.80'(M)
S LINE SE 1/4 SW 1/4 SECTION 11-44-10
1310.88'(M)
W LINE NW 1/4 SECTION 14-44-10
N00°09'51"W 1322.06'(W)
586.00'(D)
S LINE N 1/2 NW 1/4 SECTION 14-44-10
504.96'
637.97'(M) 638.00'(D)
S89°59'47"W 2179.49'(M)
E LINE NW 1/4 SECTION 14-44-10
S22°37'27"W 1102.09'(M)

OWNER:LA SALE NATIONAL BANK
PIN:10-14-100-001, 003
10-14-200-001, 003
UNSUBDIVIDED

OWNER:LA SALE NATIONAL BANK
PIN:10-14-100-001
UNSUBDIVIDED

UNSUBDIVIDED

UNSUBDIVIDED

LEGEND	
	DOWN GUY
	FIRE HYDRANT
	GAS PIPELINE MARKER
	GAS VALVE
T	TELEPHONE RISER
	UTILITY POLE
OU	OVERHEAD UTILITIES
(D)	DEED
(R)	RECORD
(M)	MEASURE

DISTANCES SHOWN ON THIS PLAT ARE GRID DISTANCES BASED ON THE NOTED STATE PLANE COORDINATE SYSTEM AT THE LOWER LEFT HAND CORNER OF THIS PLAT. TO OBTAIN GROUND LEVEL DISTANCES DIVIDE BY THE COMBINED SCALE FACTOR OF 0.9999478227.

EXISTING PROPERTY AREA

GROSS AREA: 79.745± ACRES
NET AREA: 76.761± ACRES

PROPOSE PROPERTY AREA

RESIDENTIAL LOTS 1-155: 30.928± ACRES
OUTLOTS A, B, C, D, E: 36.134± ACRES
IDOT ROW DEDICATION: 1.323± ACRES
VILLAGE OF MUNDELEIN ROW DEDICATION: 11.360± ACRES
TOTAL=79.745± ACRE+

100' 0' 100' 200'
SCALE: 1" = 100'

PROJECT BENCHMARK
NATIONAL GEODETIC CONTROL STATION "LD010"
ELEV=662.36 NAVD88

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: *
JOB NO.: 250149 I.D. PPS
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: 240667

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

PLANNING AND ZONING COMMISSION CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

I, _____ Chairman of the Village of Mundelein, Plan Commission, do certify that on this _____ day of _____, 20_____ this Preliminary Plat of Subdivision was duly approved by the Plan Commission of the Village of Mundelein

_____ _____
Chairman (print name of signer)

_____ _____
Secretary (print name of signer)

VILLAGE BOARD CERTIFICATE

STATE OF ILLINOIS)
) S.S.
COUNTY OF LAKE)

Approved by the Mayor and Board of Trustees of the Village of Mundelein, Lake County Illinois,

Dated at Mundelein, Lake County, Illinois this _____ day of_____,

A.D., 20_____.

_____
Mayor

_____
Attest, Village Clerk

SURVEYOR'S CERTIFICATE

STATE OF ILLINOIS)
) SS
COUNTY OF McHENRY)

I, _____ an Illinois Registered Land Surveyor, do hereby certify that we have surveyed and subdivided the following described property, and that the Plat as drawn represents said survey and subdivision;

Part of the North Half of the Northwest Quarter of Section 14 and part of the East Half of the Southwest Quarter of Section 11, all in Township 44 North, Range 10 East of the Third Principal Meridian, bearings and distances based on Illinois State Plane Coordinate System, East Zone, NAD83 (2011), with a combined scale factor of 0.99994782; being described as follows: Beginning at the Northwest corner of the said Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 40 seconds East along the North line thereof, 1,310.88 feet to the Southwest corner of the said East Half of the Southwest Quarter of Section 11; thence North 00 degrees 34 minutes 23 seconds West along the West line thereof, 3.70 feet to the centerline of Winchester Road; thence North 77 degrees 08 minutes 10 seconds East along said centerline, 1,528.05 feet to the West right-of-way line of State Route 83 per Trustee Deed recorded as Document No. 7946018; thence South 21 degrees 11 minutes 00 seconds West along said West right-of-way line, 39.83 feet; thence South 12 degrees 49 minutes 01 second West along said West right-of-way line, 135.03 feet; thence South 22 degrees 37 minutes 27 seconds West along said West right-of-way line, 430.00 feet; thence South 11 degrees 18 minutes 53 seconds West along said West right-of-way line, 71.39 feet; thence South 67 degrees 22 minutes 33 seconds East along the Southerly line of the lands described in said Document No. 7946018, a distance of 33.00 feet to East Half centerline of said State Route 83; thence South 22 degrees 37 minutes 27 seconds West along said centerline, 1,102.09 feet to the South line of the said North Half of the Northwest Quarter of Section 14; thence South 89 degrees 59 minutes 47 seconds West along said South line, 2,179.49 feet to the Southwest corner thereof; thence North 00 degrees 09 minutes 51 seconds West along the West line thereof, 1,322.06 feet to the Place of Beginning in Lake County, Illinois.

I, further certify, that Property contains: 79.745± Acres.

I, further certify; that based upon examination of the Flood Insurance Rate Map of McHenry County, Illinois, Panel #17097C0229K with an effective date of September 18, 2013 indicates subject property residing within Zone "X" an area determined to be outside the 0.2% chance of annual flooding.

I, further certify; that upon completion of construction, concrete monuments, as shown, and 5/8" iron bars are/will be set at all lot corners and points of change in alignment, as required by the Plat Act (765 ILCS 205/1).

I, further certify, that these professional service conforms to the current Illinois Minimum Standards applicable to a Boundary Survey, as it applies to a Final Plat of Subdivision. All distances are given in feet and decimal thereof.

Given under my hand and seal at, Woodstock, Illinois this the 3rd day of April, 2025.

_____
Illinois Registered Professional Land Survey No.
Vanderstappen Land Surveying, Inc.
Design Firm No. 184-002792

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD

WALNUT RIDGE SUBDIVISION SHEET NO. 1 OF 5

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Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

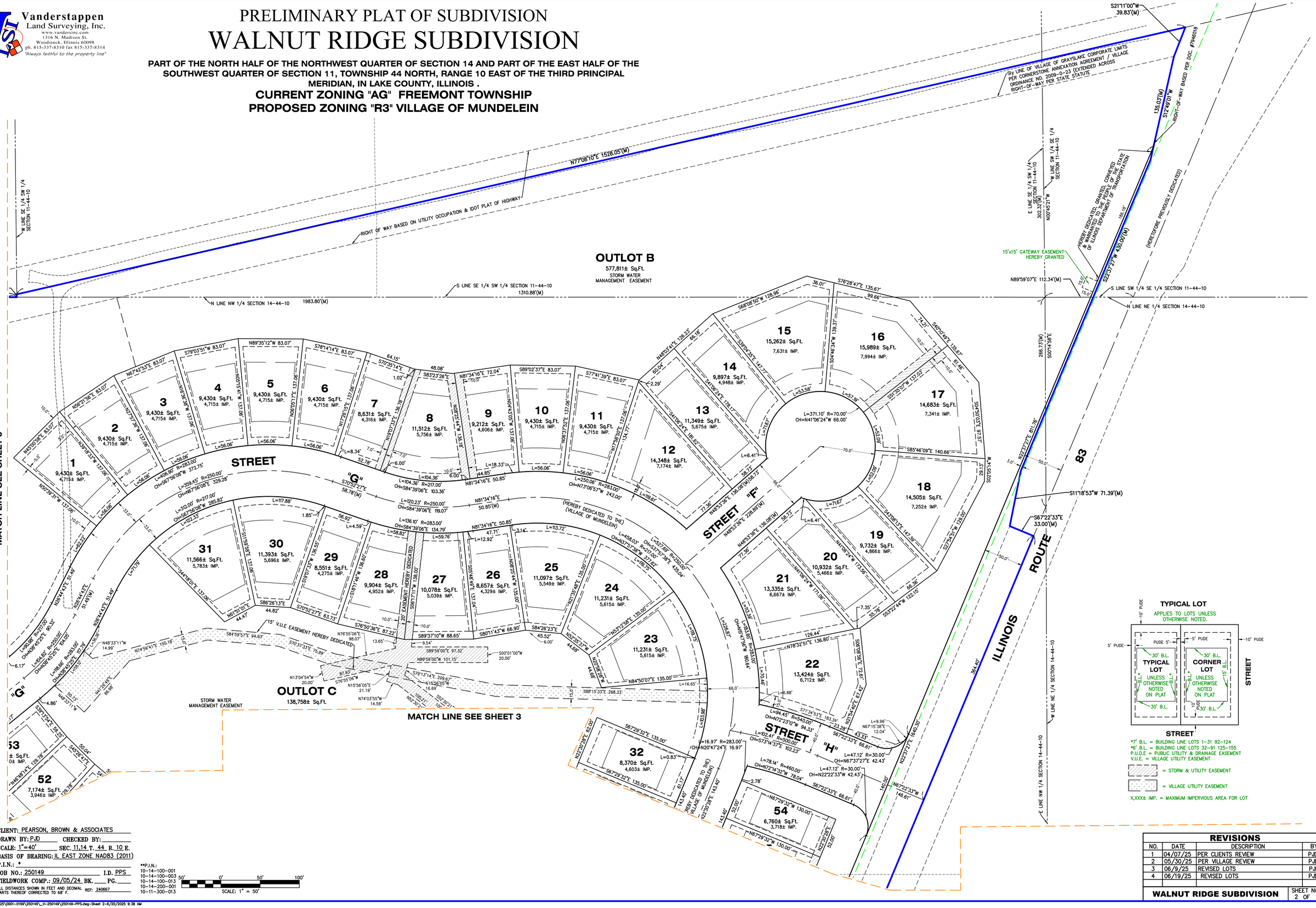
PRELIMINARY PLAT OF SUBDIVISION

WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN



CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: *
JOB NO.: 250149 I.D. PPS
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: 240667

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

SCALE: 1" = 50'

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD
WALNUT RIDGE SUBDIVISION		SHEET NO. 2 OF 5	

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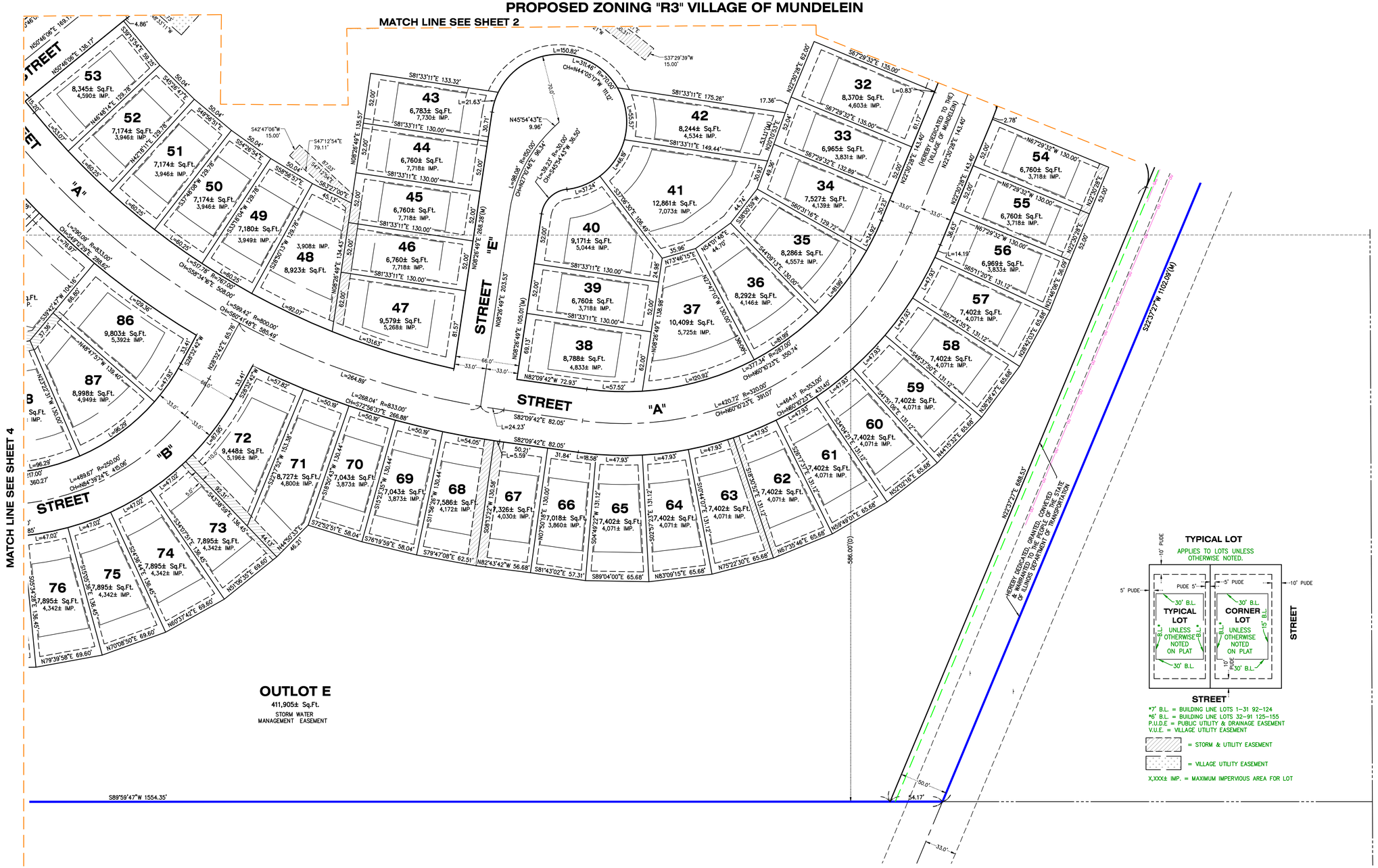
PRELIMINARY PLAT OF SUBDIVISION

WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN



TYPICAL LOT

APPLIES TO LOTS UNLESS OTHERWISE NOTED.

*7' B.L. = BUILDING LINE LOTS 1-31 92-124
*6' B.L. = BUILDING LINE LOTS 32-91 125-155
P.U.D.E = PUBLIC UTILITY & DRAINAGE EASEMENT
V.U.E. = VILLAGE UTILITY EASEMENT

= STORM & UTILITY EASEMENT

= VILLAGE UTILITY EASEMENT

X,XXX± IMP. = MAXIMUM IMPERVIOUS AREA FOR LOT

CLIENT: PEARSON, BROWN & ASSOCIATES
DRAWN BY: PJD CHECKED BY:
SCALE: 1"=40' SEC. 11,14 T. 44 R. 10 E.
BASIS OF BEARING: IL EAST ZONE NAD83 (2011)
P.I.N.: *
JOB NO.: 250149 I.D. PPS
FIELDWORK COMP.: 09/05/24 BK. PG.
ALL DISTANCES SHOWN IN FEET AND DECIMAL PARTS THEREOF CORRECTED TO 68° F. REF: 240667

**P.I.N.:
10-14-100-001
10-14-100-003
10-14-100-013
10-14-200-001
10-11-300-013

50' 0' 50' 100'
SCALE: 1" = 50'

REVISIONS			
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1	04/07/25	PER CLIENTS REVIEW	PJD
2	05/30/25	PER VILLAGE REVIEW	PJD
3	06/9/25	REVISED LOTS	PJD
4	06/19/25	REVISED LOTS	PJD
WALNUT RIDGE SUBDIVISION		SHEET NO. 3 OF 5	

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Vanderstappen
Land Surveying, Inc.
www.vandersinc.com
1316 N. Madison St.
Woodstock, Illinois 60098
ph. 815-337-8310 fax 815-337-8314
"Always faithful to the property line"

PRELIMINARY PLAT OF SUBDIVISION

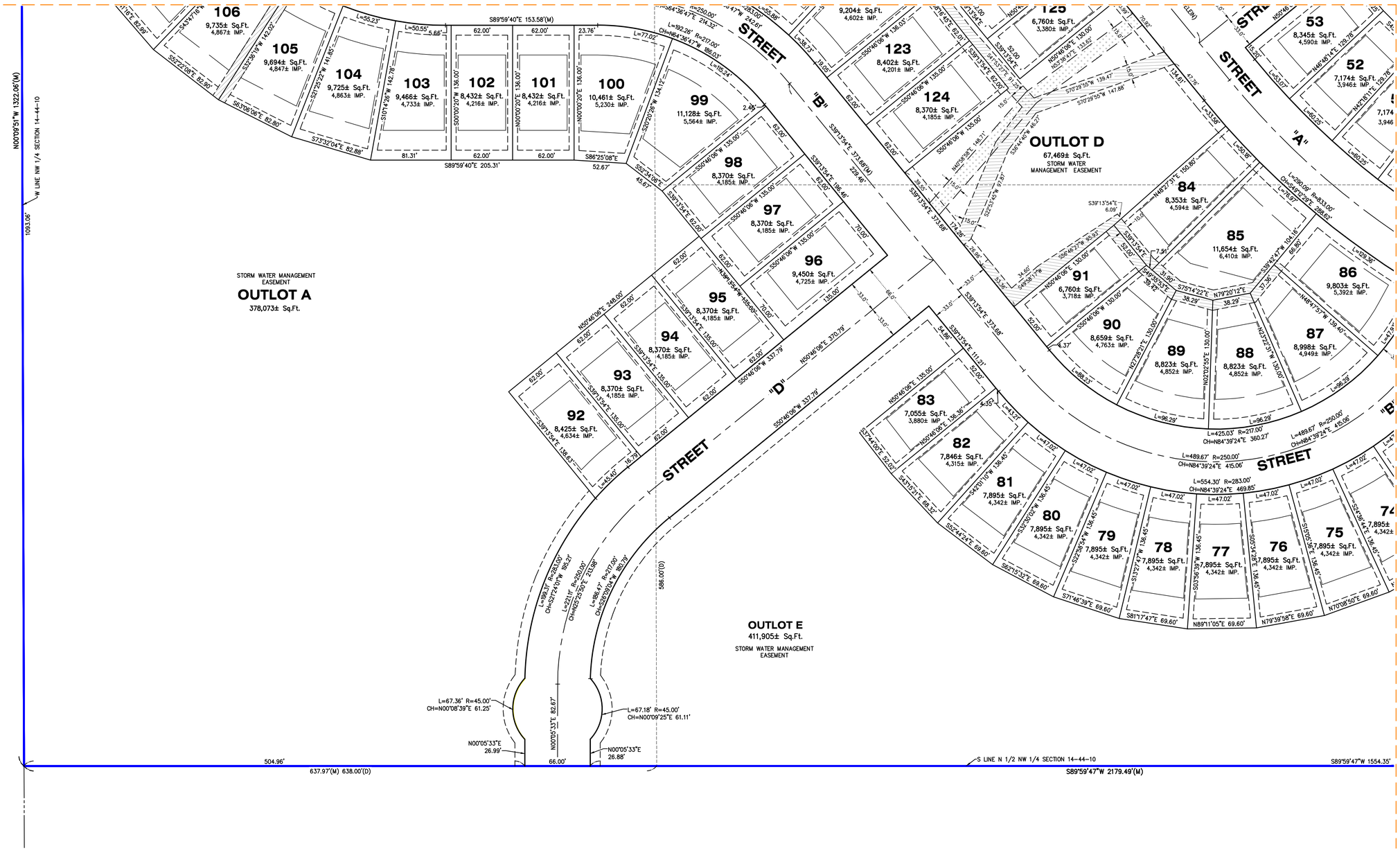
WALNUT RIDGE SUBDIVISION

PART OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 14 AND PART OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 11, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS .

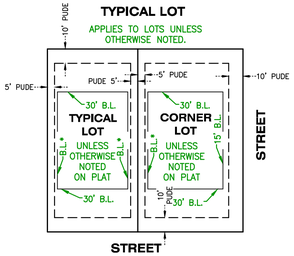
CURRENT ZONING "AG" FREEMONT TOWNSHIP

PROPOSED ZONING "R3" VILLAGE OF MUNDELEIN

MATCH LINE SEE SHEET 5



MATCH LINE SEE SHEET 3



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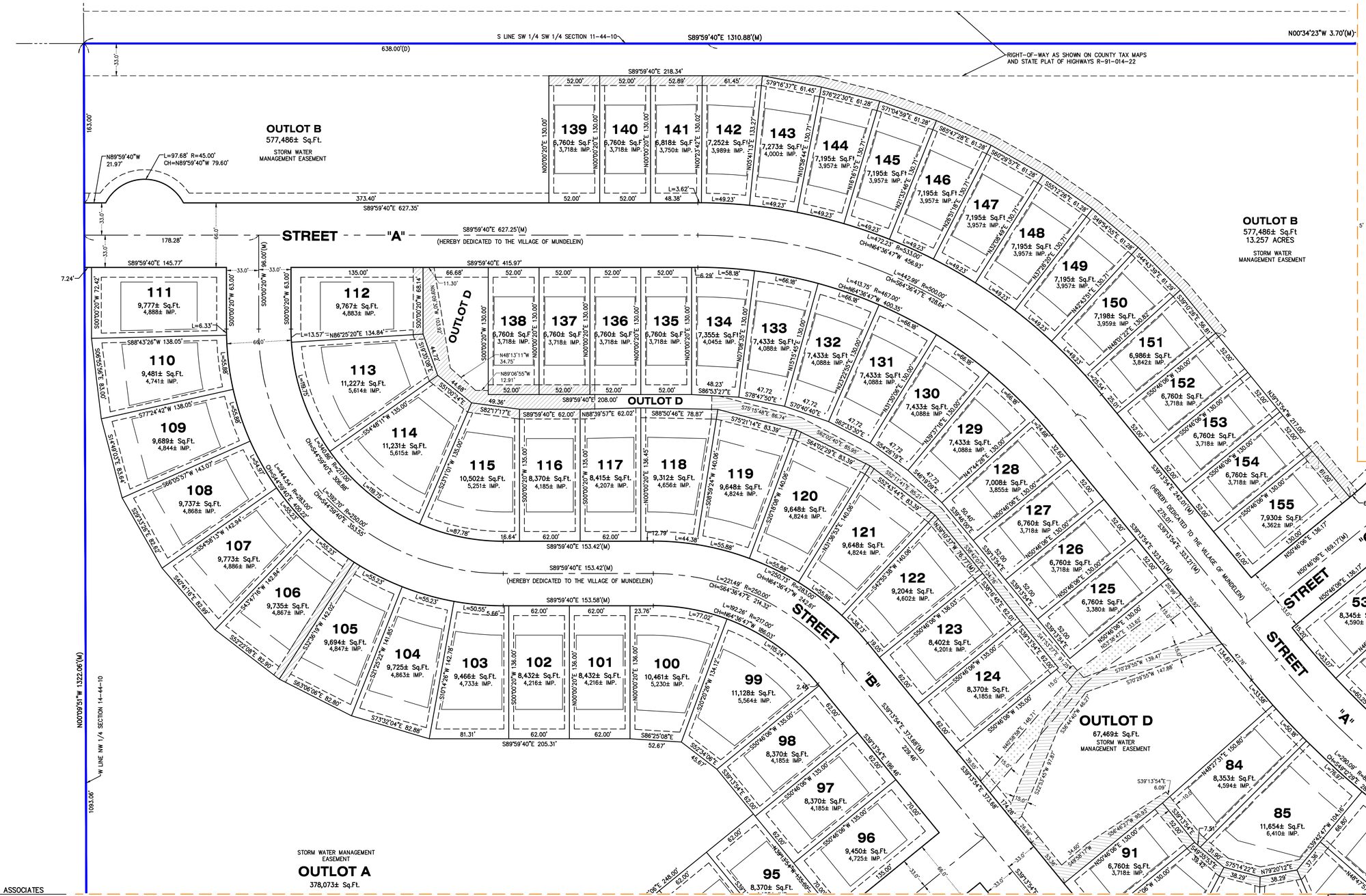
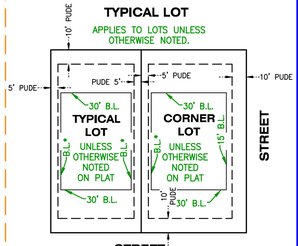


TYPICAL LOT

APPLIES TO LOTS UNLESS OTHERWISE NOTED.



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WALNUT RIDGE SUBDIVISION		SHEET NO. 5 OF 5	

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PRELIMINARY
STORMWATER MANAGEMENT REPORT

FOR

WALNUT RIDGE

MUNDELEIN, ILLINOIS

PREPARED FOR:

PULTE HOME COMPANY, LLC
1900 E. Golf Rd. #300
Schaumburg, IL 60173
(847) 230-5400

APRIL 11, 2025
REVISED JUNE 20, 2025

PEARSON, BROWN & ASSOCIATES, INC.
CONSULTING ENGINEERS

1850 W. WINCHESTER RD. – SUITE 205
LIBERTYVILLE, IL 60048
PHONE 847 / 367-6707
FAX 847 / 367-2567

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APPENDIX 4 – WETLAND HYDROLOGY

INTRODUCTION

Pearson, Brown and Associates, Inc. (PBA) prepared this preliminary stormwater management report for the Walnut Ridge project in Mundelein, Illinois for Pulte Homes.

Exhibit A shows the project location.

Aerial imagery is provided on Exhibit B. Aerial imagery is also in the background on Exhibit D.

The property area is 76.7 acres (net).

The following Parcel Identification Numbers are involved.

PINs:

10-11-300-013
10-14-100-013
10-14-200-001
10-14-100-001
10-14-100-003

155 Single Family Lots are proposed. The lots primarily in the northeast and the west can have up to 50% maximum impervious coverage. Some of the central and southeast lots can have up to 55% impervious coverage. For purposes of developing runoff curve numbers for the stormwater management design, the maximum allowable coverage was used for the residential lot areas tributary to a given basin. An additional allowance has been included based on the number of corner lots in each zone as these can have up to 5% higher coverage.

PROJECT UNDERSTANDING

The property drains to all four corners. Multiple watersheds are involved. Runoff reaching the northwest corner is tributary to Mill Creek which is tributary to the Des Plaines River sub-basin. Runoff reaching the southwest corner is tributary to Manitou Creek (formerly Squaw Creek) which is part of the Upper Fox River sub-basin. Runoff that drains to either the southeast corner or to the northeast corner of the property is tributary to Bull Creek which is part of the Des Plaines River sub-basin. Exhibit C depicts the existing site conditions.

Soil Code information from the NRCS/USDA WEBSOIL Survey is shown on Exhibit D.

Representative soils are listed below.

Code	Name	Hydrologic Soil Group
146B	**Elliott Silt Loam**	**C**
223B	**Varna Silt Loam**	**C**
223C2	**Varna Silt Loam**	**C**
330A	**Peotone Silty Clay Loam**	**B/D**
232A	**Ashkum Silty Clay Loam**	**B/D**
531D2	**Markham Silt Loam**	**C**
103A	**Houghton Muck**	**D**

Generally soils appear to be type C and B/D depending on drained or undrained conditions. An area of Houghton Muck is located in the far northeast corner that is associated with an existing wetland that is planned to be avoided as grading for the stormwater basin in that corner will begin outside the wetland limits. For purposes of calculating required stormwater storage for the development, all runoff curve numbers have been calculated using Type D soils. These calculations are included below in the sections associated with each zone.

FEMA FIRM panel information is included on an annotated Exhibit E. The current effective FIRM panel shows a Zone A SFHA in the southwest corner of the property. However, there is a local Lake County Stormwater Management Commission approved BFE for this zone on NAVD 88 datum from a study of Manitou Creek. This elevation is 831.43 as shown on the exhibit and is included on our plans. There is also an approved LCSMC BFE (from June of 2021) for the depression in the northeast corner of the site. This elevation is 832.92 and is included on the exhibit and also the engineering plans.

Exhibit F depicts the USGS Hydrologic Atlas for this property and surrounding areas. Some of the key existing ridge lines are visible showing the drainage to the corners of the property. The only flood of record zone shown is in the southeast corner of the site.

Tributary areas and hydrologic disturbance for each of the four zones, (NW,SW,SE and NE) are included in separate exhibits for each zone. Areas of offsite tributary, where applicable, are also included.

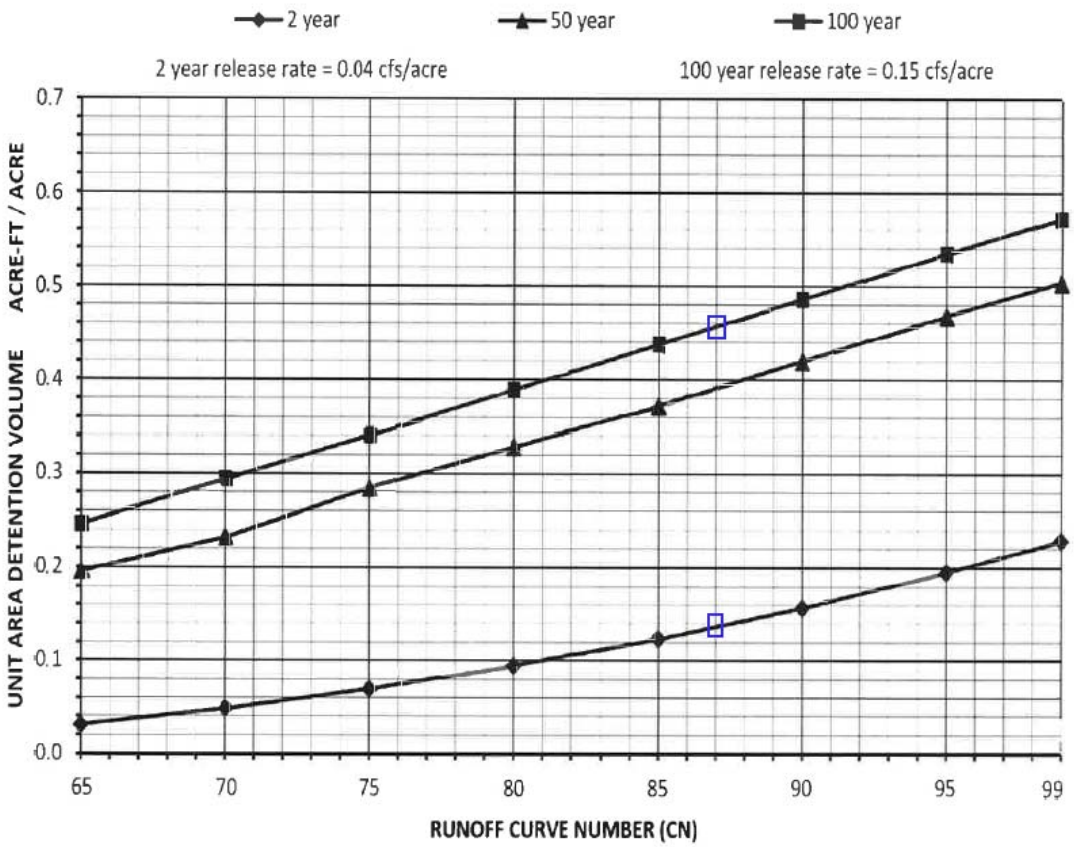
PROPOSED STORMWATER MANAGEMENT SUMMARY

NORTHWEST BASIN:

To determine the required detention volume for the northwest basin zone. the following methodology was employed. Please refer to the northwest basin exhibit [NW-1]. The hydrologic disturbed area total of 8.06 acres was used with the unit area method using the impervious coverage total to develop a composite runoff curve number (CN) of 87. [calculations included below].

The 100yr factor for CN 87 is 0.46 ac-ft/ac as shown below.
Required 100yr volume total is 3.71 ac-ft. [8.06 ac x 0.46 ac-ft/ac]

The 2yr factor is 0.14 ac-ft/ac with a corresponding required volume of 1.13 ac-ft
[8.06 ac x 0.14 ac-ft/ac].



NORTHWEST ZONE:

				CN	MULT.
HYRDOLOGICALLY DISTURBED AREA:	**8.06**	**AC**			
TRIBUTARY AREA:	**7.83**	**AC**			
TRIBUTARY AREA (OFFSITE)	**0.00**	**AC**	NO DVSF		
IMPERVIOUS (INCL NWL):	**3.25**	**AC**		**98**	318.5
PERVIOUS: [open space, Ty. D soil]	**4.81**	**AC**		**80**	384.8
				TOTAL>>	703.3

COMPOSITE CN FOR AREA:	**87**		
100YR UNIT AREA FACTOR	**0.46**	**AC-FT/AC**	
REQUIRED DETENTION FOR ZONE (100YR	**3.71**	**AC-FT**	

Impervious Area: (within hydrologic disturbed area)

NWL	0.27	ac
roads	0.85	ac
aprons	0.138	ac
s/w	0.26	ac
lots with 55% max coverage	1.35	ac
lots with 50% max coverage	0.34	ac
corner lot (2) allowance	0.04	ac
total >>	3.248	ac
	use 3.25	ac

Northwest Basin: Stage-Storage

	elev ft	area ac	avg ac	interval ft	vol ac-ft	total vol ac-ft
outlet	831	**0.27**	0.135			
	832	**0.34**	0.305	1	0.31	**0.31**
	833	**0.42**	0.38	1	0.38	**0.69**
	834	**0.50**	0.46	1	0.46	**1.15**
	835	**0.58**	0.54	1	0.54	**1.69**
	836	**0.67**	0.625	1	0.63	**2.31**
	837	**0.74**	0.705	1	0.71	**3.02**
	838	**0.83**	0.785	1	0.79	**3.80**
spillway crest	838.3	**0.87**	0.85	0.3	0.25	**4.05**

100yr HWL = 837.88 [3.71 ac-ft level]

2yr HWL = 833.96 [1.13 ac-ft level]

Northwest Basin outlet control structure design information:

Proposed restrictors for this basin employ the standard Lake County WDO 2yr release rate of 0.04 cfs per acre and 0.15 cfs per acre for the 100yr. The allowable release rate for the actual restrictors to be constructed is based on the tributary area of 7.83 acres.

PROPOSED SYSTEM DUAL RESTRICTOR CALCS:
7.83 acre design tributary area

100YR	allowable release based on 0.15 cfs/ac >>>	1.175	cfs	
2YR	allowable release based on 0.04 cfs/ac >>>	0.313	cfs	

LOWER:		UPPER:	
ORIFICE DIA. (IN)	2.65	ORIFICE DIA. (IN)	4.00
AREA (SF)	0.038	AREA (SF)	0.087
COEF:	0.60	COEF:	0.60
INVERT ELEVATION:	831.00	INVERT ELEVATION:	835.00

	STAGE	H (FT)	Q (CFS)	STAGE	H (FT)	Q (CFS)	TOTAL (CFS)
	831.00		0.00	831.00			0.00
	832.00	0.89	0.17	832.00			0.17
	833.00	1.89	0.25	833.00			0.25
2YR HWL	833.96	2.85	0.31	833.96		0.00	0.31
	834.00	2.89	0.31	834.00		0.00	0.31
	836.00	4.89	0.41	836.00	0.83	0.38	0.79
	837.00	5.89	0.45	837.00	1.83	0.57	1.02
100yr HWL	837.88	6.77	0.48	837.88	2.71	0.69	1.17
	838.00	6.89	0.48	838.00	2.83	0.71	1.19
spillway crest	838.30	7.19	0.49	838.30	3.13	0.74	1.24

A 2.65 inch lower restrictor is proposed at the outlet elevation (831.00) to control the 2yr allowable rate.

A 4 inch restrictor is proposed at elevation 835.00 to allow for the 100yr allowable rate to be released via both restrictors when the basin is at the 100yr HWL of 837.88.

Detention Volume Safety Factor (DVSF) considerations:

The proposed northwest basin has no offsite tributary so the DVSF is not required for this basin.

The proposed basin like the others planned for the subdivision is planned as a naturalized basin with deep-rooted native vegetation planted below the outlet elevation. The basins will also serve to provide water quality enhancement, and runoff volume reduction for the project.

NORTHWEST BASIN

RUNOFF VOLUME REDUCTION (RVR) & WATER QUALITY

RUNOFF VOLUME REDUCTION (RVR)

RUNOFF VOLUME REDUCTION HIERARCHY

Runoff Volume Reduction (RVR) standards described in Section 503 of the WDO apply to this development.

Article 5, Section 503.01 of the WDO requires that all development be designed in accordance with the Runoff Volume Reduction (RVR) Hierarchy listed in that section. The hierarchy has been applied to the design of the development as follows:

- *Preservation and enhancement of the stormwater management benefits of the natural resource features of the development site (e.g., areas of Hydrologic Soil Groups A and B, floodplains, Waters of the United States, Isolated Waters of Lake County, channels, drainageways, prairies, savannas, and woodlands);*

  The proposed site plan intentionally will not disturb most of an approximate 2.5 acre area in the north central part of the property due to existing trees.

- *Minimization or disconnection of impervious surfaces;*

  Impervious area is a function of the overlying community zoning. Runoff from portions of the site is directed to native planted basin areas and open vegetated swales where possible. Downspouts are also planned to splash at grade rather than directly connect to storm sewers.

- *Enhancement of the infiltration and storage characteristics of the development site using appropriate best management practices;*

  The bottom 16 inches [1.33' below the outlet elevation] of the northwest stormwater basin is designed to hold runoff and allow it to infiltrate.

- *The use of open channels with native vegetation to convey stormwater runoff;*

  Runoff is directed to open vegetated swales where possible. The stormwater basin will be planted in Native vegetation to promote stabilization, infiltration, and water quality.

- *Structural measures that provide water quality and volume reduction;*

  No structural measures are proposed.

- *Structural measures that provide only volume reduction or other rainwater harvesting practices;*

  No structural measures are proposed.

- *Measures that provide water quality and quantity control;*

  The stormwater basins will be planted in native vegetation to better absorb and infiltrate runoff and provide water quality by acting as a filter for the first flush rain events by capturing pollutants.

- *Measures that provide only quantity control.*

  As stated above, the basins are designed to capture, hold, and allow the bottom 16-inches of runoff to infiltrate. Water quality volume is also provided in this zone.

The new impervious area (created after April 1, 2009) for the onsite development areas tributary to the proposed basin system is 3.25 ac

Storage volume proposed in the bottom 16" zone below the outlet is calculated as follows.

Outlet Elevation 831 contour area: 0.27 ac

Bottom Elevation 829.67 contour area: 0.18 ac

Average Contour area: 0.225 ac

Depth =1.33'

Volume = (1.33')(0.225 ac) = 0.299 ac-ft = 13,024 cubic feet

The soil types present in the area of the northwest basin infiltration zone are:

[refer to exhibit D]

Code	Name	Hydrologic Soil Group	Permeability range from LC Soil Survey
146B	Elliott Silt Loam	C	0.06 – 0.20 in/hr for depths below 41"
223B	Varna Silt Loam	C	0.06 - 0.20 in/hr for depths below 30"
223C2	Varna Silt Loam	C	0.06 - 0.20 in/hr for depths below 30"

The USDA recommends values of 0.2-0.4 for loamy soils (see next page). As these are silty loams, we will use a lower value of 0.14 in/hr.

USDA Natural Resources Conservation Service

Indicator P | Test F | Function W

Soil Quality Indicators

Infiltration

Infiltration is the downward entry of water into the soil. The velocity at which water enters the soil is infiltration rate. Infiltration rate is typically expressed in inches per hour. Water from rainfall or irrigation must first enter the soil for it to be of value.

A one inch layer of water is added to a six inch diameter ring to measure infiltration rate.

Factors Affecting

Inherent - Infiltration rate is dependent on soil texture (percentage of sand, silt, and clay) and clay mineralogy. Water moves more quickly through the large pore spaces in a sandy soil than it does through the small pores of a clayey soil, especially if the clay is compacted and has little or no structure or aggregation (see Table 1).

Depending on the amount and type of clay minerals, many clayey soils develop shrinkage cracks as they dry, creating a direct conduit for water to enter the soil. These clay soils have high infiltration capacities as water moves into the shrinkage cracks, although at other times, when cracks are not present, their infiltration rate is characteristically slow.

Dynamic - A reflection of climate and landscape position, as well as management practices and crop demand, existing soil water content affects the ability of the soil to pull additional water into it. Pores and cracks are generally open in a dry soil. Many of them are filled in by water or swelled shut as the soil becomes wet, so infiltration rate is generally highest when the soil is dry. As the soil becomes wet, the infiltration rate slows to the rate at which water moves through the most restrictive layer, such as a compacted layer or a layer of dense clay.

Infiltration is affected by crop and land management practices that affect surface crusting, compaction, and soil organic matter. Without the protective benefits of vegetative or residue cover, bare soil is subjected to the direct impact and erosive forces of raindrops that dislodge soil particles. Dislodged soil particles fill in and block surface pores, contributing to the development of surface crusts that restrict water movement into the soil.

Compaction results from livestock and equipment traffic, especially on wet soils, and continuous plowing to the same depth, e.g. the creation of a plow pan below the tillage depth. Compacted or impervious soil layers have reduced pore space and restricted water movement through the soil profile.

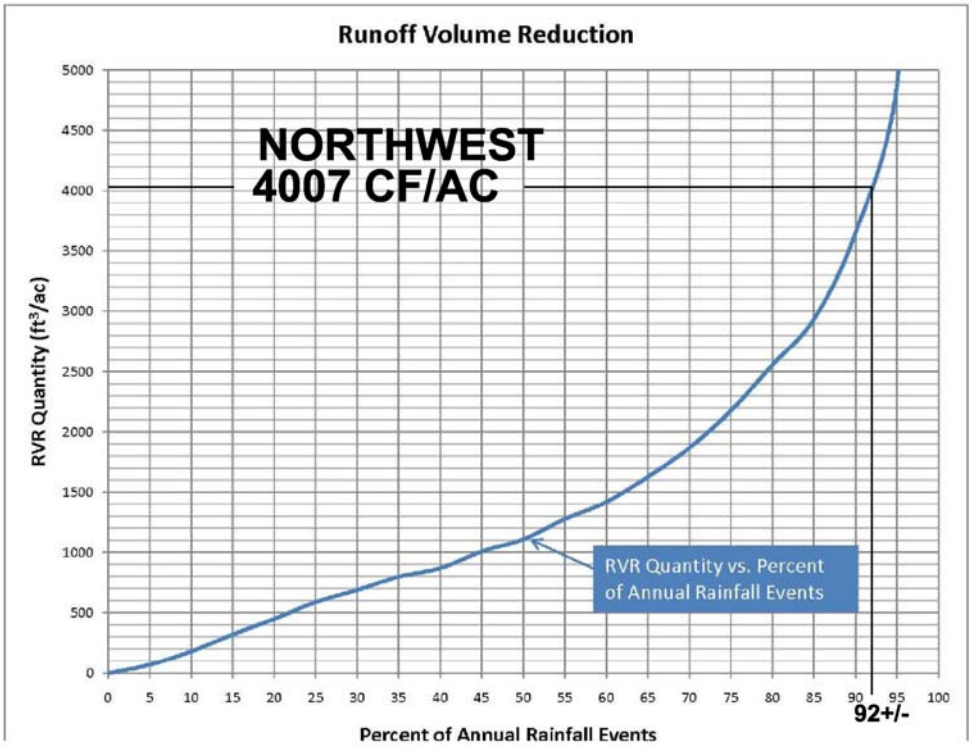
Soil organic matter affects infiltration through its positive affect on the development of stable soil aggregates, or crumbs. Highly aggregated soil has increased pore space and infiltration. Soils high in organic matter also provide good habitat for soil biota, such as earthworms, that through their burrowing activities, increase pore space and create continuous pores linking surface to subsurface soil layers.

Management that reduces soil cover, disrupts continuous poor space, compacts soil, or reduces soil organic matter negatively impacts infiltration. Since tillage negatively affects all of these properties, it plays an important role in a soil's infiltration rate.

Table 1. Steady infiltration rates for general soil texture groups in very deeply wetted soil. (Hillel, D. 1982. Introduction to soil physics. Academic Press, San Diego, CA)

Soil Type	Steady Infiltration Rate (in/hr)
Sands	> 0.8
Loams	0.2 - 0.4
Clays	0.04 - 0.2

	100% impervious values	
Percent of Annual Rainfall Events	Runoff Depth (in)	RVR Quantity ft^3/ac new impervious
0	0	0
5	0.02	70
10	0.05	180
15	0.09	320
20	0.12	450
25	0.16	590
30	0.19	690
35	0.22	800
40	0.24	870
45	0.28	1010
50	0.30	1110
55	0.35	1280
60	0.39	1420
65	0.45	1630
70	0.51	1870
75	0.60	2180
80	0.70	2560
85	0.81	2940
90	1.01	3660
95	1.35	4900
99	2.41	8760



RVR Design Summary:	
Proposed Impervious (ac)	3.25
Provided Storage to Infiltrate (cf)	13024
RVR Quantity (cf/ac)	4007
Percent of Annual Rainfall Events (%)	92 +/-
Infiltration Rate* (in/hr)	0.14
Area to Infiltrate (sf)	11761
System Infiltration Rate (cf/hr)	137
Dewatering Time (hrs)	94.9

WATER QUALITY

The WDO requires that all development divert and detain at least the first 0.01 inches of runoff for every 1% of net new impervious surface for the development with a minimum volume equal to 0.2 inches of runoff or provide an equivalent level of treatment suitable to the Enforcement Officer. The pond bottoms are designed to temporarily retain water in order to achieve the water quality requirement. The total net new impervious surface area for the development area tributary to the northwest basin is 3.25 acres and requires 0.271 acre-feet of water quality volume.

The proposed northwest basin provides 0.299 ac-ft of storage below the outlet elevation.

SOUTHWEST BASIN SYSTEM:

The southwest basin system is tributary to Manitou Creek and is therefore subject to watershed specific release rates. The 100yr allowable rate is 0.09 cfs per acre and the 2yr allowable rate is 0.02 cfs per acre.

To determine the required detention volume for the southwest basin zone. the following methodology was employed. Please refer to the southwest basin exhibit [SW-1]. The hydrologic disturbed area total of 24.75 acres was used with the impervious and pervious area totals to develop a composite runoff curve number (CN) of 89. [calculations included below].

Two basins are associated with the southwest system and these will be connected with a 24" diameter equalizer pipe. Each basin will have the same bottom, outlet, spillway and top of berm elevation.

SOUTHWEST ZONE

			CN	MULT.
HYRDOLOGICALLY DISTURBED AREA:	**24.75**	**AC**		
TRIBUTARY AREA:	**23.64**	**AC**		
IMPERVIOUS (INCL NWL):	**13.03**	**AC**	**98**	1276.94
PERVIOUS: [open space, Ty. D soil]	**11.72**	**AC**	**80**	937.6
			TOTAL>>	2214.54

COMPOSITE CN FOR AREA: **89**

Impervious Summary:

NWL	3.53	ac
roads	1.93	ac
aprons	0.30	ac
trail/path	0.35	ac
lift station & park	0.25	ac
s/w	0.55	ac
50% lots	3.00	ac
55% lots	2.96	ac
corner lot extra allow…	0.16	ac
total >>	13.03	ac

HEC-HMS was employed to initially determine the 2yr required detention volume using a minimum size 4" restrictor only with a 24hr, 2yr event. The lag time used was the same one used in the spillway design model for the Southwest basin (13.8 min.).

The peak discharge was then compared to the allowable rate of 0.47 cfs [23.64 ac x 0.02 cfs/ac]. This rate was found to be 0.41 cfs and we are calling this effective 2yr rate control for a corresponding 2yr HWL of 833.14 and 2yr required volume of 4.23 ac-ft.

Next, various size upper restrictors were examined with the model along with the 4" at normal water using the 100yr, 24hr event until a resulting peak release close to but not exceeding the 100yr allowable release rate 2.128 cfs [23.64 ac x 0.09 cfs/ac] was attained. An upper restrictor with 8.10" diameter and invert of 834.27 produced a peak release of 2.11 cfs and corresponding volume of 13.39 ac-ft.

Southwest Basin system - Two basins - West and East - Connected with 24" diameter equalizer pipe

west basin area:

	elev	area	avg	interval	vol	total vol
	ft	ac	ac	ft	ac-ft	ac-ft
outlet	832	**1.64**				
	833	**1.78**	1.71	1	1.71	**1.71**
	834	**1.93**	1.855	1	1.86	**3.57**
	835	**2.10**	2.015	1	2.02	**5.58**
hw / spillway	836	**2.28**	2.19	1	2.19	**7.77**

east basin area:

	elev	area	avg	interval	vol	total vol
	ft	ac	ac	ft	ac-ft	ac-ft
outlet	832	**1.89**				
	833	**2.05**	1.97	1	1.97	**1.97**
	834	**2.22**	2.135	1	2.14	**4.11**
	835	**2.40**	2.31	1	2.31	**6.42**
hw / spillway	836	**2.57**	2.485	1	2.49	**8.90**

TOTAL VOLUME PROVIDED = 16.67 ac-ft

COMBINED VOLUME:

	elev	area	avg	interval	vol	total vol
	ft	ac	ac	ft	ac-ft	ac-ft
outlet	832	**3.53**				
	833	**3.83**	3.68	1	3.68	**3.68**
	834	**4.15**	3.99	1	3.99	**7.67**
	835	**4.50**	4.325	1	4.33	**12.00**
hw / spillway	836	**4.85**	4.675	1	4.68	**16.67**

100yr HWL = 835.30 [13.39 ac-ft level]

2yr HWL = 833.14 [4.22 ac-ft level]

Southwest Basin outlet control structure design information:

Proposed restrictors for this dual basin system employ watershed specific release rates. The 2yr release rate is 0.02 cfs per acre and the 100yr rate is 0.09 cfs per acre. The allowable release rate for the actual restrictors to be constructed is based on the tributary area of 23.64 acres.

PROPOSED SYSTEM DUAL RESTRICTOR CALCS:

23.64 AC design tributary area

100YR	allowable release based on 0.09 cfs/ac >>>	2.128	cfs
2YR	allowable release based on 0.02 cfs/ac >>>	0.473	cfs

LOWER:		UPPER:	
ORIFICE DIA. (IN)	4.00	ORIFICE DIA. (IN)	8.10
AREA (SF)	0.087	AREA (SF)	0.358
COEF:	0.6	COEF:	0.6
INVERT ELEVATION:	832.00	INVERT ELEVATION:	834.27

	STAGE	H (FT)	Q (CFS)	STAGE	H (FT)	Q (CFS)	TOTAL (CFS)
	832.00			832.00			0.00
	833.00	0.83	0.38	833.00			0.38
2YR HWL	833.14	0.97	0.41	833.14	0.00		0.41
	834.00	1.83	0.57	834.00	0.00	0.00	0.57
	835.00	2.83	0.71	835.00	0.39	1.08	1.79
SPILLWAY	836.00	3.83	0.82	836.00	1.39	2.03	2.86

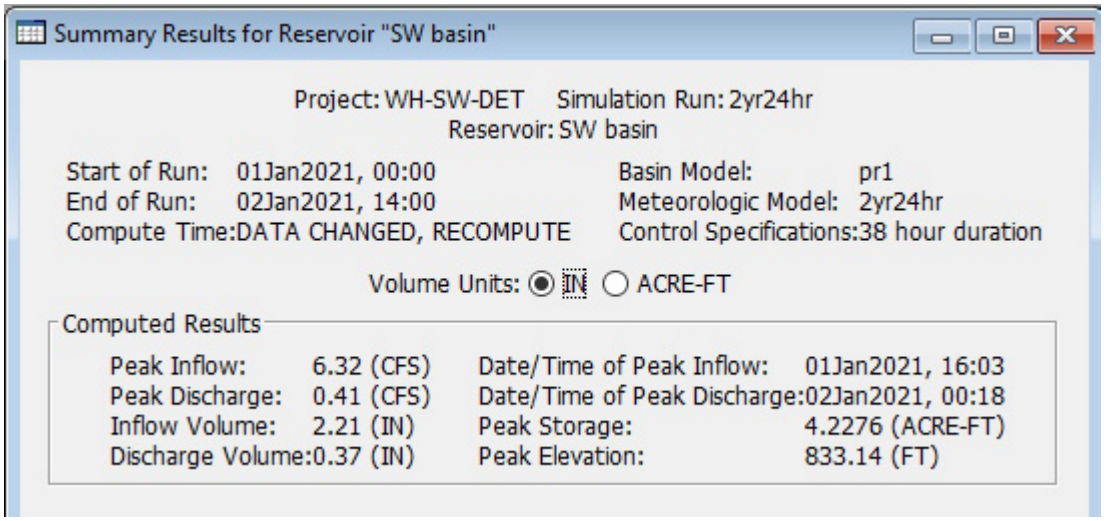
HEC-HMS OUTPUT PEAK 100YR, 24HR STAGE = 835.30, PEAK INDICATED RATE = 2.11 CFS

Detention Volume Safety Factor (DVSF) considerations:

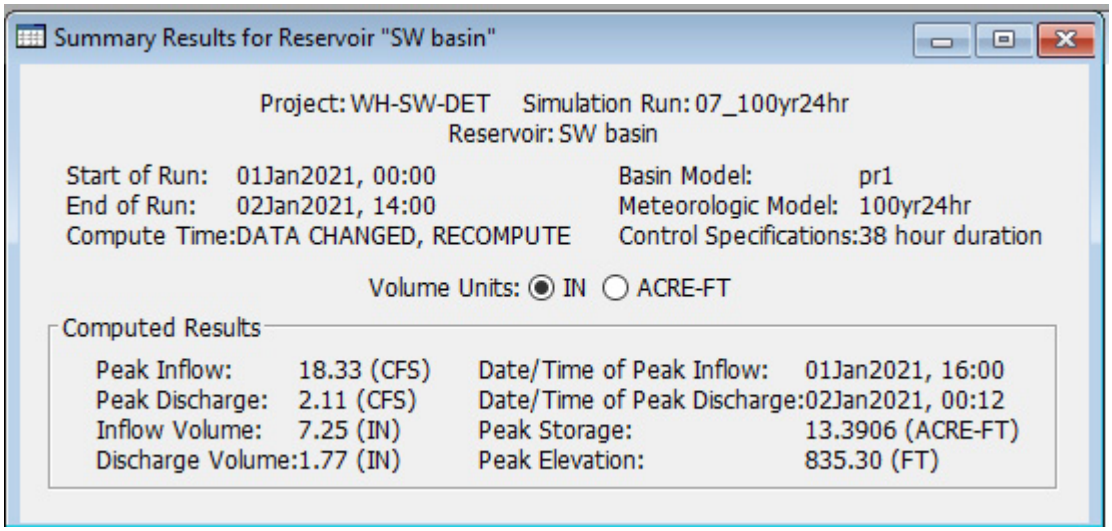
The proposed southwest basin has no offsite tributary so the DVSF is not required for this basin.

The proposed basin like the others planned for the subdivision is planned as a naturalized basin with deep-rooted native vegetation planted below the outlet elevation. The basins will also serve to provide water quality enhancement, and runoff volume reduction for the project.

The HEC-HMS output for the 2yr, 24 and 100yr, 24hr runs are shown below.



2yr, 24hr output



100yr, 24hr output

SOUTHWEST BASIN

RUNOFF VOLUME REDUCTION (RVR) & WATER QUALITY

RUNOFF VOLUME REDUCTION (RVR)

RUNOFF VOLUME REDUCTION HIERARCHY

Runoff Volume Reduction (RVR) standards described in Section 503 of the WDO apply to this development.

Article 5, Section 503.01 of the WDO requires that all development be designed in accordance with the Runoff Volume Reduction (RVR) Hierarchy listed in that section. The hierarchy has been applied to the design of the development as follows:

- *Preservation and enhancement of the stormwater management benefits of the natural resource features of the development site (e.g., areas of Hydrologic Soil Groups A and B, floodplains, Waters of the United States, Isolated Waters of Lake County, channels, drainageways, prairies, savannas, and woodlands);*

  The proposed site plan intentionally will not disturb most of an approximate 2.5 acre area in the north central part of the property due to existing trees.

- *Minimization or disconnection of impervious surfaces;*

  Impervious area is a function of the overlying community zoning. Runoff from portions of the site is directed to native planted basin areas and open vegetated swales where possible. Downspouts are also planned to splash at grade rather than directly connect to storm sewers.

- *Enhancement of the infiltration and storage characteristics of the development site using appropriate best management practices;*

  The bottom 4.8 inches [0.4' below the outlet elevation] of the two southwest basins are designed to hold runoff and allow it to infiltrate.

- *The use of open channels with native vegetation to convey stormwater runoff;*

  Runoff is directed to open vegetated swales where possible. The stormwater basins will be planted in Native vegetation to promote stabilization, infiltration, and water quality.

- *Structural measures that provide water quality and volume reduction;*

  No structural measures are proposed.

- *Structural measures that provide only volume reduction or other rainwater harvesting practices;*

  No structural measures are proposed.

- *Measures that provide water quality and quantity control;*

  The stormwater basins will be planted in native vegetation to better absorb and infiltrate runoff and provide water quality by acting as a filter for the first flush rain events by capturing pollutants.

- *Measures that provide only quantity control.*

  As stated above, the basins are designed to capture, hold, and allow the bottom 4.8-inches (0.4') of runoff to infiltrate. Water quality volume is also provided in this zone.

The new impervious area (created after April 1, 2009) for the onsite development areas tributary to the proposed basin system is 13.05 ac

Storage volume proposed in the bottom 4.8" [0.4'] zone below the outlet is calculated as follows.

Outlet Elevation 832 contour area total for both basins: 3.53 ac

Bottom Elevation 831.60 contour area total for both basins: 3.40 ac

Average Contour area: 3.46 ac

Depth =0.4'

Volume = (0.4')(3.46 ac) = 1.384 ac-ft = 60,287 cubic feet

The soil types present in the area of the southwest basin system infiltration zone are:

[refer to exhibit D]

Code	Name	Hydrologic Soil Group	Permeability range from LC Soil Survey
146B	Elliott Silt Loam	C	0.06 – 0.20 in/hr for depths below 41"
223B	Varna Silt Loam	C	0.06 - 0.20 in/hr for depths below 30"
330A	Peotone Silty Clay Loam	B/D	0.2-0.6 in/hr for depths from 0-60"
232A	Ashkum Silty Clay Loam	B/D	0.2-0.6 in/hr for depths from 0-60"
531D2	Markham Silt Loam	C	0.06-0.2 in/hr for depths below 20"

The USDA recommends values of 0.2-0.4 in/hr for loamy soils (see next page). As these are silty and silty clay loams, we will use a lower value of 0.10 in/hr.

USDA Natural Resources Conservation Service

Indicator	Test	Function
P	F	W

Soil Quality Indicators

Infiltration

Infiltration is the downward entry of water into the soil. The velocity at which water enters the soil is infiltration rate. Infiltration rate is typically expressed in inches per hour. Water from rainfall or irrigation must first enter the soil for it to be of value.

A one inch layer of water is added to a six inch diameter ring to measure infiltration rate.

Factors Affecting

Inherent - Infiltration rate is dependent on soil texture (percentage of sand, silt, and clay) and clay mineralogy. Water moves more quickly through the large pore spaces in a sandy soil than it does through the small pores of a clayey soil, especially if the clay is compacted and has little or no structure or aggregation (see Table 1).

Depending on the amount and type of clay minerals, many clayey soils develop shrinkage cracks as they dry, creating a direct conduit for water to enter the soil. These clay soils have high infiltration capacities as water moves into the shrinkage cracks, although at other times, when cracks are not present, their infiltration rate is characteristically slow.

Dynamic - A reflection of climate and landscape position, as well as management practices and crop demand, existing soil water content affects the ability of the soil to pull additional water into it. Pores and cracks are generally open in a dry soil. Many of them are filled in by water or swelled shut as the soil becomes wet, so infiltration rate is generally highest when the soil is dry. As the soil becomes wet, the infiltration rate slows to the rate at which water moves through the most restrictive layer, such as a compacted layer or a layer of dense clay.

Infiltration is affected by crop and land management practices that affect surface crusting, compaction, and soil organic matter. Without the protective benefits of vegetative or residue cover, bare soil is subjected to the direct impact and erosive forces of raindrops that dislodge soil particles. Dislodged soil particles fill in and block surface pores, contributing to the development of surface crusts that restrict water movement into the soil.

Compaction results from livestock and equipment traffic, especially on wet soils, and continuous plowing to the same depth, e.g. the creation of a plow pan below the tillage depth. Compacted or impervious soil layers have reduced pore space and restricted water movement through the soil profile.

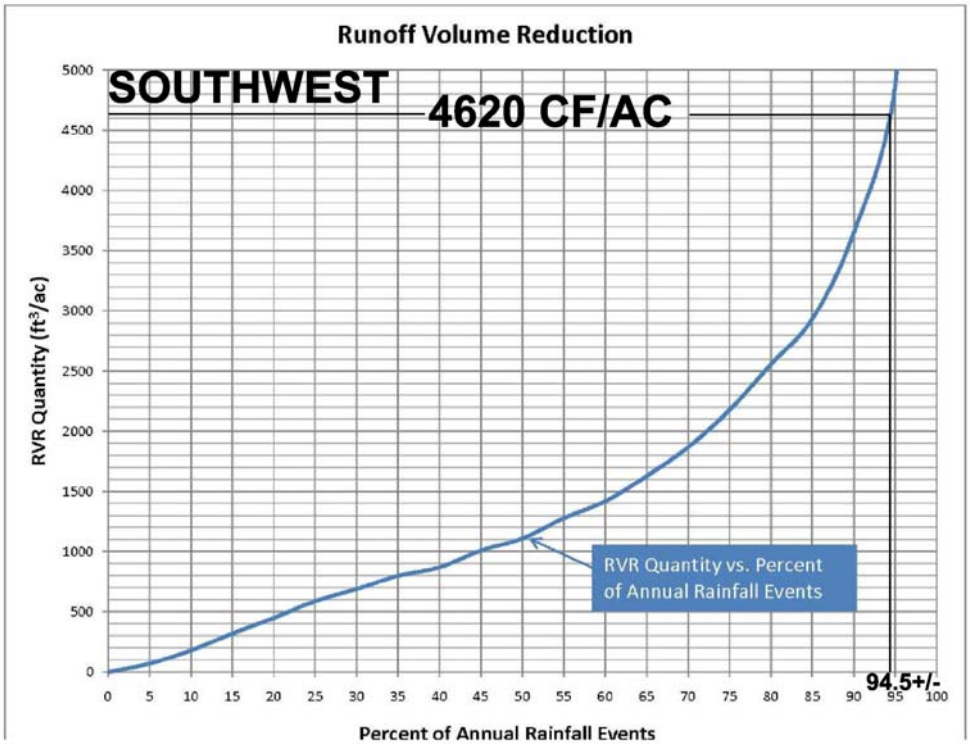
Soil organic matter affects infiltration through its positive affect on the development of stable soil aggregates, or crumbs. Highly aggregated soil has increased pore space and infiltration. Soils high in organic matter also provide good habitat for soil biota, such as earthworms, that through their burrowing activities, increase pore space and create continuous pores linking surface to subsurface soil layers.

Management that reduces soil cover, disrupts continuous poor space, compacts soil, or reduces soil organic matter negatively impacts infiltration. Since tillage negatively affects all of these properties, it plays an important role in a soil's infiltration rate.

Table 1. Steady infiltration rates for general soil texture groups in very deeply wetted soil. (Hillel, D. 1982. Introduction to soil physics. Academic Press, San Diego, CA)

Soil Type	Steady Infiltration Rate (in/hr)
Sands	> 0.8
Loams	0.2 - 0.4
Clays	0.04 - 0.2

Percent of Annual Rainfall Events	100% impervious values	
	Runoff Depth (in)	RVR Quantity ft^3/ac new impervious
0	0	0
5	0.02	70
10	0.05	180
15	0.09	320
20	0.12	450
25	0.16	590
30	0.19	690
35	0.22	800
40	0.24	870
45	0.28	1010
50	0.30	1110
55	0.35	1280
60	0.39	1420
65	0.45	1630
70	0.51	1870
75	0.60	2180
80	0.70	2560
85	0.81	2940
90	1.01	3660
95	1.35	4900
99	2.41	8760



RVR Design Summary:	
Proposed Impervious (ac)	**13.05**
Provided Storage to Infiltrate (cf)	**60287**
RVR Quantity (cf/ac)	**4620**
Percent of Annual Rainfall Events (%)	**94.5 +/-**
Infiltration Rate* (in/hr)	**0.10**
Area to Infiltrate (sf)	**153766**
System Infiltration Rate (cf/hr)	**1281**
Dewatering Time (hrs)	**47.0**

WATER QUALITY

The WDO requires that all development divert and detain at least the first 0.01 inches of runoff for every 1% of net new impervious surface for the development with a minimum volume equal to 0.2 inches of runoff or provide an equivalent level of treatment suitable to the Enforcement Officer. The pond bottoms are designed to temporarily retain water in order to achieve the water quality requirement. The total net new impervious surface area for the development area tributary to the southwest basin system is 13.05 acres and requires 1.088 acre-feet of water quality volume.

The proposed southwest basin system provides 1.384 ac-ft of storage below the outlet elevation.

SOUTHEAST BASIN SYSTEM:

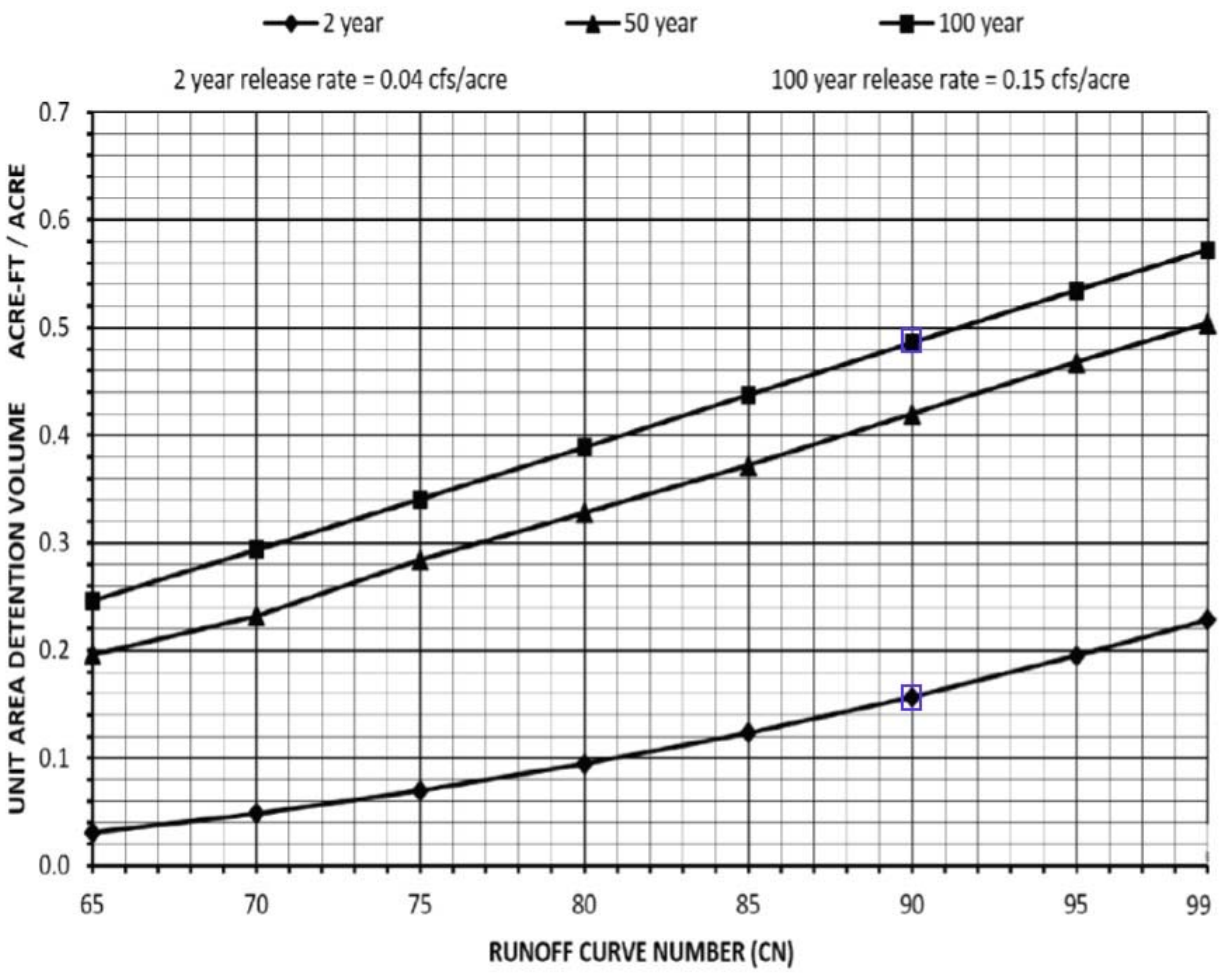
The southeast basin system is subject to the standard 0.04 cfs per acre and 0.15 cfs per acre allowable release rates for the 2yr, and 100yr events, respectively.

To determine the required detention volume for the southeast basin zone. the following methodology was employed. Please refer to the southeast basin exhibit [SE-1].

The hydrologic disturbed area total of 14.11 acres was used with the unit area method using the impervious coverage total to develop a composite runoff curve number (CN) of 90. [calculations included below]. The 14.11 acre total includes 0.85 ac of added impervious area from the proposed Route 83 widening associated with this project. The impervious summary for the tributary area is included later in this section.

The 100yr factor based on 0.15 cfs/ac for CN 90 is 0.49 ac-ft/ac as shown below on the next page. Required 100yr volume total is 6.91 ac-ft. [14.11 ac x 0.49 ac-ft/ac]

The 2yr factor based on 0.04 cfs/ac for CN 90 is 0.16 ac-ft/ac. The corresponding 2yr required volume is 2.26 ac-ft. [14.11 ac x 0.16 ac-ft/ac]



100yr unit area factor for CN 90 = 0.49 ac-ft /ac

2yr unit area factor for CN 90 = 0.16 ac-ft/ac

Detention Volume Safety Factor (DVSF) considerations:

The proposed southeast basin has 0.17 ac of offsite tributary area. Therefore, the applicable DVSF is calculated as follows 1 + 0.05(0.17ac /14.11ac) = 1.0006. As this factor is essentially 1.00 it will not be applied in this case.

SOUTHEAST ZONE

			CN	MULT.
HYRDOLOGICALLY DISTURBED AREA:	**14.11**	**AC**		
Including Rte 83 added impervious within ROW [0.85 ac]				
TRIBUTARY AREA (ONSITE):	**12.78**	**AC**		
TRIBUTARY AREA (OFFSITE):	**0.17**	**AC**		
IMPERVIOUS (INCL NWL):	**7.94**	**AC**	**98**	778.12
PERVIOUS: (open space, Ty. D soil)	**6.17**	**AC**	**80**	493.6
			TOTAL>>	1271.72

COMPOSITE CN FOR AREA:	**90**	
100YR UNIT AREA FACTOR	**0.49**	**AC-FT/AC**
REQUIRED DETENTION FOR ZONE:	**6.91**	**AC-FT**

Impervious Summary:

NWL	1.96	ac
roads	0.99	ac
aprons	0.18	ac
trail/path	0.23	ac
s/w	0.31	ac
55% max. imp. lots	3.26	ac
corner lot allowance	0.16	ac
Route 83 widening	0.85	ac
total >>	7.94	ac

Southeast Basin - Stage-Storage

	elev	area	avg	interval	vol	total vol
	ft	ac	ac	ft	ac-ft	ac-ft
outlet	832	**1.96**				
	833	**2.11**	2.035	1	2.04	**2.04**
	834	**2.25**	2.18	1	2.18	**4.22**
	835	**2.41**	2.33	1	2.33	**6.55**
hw /spillway crest	836	**2.56**	2.485	1	2.49	**9.03**

100yr HWL = 835.14 [6.91 ac-ft level]

2yr HWL = 833.10 [2.26 ac-ft level]

Southeast Basin outlet control structure design information:

This section shows the calculations for the ideal restrictors for the southeast basin. One or both of the actual proposed restrictors will be smaller in diameter as this basin is planned to be over-restricted to access additional volume to provide compensatory storage.

The allowable release rate for the ideal restrictors is based on the total tributary area of 14.28 acres.

PROPOSED SYSTEM DUAL RESTRICTOR CALCS:

14.28 AC design tributary area

100YR	allowable release based on 0.15 cfs/ac >>>	2.142	cfs
2YR	allowable release based on 0.04 cfs/ac >>>	0.571	cfs

LOWER:		UPPER:	
ORIFICE DIA. (IN)	4.80	ORIFICE DIA. (IN)	6.00
AREA (SF)	0.126	AREA (SF)	0.196
COEF:	0.6	COEF:	0.6
INVERT ELEVATION:	832.00	INVERT ELEVATION:	833.54

	STAGE	H (FT)	Q (CFS)	STAGE	H (FT)	Q (CFS)	TOTAL (CFS)
	832.00			832.00			0.00
	833.00	0.80	0.54	833.00			0.54
2YR HWL	833.10	0.90	0.57	833.10	0.00	0.00	0.57
	834.00	1.80	0.81	834.00	0.21	0.43	1.24
	835.00	2.80	1.01	835.00	1.21	1.04	2.05
100YR HWL	835.14	2.94	1.04	835.14	1.35	1.10	2.14
SPILLWAY	836.00	3.80	1.18	836.00	2.21	1.41	2.58

Ideal restrictors:

4.80” dia. at elevation 832.00 [2yr release = 0.57 cfs]

6.00” dia at elevation 833.54 [release at 100yr HWL via both = 2.14 cfs]

Proposed restrictor design to over-restrict basin to access compensatory storage:

To over-restrict the basin we will reduce the lower restrictor to 4” diameter and eliminate the upper restrictor.

PROPOSED SYSTEM DUAL RESTRICTOR CALCS - [OVER-RESTRICTED]

14.28 AC design tributary area

	100YR	allowable release based on 0.15 cfs/ac >>>	2.142	cfs
	2YR	allowable release based on 0.04 cfs/ac >>>	0.571	cfs

LOWER:		UPPER:	NOT PROPOSED
ORIFICE DIA. (IN)	4.00	ORIFICE DIA. (IN)	0.00
AREA (SF)	0.087	AREA (SF)	0.000
COEF:	0.6	COEF:	0.6
INVERT ELEVATION:	832.00	INVERT ELEVATION:	833.50

	STAGE	H (FT)	Q (CFS)	STAGE	H (FT)	Q (CFS)	TOTAL (CFS)
	832.00			832.00			0.00
	833.00	0.83	0.38	833.00			0.38
2YR HWL	833.10	0.93	0.41	833.10	0.00	0.00	0.41
	834.00	1.83	0.57	834.00	0.50	0.00	0.57
	835.00	2.83	0.71	835.00	1.50	0.00	0.71
100YR HWL	835.14	2.97	0.72	835.14	1.64	0.00	0.72
SPILLWAY	836.00	3.83	0.82	836.00	2.50	0.00	0.82

The following is the resulting stage-storage-discharge table for the southeast basin in the over-restricted condition. This relationship was employed with HEC-HMS modeling software to demonstrate the additional volume accessed in the proposed southeast basin.

Stage (ft)	Storage (ac-ft)	Discharge (cfs)
832	0.00	0.00
833	2.04	0.38
833.10	2.26	0.41
834	4.22	0.57
835	6.55	0.71
835.14	6.91	0.72
836	9.03	0.82

In the HEC-HMS model, the actual tributary area of 12.95 ac is used [0.0202344 sq. mi.]

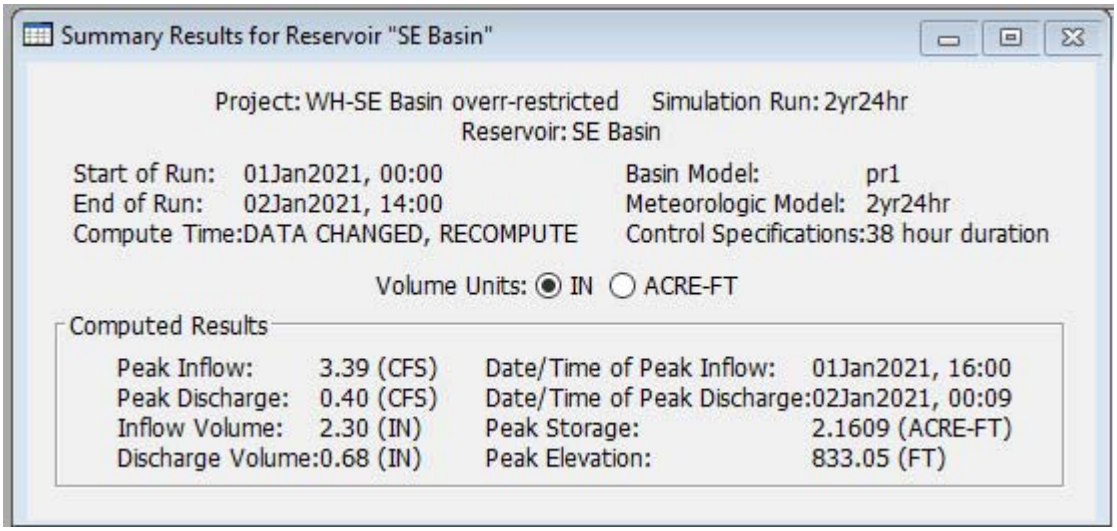
[12.78 ac onsite and 0.17 ac offsite]

Composite CN remains 90

Tc = 16 min. [from storm sewer design calculations]

Lag time = 0.6 x 16 min. = 9.6 min.

We executed the 2yr, 24hr and a multi-event critical duration analysis for the 100yr storms using HEC-HMS.

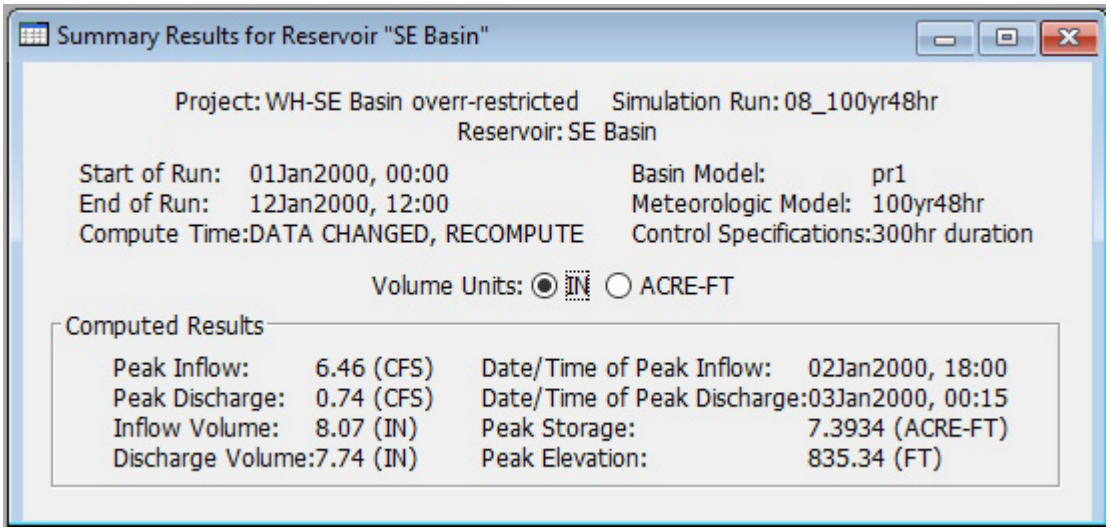


The 2yr peak stage is 833.05 with a corresponding peak release of 0.40 cfs.

The 0.40 cfs rate is accordingly below the 0.57 cfs allowable rate.

100yr critical duration results – Southeast Basin – Over-restricted condition:

Event	Peak Stage (ft)	Peak Release (cfs)	Peak Storage (ac-ft)
1hr	833.50	0.48	3.13
2hr	833.93	0.56	4.06
3hr	834.15	0.59	4.57
6hr	834.52	0.64	5.42
12hr	834.90	0.70	6.32
18hr	835.12	0.72	6.85
24hr	835.25	0.73	7.19
48hr	835.34	0.74	7.39
72hr	835.31	0.74	7.33
120hr	835.15	0.72	6.94
240hr	834.84	0.69	6.18



The peak accessed volume in the 100yr critical duration analysis is 7.39 ac-ft in the 48hr event. This volume exceeds the required detention volume (6.91 ac-ft) by 0.48 ac-ft and can be counted as compensatory storage.

SOUTHEAST BASIN

RUNOFF VOLUME REDUCTION (RVR) & WATER QUALITY

The proposed basin like the others planned for the subdivision is planned as a naturalized basin with deep-rooted native vegetation planted below the outlet elevation. The basin will also serve to provide water quality enhancement, and runoff volume reduction for the project.

RUNOFF VOLUME REDUCTION (RVR)

RUNOFF VOLUME REDUCTION HIERARCHY

Runoff Volume Reduction (RVR) standards described in Section 503 of the WDO apply to this development.

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- *Preservation and enhancement of the stormwater management benefits of the natural resource features of the development site (e.g., areas of Hydrologic Soil Groups A and B, floodplains, Waters of the United States, Isolated Waters of Lake County, channels, drainageways, prairies, savannas, and woodlands);*

  The proposed site plan intentionally will not disturb most of an approximate 2.5 acre area in the north central part of the property due to existing trees.

- *Minimization or disconnection of impervious surfaces;*

  Impervious area is a function of the overlying community zoning. Runoff from portions of the site is directed to native planted basin areas and open vegetated swales where possible. Downspouts are also planned to splash at grade rather than directly connect to storm sewers.

- *Enhancement of the infiltration and storage characteristics of the development site using appropriate best management practices;*

  The bottom 4.8 inches [0.40' below the outlet elevation] of the southeast basin is designed to hold runoff and allow it to infiltrate.

- *The use of open channels with native vegetation to convey stormwater runoff;*

  Runoff is directed to open vegetated swales where possible. The stormwater basin will be planted in Native vegetation to promote stabilization, infiltration, and water quality.

- *Structural measures that provide water quality and volume reduction;*

  No structural measures are proposed.

- *Structural measures that provide only volume reduction or other rainwater harvesting practices;*

  No structural measures are proposed.

- *Measures that provide water quality and quantity control;*

The stormwater basins will be planted in native vegetation to better absorb and infiltrate runoff and provide water quality by acting as a filter for the first flush rain events by capturing pollutants.

- *Measures that provide only quantity control.*

  As stated above, the basin is designed to capture, hold, and allow the bottom 4-inches (0.33') of runoff to infiltrate. Water quality volume is also provided in this zone.

The new impervious area (created after April 1, 2009) for the onsite development areas tributary to the proposed basin system is 7.09 ac [7.94 ac – 0.85 ac offsite Route 83 widening impervious]

Storage volume proposed in the bottom 4.8" [0.40'] zone below the outlet is calculated as follows.

Outlet Elevation 832 contour area: 1.96 ac

Bottom Elevation 831.60 contour area: 1.91 ac

Average Contour area: 1.935 ac

Depth =0.40'

Volume = (0.40')(1.935 ac) = 0.774 ac-ft = 33,715 cubic feet

The soil types present in the area of the southeast basin system infiltration zone are:

[refer to exhibit D]

Code	Name	Hydrologic Soil Group	Permeability range from LC Soil Survey
146B	Elliott Silt Loam	C	0.06–0.20 in/hr for depths below 41"
232A	Ashkum Silty Clay Loam	B/D	0.2-0.6 in/hr for depths from 0-60"
531D2	Markham Silt Loam	C	0.06-0.2 in/hr for depths below 20"

The USDA recommends values of 0.2-0.4 in/hr for loamy soils (see next page). As these are silty and silty clay loams, we will use a lower value of 0.10 in/hr.

USDA Natural Resources Conservation Service

Indicator P | Test F | Function W

Soil Quality Indicators

Infiltration

Infiltration is the downward entry of water into the soil. The velocity at which water enters the soil is infiltration rate. Infiltration rate is typically expressed in inches per hour. Water from rainfall or irrigation must first enter the soil for it to be of value.

A one inch layer of water is added to a six inch diameter ring to measure infiltration rate.

Factors Affecting

Inherent - Infiltration rate is dependent on soil texture (percentage of sand, silt, and clay) and clay mineralogy. Water moves more quickly through the large pore spaces in a sandy soil than it does through the small pores of a clayey soil, especially if the clay is compacted and has little or no structure or aggregation (see Table 1).

Depending on the amount and type of clay minerals, many clayey soils develop shrinkage cracks as they dry, creating a direct conduit for water to enter the soil. These clay soils have high infiltration capacities as water moves into the shrinkage cracks, although at other times, when cracks are not present, their infiltration rate is characteristically slow.

Dynamic - A reflection of climate and landscape position, as well as management practices and crop demand, existing soil water content affects the ability of the soil to pull additional water into it. Pores and cracks are generally open in a dry soil. Many of them are filled in by water or swelled shut as the soil becomes wet, so infiltration rate is generally highest when the soil is dry. As the soil becomes wet, the infiltration rate slows to the rate at which water moves through the most restrictive layer, such as a compacted layer or a layer of dense clay.

Infiltration is affected by crop and land management practices that affect surface crusting, compaction, and soil organic matter. Without the protective benefits of vegetative or residue cover, bare soil is subjected to the direct impact and erosive forces of raindrops that dislodge soil particles. Dislodged soil particles fill in and block surface pores, contributing to the development of surface crusts that restrict water movement into the soil.

Compaction results from livestock and equipment traffic, especially on wet soils, and continuous plowing to the same depth, e.g. the creation of a plow pan below the tillage depth. Compacted or impervious soil layers have reduced pore space and restricted water movement through the soil profile.

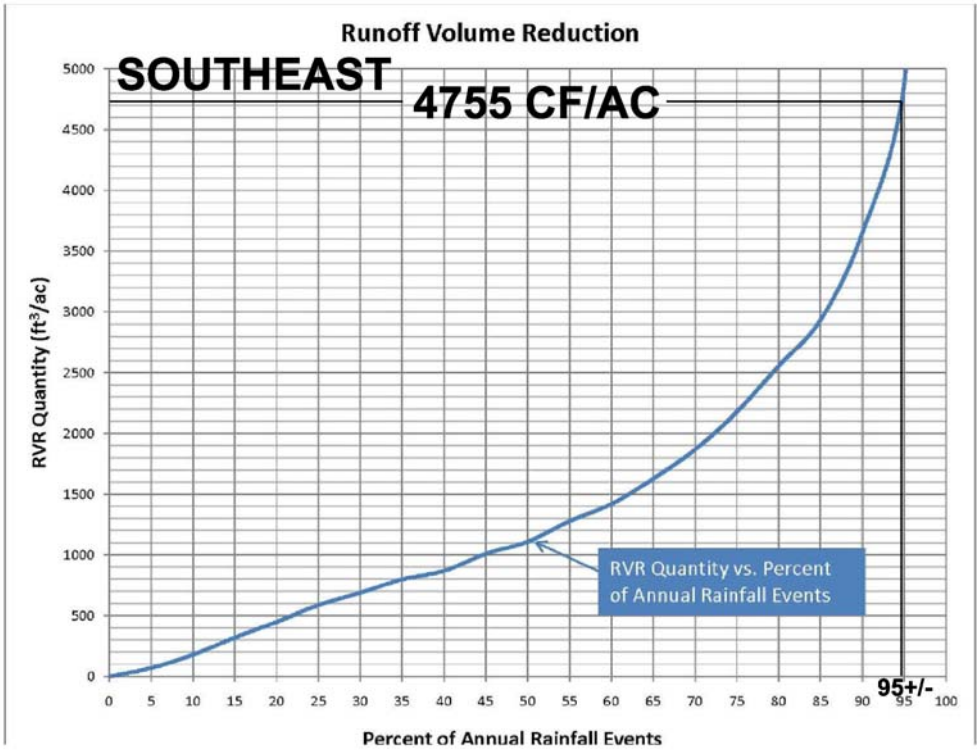
Soil organic matter affects infiltration through its positive affect on the development of stable soil aggregates, or crumbs. Highly aggregated soil has increased pore space and infiltration. Soils high in organic matter also provide good habitat for soil biota, such as earthworms, that through their burrowing activities, increase pore space and create continuous pores linking surface to subsurface soil layers.

Management that reduces soil cover, disrupts continuous poor space, compacts soil, or reduces soil organic matter negatively impacts infiltration. Since tillage negatively affects all of these properties, it plays an important role in a soil's infiltration rate.

Table 1. Steady infiltration rates for general soil texture groups in very deeply wetted soil. (Hillel, D. 1982. Introduction to soil physics. Academic Press, San Diego, CA)

Soil Type	Steady Infiltration Rate (in/hr)
Sands	> 0.8
Loams	0.2 - 0.4
Clays	0.04 - 0.2

	100% impervious values	
Percent of Annual Rainfall Events	Runoff Depth (in)	RVR Quantity ft^3/ac new impervious
0	0	0
5	0.02	70
10	0.05	180
15	0.09	320
20	0.12	450
25	0.16	590
30	0.19	690
35	0.22	800
40	0.24	870
45	0.28	1010
50	0.30	1110
55	0.35	1280
60	0.39	1420
65	0.45	1630
70	0.51	1870
75	0.60	2180
80	0.70	2560
85	0.81	2940
90	1.01	3660
95	1.35	4900
99	2.41	8760



RVR Design Summary:	
Proposed Impervious (ac)	**7.09**
Provided Storage to Infiltrate (cf)	**33715**
RVR Quantity (cf/ac)	**4755**
Percent of Annual Rainfall Events (%)	**95 +/-**
Infiltration Rate* (in/hr)	**0.10**
Area to Infiltrate (sf)	**85377**
System Infiltration Rate (cf/hr)	**711**
Dewatering Time (hrs)	**47.4**

WATER QUALITY

The WDO requires that all development divert and detain at least the first 0.01 inches of runoff for every 1% of net new impervious surface for the development with a minimum volume equal to 0.2 inches of runoff or provide an equivalent level of treatment suitable to the Enforcement Officer. The pond bottoms are designed to temporarily retain water in order to achieve the water quality requirement. The total net new impervious surface area for the development area tributary to the southeast basin system is 7.09 acres and requires 0.59 acre-feet of water quality volume.

The proposed southeast basin system provides 0.774 ac-ft of storage below the outlet elevation.

NORTHHEAST BASIN SYSTEM:

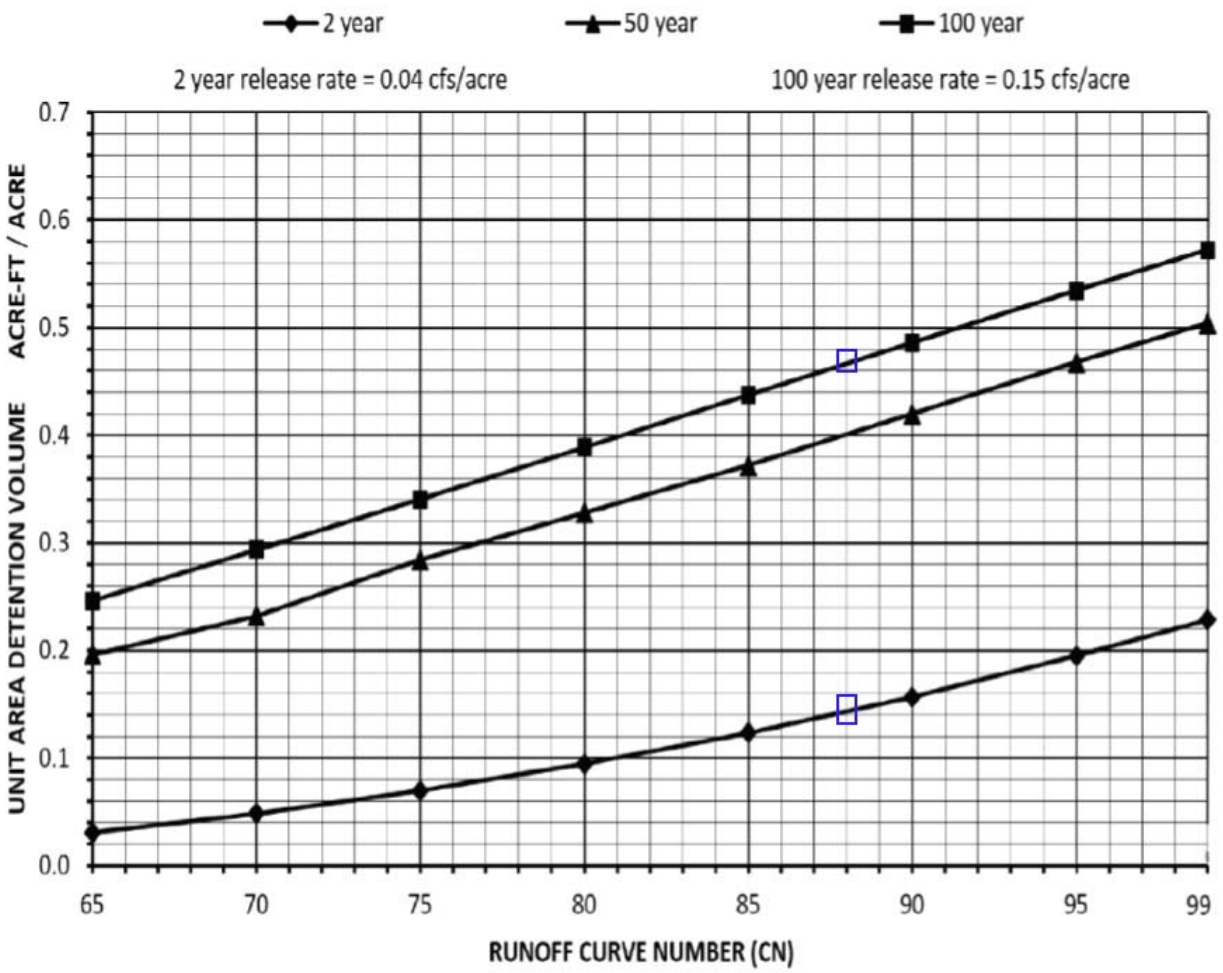
The northeast basin system is subject to the standard 0.04 cfs per acre and 0.15 cfs per acre allowable release rates for the 2yr, and 100yr events, respectively.

To determine the required detention volume for the northeast basin zone. the following methodology was employed. Please refer to the southeast basin exhibit [NE-1].

The hydrologic disturbed area total of 20.54 acres was used with the unit area method using the impervious coverage total to develop a composite runoff curve number (CN) of 88. [calculations included below]. The impervious summary for the tributary area is included later in this section.

The 100yr factor based on 0.15 cfs/ac for CN 88 is 0.475 ac-ft/ac as shown below on the next page. Required 100yr volume total is 9.76 ac-ft. [20.54 ac x 0.475 ac-ft/ac]

The 2yr factor based on 0.04 cfs/ac for CN 88 is 0.142 ac-ft/ac. The corresponding 2yr required volume is 2.92 ac-ft. [20.54 ac x 0.142 ac-ft/ac]



100yr unit area factor for CN 88 = 0.475 ac-ft /ac

2yr unit area factor for CN 88 = 0.142 ac-ft/ac

Detention Volume Safety Factor (DVSF) considerations:

The proposed southeast basin has 0.15 ac of offsite tributary area. Therefore, the applicable DVSF is calculated as follows 1 + 0.05(0.15ac /19.25ac) = 1.0004. As this factor is essentially 1.00 it will not be applied in this case.

NORTHEAST ZONE

			CN	MULT.
HYRDOLOGICALLY DISTURBED AREA:	**20.54**	**AC**		
TRIBUTARY AREA (ONSITE):	**19.25**	**AC**		
TRIBUTARY AREA (OFFSITE):	**0.15**	**AC**		
IMPERVIOUS (INCL. NWL):	**8.65**	**AC**	**98**	847.7
PERVIOUS: [open space, Ty. D soil]	**11.89**	**AC**	**80**	951.2
			TOTAL>>	1798.9

COMPOSITE CN FOR AREA:	**88**		
100YR UNIT AREA FACTOR	**0.475**	**AC-FT/AC**	
REQUIRED DETENTION FOR ZONE:		**9.76**	**AC-FT**

Impervious Summary:

NWL	**1.76**	ac
roads	**1.24**	ac
aprons	**0.22**	ac
trail/path	**0.39**	ac
sidewalk	**0.35**	ac
50% lots	**3.94**	ac
55% lots	**0.62**	ac
corner lot addtl. allowance	**0.13**	ac
total >>	**8.65**	ac

northeast basin area:

	elev	area	avg	interval	vol	total vol
	ft	ac	ac	ft	ac-ft	ac-ft
outlet	833	1.76				
	834	1.98	1.87	1	1.87	1.87
	835	2.21	2.095	1	2.10	3.97
	836	2.44	2.325	1	2.33	6.29
	837	2.72	2.58	1	2.58	8.87
	838	2.96	2.84	1	2.84	11.71
	839	3.22	3.09	1	3.09	14.80
hw / spillway crest	839.5	3.36	3.29	0.5	1.65	16.45

100yr HWL = 837.31 [9.76 ac-ft level]

2yr HWL = 834.50 [2.92 ac-ft level]

Northeast Basin outlet control structure design information:

This section shows the calculations for the ideal restrictors for the northeast basin. One or both of the actual proposed restrictors will be smaller in diameter as this basin is planned to be over-restricted to access additional volume to provide compensatory storage.

The allowable release rate for the ideal restrictors is based on the total tributary area of 19.40 acres.

PROPOSED SYSTEM DUAL RESTRICTOR CALCS: **IDEAL RESTRICTOR SIZING**

19.40 AC design tributary area

100YR	allowable release based on 0.15 cfs/ac >>>	2.910	cfs	
2YR	allowable release based on 0.04 cfs/ac >>>	0.776	cfs	

LOWER:		UPPER:	
ORIFICE DIA. (IN)	5.07	ORIFICE DIA. (IN)	6.42
AREA (SF)	0.140	AREA (SF)	0.225
COEF:	0.6	COEF:	0.6
INVERT ELEVATION:	833.00	INVERT ELEVATION:	835.00

	STAGE	H (FT)	Q (CFS)	STAGE	H (FT)	Q (CFS)	TOTAL (CFS)
	833.00		0.00	833.00			0.00
	834.00	0.79	0.60	834.00			0.60
2YR HWL	834.50	1.29	0.77	834.50	0.00	0.00	0.77
	835.00	1.79	0.90	835.00	0.00	0.00	0.90
	836.00	2.79	1.13	836.00	0.73	0.93	2.05
	837.00	3.79	1.31	837.00	1.73	1.42	2.74
100YR HWL	837.31	4.10	1.37	837.31	2.04	1.55	2.91
	838.00	4.79	1.48	838.00	2.73	1.79	3.27
	839.00	5.79	1.62	839.00	3.73	2.09	3.72
SPILLWAY CREST	839.50	6.29	1.69	839.50	4.23	2.23	3.92

Ideal restrictors:

5.07” dia. at elevation 833.00 [2yr release = 0.77 cfs]

6.42” dia at elevation 835.00 [release at 100yr HWL via both = 2.91 cfs]

Proposed restrictor design to over-restrict basin to access compensatory storage:

To over-restrict the basin we will reduce the lower restrictor to 2.00” diameter and eliminate the upper restrictor.

PROPOSED SYSTEM DUAL RESTRICTOR CALCS: **OVER-RESTRICTED CONDITION**

19.40 AC design tributary area

100YR	allowable release based on 0.15 cfs/ac >>>	2.910	cfs	
2YR	allowable release based on 0.04 cfs/ac >>>	0.776	cfs	

LOWER:		UPPER:	NOT PROPOSED
ORIFICE DIA. (IN)	2.00	ORIFICE DIA. (IN)	0.00
AREA (SF)	0.022	AREA (SF)	0.000
COEF:	0.6	COEF:	0.6
INVERT ELEVATION:	833.00	INVERT ELEVATION:	0.00

	STAGE	H (FT)	Q (CFS)	STAGE	H (FT)	Q (CFS)	TOTAL (CFS)
	833.00		0.00	833.00			0.00
	834.00	0.92	0.10	834.00			0.10
2YR HWL	834.50	1.42	0.13	834.50	0.00	0.00	0.13
	835.00	1.92	0.15	835.00	0.00	0.00	0.15
	836.00	2.92	0.18	836.00	836.00	0.00	0.18
	837.00	3.92	0.21	837.00	837.00	0.00	0.21
100YR HWL	837.31	4.23	0.22	837.31	837.31	0.00	0.22
	838.00	4.92	0.23	838.00	838.00	0.00	0.23
	839.00	5.92	0.26	839.00	839.00	0.00	0.26
SPILLWAY CREST	839.50	6.42	0.27	839.50	839.50	0.00	0.27

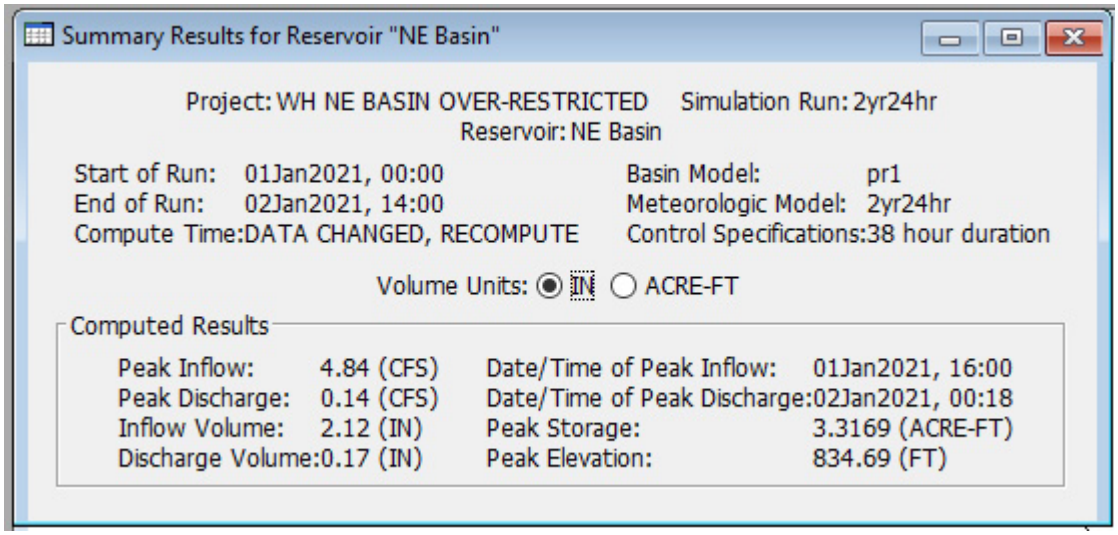
The following is the resulting stage-storage-discharge table for the southeast basin in the over-restricted condition. This relationship was employed with HEC-HMS modeling software to demonstrate the additional volume accessed in the proposed northeast basin.

Stage (ft)	Storage (ac-ft)	Discharge (cfs)
833	0.00	0.00
834	1.87	0.10
834.50	2.92	0.13
835	3.97	0.15
836	6.29	0.18
837	8.87	0.21
837.31	9.76	0.22
838	11.71	0.23
839	14.80	0.26
839.50	16.45	0.27

In the HEC-HMS model, the actual tributary area of 19.40 ac is used [0.0303125 sq. mi.]

[19.25 ac onsite and 0.15 ac offsite]
Composite CN remains 88
Tc = 16 min. [from storm sewer design calculations]
Lag time = 0.6 x 16 min. = 9.6 min.

We executed the 2yr, 24hr and a multi-event critical duration analysis for the 100yr storms using HEC-HMS.



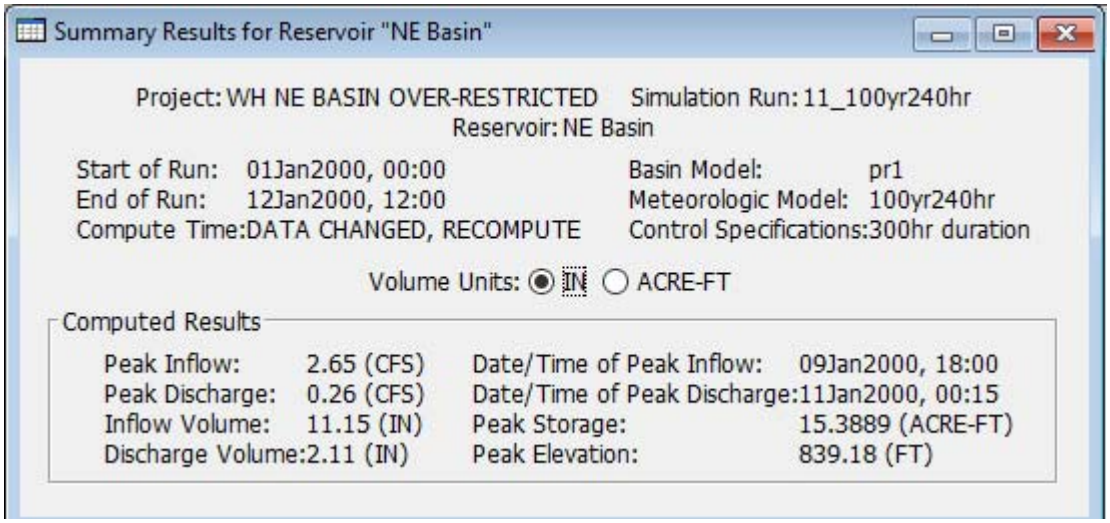
The 2yr peak stage is 834.69 with a corresponding peak release of 0.14 cfs.

The 0.14 cfs rate is accordingly below the 0.77 cfs allowable rate.

100yr critical duration results – Northeast Basin – Over-restricted condition:

Event	Peak Stage (ft)	Peak Release (cfs)	Peak Storage (ac-ft)
1hr	835.20	0.16	4.44
2hr	835.81	0.17	5.85
3hr	836.14	0.18	6.64
6hr	836.69	0.20	8.06
12hr	837.26	0.22	9.62
18hr	837.58	0.22	10.53
24hr	837.84	0.23	11.27
48hr	838.16	0.23	12.19
72hr	838.37	0.24	12.84
120hr	838.62	0.25	13.62
240hr	839.18	0.26	15.39

The peak accessed volume in the 100yr critical duration analysis is 15.39 ac-ft in the 240 hr event.



This volume exceeds the required detention volume (9.76 ac-ft) by 5.63 ac-ft and can be counted as compensatory storage.

NORTHEAST BASIN

RUNOFF VOLUME REDUCTION (RVR) & WATER QUALITY

The proposed basin like the others planned for the subdivision is planned as a naturalized basin with deep-rooted native vegetation planted below the outlet elevation. The basin will also serve to provide water quality enhancement, and runoff volume reduction for the project.

RUNOFF VOLUME REDUCTION (RVR)

RUNOFF VOLUME REDUCTION HIERARCHY

Runoff Volume Reduction (RVR) standards described in Section 503 of the WDO apply to this development.

Article 5, Section 503.01 of the WDO requires that all development be designed in accordance with the Runoff Volume Reduction (RVR) Hierarchy listed in that section. The hierarchy has been applied to the design of the development as follows:

- *Preservation and enhancement of the stormwater management benefits of the natural resource features of the development site (e.g., areas of Hydrologic Soil Groups A and B, floodplains, Waters of the United States, Isolated Waters of Lake County, channels, drainageways, prairies, savannas, and woodlands);*

  The proposed site plan intentionally will not disturb most of an approximate 2.5 acre area in the north central part of the property due to existing trees.

- *Minimization or disconnection of impervious surfaces;*

  Impervious area is a function of the overlying community zoning. Runoff from portions of the site is directed to native planted basin areas and open vegetated swales where possible. Downspouts are also planned to splash at grade rather than directly connect to storm sewers.

- *Enhancement of the infiltration and storage characteristics of the development site using appropriate best management practices;*

  The bottom 6 inches [0.50' below the outlet elevation] of the northeast basin is designed to hold runoff and allow it to infiltrate.

- *The use of open channels with native vegetation to convey stormwater runoff;*

  Runoff is directed to open vegetated swales where possible. The stormwater basin will be planted in Native vegetation to promote stabilization, infiltration, and water quality.

- *Structural measures that provide water quality and volume reduction;*

  No structural measures are proposed.

- *Structural measures that provide only volume reduction or other rainwater harvesting practices;*

  No structural measures are proposed.

- *Measures that provide water quality and quantity control;*

The stormwater basins will be planted in native vegetation to better absorb and infiltrate runoff and provide water quality by acting as a filter for the first flush rain events by capturing pollutants.

- *Measures that provide only quantity control.*

  As stated above, the basins are designed to capture, hold, and allow the bottom 6-inches (0.5') of runoff to infiltrate. Water quality volume is also provided in this zone.

The new impervious area (created after April 1, 2009) for the onsite development areas tributary to the proposed basin system is 8.65 ac

Storage volume proposed in the bottom 6" [0.50'] zone below the outlet is calculated as follows.

Outlet Elevation 833 contour area: 1.76 ac

Bottom Elevation 832.50 contour area: 1.67 ac

Average Contour area: 1.715 ac

Depth =0.50'

Volume = (0.50')(1.715 ac) = 0.8575 ac-ft = 37352 cubic feet

The soil types present in the area of the southeast basin system infiltration zone are:

[refer to exhibit D]

Code	Name	Hydrologic Soil Group	Permeability range from LC Soil Survey
146B	Elliott Silt Loam	C	0.06–0.20 in/hr for depths below 41"
103A	Houghton Muck	D	0.2 – 6 from 0 to 60"
531D2	Markham Silt Loam	C	0.06-0.2 in/hr for depths below 20"

The USDA recommends values of 0.2-0.4 in/hr for loamy soils (see next page). As these are silt loam and muck we will use a lower value of 0.07 in/hr

USDA Natural Resources Conservation Service

Indicator P | Test F | Function W

Soil Quality Indicators

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A one inch layer of water is added to a six inch diameter ring to measure infiltration rate.

Factors Affecting

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Infiltration is affected by crop and land management practices that affect surface crusting, compaction, and soil organic matter. Without the protective benefits of vegetative or residue cover, bare soil is subjected to the direct impact and erosive forces of raindrops that dislodge soil particles. Dislodged soil particles fill in and block surface pores, contributing to the development of surface crusts that restrict water movement into the soil.

Compaction results from livestock and equipment traffic, especially on wet soils, and continuous plowing to the same depth, e.g. the creation of a plow pan below the tillage depth. Compacted or impervious soil layers have reduced pore space and restricted water movement through the soil profile.

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Management that reduces soil cover, disrupts continuous poor space, compacts soil, or reduces soil organic matter negatively impacts infiltration. Since tillage negatively affects all of these properties, it plays an important role in a soil's infiltration rate.

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Percent of Annual Rainfall Events	Runoff Depth (in)	RVR Quantity ft^3/ac new impervious
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10	0.05	180
15	0.09	320
20	0.12	450
25	0.16	590
30	0.19	690
35	0.22	800
40	0.24	870
45	0.28	1010
50	0.30	1110
55	0.35	1280
60	0.39	1420
65	0.45	1630
70	0.51	1870
75	0.60	2180
80	0.70	2560
85	0.81	2940
90	1.01	3660
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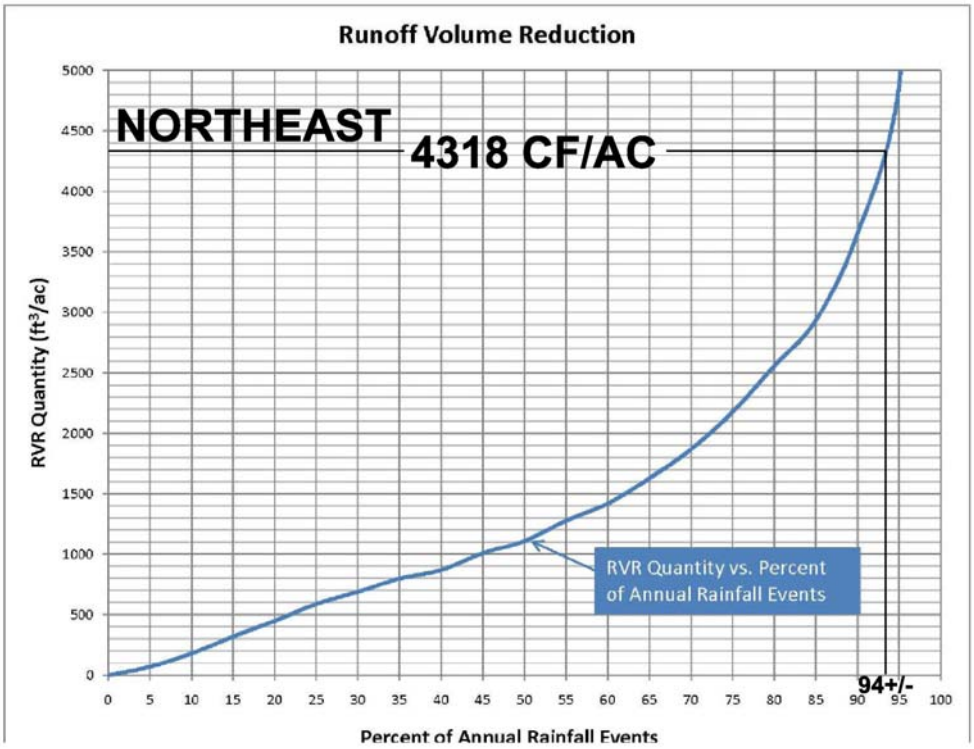
99	2.41	8760



RVR Design Summary:	
Proposed Impervious (ac)	8.65
Provided Storage to Infiltrate (cf)	37352
RVR Quantity (cf/ac)	4318
Percent of Annual Rainfall Events (%)	93 +/-
Infiltration Rate* (in/hr)	0.07
Area to Infiltrate (sf)	76665
System Infiltration Rate (cf/hr)	447
Dewatering Time (hrs)	83.5

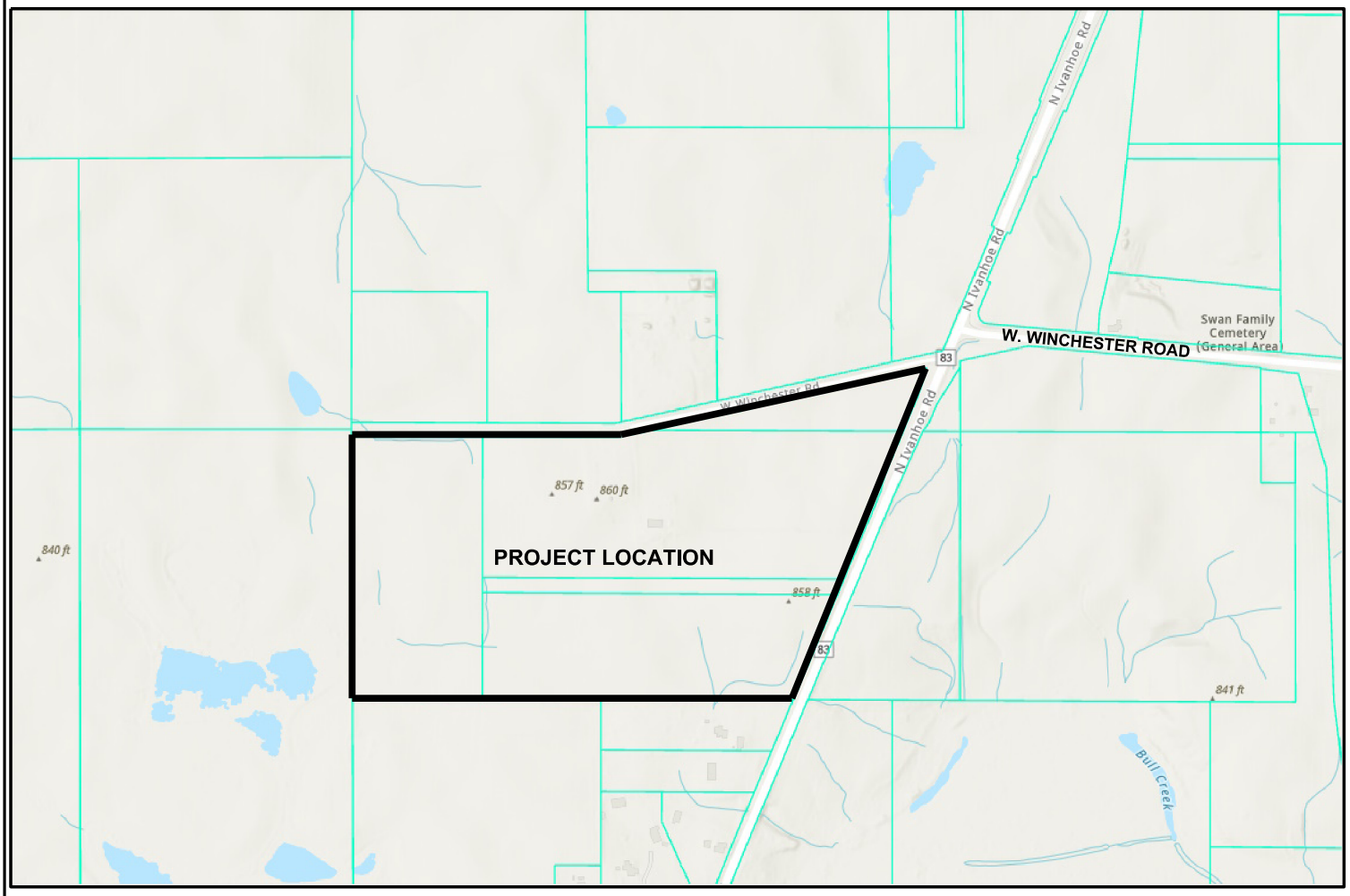
WATER QUALITY

The WDO requires that all development divert and detain at least the first 0.01 inches of runoff for every 1% of net new impervious surface for the development with a minimum volume equal to 0.2 inches of runoff or provide an equivalent level of treatment suitable to the Enforcement Officer. The pond bottoms are designed to temporarily retain water in order to achieve the water quality requirement. The total net new impervious surface area for the development area tributary to the northeast basin system is 8.65 acres and requires 0.72 acre-feet of water quality volume.

The proposed northeast basin system provides 0.85 ac-ft of storage below the outlet elevation.

Conclusions:

The proposed naturalized basins will provide detention, water quality treatment, runoff volume reduction, and additional accessed volume to compensate for existing depressional storage for the project. Each basin zone also has emergency an overflow spillway sized for at least the peak unattenuated inflow from 100yr critical duration analyses performed on the tributary areas.



LOCATION MAP NORTH

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CONSULTING ENGINEERS
1850 W. WINCHESTER ROAD - SUITE 205
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NORTH

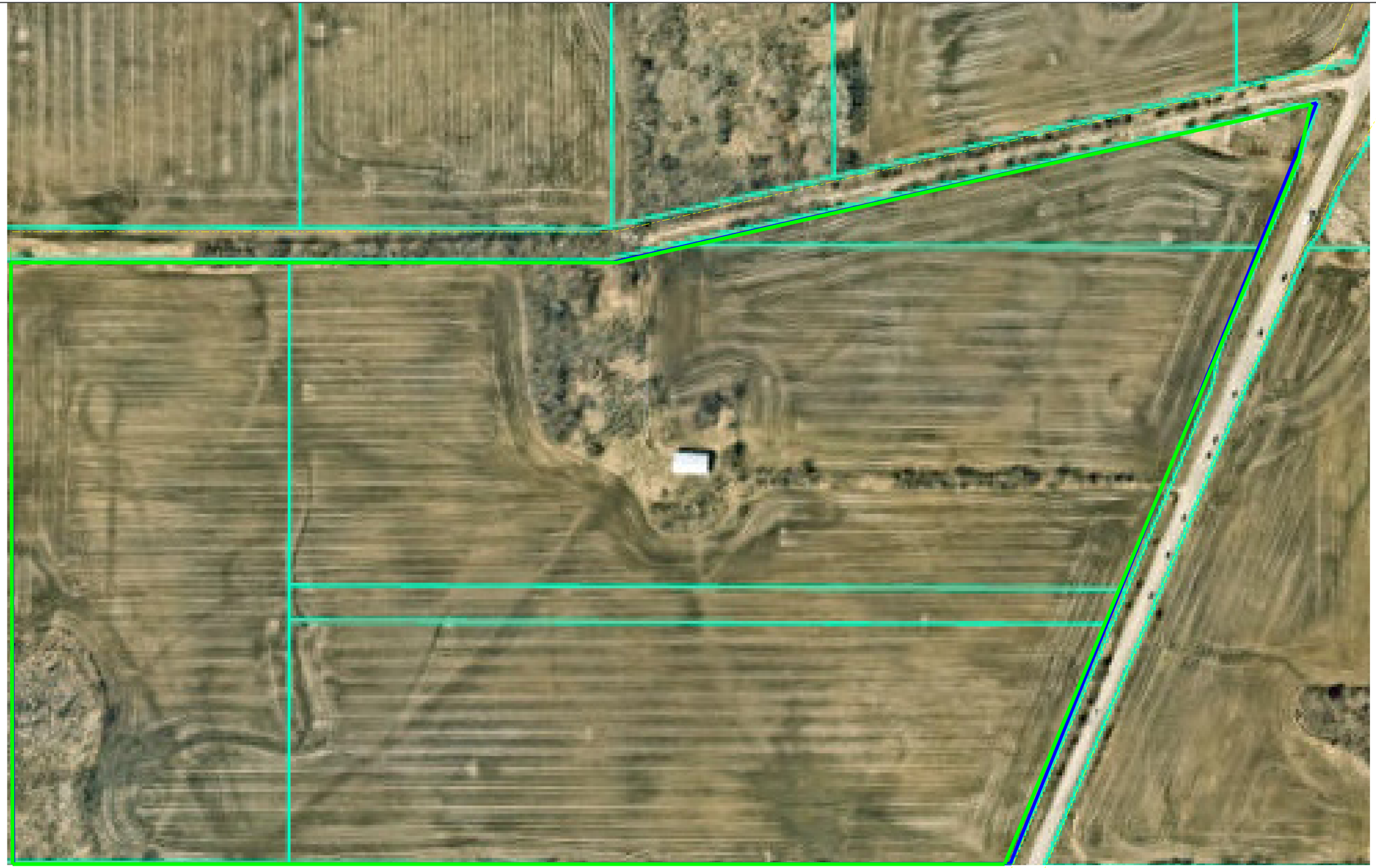
N.T.S.

TITLE:
LOCATION MAP

PROJECT:
WALNUT RIDGE
MUNDELEIN, IL
PROJECT NO.: 2535

EXHIBIT
A

DATE: 04/11/25



PEARSON, BROWN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1850 W. WINCHESTER ROAD - SUITE 205
LIBERTYVILLE, IL. 60048
PHONE: (847) 367-6707
FAX: (847) 367-2567
E-MAIL ADDRESS: pba@pearsonbrown.com

NORTH

0 100' 200'

SCALE: 1" = 200'

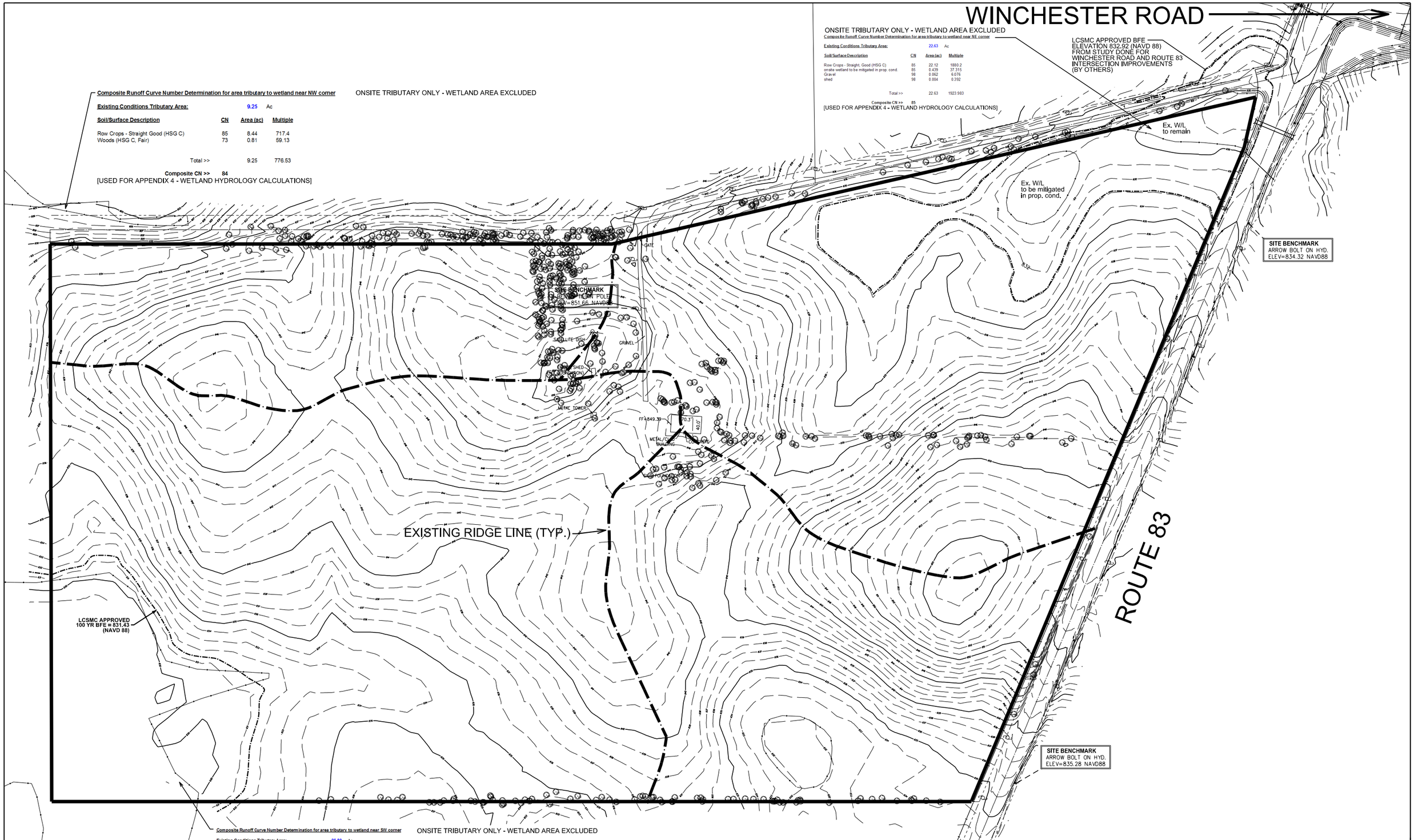
TITLE:
AERIAL PHOTO
SOURCE: LAKE CO. G.I.S. (2022)

PROJECT:
WALNUT RIDGE
MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT
B

DATE: 04/11/25



Composite Runoff Curve Number Determination for area tributary to wetland near NW corner

ONSITE TRIBUTARY ONLY - WETLAND AREA EXCLUDED

Existing Conditions Tributary Area: 9.25 Ac

Soil/Surface Description	CN	Area (ac)	Multiple
Row Crops - Straight Good (HSG C)	85	8.44	717.4
Woods (HSG C, Fair)	73	0.81	59.13
Total >>		9.25	776.53

Composite CN >> 84

[USED FOR APPENDIX 4 - WETLAND HYDROLOGY CALCULATIONS]

ONSITE TRIBUTARY ONLY - WETLAND AREA EXCLUDED

Composite Runoff Curve Number Determination for area tributary to wetland near NE corner

Existing Conditions Tributary Area: 22.63 Ac

Soil/Surface Description	CN	Area (ac)	Multiple
Row Crops - Straight, Good (HSG C)	85	22.12	1880.2
onsite wetland to be mitigated in prop. cond.	85	0.439	37.315
Gravel	98	0.062	6.076
shed	98	0.004	0.392
Total >>		22.63	1923.983

Composite CN >> 85

[USED FOR APPENDIX 4 - WETLAND HYDROLOGY CALCULATIONS]

Composite Runoff Curve Number Determination for area tributary to wetland near SW corner

ONSITE TRIBUTARY ONLY - WETLAND AREA EXCLUDED

Existing Conditions Tributary Area: 26.80 Ac

Soil/Surface Description	CN	Area (ac)	Multiple
Row Crops - Straight, Good (HSG C)	85	26.76	2274.6
Gravel	98	0.014	1.372
Metal Building	98	0.022	2.156
Tower	98	0.005	0.4802
Total >>		26.80	2278.6082

Composite CN >> 85

[USED FOR APPENDIX 4 - WETLAND HYDROLOGY CALCULATIONS]

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NORTH

0 100' 200'

SCALE: 1" = 200'

TITLE: EXISTING CONDITIONS

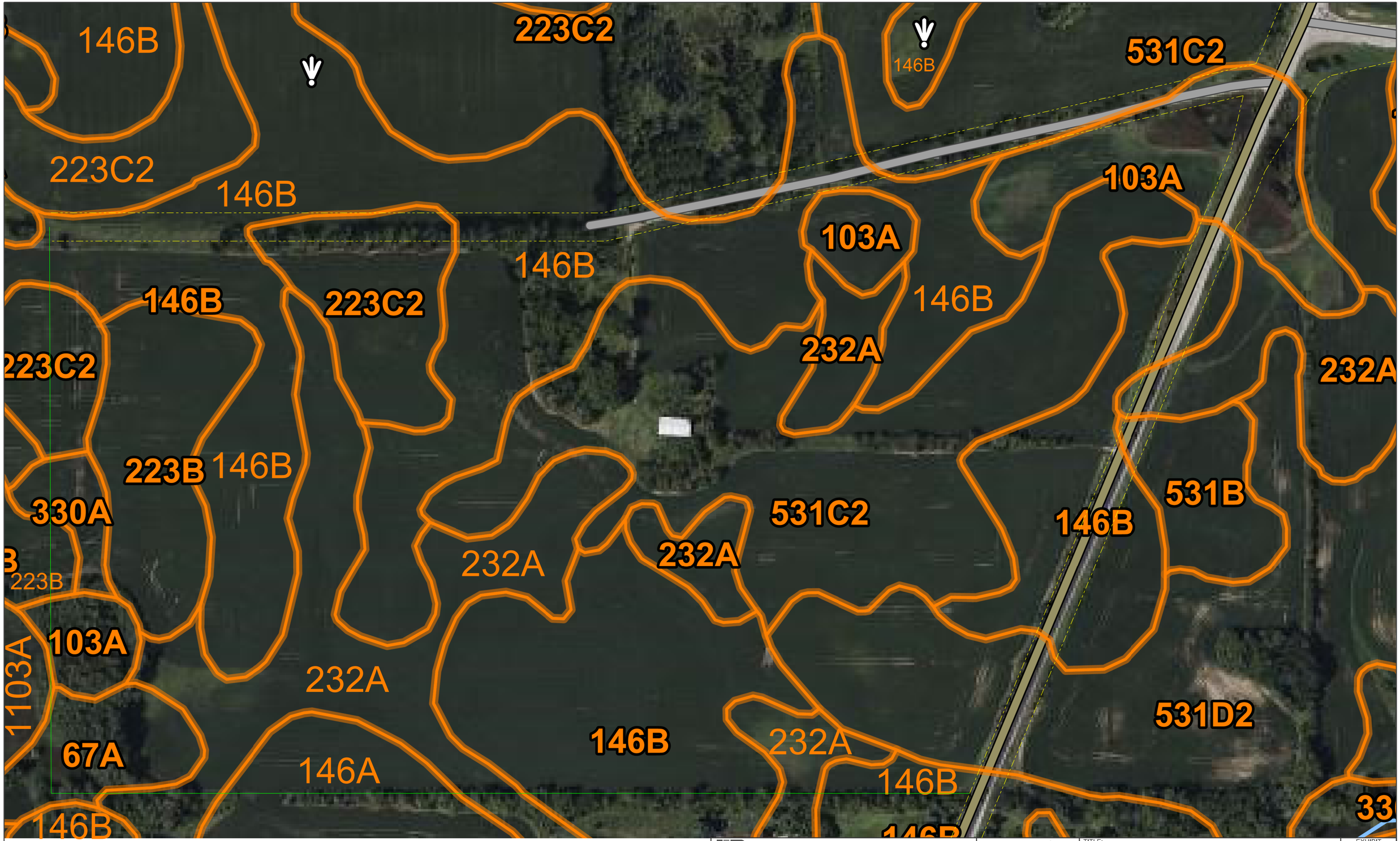
PROJECT: WALNUT RIDGE

MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT C

DATE: 04/11/25



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PHONE: (847) 367-6707
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NORTH

0 100' 200'
SCALE: 1" = 200'

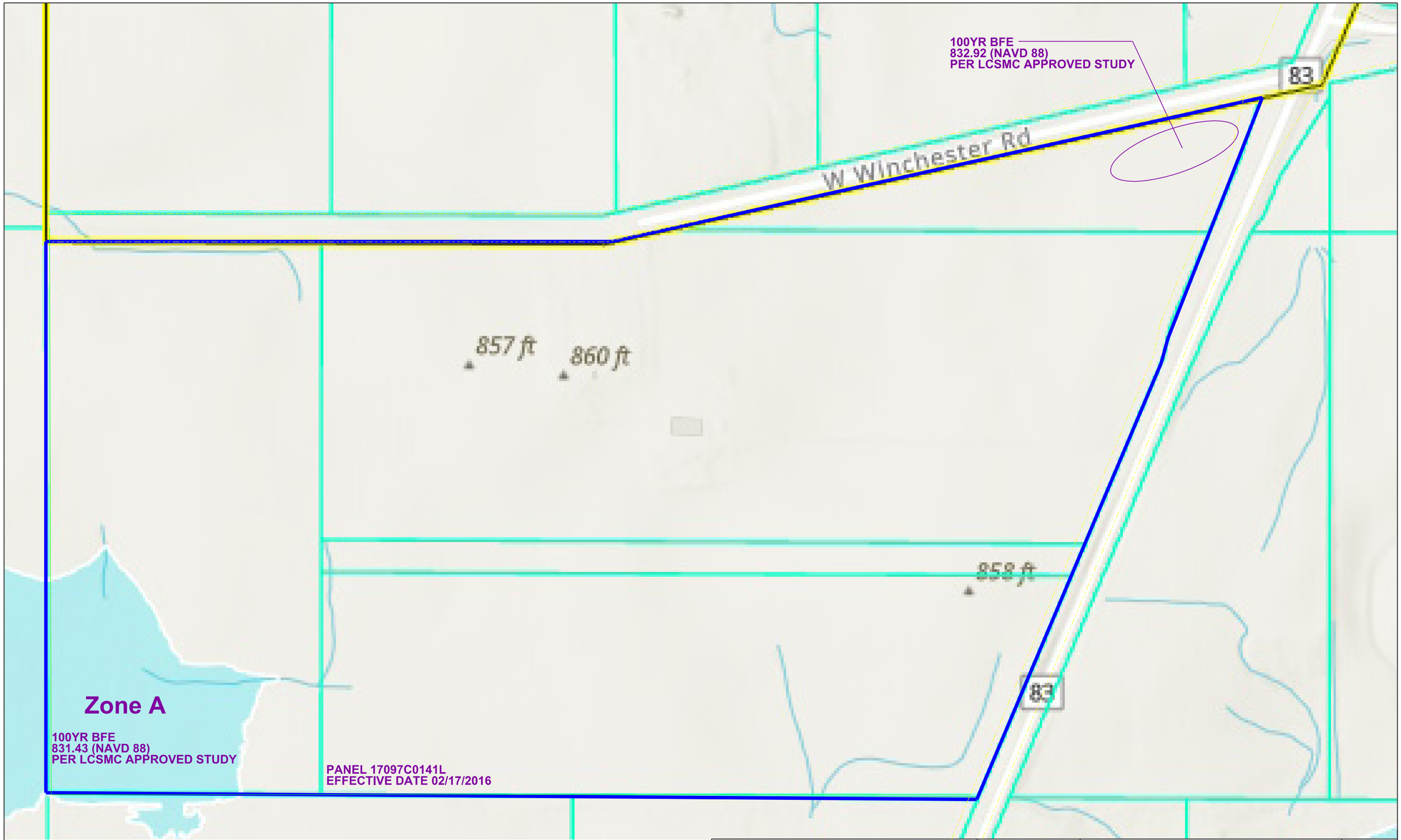
TITLE: SOIL MAP

PROJECT: WALNUT RIDGE
MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT D

DATE: 04/11/25



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NORTH

0 100' 200'

SCALE: 1" = 200'

TITLE: FEMA FIRM PANEL

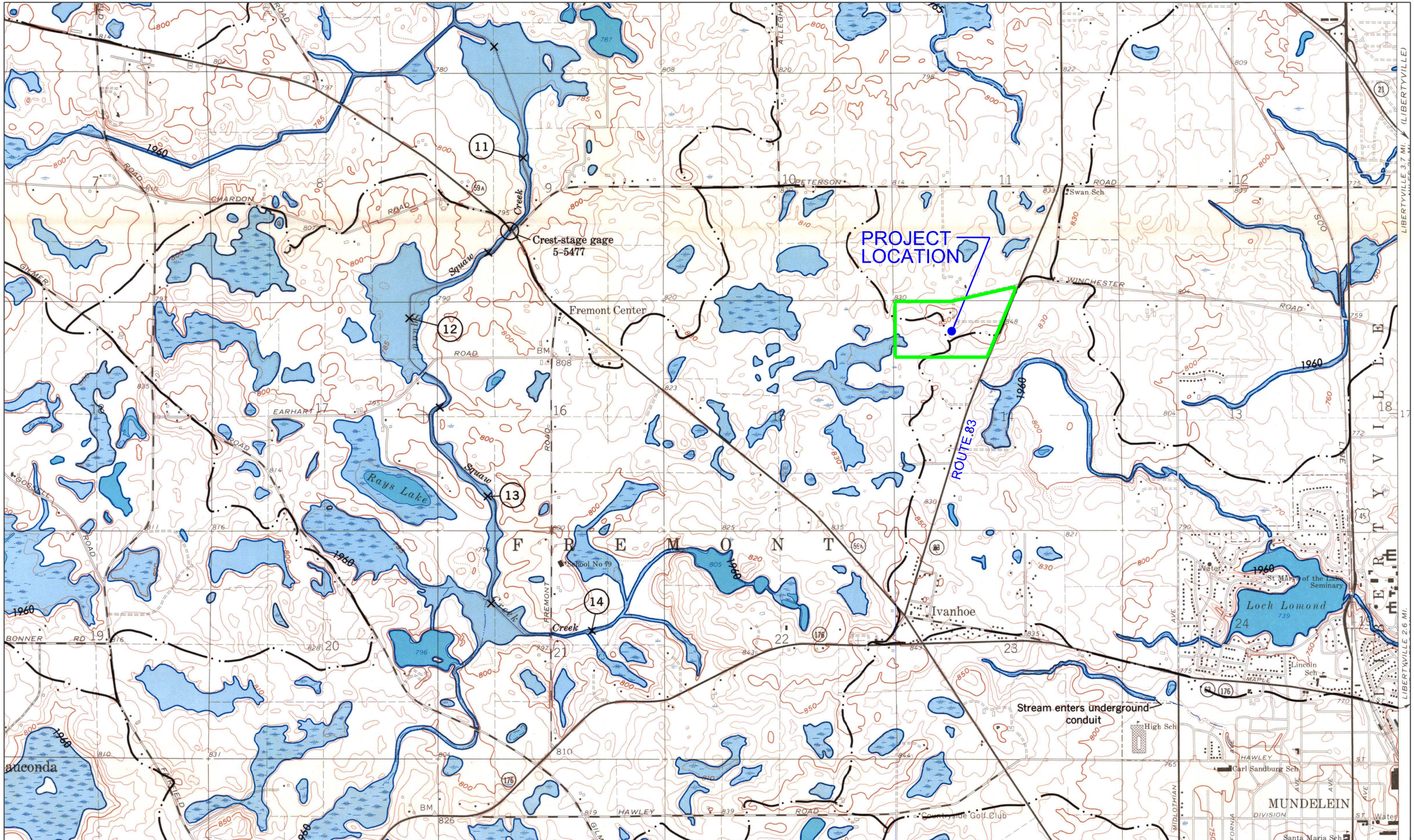
PROJECT: WALNUT RIDGE

MUNDELEIN, IL

PROJECT NO.: 2535

DATE: 04/11/25

EXHIBIT E



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NORTH

0 1000' 2000'
SCALE: 1" = 2000'

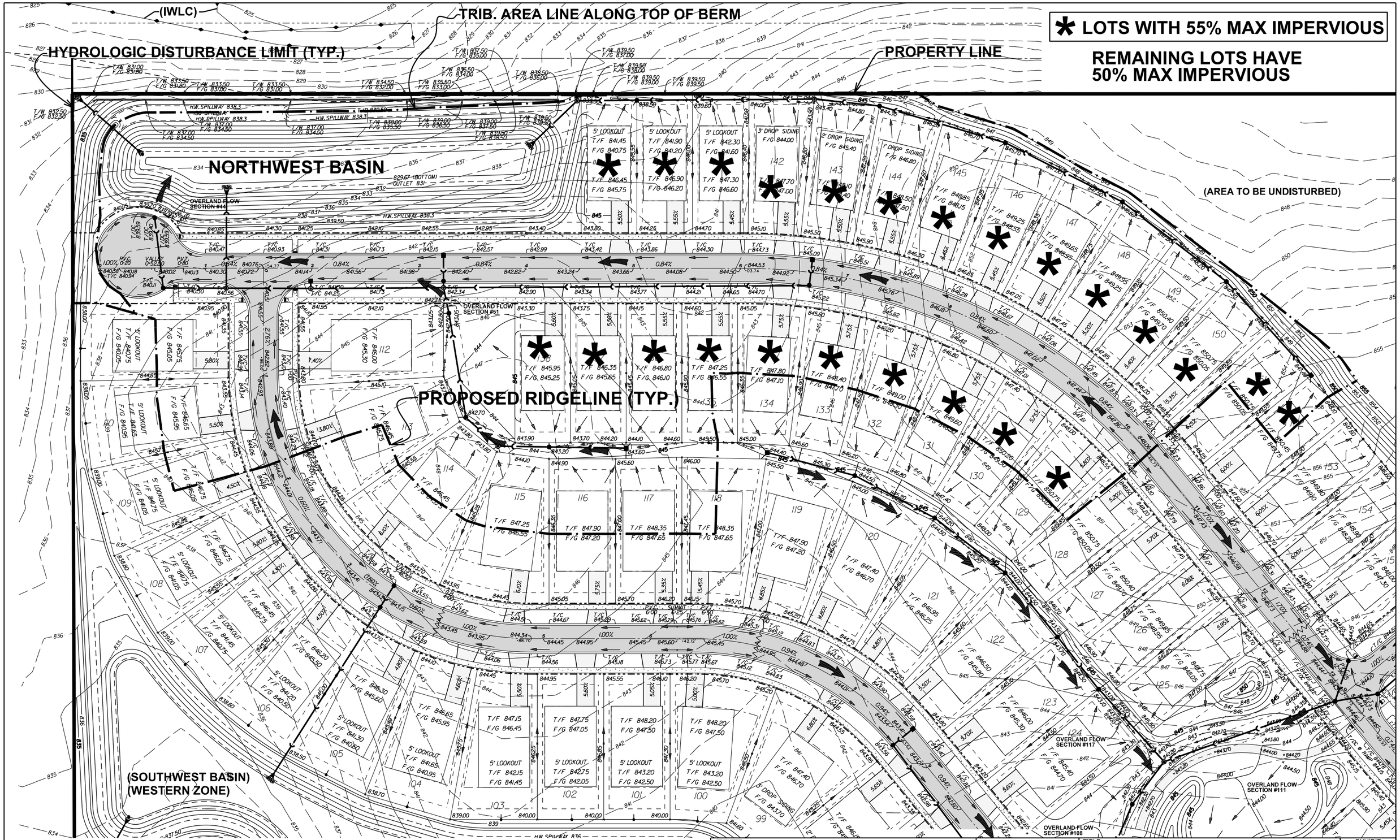
TITLE:
USGS - HYDROLOGIC ATLAS
HA-230

PROJECT:
WALNUT RIDGE
MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT
F

DATE: 04/11/25



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NORTH

0 40' 80'

SCALE: 1" = 80'

TITLE: NORTHWEST BASIN

PROJECT: WALNUT RIDGE

MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT **NW-1**

DATE: 06/20/25

*** LOTS WITH 55% MAX IMPERVIOUS**

REMAINING LOTS HAVE 50% MAX IMPERVIOUS

SOUTHWEST BASIN
WEST ZONE

EX. 100YR BFE
831.43 (NAVD 88)
LCSMC APPROVED

24" DIA. EQUALIZER

EX. 100YR BFE
831.43 (NAVD 88)
LCSMC APPROVED

SOUTHWEST BASIN
EAST ZONE

TRIBUTARY AREA LIMIT ALONG TOP OF BERM

HDYROLOGIC DISTURBANCE LIMIT

PROPERTY LINE

UNDISTURBED AREA

(SOUTHEAST BASIN)

OVERLAND FLOW SECTION #83

OVERLAND FLOW SECTION #117

OVERLAND FLOW SECTION #111

OVERLAND FLOW SECTION #109

OVERLAND FLOW SECTION #89

PEARSON, BROWN & ASSOCIATES, INC.
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NORTH

0 60' 120'

SCALE: 1" = 120'

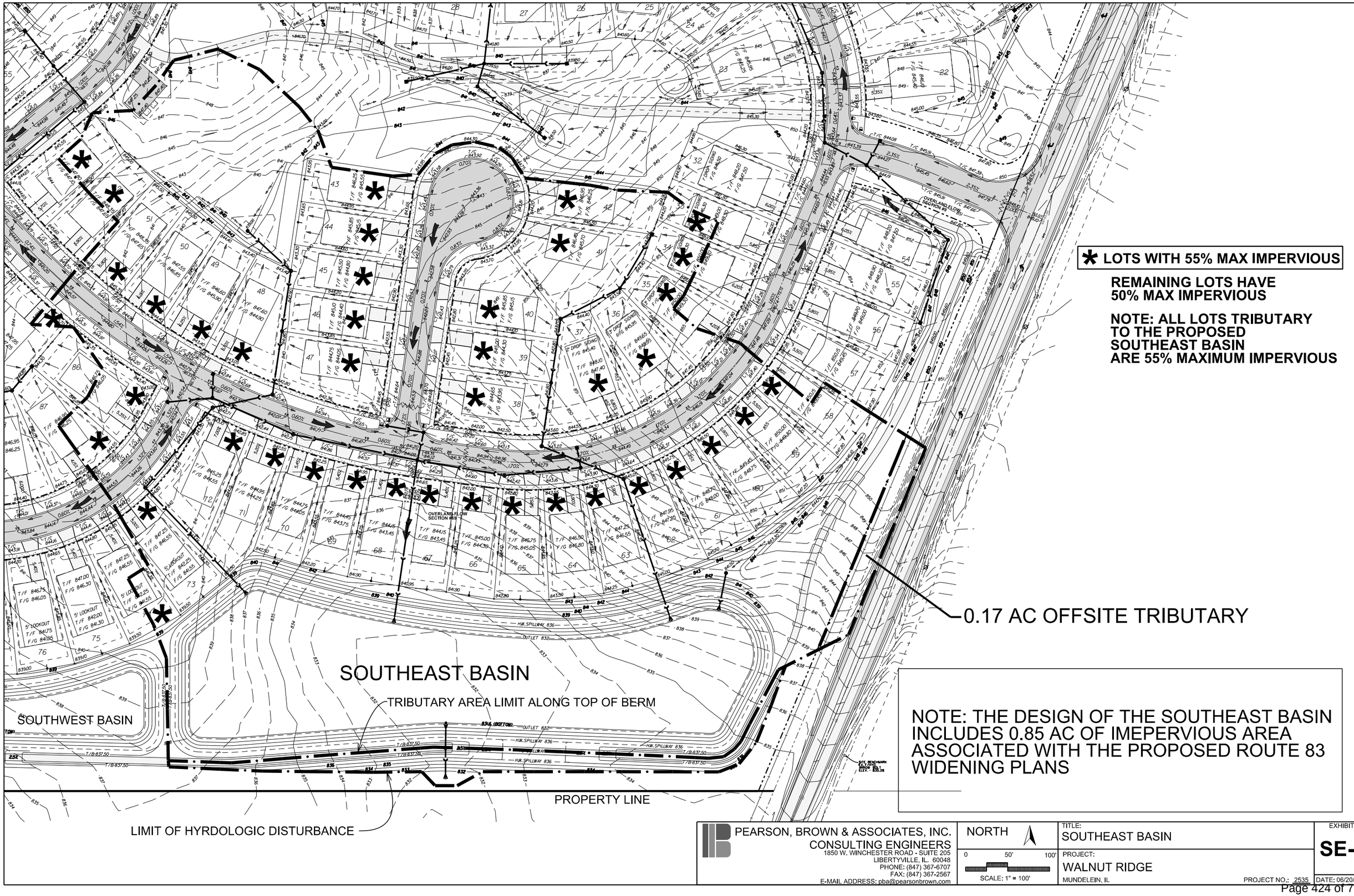
TITLE: SOUTHWEST BASIN

PROJECT: WALNUT RIDGE
MUNDELEIN, IL

PROJECT NO.: 2535

DATE: 06/20/25

EXHIBIT **SW-1**



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PHONE: (847) 367-6707
FAX: (847) 367-2567
E-MAIL ADDRESS: pba@pearsonbrown.com

NORTH

0 50' 100'

SCALE: 1" = 100'

TITLE: SOUTHEAST BASIN

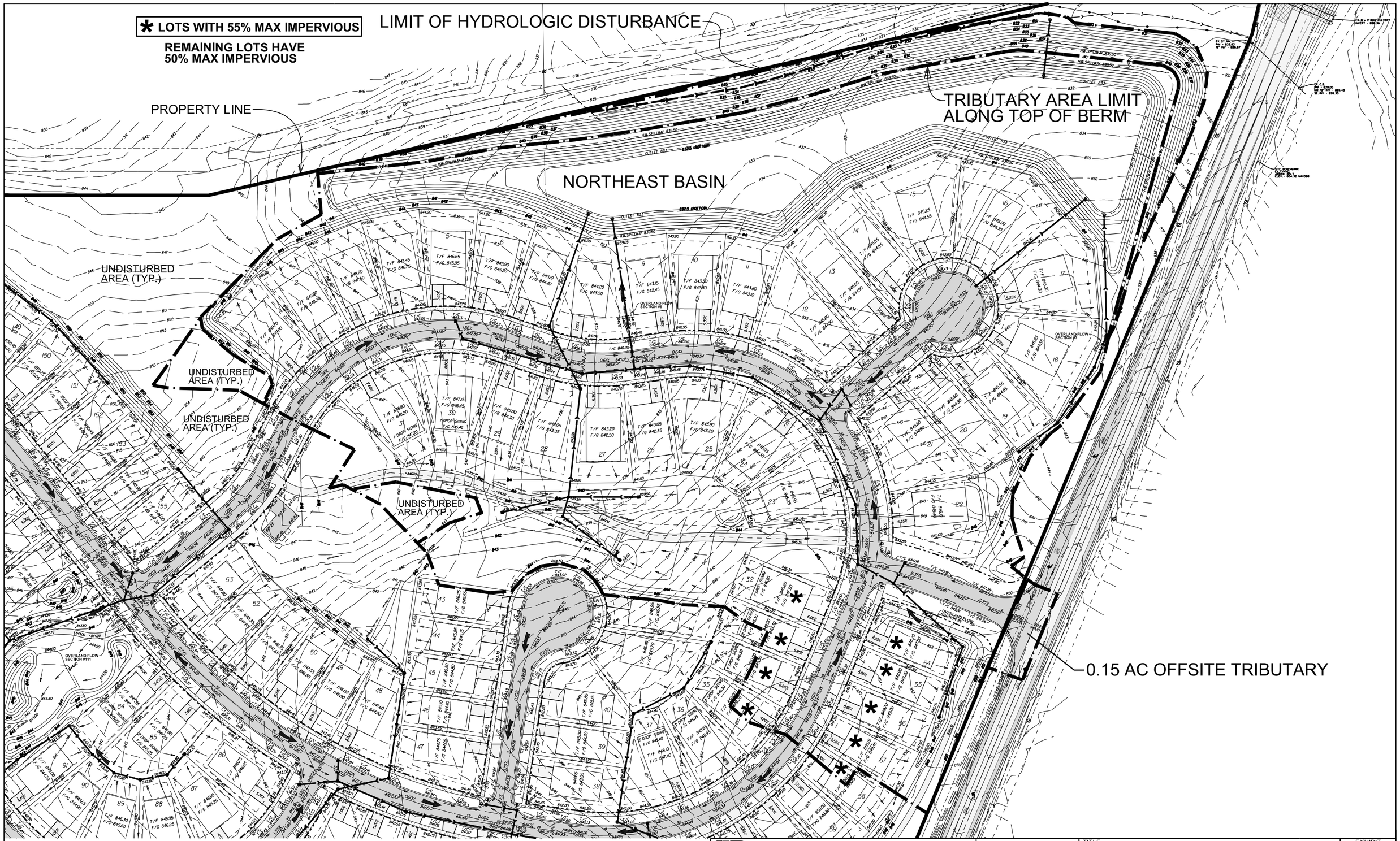
PROJECT: WALNUT RIDGE

MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT **SE-1**

DATE: 06/20/25



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FAX: (847) 367-2567
E-MAIL ADDRESS: pba@pearsonbrown.com

NORTH

0 60' 120'

SCALE: 1" = 120'

TITLE: NORTHEAST BASIN ZONE

EXHIBIT **NE-1**

PROJECT: WALNUT RIDGE

MUNDELEIN, IL

PROJECT NO.: 2535

DATE: 06/20/25

Appendix 1

Storm Sewer Design Calculations

Inlet Capacity – Flow Through Locations

Inlet Capacity – Valleys

Sub-Area C-Factor Calculations

Time of Concentration Calculations

Tributary Area Map

Overland Flow Calculations

All proposed storm sewer for the project is designed using **ISWS Bulletin 75 rainfall intensities.**

For the sub-area C-Factor calculations, 0.35 was employed for pervious area and 0.95 for impervious area.

The time of concentration calculations employ a maximum sheet flow length of 100’

STORM SEWER DESIGN CALCULATIONS

Pearson, Brown & Associates Inc.

Libertyville, IL 60048

Walnut Ridge

Job #: 2535

Prepared by: AKZ

Date: 04/11/2025

Revised: 06/20/2025

From	To	Individual Sub-area Pickup (ac.)	Area Total (ac.)	Individual Sub-area Runoff Factor	C*A Multiple	Sum of C*A to segment	Wieghted C-factor (sum of C*A div. by area total)	Time of Concentration Inlet	Channel	Total	Intensity (in./hr.)	Q=CIA Flow (cfs)	Diameter (in.)	Minimum Required Slope (ft./ft.)	PLAN Design Slope (ft./ft.)	Capacity (cfs)	Velocity (ft/sec)
5	3	0.67	0.67	0.50	0.34	0.34	0.50	16	0	16	5.34	1.79	12	0.0025	0.0150	4.38	5.57
3	1	0.27	0.94	0.51	0.14	0.47	0.50	16	1	17	5.15	2.43	12	0.0047	0.0128	4.04	5.15
100 YEAR STORM																	
7	6	1.20	1.20	0.74	0.89	0.89	0.74	16	0	16	8.88	7.89	15	0.0149	0.0220	9.61	7.83
24	23	0.43	0.43	0.55	0.24	0.24	0.55	16	0	16	5.34	1.26	12	0.0013	0.0080	3.20	4.07
23	21	0.15	0.58	0.55	0.08	0.32	0.55	15	0	16	5.34	1.70	12	0.0023	0.0080	3.20	4.07
22	21	0.26	0.26	0.60	0.16	0.16	0.60	5	0	5	7.44	1.16	12	0.0011	0.0100	3.57	4.55
21	20	0.88	1.72	0.68	0.60	1.07	0.62	15	0	16	5.34	5.73	15	0.0079	0.0090	6.14	5.01
20	16	0.58	2.30	0.69	0.40	1.47	0.64	15	1	17	5.15	7.59	18	0.0052	0.0090	9.99	5.65
18	17	0.66	0.66	0.66	0.44	0.44	0.66	12	0	12	6.02	2.62	12	0.0054	0.0100	3.57	4.55
17	16	0.23	0.89	0.69	0.16	0.59	0.67	14	0	14	5.69	3.38	12	0.0090	0.0150	4.38	5.57
16	10	0.44	3.63	0.57	0.25	2.32	0.64	16	0	17	5.15	11.94	21	0.0057	0.0064	12.71	5.28
13	12	0.87	0.87	0.64	0.56	0.56	0.64	15	0	15	5.56	3.10	12	0.0076	0.0100	3.57	4.55
12	10	0.51	1.38	0.61	0.31	0.87	0.63	14	0	15	5.56	4.83	15	0.0056	0.0150	7.93	6.46
10	9	1.15	6.16	0.69	0.79	3.98	0.65	15	0	17	5.15	20.50	24	0.0082	0.0090	21.52	6.85
9	8	1.27	7.43	0.67	0.85	4.83	0.65	15	1	18	4.98	24.06	27	0.0060	0.0090	29.46	7.41
100 YEAR STORM																	
30	28	0.89	0.89	0.53	0.47	0.47	0.53	16	0	16	8.88	4.19	12	0.0138	0.0150	4.38	5.57
29B	29	0.53	0.53	0.44	0.23	0.23	0.44	16	0	16	8.88	2.07	12	0.0034	0.0200	5.05	6.43
29	28	0.23	0.76	0.40	0.09	0.33	0.43	12	0	16	8.88	2.89	12	0.0066	0.0350	6.68	8.51
29A	28	0.59	0.59	0.42	0.25	0.25	0.42	9	0	9	10.97	2.72	12	0.0058	0.0150	4.38	5.57
28	25	0.81	3.05	0.55	0.45	1.49	0.49	13	1	17	8.56	12.76	24	0.0032	0.0040	14.35	4.57
100 YEAR STORM																	
42	41	0.18	0.18	0.55	0.10	0.10	0.55	15	0	15	9.24	0.91	12	0.0007	0.0050	2.53	3.22
41	40	0.16	0.34	0.58	0.09	0.19	0.56	15	0	15	9.24	1.77	12	0.0025	0.0070	2.99	3.81
40	39	0.20	0.54	0.56	0.11	0.30	0.56	15	1	16	8.88	2.70	12	0.0057	0.0080	3.20	4.07
39	38	0.22	0.76	0.54	0.12	0.42	0.56	15	0	16	8.88	3.75	12	0.0111	0.0250	5.65	7.19
38	36	0.21	0.97	0.55	0.12	0.54	0.55	11	1	17	8.56	4.61	12	0.0167	0.0200	5.05	6.43
36	34	0.34	1.31	0.61	0.21	0.75	0.57	15	0	17	8.56	6.38	12	0.0321	0.0400	7.14	9.10
57	56	0.89	0.89	0.73	0.65	0.65	0.73	16	0	16	5.34	3.47	12	0.0095	0.0200	5.05	6.43
56	48	0.74	1.63	0.70	0.52	1.17	0.72	16	1	17	5.15	6.01	15	0.0087	0.0100	6.48	5.28
55	54	0.39	0.39	0.61	0.24	0.24	0.61	15	0	15	5.56	1.32	12	0.0014	0.0060	2.77	3.52
54	52	0.24	0.63	0.60	0.14	0.38	0.61	13	0	15	5.56	2.12	12	0.0036	0.0120	3.91	4.98
52	51	0.33	0.96	0.57	0.19	0.57	0.59	15	0	15	5.56	3.17	12	0.0079	0.0100	3.57	4.55
51	48	0.20	1.16	0.50	0.10	0.67	0.58	15	0	15	5.56	3.73	12	0.0109	0.0140	4.23	5.38
50	49	0.59	0.59	0.70	0.41	0.41	0.70	16	0	16	5.34	2.21	12	0.0038	0.0100	3.57	4.55
49	48	0.66	1.25	0.73	0.48	0.89	0.72	16	0	16	5.34	4.78	12	0.0180	0.0200	5.05	6.43
48	46	0.00	4.04	0.00	0.00	2.73	0.68	0	0	17	5.15	14.07	24	0.0039	0.0040	14.35	4.57
47	46	0.43	0.43	0.67	0.29	0.29	0.67	14	0	14	5.69	1.64	12	0.0021	0.0100	3.57	4.55
46	54A	0.00	4.47	0.00	0.00	3.02	0.68	0	1	18	4.98	15.04	24	0.0044	0.0045	15.22	4.84
44	45	0.25	0.25	0.69	0.17	0.17	0.69	5	0	5	12.36	2.13	15	0.0011	0.0100	6.48	5.28
45	45A	0.52	0.77	0.68	0.35	0.53	0.68	15	0	15	5.56	2.93	15	0.0021	0.0120	7.10	5.78
45A	43	0.00	5.24	0.67	0.00	3.55	0.68	14	0	18	4.98	17.66	24	0.0061	0.0190	31.27	9.95
62	61	0.55	0.55	0.51	0.28	0.28	0.51	16	0	16	5.34	1.50	12	0.0018	0.0480	7.83	9.97

From	To	Individual Sub-area Pickup (ac.)	Area Total (ac.)	Individual Sub-area Runoff Factor	C*A Multiple	Sum of C*A to segment	Wieghted C-factor (sum of C*A div. by area total)	Time of Concentration Inlet	Channel	Total	Intensity (in./hr.)	Q=CIA Flow (cfs)	Diameter (in.)	Minimum Required Slope (ft./ft.)	PLAN Design Slope (ft./ft.)	Capacity (cfs)	Velocity (ft/sec)
100 YEAR STORM																	
67A	67	0.28	0.28	0.52	0.15	0.15	0.52	6	0	6	11.84	1.72	12	0.0023	0.0240	5.53	7.05
67	66	0.24	0.52	0.52	0.12	0.27	0.52	8	0	8	11.19	3.03	12	0.0072	0.0100	3.57	4.55
66	63	0.38	0.90	0.52	0.20	0.34	0.38	15	1	16	8.88	3.05	12	0.0073	0.0100	3.57	4.55
78	76	0.43	0.43	0.68	0.29	0.29	0.68	15	0	15	5.56	1.63	12	0.0021	0.0100	3.57	4.55
77	76	0.46	0.46	0.65	0.30	0.30	0.65	14	0	14	5.69	1.70	12	0.0023	0.0050	2.53	3.22
76	69	0.32	1.21	0.65	0.21	0.80	0.66	14	1	16	5.34	4.27	15	0.0044	0.0070	5.42	4.42
74	73	0.97	0.97	0.70	0.68	0.68	0.70	15	0	15	5.56	3.78	12	0.0112	0.0150	4.38	5.57
73	69	1.00	1.97	0.69	0.69	1.37	0.69	15	0	15	5.56	7.61	15	0.0139	0.0160	8.19	6.68
72	71	0.43	0.43	0.67	0.29	0.29	0.67	14	0	14	5.69	1.64	12	0.0021	0.0100	3.57	4.55
71	69	0.61	1.04	0.74	0.45	0.74	0.71	14	1	15	5.56	4.11	12	0.0133	0.0200	5.05	6.43
69	68	1.05	5.27	0.73	0.77	3.67	0.70	15	1	17	5.15	18.92	21	0.0143	0.0150	19.46	8.09
100 YEAR STORM																	
84	82	1.52	1.52	0.45	0.68	0.68	0.45	15	0	15	9.24	6.32	18	0.0036	0.0040	6.66	3.77
82	79	0.27	1.79	0.56	0.15	0.84	0.47	15	1	16	8.88	7.42	18	0.0050	0.0065	8.49	4.81
90	89	0.78	0.78	0.72	0.56	0.56	0.72	7	0	7	6.89	3.87	12	0.0118	0.0150	4.38	5.57
89	88	0.30	1.08	0.77	0.23	0.79	0.73	15	0	15	5.56	4.41	12	0.0153	0.0463	7.69	9.79
125	124	0.64	0.64	0.73	0.47	0.47	0.73	15	0	15	5.56	2.60	12	0.0053	0.0100	3.57	4.55
124	123	0.45	1.09	0.66	0.30	0.76	0.70	14	0	15	5.56	4.25	12	0.0142	0.0160	4.52	5.75
123	106	0.52	1.61	0.72	0.37	1.14	0.71	14	0	15	5.56	6.33	15	0.0096	0.0120	7.10	5.78
122	121	0.31	0.31	0.58	0.18	0.18	0.58	15	0	15	5.56	1.00	12	0.0008	0.0150	4.38	5.57
121	120	0.31	0.62	0.58	0.18	0.36	0.58	12	0	15	5.56	2.00	12	0.0031	0.0060	2.77	3.52
120	119	0.30	0.92	0.55	0.17	0.52	0.57	12	0	15	5.56	2.92	12	0.0067	0.0090	3.39	4.32
119	118	0.22	1.14	0.57	0.13	0.65	0.57	11	1	16	5.34	3.47	12	0.0095	0.0120	3.91	4.98
118	117	0.29	1.43	0.62	0.18	0.83	0.58	11	0	16	5.34	4.43	15	0.0047	0.0060	5.02	4.09
117	110	0.23	1.66	0.66	0.15	0.98	0.59	11	0	16	5.34	5.24	15	0.0066	0.0080	5.79	4.72
116	115	0.36	0.36	0.57	0.21	0.21	0.57	16	0	16	5.34	1.10	12	0.0009	0.0050	2.53	3.22
115	113	0.32	0.68	0.35	0.11	0.32	0.47	11	0	16	5.34	1.69	12	0.0023	0.0100	3.57	4.55
113	111	0.75	1.43	0.64	0.48	0.80	0.56	14	0	16	5.34	4.26	12	0.0143	0.0200	5.05	6.43
112	111	0.89	0.89	0.71	0.63	0.63	0.71	15	0	15	5.56	3.51	12	0.0097	0.0150	4.38	5.57
111	110	0.86	3.18	0.70	0.60	2.03	0.64	15	1	17	5.15	10.46	18	0.0099	0.0140	12.46	7.05
110	109	0.00	4.84	0.00	0.00	3.01	0.62	0	0	17	5.15	15.52	24	0.0047	0.0060	17.57	5.59
109	108	0.54	5.38	0.51	0.28	3.29	0.61	22	0	22	4.45	14.63	24	0.0042	0.0060	17.57	5.59
108	107	0.08	5.46	0.43	0.03	3.32	0.61	10	0	22	4.45	14.79	24	0.0043	0.0060	17.57	5.59
107	106	0.85	6.31	0.67	0.57	3.89	0.62	15	0	22	4.45	17.32	24	0.0059	0.0070	18.98	6.04
106	92	0.56	8.48	0.67	0.38	5.41	0.64	15	0	22	4.45	24.06	24	0.0113	0.0130	25.86	8.23
105	102	0.20	0.20	0.56	0.11	0.11	0.56	12	0	12	6.02	0.67	12	0.0004	0.0200	5.05	6.43
102	101	0.35	0.55	0.61	0.21	0.33	0.59	15	0	15	5.56	1.81	12	0.0026	0.0050	2.53	3.22
101	100	0.16	0.71	0.58	0.09	0.42	0.59	11	0	15	5.56	2.33	12	0.0043	0.0100	3.57	4.55
100	99	0.14	0.85	0.52	0.07	0.49	0.58	7	0	15	5.56	2.73	12	0.0059	0.0100	3.57	4.55
99	97	0.06	0.91	0.35	0.02	0.51	0.56	9	0	15	5.56	2.85	12	0.0064	0.0100	3.57	4.55
98	97	0.35	0.35	0.35	0.12	0.12	0.35	21	0	21	4.57	0.56	12	0.0002	0.0100	3.57	4.55
97	93	0.00	1.26	0.00	0.00	0.63	0.50	0	1	22	4.45	2.82	12	0.0063	0.0100	3.57	4.55
96	95	0.50	0.50	0.66	0.33	0.33	0.66	15	0	15	5.56	1.83	12	0.0027	0.0100	3.57	4.55
95	93	0.80	1.30	0.73	0.58	0.91	0.70	16	0	16	5.34	4.88	15	0.0057	0.0070	5.42	4.42
93	92	0.00	2.56	0.00	0.00	0.91	0.36	0	0	22	4.45	4.07	15	0.0040	0.0100	6.48	5.28
92	91	0.00	11.04	0.00	0.00	6.32	0.57	0	1	23	4.35	27.49	24	0.0148	0.0185	30.85	9.82
128	127	0.88	0.88	0.67	0.59	0.59	0.67	15	0	15	9.24	5.45	15	0.0071	0.0100	6.48	5.28
127	126	1.22	2.10	0.72	0.88	1.47	0.70	14	0	15	9.24	13.56	18	0.0167	0.0280	17.62	9.97

From	To	Individual Sub-area Pickup (ac.)	Area Total (ac.)	Individual Sub-area Runoff Factor	C*A Multiple	Sum of C*A to segment	Wieghted C-factor (sum of C*A div. by area total)	Time of Concentration Inlet	Channel	Total	Intensity (in./hr.)	Q=CIA Flow (cfs)	Diameter (in.)	Minimum Required Slope (ft./ft.)	PLAN Design Slope (ft./ft.)	Capacity (cfs)	Velocity (ft/sec)
100 YEAR STORM																	
132	**131**	**0.30**	**0.30**	**0.81**	**0.24**	**0.24**	**0.81**	**5**	**0**	**5**	**12.36**	**3.00**	**12**	0.0071	**0.0090**	3.39	4.32

INLET CAPACITY AT FLOW THROUGH LOCATIONS						
Project Name:	Walnut Ridge				**Proj No:**	2535
Prepared By:	AKZ				**Date:**	04/11/2025
Checked By:	JFC				**Date:**	04/11/2025
					Revised:	06/20/2025
Structure No.	**To Structure No.**	**Direct Flow (cfs)**	**Total Flow (cfs)**	**Captured Flow (cfs)**	**Bypass Flow (cfs)**	**Head (Ft) On Inlet**
21	18	3.33	3.33	1.61	1.72	0.31
22	18	1.16	1.16	0.83	0.33	0.20
18	9	2.62	5.06	2.81	2.25	0.40
17	9	0.90	0.90	0.80	0.10	0.21
13	9	3.10	3.10	1.50	1.60	0.30
9						SEE VALLEYS
20	16	2.23	2.23	1.25	0.98	0.27
16	10	1.34	2.32	1.50	0.82	0.32
12	10	1.77	1.77	1.03	0.74	0.24
10						SEE VALLEYS
57	50	3.47	3.47	1.83	1.64	0.36
50	44	2.21	4.04	2.00	2.04	0.38
44						SEE VALLEYS
56	49	2.77	2.77	1.60	1.17	0.33
49	47	2.57	3.74	1.71	2.03	0.37
47	45	1.64	3.67	1.89	1.78	0.37
45						SEE VALLEYS

Structure No.	To Structure No.	Direct Flow (cfs)	Total Flow (cfs)	Captured Flow (cfs)	Bypass Flow (cfs)	Head (Ft) On Inlet
71	69	2.57	2.57	1.39	1.18	0.28
77	76	1.70	1.70	1.07	0.63	0.24
76	69	1.18	1.81	1.20	0.61	0.26
69						SEE VALLEYS
72	73	1.64	1.64	1.02	0.62	0.24
73						SEE VALLEYS
78	74	1.63	1.63	1.02	0.61	0.24
74						SEE VALLEYS
95	106	3.12	3.12	1.71	1.41	0.37
106						SEE VALLEYS
96	107	1.83	1.83	1.28	0.55	0.30
125	107	1.79	1.79	1.15	0.64	0.27
107						SEE VALLEYS
124	123	1.69	1.69	1.06	0.63	0.26
123						SEE VALLEYS

INLET CAPACITY CALCULATIONS
Pearson, Brown & Associates Inc.
Libertyville, IL 60048

Job #: 2535
Prepared by: AKZ
Checked by:. JFC
Date: 04-11-2025
Revised: 06-20-2025

YARD AREAS - NEEHAH R-2502 TYPE C OPEN AREA 1.2 SF, WEIR PERIMETER = 6.0 L.F.
- NEENAH R-4340-B - BEEHIVE GRATE, OPEN AREA 1.1 SF, WEIR PERIMETER = 6.0 L.F.
DEPRESSED CURB AREAS - NEEHAH R-3287-5 OPEN AREA 3.2 SF, WEIR PERIMETER = 11.3 L.F.
BARRIER CURB AREAS - NEENAH R-3281-A W/ TY C GRATE OPEN AREA 1.0 SF, WEIR PERIMETER 4.3 L.F.
NEENAH R-3287-15 OPEN AREA = 3.2 SF, WEIR PERIMETER = 7.5 L.F.
NEENAH R-3287-SB-10 OPEN AREA = 1.5 SF, WEIR PERIMETER = 5.5 L.F.

Single Structure
Q = CLH^(3/2)
w/ C = 3.33 per neenah

Weir Flow Capacity Calculations:

Flow to Structure	Individual Sub-area Pickup (ac.)	Individual Sub-area Runoff Factor	Time of Concentration Inlet	10YR 100YR Intensity (in./hr.)	Q=CIA Flow (cfs)	Flow From Upstream (cfs)	TOTAL Flow (cfs)	Location Type	GRATE TYPE	Weir Perimeter (ft)	Rim Elevation (ft)	head on grate (ft)	Capacity Based on Weir Eqn. (cfs)	Number of Strucures	Total Capacity (cfs)	Capacity Provided
3	0.27	0.51	16	5.34	2.24	0.00	2.24	Yard	R-2502	6.0	840.00	0.24	2.35	1	2.35	YES
5	0.67	0.50	16	5.34	1.94	0.00	1.94	Yard	R-4340	6.0	841.20	0.22	2.06	1	2.06	YES
7	1.20	0.74	16	8.88	7.89	0.00	7.89	Barrier	R-3287-15	7.5	841.60	0.47	8.05	1	8.05	YES
9	1.24	0.67	15	5.56	4.62	3.95	8.57	Barrier	R-3287-15	7.5	839.70	0.49	8.57	1	8.57	YES
10	1.15	0.69	15	5.56	4.41	1.56	5.97	Barrier	R-3287-15	7.5	839.70	0.39	6.08	1	6.08	YES
23	0.15	0.55	5	7.44	0.61	0.00	0.61	Yard	R-2502	6.0	845.00	0.10	0.63	1	0.63	YES
24	0.43	0.55	16	5.34	1.26	0.00	1.26	Yard	R-4340	6.0	845.10	0.16	1.28	1	1.28	YES
28	1.11	0.52	13	9.72	5.61	0.00	5.61	Yard	R-4340	6.0	839.50	0.43	5.63	1	5.63	YES
29	0.23	0.40	12	10.02	0.92	0.00	0.92	Yard	R-4340	6.0	839.50	0.13	0.94	1	0.94	YES
29A	0.59	0.42	9	10.97	2.72	0.00	2.72	Yard	R-4340	6.0	839.50	0.48	6.64	1	6.64	YES
29B	0.53	0.53	16	8.88	2.49	0.00	2.49	Yard	R-4340	6.0	841.50	0.48	6.64	1	6.64	YES
30	0.59	0.53	16	8.88	2.78	0.00	2.78	Yard	R-4340	6.0	840.60	0.27	2.80	1	2.80	YES
36	0.34	0.61	15	5.56	1.15	0.00	1.15	Yard	R-2502	6.0	838.50	0.15	1.16	1	1.16	YES
38	0.21	0.55	11	6.23	0.72	0.00	0.72	Yard	R-2502	6.0	844.30	0.11	0.73	1	0.73	YES
39	0.22	0.54	15	5.56	0.66	0.00	0.66	Yard	R-2502	6.0	845.70	0.11	0.73	1	0.73	YES
40	0.20	0.56	15	5.56	0.62	0.00	0.62	Yard	R-2502	6.0	846.60	0.10	0.63	1	0.63	YES
41	0.16	0.58	15	5.56	0.52	0.00	0.52	Yard	R-2502	6.0	847.30	0.10	0.63	1	0.63	YES
42	0.18	0.55	15	5.56	0.55	0.00	0.55	Yard	R-4340	6.0	847.40	0.10	0.63	1	0.63	YES
44	0.25	0.70	5	7.44	1.30	2.04	3.34	Barrier	R-3287-15	7.5	839.69	0.27	3.50	1	3.50	YES
45	0.52	0.68	15	5.56	1.97	1.78	3.75	Barrier	R-3287-15	7.5	839.69	0.29	3.90	1	3.90	YES
51	0.20	0.50	15	5.56	0.56	0.00	0.56	Yard	R-2502	6.0	842.50	0.10	0.63	1	0.63	YES
52	0.33	0.57	15	5.56	1.05	0.00	1.05	Yard	R-2502	6.0	842.70	0.14	1.05	1	1.05	YES
54	0.24	0.60	13	5.84	0.84	0.00	0.84	Yard	R-2502	6.0	843.50	0.13	0.94	1	0.94	YES
55	0.39	0.61	15	5.56	1.32	0.00	1.32	Yard	R-4340	6.0	843.60	0.17	1.40	1	1.40	YES
62	0.55	0.51	16	5.34	1.50	0.00	1.50	Yard	R-4340	6.0	841.50	0.18	1.53	1	1.53	YES
66	0.44	0.47	15	5.56	1.15	0.00	1.15	Yard	R-2502	6.0	841.90	0.15	1.16	1	1.16	YES
67	0.24	0.48	8	8.51	0.98	0.00	0.98	Yard	R-4340	6.0	842.90	0.14	1.05	1	1.05	YES
67A	0.28	0.48	6	8.98	1.21	0.00	1.21	Yard	R-4340	6.0	842.90	0.16	1.28	1	1.28	YES
69	1.05	0.73	15	5.56	4.26	1.79	6.05	Barrier	R-3287-15	7.5	840.76	0.39	6.08	1	6.08	YES
73	1.00	0.69	15	5.56	3.84	0.22	4.06	Barrier	R-3287-15	7.5	840.68	0.30	4.10	1	4.10	YES
74	0.97	0.70	15	5.56	3.78	0.61	4.39	Barrier	R-3287-15	7.5	840.68	0.32	4.52	1	4.52	YES
82	0.27	0.56	15	9.24	1.40	0.00	1.40	Yard	R-2502	6.0	841.70	0.17	1.40	1	1.40	YES
84	1.52	0.45	16	8.88	6.07	0.00	6.07	Yard	R-4340	6.0	839.00	0.46	6.23	1	6.23	YES

89	0.30	0.77	15	5.56	1.28	0.00	1.28	Barrier	R-3281-A	4.3	838.33	0.20	1.28	1	1.28	YES
90	0.78	0.72	7	6.89	3.87	0.00	3.87	Barrier	R-3287-SB-10	5.5	838.33	0.36	3.96	1	3.96	YES
98	0.35	0.35	21	4.57	0.56	0.00	0.56	Yard	R-2502	6.0	842.00	0.10	0.63	1	0.63	YES
99	0.06	0.35	9	6.59	0.14	0.00	0.14	Yard	R-2502	6.0	842.30	0.10	0.63	1	0.63	YES
100	0.14	0.52	7	6.89	0.50	0.00	0.50	Yard	R-2502	6.0	842.60	0.10	0.63	1	0.63	YES
101	0.16	0.58	11	6.23	0.58	0.00	0.58	Yard	R-2502	6.0	842.70	0.10	0.63	1	0.63	YES
102	0.35	0.61	15	5.56	1.19	0.00	1.19	Yard	R-2502	6.0	843.00	0.16	1.28	1	1.28	YES
105	0.20	0.20	12	6.02	0.24	0.00	0.24	Yard	R-4340	6.0	844.30	0.10	0.63	1	0.63	YES
106	0.56	0.67	15	5.56	2.09	1.41	3.50	Barrier	R-3287-SB-10	5.5	841.00	0.34	3.63	1	3.63	YES
107	0.85	0.67	15	5.56	3.17	1.19	4.36	Barrier	R-3287-SB-10	5.5	841.07	0.39	4.46	1	4.46	YES
108	0.08	0.43	10	6.48	0.22	0.00	0.22	Yard	R-2502	6.0	841.80	0.10	0.63	1	0.63	YES
109	0.54	0.51	22	4.45	1.23	0.00	1.23	Yard	R-2502	6.0	841.70	0.16	1.28	1	1.28	YES
111	0.86	0.70	15	5.56	3.35	0.00	3.35	Depressed	R-3287-5	11.3	844.02	0.20	3.37	1	3.37	YES
112	0.89	0.71	15	5.56	3.51	0.00	3.51	Barrier	R-3287-SB-10	5.5	843.85	0.34	3.63	1	3.63	YES
113	0.75	0.64	14	5.69	2.73	0.00	2.73	Barrier	R-3287-SB-10	5.5	843.85	0.29	2.86	1	2.86	YES
115	0.32	0.32	11	6.23	0.64	0.00	0.64	Yard	R-2502	6.0	846.00	0.11	0.73	1	0.73	YES
116	0.36	0.57	16	5.34	1.10	0.00	1.10	Yard	R-4340	6.0	845.60	0.15	1.16	1	1.16	YES
117	0.33	0.66	11	6.23	1.36	0.00	1.36	Yard	R-2502	6.0	843.00	0.17	1.40	1	1.40	YES
118	0.29	0.62	11	6.23	1.12	0.00	1.12	Yard	R-2502	6.0	843.50	0.15	1.16	1	1.16	YES
119	0.22	0.57	11	6.23	0.78	0.00	0.78	Yard	R-2502	6.0	844.00	0.12	0.83	1	0.83	YES
120	0.30	0.55	12	6.02	0.99	0.00	0.99	Yard	R-2502	6.0	844.20	0.14	1.05	1	1.05	YES
121	0.31	0.58	12	6.02	1.08	0.00	1.08	Yard	R-2502	6.0	844.50	0.15	1.16	1	1.16	YES
122	0.31	0.58	15	5.56	1.00	0.00	1.00	Yard	R-4340	6.0	844.40	0.14	1.05	1	1.05	YES
123	0.52	0.72	14	5.69	2.13	0.63	2.76	Barrier	R-3287-SB-10	5.5	841.00	0.29	2.86	1	2.86	YES
127	1.22	0.72	15	9.25	8.13	0.00	8.13	Barrier	R-3287-15	7.5	842.80	0.48	8.31	1	8.31	YES
128	0.88	0.67	14	9.46	5.58	0.00	5.58	Barrier	R-3287-15	7.5	842.80	0.37	5.62	1	5.62	YES

INDIVIDUAL SUB-AREA RUNOFF FACTOR DETERMINATION

Date: 04-11-2025
Revised: 06-20-2025

Area		Acres	Factor	Multiple
To Structure #3	***total area***	**0.27**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.07	**0.95**	0.0665
Total		0.27		0.1365
Sub area c-factor				**0.51**

Area		Acres	Factor	Multiple
To Structure #9	***total area***	**1.27**		
Grassy		0.59	**0.35**	0.2065
Impervious		0.68	**0.95**	0.6460
Total		1.27		0.8525
Sub area c-factor				**0.67**

Area		Acres	Factor	Multiple
To Structure #5	***total area***	**0.67**		
Grassy		0.50	**0.35**	0.1750
Impervious		0.17	**0.95**	0.1615
Total		0.67		0.3365
Sub area c-factor				**0.50**

Area		Acres	Factor	Multiple
To Structure #10	***total area***	**1.15**		
Grassy		0.50	**0.35**	0.1750
Impervious		0.65	**0.95**	0.6175
Total		1.15		0.7925
Sub area c-factor				**0.69**

Area		Acres	Factor	Multiple
To Structure #7	***total area***	**1.20**		
Grassy		0.42	**0.35**	0.1470
Impervious		0.78	**0.95**	0.7410
Total		1.20		0.8880
Sub area c-factor				**0.74**

Area		Acres	Factor	Multiple
To Structure #12	***total area***	**0.51**		
Grassy		0.29	**0.35**	0.1015
Impervious		0.22	**0.95**	0.2090
Total		0.51		0.3105
Sub area c-factor				**0.61**

Area		Acres	Factor	Multiple
To Structure #13	***total area***	**0.87**		
Grassy		0.45	**0.35**	0.1575
Impervious		0.42	**0.95**	0.3990
Total		0.87		0.5565
Sub area c-factor				**0.64**

Area		Acres	Factor	Multiple
To Structure #18	***total area***	**0.66**		
Grassy		0.32	**0.35**	0.1120
Impervious		0.34	**0.95**	0.3230
Total		0.66		0.4350
Sub area c-factor				**0.66**

Area		Acres	Factor	Multiple
To Structure #16	***total area***	**0.44**		
Grassy		0.28	**0.35**	0.0980
Impervious		0.16	**0.95**	0.1520
Total		0.44		0.2500
Sub area c-factor				**0.57**

Area		Acres	Factor	Multiple
To Structure #20	***total area***	**0.58**		
Grassy		0.25	**0.35**	0.0875
Impervious		0.33	**0.95**	0.3135
Total		0.58		0.4010
Sub area c-factor				**0.69**

Area		Acres	Factor	Multiple
To Structure #17	***total area***	**0.23**		
Grassy		0.10	**0.35**	0.0350
Impervious		0.13	**0.95**	0.1235
Total		0.23		0.1585
Sub area c-factor				**0.69**

Area		Acres	Factor	Multiple
To Structure #21	***total area***	**0.88**		
Grassy		0.40	**0.35**	0.1400
Impervious		0.48	**0.95**	0.4560
Total		0.88		0.5960
Sub area c-factor				**0.68**

Area		Acres	Factor	Multiple
To Structure #22	***total area***	**0.26**		
Grassy		0.15	**0.35**	0.0525
Impervious		0.11	**0.95**	0.1045
Total		0.26		0.1570
Sub area c-factor				**0.60**

Area		Acres	Factor	Multiple
To Structure #28	***total area***	**1.11**		
Grassy		0.54	**0.35**	0.1890
Impervious		0.27	**0.95**	0.2565
Total		0.81		0.4455
Sub area c-factor				**0.55**

Area		Acres	Factor	Multiple
To Structure #23	***total area***	**0.15**		
Grassy		0.10	**0.35**	0.0350
Impervious		0.05	**0.95**	0.0475
Total		0.15		0.0825
Sub area c-factor				**0.55**

Area		Acres	Factor	Multiple
To Structure #29	***total area***	**0.23**		
Grassy		0.21	**0.35**	0.0735
Impervious		0.02	**0.95**	0.0190
Total		0.23		0.0925
Sub area c-factor				**0.40**

Area		Acres	Factor	Multiple
To Structure #24	***total area***	**0.43**		
Grassy		0.29	**0.35**	0.1015
Impervious		0.14	**0.95**	0.1330
Total		0.43		0.2345
Sub area c-factor				**0.55**

Area		Acres	Factor	Multiple
To Structure #30	***total area***	**0.59**		
Grassy		0.62	**0.35**	0.2170
Impervious		0.27	**0.95**	0.2565
Total		0.89		0.4735
Sub area c-factor				**0.53**

Area		Acres	Factor	Multiple
To Structure #36	***total area***	**0.34**		
Grassy		0.19	**0.35**	0.0665
Impervious		0.15	**0.95**	0.1425
Total		0.34		0.2090
				0.61

Area		Acres	Factor	Multiple
To Structure #40	***total area***	**0.20**		
Grassy		0.13	**0.35**	0.0455
Impervious		0.07	**0.95**	0.0665
Total		0.20		0.1120
Sub area c-factor				**0.56**

Area		Acres	Factor	Multiple
To Structure #38	***total area***	**0.21**		
Grassy		0.14	**0.35**	0.0490
Impervious		0.07	**0.95**	0.0665
Total		0.21		0.1155
Sub area c-factor				**0.55**

Area		Acres	Factor	Multiple
To Structure #41	***total area***	**0.16**		
Grassy		0.10	**0.35**	0.0350
Impervious		0.06	**0.95**	0.0570
Total		0.16		0.0920
Sub area c-factor				**0.58**

Area		Acres	Factor	Multiple
To Structure #39	***total area***	**0.22**		
Grassy		0.15	**0.35**	0.0525
Impervious		0.07	**0.95**	0.0665
Total		0.22		0.1190
Sub area c-factor				**0.54**

Area		Acres	Factor	Multiple
To Structure #42	***total area***	**0.18**		
Grassy		0.12	**0.35**	0.0420
Impervious		0.06	**0.95**	0.0570
Total		0.18		0.0990
Sub area c-factor				**0.55**

Area		Acres	Factor	Multiple
To Structure #44	***total area***	**0.25**		
Grassy		0.11	**0.35**	0.0385
Impervious		0.14	**0.95**	0.1330
Total		0.25		0.1715
Sub area c-factor				**0.69**

Area		Acres	Factor	Multiple
To Structure #49	***total area***	**0.66**		
Grassy		0.24	**0.35**	0.0840
Impervious		0.42	**0.95**	0.3990
Total		0.66		0.4830
Sub area c-factor				**0.73**

Area		Acres	Factor	Multiple
To Structure #45	***total area***	**0.52**		
Grassy		0.23	**0.35**	0.0805
Impervious		0.29	**0.95**	0.2755
Total		0.52		0.3560
Sub area c-factor				**0.68**

Area		Acres	Factor	Multiple
To Structure #50	***total area***	**0.59**		
Grassy		0.25	**0.35**	0.0875
Impervious		0.34	**0.95**	0.3230
Total		0.59		0.4105
Sub area c-factor				**0.70**

Area		Acres	Factor	Multiple
To Structure #47	***total area***	**0.43**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.23	**0.95**	0.2185
Total		0.43		0.2885
Sub area c-factor				**0.67**

Area		Acres	Factor	Multiple
To Structure #51	***total area***	**0.20**		
Grassy		0.15	**0.35**	0.0525
Impervious		0.05	**0.95**	0.0475
Total		0.20		0.1000
Sub area c-factor				**0.50**

Area		Acres	Factor	Multiple
To Structure #52	***total area***	**0.33**		
Grassy		0.21	**0.35**	0.0735
Impervious		0.12	**0.95**	0.1140
Total		0.33		0.1875
Sub area c-factor				**0.57**

Area		Acres	Factor	Multiple
To Structure #56	***total area***	**0.74**		
Grassy		0.31	**0.35**	0.1085
Impervious		0.43	**0.95**	0.4085
Total		0.74		0.5170
Sub area c-factor				**0.70**

Area		Acres	Factor	Multiple
To Structure #54	***total area***	**0.24**		
Grassy		0.14	**0.35**	0.0490
Impervious		0.10	**0.95**	0.0950
Total		0.24		0.1440
Sub area c-factor				**0.60**

Area		Acres	Factor	Multiple
To Structure #57	***total area***	**0.89**		
Grassy		0.32	**0.35**	0.1120
Impervious		0.57	**0.95**	0.5415
Total		0.89		0.6535
Sub area c-factor				**0.73**

Area		Acres	Factor	Multiple
To Structure #55	***total area***	**0.39**		
Grassy		0.22	**0.35**	0.0770
Impervious		0.17	**0.95**	0.1615
Total		0.39		0.2385
Sub area c-factor				**0.61**

Area		Acres	Factor	Multiple
To Structure #62	***total area***	**0.55**		
Grassy		0.40	**0.35**	0.1400
Impervious		0.15	**0.95**	0.1425
Total		0.55		0.2825
Sub area c-factor				**0.51**

Area		Acres	Factor	Multiple
To Structure #66	***total area***	**0.44**		
Grassy		0.35	**0.35**	0.1225
Impervious		0.09	**0.95**	0.0855
Total		0.44		0.2080
Sub area c-factor				**0.47**

Area		Acres	Factor	Multiple
To Structure #71	***total area***	**0.61**		
Grassy		0.21	**0.35**	0.0735
Impervious		0.40	**0.95**	0.3800
Total		0.61		0.4535
Sub area c-factor				**0.74**

Area		Acres	Factor	Multiple
To Structure #67	***total area***	**0.24**		
Grassy		0.19	**0.35**	0.0665
Impervious		0.05	**0.95**	0.0475
Total		0.24		0.1140
Sub area c-factor				**0.48**

Area		Acres	Factor	Multiple
To Structure #72	***total area***	**0.43**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.23	**0.95**	0.2185
Total		0.43		0.2885
Sub area c-factor				**0.67**

Area		Acres	Factor	Multiple
To Structure #69	***total area***	**1.05**		
Grassy		0.38	**0.35**	0.1330
Impervious		0.67	**0.95**	0.6365
Total		1.05		0.7695
Sub area c-factor				**0.73**

Area		Acres	Factor	Multiple
To Structure #73	***total area***	**1.00**		
Grassy		0.44	**0.35**	0.1540
Impervious		0.56	**0.95**	0.5320
Total		1.00		0.6860
Sub area c-factor				**0.69**

Area		Acres	Factor	Multiple
To Structure #74	***total area***	**0.97**		
Grassy		0.41	**0.35**	0.1435
Impervious		0.56	**0.95**	0.5320
Total		0.97		0.6755
Sub area c-factor				**0.70**

Area		Acres	Factor	Multiple
To Structure #78	***total area***	**0.43**		
Grassy		0.19	**0.35**	0.0665
Impervious		0.24	**0.95**	0.2280
Total		0.43		0.2945
Sub area c-factor				**0.68**

Area		Acres	Factor	Multiple
To Structure #76	***total area***	**0.32**		
Grassy		0.16	**0.35**	0.0560
Impervious		0.16	**0.95**	0.1520
Total		0.32		0.2080
Sub area c-factor				**0.65**

Area		Acres	Factor	Multiple
To Structure #82	***total area***	**0.27**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.07	**0.95**	0.0665
Total		0.27		0.1365
Sub area c-factor				**0.51**

Area		Acres	Factor	Multiple
To Structure #77	***total area***	**0.46**		
Grassy		0.23	**0.35**	0.0805
Impervious		0.23	**0.95**	0.2185
Total		0.46		0.2990
Sub area c-factor				**0.65**

Area		Acres	Factor	Multiple
To Structure #84	***total area***	**1.52**		
Grassy		1.22	**0.35**	0.4270
Impervious		0.30	**0.95**	0.2850
Total		1.52		0.7120
Sub area c-factor				**0.47**

Area		Acres	Factor	Multiple
To Structure #89	***total area***	**0.30**		
Grassy		0.09	**0.35**	0.0315
Impervious		0.21	**0.95**	0.1995
Total		0.30		0.2310
Sub area c-factor				**0.77**

Area		Acres	Factor	Multiple
To Structure #96	***total area***	**0.50**		
Grassy		0.24	**0.35**	0.0840
Impervious		0.26	**0.95**	0.2470
Total		0.50		0.3310
Sub area c-factor				**0.66**

Area		Acres	Factor	Multiple
To Structure #90	***total area***	**0.78**		
Grassy		0.30	**0.35**	0.1050
Impervious		0.48	**0.95**	0.4560
Total		0.78		0.5610
Sub area c-factor				**0.72**

Area		Acres	Factor	Multiple
To Structure #98	***total area***	**0.35**		
Grassy		0.35	**0.35**	0.1225
Impervious		0.00	**0.95**	0.0000
Total		0.35		0.1225
Sub area c-factor				**0.35**

Area		Acres	Factor	Multiple
To Structure #95	***total area***	**0.80**		
Grassy		0.30	**0.35**	0.1050
Impervious		0.50	**0.95**	0.4750
Total		0.80		0.5800
Sub area c-factor				**0.73**

Area		Acres	Factor	Multiple
To Structure #99	***total area***	**0.06**		
Grassy		0.06	**0.35**	0.0210
Impervious		0.00	**0.95**	0.0000
Total		0.06		0.0210
Sub area c-factor				**0.35**

Area		Acres	Factor	Multiple
To Structure #100	***total area***	**0.14**		
Grassy		0.10	**0.35**	0.0350
Impervious		0.04	**0.95**	0.0380
Total		0.14		0.0730
Sub area c-factor				**0.52**

Area		Acres	Factor	Multiple
To Structure #101	***total area***	**0.16**		
Grassy		0.10	**0.35**	0.0350
Impervious		0.06	**0.95**	0.0570
Total		0.16		0.0920
Sub area c-factor				**0.58**

Area		Acres	Factor	Multiple
To Structure #102	***total area***	**0.35**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.15	**0.95**	0.1425
Total		0.35		0.2125
Sub area c-factor				**0.61**

Area		Acres	Factor	Multiple
To Structure #105	***total area***	**0.20**		
Grassy		0.13	**0.35**	0.0455
Impervious		0.07	**0.95**	0.0665
Total		0.20		0.1120
Sub area c-factor				**0.56**

Area		Acres	Factor	Multiple
To Structure #106	***total area***	**0.56**		
Grassy		0.26	**0.35**	0.0910
Impervious		0.30	**0.95**	0.2850
Total		0.56		0.3760
Sub area c-factor				**0.67**

Area		Acres	Factor	Multiple
To Structure #107	***total area***	**0.85**		
Grassy		0.40	**0.35**	0.1400
Impervious		0.45	**0.95**	0.4275
Total		0.85		0.5675
Sub area c-factor				**0.67**

Area		Acres	Factor	Multiple
To Structure #108	***total area***	**0.08**		
Grassy		0.07	**0.35**	0.0245
Impervious		0.01	**0.95**	0.0095
Total		0.08		0.0340
Sub area c-factor				**0.43**

Area		Acres	Factor	Multiple
To Structure #112	***total area***	**0.89**		
Grassy		0.36	**0.35**	0.1260
Impervious		0.53	**0.95**	0.5035
Total		0.89		0.6295
Sub area c-factor				**0.71**

Area		Acres	Factor	Multiple
To Structure #109	***total area***	**0.54**		
Grassy		0.40	**0.35**	0.1400
Impervious		0.14	**0.95**	0.1330
Total		0.54		0.2730
Sub area c-factor				**0.51**

Area		Acres	Factor	Multiple
To Structure #113	***total area***	**0.75**		
Grassy		0.39	**0.35**	0.1365
Impervious		0.36	**0.95**	0.3420
Total		0.75		0.4785
Sub area c-factor				**0.64**

Area		Acres	Factor	Multiple
To Structure #111	***total area***	**0.86**		
Grassy		0.36	**0.35**	0.1260
Impervious		0.50	**0.95**	0.4750
Total		0.86		0.6010
Sub area c-factor				**0.70**

Area		Acres	Factor	Multiple
To Structure #115	***total area***	**0.32**		
Grassy		0.32	**0.35**	0.1120
Impervious		0.00	**0.95**	0.0000
Total		0.32		0.1120
Sub area c-factor				**0.35**

Area		Acres	Factor	Multiple
To Structure #116	***total area***	**0.36**		
Grassy		0.23	**0.35**	0.0805
Impervious		0.13	**0.95**	0.1235
Total		0.36		0.2040
Sub area c-factor				**0.57**

Area		Acres	Factor	Multiple
To Structure #119	***total area***	**0.22**		
Grassy		0.14	**0.35**	0.0490
Impervious		0.08	**0.95**	0.0760
Total		0.22		0.1250
Sub area c-factor				**0.57**

Area		Acres	Factor	Multiple
To Structure #117	***total area***	**0.33**		
Grassy		0.11	**0.35**	0.0385
Impervious		0.12	**0.95**	0.1140
Total		0.23		0.1525
Sub area c-factor				**0.66**

Area		Acres	Factor	Multiple
To Structure #120	***total area***	**0.30**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.10	**0.95**	0.0950
Total		0.30		0.1650
Sub area c-factor				**0.55**

Area		Acres	Factor	Multiple
To Structure #118	***total area***	**0.29**		
Grassy		0.16	**0.35**	0.0560
Impervious		0.13	**0.95**	0.1235
Total		0.29		0.1795
Sub area c-factor				**0.62**

Area		Acres	Factor	Multiple
To Structure #121	***total area***	**0.31**		
Grassy		0.19	**0.35**	0.0665
Impervious		0.12	**0.95**	0.1140
Total		0.31		0.1805
Sub area c-factor				**0.58**

Area		Acres	Factor	Multiple
To Structure #122	***total area***	**0.31**		
Grassy		0.19	**0.35**	0.0665
Impervious		0.12	**0.95**	0.1140
Total		0.31		0.1805
Sub area c-factor				**0.58**

Area		Acres	Factor	Multiple
To Structure #125	***total area***	**0.44**		
Grassy		0.24	**0.35**	0.0840
Impervious		0.40	**0.95**	0.3800
Total		0.64		0.4640
Sub area c-factor				**0.73**

Area		Acres	Factor	Multiple
To Structure #123	***total area***	**0.52**		
Grassy		0.20	**0.35**	0.0700
Impervious		0.32	**0.95**	0.3040
Total		0.52		0.3740
Sub area c-factor				**0.72**

Area		Acres	Factor	Multiple
To Structure #127	***total area***	**1.22**		
Grassy		0.47	**0.35**	0.1645
Impervious		0.75	**0.95**	0.7125
Total		1.22		0.8770
Sub area c-factor				**0.72**

Area		Acres	Factor	Multiple
To Structure #124	***total area***	**0.45**		
Grassy		0.22	**0.35**	0.0770
Impervious		0.23	**0.95**	0.2185
Total		0.45		0.2955
Sub area c-factor				**0.66**

Area		Acres	Factor	Multiple
To Structure #128	***total area***	**0.88**		
Grassy		0.41	**0.35**	0.1435
Impervious		0.47	**0.95**	0.4465
Total		0.88		0.5900
Sub area c-factor				**0.67**

Area		Acres	Factor	Multiple
To Structure #29A	***total area***	**0.59**		
Grassy		0.52	**0.35**	0.1820
Impervious		0.07	**0.95**	0.0665
Total		0.59		0.2485
Sub area c-factor				**0.42**

Area		Acres	Factor	Multiple
To Structure #29	***total area***	**0.23**		
Grassy		0.21	**0.35**	0.0735
Impervious		0.02	**0.95**	0.0190
Total		0.23		0.0925
Sub area c-factor				**0.40**

Area		Acres	Factor	Multiple
To Structure #29B	***total area***	**0.53**		
Grassy		0.45	**0.35**	0.1575
Impervious		0.08	**0.95**	0.0760
Total		0.53		0.2335
Sub area c-factor				**0.44**

Area		Acres	Factor	Multiple
To Structure #67A	***total area***	**0.28**		
Grassy		0.22	**0.35**	0.0770
Impervious		0.06	**0.95**	0.0570
Total		0.28		0.1340
Sub area c-factor				**0.48**

Area		Acres	Factor	Multiple
To Structure #132	***total area***	**0.59**		
Grassy		0.07	**0.35**	0.0245
Impervious		0.23	**0.95**	0.2185
Total		0.30		0.2430
Sub area c-factor				**0.81**

Time of Concentration Calculations

Pearson, Brown & Associates Inc.
Libertyville, IL 60048

sheet flow roughness coefs - paved = 0.011, grassy = 0.240
maximum sheet flow segment length = 100'

Job #: 2535
Prepared by: AKZ
Date: 04/11/2025
Revised: 06/20/2025

Surface Flow Time Calculations - SCS Methods…2yr, 24hr rainfall depth = 2.80" [LAKE CO.] (Used for SCS flow time eqn…)

FLOW TO STRUCTURE	FLOW TYPE	DESCRIPTION	COEF. n	LENGTH L	SLOPE s	SHALLOW CONCENTRATED VELOCITY (FT/SEC)		TIME hours	TIME min	TIME USED min
3	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	80	0.0200	2.282		0.01	1	
							total	0.26	16	16
5	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	75	0.0200	2.282		0.01	1	
							total	0.26	16	16
7	Sheet Flow	grassy	0.240	88	0.0200			0.23	14	
	Shallow Concentrated	paved	*N/A*	155	0.0060	1.575		0.03	2	
							total	0.26	15	16
9	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	170	0.0156	2.015		0.02	1	
	Shallow Concentrated	paved	*N/A*	65	0.0061	1.260		0.01	1	
							total	0.26	16	15
10	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	115	0.0156	2.015		0.02	1	
	Shallow Concentrated	paved	*N/A*	73	0.0061	1.260		0.02	1	
							total	0.25	15	15
12	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	220	0.0156	2.539		0.02	1	
							total	0.25	15	14
13	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	255	0.0156	2.539		0.03	2	
							total	0.25	15	15
16	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	paved	*N/A*	130	0.0064	1.626		0.02	1	
							total	0.28	17	16
17	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	65	0.0100	2.033		0.01	1	
							total	0.23	14	14
18	Sheet Flow	grassy	0.240	70	0.0200			0.19	11	
	Shallow Concentrated	paved	*N/A*	135	0.0064	1.626		0.02	1	
							total	0.21	13	12
20	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	230	0.0160	2.571		0.02	1	
							total	0.25	15	15
21	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	260	0.0160	2.041		0.04	2	
							total	0.26	15	15
22	Sheet Flow	grassy	0.240	20	0.0200			0.07	4	
	Shallow Concentrated	paved	*N/A*	100	0.0235	2.473		0.01	1	
							total	0.08	5	5
23	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	15	0.0200	2.282		0.00	0	
							total	0.26	15	15
24	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	85	0.0200	2.282		0.01	1	
							total	0.26	16	16
28	Sheet Flow	grassy	0.240	75	0.0200			0.20	12	
	Shallow Concentrated	unpaved	*N/A*	230	0.0300	2.795		0.02	1	
							total	0.22	13	13
29	Sheet Flow	grassy	0.240	50	0.0100			0.19	12	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.19	12	12
29A	Sheet Flow	grassy	0.240	50	0.0200			0.15	9	
	Shallow Concentrated	unpaved	*N/A*	70	0.0357	3.049		0.01	0	
							total	0.15	9	9
29B	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	80	0.0200	2.282		0.01	1	
							total	0.26	16	16
30	Sheet Flow	grassy	0.240	100	0.0230			0.24	14	
	Shallow Concentrated	unpaved	*N/A*	160	0.0220	2.393		0.02	1	
							total	0.26	16	16

Time of Concentration Calculations

Pearson, Brown & Associates Inc.
Libertyville, IL 60048

sheet flow roughness coefs - paved = 0.011, grassy = 0.240
maximum sheet flow segment length = 100'

Job #: 2535
Prepared by: AKZ
Date: 04/11/2025
Revised: 06/20/2025

Surface Flow Time Calculations - SCS Methods…2yr, 24hr rainfall depth = 2.80" [LAKE CO.] (Used for SCS flow time eqn…)

FLOW TO STRUCTURE	FLOW TYPE	DESCRIPTION	COEF. n	LENGTH L	SLOPE s	SHALLOW CONCENTRATED VELOCITY (FT/SEC)		TIME hours	TIME min	TIME USED min
36	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	10	0.0200	2.875		0.00	0	
							total	0.26	15	15
38	Sheet Flow	grassy	0.240	65	0.0200			0.18	11	
	Shallow Concentrated	unpaved	*N/A*	60	0.0300	3.521		0.00	0	
							total	0.18	11	11
39	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	25	0.0200	2.875		0.00	0	
							total	0.26	15	15
40	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	25	0.0200	2.875		0.00	0	
							total	0.26	15	15
41	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	25	0.0200	2.875		0.00	0	
							total	0.26	15	15
42	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	25	0.0200	2.875		0.00	0	
							total	0.26	15	15
44	Sheet Flow	grassy	0.240	15	0.0200			0.06	3	
	Shallow Concentrated	paved	*N/A*	270	0.0084	1.863		0.04	2	
							total	0.10	6	5
45	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	140	0.0276	2.680		0.01	1	
	Shallow Concentrated	paved	*N/A*	80	0.0084	1.479		0.02	1	
							total	0.25	15	15
47	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	120	0.0276	3.377		0.01	1	
							total	0.23	14	14
49	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	340	0.0084	1.863		0.05	3	
							total	0.27	16	16
50	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	330	0.0084	1.863		0.05	3	
							total	0.27	16	16
51	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	30	0.0200	2.282		0.00	0	
							total	0.26	15	15
52	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	25	0.0200	2.282		0.00	0	
							total	0.26	15	15
54	Sheet Flow	grassy	0.240	85	0.0200			0.22	13	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.22	13	13
55	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	25	0.0200	2.875		0.00	0	
							total	0.26	15	15
56	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	345	0.0084	1.863		0.05	3	
							total	0.27	16	16
57	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	370	0.0084	1.863		0.06	3	
							total	0.28	17	16
62	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	220	0.0200	2.875		0.02	1	
							total	0.28	17	16
66	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	35	0.0200	2.282		0.00	0	
							total	0.26	16	15
67	Sheet Flow	grassy	0.240	45	0.0200			0.13	8	
	Shallow Concentrated	unpaved	*N/A*	0	0.0200	2.282		0.00	0	
							total	0.13	8	8
67A	Sheet Flow	grassy	0.240	30	0.0200			0.10	6	
	Shallow Concentrated	unpaved	*N/A*	0	0.0200	2.282		0.00	0	
							total	0.10	6	6

Time of Concentration Calculations

Pearson, Brown & Associates Inc.
Libertyville, IL 60048

sheet flow roughness coefs - paved = 0.011, grassy = 0.240
maximum sheet flow segment length = 100'

Job #: 2535
Prepared by: AKZ
Date: 04/11/2025
Revised: 06/20/2025

Surface Flow Time Calculations - SCS Methods…2yr, 24hr rainfall depth = 2.80" [LAKE CO.] (Used for SCS flow time eqn…)

FLOW TO STRUCTURE	FLOW TYPE	DESCRIPTION	COEF. n	LENGTH L	SLOPE s	SHALLOW CONCENTRATED VELOCITY (FT/SEC)		TIME hours	TIME min	TIME USED min
69	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	200	0.0060	1.575		0.04	2	
							total	0.26	15	15
71	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	215	0.0170	2.650		0.02	1	
							total	0.24	15	14
72	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	160	0.0170	2.104		0.02	1	
							total	0.24	15	14
73	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	255	0.0100	2.033		0.03	2	
							total	0.26	15	15
74	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	255	0.0100	2.033		0.03	2	
							total	0.26	15	15
76	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	145	0.0132	2.336		0.02	1	
							total	0.24	14	14
77	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	75	0.0132	2.336		0.01	1	
							total	0.23	14	14
78	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	125	0.0154	2.002		0.02	1	
	Shallow Concentrated	paved	*N/A*	50	0.0060	1.250		0.01	1	
							total	0.25	15	15
82	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	20	0.0200	2.282		0.00	0	
							total	0.26	15	15
84	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	115	0.0460	3.460		0.01	1	
							total	0.26	16	16
89	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	120	0.0150	1.976		0.02	1	
	Shallow Concentrated	paved	*N/A*	65	0.0060	1.250		0.01	1	
							total	0.25	15	15
90	Sheet Flow	grassy	0.240	20	0.0200			0.07	4	
	Shallow Concentrated	paved	*N/A*	185	0.0150	1.976		0.03	2	
	Shallow Concentrated	paved	*N/A*	65	0.0060	1.250		0.01	1	
							total	0.11	7	7
95	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	290	0.0060	1.575		0.05	3	
							total	0.27	16	16
96	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	200	0.0060	1.575		0.04	2	
							total	0.26	15	15
98	Sheet Flow	grassy	0.240	100	0.0100			0.34	20	
	Shallow Concentrated	unpaved	*N/A*	125	0.0100	1.613		0.02	1	
							total	0.36	21	21
99	Sheet Flow	grassy	0.240	50	0.0200			0.15	9	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.15	9	9
100	Sheet Flow	grassy	0.240	35	0.0200			0.11	7	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.11	7	7
101	Sheet Flow	grassy	0.240	65	0.0200			0.18	11	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.18	11	11
102	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	40	0.0200	2.282		0.00	0	
							total	0.26	16	15
105	Sheet Flow	grassy	0.240	75	0.0200			0.20	12	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.20	12	12

Time of Concentration Calculations

Pearson, Brown & Associates Inc.
Libertyville, IL 60048

sheet flow roughness coefs - paved = 0.011, grassy = 0.240
maximum sheet flow segment length = 100'

Job #: 2535
Prepared by: AKZ
Date: 04/11/2025
Revised: 06/20/2025

Surface Flow Time Calculations - SCS Methods…2yr, 24hr rainfall depth = 2.80" [LAKE CO.] (Used for SCS flow time eqn…)

FLOW TO STRUCTURE	FLOW TYPE	DESCRIPTION	COEF. n	LENGTH L	SLOPE s	SHALLOW CONCENTRATED VELOCITY (FT/SEC)		TIME hours	TIME min	TIME USED min
106	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	170	0.0060	1.575		0.03	2	
							total	0.25	15	15
107	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	235	0.0060	1.575		0.04	2	
							total	0.26	16	15
108	Sheet Flow	grassy	0.240	40	0.0100			0.16	10	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.16	10	10
109	Sheet Flow	grassy	0.240	100	0.0100			0.34	20	
	Shallow Concentrated	unpaved	*N/A*	150	0.0100	1.613		0.03	2	
							total	0.36	22	22
111	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	180	0.0170	2.104		0.02	1	
	Shallow Concentrated	paved	*N/A*	70	0.0074	1.388		0.01	1	
							total	0.26	16	15
112	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	170	0.0170	2.104		0.02	1	
	Shallow Concentrated	paved	*N/A*	50	0.0074	1.388		0.01	1	
							total	0.25	15	15
113	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	80	0.0074	1.749		0.01	1	
							total	0.23	14	14
115	Sheet Flow	grassy	0.240	100	0.0490			0.18	11	
	Shallow Concentrated	unpaved	*N/A*	90	0.0490	3.572		0.01	0	
							total	0.18	11	11
116	Sheet Flow	grassy	0.240	100	0.0200			0.25	15	
	Shallow Concentrated	unpaved	*N/A*	70	0.0200	2.282		0.01	1	
							total	0.26	16	16
117	Sheet Flow	grassy	0.240	70	0.0200			0.19	11	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.19	11	11
118	Sheet Flow	grassy	0.240	70	0.0200			0.19	11	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.19	11	11
119	Sheet Flow	grassy	0.240	70	0.0200			0.19	11	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.19	11	11
120	Sheet Flow	grassy	0.240	75	0.0200			0.20	12	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.20	12	12
121	Sheet Flow	grassy	0.240	75	0.0200			0.20	12	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.20	12	12
122	Sheet Flow	grassy	0.240	95	0.0200			0.24	15	
	Shallow Concentrated	unpaved	*N/A*	0	0.0100	1.613		0.00	0	
							total	0.24	15	15
123	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	150	0.0094	1.971		0.02	1	
							total	0.24	15	14
124	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	130	0.0094	1.971		0.02	1	
							total	0.24	14	14
125	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	190	0.0094	1.971		0.03	2	
							total	0.25	15	15
127	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	150	0.0060	1.575		0.03	2	
							total	0.25	15	15
128	Sheet Flow	grassy	0.240	84	0.0200			0.22	13	
	Shallow Concentrated	paved	*N/A*	90	0.0060	1.575		0.02	1	
							total	0.24	14	14
132	Sheet Flow	grassy	0.240	18	0.0200			0.06	4	
	Shallow Concentrated	paved	*N/A*	190	0.0170	2.650		0.02	1	
							total	0.08	5	5

NORTH

SCALE: 1" = 100'

Tc PATH (TYPICAL)

WALNUT RIDGE

MUNDELEIN, ILLINOIS

PEARSON,BROWN & ASSOCIATES,INC.
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DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

STORM SEWER TRIBUTARY AREA EXHIBIT

SHEET NUMBER 1 OF 1 SHEETS

JOB No. 2535

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

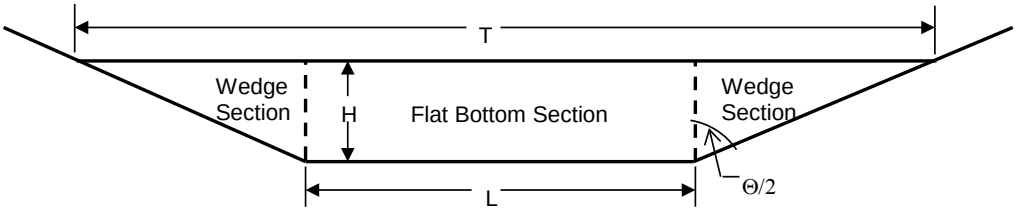
Section ID: Section 3
Location: Outlot B at rear of lots 18 and 19

Required Flow Capacity For Weir Section

Input Data			Calculated Data		
A =	0.94	acres			
C =	0.39	coef.	$Q_{100\text{-}YR}$ =	3.14	cfs
$T_{100\text{-}YR}$ =	17	min			
$I_{100\text{-}YR}$ =	8.56	in/hr	$Q_{100\text{-}YR}$=	**3.14**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	75.96	deg
H =	0.43	feet	**T =**	5.44	feet
Side Slopes =	4.00	H:V	**Weir Elevation =**	840.50	feet
L =	2.00	feet	**HWL =**	840.93	feet
			Low F/G =	844.55	feet
			Freeboard =	3.62	feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 1.45 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 1.69 cfs

Total Flow Provided = **3.15 cfs** *meets capacity at H = 0.43'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

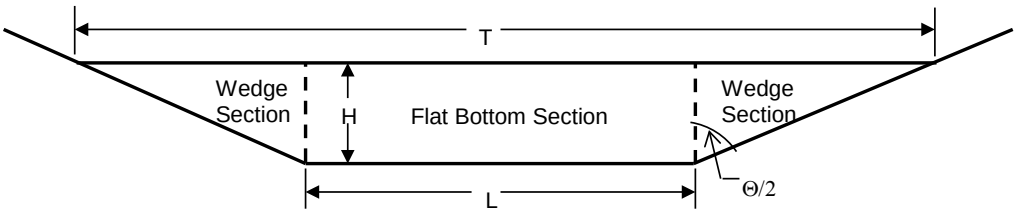
Section ID: Section 23
Location: Outlot E at sideyard of lot 54

Required Flow Capacity For Weir Section

Input Data			Calculated Data		
A =	0.58	acres			
C =	0.45	coef.	**$Q_{100\text{-}YR}$ =**	2.32	cfs
$T_{100\text{-}YR}$ =	16	min			
$I_{100\text{-}YR}$ =	8.88	in/hr	**$Q_{100\text{-}YR}$=**	**2.32**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	84.29	deg
H =	0.30	feet	**T =**	8.00	feet
Side Slopes =	10.00	H:V	**Weir Elevation =**	846.00	feet
L =	2.00	feet	**HWL =**	846.30	feet
			Low F/G =	847.50	feet
			Freeboard =	1.20	feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 1.48 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 0.99 cfs

Total Flow Provided = **2.46 cfs** *meets capacity at H = 0.30'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

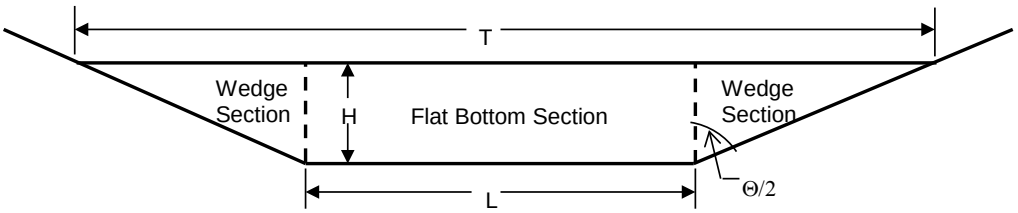
Section ID: Section 9
Location: Sideyard of lots 8 and 9

Required Flow Capacity For Weir Section

Input Data				Calculated Data		
	A =	7.43	acres			
	C =	0.57	coef.	**$Q_{100\text{-}YR}$ =**	35.02	cfs
	$T_{100\text{-}YR}$ =	18	min			
	$I_{100\text{-}YR}$ =	8.27	in/hr	**$Q_{100\text{-}YR}$=**	**35.02**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00 coef.	**Θ/2 =**	75.96 deg
H =	1.00 feet	**T =**	16.00 feet
Side Slopes =	4.00 H:V	**Weir Elevation =**	840.70 feet
L =	8.00 feet	**HWL =**	841.70 feet
		Low F/G =	842.45 feet
		Freeboard =	0.75 feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 12.00 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 24.00 cfs

Total Flow Provided = **36.00 cfs** *meets capacity at H = 1.00'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

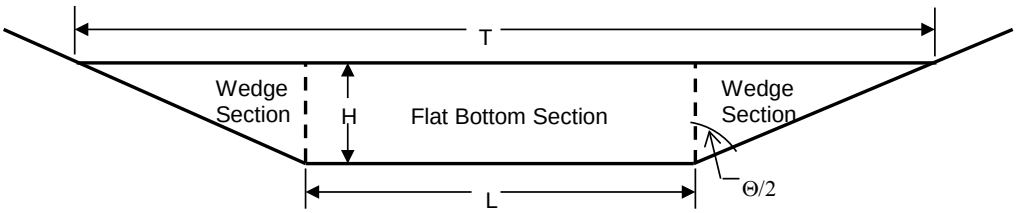
Section ID: Section 51
Location: Rear of lot 112 and side of lot 138

Required Flow Capacity For Weir Section

Input Data			Calculated Data		
A =	1.16	acres			
C =	0.48	coef.	$Q_{100\text{-}YR}$ =	5.14	cfs
$T_{100\text{-}YR}$ =	15	min			
$I_{100\text{-}YR}$ =	9.24	in/hr	$Q_{100\text{-}YR}$=	**5.14**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	78.69	deg
H =	0.25	feet	**T =**	15.00	feet
Side Slopes =	5.00	H:V	**Weir Elevation =**	842.80	feet
L =	12.50	feet	**HWL =**	843.05	feet
			Low F/G =	845.25	feet
			Freeboard =	2.20	feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 0.47 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 4.69 cfs

Total Flow Provided = **5.16 cfs** *meets capacity at H = 0.25'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

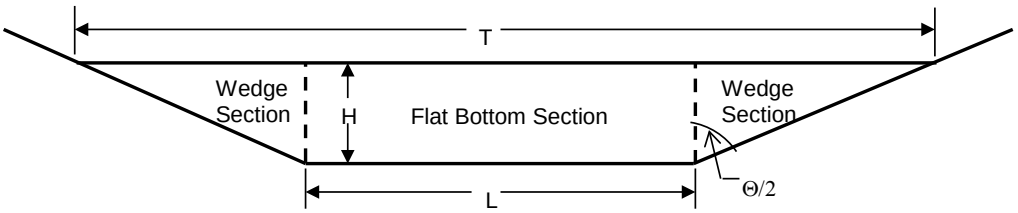
Section ID: Section 44
Location: Overflow into Northwest pond

Required Flow Capacity For Weir Section

Input Data				Calculated Data		
A =	5.24	acres				
C =	0.61	coef.		$Q_{100\text{-}YR}$ =	26.43	cfs
$T_{100\text{-}YR}$ =	18	min				
$I_{100\text{-}YR}$ =	8.27	in/hr		$Q_{100\text{-}YR}$=	**26.43**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	87.14	deg
H =	0.35	feet	**T =**	50.00	feet
Side Slopes =	20.00	H:V	**Weir Elevation =**	839.70	feet
L =	36.00	feet	**HWL =**	840.05	feet
			Low F/G =	N/A	feet
			Freeboard =	N/A	feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 4.35 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 22.36 cfs

Total Flow Provided = **26.71 cfs** *meets capacity at H = 0.35'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

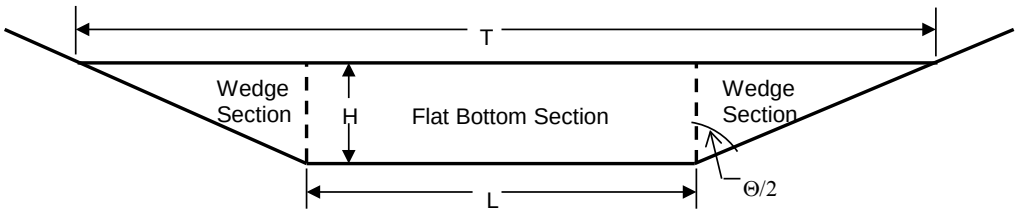
Section ID: Section 69
Location: Sideyard of lots 67 and 68

Required Flow Capacity For Weir Section

Input Data			Calculated Data		
A =	5.3	acres			
C =	0.62	coef.	$Q_{100\text{-}YR}$ =	25.60	cfs
$T_{100\text{-}YR}$ =	20	min			
$I_{100\text{-}YR}$ =	7.79	in/hr	$Q_{100\text{-}YR}$=	**25.60**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	75.96	deg
H =	0.83	feet	**T =**	14.64	feet
Side Slopes =	4.00	H:V	**Weir Elevation =**	841.95	feet
L =	8.00	feet	**HWL =**	842.78	feet
			Low F/G =	843.45	feet
			Freeboard =	0.67	feet

Calculated Data

Flow From Wedge Sections			Flow From Flat Bottom Section		
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)			Use Equation: Q=C*L*H^(3/2)		
Q =	7.53	cfs	**Q =**	18.15	cfs

Total Flow Provided = **25.68 cfs** *meets capacity at H = 0.83'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

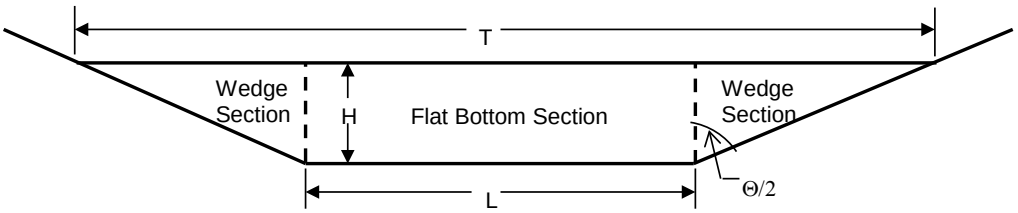
Section ID: Section 111
Location: Northeast end of park

Required Flow Capacity For Weir Section

Input Data				Calculated Data		
	A =	3.18	acres			
	C =	0.56	coef.	**$Q_{100\text{-}YR}$ =**	15.24	cfs
	$T_{100\text{-}YR}$ =	17	min			
	$I_{100\text{-}YR}$ =	8.56	in/hr	**$Q_{100\text{-}YR}$=**	**15.24**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00 coef.	**Θ/2 =**	88.67 deg
H =	0.25 feet	**T =**	51.50 feet
Side Slopes =	43.00 H:V	**Weir Elevation =**	844.35 feet
L =	30.00 feet	**HWL =**	844.60 feet
		Low F/G =	847.10 feet
		Freeboard =	2.50 feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 4.03 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 11.25 cfs

Total Flow Provided = **15.28 cfs** *meets capacity at H = 0.25'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

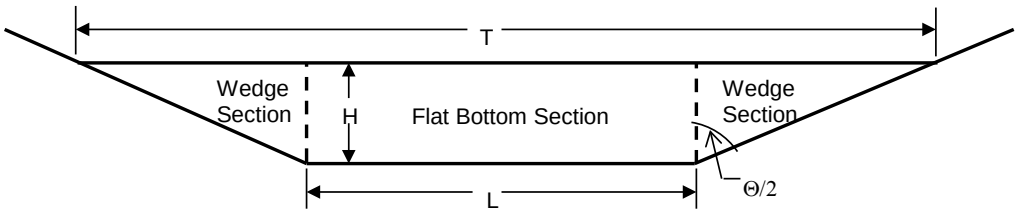
Section ID: Section 117
Location: Outlot D and rear of lot 125

Required Flow Capacity For Weir Section

Input Data			Calculated Data		
A =	1.66	acres			
C =	0.5	coef.	$Q_{100\text{-}YR}$ =	7.37	cfs
$T_{100\text{-}YR}$ =	16	min			
$I_{100\text{-}YR}$ =	8.88	in/hr	$Q_{100\text{-}YR}$=	**7.37**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	78.69	deg
H =	0.40	feet	**T =**	12.00	feet
Side Slopes =	5.00	H:V	**Weir Elevation =**	843.70	feet
L =	8.00	feet	**HWL =**	844.10	feet
			Low F/G =	844.70	feet
			Freeboard =	0.60	feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 1.52 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 6.07 cfs

Total Flow Provided = **7.59 cfs** *meets capacity at H = 0.40'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

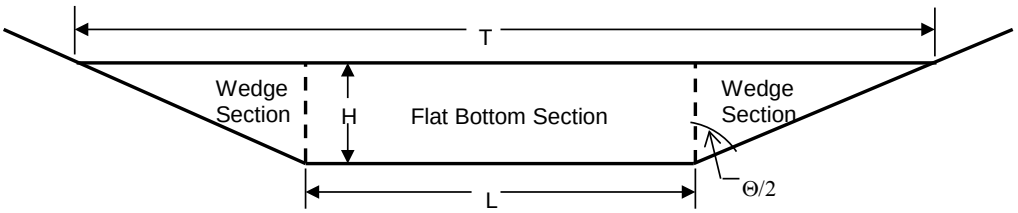
Section ID: Area 108
Location: Paek Site

Required Flow Capacity For Weir Section

Input Data				Calculated Data		
	A =	6.72	acres			
	C =	0.5	coef.	**$Q_{100\text{-}YR}$ =**	24.83	cfs
	$T_{100\text{-}YR}$ =	22	min			
	$I_{100\text{-}YR}$ =	7.39	in/hr	**$Q_{100\text{-}YR}$=**	**24.83**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00 coef.	**Θ/2 =**	87.14 deg
H =	0.37 feet	**T =**	44.80 feet
Side Slopes =	20.00 H:V	**Weir Elevation =**	841.85 feet
L =	30.00 feet	**HWL =**	842.22 feet
		Low F/G =	844.30 feet
		Freeboard =	2.08 feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 5.00 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 20.26 cfs

Total Flow Provided = **25.25 cfs** *meets capacity at H = 0.37'*

Project Name:	Walnut Ridge	**Project No:**	2535
Prepared By:	AKZ	**Date:**	04/11/25
Checked By:	JFC	**Revised:**	06/20/25

Overland Flow Route Design Calculations

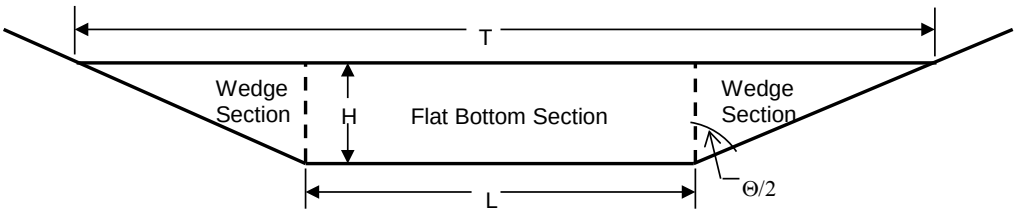
Section ID: Area 89
Location: Across from lots 92 and 93

Required Flow Capacity For Weir Section

Input Data				Calculated Data		
	A =	12.12	acres			
	C =	0.56	coef.	**$Q_{100\text{-}YR}$ =**	47.99	cfs
	$T_{100\text{-}YR}$ =	24	min			
	$I_{100\text{-}YR}$ =	7.07	in/hr	**$Q_{100\text{-}YR}$=**	**47.99**	**cfs**

Provided Flow Capacity For Weir Section

Overland Flow Route Cross-Section Diagram



Weir Data

C =	3.00	coef.	**Θ/2 =**	89.65	deg
H =	0.38	feet	**T =**	126.16	feet
Side Slopes =	166.00	H:V	**Weir Elevation =**	838.83	feet
L =	0.00	feet	**HWL =**	839.21	feet
			Low F/G =	841.05	feet
			Freeboard =	1.84	feet

Calculated Data

Flow From Wedge Sections
Use Equation: Q=C*H^(5/2)*TAN(Θ/2)

Q = 44.33 cfs

Flow From Flat Bottom Section
Use Equation: Q=C*L*H^(3/2)

Q = 0.00 cfs

Total Flow Provided = **44.33 cfs** *meets capacity at H = 0.38'*

SUB-AREA RUNOFF FACTOR DETERMINATION (OVERLAND FLOW)

Date: 04-11-2025
Revised: 06-20-2025

Area		Acres	Factor	Multiple
Area 3	***total area***	**0.94**		
Grassy		0.70	**0.20**	0.1400
Impervious		0.24	**0.95**	0.2280
Total		0.94		0.3680
Sub area c-factor				**0.39**

Area		Acres	Factor	Multiple
Area 51	***total area***	**1.16**		
Grassy		0.72	**0.20**	0.1440
Impervious		0.44	**0.95**	0.4180
Total		1.16		0.5620
Sub area c-factor				**0.48**

Area		Acres	Factor	Multiple
Area 23	***total area***	**0.58**		
Grassy		0.39	**0.20**	0.0780
Impervious		0.19	**0.95**	0.1805
Total		0.58		0.2585
Sub area c-factor				**0.45**

Area		Acres	Factor	Multiple
Area 44	***total area***	**5.24**		
Grassy		2.38	**0.20**	0.4760
Impervious		2.86	**0.95**	2.7170
Total		5.24		3.1930
Sub area c-factor				**0.61**

Area		Acres	Factor	Multiple
Area 9	***total area***	**7.43**		
Grassy		3.72	**0.20**	0.7440
Impervious		3.71	**0.95**	3.5245
Total		7.43		4.2685
Sub area c-factor				**0.57**

Area		Acres	Factor	Multiple
Area 69	***total area***	**5.30**		
Grassy		2.30	**0.20**	0.4600
Impervious		3.00	**0.95**	2.8500
Total		5.30		3.3100
Sub area c-factor				**0.62**

Area		Acres	Factor	Multiple
Area 111	***total area***	**3.18**		
Grassy		1.66	**0.20**	0.3320
Impervious		1.52	**0.95**	1.4440
Total		3.18		1.7760
Sub area c-factor				**0.56**

Area		Acres	Factor	Multiple
Area 89	***total area***	**12.12**		
Grassy		6.31	**0.20**	1.2620
Impervious		5.81	**0.95**	5.5195
Total		12.12		6.7815
Sub area c-factor				**0.56**

Area		Acres	Factor	Multiple
Area 117	***total area***	**1.66**		
Grassy		0.99	**0.20**	0.1980
Impervious		0.67	**0.95**	0.6365
Total		1.66		0.8345
Sub area c-factor				**0.50**

Area		Acres	Factor	Multiple
Area 108	***total area***	**6.72**		
Grassy		4.06	**0.20**	0.8120
Impervious		2.66	**0.95**	2.5270
Total		6.72		3.3390
Sub area c-factor				**0.50**

AREA 44
4.08 Ac.

AREA 51
1.16 Ac.

AREA 117
1.66 Ac.

AREA 111
3.18 Ac.

AREA 108
1.88 Ac.

AREA 89
5.40 Ac.

AREA 9
6.85 Ac.

AREA 3
0.94 Ac.

AREA 23
0.58 Ac.

AREA 69
5.30 Ac.

NORTH

SCALE: 1" = 100'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25.

REVISIONS

DESCRIPTION	BY	DATE
REVISED PER VILLAGE REVIEW COMMENTS	AKZ	06/20/25

OVERLAND FLOW ROUTES EXHIBIT

SHEET NUMBER
1
OF 1 SHEETS

JOB No. 2535

Appendix 2 – Spillway Emergency Overflow and Southwest Basin Equalizer Calculations

HEC-HMS was used to perform a critical duration analysis for all four basin system to determine the peak unattenuated inflow rate to the basins. The peak rate for each zone was used to design the proposed spillway widths and operating depths while maintaining 1' of freeboard to the proposed top of berm elevations.

ZONE	TRIB. AREA. (AC)	TRIB. AREA. (SQ. MI.)	COMPOSITE CN	TIME OF CONC. (MIN.) FROM STORM SEWER CALCS
NORTHWEST	7.83	0.012234375	87	18
SOUTHWEST	23.76	0.037125	89	23
SOUTHEAST	12.95	0.020234375	90	16
NORTHEAST	19.40	0.0303125	88	16

NOTE: LAG TIME EMPLOYED IN MODELS IS (0.6XTC)

ZONE	Peak Inflow (cfs)	Event Duration (hr)
Northwest	35.26	1hr
Southwest	104.38	1hr
Southeast	68.51	1hr
Northeast	95.23	1hr

Northwest Basin Spillway Design Capacity

Peak unattenuated inflow rate from Critical Duration Anlysis >>>>>>>>>>>>> 35.26 cfs

Spillway Crest >>> 838.3 ft

Top of Berm >>> 839.5 ft

Operating Head maintaining 1' freeboard to top of berm >>> 0.2 ft

Proposed Spillway Width >>> 150 ft

Capcacity based on standard weir equation Q = CLH^(3/2) w/c=3.0, L=150, H=0.2 >> 40.25 cfs

Operating Head Elevation >>>> 838.5 ft

Freeboard to T/B >>>> 1 ft

Southwest Basin System Spillway Design Capacity - Two Basins

Peak unattenuated inflow rate from Critical Duration Anlysis >>>>>>>>>>>>> 104.38 cfs

Spillway Crest >>> 836 ft

Top of Berm >>> 837.5 ft

Operating Head maintaining 1' freeboard to top of berm >>> 0.5 ft

Proposed Spillway Width >>> 150 ft

Capcacity based on standard weir equation Q = CLH^(3/2) w/c=3.0, L=150, H=0.5 >> 159.10 cfs

Operating Head Elevation >>>> 836.5 ft

Freeboard to T/B >>>> 1 ft

A 75’ wide spillway is proposed for each basin in the southwest basin system.

Southeast Basin Spillway Design Capacity

Peak unattenuated inflow rate from Critical Duration Anlysis >>>>>>>>>>>>> 68.51 cfs

Spillway Crest >>> 836 ft

Top of Berm >>> 837.5 ft

Operating Head maintaining 1' freeboard to top of berm >>> 0.5 ft

Proposed Spillway Width >>> 75 ft

Capcacity based on standard weir equation Q = CLH^(3/2) w/c=3.0, L=75, H=0.5 >> 79.55 cfs

Operating Head Elevation >>>> 836.5 ft

Freeboard to T/B >>>> 1 ft

Northeast Basin Spillway Design Capacity

Peak unattenuated inflow rate from Critical Duration Anlysis >>>>>>>>>>>>> 95.23 cfs

Spillway Crest >>> 839.5 ft

Top of Berm >>> 841 ft

Operating Head maintaining 1' freeboard to top of berm >>> 0.5 ft

Proposed Spillway Width >>> 100 ft

Capcacity based on standard weir equation Q = CLH^(3/2) w/c=3.0, L=100, H=0.5 >> 106.07 cfs

Operating Head Elevation >>>> 840 ft

Freeboard to T/B >>>> 1 ft

Southwest Zone 24" Equalizer Calculations

Submerged Culvert / Pipe Pressure Flow Calculations…

The two stormwater basins associated with the Southwest zone are connected by a proposed 24" diameter equalizer pipe. The equalizer is proposed flat with the inverts at each end equal to the outlet elevation 832.00

HEAD = ELEV. DIFFERENCE U/S WSE - D/S WSE…

Entrance and Exit Submerged ▪ When both the exit and entrance are submerged (Fig. 21.38), the culvert flows full, and the discharge is independent of the slope. This is normal pipe flow and is easily solved by using the Manning or Darcy-Weisbach formula for friction loss [Eq. (21.33*d*) or (21.30)]. From the Bernoulli equation for the entrance and exit, and the Manning equation for friction loss, the following equation is obtained:

$$H = (1 + K_e)\frac{V^2}{2g} + \frac{V^2 n^2 L}{2.21R^{4/3}} \qquad (21.72)$$

Solution for the velocity of flow yields

$$V = \sqrt{\frac{H}{(1 + K_e/2g) + (n^2 L/2.21R^{4/3})}} \qquad (21.73)$$

H = elevation difference between headwater and tailwater, ft
V = velocity in culvert, ft/s
g = acceleration due to gravity, 32.2 ft/s²
K_e = entrance-loss coefficient (Art. 21.20)
n = Manning's roughness coefficient
L = length of culvert, ft
R = hydraulic radius of culvert, ft

Source: Handbook of Civil Engineers
Merritt (1996)

Ke=0.15 *pipe (proj.)*

H	L	N	D	A	P	R	velocity	single pipe capacity Q
0.1	**289**	0.013	24	3.142	6.283	0.50	1.17	**3.66**
feet	feet	roughness	inch	sq. ft.	ft	ft	ft/sec	cfs

Rating:

H (ft)	Q (cfs)
0.0	**0.00**
0.1	**3.66**
0.2	**5.18**
0.3	**6.34**
0.4	**7.33**
0.5	**8.19**

Head = Upstream Water Surface Elevation - downstream Water Surface Elevation

The southwest basin system 100yr allowable release rate is 2.138 cfs

With 0.1' of elevation difference between either basin level, the 24" diameter pipe can convey 1.71 times the 100yr allowable release rate.

With 0.2' of elevation difference between either basin level, the 24" diameter pipe can convey 2.42 times the 100yr allowable release rate.

With 0.5' of elevation difference between either basin level, the 24" diameter pipe can convey 3.83 times the 100yr allowable release rate.

In addition to the capacity for stormwater exchange between the two basins, each basin itself is also proposed with a 75' wide spillway.

Appendix 3

Existing Depressional Storage
&
Compensatory Storage Summary

Appendix 3 Exhibits:

Existing Southeast Zone Depression [SE DEPR.]

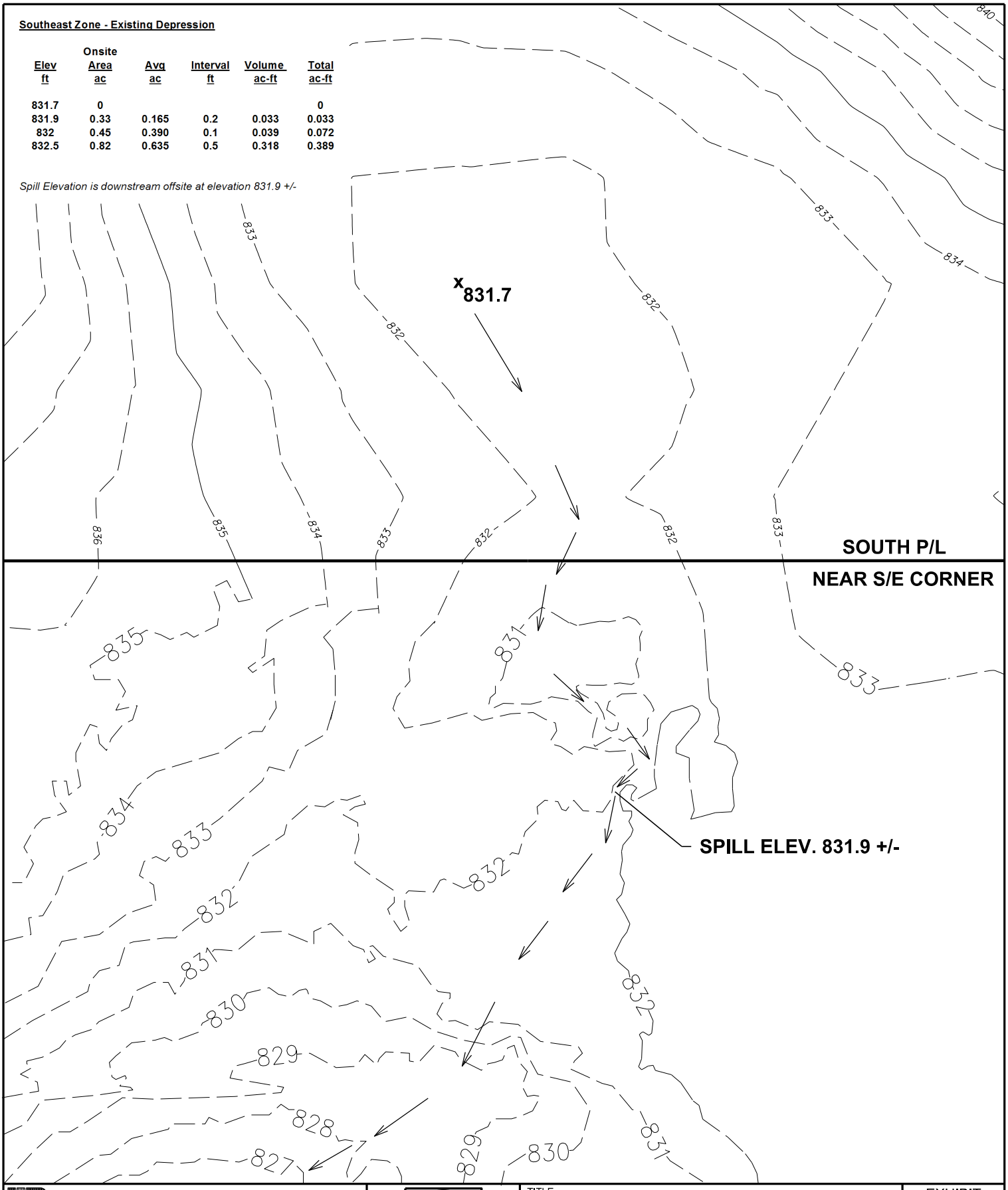
Existing Northeast Zone Depression [NE DEPR]

Existing Northeast Zone Depression with Proposed Grading [Fill Calculations]

Southeast Zone - Existing Depression

Elev ft	Onsite Area ac	Avg ac	Interval ft	Volume ac-ft	Total ac-ft
831.7	0				0
831.9	0.33	0.165	0.2	0.033	0.033
832	0.45	0.390	0.1	0.039	0.072
832.5	0.82	0.635	0.5	0.318	0.389

Spill Elevation is downstream offsite at elevation 831.9 +/-



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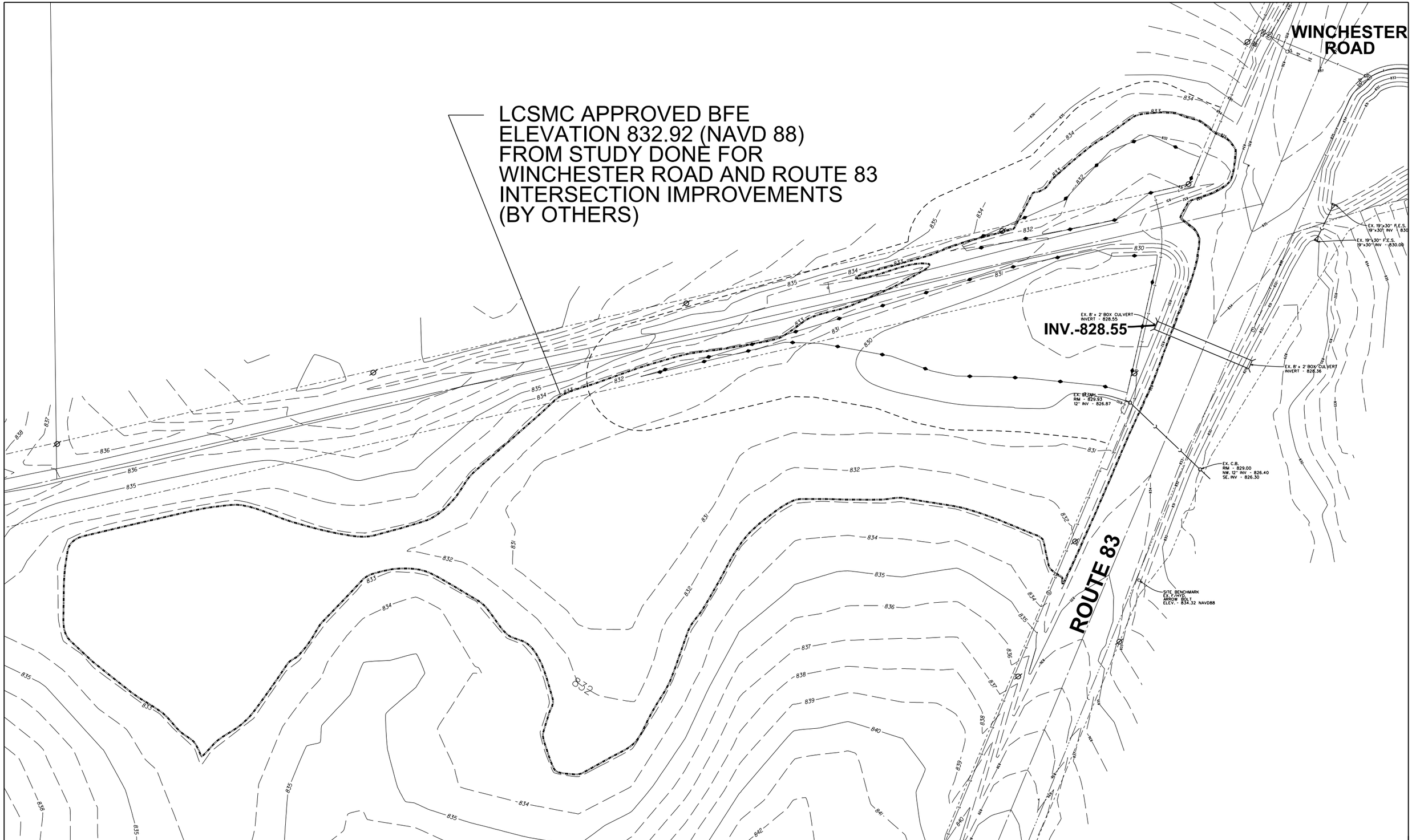
NORTH
0 30' 60'
SCALE: 1" = 60'

TITLE:
EXISTING SOUTHEAST ZONE DEPRESSION

PROJECT:
WALNUT RIDGE
MUNDELEIN, IL
PROJECT NO.: 2535

EXHIBIT
APP. 3
SE DEPR.

DATE: 04/11/25



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NORTH

0 40' 80'

TITLE: EXISTING NORTHEAST ZONE DEPRESSION

PROJECT: WALNUT RIDGE
MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT
APP. 3
NE DEPR.
EXISTING
COND.

DATE: 04/11/25

Northeast Zone:

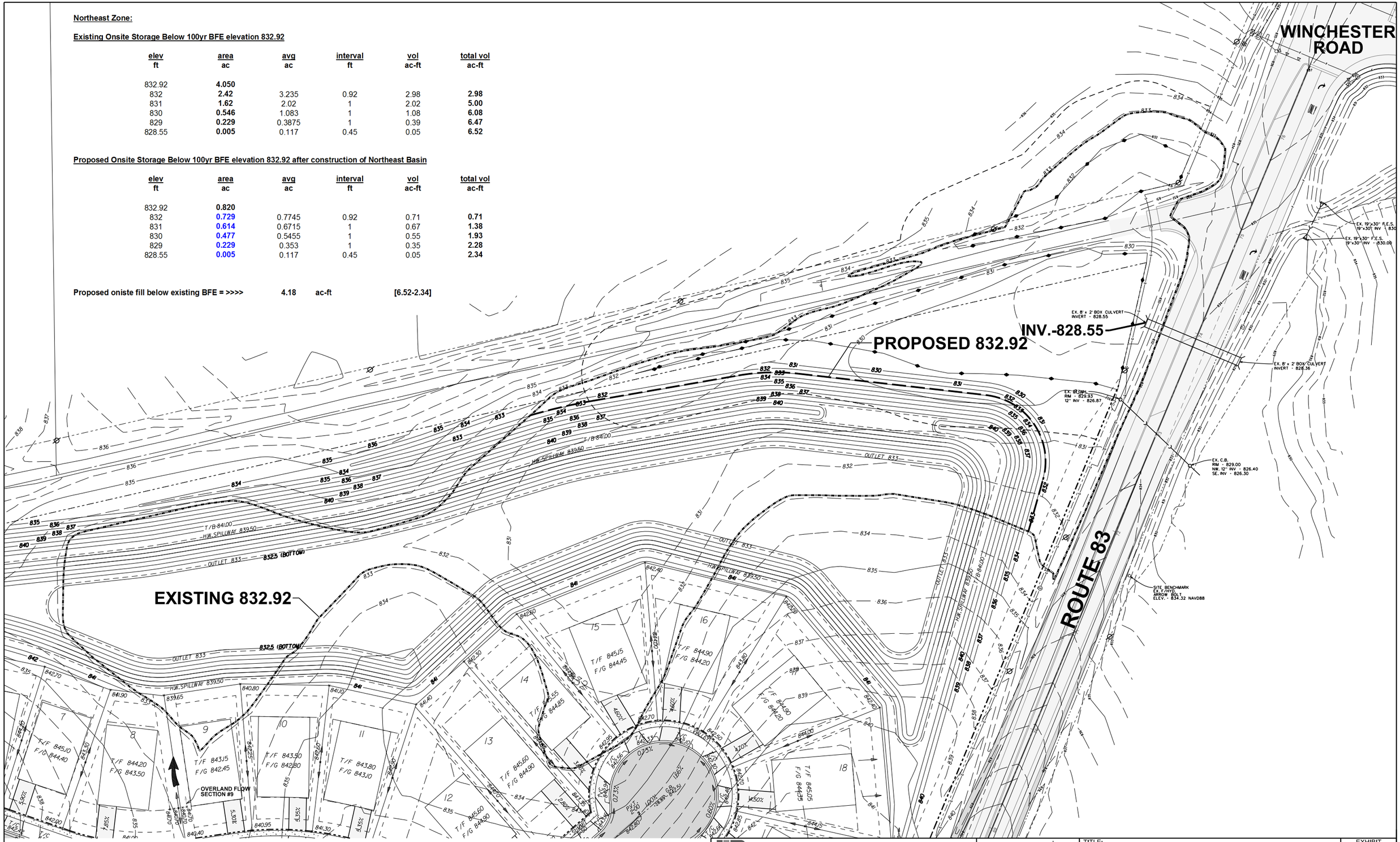
Existing Onsite Storage Below 100yr BFE elevation 832.92

elev ft	area ac	avg ac	interval ft	vol ac-ft	total vol ac-ft
832.92	**4.050**				
832	**2.42**	3.235	0.92	2.98	**2.98**
831	**1.62**	2.02	1	2.02	**5.00**
830	**0.546**	1.083	1	1.08	**6.08**
829	**0.229**	0.3875	1	0.39	**6.47**
828.55	**0.005**	0.117	0.45	0.05	**6.52**

Proposed Onsite Storage Below 100yr BFE elevation 832.92 after construction of Northeast Basin

elev ft	area ac	avg ac	interval ft	vol ac-ft	total vol ac-ft
832.92	**0.820**				
832	**0.729**	0.7745	0.92	0.71	**0.71**
831	**0.614**	0.6715	1	0.67	**1.38**
830	**0.477**	0.5455	1	0.55	**1.93**
829	**0.229**	0.353	1	0.35	**2.28**
828.55	**0.005**	0.117	0.45	0.05	**2.34**

Proposed oniste fill below existing BFE = >>>> **4.18** **ac-ft** **[6.52-2.34]**



PEARSON, BROWN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1850 W. WINCHESTER ROAD - SUITE 205
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NORTH

0 40' 80'

TITLE: EXISTING NORTHEAST ZONE DEPRESSION WITH PROPOSED GRADING

PROJECT: WALNUT RIDGE

MUNDELEIN, IL

PROJECT NO.: 2535

EXHIBIT: NE ZONE DEPR. W/ PROP. GRADING

DATE: 04/11/25

Southeast Zone:

There is an existing small depressional area located near the southeast corner of the property. The lowest onsite spot elevation from the project topography is 831.7. No lower spot elevations exist between this location and the south property line. As shown on the southeast zone depression exhibit, the area is only capable of storing 0.033 ac-ft at the existing spill elevation of 831.9. We calculated storage onsite up to elevation 832.5 [0.389 ac-ft]. This area is planned to be filled in proposed conditions to create the southeast stormwater basin. The proposed southeast basin outlet controls are planned to be over-restricted to access additional volume in the basin. The additional volume accessed (compensatory storage) in the 100yr critical duration analysis [refer to the southeast basin section of the main report] is 0.48 ac-ft.

Northeast Zone:

An existing depressional zone is located in the northeast corner area. The 100yr BFE for this depression is 832.92 from a LCSMC approved study done for the planned Route 83 and Winchester Road intersection improvements plans [Exhibit NE DEPR.].

The NE Zone DEPR. W/ Prop. Grading Exhibit shows this area with the proposed grading for the northeast basin. The existing and proposed locations for the contours at and below the BFE of 832.92 are shown. The exhibit also includes stage-storage calculations for volume below the BFE in existing and proposed conditions. Based on these totals, 4.18 ac-ft of fill is proposed. The northeast zone discussion in the main report describes how the basin outlet will be over-restricted to access additional volume in the basin. The total volume accessed in the 100yr critical duration analysis is 15.39 ac-ft. This volume exceeds the required detention volume (9.76 ac-ft) by 5.63 ac-ft and can be counted as compensatory storage. Since the depression extends offsite, the required compensatory storage needs to be increased by 120% for this zone. The required volume is 4.18 ac-ft x 120% or 5.02 ac-ft. The additional volume accessed is 5.63 ac-ft, accordingly exceeding the required amount.

Appendix 4
Wetland Hydrology

Three zones associated with the project require an indirect wetland impact analysis (80/150). The first is an Isolated Wetland of Lake County that will remain just offsite at the northwest corner of the property. The second is an Isolated Wetland of Lake County that will remain at the southwest corner of the property. Finally, at the northeast corner of the property an Isolated Wetland of Lake County will remain. Each of these zones was analyzed to determine the 2yr, 24hr ISWS Bul. 75 runoff volume to the wetland for both the existing and proposed conditions.

While there is an existing Isolated Wetland of Lake County in the southeast portion of the site, no wetland hydrology calculations are required since this wetland is proposed to be fully impacted and will not remain in the proposed condition.

Accordingly per LCSMC rules, the wetland areas being analyzed are excluded for both cases and onsite tributary areas only are involved. Existing conditions Exhibit C should be referred to for curve number determinations (also included on spreadsheet in this Appendix).

For the northeast zone, there is an existing onsite wetland onsite upstream of the subject wetland and this was included in the existing analysis only as it is planned to be fully impacted in the proposed case. The runoff curve number (RCN) for the wetland ended up being 85 the same as the surrounding row crop curve number so there was essentially no effect.

Included in this Appendix are spreadsheets determining the composite curve numbers for each zone and also the hydrology calculations to ascertain if the runoff delivered in proposed conditions accordingly remains between 80% and 150% of the existing values. As mentioned above, Exhibit C should be referred to for existing conditions. For proposed conditions, the relevant basin zone exhibits [NW-1, SW-1 and NE-1] should be referenced.

Composite Curve Number Spreadsheets for each zone:

Composite Runoff Curve Number Determination for area tributary to wetland near NW corner

Existing Conditions Tributary Area: **9.25** Ac

Soil/Surface Description	CN	Area (ac)	Multiple
Row Crops - Straight Good (HSG C)	85	8.44	717.4
Woods (HSG C, Fair)	73	0.81	59.13
Total >>		9.25	776.53
Composite CN >>	**84**		

Proposed Conditions Tributary Area: **8.06** Ac

Composite CN from NW basin analysis = 87

Composite Runoff Curve Number Determination for area tributary to wetland near SW corner

Existing Conditions Tributary Area: **26.80** Ac

Soil/Surface Description	CN	Area (ac)	Multiple
Row Crops - Straight, Good (HSG C)	85	26.76	2274.6
Gravel	98	0.014	1.372
Metal Building	98	0.022	2.156
Tower	98	0.005	0.4802
Total >>		26.80	2278.6082
Composite CN >>	**85**		

Proposed Conditions Tributary Area: **24.70** Ac

Composite CN from SW basin analysis = 89

Composite Runoff Curve Number Determination for area tributary to wetland near NE corner

Existing Conditions Tributary Area: **22.63** Ac

Soil/Surface Description	CN	Area (ac)	Multiple
Row Crops - Straight, Good (HSG C)	85	22.12	1880.2
onsite wetland to be mitigated in prop. cond.	85	0.439	37.315
Gravel	98	0.062	6.076
shed	98	0.004	0.392
Total >>		22.63	1923.983
Composite CN >>	**85**		

Proposed Conditions Tributary Area: **20.54** Ac

Composite CN from SW basin analysis = 88

Technical Release 55 (TR-55)

Runoff Depth for 80/150

80/150 Analysis for NW Corner Wetland (offsite)

EXISTING CONDITIONS				
Existing Tributary Area (acres) =	9.25	S	Q (in)	
Existing Conditions Curve Number =	84	1.905	1.800	
Event	**Rainfall (in)**	**CN**	**Runoff (in)**	**Runoff Volume (ac-ft)**
2-Year 24 Hour	3.34	84	1.800	1.39

80/150 Compliance				
Event	**Existing Runoff Volume (ac-ft)**	**Unit Runoff Volume (ac-ft/ac)**	**80% of Existing Volume (ac-ft)**	**150% of Existing Volume (ac-ft)**
2-Year 24 Hour	1.39	0.150	1.11	2.08

PROPOSED CONDITIONS					
Proposed Tributary Area (acres) =	8.06	S	Q (in)		
Proposed Conditions Curve Number =	87	1.494	2.039		
Event	**Rainfall (in)**	**CN**	**Runoff (in)**	**Runoff Volume (ac-ft)**	**Percent of Existing Volume**
2-Year 24 Hour	3.34	87	2.039	1.37	99%

Technical Release 55 (TR-55)

Runoff Depth for 80/150

80/150 Analysis for Wetland at Southwest Corner

EXISTING CONDITIONS				
Existing Tributary Area (acres) =	26.8	S	Q (in)	
Existing Conditions Curve Number =	85	1.765	1.878	
Event	**Rainfall (in)**	**CN**	**Runoff (in)**	**Runoff Volume (ac-ft)**
2-Year 24 Hour	3.34	85	1.878	4.19

80/150 Compliance				
Event	**Existing Runoff Volume (ac-ft)**	**Unit Runoff Volume (ac-ft/ac)**	**80% of Existing Volume (ac-ft)**	**150% of Existing Volume (ac-ft)**
2-Year 24 Hour	4.19	0.156	3.35	6.29

PROPOSED CONDITIONS					
Proposed Tributary Area (acres) =	24.70	S	Q (in)		
Proposed Conditions Curve Number =	89	1.236	2.210		
Event	**Rainfall (in)**	**CN**	**Runoff (in)**	**Runoff Volume (ac-ft)**	**Percent of Existing Volume**
2-Year 24 Hour	3.34	79	2.210	4.55	108%

Technical Release 55 (TR-55)

Runoff Depth for 80/150

80/150 Analysis for Wetland Near NE Corner

EXISTING CONDITIONS				
Existing Tributary Area (acres) =	22.63	S	Q (in)	
Existing Conditions Curve Number =	85	1.765	1.878	
Event	**Rainfall (in)**	**CN**	**Runoff (in)**	**Runoff Volume (ac-ft)**
2-Year 24 Hour	3.34	85	1.878	3.54

80/150 Compliance				
Event	**Existing Runoff Volume (ac-ft)**	**Unit Runoff Volume (ac-ft/ac)**	**80% of Existing Volume (ac-ft)**	**150% of Existing Volume (ac-ft)**
2-Year 24 Hour	3.54	0.156	2.83	5.31

PROPOSED CONDITIONS					
Proposed Tributary Area (acres) =	20.54	S	Q (in)		
Proposed Conditions Curve Number =	88	1.364	2.123		
Event	**Rainfall (in)**	**CN**	**Runoff (in)**	**Runoff Volume (ac-ft)**	**Percent of Existing Volume**
2-Year 24 Hour	3.34	88	2.123	3.63	103%

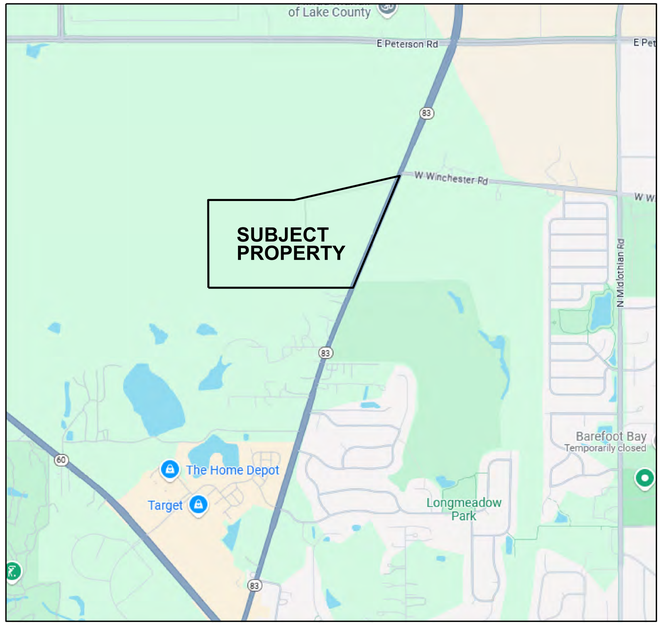
Hydrologic Analysis Summary Table:

Zone	Existing 2yr,24hr Runoff Volume (ac-ft)	Proposed 2yr,24hr Runoff Volume (ac-ft)	Proposed Volume Percent of Existing	Within 80% - 150% Range
Northwest	**1.39**	**1.37**	**99%**	**YES**
Southwest	**4.19**	**4.55**	**108%**	**YES**
Northeast	**3.54**	**3.63**	**103%**	**YES**

All three zone comply with the 80% to 150% requirement. There are no indirect impacts due to wetland hydrology proposed.

PRELIMINARY ENGINEERING
WALNUT RIDGE

MUNDELEIN, ILLINOIS



LOCATION MAP NORTH

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LIFT STATION PLANS:
IN PROGRESS

LEGEND

EXISTING	PROPOSED		EXISTING	PROPOSED	
		SANITARY SEWER			CENTER LINE
		FORCE MAIN			EASEMENT
		STORM SEWER			BUILDING SETBACK
		P.V.C. STORM SEWER			CURB & GUTTER
		COMBINED SEWER			CURB & REVERSE GUTTER PITCH
		DRAIN TILE			DEPRESSED CURB & GUTTER
		WATER MAIN			GUARD RAIL
		TRENCH BACKFILL			FENCE
		MANHOLE			RETAINING WALL
		CATCH BASIN			CURB RAMP
		INLET			DRIVEWAY HAND
		2' STORM MANHOLE			SIGN
		INLET MANHOLE	MB	MB	MAIL BOX
		FLARED END SECTION			SOIL BORING
		HEAD WALL			DECIDIOUS TREE, DIAMETER
LS	LS	LIFT STATION			EVERGREEN TREE, HEIGHT
		CLEAN-OUT	T/F 600.00	T/F 600.00	TOP OF FOUNDATION
M	M	METER VAULT	F/G 600.00	F/G 600.00	FINISHED GRADE
		VALVE VAULT	600.00	600.00	SPOT ELEVATION
		VALVE BOX	T/C 600.00	T/C 600.00	TOP OF CURB ELEVATION
		BUFFALO BOX	F/L 600.00	F/L 600.00	FLOW LINE OF GUTTER
		FIRE HYDRANT	600	600	CONTOUR
		CONFLICT			DITCH
		CROSSING			DRAINAGE FLOW
		TRIPLE BASIN			OVERLAND FLOW
GB	GB	GREASE BASIN	R-600.00	R-600.00	RIM ELEVATION
G	G	GAS MAIN	I-600.00	I-600.00	INVERT ELEVATION
E	E	ELECTRIC CABLE			WETLAND LIMIT
T	T	TELEPHONE CABLE			WETLAND BUFFER LINE
F	F	FIBER OPTIC CABLE			RIDGE LINE
C	C	CABLE			BASE FLOOD ELEVATION LINE
		STREET LIGHT			F.E.M.A. FLOODPLAIN LINE
		UTILITY POLE			
		PEDESTAL			
		TRANSFORMER			
G	G	GAS VALVE			
E	E	ELECTRIC BOX			
T	T	TELEPHONE MANHOLE			
F	F	FIBER OPTIC MANHOLE			
T	T	TRAFFIC SIGNAL BOX			
		TRAFFIC SIGNAL			

BENCHMARKS:

SOURCE BENCHMARK:

NATIONAL GEODETIC CONTROL STATION "LD010" ELEVATION 662.36 NAVD88

SITE BENCHMARKS:

FIRE HYDRANT AT STATION 57+66 ALONG IL. ROUTE 83
29' EAST OF THE CENTERLINE OF THE ROADWAY
ARROW BOLT ON FIRE HYDRANT
ELEVATION = 835.28 NAVD88

FIRE HYDRANT AT STATION 71+67 ALONG IL. ROUTE 83
33' EAST OF THE CENTERLINE OF THE ROADWAY
ARROW BOLT ON FIRE HYDRANT
ELEVATION = 834.32 NAVD88

DRAINAGE CERTIFICATE

TO THE BEST OF OUR KNOWLEDGE AND BELIEF THE DRAINAGE OF SURFACE WATERS WILL NOT BE CHANGED BY THE CONSTRUCTION OF THIS DEVELOPMENT OR ANY PART THEREOF, OR, THAT IF SUCH SURFACE WATER DRAINAGE WILL BE CHANGED, REASONABLE PROVISION HAS BEEN MADE FOR COLLECTION AND DIVERSION OF SUCH SURFACE WATERS INTO PUBLIC AREAS, OR DRAINS WHICH THE DEVELOPER HAS A RIGHT TO USE, AND THAT SUCH SURFACE WATERS WILL BE PLANNED FOR IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES SO AS TO REDUCE THE LIKELIHOOD OF DAMAGE TO THE ADJOINING PROPERTY BECAUSE OF THE CONSTRUCTION OF THIS DEVELOPMENT.

PEARSON, BROWN + ASSOCIATES, INC. 06-05-25
REGISTERED PROFESSIONAL ENGINEER DATE

OWNER OR OWNER'S DULY AUTHORIZED AGENT DATE

PREPARED FOR:

PULTE HOME COMPANY, LLC
1900 E. GOLF ROAD - SUITE 300 SCHAUMBURG, IL. 60173, (847) 230-5400

CONSULTING ENGINEERS:

PEARSON, BROWN & ASSOCIATES, INC.
A PROFESSIONAL DESIGN FIRM - ILLINOIS PROFESSIONAL ENGINEERING CORPORATION - LICENSE NUMBER 184-001058 EXPIRES 04/30/27
1850 W. WINCHESTER ROAD - SUITE 205 LIBERTYVILLE, IL. 60048 (847) 367-6707

NOT FOR CONSTRUCTION

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IEPA - WATER		
IEPA - NOI		
LCSMC		
VILLAGE		

	REVISIONS	
1	06/20/25	PER VILLAGE REVIEW COMMENTS
2		
3		
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10		
11		
12		

JOHN F. CERBUS 062-052376 REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS 11/30/25
ENGINEER'S SEAL & SIGNATURE

ORIGINAL ISSUE DATE: 04/11/25

SHEET NUMBER 1 OF 59 SHEETS

JOB No. 2535

WALNUT RIDGE

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SPECIAL PROVISIONS

THE FOLLOWING SPECIAL PROVISIONS ASSUME A TYPICAL OWNER/DEVELOPER AND FOUR PRIME CONTRACTORS (EXCAVATION, UNDERGROUND, PAVING, AND LIGHTING). IF A GENERAL CONTRACTOR IS INVOLVED, REQUIREMENTS AND RESPONSIBILITIES SHALL APPLY ACCORDINGLY BASED ON CONTRACT RELATIONSHIPS BETWEEN THE GENERAL CONTRACTOR, RELEVANT SUBCONTRACTORS AND THE OWNER/DEVELOPER.

I. GENERAL NOTES

1. THE CONSTRUCTION OF ALL IMPROVEMENTS OF THE PROJECT SHALL BE GOVERNED BY THE LATEST CODES AND ORDINANCES OF THE MUNICIPALITY.

   THE CONSTRUCTION OF ALL SEWER AND WATER MAIN IMPROVEMENTS ON THIS PROJECT SHALL BE GOVERNED BY THE FOLLOWING:
   - A. THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS", LATEST REVISION, EXCEPT AS NOTED IN THE PLANS AND SPECIFICATIONS
   - B. THE "ILLINOIS ADMINISTRATIVE CODE, TITLE 77, PART 890" THE "ILLINOIS PLUMBING CODE", LATEST REVISION
   - C. THE "ILLINOIS ADMINISTRATIVE CODE, TITLE 35, SUBTITLE C, PART 370" THE "ILLINOIS RECOMMENDED STANDARDS FOR SEWAGE WORKS", PATTERN 1 EDITION
   - D. THE "ILLINOIS ADMINISTRATIVE CODE, TITLE 35, SUBTITLE F" "PUBLIC WATER SUPPLIES", LATEST REVISION

   THE CONSTRUCTION OF ALL PAVING AND GRADING IMPROVEMENTS SHALL BE GOVERNED BY THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" (SPECIAL PROVISIONS), LATEST REVISIONS, PREPARED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT). IN CASE OF CONFLICT THE "SPECIAL PROVISIONS" SHALL TAKE PRECEDENCE AND GOVERN. CONTRACTOR SHALL USE IDOT STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS SHALL HEREINAFTER BE REFERRED TO AS THE "IDOT STANDARD SPECIFICATIONS".

   SOIL EROSION AND SEDIMENT CONTROL ON THIS PROJECT SHALL BE GOVERNED BY THE "ILLINOIS URBAN MANUAL", LATEST REVISION.

2. **OWNER AND MUNICIPALITY**
   THE WORD "OWNER" AS USED IN THE SPECIAL PROVISIONS SHALL WHERE APPLICABLE. INCLUDE THE LOCAL MUNICIPALITY OR GOVERNING AUTHORITY.

3. **GUARANTEE PERIOD**
   ALL CONSTRUCTION PERFORMED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR AND HIS SURETY FOR A PERIOD OF TWELVE MONTHS FROM THE DATE OF FINAL ACCEPTANCE BY THE LOCAL MUNICIPALITY, GOVERNING AUTHORITY, OR PRIVATE OWNER OF THE WORK AGAINST DEFECTS IN WORKMANSHIP AND FAULTY OR IMPROPER MATERIALS.

4. **BONDS AND INSURANCE**
   CONTRACTOR SHALL FURNISH PERFORMANCE AND PAYMENT BONDS AS SECURITY FOR THE FAITHFUL PERFORMANCE AND PAYMENT OF ALL HIS OBLIGATIONS UNDER THE PLANS AND SPECIFICATIONS. THESE BONDS SHALL BE IN AMOUNTS AT LEAST EQUAL TO THE CONTRACT PRICE, AND IN SUCH FORM AND WITH SUCH SURETY AS ARE ACCEPTABLE TO CONDUCT BUSINESS IN THE STATE WHERE THE PROJECT IS LOCATED AND ARE NAMED IN THE CURRENT LIST OF "SURETY COMPANIES ACCEPTABLE ON FEDERAL BONDS" AS PUBLISHED IN THE FEDERAL REGISTER BY THE AUDIT STAFF BUREAU OF ACCOUNTS, U. S. TREASURY DEPARTMENT. IF THE SURETY ON ANY BOND FURNISHED BY THE CONTRACTOR IS DECLARED BANKRUPT OR BECOMES INSOLVENT OR ITS RIGHT TO DO BUSINESS IS TERMINATED IN ANY STATE WHERE ANY PART OF THE PROJECT IS LOCATED IS REVOKED, CONTRACTOR SHALL WITHIN FIVE DAYS THEREAFTER SUBSTITUTE ANOTHER BOND AND SURETY, BOTH OF WHICH SHALL BE ACCEPTABLE TO OWNER. CONTRACTOR SHALL PURCHASE AND MAINTAIN SUCH INSURANCE AS WILL PROTECT HIM FROM CLAIMS UNDER WORKMENS COMPENSATION LAWS, DISABILITY BENEFIT LAWS OR OTHER SIMILAR EMPLOYEE BENEFIT LAWS; FROM CLAIMS FOR DAMAGES BECAUSE OF BODILY INJURY, OCCUPATIONAL SICKNESS OR DISEASE, OR DEATH OF HIS EMPLOYEES, AND CLAIMS INSURED BY USUAL PERSONAL INJURY LIABILITY COVERAGE; FROM CLAIMS FOR DAMAGES BECAUSE OF BODILY INJURY, SICKNESS OR DISEASE, OR DEATH OF ANY PERSON OTHER THAN HIS EMPLOYEES INCLUDING CLAIMS INSURED BY USUAL PERSONAL INJURY LIABILITY COVERAGE; FROM CLAIMS FOR DAMAGES BECAUSE OF BODILY INJURY OR PROPERTY DAMAGE OUT OF THE OWNERSHIP MAINTENANCE OR USE OF ANY AUTOMOBILE OR VEHICLE; AND FROM CLAIMS FOR INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY, INCLUDING LOSS OF USE RESULTING THEREFROM - ANY OR ALL OF WHICH MAY ARISE OUT OF OR RESULT FROM CONTRACTOR'S OPERATIONS UNDER THE PLANS AND SPECIFICATIONS, WHETHER SUCH OPERATIONS BE BY HIMSELF OR BY ANY SUBCONTRACTOR OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM OR FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE. REGARDLESS OF WHETHER OR NOT IT IS CAUSED IN PART BY A PARTY INDEMNIFIED HEREUNDER, IN ANY AND ALL CLAIMS AGAINST OWNER OR CONSULTANT OR ANY OF THEIR AGENTS OR EMPLOYEES BY ANY EMPLOYEE OF CONTRACTOR, ANY SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY AND OF THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, THE INDEMNIFICATION SHALL NOT BE LIMITED IN ANY WAY BY ANY LIMITATION ON THE AMOUNT OR TYPE OF DAMAGES, COMPENSATION OR BENEFITS PAYABLE BY OR FOR CONTRACTOR OR ANY SUBCONTRACTOR UNDER WORKMEN'S COMPENSATION ACTS, DISABILITY BENEFIT ACTS OR OTHER EMPLOYEE BENEFIT ACTS.

6. **LIABILITY LIMITATIONS**
   THE CONTRACTOR AND HIS SUBCONTRACTORS ARE SKILLED AND EXPERIENCED IN THE USE AND INTERPRETATIONS OF PLANS AND SPECIFICATIONS SUCH AS THOSE INCLUDED IN THE BID DOCUMENTS FOR THIS CONTRACT. THEY HAVE CAREFULLY REVIEWED THE PLANS AND SPECIFICATIONS, AND HAVE FOUND THEM FREE OF AMBIGUITIES AND SUFFICIENT FOR BID PURPOSES. FURTHER, THEY HAVE BASED THEIR BID SOLELY ON THESE DOCUMENTS, NOT RELYING IN ANY WAY ON ANY EXPLANATION OR INTERPRETATION, ORAL OR WRITTEN, FROM ANY OTHER SOURCE. HAVING ASSURED HIMSELF OF THE ADEQUACY OF THE DOCUMENTS AND THE ACCURACY OF HIS BID, THE CONTRACTOR AGREES AND SHALL REQUIRE HIS SUBCONTRACTORS TO AGREE TO LIMIT THE LIABILITY OF THE OWNER AND OF THE CONSULTANT TO A TOTAL AGGREGATE LIABILITY TO THE CONTRACTOR OF THE AMOUNT OF THE CONSULTANT'S TOTAL FEE FOR SERVICES RENDERED ON THIS PROJECT. NEITHER THE CONTRACTOR NOR ANY OF HIS SUBCONTRACTORS ASSUME ANY LIABILITY FOR THE ERRORS, OMISSIONS OR NEGLIGENT ACTS OF THE CONSULTANT.

7. **SAFETY AND PROTECTION**
   CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. HE SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE THE NECESSARY PROTECTION TO PREVENT DAMAGE, INJURY OR LOSS TO;
   - A. ALL EMPLOYEES ON THE WORK AND OTHER PERSONS WHO MAY BE AFFECTED THEREBY.
   - B. ALL THE WORK AND ALL MATERIALS OR EQUIPMENT TO BE INCORPORATED THEREIN, WHETHER IN STORAGE ON OR OFF THE SITE.
   - C. OTHER PROPERTY AT THE SITE OR ADJACENT THERETO, INCLUDING TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAYS, STRUCTURES AND UTILITIES NOT DESIGNATED FOR REMOVAL, RELOCATION OR REPLACEMENT IN COURSE OF CONSTRUCTION.

   CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY OR TO PROTECT THEM FROM DAMAGE, INJURY OR LOSS. HE SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR ITS SAFETY AND PROTECTION. HE SHALL NOTIFY OWNERS OF ADJACENT UTILITIES WHEN PROSECUTION OF THE WORK MAY AFFECT THEM. ALL DAMAGE, INJURY OR LOSS TO ANY PROPERTY REFERRED TO CAUSE, DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, BY CONTRACTOR, ANY SUBCONTRACTOR OR ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, SHALL BE REMEDIED BY CONTRACTOR. CONTRACTOR'S DUTIES AND RESPONSIBILITIES FOR THE SAFETY AND PROTECTION OF THE WORK SHALL CONTINUE UNTIL SUCH TIME AS ALL THE WORK IS COMPLETED AND CONSULTANT HAS ISSUED A NOTICE TO OWNER AND CONTRACTOR THAT WORK IS ACCEPTABLE. CONTRACTOR SHALL DESIGNATE A RESPONSIBLE MEMBER OF HIS ORGANIZATION AT THE SITE WHOSE DUTY SHALL BE THE PREVENTION OF ACCIDENTS. THIS PERSON SHALL BE THE CONTRACTOR'S SUPERINTENDENT UNLESS OTHERWISE DESIGNATED IN WRITING BY CONTRACTOR TO OWNER. IN EMERGENCIES AFFECTING THE SAFETY OF PERSONS OR THE WORK OR PROPERTY AT THE SITE OR ADJACENT THERETO, CONTRACTOR, WITHOUT SPECIAL INSTRUCTION OR AUTHORIZATION FROM CONSULTANT OR OWNER, IS OBLIGATED TO ACT, AT HIS DISCRETION, TO PREVENT THREATENED DAMAGE, INJURY OR LOSS.

8. **SUPERVISION AND SUPERINTENDENCE**
   CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK EFFICIENTLY AND WITH HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION, BUT HE SHALL NOT BE SOLELY RESPONSIBLE FOR THE NEGLIGENCE OF OTHERS IN THE DESIGN OR SELECTION OF A SPECIFIC MEANS, METHOD, TECHNIQUE, SEQUENCE OR PROCEDURE OF CONSTRUCTION WHICH IS INDICATED IN AND REQUIRED BY THE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO SEE THAT THE FINISHED WORK COMPLIES ACCURATELY WITH THE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL KEEP ON THE WORK AT ALL TIMES DURING ITS PROGRESS A COMPETENT RESIDENT SUPERINTENDENT, WHO SHALL NOT BE REPLACED WITHOUT WRITTEN NOTICE TO OWNER AND CONSULTANT, EXCEPT UNDER EXTRAORDINARY CIRCUMSTANCES. THE SUPERINTENDENT WILL BE CONTRACTOR'S REPRESENTATIVE AT THE SITE AND SHALL HAVE AUTHORITY TO ACT ON BEHALF OF CONTRACTOR. ALL COMMUNICATIONS GIVEN TO THE SUPERINTENDENT SHALL BE AS BINDING AS IF GIVEN TO CONTRACTOR.

9. **SUBSTITUTE MATERIAL OR EQUIPMENT**
   IF THE GENERAL REQUIREMENTS, LAWS, ORDINANCES OR APPLICABLE RULES OR REGULATIONS PERMIT CONTRACTOR TO FURNISH OR USE A SUBSTITUTE THAT IS EQUAL TO ANY MATERIAL OR EQUIPMENT SPECIFIED, AND IF ANY CONTRACTOR DESIRES TO USE A PROPOSED SUBSTITUTE, HE SHALL FILE, MAKE WRITTEN APPLICATION TO CONSULTANT, OWNER AND VILLAGE FOR APPROVAL OF SUCH A SUBSTITUTE CERTIFYING IN WRITING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTION CALLED FOR BY THE GENERAL DESIGN, BE OF EQUAL QUALITY AND SUBSTANCE TO THAT SPECIFIED AND BE SUITED TO THE SAME USE AND CAPABLE OF PERFORMING THE SAME FUNCTION AS THAT SPECIFIED; STATING WHETHER OR NOT ITS INCORPORATION IN OR USE IN CONNECTION WITH THE PROJECT IS SUBJECT TO THE PAYMENT OF ANY LICENSE FEE OR ROYALTY; AND IDENTIFYING ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED AND INDICATING AVAILABLE MAINTENANCE SERVICE. NO SUBSTITUTE SHALL BE ORDERED OR INSTALLED WITHOUT THE WRITTEN APPROVAL OF CONSULTANT WHO WILL BE THE JUDGE OF EQUALITY AND MAY REQUIRE CONTRACTOR TO FURNISH SUCH OTHER DATA ABOUT THE PROPOSED SUBSTITUTE AS HE CONSIDERS PERTINENT. NO SUBSTITUTE SHALL BE ORDERED OR INSTALLED WITHOUT SUCH PERFORMANCE GUARANTEE AND BONDS AS OWNER MAY REQUIRE WHICH SHALL BE FURNISHED AT CONTRACTOR'S EXPENSE.

10. **RECORD DRAWINGS**
    CONTRACTOR SHALL KEEP ONE RECORD COPY OF ALL SPECIFICATIONS, DRAWINGS, ADDENDA, MODIFICATIONS, AND SHOP DRAWINGS AT THE SITE IN GOOD ORDER AND ANNOTATED TO SHOW ALL CHANGES MADE DURING THE CONSTRUCTION PROCESS. THESE SHALL BE AVAILABLE TO CONSULTANT AND SHALL BE DELIVERED TO HIM OR OWNER UPON COMPLETION OF THE PROJECT. CONSULTANT OR OWNER SHALL SUPPLY RECORD DRAWINGS TO THE LOCAL MUNICIPALITY.

11. **INSTRUCTIONS TO CONTRACTORS FROM CONSULTANT**
    THE CONTRACTOR SHALL ONLY ACCEPT INSTRUCTIONS, EITHER VERBAL OR WRITTEN, FROM AUTHORIZED PERSONNEL OF PEARSON, BROWN & ASSOCIATES, INC. THE PERSONNEL SO AUTHORIZED TO ISSUE INSTRUCTIONS TO CONTRACTORS ARE EXCLUSIVELY RONALD ADAMS, GUS ZOGRAFOS AND ANGELO ZOGRAFOS, NOT WITHOUT OWNERS PERMISSION.

12. **APPLICATION FOR PAYMENT**
    IF APPROVAL BY THE CONSULTANT AND THE MUNICIPALITY IS REQUIRED FOR THE PROCESSING OF THE APPLICATION FOR PAYMENT, THEN CONTRACTOR SHALL SUBMIT TO CONSULTANT AN APPLICATION FOR PAYMENT ACCEPTABLE TO CONSULTANT AND SHALL PROVIDE TO THE CONSULTANT ANY AND ALL INFORMATION PERTINENT TO SAID APPLICATION WHETHER REQUESTED SPECIFICALLY OR NOT. CONSULTANT'S APPROVAL IS BASED ON WORK COMPLETED TO DATE OF APPLICATION SUBMITTAL. IF CONTRACTOR HAS AGREED BY CONTRACT AGREEMENT OR IN THE SCOPE OF WORK TO A QUANTITY OF EQUIPMENT WITH OPERATORS OR TO A NUMBER OF CREWS TO START WORK ON A SPECIFIC DATE AND PROCEED AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE, AND CONTRACTOR DOES NOT PROVIDE THE EQUIPMENT WITH OPERATORS OR THE NUMBER OF CREWS AS DIRECTED BY OWNER OR HIS REPRESENTATIVE, AND, AS A RESULT, CAUSES DELAYS TO THE PROJECT, THE OWNER OR HIS REPRESENTATIVE RESERVES THE RIGHT TO WITHHOLD APPROVAL FOR PAYMENT UNTIL SUCH TIME AS CONTRACTOR HAS COMPLIED WITH SAID CONTRACT AGREEMENT OR SCOPE OF WORK.

13. **RETENTION**
    ANY AND ALL APPLICATIONS FOR PAYMENT SUBMITTED TO CONSULTANT SHALL HAVE A TEN PERCENT (10%) RETAINER UNTIL SUCH TIME AS ONE HUNDRED PERCENT (100%) OF THE WORK REQUESTED OF SAID CONTRACTOR HAS BEEN COMPLETED. UPON COMPLETION OF ONE HUNDRED (100%) PERCENT OF THE WORK, THE CONTRACTOR SHALL SUBMIT TO THE CONSULTANT AT SUCH TIME AS CONTRACTOR HAS APPLIED FOR AND OBTAINED TESTING AND OBTAINED IN WRITING FINAL ACCEPTANCE FOR MAINTENANCE OF THIS WORK BY SAID GOVERNING AUTHORITIES. UPON TESTING, APPROVAL AND ACCEPTANCE OF THE WORK, THE RETENTION SHALL BE REDUCED TO FIVE PERCENT (2%) UNTIL ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AT WHICH TIME ALL MONIES DUE CONTRACTOR SHALL BE APPROVED FOR PAYMENT UNLESS CONTRACTOR HAD FAILED TO PERFORM IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND/OR WRITTEN OR VERBAL INSTRUCTIONS FROM ENGINEER REGARDING FAULTY MATERIAL AND/OR WORKMANSHIP.

14. **CONFLICT BETWEEN COMPONENT PARTS OR SPECIFICATIONS**
    IN THE EVENT THAT ANY PROVISION IN ANY OF THE FOLLOWING COMPONENT PARTS OF THESE SPECIFICATIONS CONFLICT WITH ANY PROVISION IN ANY OTHER OF THE COMPONENT PARTS, THE PROVISION IN THE CONFLICT PART FIRST LISTED BELOW SHALL GOVERN AND/OR ANY OTHER COMPONENT PART WHICH FOLLOWS IT, EXCEPT AS MAY OTHERWISE SPECIFICALLY BE STATED. SAID COMPONENT PARTS ARE THE FOLLOWING:
    - A. PLANS
    - B. ADDENDUM TO SPECIFICATIONS
    - C. SPECIAL PROVISIONS
    - D. STANDARD SPECIFICATIONS

15. **PERMITS**
    THE OWNER OR CONSULTANT SHALL MAKE APPLICATION FOR THE FOLLOWING PERMITS:
    MUNICIPALITY: WATERSHED DEVELOPMENT PERMIT
    IEPA: NOI, SANITARY SEWER, AND WATER SUPPLY
    IDOT: ACCESS PERMIT
    LCDOT: UTILITY PERMIT
    LCSMC: WETLAND

16. **CHANGES IN THE CONSULTANT'S ENGINEERING PLANS**
    THE CONSULTANT'S ENGINEERING PLANS MUST BE APPROVED BY BOTH THE DESIGN CONSULTANT AND THE MUNICIPAL ENGINEER. A WRITTEN REQUEST, ACCOMPANIED BY REVISED ENGINEERED PLANS, IS TO BE SUBMITTED TO BOTH AND APPROVED BY BOTH BEFORE CHANGES ARE STARTED.

17. **DRAIN TILES**
    MAY EXIST ON THE SUBJECT PROPERTY; THEIR LOCATIONS MAY BE KNOWN AND/OR UNKNOWN AND MAY EXTEND OFFSITE EITHER UPSTREAM OR DOWNSTREAM. ALL EXISTING ONSITE DRAIN TILES SHALL BE ABANDONED IN TRENCH REMOVAL PRIOR TO OTHER EXCAVATION/CUT IMPLEMENT ACTIVITIES. IF ANY EXISTING DRAIN TILE (MAINLINE, SUB-MAIN OR LATERAL) CONTINUE OFFSITE TO UPLAND WATERSHEDS,THE CONTRACTOR (GRADING AND/OR UNDERGROUND) SHALL NOTIFY CONSULTANT FOR DIRECTION AND MUST MAINTAIN DRAINAGE SERVICE DURING CONSTRUCTION UNTIL NEW STORM SEWER CAN BE INSTALLED FOR A PERMANENT CONNECTION OR BE REROUTED WITH NEW PIPE OF SIMILAR SIZE, MATERIAL, CAPACITY AND GRADIENT AND PUT INTO ACCEPTABLE OPERATION. SUCH CONNECTION OR RELOCATION SHALL BE RECORDED ON "RECORD DRAWINGS". NORMAL CONSTRUCTION ACTIVITY INCLUDING GRADING, UNDERGROUND PIPING AND BUILDING EXCAVATION SHOULD ADEQUATELY REMOVE OR TAKE OUT OF SERVICE ONSITE SUB-MAINS AND LATERALS. THE COST OF THE ABOVE WORK INCLUDED IN THE SCHEDULE OF QUANTITIES SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

II. GENERAL NOTES

1. NO CONSTRUCTION PLANS SHALL BE USED FOR CONSTRUCTION UNLESS SPECIFICALLY MARKED "FOR CONSTRUCTION". PRIOR TO COMMENCEMENT OF CONSTRUCTION,THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AFFECTING THEIR WORK WITH THE ACTUAL CONDITIONS AT THE JOB SITE. IF THERE ARE ANY DISCREPANCIES FROM WHAT IS SHOWN ON THE CONSTRUCTION PLANS, HE MUST IMMEDIATELY REPORT SAME TO THE CONSULTANT BEFORE DOING ANY WORK. OTHERWISE THE CONTRACTOR ASSUMES FULL RESPONSIBILITY. IN THE EVENT OF DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, STANDARD SPECIFICATIONS NEOR SPECIAL DETAILS, THE CONTRACTOR SHALL SECURE WRITTEN INSTRUCTIONS FROM THE CONSULTANT PRIOR TO PROCEEDING WITH ANY PART OF THE WORK AFFECTED BY OMISSIONS ORDISCREPANCIES. FAILING TO SECURE SUCH INSTRUCTION, THE CONTRACTOR WILL BE CONSIDERED TO HAVE PROCEEDED AT HIS OWN RISK AND EXPENSE. IN THE EVENT OF ANY DOUBT OR QUESTION ARISING WITH RESPECT TO THE TRUE MEANING OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE DECISION OF THE CONSULTANT SHALL BE FINAL AND CONCLUSIVE.

2. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE PROPER BRACING, SHORING AND OTHER REQUIRED PROTECTION OF ALL ROADWAYS BEFORE CONSTRUCTION BEGINS. HE SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE STREETS OR ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO THE SATISFACTION OF THE CONSULTANT.

3. IF LINE AND GRADE STAKES ARE PROVIDED BY CONSULTANT, STAKES WILL BE SET AT THE OWNER'S EXPENSE ONE TIME AND ONE TIME ONLY. CONTRACTORS SHALL NOTIFY THE CONSULTANT THAT STAKES WILL BE NEEDED AT LEAST 3 WORKING DAYS IN ADVANCE OF STARTING THEIR WORK. (ADDITIONAL NOTIFICATION SHALL BE PROVIDED PRIOR TO THE START OF INITIAL PROJECT CONSTRUCTION OPERATIONS.) ANY AND ALL REQUIRED RESTAKING WILL BE PERFORMED BY THE CONSULTANT AT THE EXPENSE OF THAT CONTRACTOR REQUIRING THE RESTAKING. IT SHALL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO PROTECT STAKES PROVIDED FOR HIS USE AND TO REPORT TO THE OWNER'S SUPERINTENDENT ANY SPECIFIC INSTANCES OF DAMAGED STAKES AND/OR MONUMENTS PROVIDED. LOT CORNER IRONS ARE TO BE CONSIDERED AS CONTROL.

   OFTEN TIMES, CURB GRADE STAKES ARE PLACED AT 4.4' OFFSET TO BACK OF CURB AT THE REQUEST OF THE CONTRACTOR. IN MOST INSTANCES, THIS AREA IS LOCATED OVER THE WATERMAIN, SANITARY SEWER,OR STORM SEWER TRENCH, AND NOT SOLID GROUND. CURB GRADE STAKES MAY LOSE THEIR INTEGRITY DUE TO A RAISE EVENT, HEAVY MACHINERY TRAFFIC, AND THE LIKE. THEREFORE, THE CURB CONTRACTOR SHALL CHECK THE CURB GRADE STAKES DURING THE SETTING OF THE STRING LINE AND REPORT ANY IRREGULARITIES TO THE CONSULTANT. THE CURB CONTRACTOR SHALL ALSO VERIFY THAT ALL STAKES FOR CURB DEPRESSIONS (SIDEWALKS, DRIVEWAYS, BIKE PATHS, EMERGENCY ACCESSES, ETC.) ARE IN PLACE PRIOR TO POURING OF ANY CURB.

4. EASEMENTS FOR THE EXISTING UTILITIES, BOTH PUBLIC AND PRIVATE, AND UTILITIES WITHIN PUBLIC RIGHTS-OF-WAY ARE SHOWN ON THE PLANS ACCORDING TO AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION IN THE FIELD OF THESE UTILITY LINES AND THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE CONSULTANT IMMEDIATELY SO THAT THE CONFLICT MAY BE RESOLVED.

5. WHENEVER THE PERFORMANCE OF WORK IS INDICATED ON THE PLANS, AND NO ITEM IS INCLUDED IN THE CONTRACT FOR PAYMENT, THE WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNS, TRAFFIC CONTROL DEVICES, AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC DURING ALL PHASES OF CONSTRUCTION. BARRICADES AND WARNING SIGNS SHALL BE PROVIDED IN ACCORDANCE WITH TITLE I.D.O.T. STANDARD SPECIFICATIONS. ADEQUATE LIGHTING SHALL BE MAINTAINED FROM DUSK TO DAWN AT ALL LOCATIONS WHERE CONSTRUCTION OPERATIONS WARRANT, OR AS DESIGNATED BY THE CONSULTANT, MUNICIPALITY OR GOVERNING AGENCY. ALL TRAFFIC CONTROL WORK SHALL BE DONE IN ACCORDANCE WITH THE I.D.O.T. STANDARD PROCEDURES, AND THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.

7. CONTRACTORS SHALL KEEP PUBLIC STREET PAVEMENTS CLEAN OF DIRT AND DEBRIS AND, WHEN NECESSARY, CLEAN PAVEMENTS ON A DAILY BASIS.

8. PRIOR TO COMMENCEMENT OF UNDERGROUND CONSTRUCTION. THE GRADING CONTRACTOR SHALL OBTAIN FROM THE OWNER AND/OR CONSULTANT VERIFICATION OF ELEVATIONS TO PLUS OR MINUS ONE TENTH OF A FOOT (0.10') OF PROPOSED SUB-GRADE AND APPROVALS OF COMPACTION.

9. DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL ENSURE POSITIVE SITE DRAINAGE AT THE CONCLUSION OF EACH DAY. SITE DRAINAGE MAY BE ACHIEVED BY DITCHING, PUMPING OR ANY OTHER ACCEPTABLE METHOD. THE CONTRACTOR'S FAILURE TO PROVIDE THE ABOVE WILL PRECLUDE ANY POSSIBLE ADDED COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT THEREOF.

10. IT SHALL BE THE RESPONSIBILITY OF EACH RESPECTIVE CONTRACTOR TO REMOVE FROM THE SITE ANY AND ALL MATERIALS AND DEBRIS WHICH RESULT FROM HIS CONSTRUCTION OPERATIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.

11. THE CONSULTANT, MUNICIPALITY AND OWNER ARE NOT RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, TIME OF PERFORMANCE, PROGRAMS OR FOR ANY SAFETY PRECAUTIONS USED BY THE CONTRACTOR, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXECUTION OF HIS WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS.

12. ELECTRIC,TELEPHONE, NATURAL GAS, AND OTHER UTILITY COMPANIES HAVE UNDERGROUND AND/OR OVERHEAD SERVICE FACILITIES IN THE VICINITY OF THE PROPOSED WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE UTILITY COMPANIES LOCATE THEIR FACILITIES IN THE FIELD PRIOR TO CONSTRUCTION AND SHALL ALSO BE RESPONSIBLE FOR THE MAINTENANCE AND PRESERVATION OF THESE FACILITIES. THE CONTRACTOR SHALL CALL J.U.L.I.E AT (800)892-0123 AND THE MUNICIPALITY FOR UTILITY LOCATIONS.

13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR THE RELOCATION OR BRACING OF EXISTING UTILITY POLES THAT MAY BE WITHIN THE WORKING LIMITS OF THE CONTRACT. IT IS EXPRESSLY UNDERSTOOD THAT ALL WORK AND COSTS CONNECTED WITH THESE UTILITY POLES, THEIR TEMPORARY RELOCATIONS, ETC., SHALL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER OR RELEVANT CONTRACTOR.

14. ALL PAVEMENT, CURB AND GUTTER, DRIVEWAYS, SIDEWALKS, TREES, SHRUBS, BUSHES, LAWNS, FENCES, AND ALL OTHER STRUCTURES REQUIRED TO BE REMOVED, SHALL BE REPLACED AND/OR RESTORED AS DIRECTED BY THE OWNER TO ORIGINAL CONDITION. ALL RESTORATION NOT COVERED IN THE CONTRACT QUANTITIES OR SPECIFICATIONS SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.

15. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND FEDERAL SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS OF THE FEDERAL CONSTRUCTION SAFETY STANDARDS (SERIES 1926) AND WITH APPLICABLE PROVISIONS AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)STANDARDS OF THE WILLIAMS STELGER OCCUPATIONAL HEALTH STATE SAFETY ACT OF 1970(REVISED). THE CONTRACTOR, CONSULTANT AND OWNER SHALL EACH BE RESPONSIBLE FOR HIS OWN RESPECTIVE AGENTS AND EMPLOYEES.

16. CHANGES IN THE CONSULTANT'S ENGINEERING PLANS MUST BE APPROVED BY BOTH THE DESIGN CONSULTANT AND THE MUNICIPAL ENGINEER. A WRITTEN REQUEST, ACCOMPANIED BY REVISED ENGINEERED PLANS, IS TO BE SUBMITTED TO BOTH AND APPROVED BY BOTH BEFORE CHANGES ARE STARTED.

III. EARTHWORK

1. WORK UNDER THIS SECTION SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   - A. CLEARING AND REMOVAL OF ALL UNDESIRABLE TREES AND OTHER VEGETATIVE GROWTH WITHIN THE CONSTRUCTION AREA. TREE REMOVAL SHALL BE AS DESIGNATED BY THE OWNER AND SHALL BE KEPT TO A MINIMUM.
   - B. STRIPPING OF TOPSOIL FROM ALL STREET, DRIVEWAY, PARKING LOT, RIGHT-OF-WAY, BUILDING PAD, AND OTHER DESIGNATED STRUCTURAL AREAS.
   - C. STOCKPILING OF TOPSOIL AT LOCATIONS AS DIRECTED BY THE OWNER AND APPROVED BY MUNICIPALITY. TOPSOIL STOCKPILED FOR FUTURE USE SHALL BE RELATIVELY FREE FROM LARGE ROOTS, STICKS, WEEDS, BRUSH, STONES LARGER THAN ONE (1) INCH DIAMETER, OR OTHER LITTER AND WASTE PRODUCTS INCLUDING EXTRANEOUS MATERIALS NOT CONDUCIVE TO PLANT GROWTH.
   - D. REMOVING UNSUITABLE MATERIALS AS SPECIFIED FROM ROADWAY,DRIVEWAY/PARKING, BUILDING PAD AND OTHER DESIGNATED AREAS.
   - E. DEMOLITION AND REMOVAL OF EXISTING BUILDINGS AND/OR PAVEMENTS INCLUDING OFFSITE DISPOSAL OF SAME,AT A DUMP SITE AS SELECTED BY THE CONTRACTOR.
   - F. CLAY CUT AND CLAY FILL WITH COMPACTION WITHIN ROADWAY,DRIVEWAY/PARKING, BUILDING PAD, AND OTHER DESIGNATED AREAS.
   - G. E

REMOVE GATE

REMOVE UTILITY POLE

REMOVE UTILITY POLE

REMOVE GRAVEL DRIVE

REMOVE SATELLITE DISH

SATELLITE DISH

GRAVEL

REMOVE FRAME SHED

FRAME SHED (NO FOUNDATION)

REMOVE METAL TOWER

METAL TOWER

REMOVE METAL POLE BUILDING

FF=849.30

70.3'

40.0'

METAL/CLAD BUILDING

CONCRETE

SILO FOUNDATION

REMOVE SILO FOUNDATION

EXISTING FARMED WETLAND TO BE IMPACTED

EXISTING FARMED WETLAND TO BE IMPACTED

REMOVE UTILITY POLE

REMOVE UTILITY POLE

REMOVE UTILITY POLE

REMOVE UTILITY POLE

REMOVE UTILITY POLE

ROUTE 83

IL

NORTH

SCALE: 1" = 100'

100' 50' 0 100'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

PEARSON,BROWN & ASSOCIATES,INC.

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DRAWN BY: D.S.H.

CHECKED BY: J.F.C.

ORIGINAL ISSUE: 04/11/25

DESCRIPTION	DATE	BY
REVISED PER VILLAGE REVIEW COMMENTS	06/20/25	AKZ

REVISIONS

EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET NUMBER

3

OF 59 SHEETS

JOB No. 2535

WINCHESTER ROAD

WINCHESTER ROAD AND IL. ROUTE 83 RECONSTRUCTION
BY LAKE COUNTY DIVISION OF TRANSPORTATION

WETLAND #2 (IWLC)
50' WETLAND BUFFER

SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. - 834.32 NAVD88

WETLAND #7 (IWLC)

50' WETLAND BUFFER

NORTHWEST BASIN

NORTHEAST BASIN

STREET A

STREET B

STREET C

STREET D

STREET E

STREET F

STREET G

LIFT STATION COMPLEX

PARK SITE

SOUTHWEST (WEST ZONE) BASIN

SOUTHWEST (EAST ZONE) BASIN

SOUTHEAST BASIN

WETLAND #1 (IWLC)

50' WETLAND BUFFER

SEE "IL. ROUTE 83 IMPROVEMENT PLANS"
PREPARED BY:
PEARSON, BROWN AND ASSOCIATES, INC.
FOR WORK WITHIN THE IDOT RIGHT OF WAY

IL. ROUTE 83

SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. - 835.28

NORTH

SCALE: 1" = 100'

100' 50' 0 100'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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REVISIONS

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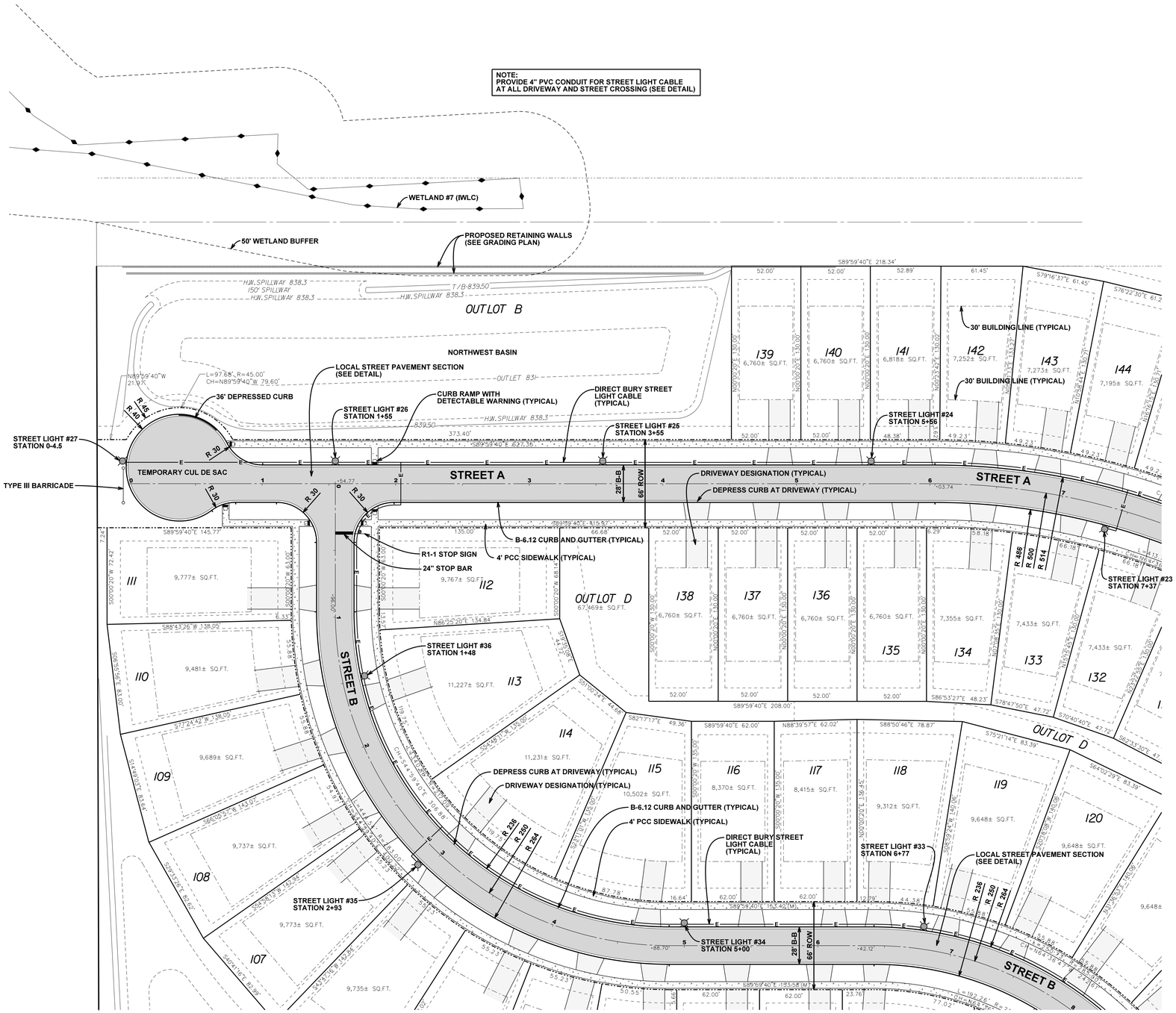
REVISED PER VILLAGE REVIEW COMMENTS	AKZ	06/20/25

OVERALL SITE PLAN

SHEET NUMBER
4
OF 59 SHEETS

JOB No. 2535



NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

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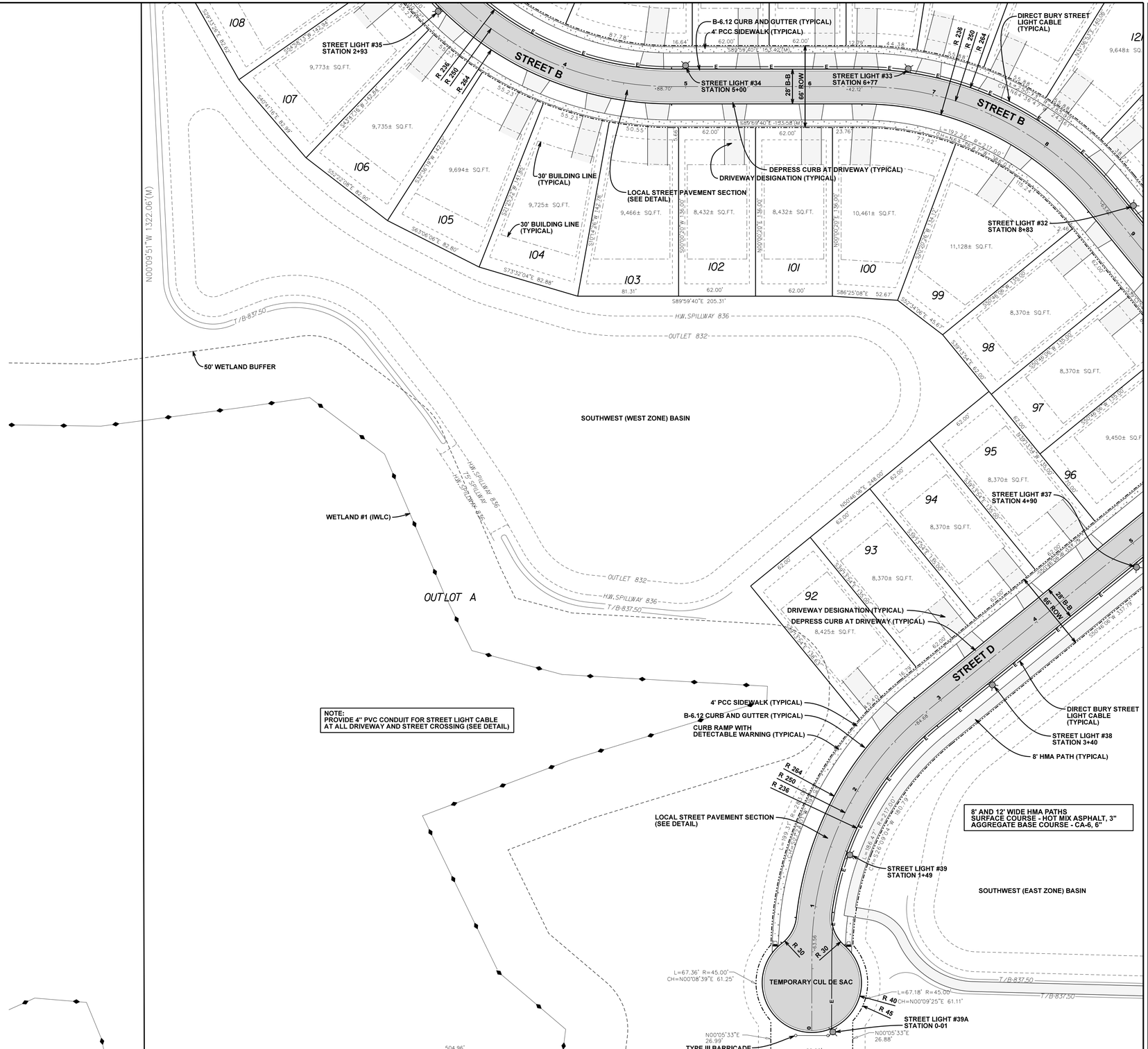
REVISIONS

GEOMETRICS, SIGNAGE, STRIPING AND STREET LIGHTING PLAN - NORTHWEST

SHEET NUMBER 5 OF 59 SHEETS

JOB No. 2535



WALNUT RIDGE

MUNDELEIN, ILLINOIS

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GEOMETRICS, SIGNAGE, STRIPING AND STREET LIGHTING PLAN - SOUTHWEST

SHEET NUMBER
6
OF 59 SHEETS

JOB No. 2535

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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REVISIONS

GEOMETRICS, SIGNAGE, STRIPING AND STREET LIGHTING PLAN - NORTH CENTRAL

SHEET NUMBER 7 OF 59 SHEETS

JOB No. 2535

NOTE:
PROVIDE 4" PVC CONDUIT FOR STREET LIGHT CABLE AT ALL DRIVEWAY AND STREET CROSSING (SEE DETAIL)

8' AND 12' WIDE HMA PATHS
SURFACE COURSE - HOT MIX ASPHALT, 3"
AGGREGATE BASE COURSE - CA-6, 6"

NORTHEAST BASIN

OUTLOT B

OUTLOT C

OUTLOT D

STREET A

STREET B

STREET C

30' BUILDING LINE (TYPICAL)

STREET LIGHT #23 STATION 7+37

STREET LIGHT #22 STATION 9+33

STREET LIGHT #21 STATION 11+23

STREET LIGHT #11 STATION 1+75

STREET LIGHT #9 STATION 4+75

STREET LIGHT #8 STATION 6+24

STREET LIGHT #7 STATION 8+15

STREET LIGHT #10 STATION 3+50

DIRECT BURY STREET LIGHT CABLE (TYPICAL)

DRIVEWAY DESIGNATION (TYPICAL)

DEPRESS CURB AT DRIVEWAY (TYPICAL)

4' PCC SIDEWALK (TYPICAL)

B-6.12 CURB AND GUTTER (TYPICAL)

12' HMA PATH (TYPICAL)

8' HMA PATH (TYPICAL)

CONTROLLER

R1-1 STOP SIGN

24" STOP BAR

LOCAL STREET PAVEMENT SECTION (SEE DETAIL)

LIFT STATION COMPLEX

CURB RAMP WITH DETECTABLE WARNING (TYPICAL)

66' ROW

28' B-B

T/B 841.00

H.W. SPILLWAY 839.50

OUTLET 833

NOTE:
PROVIDE 4" PVC CONDUIT FOR STREET LIGHT CABLE AT ALL DRIVEWAY AND STREET CROSSING (SEE DETAIL)

R1-1 STOP SIGN
24" STOP BAR
LOCAL STREET PAVEMENT SECTION (SEE DETAIL)
8' HMA PATH (TYPICAL)
CURB RAMP WITH DETECTABLE WARNING (TYPICAL)
LOCAL STREET PAVEMENT SECTION (SEE DETAIL)
30' DEPRESSED CURB
STREET LIGHT #20 STATION 13+27
DIRECT BURY STREET LIGHT CABLE (TYPICAL)
STREET LIGHT #19 STATION 14+88
STREET LIGHT #18 STATION 16+80
STREET LIGHT #16A STATION 3+66
STREET LIGHT #16 STATION 2+06
STREET LIGHT #17 STATION 18+00
STREET LIGHT #14 STATION 20+50
STREET LIGHT #15 STATION 19+45
STREET LIGHT #32 STATION 8+83
STREET LIGHT #31 STATION 10+88
CURB RAMP WITH DETECTABLE WARNING (TYPICAL)
W14-2 "NO OUTLET" SIGN
4' PCC SIDEWALK (TYPICAL)
STREET LIGHT #37 STATION 4+90
R1-1 STOP SIGN
24" STOP BAR
STREET LIGHT #30 STATION 12+75
DRIVEWAY DESIGNATION (TYPICAL)
DEPRESS CURB AT DRIVEWAY (TYPICAL)
B-6.12 CURB AND GUTTER (TYPICAL)
4' PCC SIDEWALK (TYPICAL)
STREET LIGHT #29 STATION 14+75
STREET LIGHT #28 STATION 16+50
R1-1 STOP SIGN
24" STOP BAR
30' BUILDING LINE (TYPICAL)
DIRECT BURY STREET LIGHT CABLE (TYPICAL)
STREET LIGHT #38 STATION 3+40
8' HMA PATH (TYPICAL)
30' BUILDING LINE (TYPICAL)
8' HMA PATH (TYPICAL)

OUTLOT D PARK
OUTLOT E
SOUTHWEST (EAST ZONE) BASIN
SOUTHEAST BASIN

8' AND 12' WIDE HMA PATHS
SURFACE COURSE - HOT MIX ASPHALT, 3"
AGGREGATE BASE COURSE - CA-6, 6"

H.W. SPILLWAY 836
OUTLET 832
T/B 837.50
75' SPILLWAY

S89°59'47"W 2179.49'(M)

NORTH
SCALE: 1" = 40'

WALNUT RIDGE
MUNDELEIN, ILLINOIS

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ORIGINAL ISSUE: 04/11/25

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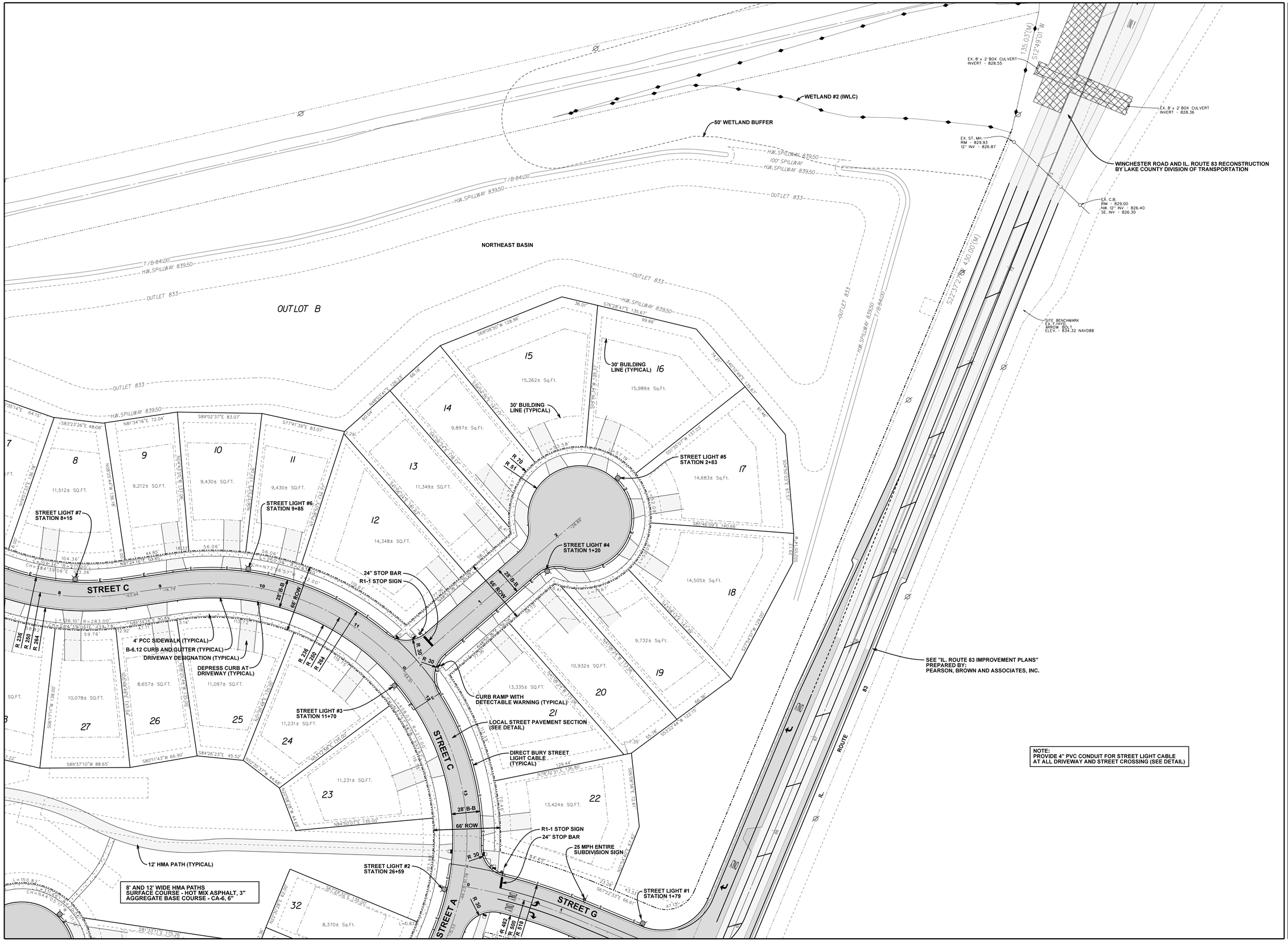
GEOMETRICS, SIGNAGE, STRIPING AND STREET LIGHTING PLAN - SOUTH CENTRAL

SHEET NUMBER 8
OF 59 SHEETS
JOB No. 2535



NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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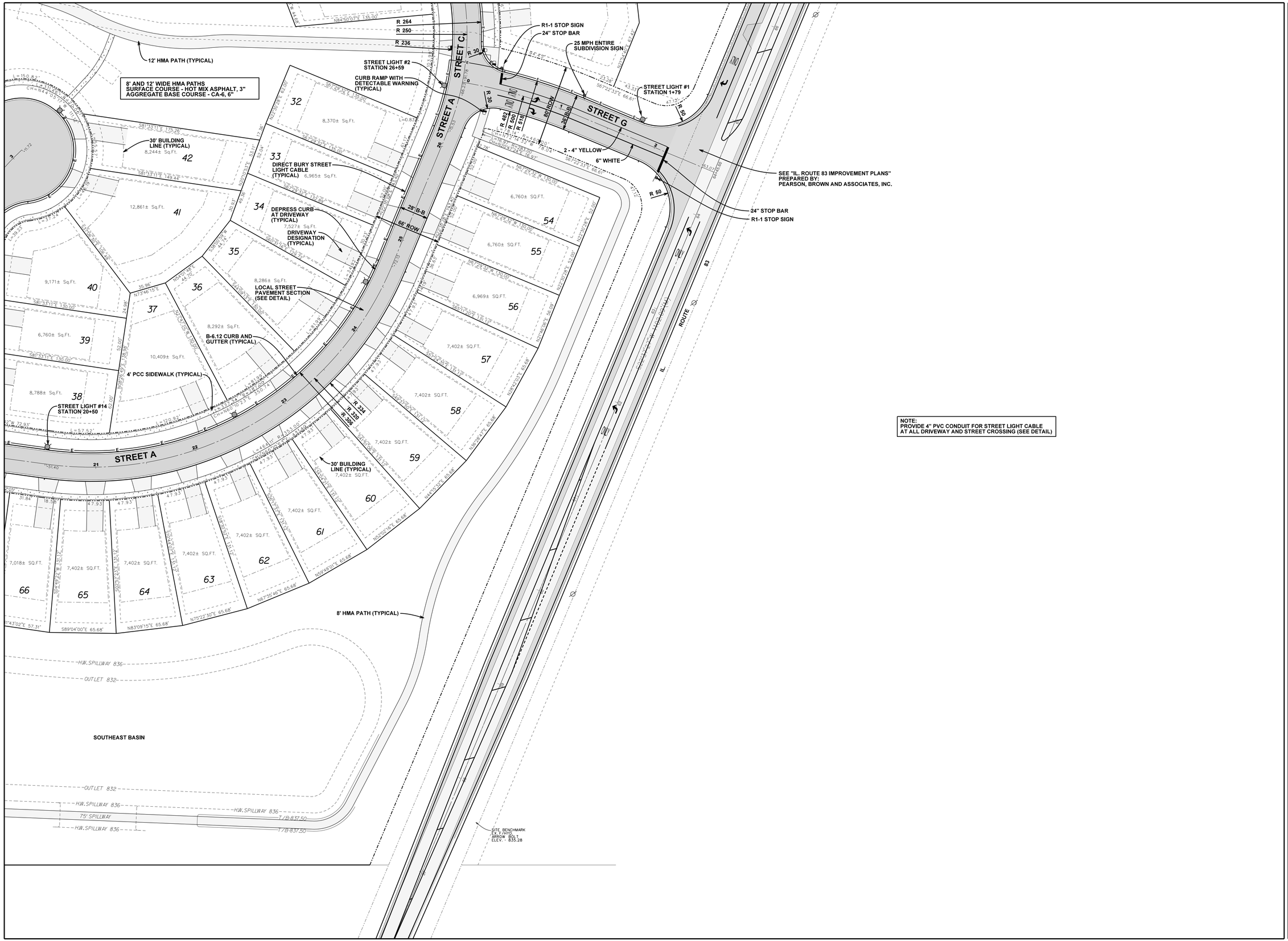
GEOMETRICS, SIGNAGE, STRIPING AND STREET LIGHTING PLAN - NORTHEAST

SHEET NUMBER
9
OF 59 SHEETS

JOB No. 2535



NOTE:
PROVIDE 4" PVC CONDUIT FOR STREET LIGHT CABLE
AT ALL DRIVEWAY AND STREET CROSSING (SEE DETAIL)

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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GEOMETRICS, SIGNAGE, STRIPING AND STREET LIGHTING PLAN - SOUTHEAST

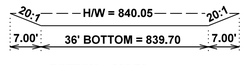
SHEET NUMBER
10
OF 59 SHEETS

JOB No. 2535

GENERAL NOTES:

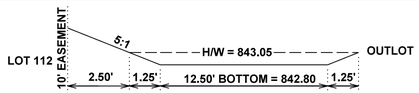
1. NO SLOPES ONSITE SHALL EXCEED 4:1.
   SEE PLANS FOR PROPOSED CONTOURS IN 4:1 SLOPE AREAS
2. ALL ONSITE SWALES SHALL HAVE A 2' MINIMUM BOTTOM.
   SEE OVERLAND FLOW SECTIONS FOR VARIED SWALE BOTTOM WIDTHS.

ALONG ROW



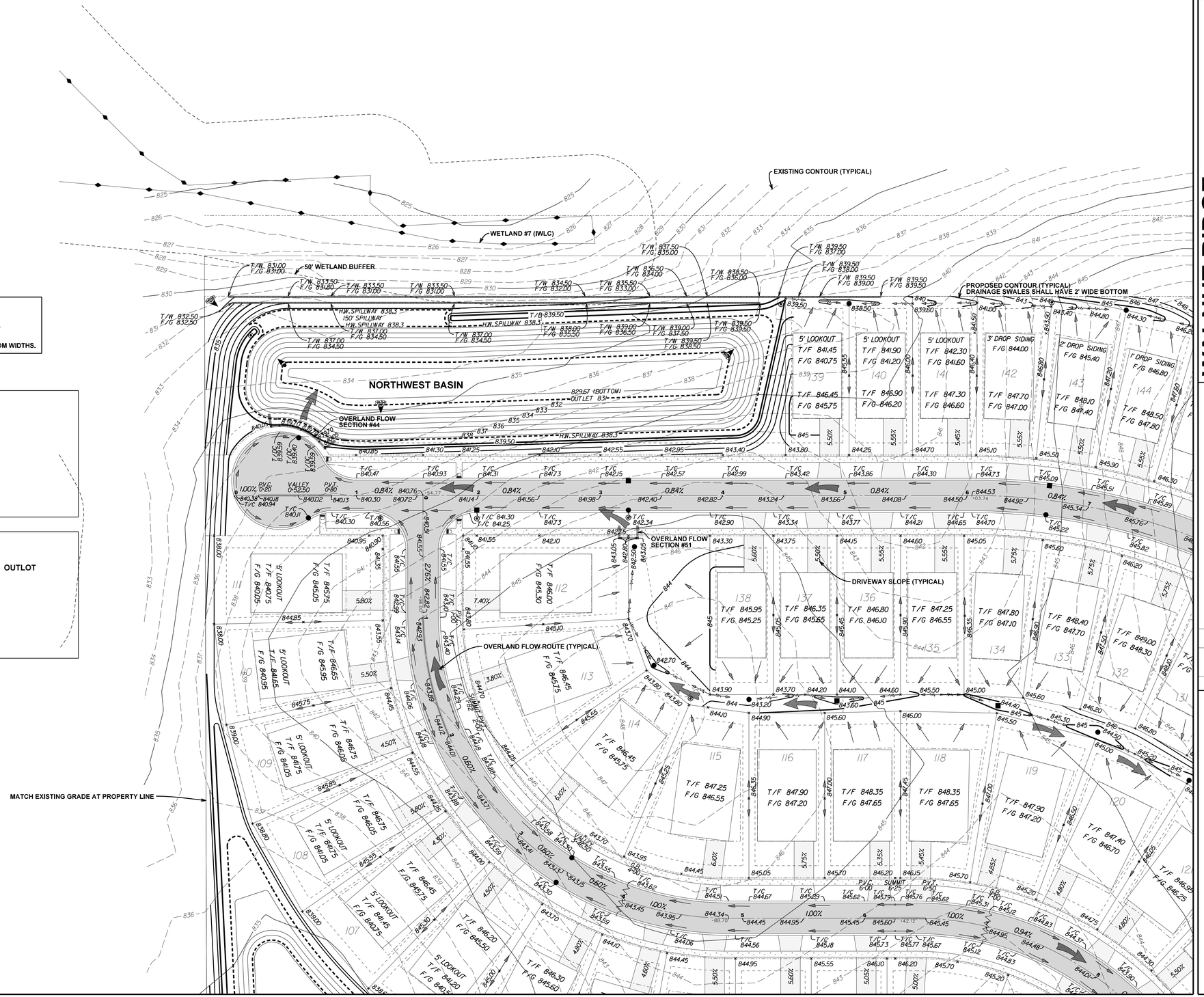
BOTTOM = 839.70
HIGH WATER = 840.05
LOW FINISHED GRADE = N/A
FREEBOARD = N/A

OVERLAND FLOW SECTION #44



BOTTOM = 842.80
HIGH WATER = 843.05
LOW FINISHED GRADE = 845.25
FREEBOARD = 2.20 FEET

OVERLAND FLOW SECTION #51



NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

GRADING PLAN - NORTHWEST

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DESCRIPTION	DATE	BY
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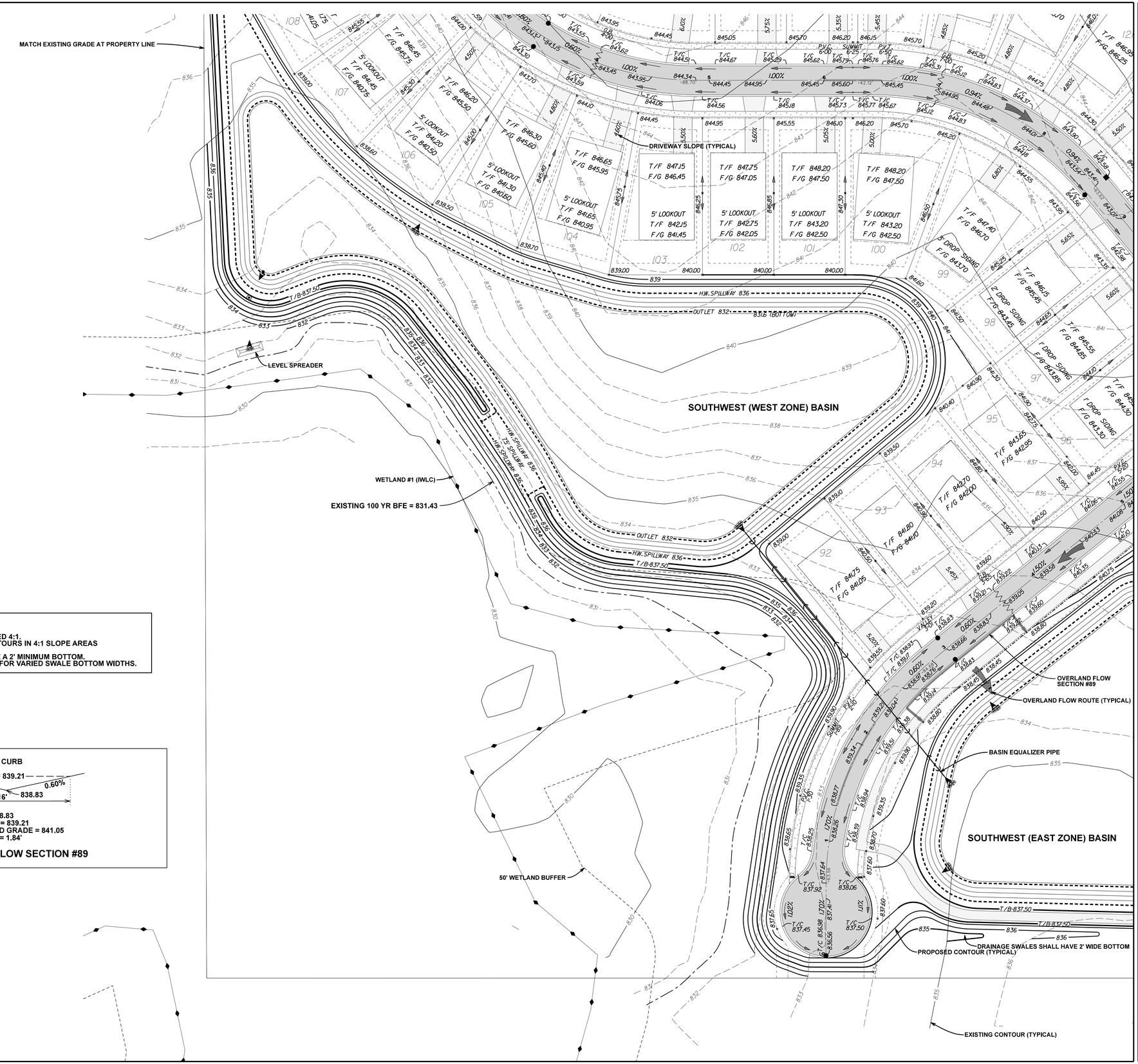
REVISIONS

SHEET NUMBER 11 OF 59 SHEETS

JOB No. 2535



GENERAL NOTES:

1. NO SLOPES ONSITE SHALL EXCEED 4:1.
   SEE PLANS FOR PROPOSED CONTOURS IN 4:1 SLOPE AREAS
2. ALL ONSITE SWALES SHALL HAVE A 2' MINIMUM BOTTOM.
   SEE OVERLAND FLOW SECTIONS FOR VARIED SWALE BOTTOM WIDTHS.

ALONG CURB

H/W = 839.21 — 0.60% — 838.83 — 0.60% — 126.16'

BOTTOM = 838.83
HIGH WATER = 839.21
LOW FINISHED GRADE = 841.05
FREEBOARD = 1.84'

OVERLAND FLOW SECTION #89

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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MUNDELEIN, ILLINOIS

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REVISIONS

GRADING PLAN - SOUTHWEST

SHEET NUMBER
12
OF 59 SHEETS

JOB No. 2535

GENERAL NOTES:

1. NO SLOPES ONSITE SHALL EXCEED 4:1.
   SEE PLANS FOR PROPOSED CONTOURS IN 4:1 SLOPE AREAS
2. ALL ONSITE SWALES SHALL HAVE A 2' MINIMUM BOTTOM.
   SEE OVERLAND FLOW SECTIONS FOR VARIED SWALE BOTTOM WIDTHS.

EXISTING CONTOUR (TYPICAL)

PROPOSED CONTOUR (TYPICAL)

DRAINAGE SWALE SHALL HAVE 2' WIDE BOTTOM

DRAINAGE SWALE SHALL HAVE 2' WIDE BOTTOM

MATCH EXISTING GRADE AT PROPERTY LINE

NORTHEAST BASIN

DRIVEWAY SLOPE (TYPICAL)

OVERLAND FLOW ROUTE (TYPICAL)

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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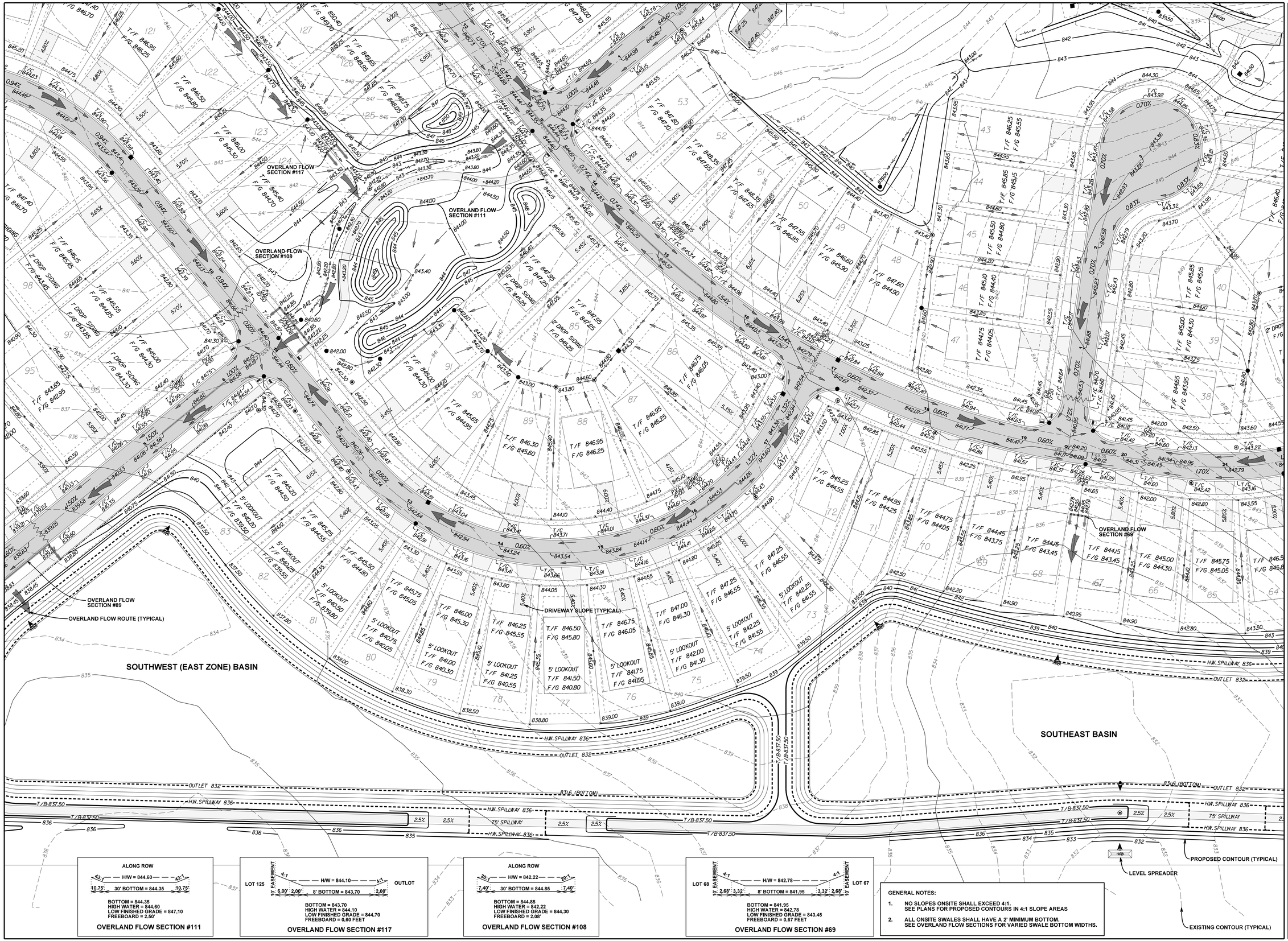
GRADING PLAN - NORTH CENTRAL

SHEET NUMBER
13
OF 59 SHEETS

JOB No. 2535



GENERAL NOTES:

1. NO SLOPES ONSITE SHALL EXCEED 4:1. SEE PLANS FOR PROPOSED CONTOURS IN 4:1 SLOPE AREAS
2. ALL ONSITE SWALES SHALL HAVE A 2' MINIMUM BOTTOM. SEE OVERLAND FLOW SECTIONS FOR VARIED SWALE BOTTOM WIDTHS.

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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GRADING PLAN - SOUTH CENTRAL

SHEET NUMBER
14
OF 59 SHEETS

JOB No. 2535

EXISTING CONTOUR (TYPICAL)

MATCH EXISTING GRADE AT PROPERTY LINE

PROPOSED CONTOUR (TYPICAL)

50' WETLAND BUFFER

WETLAND #2 (IWLC)

LEVEL SPREADER

NORTHEAST BASIN

EX. 8' x 2' BOX CULVERT
INVERT - 828.55

EX. 8' x 2' BOX CULVERT
INVERT - 828.36

EX. ST. MH.
RIM - 829.93
12" INV - 826.87

EX. C.B.
RIM - 829.00
NW. 12" INV - 826.40
SE. INV - 826.30

SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. - 834.32 NAVD88

OVERLAND FLOW ROUTE (TYPICAL)

OVERLAND FLOW SECTION #9

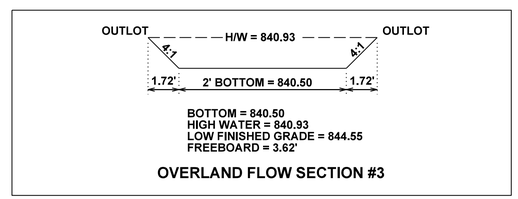
DRIVEWAY SLOPE (TYPICAL)

OVERLAND FLOW SECTION #3

DRAINAGE SWALES SHALL HAVE 2' WIDE BOTTOM

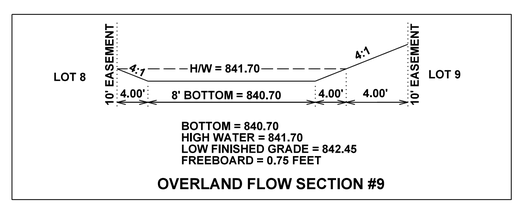
GENERAL NOTES:

1. NO SLOPES ONSITE SHALL EXCEED 4:1. SEE PLANS FOR PROPOSED CONTOURS IN 4:1 SLOPE AREAS
2. ALL ONSITE SWALES SHALL HAVE A 2' MINIMUM BOTTOM. SEE OVERLAND FLOW SECTIONS FOR VARIED SWALE BOTTOM WIDTHS.



BOTTOM = 840.50
HIGH WATER = 840.93
LOW FINISHED GRADE = 844.55
FREEBOARD = 3.62'

OVERLAND FLOW SECTION #3



BOTTOM = 840.70
HIGH WATER = 841.70
LOW FINISHED GRADE = 842.45
FREEBOARD = 0.75 FEET

OVERLAND FLOW SECTION #9

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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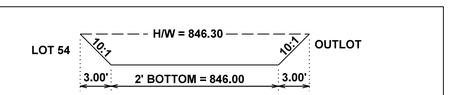
GRADING PLAN - NORTHEAST

SHEET NUMBER
15
OF 59 SHEETS

JOB No. 2535

GENERAL NOTES:

1. NO SLOPES ONSITE SHALL EXCEED 4:1.
   SEE PLANS FOR PROPOSED CONTOURS IN 4:1 SLOPE AREAS
2. ALL ONSITE SWALES SHALL HAVE A 2' MINIMUM BOTTOM.
   SEE OVERLAND FLOW SECTIONS FOR VARIED SWALE BOTTOM WIDTHS.



BOTTOM = 846.00
HIGH WATER = 846.30
LOW FINISHED GRADE = 847.50
FREEBOARD = 1.20'

OVERLAND FLOW SECTION #23

DRAINAGE SWALES SHALL HAVE 2' WIDE BOTTOM

DRIVEWAY SLOPE (TYPICAL)

OVERLAND FLOW ROUTE (TYPICAL)

OVERLAND FLOW SECTION #9

DRAINAGE SWALES SHALL HAVE 2' WIDE BOTTOM

PROPOSED CONTOUR (TYPICAL)

EXISTING CONTOUR (TYPICAL)

SOUTHEAST BASIN

SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. - 835.28

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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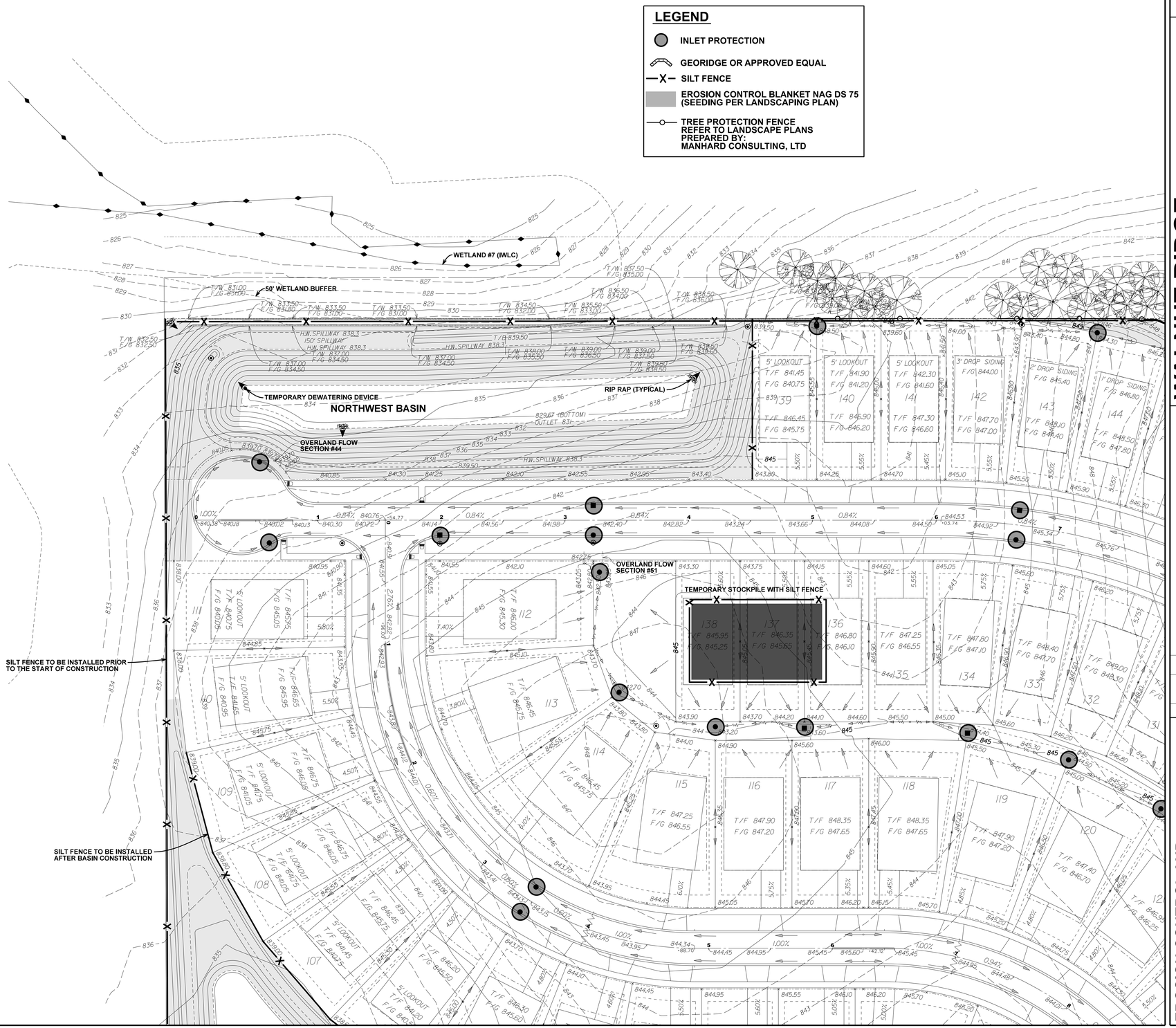
GRADING PLAN - SOUTHEAST

SHEET NUMBER
16
OF 59 SHEETS

JOB No. 2535



NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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REVISIONS

DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

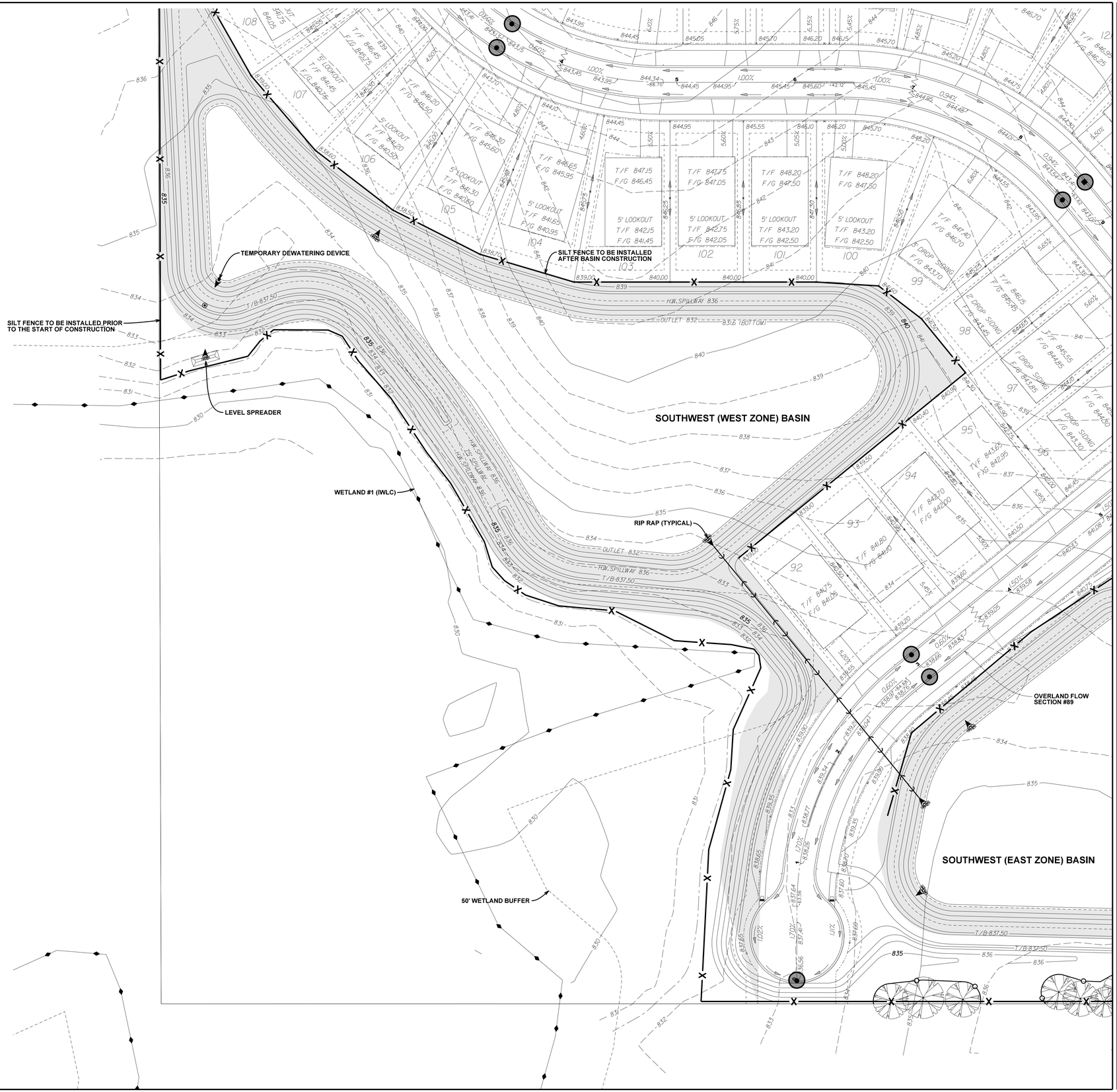
EROSION CONTROL AND TREE PROTECTION PLAN - NORTHWEST

SHEET NUMBER 17 OF 59 SHEETS

JOB No. 2535

LEGEND

- INLET PROTECTION
- GEORIDGE OR APPROVED EQUAL
- SILT FENCE
- EROSION CONTROL BLANKET NAG DS 75 (SEEDING PER LANDSCAPING PLAN)
- TREE PROTECTION FENCE
  REFER TO LANDSCAPE PLANS
  PREPARED BY:
  MANHARD CONSULTING, LTD



NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

PEARSON, BROWN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1850 W. WINCHESTER ROAD - SUITE 205
LIBERTYVILLE, IL. 60048
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DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

EROSION CONTROL AND TREE PROTECTION PLAN - SOUTHWEST

SHEET NUMBER
18
OF 59 SHEETS

JOB No. 2535

LEGEND

- INLET PROTECTION
- GEORIDGE OR APPROVED EQUAL
- SILT FENCE
- EROSION CONTROL BLANKET NAG DS 75 (SEEDING PER LANDSCAPING PLAN)
- TREE PROTECTION FENCE
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SILT FENCE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION

TEMPORARY STOCKPILE WITH SILT FENCE

NORTHEAST BASIN

RIP RAP (TYPICAL)

SILT FENCE TO BE INSTALLED AFTER BASIN CONSTRUCTION

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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EROSION CONTROL AND TREE PROTECTION PLAN - NORTH CENTRAL

SHEET NUMBER
19
OF 59 SHEETS

JOB No. 2535

OVERLAND FLOW SECTION #117

OVERLAND FLOW SECTION #111

OVERLAND FLOW SECTION #108

OVERLAND FLOW SECTION #89

OVERLAND FLOW SECTION #69

SILT FENCE TO BE INSTALLED AFTER BASIN CONSTRUCTION

RIP RAP (TYPICAL)

TEMPORARY STOCKPILE WITH SILT FENCE

SOUTHWEST (EAST ZONE) BASIN

SOUTHEAST BASIN

TEMPORARY DEWATERING DEVICE

LEVEL SPREADER

SILT FENCE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION

LEGEND

- INLET PROTECTION
- GEORIDGE OR APPROVED EQUAL
- SILT FENCE
- EROSION CONTROL BLANKET NAG DS 75 (SEEDING PER LANDSCAPING PLAN)
- TREE PROTECTION FENCE REFER TO LANDSCAPE PLANS PREPARED BY: MANHARD CONSULTING, LTD

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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EROSION CONTROL AND TREE PROTECTION PLAN - SOUTH CENTRAL

SHEET NUMBER 20 OF 59 SHEETS

JOB No. 2535

NORTHEAST BASIN

LEVEL SPREADER

SILT FENCE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION

50' WETLAND BUFFER

WETLAND #2 (IWLC)

TEMPORARY DEWATERING DEVICE

HW SPILLWAY 839.50
100' SPILLWAY
HW SPILLWAY 839.50
T/B 841.00
OUTLET 833
832.5 (BOTTOM)

RIP RAP (TYPICAL)

SILT FENCE TO BE INSTALLED AFTER BASIN CONSTRUCTION

OVERLAND FLOW SECTION #9

OVERLAND FLOW SECTION #3

EX. 8' x 2' BOX CULVERT
INVERT - 828.55

EX. 8' x 2' BOX CULVERT
INVERT - 828.36

EX. ST. MH.
RIM - 829.93
12" INV - 826.87

EX. C.B.
RIM - 829.00
NW. 12" INV - 826.40
SE. INV - 826.30

SITE BENCHMARK
EX. FAYD.
ARROW BOLT
ELEV. - 834.32 NAVD88

LEGEND

- INLET PROTECTION
- GEORIDGE OR APPROVED EQUAL
- SILT FENCE
- EROSION CONTROL BLANKET NAG DS 75 (SEEDING PER LANDSCAPING PLAN)
- TREE PROTECTION FENCE REFER TO LANDSCAPE PLANS PREPARED BY: MANHARD CONSULTING, LTD

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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EROSION CONTROL AND TREE PROTECTION PLAN - NORTHEAST

SHEET NUMBER 21 OF 59 SHEETS

JOB No. 2535

CONCRETE WASHOUT FINAL LOCATION TO BE DETERMINED IN THE FIELD BY THE OWNER

OVERLAND FLOW SECTION #9

CONSTRUCTION ACCESS

SILT FENCE TO BE INSTALLED AFTER BASIN CONSTRUCTION

RIP RAP (TYPICAL)

SOUTHEAST BASIN

SILT FENCE TO BE INSTALLED PRIOR TO THE START OF CONSTRUCTION

SITE BENCHMARK
EX. F/HYD.
ARROW BOLT
ELEV. = 835.28

LEGEND

- INLET PROTECTION
- GEORIDGE OR APPROVED EQUAL
- SILT FENCE
- EROSION CONTROL BLANKET NAG DS 75 (SEEDING PER LANDSCAPING PLAN)
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NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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EROSION CONTROL AND TREE PROTECTION PLAN - SOUTHEAST

SHEET NUMBER 22 OF 59 SHEETS

JOB No. 2535

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION
SOIL EROSION AND SEDIMENT CONTROL CONSTRUCTION NOTES

A. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.

B. FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
- UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS), PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
- AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

C. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

D. A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-1 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

E. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.

F. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.

G. ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.

H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURESAS APPROVED BY THE ENFORCEMENT OFFICER.

I. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.

J. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.

K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.

M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.

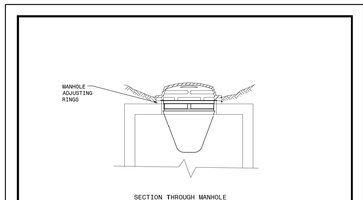
N. ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

O. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.

TYPICAL CONSTRUCTION SEQUENCING

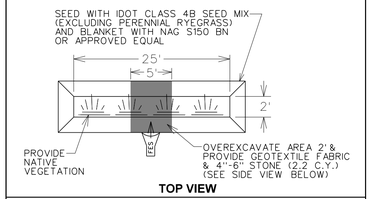
1. **INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL SE/SC MEASURES**
   - **A. SELECTIVE VEGETATION REMOVAL FOR SILT FENCE INSTALLATION**
   - **B. SILT / CONSTRUCTION FENCE INSTALLATION**
   - **C. CONSTRUCTION FENCING AROUND AREAS NOT TO BE DISTURBED**
   - **D. STABILIZED CONSTRUCTION ENTRANCE**
2. **TREE REMOVAL WHERE NECESSARY (CLEAR & GRUB)**
3. **CONSTRUCT WATER QUALITY / RVR / SEDIMENT COLLECTION BASIN**
4. **STRIP TOPSOIL, STOCKPILE TOPSOIL AND GRADE SITE**
5. **TEMPORARILY STABILIZE TOPSOIL STOCKPILES (SEED AND SILT FENCE AROUND TOE OF SLOPE)**
6. **INSTALL STORM SEWER, SANITARY SEWER, WATER AND ASSOCIATED INLET & OUTLET PROTECTION**
7. **PERMANENTLY STABILIZE UPPER ZONES OF THE WATER QUALITY / RVR BASIN WITH SEED AND EROSION CONTROL BLANKET PER LANDSCAPE PLANS LOWER ZONE TO REMAIN OVER-EXCAVATED FOR SEDIMENT COLLECTION UNTIL CONTRIBUTING DRAINAGE AREAS ARE STABILIZED.**
8. **TEMPORARILY STABILIZE ALL AREAS INCLUDING LOTS THAT HAVE REACHED TEMPORARY GRADE**
9. **INSTALL ROADWAYS**
10. **PERMANENTLY STABILIZE ALL OUTLOT AREAS**
11. **INSTALL STRUCTURES AND GRADE INDIVIDUAL LOTS**
12. **PERMANENTLY STABILIZE LOTS**
13. **COMPLETE FINAL GRADING AND SEEEDING/PLANTING OF WATER QUALITY / RVR BASIN.**
14. **REMOVE ALL TEMPORARY SE/SC MEASURES AFTER THE SITE IS STABILIZED WITH VEGETATION**

* **SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE MUST OCCUR WEEKLY AND AFTER EVERY ONE-HALF INCH (1/2") OR GREATER RAINFALL EVENT**

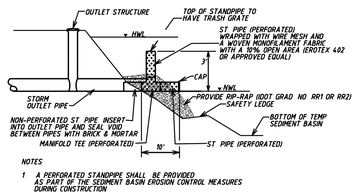


VILLAGE OF Mundelein — VILLAGE OF MUNDELEIN ENGINEERING DETAILS

TEMPORARY SILTATION BASKET INSTALLATION BETWEEN INLET FRAME AND GRATE — DETAIL NO. ST-5

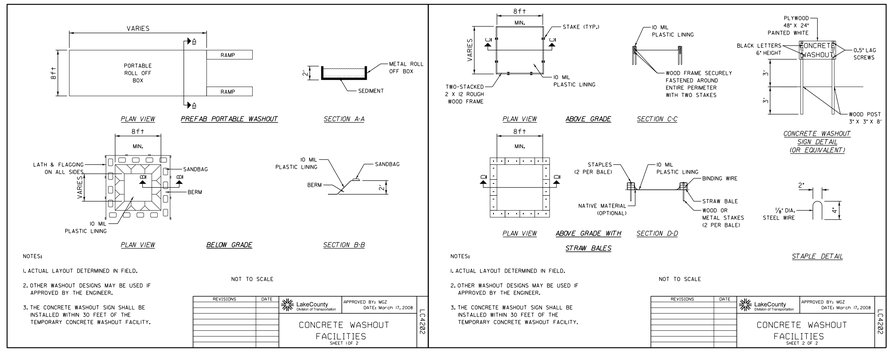


LEVEL SPREADER DETAIL

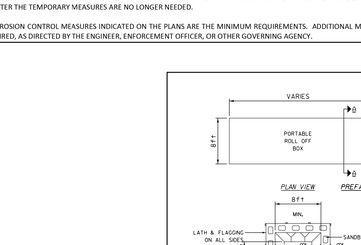


NOTES
1. A PERFORATED STANDPIPE SHALL BE PROVIDED AS PART OF THE SEDIMENT BASIN EROSION CONTROL MEASURES DURING CONSTRUCTION
2. STORM PIPE AND TEE TO BE EITHER PERFORATED CORRUGATED DUAL WALL HDPE PIPE WITH A SMOOTH INTERIOR (ASTM F-667) OR SINGLE WALL HDPE PIPE (ASTM F-667)
3. PIPE DIAMETER TO BE ONE SIZE SMALLER THAN STORM OUTLET PIPE WITH MAXIMUM SIZE OF 36-INCH
4. 12 HOLES PER CORRUGATION (MIN.) HOLES TO BE 3/4-INCH DIAMETER (MIN.)
5. A WOVEN MONOFILAMENT FABRIC WITH A 10% OPEN AREA (EROTEX 402 OR APPROVED EQUAL) SHALL BE WRAPPED OVER THE WIRE MESH AND FASTENED TO THE PERFORATED STANDPIPE WITH STRAPPING OR CONNECTING BANDS
6. WHEN THE SEDIMENT BASIN IS NO LONGER REQUIRED FOR SEDIMENT CONTROL, THE ENTIRE STANDPIPE ASSEMBLY SHALL BE REMOVED
7. FABRIC TO BE CHECKED WEEKLY FOR CLOGGING (CLEAN OR REPLACE AS NEEDED)

TEMPORARY SEDIMENT DEWATERING DEVICE



STABILIZED CONSTRUCTION ENTRANCE DETAIL

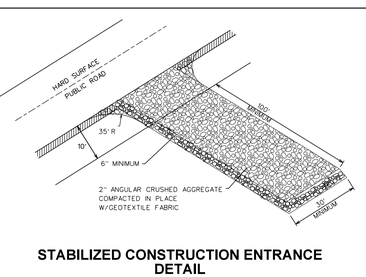


SILT FENCE DETAIL

DATE: 4/21/08 BY: KAW
REVISED: BY:

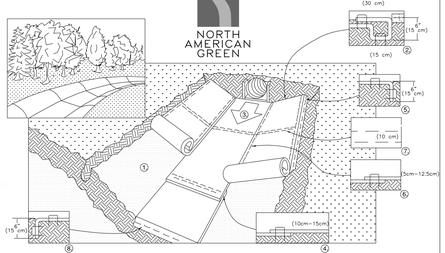
NOTE:
SILT FENCE SPACING AND MATERIAL SPECIFICATIONS SHALL BE IN ACCORDANCE WITH AASHTO M288

Lake County — STORMWATER MANAGEMENT COMMISSION

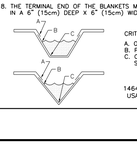


CHANNEL INSTALLATION S75BN

NORTH AMERICAN GREEN



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-5" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5cm-12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH™ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. CONCENTRATED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

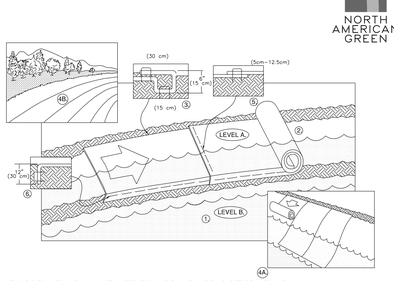
NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
www.nagreen.com

SHORELINE INSTALLATION SC150BN

NORTH AMERICAN GREEN



1. FOR EASIER INSTALLATION, LOWER WATER FROM LEVEL A TO LEVEL B BEFORE INSTALLATION.
2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED NOTE: WHEN USING CELL-O-SEED, DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
3. BEGIN AT THE TOP OF THE SHORELINE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
4. ROLL BLANKETS EITHER (A.) DOWN THE SHORELINE FOR LONG BANKS, (TOP TO BOTTOM) OR (B.) HORIZONTALLY ACROSS THE SHORELINE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
5. THE EDGES OF ALL HORIZONTAL AND VERTICAL BLANKET SEAMS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP. TO ENSURE PROPER SEAM ALIGNMENT BETWEEN ADJACENT BLANKETS, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH™ON THE PREVIOUSLY INSTALLED BLANKET. SECURE ALL OVERLAPS WITH STAPLES SPACED 12" (30cm) APART.

NOTE:
* SEAM OVERLAP SHOULD BE SHINGLED ACCORDING TO PREDOMINANT EROSIVE ACTION.

6. THE EDGE OF THE BLANKET AT OR BELOW NORMAL WATER LEVEL MUST BE ANCHORED BY PLACING THE BLANKET IN A 12" (30cm) DEEP X 6" (15cm) WIDE ANCHOR TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART IN THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING (STONE OR SOIL MAY BE USED AS BACKFILL.)

NOTE:
* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

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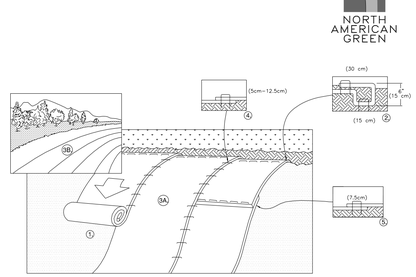
SLOPE INSTALLATION S75BN

NORTH AMERICAN GREEN



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH™ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

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STAPLE PATTERN GUIDE

NOTE:
USE STAPLE PATTERN E

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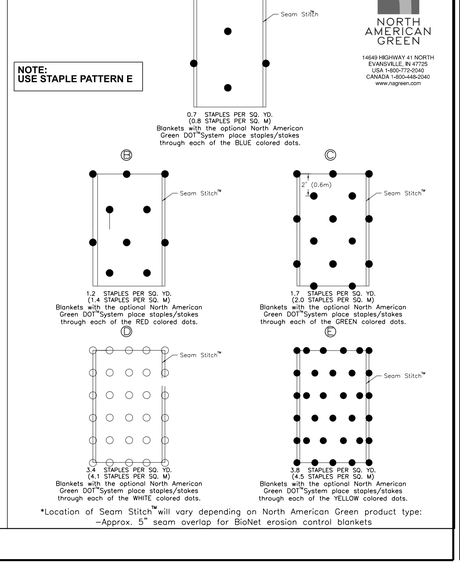

*Location of Seam Stitch™ will vary depending on North American Green product type: –Approx. 5" seam overlap for BioNet erosion control blankets

ORANGE CONSTRUCTION FENCE (AND TREE PROTECTION AT OWNERS DIRECTION)

INSTALLATION INSTRUCTIONS

GEORIDGE

Select an erosion control blanket (ECB) grade based on the channel geometry and flow conditions. Follow manufacturer's recommended installation procedures.

Refer to the diagram for steps 1-4.

Step 1: A section of ECB shall be placed across the flowline direction of the channel prior to the installation of the GeoRidge®. The ECB section must span the entire width of the channel, while the width of the blanket must be at least one roll width or no less than 1.22m (4 ft.).

Step 2: The upstream edge of the ECB must be secured in a 100mm (4") trench. Secure the blanket to the trench using 150mm or 6 inch minimum staples placed at 500mm (1.67 ft.) intervals along the edge. Backfill and re-compact the soil in the upstream edge trench.

Step 3: Secure the downstream edge of the blanket with 150mm or 6 inch minimum staples placed at 300mm (1 ft.) intervals along the edge.

Step 4: Place the GeoRidge® berm in the middle of the ECB and anchor with 10 inch spiral spikes. Anchor spacing depends on soil condition and density. Minimum recommendation is 3 anchors on the upstream side and 2 anchors on the downstream side. The anchors will prevent water from going around or under the GeoRidge®. (See figure 3.)

NOTE: If multiple GeoRidge® panels are required to span a channel, ensure that the anchor holes line-up when you overlap each panel. (See figure 2.)

SPACING: When positioning GeoRidge® panels in a channel, the gradient plays a key role in the distance between panels as follows:

GRADIENT	SPACING
1%	23.0 m
2%	11.5 m
3%	7.7 m
4%	5.8 m
5%	4.6 m
6%	3.8 m
7%	3.3 m
8%	2.9 m
9%	2.6 m
10%	2.3 m

Spacing is based on calculating the height of GeoRidge® divided by the gradient.

Example: On a 2% gradient... 0.230 m (height of GeoRidge®) / 0.02 Gradient = 11.5 m spacing.

nilex.com
1-800-667-4811
NILEX

PERMEABLE PLASTIC DITCH CHECK

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WALNUT RIDGE

DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

DATE	BY	DESCRIPTION
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REVISIONS

EROSION CONTROL NOTES AND DETAILS

SHEET NUMBER 23 OF 59 SHEETS

JOB No. 2535

FORCE MAIN

LIFT STATION COMPLEX

ROUTE 83

IL. ROUTE 1

LEGEND

SYMBOL	INDICATES
00	PROPOSED SANITARY STRUCTURE NUMBER
00	PROPOSED STORM STRUCTURE NUMBER
00	PROPOSED WATER STRUCTURE NUMBER

NORTH

SCALE: 1" = 100'

WALNUT RIDGE

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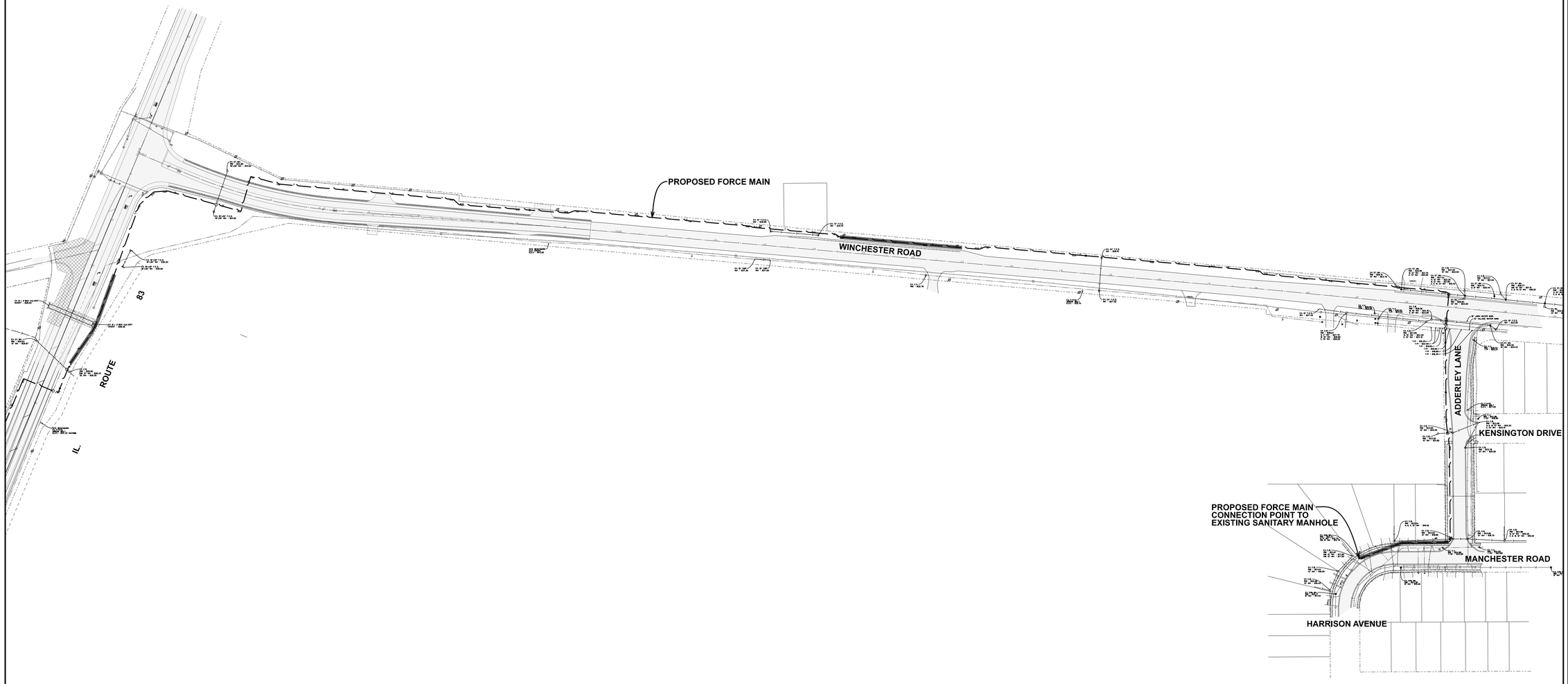
GENERAL UTILITY PLAN

SHEET NUMBER

24

OF 59 SHEETS

JOB No. 2535



NORTH

SCALE: 1" = 100'

100' 50' 0 100'

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OFF SITE FORCE MAIN PLAN

SHEET NUMBER

25

OF 59 SHEETS

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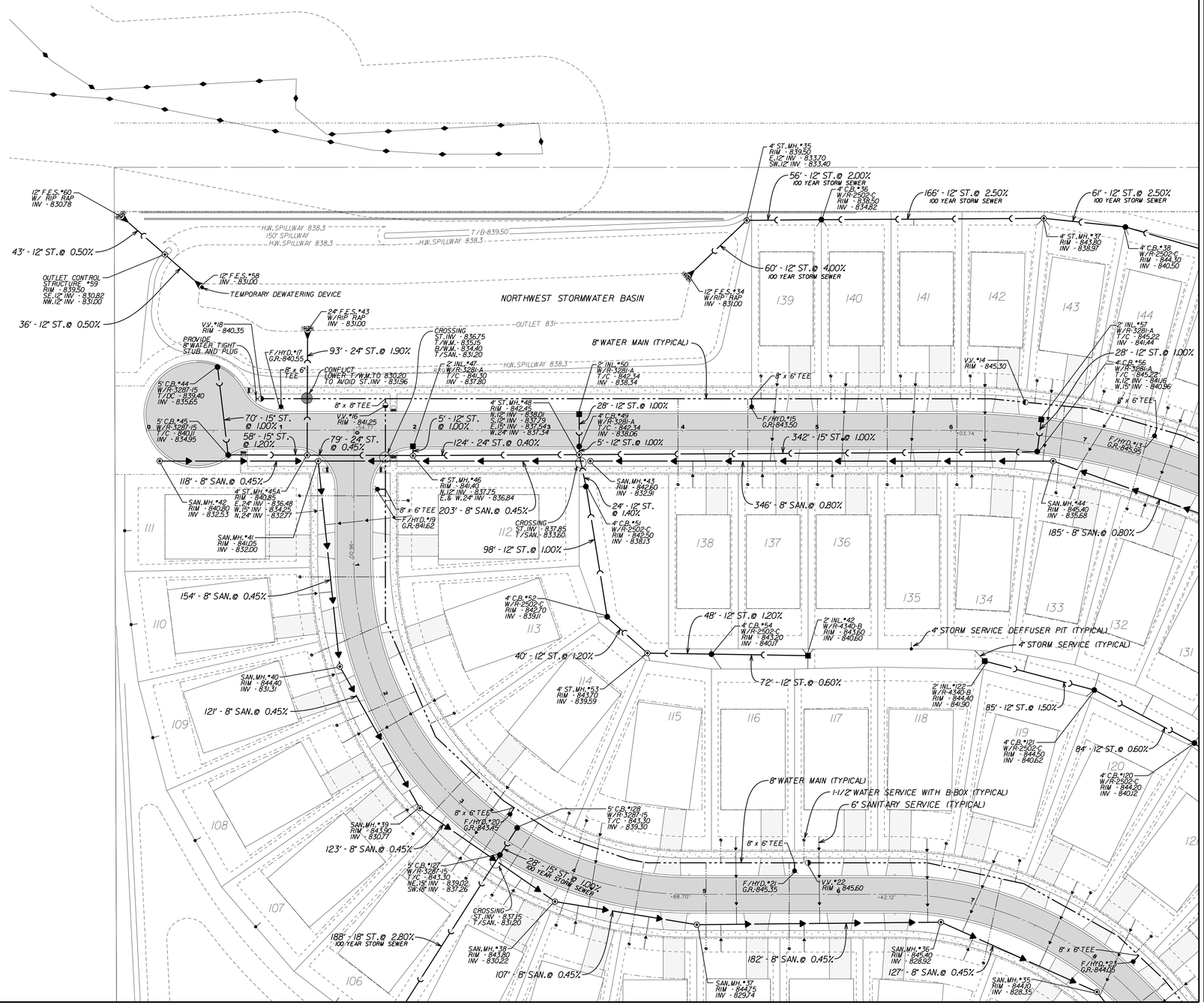

NORTH

SCALE: 1" = 40'

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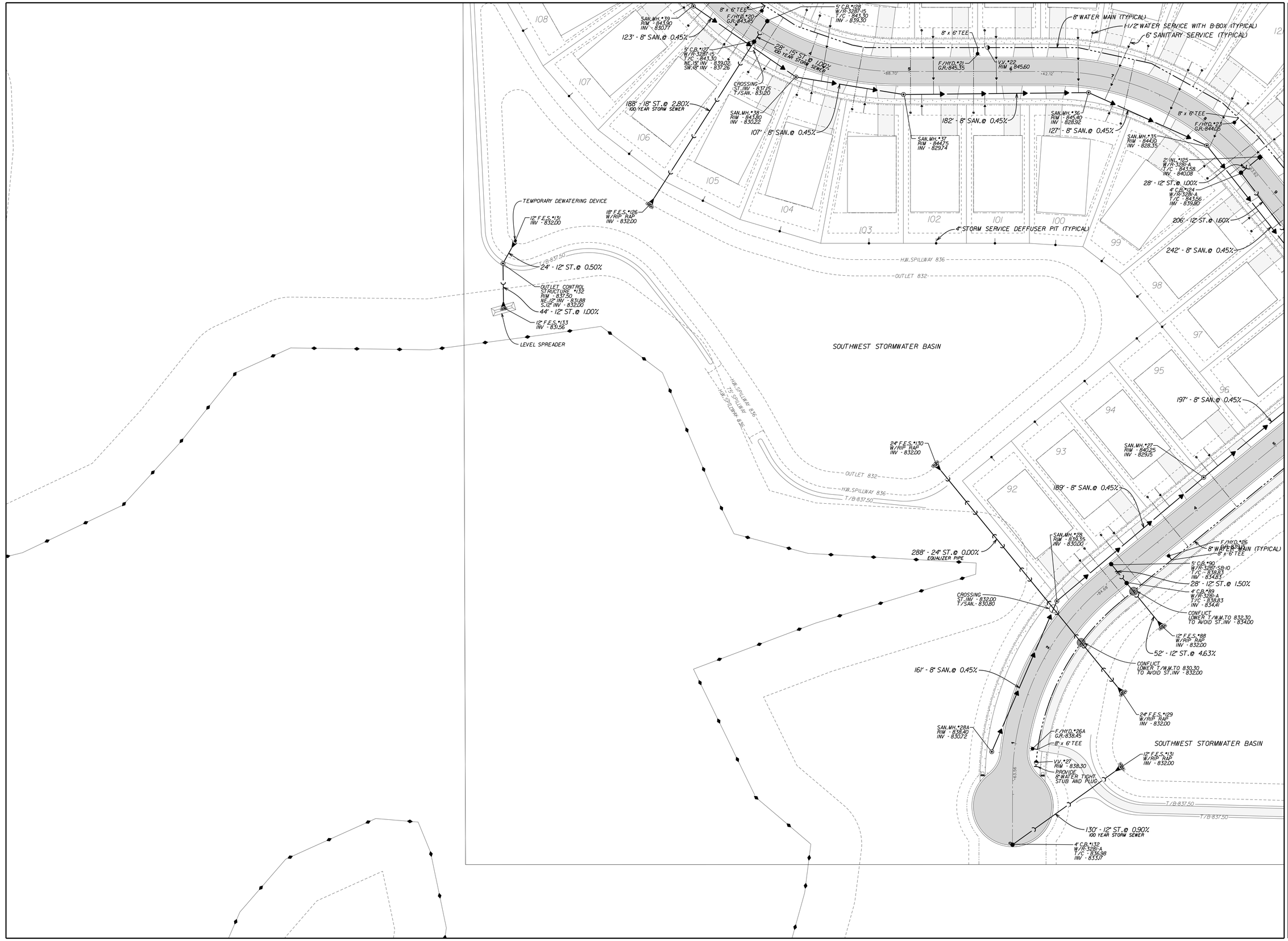
UTILITY PLAN - NORTHWEST

SHEET NUMBER
26
OF 59 SHEETS

JOB No. 2535



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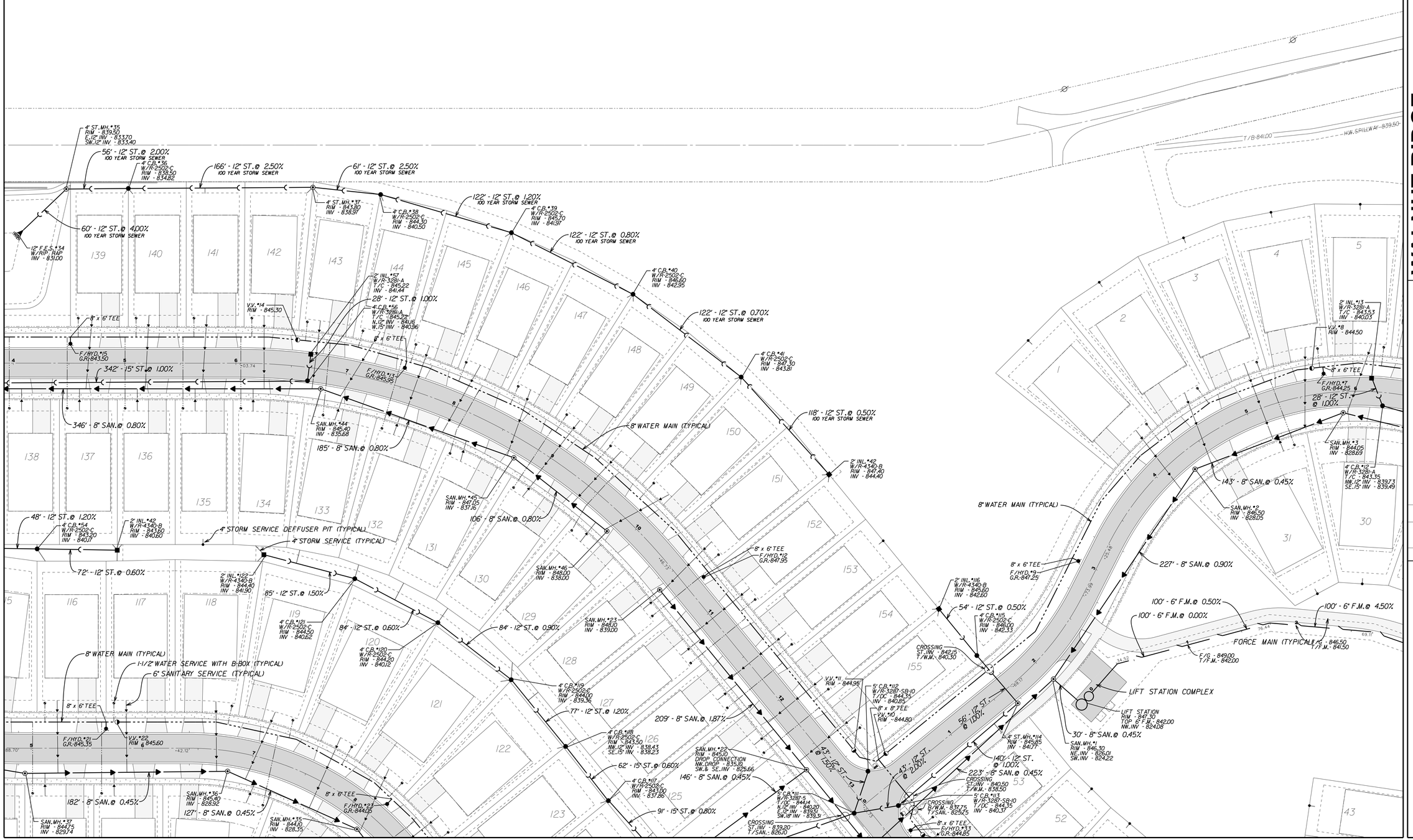
UTILITY PLAN - SOUTHWEST

SHEET NUMBER 27 OF 59 SHEETS

JOB No. 2535



NORTH

SCALE: 1" = 40'

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UTILITY PLAN - NORTH CENTRAL

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28
OF 59 SHEETS

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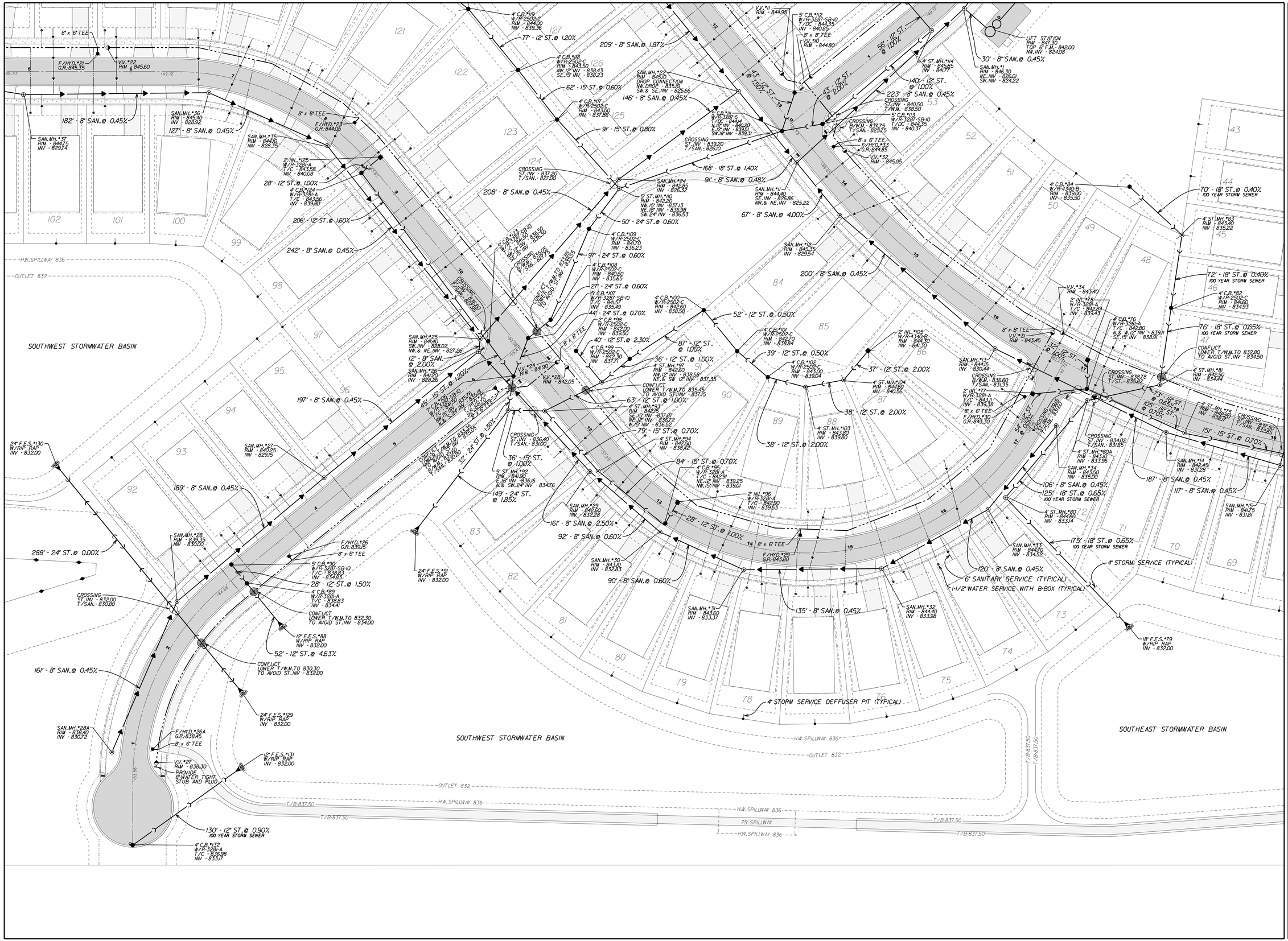

NORTH

SCALE: 1" = 40'

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UTILITY PLAN - SOUTH CENTRAL

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JOB No. 2535

NORTH

SCALE: 1" = 40'

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UTILITY PLAN - NORTHEAST

SHEET NUMBER
30
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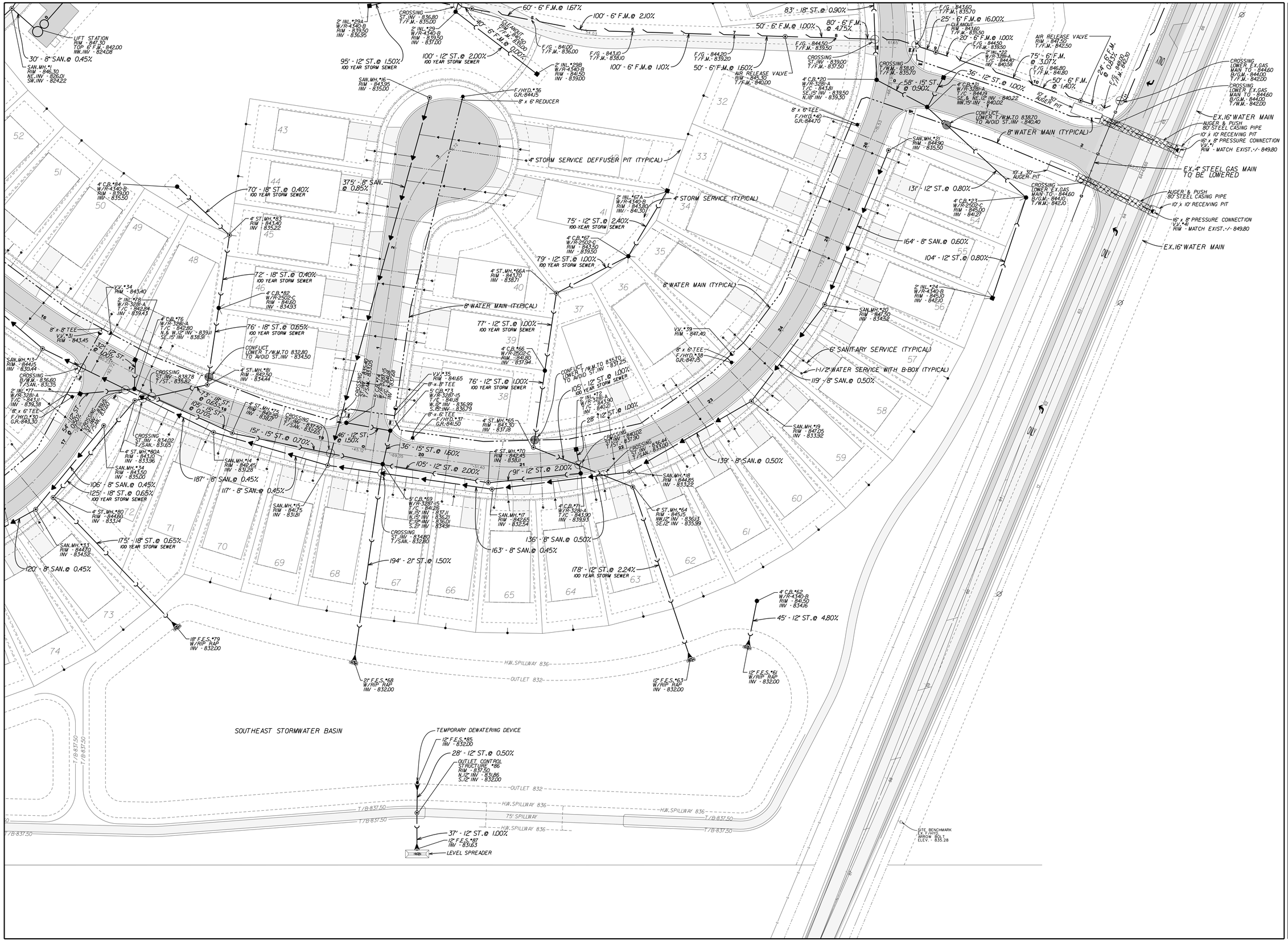

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UTILITY PLAN - SOUTHEAST

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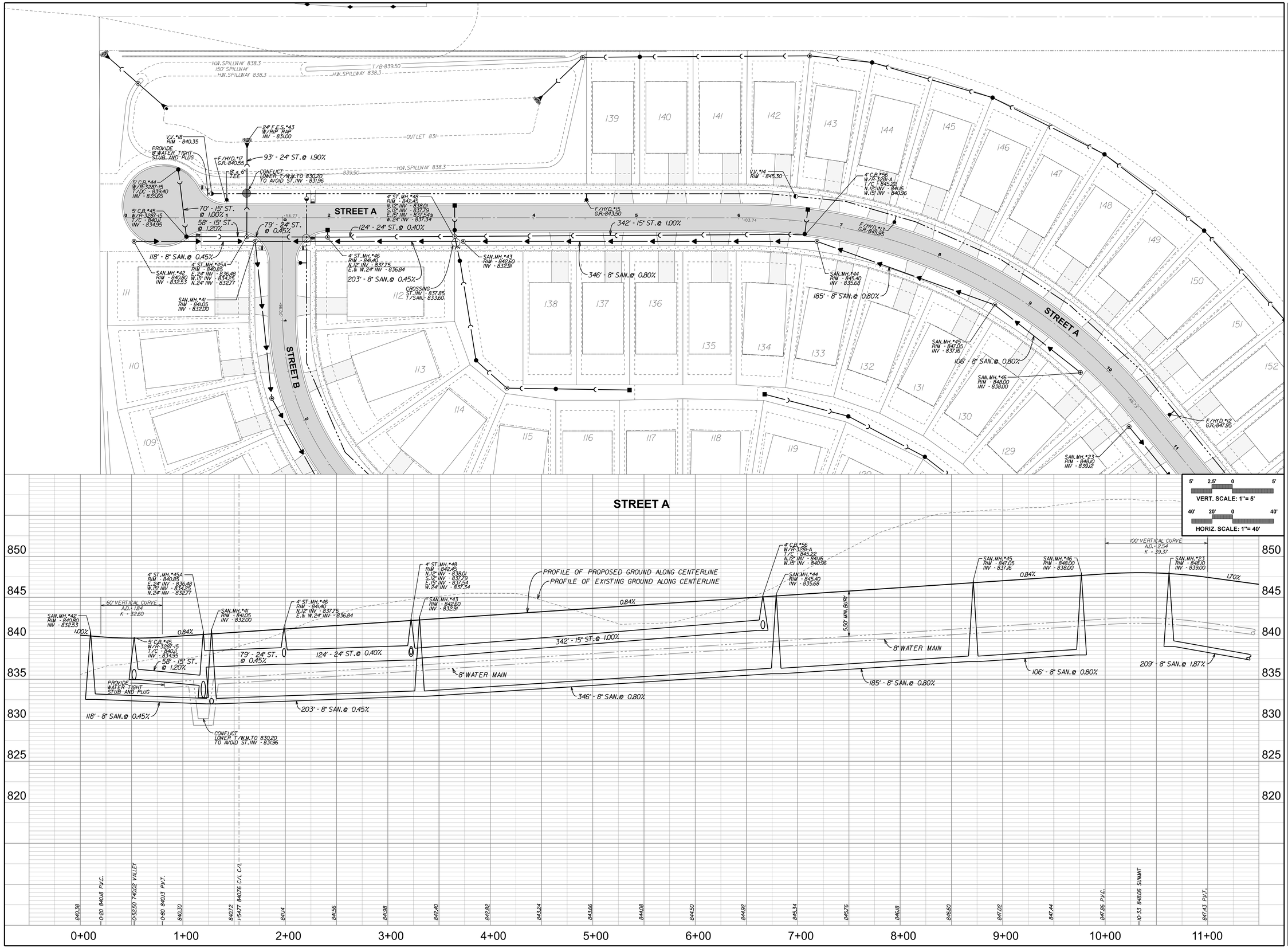

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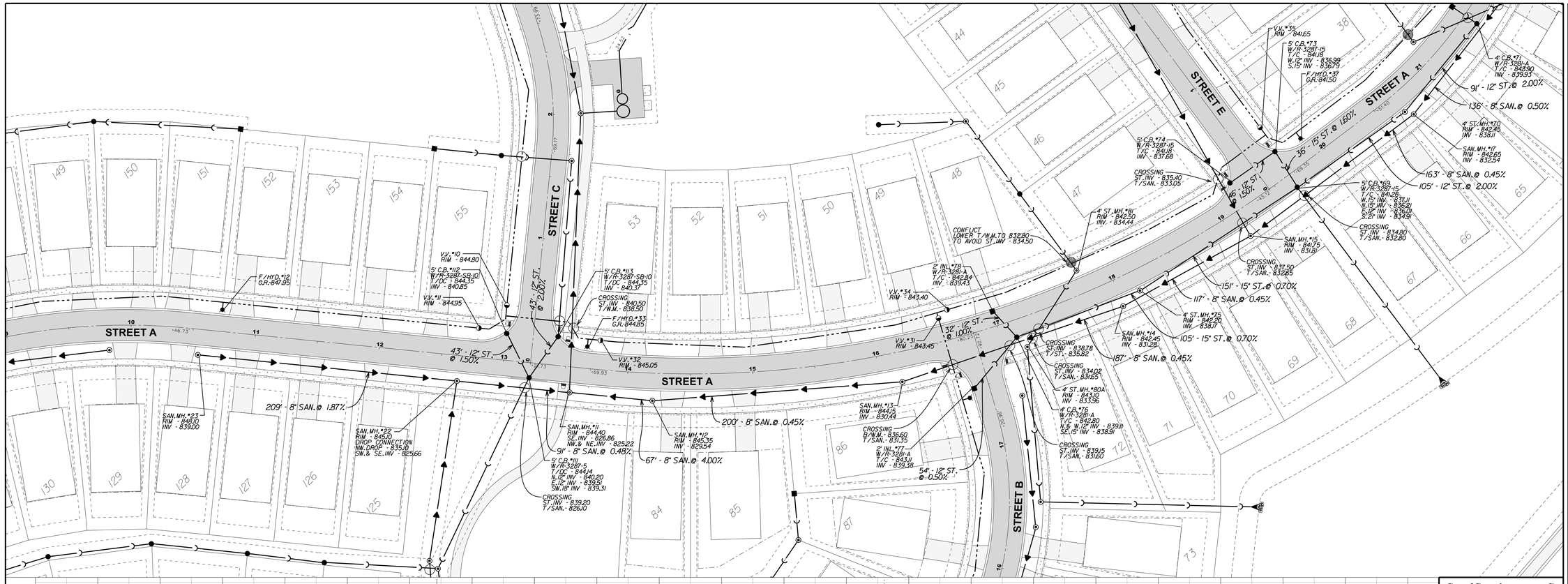

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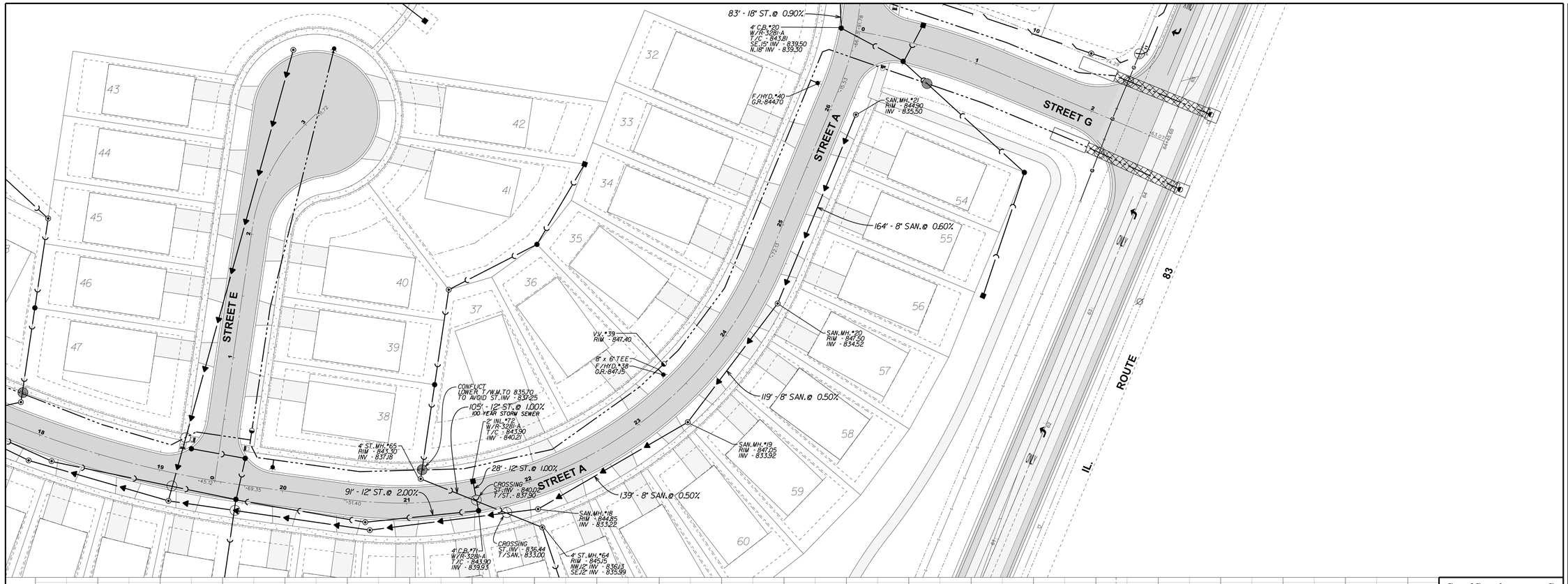

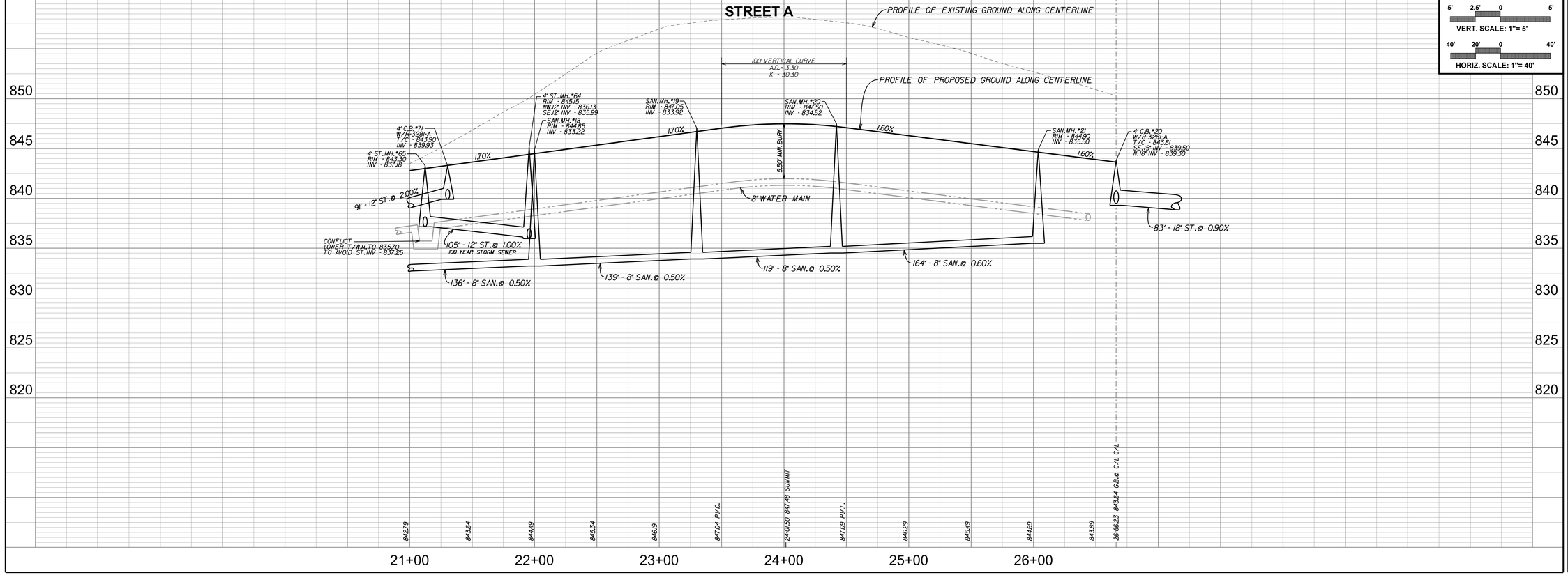

5' 2.5' 0 5'
VERT. SCALE: 1"= 5'
40' 20' 0 40'
HORIZ. SCALE: 1"= 40'

NORTH

40' 20' 0 40'
SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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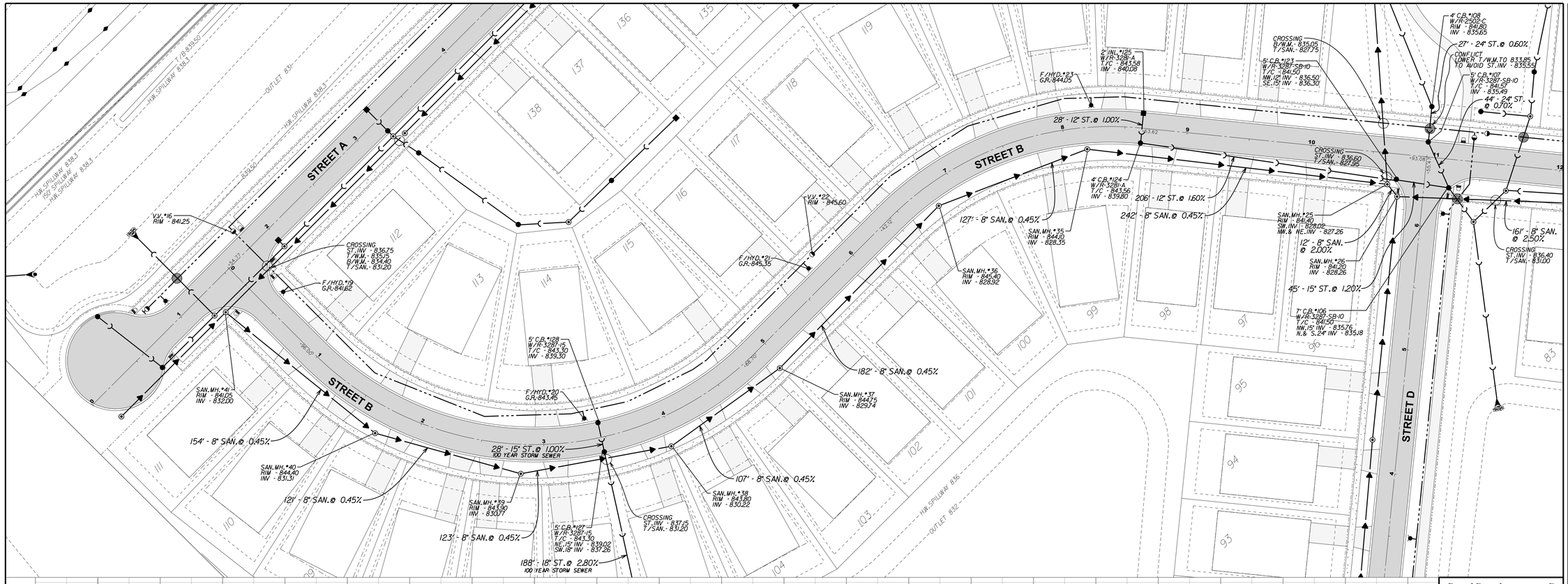
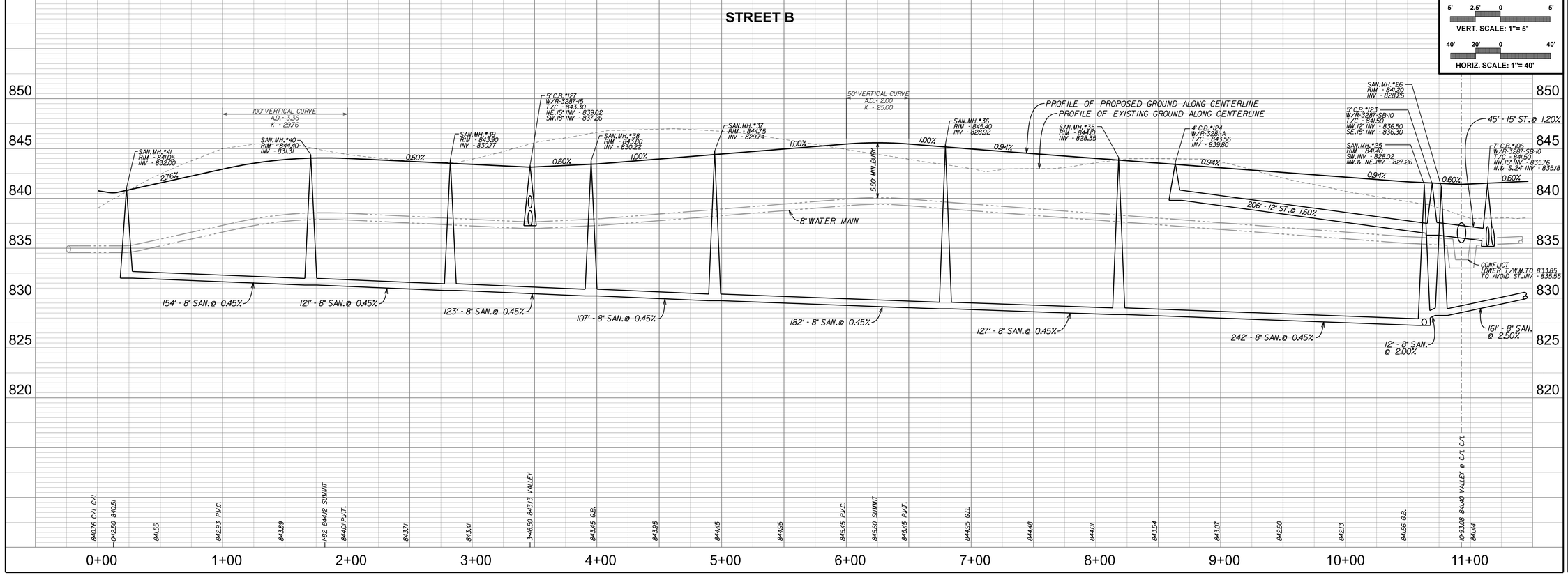
STREET A - STATION 21+00 TO 26+66.23

SHEET NUMBER
34
OF 59 SHEETS

JOB No. 2535





NORTH

SCALE: 1" = 40'

WALNUT RIDGE

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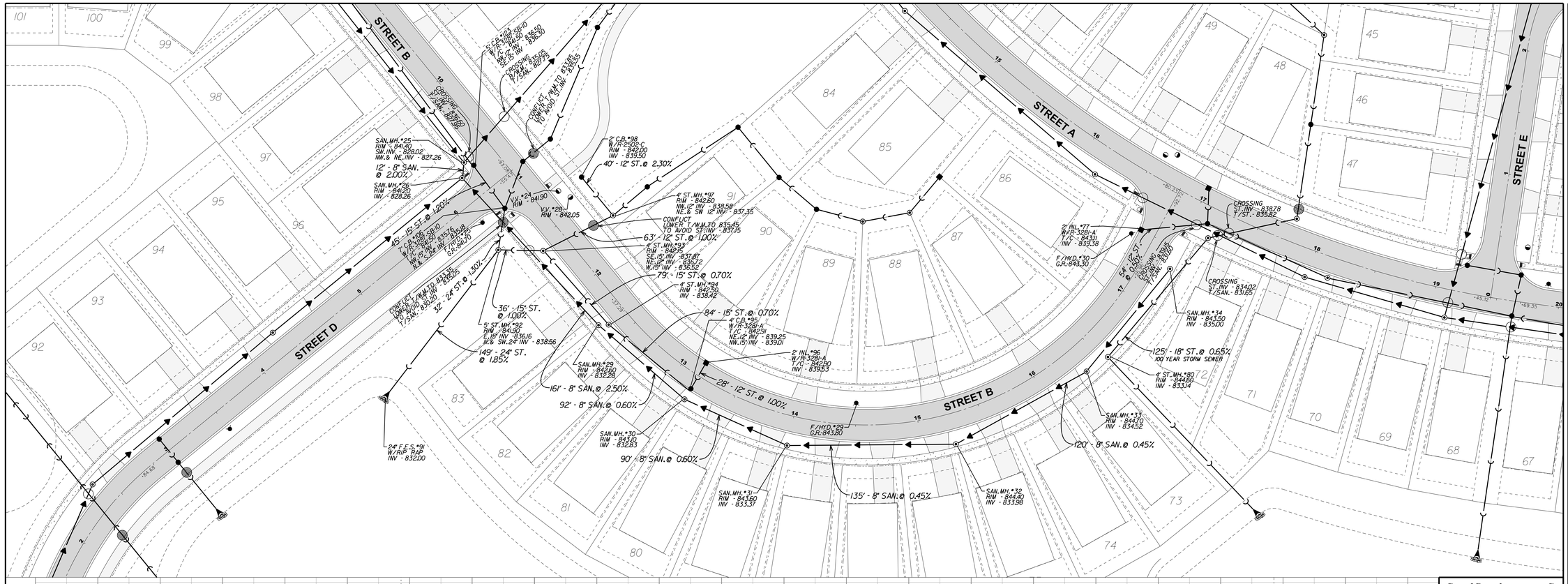
REVISIONS

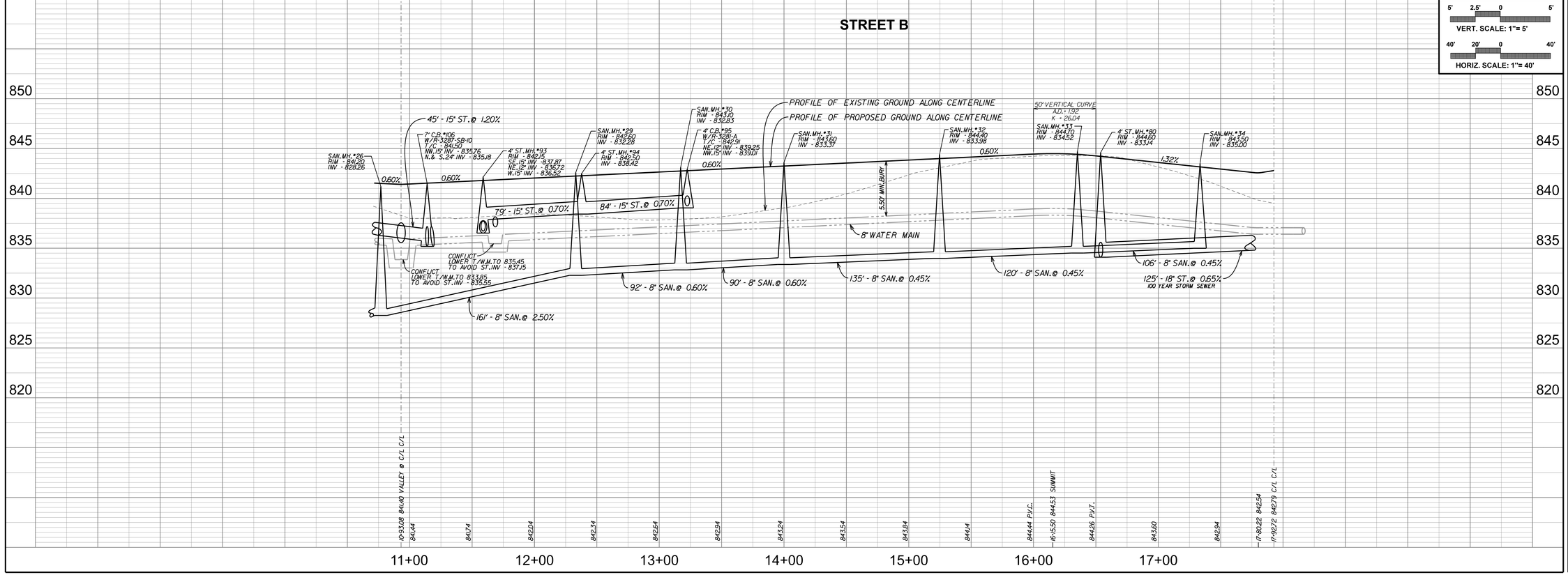
PLAN AND PROFILE STREET B - STATION 0+00 TO 11+00

SHEET NUMBER **35** OF 59 SHEETS

JOB No. 2535



STREET B



VERT. SCALE: 1"= 5'

HORIZ. SCALE: 1"= 40'

NORTH

SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

PEARSON,BROWN & ASSOCIATES,INC.

CONSULTING ENGINEERS

1850 W. WINCHESTER ROAD - SUITE 205

LIBERTYVILLE, IL. 60048

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FAX: (847) 367-2567

E-MAIL ADDRESS: pba@pbaengineers.com

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DRAWN BY: D.S.H.

CHECKED BY: J.F.C.

ORIGINAL ISSUE: 04/11/25

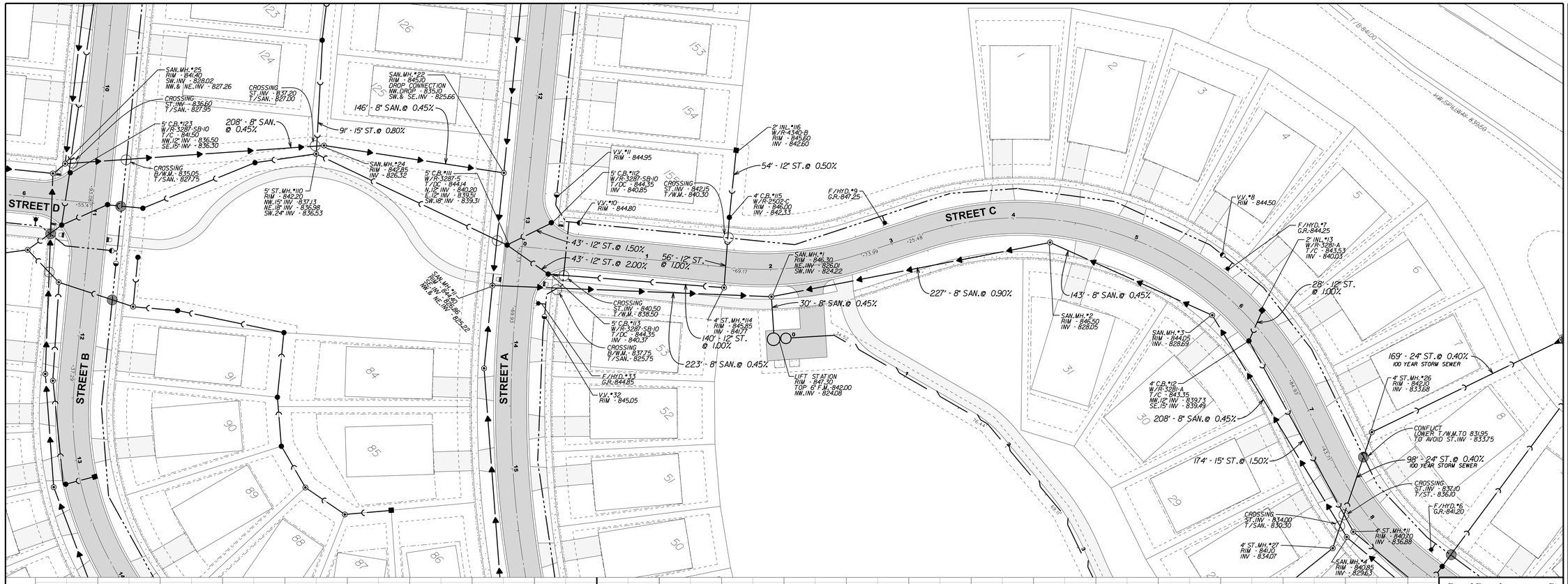
DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

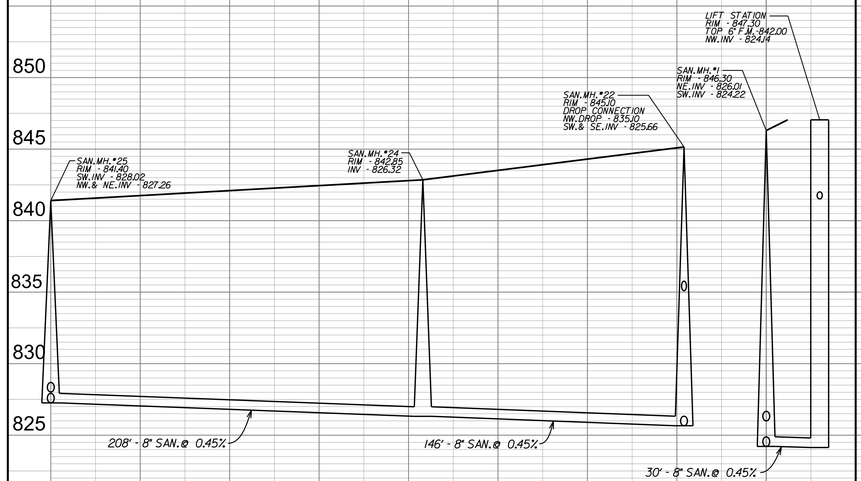
PLAN AND PROFILE STREET B - STATION 11+00 TO 17+92.72

SHEET NUMBER 36 OF 59 SHEETS

JOB No. 2535



SANITARY PROFILES



STREET C

MUNDELEIN, ILLINOIS
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WALNUT RIDGE

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CHECKED BY: J.F.C.
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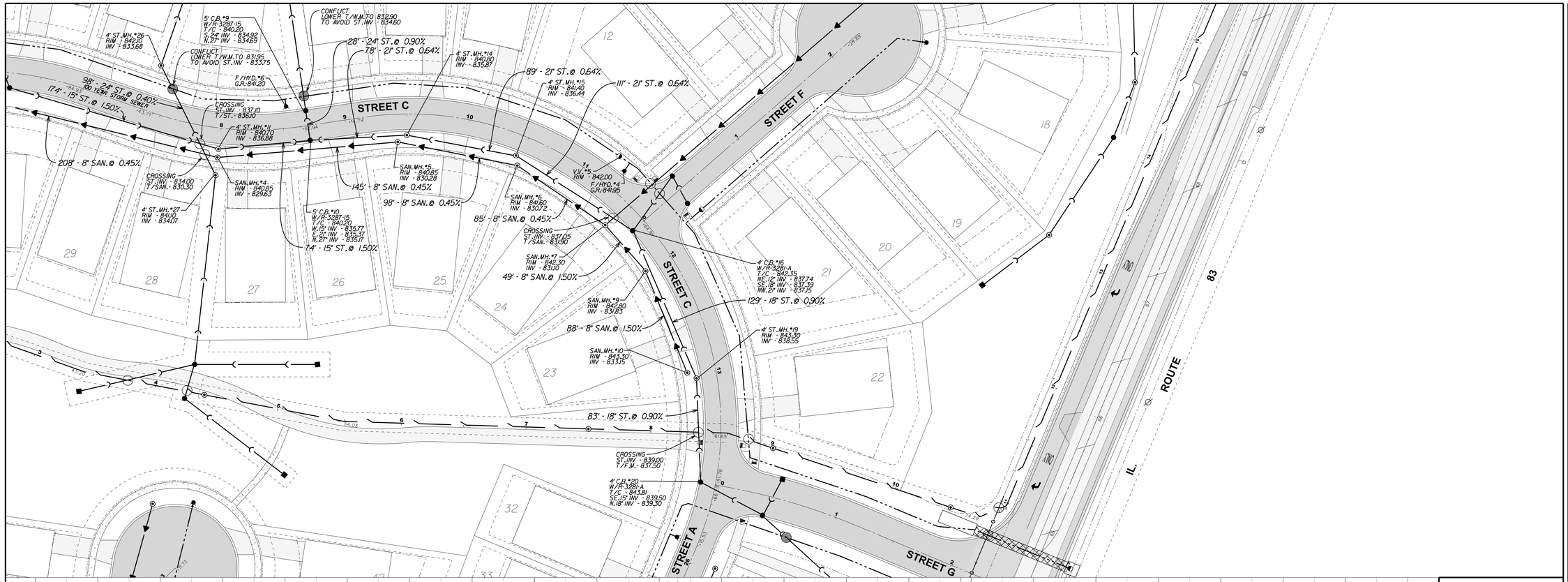
DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

SANITARY PROFILES AND PLAN AND PROFILE STREET C - STATION 0+00 TO 7+00

SHEET NUMBER 37 OF 59 SHEETS

JOB No. 2535



MUNDELEIN, ILLINOIS

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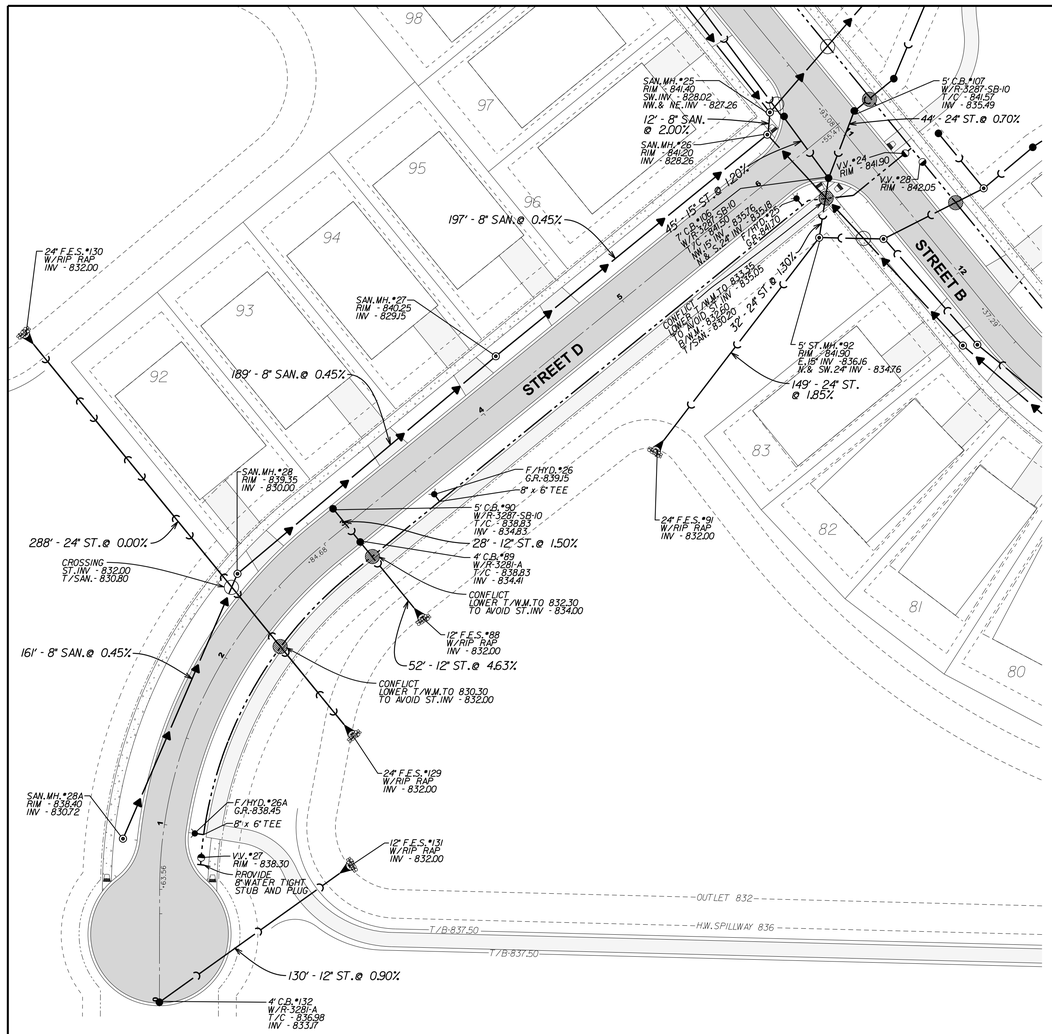
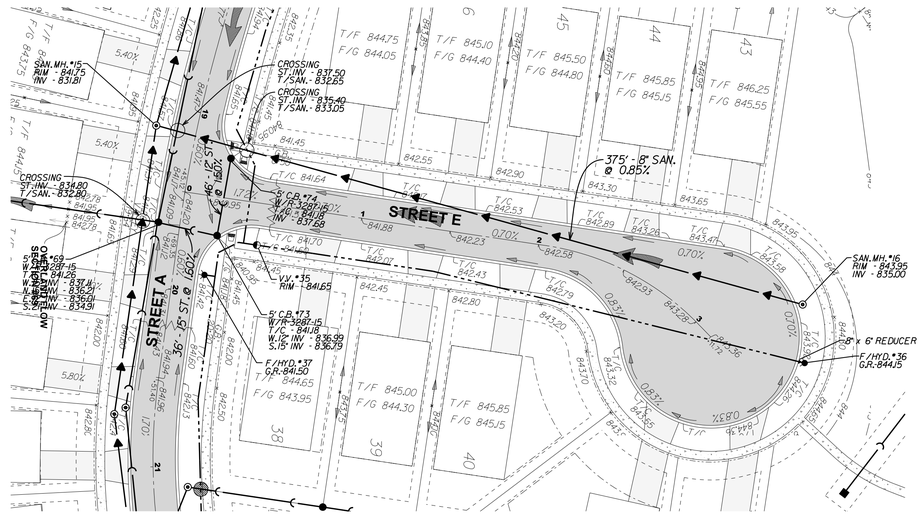
REVISIONS

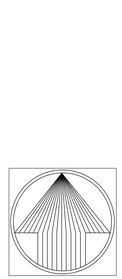
PLAN AND PROFILE STREET C - STATION 7+00 TO 13+91.78

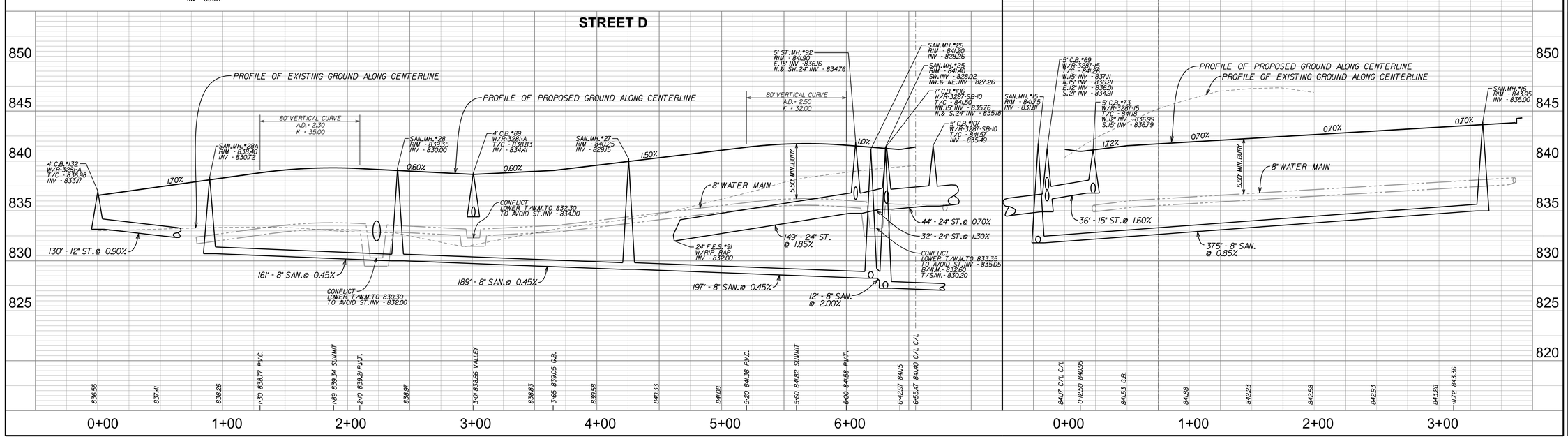
SHEET NUMBER 38 OF 59 SHEETS

JOB No. 2535









5' 2.5' 0 5'
VERT. SCALE: 1"= 5'
40' 20' 0 40'
HORIZ. SCALE: 1"= 40'

NORTH
40' 20' 0 40'
SCALE: 1" = 40'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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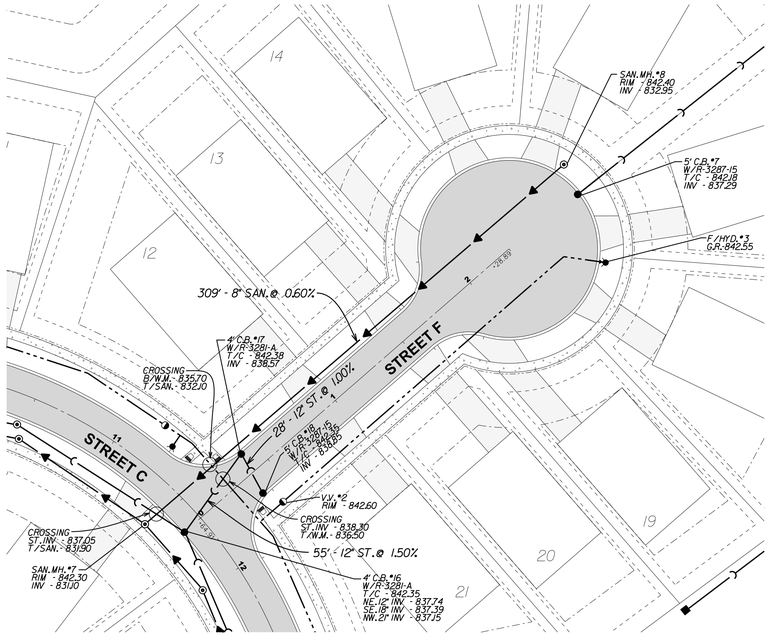
DESCRIPTION	DATE	BY
REVISED PER VILLAGE REVIEW COMMENTS	06/20/25	AKZ

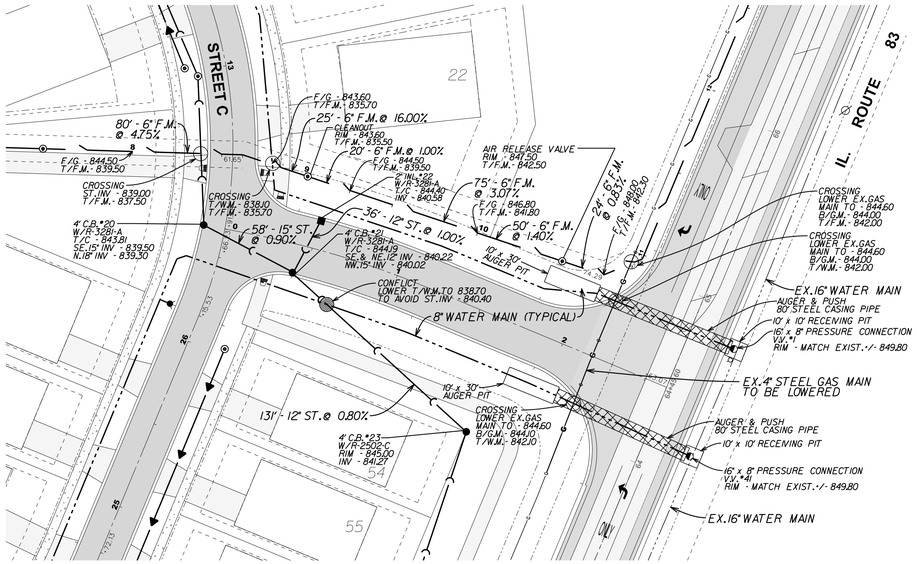
REVISIONS

PLAN AND PROFILE
STREET D AND STREET E

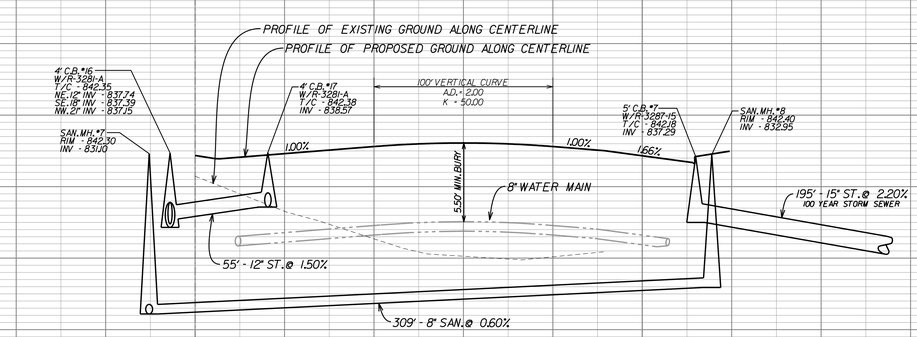
SHEET NUMBER
39
OF 59 SHEETS

JOB No. 2535

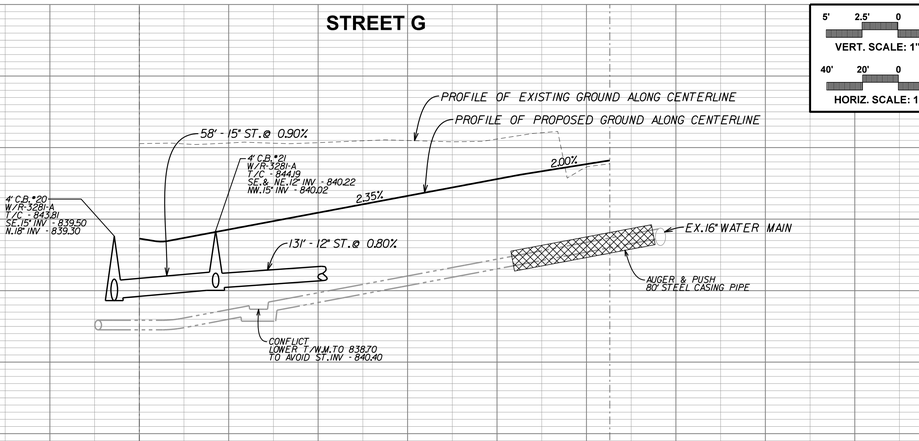




STREET F



STREET G



NORTH

SCALE: 1" = 40'

MUNDELEIN, ILLINOIS

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WALNUT RIDGE

DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

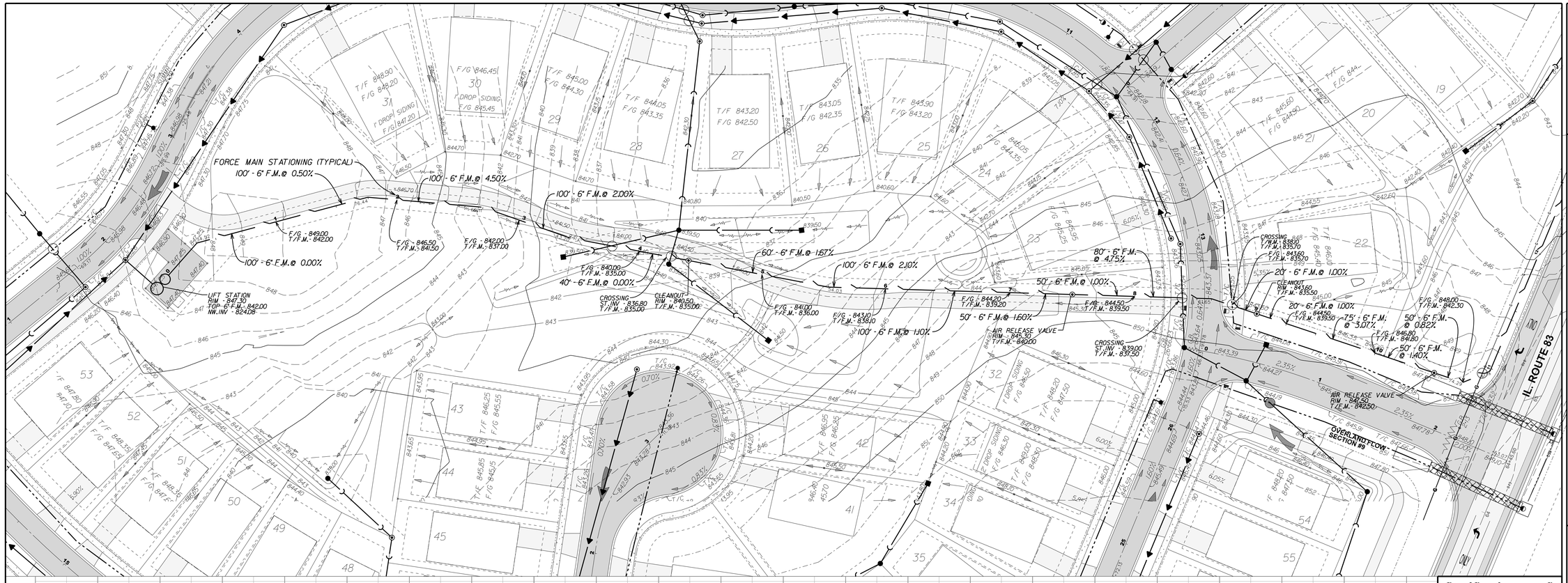
REVISIONS

DESCRIPTION	BY	DATE
REVISED PER VILLAGE REVIEW COMMENTS	AKZ	06/20/25

PLAN AND PROFILE STREET F AND STREET G

SHEET NUMBER 40 OF 59 SHEETS

JOB No. 2535



WALNUT RIDGE

MUNDELEIN, ILLINOIS

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ORIGINAL ISSUE: 04/11/25.

DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

FORCE MAIN PLAN AND PROFILE
ONSITE STATION 0+00 TO 10+74.29

SHEET NUMBER
41
OF 59 SHEETS
JOB No. 2535

NOTES:

1. CONTRACTOR SHALL CALL JULIE AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. 1-800-892-0123.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. EXPLORATORY DIGGING MAY BE REQUIRED.
3. CONTRACTOR SHALL ADJUST OR RELOCATE ALL EXISTING UTILITIES AS NEEDED TO COMPLETE IMPROVEMENTS.
4. CONTRACTOR SHALL RELOCATE ALL SIGNS AS NEEDED FOR UTILITY INSTALLATION.
5. ALL DISTURBED AREAS OFFSITE SHALL BE RESTORED WITH A MINIMUM OF 4-IN OF TOPSOIL, SEEDED WITH IDOT CLASS 2A SEED MIX AND HYDROMULCHED OR APPROVED EQUAL
6. RESTORE ALL EXISTING OFFSITE PAVEMENT DISTURBED BY PROPOSED UTILITY CONSTRUCTION WITH LIKEN MATERIAL.
7. BRACE EXISTING POWER POLES AS NEEDED FOR FORCE MAIN INSTALLATION.

NORTH

SCALE: 1" = 20'

F/G - 848.00
T/F.M.- 842.30
16' - 6" F.M.@ 1.87%

CROSSING
LOWER EX.GAS
MAIN TO - 844.60
B/G.M.- 844.00
T/F.M.- 842.00

PROPOSED 50' HALF RIGHT OF WAY

100' - 6" F.M.@ 0.50%

EXISTING 4" GAS MAIN

100' - 6" F.M.@ 2.00%

100' - 6" F.M.@ 2.00%

100' - 6" F.M.@ 3.50%

50' - 6" F.M.@ 1.00%

F/G - 848.20
T/F.M.- 842.00

F/G - 846.50
T/F.M.- 841.50

F/G - 844.50
T/F.M.- 839.50

F/G - 842.50
T/F.M.- 837.50

F/G - 839.00
T/F.M.- 834.00

F/G - 837.50
T/F.M.- 832.50

ONLY

ONLY

FORCE MAIN STATIONING (TYPICAL)

PROPOSED WIDENING

EXISTING PAVEMENT

IL. ROUTE 83

64+45.60

PROPOSED GROUND ABOVE FORCE MAIN

64+90 FORCE MAIN BEND

-50 FORCE MAIN

65+00 66+00 67+00 68+00 69+00

MUNDELEIN, ILLINOIS

WALNUT RIDGE

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ORIGINAL ISSUE: 04/11/25

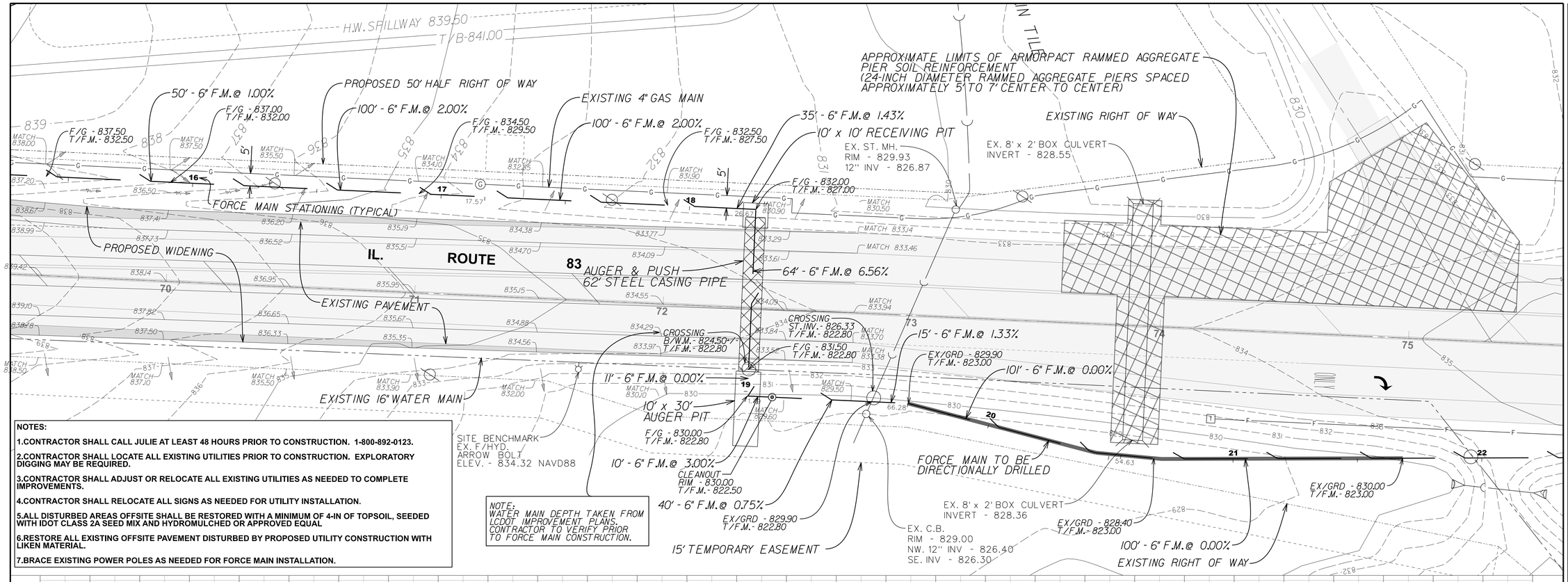
REVISIONS

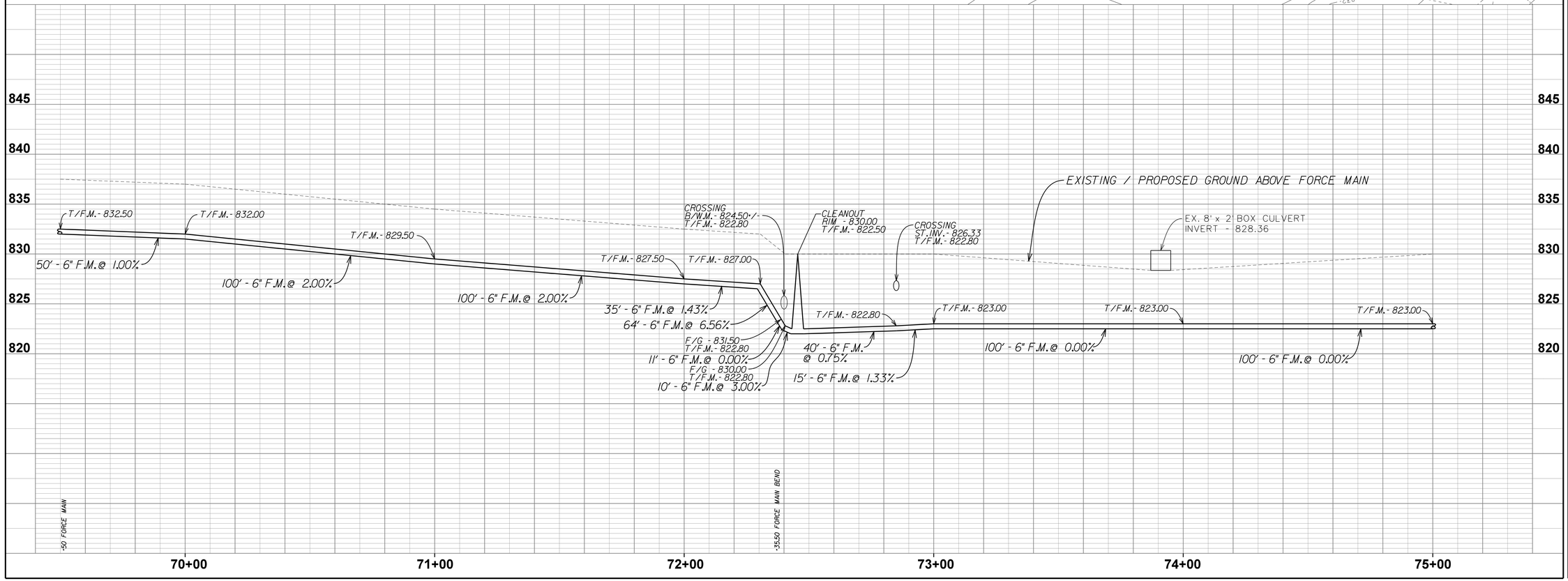
DESCRIPTION	BY	DATE
REVISED PER VILLAGE REVIEW COMMENTS	AKZ	06/20/25

FORCE MAIN PLAN AND PROFILE
IL. ROUTE 83 STATION 64+90 TO 69+50

SHEET NUMBER 42 OF 59 SHEETS

JOB No. 2535





NORTH

SCALE: 1" = 20'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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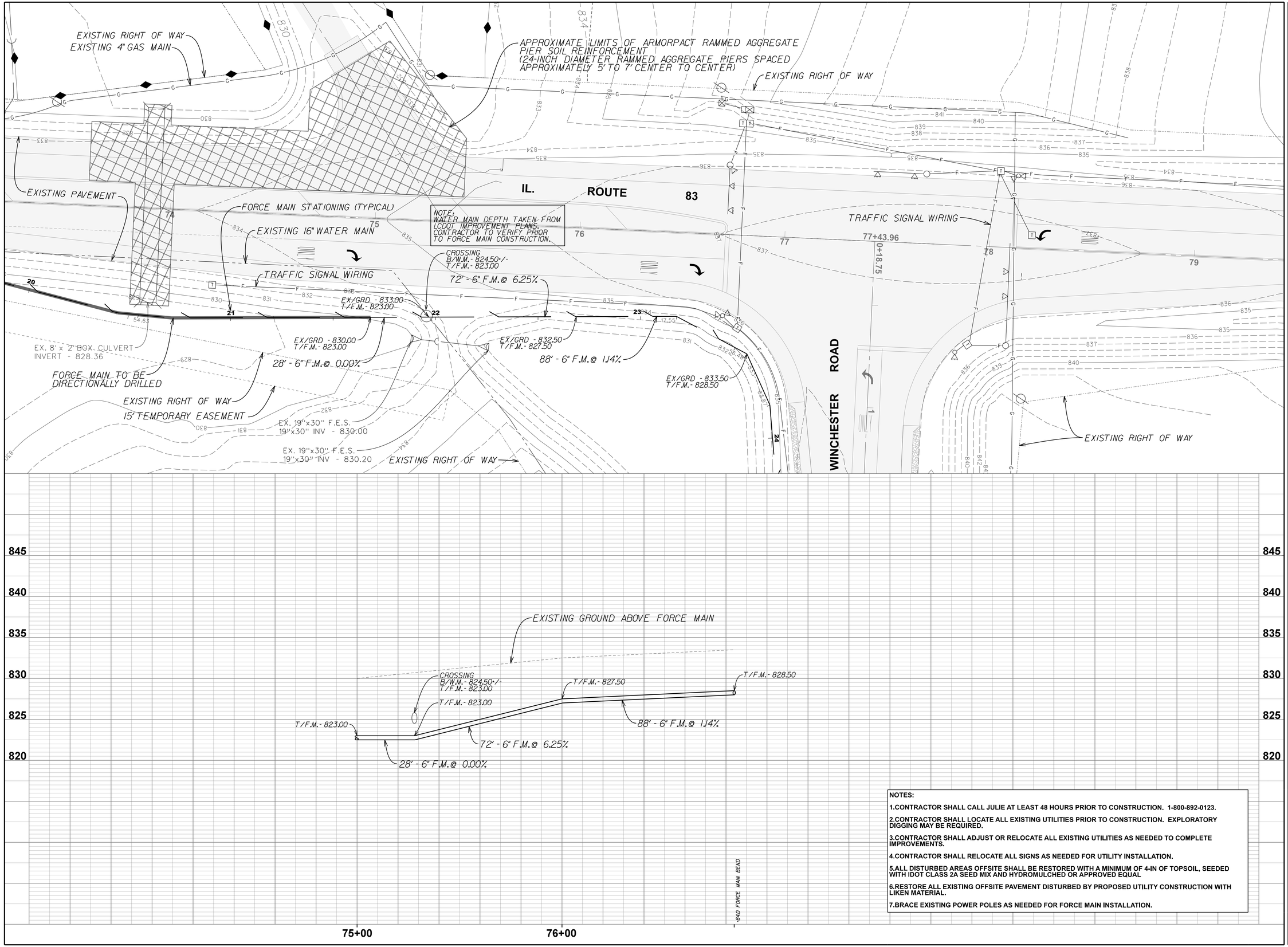
REVISIONS

DESCRIPTION	DATE	BY
REVISED PER VILLAGE REVIEW COMMENTS	06/20/25	AKZ

FORCE MAIN PLAN AND PROFILE
IL. ROUTE 83 STATION 69+50 TO 75+00

SHEET NUMBER 43 OF 59 SHEETS

JOB No. 2535



NOTES:

1. CONTRACTOR SHALL CALL JULIE AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. 1-800-892-0123.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. EXPLORATORY DIGGING MAY BE REQUIRED.
3. CONTRACTOR SHALL ADJUST OR RELOCATE ALL EXISTING UTILITIES AS NEEDED TO COMPLETE IMPROVEMENTS.
4. CONTRACTOR SHALL RELOCATE ALL SIGNS AS NEEDED FOR UTILITY INSTALLATION.
5. ALL DISTURBED AREAS OFFSITE SHALL BE RESTORED WITH A MINIMUM OF 4-IN OF TOPSOIL, SEEDED WITH IDOT CLASS 2A SEED MIX AND HYDROMULCHED OR APPROVED EQUAL
6. RESTORE ALL EXISTING OFFSITE PAVEMENT DISTURBED BY PROPOSED UTILITY CONSTRUCTION WITH LIKEN MATERIAL.
7. BRACE EXISTING POWER POLES AS NEEDED FOR FORCE MAIN INSTALLATION.

NORTH

SCALE: 1" = 20'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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REVISIONS

DESCRIPTION	DATE	BY
REVISED PER VILLAGE REVIEW COMMENTS	06/20/25	AKZ

FORCE MAIN PLAN AND PROFILE
IL. ROUTE 83 STATION 75+00 TO 76+84

SHEET NUMBER 44 OF 59 SHEETS

JOB No. 2535

NOTES:

1. CONTRACTOR SHALL CALL JULIE AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. 1-800-892-0123.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. EXPLORATORY DIGGING MAY BE REQUIRED.
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6. RESTORE ALL EXISTING OFFSITE PAVEMENT DISTURBED BY PROPOSED UTILITY CONSTRUCTION WITH LIKEN MATERIAL.
7. BRACE EXISTING POWER POLES AS NEEDED FOR FORCE MAIN INSTALLATION.

77+43.96
0+18.75
EX. ST. MH.
RIM - 834.80
19"x30" INV - 831.50
10' x 10' RECEIVING PIT
EX/GRD - 836.00
T/F.M. - 831.00
48' - 6" F.M.
@ 2.08%
EX/GRD - 837.00
T/F.M. - 832.00
FORCE MAIN STATIONING (TYPICAL)
EX/GRD - 840.00
T/F.M. - 834.50
EX/GRD - 841.50
T/F.M. - 834.60
246' - 6" F.M.
@ 0.20%
EX/GRD - 842.00
T/F.M. - 834.70
EXISTING ROW (TYPICAL)
EX/GRD - 842.00
T/F.M. - 834.80
EXISTING GAS MAIN (TYPICAL)
EX/GRD - 841.50
T/F.M. - 834.90
EX/GRD - 840.00
T/F.M. - 835.00
EX/GRD - 834.00
T/F.M. - 829.00
EX/GRD - 833.50
T/F.M. - 828.50
42'
73' - 6" F.M.
@ 0.68%
48' - 6" F.M.
@ 5.20%
36'
42'
27' - 6" F.M.
@ 1.85%
50' - 6" F.M.
@ 1.0%
EX/GRD - 834.50
T/F.M. - 829.50
52' - 6" F.M.
@ 0.96%
CROSSING
ST. INV - 831.10
T/F.M. - 830.00
52' - 6" F.M.
@ 0.96%
EX. 19"x30" F.E.S.
19"x30" INV - 831.00
10' x 30'
AUGER PIT
AUGER & PUSH
66' STEEL CASING PIPE
EX/GRD - 838.20
T/F.M. - 830.50
WINCHESTER ROAD
TRAFFIC SIGNAL WIRING
EXISTING 16" WATER MAIN

EXISTING GROUND ABOVE FORCE MAIN

T/F.M. - 828.50
T/F.M. - 829.00
T/F.M. - 829.50
T/F.M. - 830.50
T/F.M. - 831.00
T/F.M. - 832.00
T/F.M. - 834.50
T/F.M. - 835.00
CROSSING
ST. INV - 831.10
T/F.M. - 830.00
27' - 6" F.M.
@ 1.85%
50' - 6" F.M.
@ 1.0%
52' - 6" F.M.
@ 0.96%
52' - 6" F.M.
@ 0.96%
73' - 6" F.M.
@ 0.68%
48' - 6" F.M.
@ 2.08%
48' - 6" F.M.
@ 5.20%
246' - 6" F.M.
@ 0.20%

0+82.5 C/L C/L
0+76.6 FORCE MAIN BEND
-50 FORCE MAIN BEND

850 845 840 835 830 825 820

1+00 2+00 3+00 4+00 5+00 6+00

NORTH
SCALE: 1" = 20'

MUNDELEIN, ILLINOIS
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WALNUT RIDGE

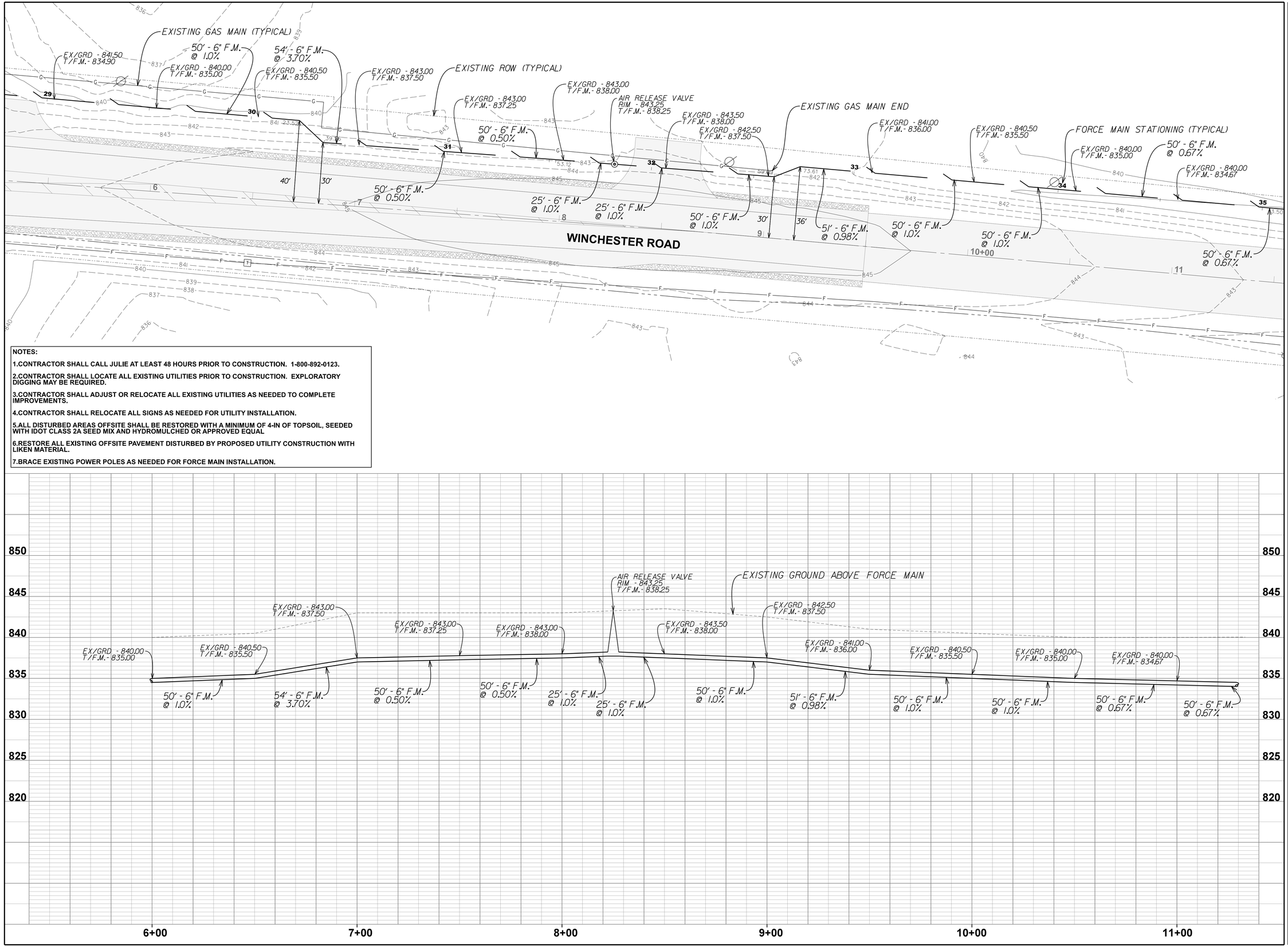
DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

FORCE MAIN PLAN AND PROFILE
WINCHESTER ROAD STATION 0+76.50 TO 6+00

SHEET NUMBER 45
OF 59 SHEETS
JOB No. 2535



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6. RESTORE ALL EXISTING OFFSITE PAVEMENT DISTURBED BY PROPOSED UTILITY CONSTRUCTION WITH LIKEN MATERIAL.
7. BRACE EXISTING POWER POLES AS NEEDED FOR FORCE MAIN INSTALLATION.

NORTH

SCALE: 1" = 20'

WALNUT RIDGE

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MUNDELEIN, ILLINOIS

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DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

REVISIONS

DESCRIPTION	BY	DATE
REVISED PER VILLAGE REVIEW COMMENTS	AKZ	06/20/25

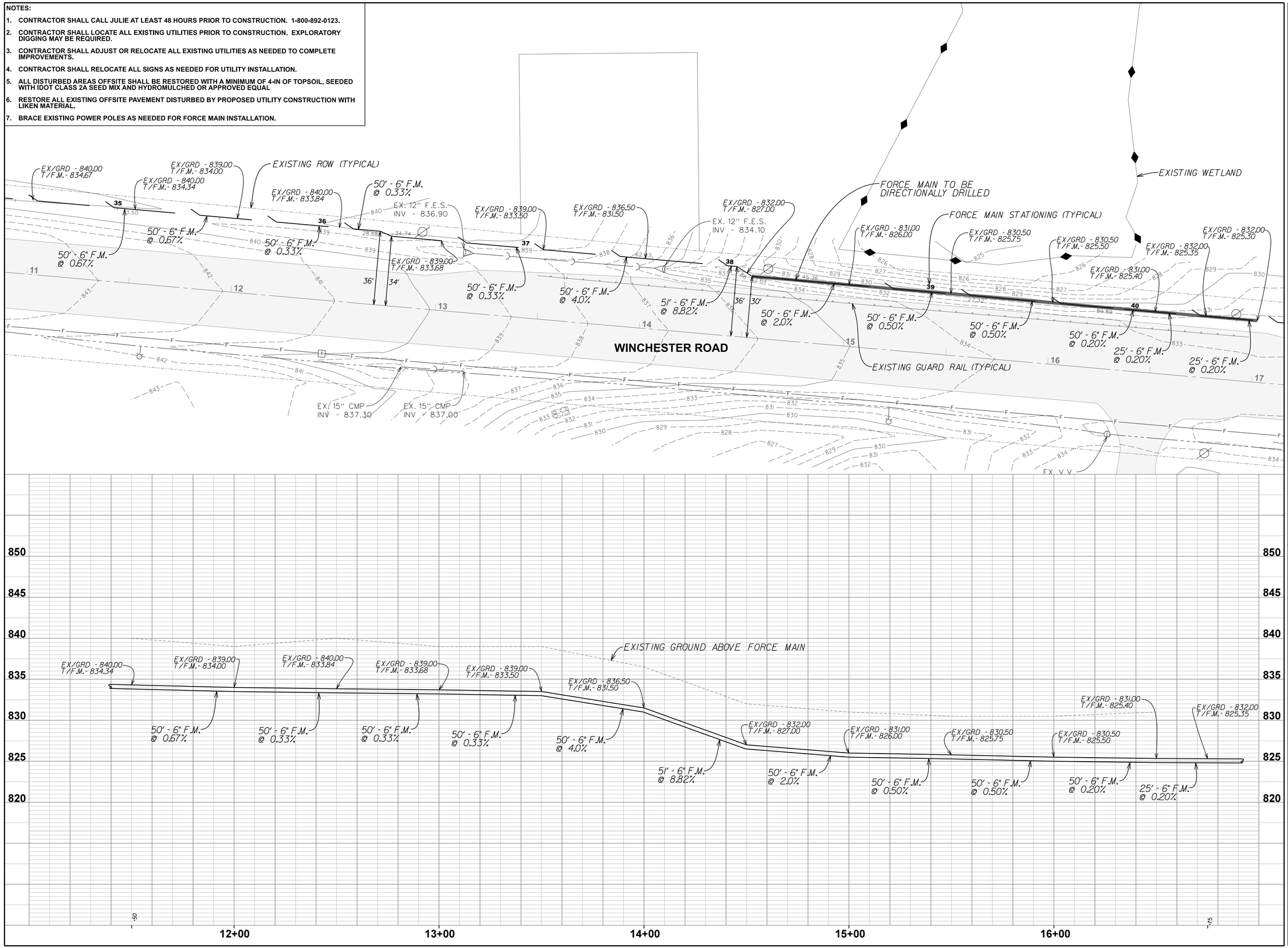
FORCE MAIN PLAN AND PROFILE
WINCHEATER ROAD STATION 6+00 TO 11+00

SHEET NUMBER 46 OF 59 SHEETS

JOB No. 2535

NOTES:

1. CONTRACTOR SHALL CALL JULIE AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. 1-800-892-0123.
2. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. EXPLORATORY DIGGING MAY BE REQUIRED.
3. CONTRACTOR SHALL ADJUST OR RELOCATE ALL EXISTING UTILITIES AS NEEDED TO COMPLETE IMPROVEMENTS.
4. CONTRACTOR SHALL RELOCATE ALL SIGNS AS NEEDED FOR UTILITY INSTALLATION.
5. ALL DISTURBED AREAS OFFSITE SHALL BE RESTORED WITH A MINIMUM OF 4-IN OF TOPSOIL, SEEDED WITH IDOT CLASS 2A SEED MIX AND HYDROMULCHED OR APPROVED EQUAL
6. RESTORE ALL EXISTING OFFSITE PAVEMENT DISTURBED BY PROPOSED UTILITY CONSTRUCTION WITH LIKEN MATERIAL.
7. BRACE EXISTING POWER POLES AS NEEDED FOR FORCE MAIN INSTALLATION.



NORTH

SCALE: 1" = 20'

WALNUT RIDGE

MUNDELEIN, ILLINOIS

PEARSON,BROWN & ASSOCIATES,INC.
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DESCRIPTION	DATE	BY
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REVISIONS

FORCE MAIN PLAN AND PROFILE
WINCHESTER ROAD STATION 11+00 TO 16+50

SHEET NUMBER
47
OF 59 SHEETS

JOB No. 2535

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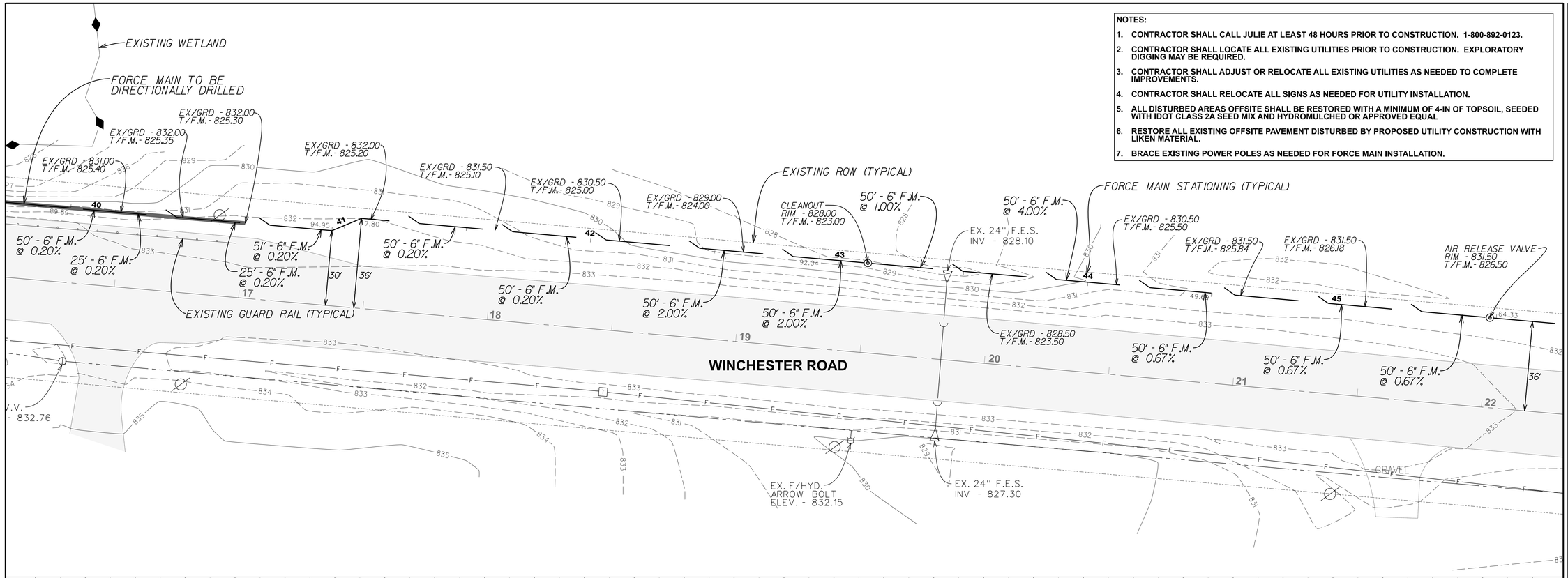

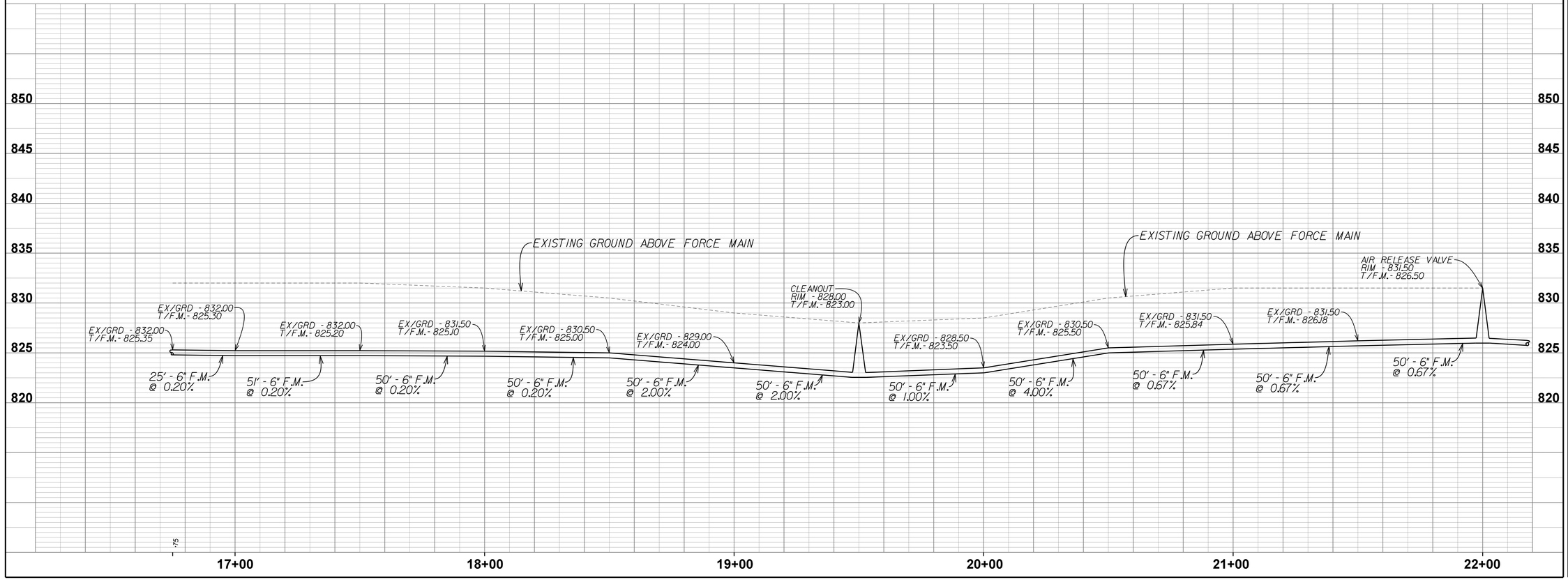

NORTH

SCALE: 1" = 20'

WALNUT RIDGE

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FORCE MAIN PLAN AND PROFILE
WINCHESTER ROAD STATION 16+50 TO 22+00

SHEET NUMBER 48 OF 59 SHEETS

JOB No. 2535

NOTES:

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NORTH

SCALE: 1" = 20'

AIR RELEASE VALVE
RIM - 831.50
T/F.M. - 826.50

FORCE MAIN STATIONING (TYPICAL)

EXISTING GAS MAIN END

EXISTING GAS MAIN (TYPICAL)

EXISTING ROW (TYPICAL)

EX/GRD - 830.50
T/F.M. - 825.50

EX/GRD - 831.00
T/F.M. - 826.00

EX/GRD - 830.00
T/F.M. - 825.00

EX/GRD - 829.50
T/F.M. - 824.50

EX/GRD - 829.00
T/F.M. - 824.00

EX/GRD - 828.50
T/F.M. - 823.50

EX/GRD - 828.00
T/F.M. - 823.00

EX/GRD - 827.50
T/F.M. - 821.88

EX/GRD - 827.50
T/F.M. - 821.53

50' - 6" F.M.
@ 0.67%

50' - 6" F.M.
@ 1.00%

50' - 6" F.M.
@ 1.00%

52' - 6" F.M.
@ 0.96%

50' - 6" F.M.
@ 1.00%

50' - 6" F.M.
@ 1.00%

50' - 6" F.M.
@ 1.00%

50' - 6" F.M.
@ 1.00%

33' - 6" F.M.
@ 3.00%

67' - 6" F.M.
@ 0.70%

36' - 6" F.M.
@ 13.40%

WINCHESTER ROAD

ADDERLEY LANE

GRAVEL

EX. ST. MH.
RIM - 826.15
12" INV - 823.70

CROSSING
ST. INV - 822.78
T/F.M. - 822.00

EX. ST. MH.
RIM - 820.90
W. 12" INV - 821.70
E. 12" INV - 820.90

EX. ST. MH.
RIM - 827.53
S. 12" INV - 822.20
N. 12" INV - 821.90
E. & W. 12" INV - 819.40

EX. C.B.
RIM - 824.55
12" INV - 822.50

EX. C.B.
RIM - 823.51
12" INV - 821

EX. ST. MH.
RIM - 825.70
S. 8" INV - 820.40

CROSSING
ST. INV - 819.58
T/F.M. - 816.70

EX. INL.
RIM - 826.83
12" INV - 823.50

EX. V.V.
RIM - 829.05
T/P - 823.05

EX. V.V.
RIM - 830.52
T/P - 823.02

EX. 15" F.E.S.
INV - 827.40

EX. C.B.
RIM - 828.67
S. 4" INV - 827.70
W. 15" INV - 826.60
E. 15" INV - 826.50

EX. C.B.
RIM - 828.06
W. 15" INV - 824.10
E. 15" INV - 823.90

EX. C.B.
RIM - 827.65
W. 15" INV - 824.20
E. 15" INV - 824.10

T/P - 816.25+/-
T/P - 822.00+/-

16" JAWA WATER M
12" VILLAGE WAT

EXISTING GROUND ABOVE FORCE MAIN

-86. FORCE MAIN BEND

22+00 | 23+00 | 24+00 | 25+00 | 26+00 | 27+00

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WALNUT RIDGE

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CHECKED BY: J.F.C.
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FORCE MAIN PLAN AND PROFILE
WINCHESTER ROAD STATION 22+00 TO 26+86

SHEET NUMBER 49 OF 59 SHEETS

JOB No. 2535

NOTES:

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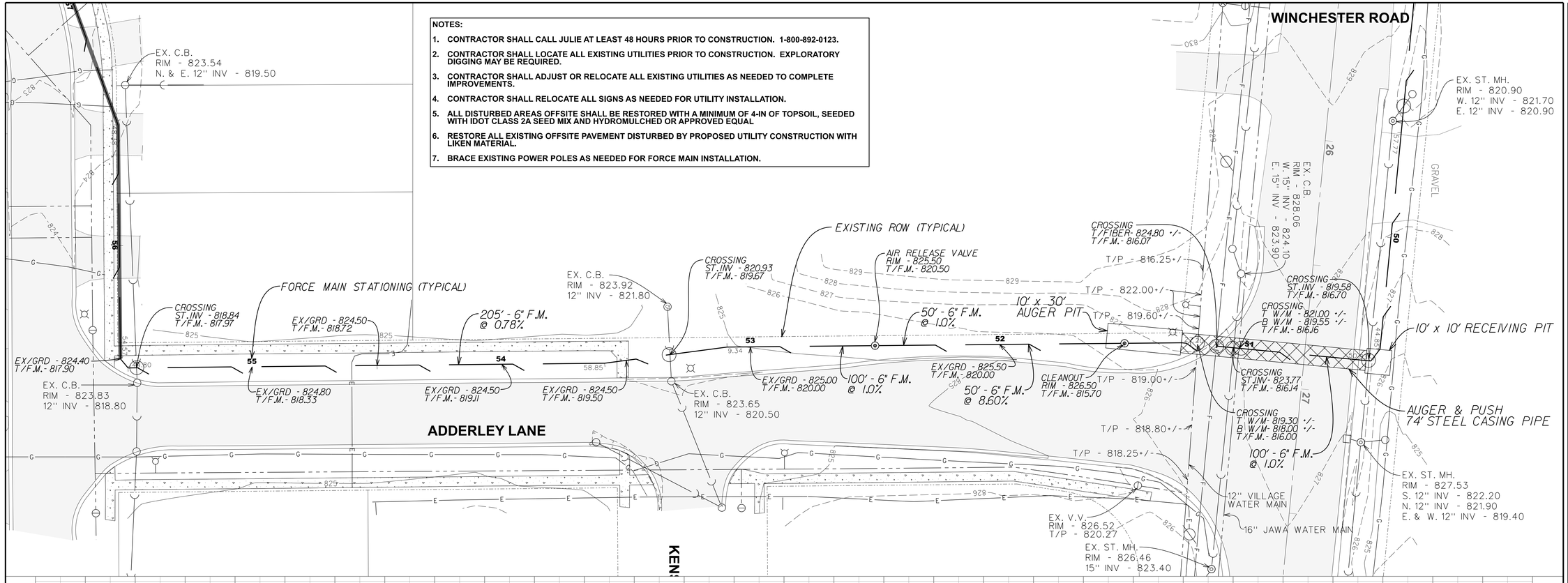

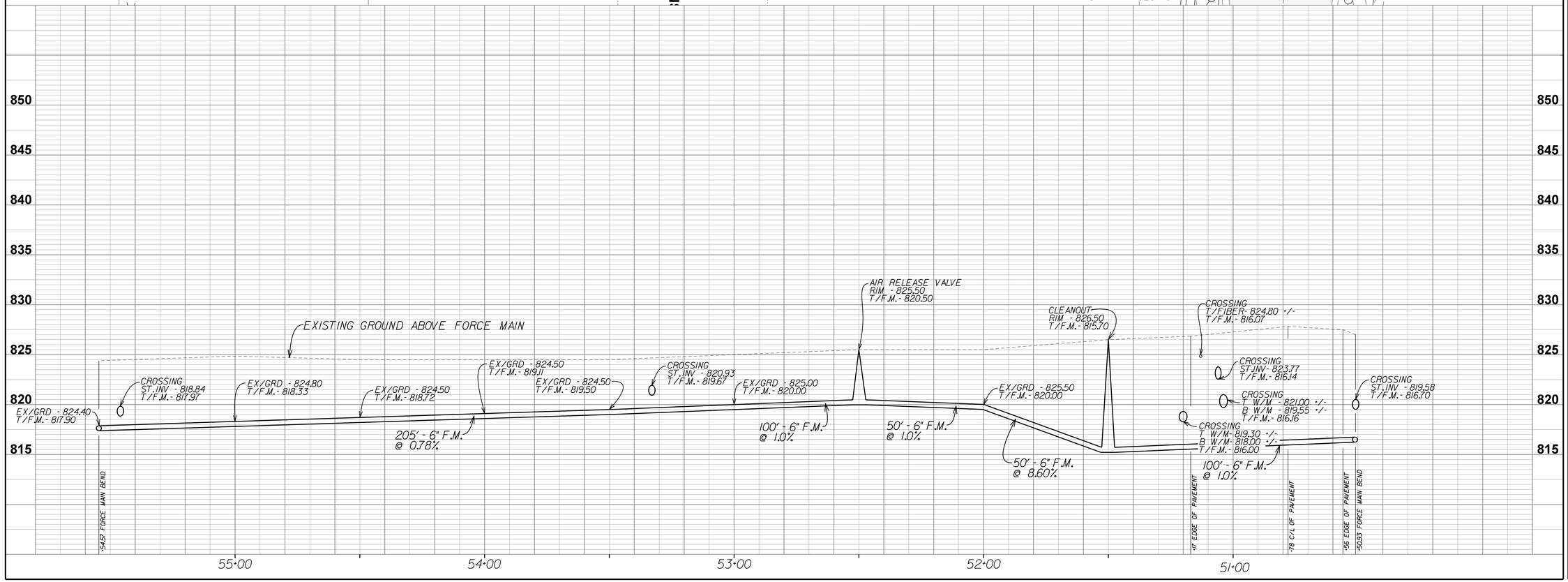

NORTH

SCALE: 1" = 20'

WALNUT RIDGE
MUNDELEIN, ILLINOIS

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FORCE MAIN PLAN AND PROFILE
ADDERLEY LANE STATION 50+50.93 TO 55+54.57

SHEET NUMBER 50 OF 59 SHEETS

JOB No. 2535

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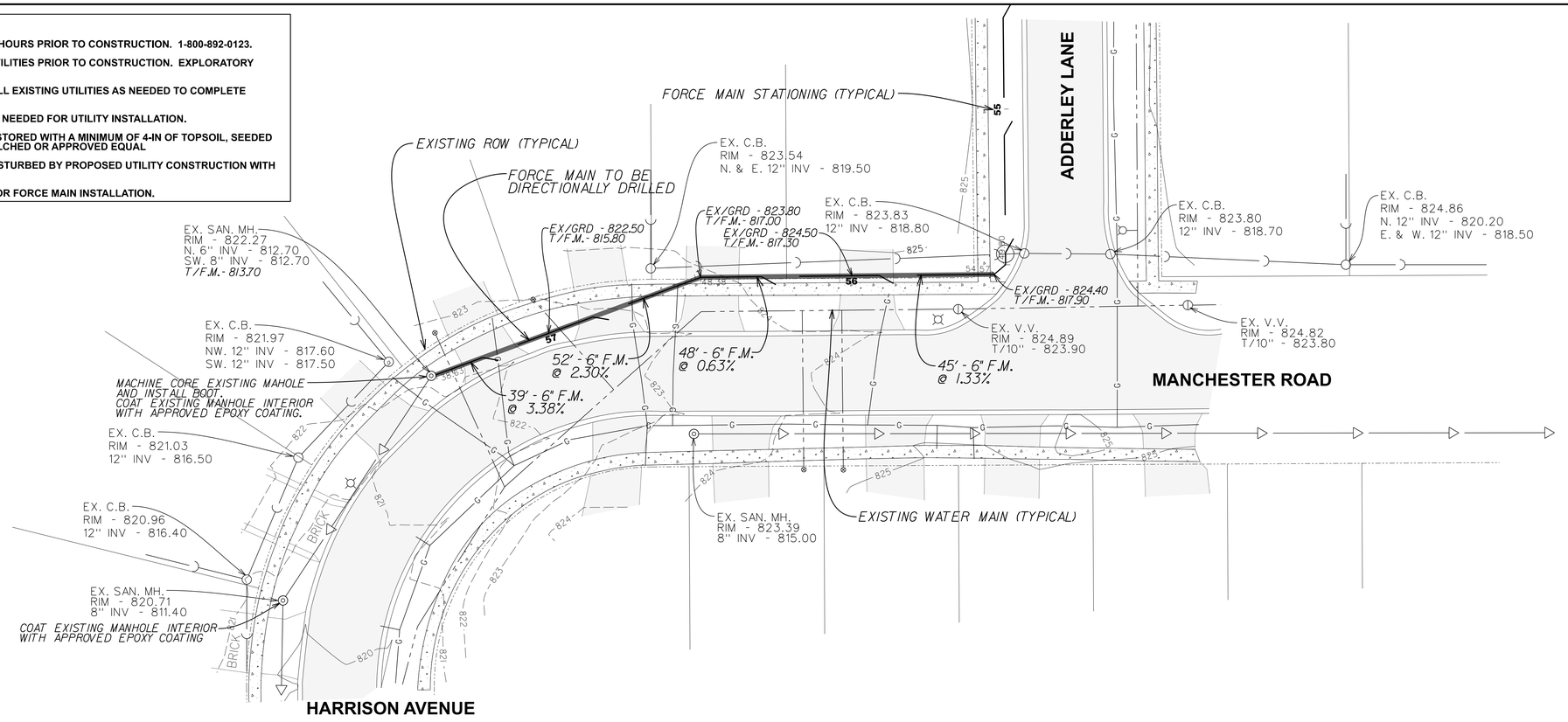

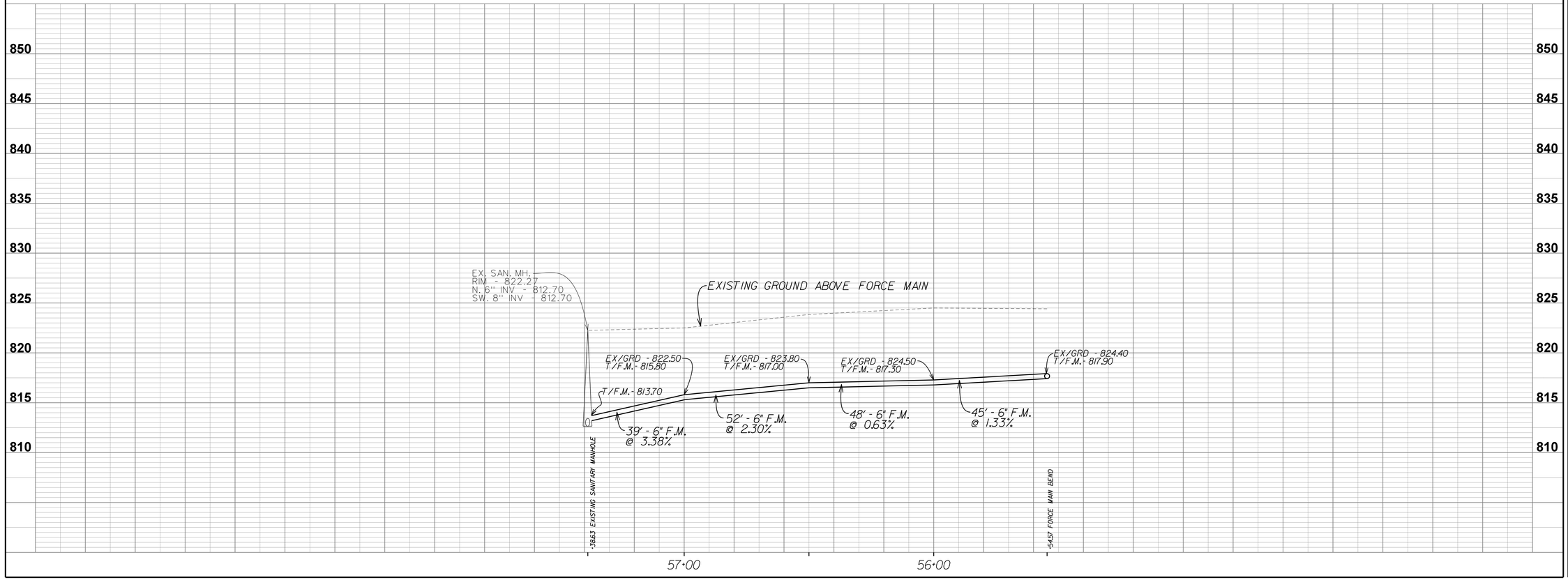

NORTH

SCALE: 1" = 20'

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WALNUT RIDGE

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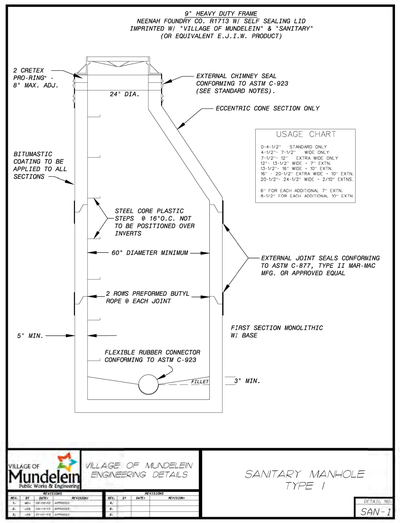
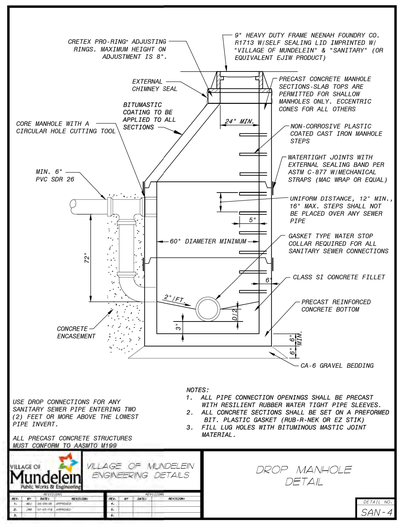
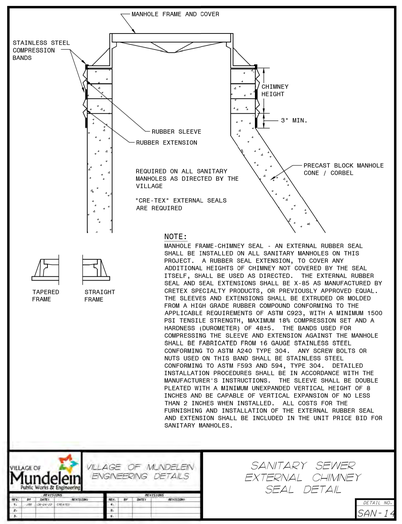
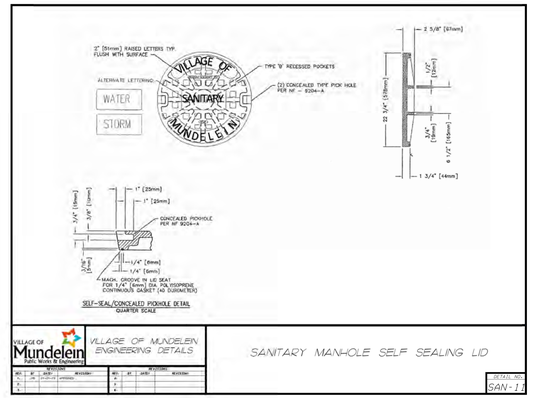
FORCE MAIN PLAN AND PROFILE
MANCHESTER ROAD STATION 55+54.57 TO 57+38.63

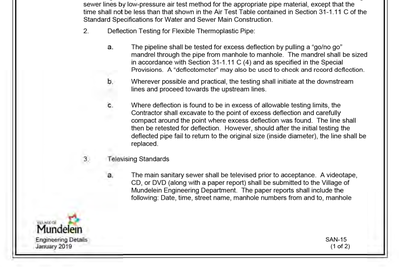
SHEET NUMBER
51
OF 59 SHEETS
JOB No. 2535

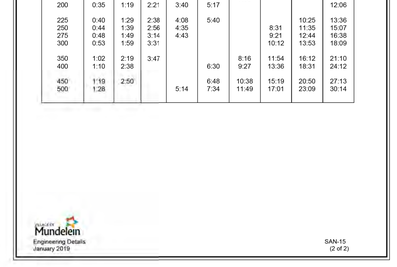


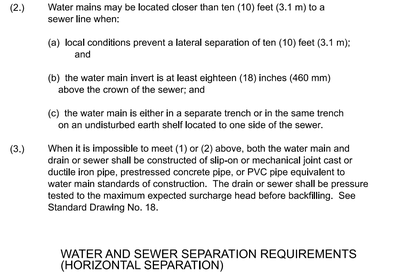


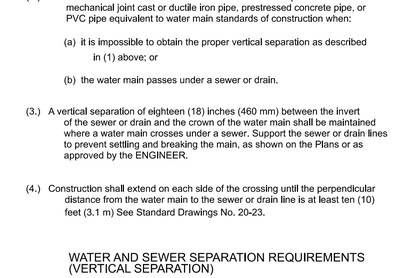












Sanitary Sewer Testing Specifications

A. Testing and Inspection for Acceptance of Sanitary Sewers

Testing and inspection of sanitary sewers for acceptability shall be conducted by the developers and results submitted to Village of Mundelein for approval.

1. Exfiltration of air under pressure.
2. Deflection of flexible Thermoplastic Pipe.
3. Televising.

The method(s) of testing shall be specified in the Special Provisions or on the plans.

B. Testing Technique

All Testing Methods: All wyes, tees, and stubs shall be plugged with flexible jointed caps, or acceptable alternate, securely fastened to withstand the internal test pressure. Such plugs or caps shall be readily removable.

1. Air Testing Method Procedures: The section of sewer to be tested shall have been trench backfilled and cleared. Pneumatic plugs (having a sealing length equal to or greater than the diameter of the pipe to be tested) placed in both ends of the pipe to be tested shall be inflated to 25 psig. The sealed sewer pipe shall then be pressurized to four (4) psig above the average back pressure of groundwater over the sewer pipe and the air pressure allowed to stabilize for at least two (2) minutes.

After the stabilization period the line shall be pressurized to three and a half (3.5) psig and the time in minutes measured for pressure to drop to two and a half (2.5) psig. If groundwater is present, the air pressure within shall be increased to three and a half (3.5) psig above the level of the groundwater and the drop of one (1) pound of air pressure measured in minutes.

Air testing techniques shall be in accordance with the latest ASTM Standard Practice for testing sewer lines by low-pressure air test method for the appropriate pipe material, except that the time shall not be less than that shown in the Air Test Table contained in Section 31-1.11 C of the Standard Specifications for Water and Sewer Main Construction.

2. Deflection Testing for Flexible Thermoplastic Pipe:

a. The pipeline shall be tested for excess deflection by pulling a "go/no go" mandrel through the pipe from manhole to manhole. The mandrel shall be sized in accordance with Section 31-1.11 C (4) and as specified in the Special Provisions. A "deflectometer" may also be used to check and record deflection.

b. Wherever possible and practical, the testing shall initiate at the downstream lines and proceed towards the upstream lines.

c. Where deflection is found to be in excess of allowable testing limits, the Contractor shall excavate to the point of excess deflection and carefully compact around the point where excess deflection was found. The line shall then be retested for deflection. However, should after the initial testing the deflected pipe fail to return to the original size (inside diameter), the line shall be replaced.

3. Televising Standards

a. The main sanitary sewer shall be televised prior to acceptance. A videotape, CD, or DVD (along with a paper report) shall be submitted to the Village of Mundelein Engineering Department. The paper reports shall include the following: Date, time, street name, manhole numbers from and to, manhole

Village of Mundelein
Engineering Details
January 2019

SAN-15
(1 of 2)

depths, pipe size, pipe type, direction televised, surface conditions, clock position of services, final distances in feet, and observation details with footage. (Include still photos for each observation that is indicated.) The contractor without delay shall perform all necessary corrective work.

AIR TEST TABLE

SPECIFICATION TIME (MIN SEC) REQUIRED FOR PRESSURE CROP FROM 30 TO 20 PSIG WHEN TESTING ONE PIPE DIAMETER ONLY

	PIPE DIAMETER, Inches								
Length of Sewer Pipe in Inches	4	6	8	10	12	15	18	21	24
25	0:04	0:10	0:18	0:28	0:40	1:02	1:29	2:01	2:38
50	0:09	0:20	0:35	0:55	1:19	2:04	2:58	4:03	5:17
75	0:13	0:30	0:53	1:23	1:59	3:06	4:27	6:04	7:55
100	0:18	0:40	1:10	1:50	2:38	4:08	5:56	8:05	10:34
125	0:22	0:50	1:28	2:18	3:18	5:09	7:26	9:55	11:20
150	0:26	0:59	1:46	2:45	3:58	6:11	8:30		
175	0:31	1:09	2:03	3:13	4:37	7:05			
200	0:35	1:19	2:21	3:40	5:17				12:06
225	0:40	1:29	2:38	4:08	5:40			10:25	13:36
250	0:44	1:39	2:56	4:35			8:31	11:35	15:07
275	0:48	1:49	3:14	4:43			9:21	12:44	16:38
300	0:53	1:59	3:31				10:12	13:53	18:09
350	1:02	2:19	3:47			8:16	11:54	16:12	21:10
400	1:10	2:38			6:30	9:27	13:36	18:31	24:12
450	1:19	2:50			6:48	10:38	15:19	20:50	27:13
500	1:28			5:14	7:34	11:49	17:01	23:09	30:14

Village of Mundelein
Engineering Details
January 2019

SAN-15
(2 of 2)

STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41-2.01 PROTECTION OF WATER MAIN AND WATER SERVICE LINES

41-2.01A GENERAL

Water mains and water service lines shall be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections and drains as follows:

41-2.01B HORIZONTAL SEPARATION - WATER MAINS AND SEWERS

(1.) Water mains shall be located at least ten (10) feet (3.1 m) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, combined sewer or sewer service connection.

(2.) Water mains may be located closer than ten (10) feet (3.1 m) to a sewer line when:

(a) local conditions prevent a lateral separation of ten (10) feet (3.1 m); and

(b) the water main invert is at least eighteen (18) inches (460 mm) above the crown of the sewer; and

(c) the water main is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

(3.) When it is impossible to meet (1) or (2) above, both the water main and drain or sewer shall be constructed of slip-on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction. The drain or sewer shall be pressure tested to the maximum expected surcharge head before backfilling. See Standard Drawing No. 18.

WATER AND SEWER SEPARATION REQUIREMENTS (HORIZONTAL SEPARATION)

STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41-2.01C VERTICAL SEPARATION - WATER MAINS AND SEWERS

(1.) A water main shall be separated from a sewer so that its invert is a minimum of eighteen (18) inches (460mm) above the crown of the drain or sewer whenever water mains cross storm sewers, sanitary sewers or sewer service connections. The vertical seperation shall be maintained for that portion of the water main located within ten (10) feet (3.1m) horizontally of any sewer or drain crossed. A length of water main pipe shall be centered over the sewer to be crossed with joints equidistant from the sewer or drain.

(2.) Both the water main and sewer shall be constructed of slip-on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction when:

(a) it is impossible to obtain the proper vertical separation as described in (1) above; or

(b) the water main passes under a sewer or drain.

(3.) A vertical separation of eighteen (18) inches (460 mm) between the invert of the sewer or drain and the crown of the water main shall be maintained where a water main crosses under a sewer. Support the sewer or drain lines to prevent settling and breaking the main, as shown on the Plans or as approved by the ENGINEER.

(4.) Construction shall extend on each side of the crossing until the perpendicular distance from the water main to the sewer or drain line is at least ten (10) feet (3.1 m) See Standard Drawings No. 20-23.

WATER AND SEWER SEPARATION REQUIREMENTS (VERTICAL SEPARATION)

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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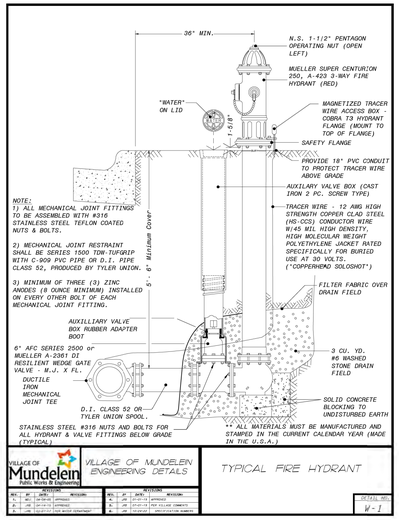
ORIGINAL ISSUE: 04/11/25

DATE	BY	DESCRIPTION
06/2025	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

REVISIONS

DETAILS

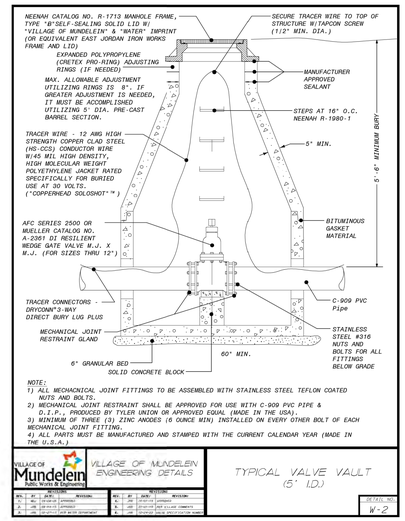
SHEET NUMBER 52
OF 59 SHEETS
JOB No. 2535



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

TYPICAL FIRE HYDRANT

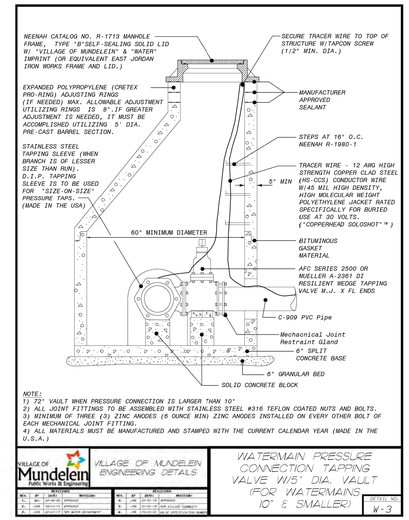
DETAIL NO. W-1



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

TYPICAL VALVE VAULT (5' I.D.)

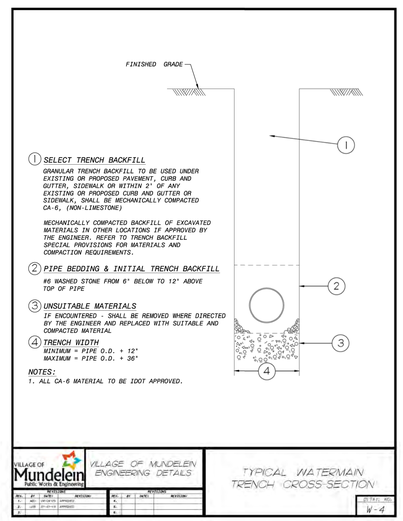
DETAIL NO. W-2



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

WATERMAIN PRESSURE CONNECTION TAPPING VALVE W/5" DIA. VAULT (FOR WATERMAINS 10" & SMALLER)

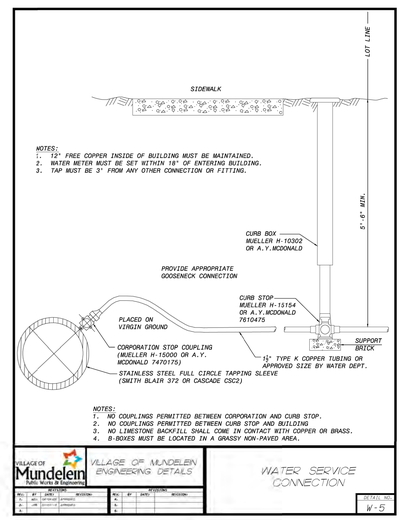
DETAIL NO. W-3



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

TYPICAL WATERMAIN TRENCH CROSS-SECTION

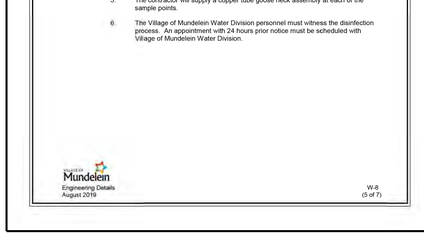
DETAIL NO. W-4



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

WATER SERVICE CONNECTION

DETAIL NO. W-5



CARRIER PIPE I.D.	CASING PIPE I.D.	PIPE T
6"	12"	0.375"
8"	16"	0.375"
12"	24"	0.500"
ADDITIONAL SIZES PER VILLAGE APPROVAL		

VILLAGE OF MUNDELEIN ENGINEERING DETAILS

STEEL CASING PIPE

DETAIL NO. W-6

Water Main Testing Specifications

Pressure and Leakage Test

A. Testing Procedures

1. All pressure leakage testing shall be tested against installed pipe, fittings, valves, joints, and fire hydrants up to nozzles.

B. Valve Operations

Village of Mundelein Water Division personnel are the only individuals authorized to operate any water valves.

C. Taps for Testing

Contractor/developer is required to provide one (1)-inch service taps in manholes for test gauges, flushing needs, and for disinfection at each end of the pipe test section.

1. Service tap will include a full circle stainless steel tapping sleeve, per the detail.
2. Contractor shall make the tap connection using an approved tapping tool on PVC C-909 piping. Contractor shall provide removed coupon to Village of Mundelein Water Division Inspector.
3. Contractor shall schedule an appointment with the Village of Mundelein Water Division for the witnessing/inspection of all taps. 24-hour notice prior to appointment must be provided to the Village of Mundelein Water Division.
4. Contractor shall remove copper tube with goose neck assembly from manholes upon completion of testing and chlorination procedures.

D. Air Removal

Before applying the specified test pressure, air shall be expelled completely from the section of piping under test. Air removal will be done in conjunction with the flushing procedures of the water main (see Flushing Requirements.)

E. Allowable Leakage

No pipe installations will be accepted if the leakage is greater than that determined by the following formula:

In inch-pound units,

$$L = \frac{SD\sqrt{P}}{133,200}$$

Where:

L	=	allowable leakage, in gallons per hour
S	=	length of pipe tested, in feet
D	=	nominal diameter of the pipe, in inches
P	=	average test pressure during the leakage test, in pounds per square inch (gauge)

In metric units,

$$Lm = \frac{SD\sqrt{P}}{715,317}$$

Where:

LM	=	allowable leakage, in liters per hour
S	=	length of pipe tested, in meters
D	=	nominal diameter of the pipe, in millimeters
P	=	average test pressure during the leakage test, in kPa

These formulas are based on an allowable leakage of 11.85 gpd/mi/in. of nominal diameter at a pressure of 150 psi.

When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/b/in. of nominal valve size shall be allowed. When hydrants are in the test section, the test shall be made against the main valve in the hydrant.

F. Acceptance of Installation

1. Acceptance shall be determined as the basis of allowable leakage or the procedures established by the Village of Mundelein Engineering Department. If any test of laid pipe discloses leakage greater than that specified, repairs or replacements shall be accomplished in accordance with the Specifications.
2. All visible leaks are to be repaired regardless of the amount of leakage.
3. Dye or any other form of colorizing the water will not be introduced into the water main for the purpose of locating leaks.

Disinfection of Water Mains

Water main disinfection will be in accordance with the State of Illinois Rules and Regulations Title 35, Subtitle F, Chapter 11, Section 652.203 o/ the Technical Policy Statement.

A. Flushing Water Main

1. Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. Fire hydrants in these sections will be flushed using either the two and a half (2 ½)-inches nozzle or the pumper nozzle to develop a velocity of at least two and five-tenths (2 5/10)-feet per second in the main.
2. All fire hydrants will be flushed and operated in the section of water main to be tested/disinfected.
3. Village of Mundelein Water Division personnel are the only individuals authorized to operate any water valves.
4. All valves that are closed will have a tap with copper tube and goose neck assembly installed in the vault for the purpose of flushing, and disinfecting the water main to the furthest end point of each section being tested.

B. Requirement of Chlorine

Before being placed into service, all new mains and repaired portion of, or extensions to existing mains shall be chlorinated so that the initial chlorine residual is not less than 50 mg/L and that a chlorine residual of not less than 25 mg/L remains in the water after standing 24 hours in the pipe. ** NO CHLORINE GAS ALLOWED**

1. Liquid Chlorine

A chlorine liquid mixture shall be applied by means of a solution-feed chlorinating device. The liquid solution must be fed directly through proper devices for regulating the rate of flow and providing effective dilution of the liquid chlorine solution into the water within the pipe being treated. Chlorinating devices for feeding solutions of the liquid chlorine must provide means for preventing the backflow of water into the chlorine solution.

2. Chlorine- Bearing Compounds in Water

This method must have prior approval from the Village of Mundelein Water Superintendent before introduction. A mixture of water and high-test calcium hypo chlorite (65-70% Chlorine) may be substituted for the chlorine gas water mixture. The dry powder shall first be mixed as a paste and then thinned to a one (1) percent chlorine solution by adding water to give a total quantity of seven and five-tenths (7 5/10) gallons of water per pound of dry powder. This solution shall be injected in one (1) end of the section of main to be disinfected while filling the main with water in the amounts as shown in the table which follows:

Chlorine Requirements to Produce ≥o mg/l Concentration in 100-feet of Pipe – By Diameter

Pipe Size In Inches	100 %Chlorine, Lb.	1 % Chlorine Solution, Gals.
4	0.027	0.33
6	0.061	0.73
8	0.108	1.30
10	0.170	2.04
12	0.240	2.88

3. Tablet Disinfection

This method must have prior approval from Village of Mundelein Water Superintendent before introduction. Since preliminary flushing must be eliminated in using this method, it should be utilized only when scrupulous cleanliness has been used in construction. It shall not be used if trench water or foreign material has entered the main or if the water is below 41° F, or if the piping length exceeds 50 linear feet.

Tablets should be placed in each section of pipe, hydrants, hydrant branches, and other appurtenances. Tablets must be at the top of the main and shall be attached by an adhesive approved by the Village Water Superintendent. Tablets in joints between pipe sections, hydrants, hydrant branches, or appurtenances are to be crushed and placed inside the annular space, rubbed like chalk in butt ends of sections to coat them if the type of assembly does not permit crushing.

In filling a section of piping with water when using the tablet method water velocity shall be less than one (1)-foot per second.

Number of 5-Grain Hypochlorite Tablets Required For a Dosage of 50 MG/L per Length of Pipe Section

Pipe Size (Inches)	Length of Pipe Section (Feet)				
	Up to 13	18	20	30	40
2	1	1	1	1	1
4	1	1	2	2	2
6	2	2	3	3	4
10	3	5	7	7	9
12	5	6	10	10	14

B. Point of Application

The preferred point of application of the chlorinating agent is at the beginning of the pipeline extension or any valved section of it, and through a corporation stop inserted in the pipe.

1. The contractor will install corporation stops with a copper tube gooseneck assembly for the purpose of disinfecting and as sample collection point at each branch, dead end, or a location which has a closed valve. Fire hydrants will be disinfected as part of this procedure.
2. At a point not to exceed five (5)-feet downstream from the beginning of the new main the water entering the new main will receive a dose of chlorine fed at a constant rate such that the water will have not less than 25 mg/L free chlorine.
3. Water from the existing distribution system shall be made to flow at a constant rate into the new main.
4. The Village of Mundelein Water Division personnel must witness the disinfection process. An appointment with 24-hour prior notice must be scheduled with Village of Mundelein Water Division.
5. In the process of chlorinating newly laid pipe, all valves, fire hydrants, or other appurtenances shall be operated while the pipe line is filled with the chlorinating agent and under normal operating pressures.

Disinfection of Water Services (Larger Than Two (2)-Inches)

For the purpose of clarifying this section, a water service in this section refers to one (1) or more of the following installations that terminate inside of a building under construction:

1. The service line being installed is for the purpose of a combination domestic and fire protection use.
2. The service line being installed is for the purpose of branching into multiple domestic services inside of a meter room.
3. The service line is the section of main being tested from the Village of Mundelein right-of-way valve to a location inside of the building.
4. There are no fire hydrants installed on the service line.

A. Meter Rooms/Building Installations

1. The service line will be disinfected to the inside permanent valve of the meter room prior to any branch service being connected.
2. The meter room will have a permanent heating system installed and in working condition prior to the disinfection.
3. One (1) sample point will be provided at the source and one (1) sample point will be provided at the inside valve provided the length of pipe does not exceed 1,000-feet.
4. The contractor will supply a copper tube gooseneck assembly at each of the sample points.
5. The Village of Mundelein in Water Division personnel must witness the disinfection process. An appointment with 24 hours prior notice must be scheduled with Village of Mundelein Water Division.

B. Domestic/Fire Service Mains/Meter Room

1. The service line will be disinfected up to the inside valve on both the fire branch and the domestic branch.
2. The Fire Service Main Branch will have a valve of equal size to the riser section installed prior to chlorination.
3. The building, meter room, or location of the incoming service line will have a permanent heating system installed and in working condition prior to the disinfection.
4. One (1) sample point will be provided at the source and one (1) sample point will be provided at the inside valve provided the length of pipe does not exceed 1,000-feet.
5. The contractor will supply a copper tube goose neck assembly at each of the sample points.
6. The Village of Mundelein Water Division personnel must witness the disinfection process. An appointment with 24 hours prior notice must be scheduled with Village of Mundelein Water Division.

Dechlorination Requirements

Following chlorination, all treatec water shall be thoroughly flushed from the newly laid pipe using the fire hydrant(s) and/or all the copper gooseneck assemblies. The flushing shall replace the highly chlorinated water with water that has a chlorine residual of less than 1mg/l or equal to the residual from the supply service.

1. The discharging of chlorinated water must be expelled to the surrounding ground surface.
2. The contractor/developer must comply with all of the I.E.P.A. Rules, Regulations, and Standards for dechlorinating water as part of the discharging.
3. The contractor/developer is responsible for the equipment and materials to dechlorinate the water at each point it is discharging.
4. The Village of Mundelein Water Division personnel are the only individuals authorized to operate the valves.
5. The Village of Mundelein Water Division personnel must witness the dechlorination procedures when flushing the water mains. An appointment with 24-hour prior notice must be scheduled with Village of Mundelein Water Division.

Sampling and Testing

Sample collection for bacterial testing will start immediately after flushing the highly chlorinated water from the system and prior to any portion of the water main being placed into service. Samples will be collected at all sample points designated by the Village of Mundelein Water Superintendent. Sampling procedures must follow the I.E.P.A. Standards for construction of new water mains.

A. Locations and Spacing

1. Samples will be collected from each dead end, branch lateral, or section of pipe that has a closed valve. Samples will be collected from the copper tube with gooseneck assembly at these points.
2. Samples will be collected from fire hydrants at points not to exceed 1,000-feet of linear water main.
3. A sample will be collected from the copper goose-neck assembly point that is located no further than five (5)-feet downstream from the beginning of the new water main.

B. Collection Requirements

1. The contractor is required to collect all samples at the location(s) designated by the Village of Mundelein Water Superintendent.
2. Village of Mundelein Water Division personnel are the only individuals authorized to operate any water valves and must witness all samples at time of collection. 24-hour prior notice must be scheduled with the Village of Mundelein Water Division.
3. The contractor is required to take the collected samples to a certified laboratory approved by the Village of Mundelein Water Superintendent.
4. The Village of Mundelein Water Division has the right to collect quality control samples at the same time contractor collects samples. The charges for the quality control samples will be charged to the contractor.
5. Samples will be collected on consecutive days with at least 24-hours of separation between the collection times.
6. Each sample collected will be tested for quality and must show the absence of coliform organisms.

C. Satisfactory Sample Results

If all the samples tested meet the Bacterial Quality Standards and are certified as satisfactory by the testing lab:

1. The contractor may have the lab e-mail the results directly to the Village of Mundelein Water Division;
2. The contractor must provide original copies of the certified results to the Village of Mundelein Water Superintendent within seven (7) business days of the date on the test results; and
3. The contractor must contact the Village of Mundelein Water Division to schedule an appointment to have the water main placed into service within 72 hours of the satisfactory test results being certified and only as approved by the Water Superintendent.

Unsatisfactory Sample Results

If anyone (1) of the samples tested fails to meet the Bacterial Quality Standards and is deemed unsatisfactory, then all the samples collected on the same date for the tested section of pipe, will be considered unsatisfactory.

1. Unsatisfactory samples from the first day of collection will be discarded. A new first day collection must be scheduled with the second day to be consecutive.
2. Unsatisfactory samples from the second day of collection will be discarded. First day samples will also be discarded and the contractor must schedule new first and second day samples.

The contractor will have up to three (3) chances of first day and two (2) chances of second day bacterial testing to obtain satisfactory results on all the samples collected and tested.

3. Should the contractor fail to obtain satisfactory results after the allotted attempts, the water main section being tested is to have the original disinfection procedures repeated until satisfactory results are obtained.

Meter Room Requirements

(Future Section) Contact Public Works Department in the interim.

NOTES:

1. BLOCKING SHALL BE APPLIED FOR ALL TEES, PLUG, CAPS, & 11 1/4° OR MORE BENDS BEARING CAPACITY OF 2000 P.S.F.
2. THRUST BLOCKS TO BE CLASS "SI" CONCRETE.
3. BEARING AREAS OF UNDISTURBED EARTH SHALL HAVE A MINIMUN ALLOWABLE BEARING CAPACITY OF 2000 P.S.F.
4. BEARING AREA OF SOIL BASED ON 65 P.S.I. WATERMAIN PRESSURE.

*1. 1'-9" MIN. FOR 12" OR SMALLER DIA.
2'-9" MIN. FOR 16" DIA.
4'-0" MIN. FOR 24" DIA.

*2. 1'-3" MIN. FOR 12" OR SMALLER DIA.
2'-0" MIN. FOR 16" DIA.
2'-10" MIN. FOR 20" DIA.

THRUST BLOCKING DETAIL

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WALNUT RIDGE

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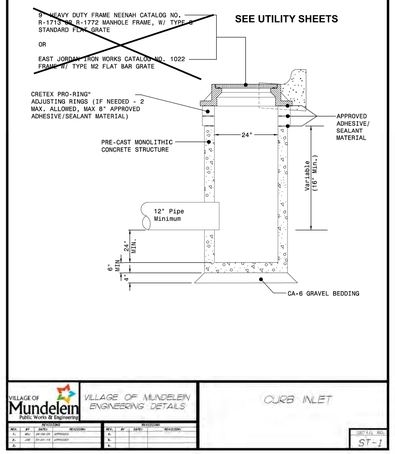
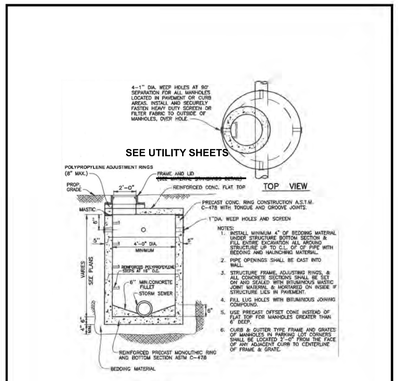


VILLAGE OF MUNDELEIN ENGINEERING DETAILS

CURB INLET

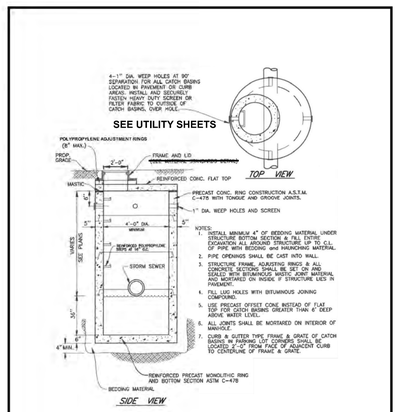
DETAIL NO. ST-1



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

STORM MANHOLE DETAIL

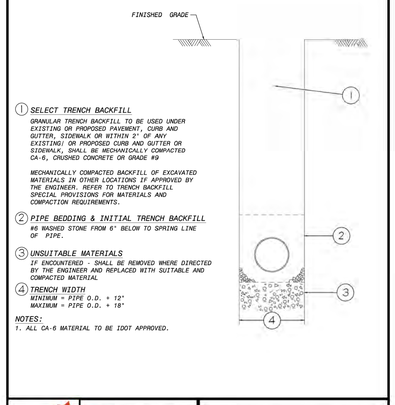
DETAIL NO. ST-6



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

CATCH BASIN DETAIL

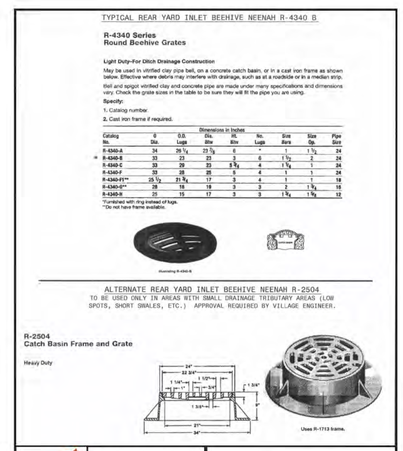
DETAIL NO. ST-7



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

TYPICAL STORM SEWER TRENCH CROSS SECTION

DETAIL NO. ST-8



VILLAGE OF MUNDELEIN ENGINEERING DETAILS

TYPICAL REAR YARD INLETS

DETAIL NO. ST-6

VILLAGE OF MUNDELEIN ENGINEERING DETAILS

SUMP PUMP CONNECTION TO STORM SEWER

DETAIL NO. ST-7

PIPE DIA.	APPROX. WALL	A	B	C	D	E	G	R	SLOPE
12"	530	2"	4"	2'-0"	4'-0"	3'-6"	1'-2"	2'	9"	3:1
15"	740	2 1/2"	6"	2'-2"	3'-10"	3'-11"	1'-4"	2'-6"	11"	3:1
18"	990	2 1/2"	9"	2'-3"	3'-10"	4'-1"	1'-6"	3'-0"	12"	3:1
21"	1280	2 1/2"	9"	2'-11"	3'-2"	4'-1"	1'-7"	3'-6"	12"	3:1
24"	1520	3"	9"	3'-7"	3'-2"	4'-6"	1'-8"	4'-0"	12"	3:1
27"	1930	3 1/2"	10"	4'-0"	2'-7"	5'-0"	1'-9"	4'-6"	13"	3:1
30"	2190	3 1/2"	10"	4'-6"	1'-7"	5'-0"	1'-9"	5'-0"	13"	3:1
33"	3200	3 1/2"	11"	4'-10"	3'-3"	5'-6"	1'-9"	5'-6"	13"	3:1
36"	4100	4"	11"	5'-3"	2'-10"	5'-6"	1'-9"	6'-0"	14"	3:1
42"	5380	4 1/2"	11"	5'-9"	2'-11"	6'-2"	1'-9"	6'-6"	14"	3:1
48"	6550	5"	12"	6'-0"	2'-2"	6'-2"	1'-9"	7'-0"	15"	3:1
54"	8240	5 1/2"	13"	5'-5"	2'-11"	8'-4"	1'-6"	7'-6"	15"	24"	2.4:1
60"	9730	6"	14"	5'-5"	3'-2"	8'-3"	1'-6"	8'-0"	15"	6"	*	2:1
66"	10710	6 1/2"	14"	6'-0"	2'-3"	8'-3"	1'-6"	8'-6"	15"	6"	*	2:1
72"	12520	7"	15"	6'-0"	1'-6"	8'-3"	1'-6"	9'-0"	16"	6"	*	1.86:1
78"	14770	7 1/2"	15"	7'-6"	1'-6"	9'-3"	1'-6"	9'-6"	16"	6"	*	1.82:1
84"	18160	8"	15"	7'-6"	1'-1"	9'-3"	1'-7"	10'-0"	16"	6"	*	1.5:1

RADIUS AS FURNISHED BY MANUFACTURER

NOTES:
1. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-170 CLASS III. WALL B REINFORCED CONCRETE PIPE.
2. PRECAST CONCRETE FLARED END SECTION FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.
3. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE CONSTRUCTED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS
4. ALL FLARED END SECTIONS SHALL HAVE GRATINGS AS PER IDOT STANDARD.
5. PROVIDE CLAY DAM UNDER COLLAR AND AROUND UPSTREAM END OF FES AND FIRST PIPE THE FULL WIDTH OF TRENCH AND 10 FEET LONG AT LOCATIONS WHERE THEY DISCHARGE INTO A DETENTION BASIN.

CONCRETE FLARED END SECTION

GENERAL NOTES

GRATING DETAIL SHOWN ARE INTENDED FOR USE WITH PASTICLA-MI SIDES OF PRECAST REINFORCED CONCRETE FLARED END SECTIONS AS SHOWN ON STANDARD 542311

STRUCTURAL STEEL SHAPES AND PLATES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

GALVANIZED STEEL PIPE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

BOLTS, NUTS AND WASHERS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

ALL FABRICATION SHALL BE COMPLETED AND READY FOR ASSEMBLY BEFORE GALVANIZING

THE CORED HOLES IN THE PRECAST CONCRETE FLARED END SECTIONS SHALL BE TO THE DIAMETERS NOTED. IF CONE-OUT ON THE OTHER END OF THE HOLE EXCEEDS 1/2" IN DEPTH, FILL HOLE WITH GROUT TO CORRECT DIAMETER OF THE HOLE.

APPROXIMATE WEIGHT OF STEEL SHOWN INCLUDES TOTAL WEIGHT OF GRATING, BOLTS, WASHERS, NUTS AND STEEL PIPE.

THE CONTRACT UNIT PRICE "EACH" FOR GRATING FOR CONCRETE FLARED END SECTION OF THE SIZE INDICATED SHALL INCLUDE FABRICATION AND INSTALLATION OF THE GRATING, COMPLETE IN PLACE, INCLUDING FABRICATION OF THE NECESSARY MOUNTING HOLES IN THE FLARED END SECTION. THIS PRICE DOES NOT INCLUDE THE COST OF THE PRECAST CONCRETE FLARED END SECTION.

CONCRETE FLARED END SECTION

NOTE: D = PIPE I.D.

CLASS	* MIN. THICKNESS
A3	8"
A4	16"
A5	22"
A6	26"
A7	32"

RIP RAP DETAIL

RIP RAP DETAIL

PIPE DIAMETER (IN.)	STONE RIP-RAP								BEDDING	
	QUALITY DESIGNATION	GRADATION (RR) NUMBER	MINIMUM THICKNESS (IN.)	MINIMUM APRON LENGTH (FT.) B	WEIGHT RANGE (#)	WEIGHT AVERAGE (#)	SIZE AVERAGE (IN.)		GRADATION (RR) NUMBER	MINIMUM THICKNESS (IN.) C
12	C	3	12"	4'	1-50	10	4.5		NOT	REQ'D.
15	C	3	14"	5'	1-50	10	4.5		NOT	REQ'D.
18	C	4	16"	6'	1-50	40	7	1		6"
24	B	4	20"	8'	1-150	40	7	1		6"
30	B	4	22"	10'	1-150	40	7	1		6"
36	B	5	24"	12'	3-400	90	10	1		8"
48	B	6	28"	16'	6-600	170	12	2		10"
60	B	6	36"	20'	6-600	170	12	2		10"
72	B	6	44"	24'	6-600	170	12	2		10"

NOTE:
1. GENERIC NAME RR1=CA3,RR2=CA1,RR3=2"X9", RR4=4"X8".
2. FOR PIPE 72" AND LARGER A SPECIAL DESIGN OF RIP-RAP OR APRON IS REQUIRED.
3. GRADATION REFER TO I.D.O.T. SPECIFICATIONS AND STANDARDS.

RIP RAP DETAIL

FOR CONSTRUCTION

WELCH BROS., INC.
Bartlett, IL (847) 741-5134
Belvidere, IL (815) 547-3000

Take Off By: 8/11/2021 LSims

Structure: FLAT TOP EXAMPLE
Based On:
Job Name: Shelston Woods PH 1
Job Location: Mundelein
Specification: 48" Storm Offset
Contractor: Pirtano Construction

Pre Pour:		Post Pour:		Frame:	3287-15 (24x42)
Boots:		Steps:		Notes:	EXAMPLE OF FLAT TOP SLAB FOR R-3287-10 AND R-3287-15. ALSO AVAILABLE FOR 5'-0" DIAMETER MH'S/CB'S
Core:		Blockout:	16" - 0		
Coating:		Invert:			

OPEN SQUARE FEET IN GRATES
3287-10 - 2.1
3287-15 - 3.2
OPEN SQUARE FEET IN FLAT TOP 6.0

WELCH BROTHERS,.INC. is an IDOT certified precast producer. Plant # 3505-01,3505-04, 3505-03. All products produced by Welch Brothers , Inc. conform to latest ASTM C-478 Specification, and IDOT standards. All materials used in manufacturing are all from IDOT approved sources and are domestically produced.See WWW.Welchbrothers.com for further info. Concrete to be min 5,000 PSI @ 28 days.

Opening Schedule

ID	Invert	To / From	Pipe Size	Connector	Hole Size	Bottom	Angle

Elevation (View A-A)

Plan View

BOM For Structure

ID	Description	Qty.	Weight
Fr	3287-15 (24x42)	1	
A	48" Flat Top Straight Hole 24x36	1	914
	Totals (pieces, lbs)	1	914

Submittal2Construction 7.3.06 Page 1 of 1 8/11/2021

R-3287-15
Combination Inlet Frame, Grate, Curb Box
Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-15	V	3.2	11.3
R-3287-15	V	3.2	11.3*

*Note: Bares Grate without Curb Box

Available with 3" radius curb box.

R-3287-SB10

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-SB10	V	1.5	5.5

R-3287-5

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-5	V	3.2	11.3

NDS
We put water in its place

NDS, INC.
851 NORTH HARVARD AVE.
LINDSAY, CA 93247
TOLL FREE: 1-800-726-1994
PHONE: (559) 562-9888
FAX: (559) 562-4488
www.ndspro.com

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

DRAINAGE EMITTER
TYPICAL POP-UP DRAINAGE EMITTER (CORRUGATED PIPE)

NDS KEY COMPONENT www.ndspro.com/s5

REVISION DATE 8-24-2015

STORM DIFFUSER PIT DETAIL

WALNUT RIDGE
MUNDELEIN, ILLINOIS

PEARSON,BROWN & ASSOCIATES,INC.
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1850 W. WINCHESTER ROAD - SUITE 205
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DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

DESCRIPTION	DATE	BY
REVISED PER VILLAGE REVIEW COMMENTS	06/20/25	AKZ

REVISIONS

DETAILS

SHEET NUMBER 54 OF 59 SHEETS

JOB No. 2535

Miscellaneous Roadway Standards/Notes

1. All connecting roadway gradients with an algebraic difference of greater than 1.2 percent shall be connected with a vertical curve. All standards contained in AASHTO's "A Policy on Geometric Design of Highways and Streets," latest edition, regarding vertical curves shall be followed. A design speed of 45 mph shall be used on collector commercial/industrial roads and a design speed of 35 mph shall be used on local streets.

2. Street jogs with centerline offsets of less than 150-feet are not allowed on local roads. Offsets on collector roads are not allowed and spacing between two (2) cross streets on collector roads shall be no closer than 500-feet.

3. Gradients of all streets shall be at least 0.6 percent:

   a. Collector and industrial streets shall not exceed five (5) percent;
   b. Local streets shall not exceed eight (8) percent.

4. Any pavement patches located within intersections will require the entire intersection, to radius returns on all the legs, to be milled and resurfaced with two (2)-inch bituminous concrete surface course.

5. Roadway cross-sections showing existing and proposed sections shall be provided at a scale of one (1)-inch = two (2)-feet V, one (1)-inch = ten (10)-feet H for any existing roadway reconstruction and at a scale of one (1)-inch = five (5)-feet V, one (1)-inch = ten (10)-feet H for new roadways.

6. One (1) copy of the Final Engineering Plans must be submitted to the Village in Microstation digital format.

7. All Plats of Subdivision shall be submitted to the Village on a 24-inch x 36-inch Mylar for recording purposes. It shall also be submitted to the Village in electronic format on a CD which can be read by an IBM compatible computer in Microstation format. All coordinates shall be based upon State Plane Coordinates and shall tie to existing monuments as established by the Village of Mundelein. The following specific electronic layers are required: the boundary, roadway centerline, property lines, and roadway right-of-way must each be on a separate layer.

8. A minimum of two (2) permanent concrete bench mark monuments (see Standard Detail R-17) shall be established in all new residential, commercial, and industrial subdivisions. Number of monuments and monument placement shall be approved by the Village Engineer.

9. A qualified geotechnical soils engineer must certify the acceptability of the subgrade of all subdivision streets prior to placing any base course material. This must be based upon the latest addition of the Village of Mundelein's Specifications "Field Quality Control Procedures for Pavement Area Subgrade" (I-1.)

Village of Mundelein
Engineering Details
August 2022

R-0
(1 of 2)

Field Quality Control Procedures For Pavement Area Subgrade

The following procedures are recommended in order to prepare the subgrade for the project.

A. The work area will first be stripped of vegetation or, in cut areas, excavated to a Design Subgrade Elevation as shown on the plans.
   1. The subgrade after cut will be proof rolled to verify a stable subgrade as directed by the soils engineer.
   2. A series of test pits may be needed as directed by the soils engineer to verify additional undercut as predicted or estimated by Boring Logs and the Earthwork Undercut Plan.

   Proof rolling procedures will be as follows:
   a. Two (2) to four (4) passes with a 25 ton rubber tire roller or equivalent; and
   b. Concentrate additional passes in areas that exhibit instability as directed by the soils engineer.

B. Unstable and unsuitable subgrade materials will be removed to the depth encountered as directed by the Soils Engineer.
   1. Materials at undercut subgrade elevation should:
      a. Have an unconfined compressive strength (Qu) of 2.0 tsf minimum, or cone indix of 250 minimum;
      b. Contain no foreign materials or have organic contents in excess of six (6) percent total organic matter as determined by the Wet Combustion Method (AASHTO T-194); or maximum dry densities less than 105 pcf as determined by AASHTO T-180 (ASTM D-1557); and
      c. Be able to support necessary construction equipment without severe rutting or deflection.

C. At undercut subgrade elevation, the upper eight (8)-inches of soil shall be scarified or disced and recompacted to 95 percent of the maximum dry density as defined by AASHTO T-180 (ASTMD-1557), prior to remedial work fill placement.

D. Proof rolling of the prepared undercut subgrade will be done if required by the soils engineer to further verify a stable subgrade prior to fill placement.

E. Roadway FILL shall be placed in successive horizontal lifts of not more than six (6)-inches in loose depth (cohesive material), or not more than nine (9)-inches in loose depth (porous granular material.)

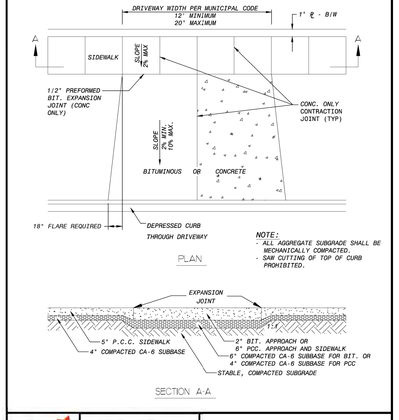
F. The upper eight (8)-inches of subgrade in areas not undercut shall also be scarified and recompacted to 95 percent of the maximum dry density as defined by AASHTO T-180 (ASTM D-1557), prior to placement of subsequent lift of FILL material.

G. Once the existing subgrade is stabilized, FILL can be placed and compacted in lifts to Design Subgrade Elevation. All roadway FILL materials shall be compacted to 95 percent of AASHTO T-180 (ASTM D-1557.)

H. When the work listed in the steps above has been completed, the subgrade will be checked by proof rolling and approved by the Village before construction of the subbase, base course, or pavement is started. The Village will make the determination as to whether areas failing this proof roll require additional drying and recompaction or whether the soil conditions warrant more extensive treatment.

Village of Mundelein
Engineering Details
August 2022

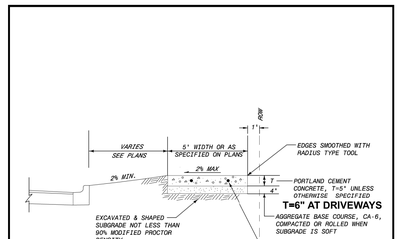
R-0
(2 of 2)



NOTE:
- ALL AGGREGATE SUBGRADE SHALL BE MECHANICALLY COMPACTED.
- SAW CUTTING OF TOP OF CURB PROHIBITED.

VILLAGE OF MUNDELEIN ENGINEERING DETAILS

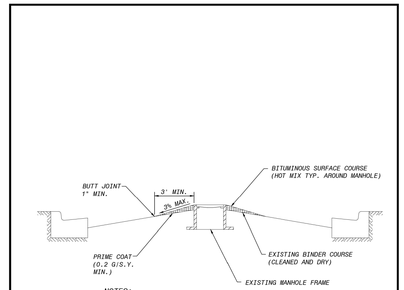
SINGLE-FAMILY RESIDENTIAL DRIVEWAY APPROACH — DETAIL NO. R-3



NOTES:
1. LIGHT BROOMED SURFACE FINISH
2. SIDEWALK WIDTH TO BE 5' CONCRETE (UNLESS OTHERWISE APPROVED TO MATCH EXISTING)
3. EXPANSION JOINTS EVERY 100' WITH PREFORMED BITUMINOUS JOINT FILLER
4. TOOLED CONTRACTION JOINT, ONE FOURTH THE DEPTH OF THE SIDEWALK EVERY 5 FEET

VILLAGE OF MUNDELEIN ENGINEERING DETAILS

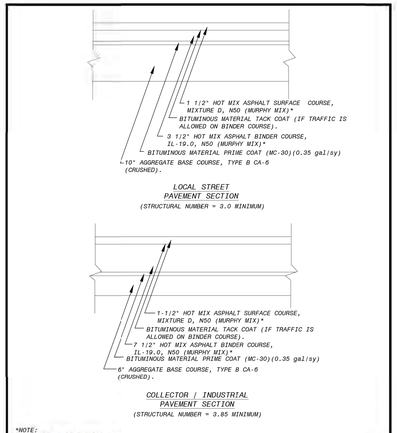
SIDEWALK DETAIL — DETAIL NO. R-4



NOTES:
1. RAMP TO BE MAINTAINED THROUGHOUT THE WINTER AND UNTIL FINAL SURFACE IS IN PLACE.
2. RAMP MATERIAL TO BE REMOVED BY MILLING OR OTHERWISE REMOVED BEFORE PLACEMENT OF FINAL SURFACE COURSE.

VILLAGE OF MUNDELEIN ENGINEERING DETAILS

MANHOLE RAMPING DETAIL — DETAIL NO. R-6



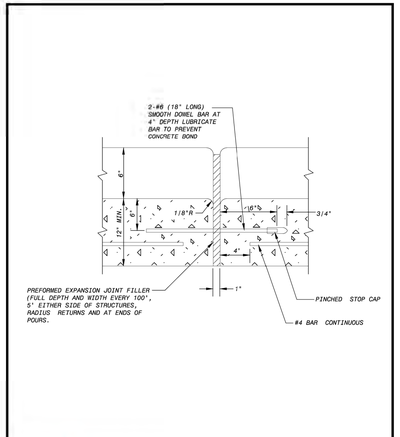
LOCAL STREET PAVEMENT SECTION
(STRUCTURAL NUMBER = 3.0 MINIMUM)

COLLECTOR / INDUSTRIAL PAVEMENT SECTION
(STRUCTURAL NUMBER = 3.85 MINIMUM)

*NOTE:
AIR VOIDS TO BE 3.5%@50 GYR

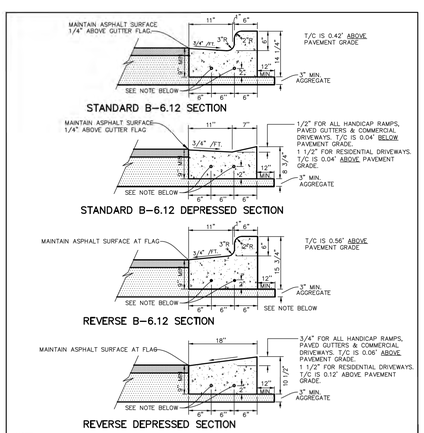
VILLAGE OF MUNDELEIN ENGINEERING DETAILS

LOCAL & COLLECTOR / INDUSTRIAL STREETS TYPICAL PAVEMENT SECTION — DETAIL NO. R-9



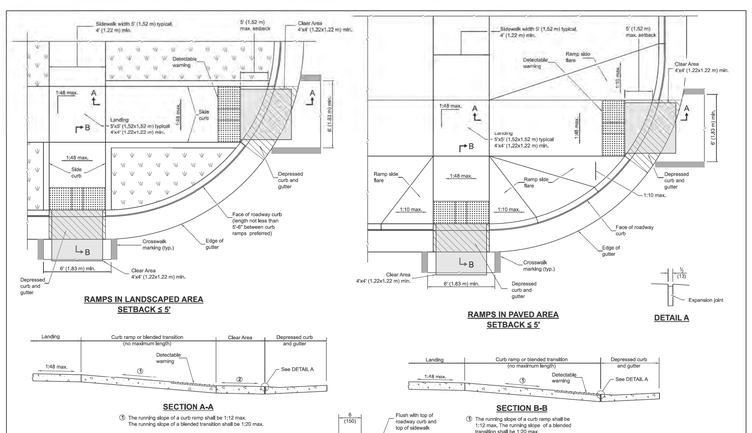
VILLAGE OF MUNDELEIN ENGINEERING DETAILS

CURB EXPANSION JOINT — DETAIL NO. R-13



NOTE:
1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES, CURB RETURNS, COLD JOINTS OR 60' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX.
3. INSTALL 2-#4 DEFORMED BARS X 10'-0" LONG OVER ALL TRENCHES.
4. TRANSITION CURB AND GUTTER AS NECESSARY TO MEET DRAINAGE STRUCTURE FRAME AND GRATE.

B-6.12 CURB & GUTTER DETAIL



DATE	REVISIONS
1-1-25	Indicated "Clear Area" Location and updated cross-slopes.
1-1-19	Removed "15-foot rule", added "Blended transitions" and placement tolerances for detectable warnings.

PERPENDICULAR CURB RAMPS FOR SIDEWALKS
(Sheet 1 of 2)
STANDARD 424001-12

Street Sign Standards

Sign Specifications

All sign posting shall be installed in accordance to the install diagram printed in the latest edition of the M.U.T.C.D. Manual.

All signage shall be fabricated in accordance with the latest revision of the Federal Highway Standards Manual and the M.U.T.C.D. Manual Publication.

All aluminum shall meet or exceed State of Illinois Aluminum Sign Specification 5052-H3 Alloy Mil Finish ATSM B-209-88, Conversion Coating ATSM B-4449-67A, Class 2 or latest revisions and .080 aluminum thickness.

All non-street name signs shall be mounted to a height of (7) feet to the bottom of the sign to the top of the curb.

Postings with (2) signs shall be mounted with the top sign (7) feet to the bottom and the second sign directly below leaving minimal or no gap between signs.

Street name signs shall be mounted to a height of (9) feet to the bottom of lowest street name sign.

All postings shall be 2"x 2" square tele spar type 14-gauge galvanized posts.

All post bases shall be 36" long x 2 ¼" x 2 ¼" 12-gauge galvanized square.

All postings, except where shown on plans (prints) shall be posted at or as close to the property lot lines wherever possible unless a conflict where underground utilities exist.

All postings shall be plumb and true with a post level and will be checked by The Village of Mundelein Public Works personnel for accuracy of installation. If installations are rejected, they shall be re-installed at the contractor's expense.

All street name signs shall be removed off street light poles where possible and if not install at 10' in height.

All bases are to be pounded in ground with 3-4 holes showing.

All street name signs bases shall be 3' from back of curb.

All non-street name sign bases shall be 3' from back of curb.

In instances of a curb side sidewalk less than 5' wide, the post should be placed immediately behind the sidewalk.

Speed Limit 25 Entire subdivision (24x30) shall be placed at all the entrances to neighborhoods.

Street name signs riveted to pole with drive rivets and riveted together on ends with PVC spacer.

All signs must have 1170 CLEAR ELECTROCUT OVERLAY.

Street name signs are to be single sided, printed on HIP mounted to each side of post.

Reflective Sheeting

The sign face shall be reflective sheeting conforming to the specifications for "Prismatic Lens Reflective Sheeting Illinois Type AZ and ASTM Type III for Traffic Control Signs."

Signs must be fabricated with 3M VIP Diamond Grade reflective sheeting with 1170 series 3M EC (electronically cut) film.

Sign Mounting Hardware

3/8-inch x ¾-inch stainless steel hammer-hit drive rivet.

¼-inch x 1 ¼-inch aluminum compression blind rivet cherry.

Village of Mundelein
Engineering Details
April 2023

R-12
(1 of 3)

Sign Mounting Hardware (Light Pole)

36-inch cantilever with 5/16-inch x 1" galvanized steel hex head bolts

Stainless steel strapping ¾ " x .030" Band-It material or 9/16 " x 40" snap lock assembly.

On Telle spar:

1" OD aluminum drive rivet and nylon washer.

5/16" x 2.5" corner bolt with washer nut.

Rivet mate ¼ w/ 1-13/16" sleeve aluminum, grip, range 1 7/8 to 2 1/8 PVC spacers VCS 237 1 ¾ ".

Reflectorized Street Name Signs

Length and width:

Mounted street name signs shall have a standard height of (9) inches. The overall length of the face and blade shall be determined by the number of letters in the street name, including the star logo, prefixes and suffixes. The name plate shall be a minimum length of (30) inches. Where extra length is required, it shall be in (6) inch increments.

Sign Face:

Sign blanks are to be flat .080 aluminum.

All cut uppercase letters are to be six (6)-inches in height, lowercase letters to be three (3)-inches in height.

All compass prefix and suffix letters are to be three (3)-inches in height.

Sign blanks are to be faced with 3M VIP Diamond Grade (White) sheeting.

White base material shall be covered with Green EC (electronically cut) film with ¾-inch borders.

Traffic Control Signs

Stop signs shall be 30-inches x 30-inches with 3M VIP Diamond Grade reflective sheeting.

Yield signs shall be 30-inches with 3M VIP Diamond Grade reflective sheeting.

Village of Mundelein
Engineering Details
April 2023

R-12
(2 of 3)

Decorative Streetscape Posting

2 3/8" Diameter Black Aluminum Poles

SKU: 293.00210

Pole, Smooth, 2-3/8"x10'x.159 Wall, Aluminum, Black Finish, decorative streethase pole

Save for later | Remove Item

Aluminum Mini Bases

SKU: 293.00624

Mini-Base for 2-3/8" Fluted Black Finish, Decorative Slip Over Base Improves Look

Save for later | Remove Item

Ball Finial for Pole Top

SKU: 293.00248

Finial, Ball Cap for 2 3/8" Round Post Toppers, Decorative Yoloxo Black Finish

Save for later | Remove Item

V-Loc® Post Anchor for Round 3" Posts

SKU: 034.00086

V-Loc, 3S-VR36 Model, for 3" Round Posts going into soil, Includes: Clean-out Bar, Wedge, Post Anchor

Save for later | Remove Item

Z Bracket Single-Sided Round Pole Brackets

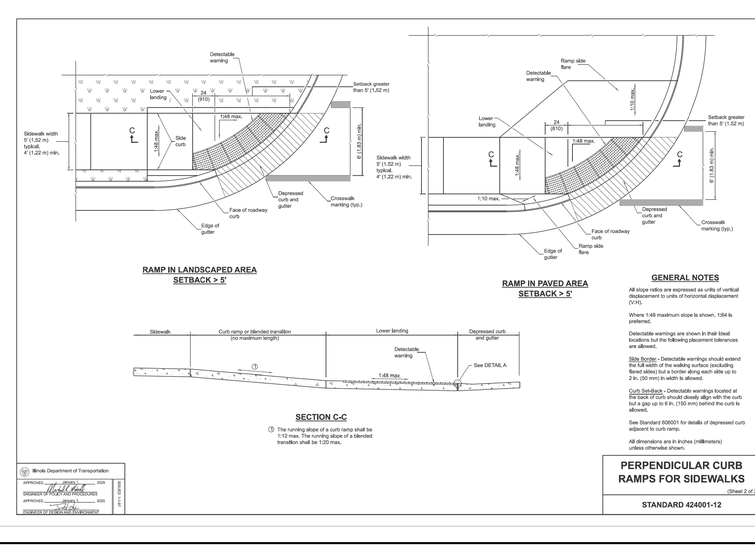
SKU: 617.00005

Sign Mounting Kit, Z-Bracket, 2-3/8" For Mounting One Static Sign to 2-3/8" OD Pole

Save for later | Remove Item

Village of Mundelein
Engineering Details
April 2023

R-12
(3 of 3)



GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

Where 1:48 maximum slope is shown, 1:64 is preferred.

Detectable warnings are shown in their ideal locations but the following placement tolerances are allowed.

Side Border - Detectable warnings should extend the full width of the walking surface (excluding flared sides) but a border along each side up to 2 in. (50 mm) in width is allowed.

Curb Set-Back - Detectable warnings located at the back of curb should ideally align with the curb but a gap up to 6 in. (150 mm) behind the curb is allowed.

See Standard 606001 for details of depressed curb adjacent to curb ramp.

All dimensions are in inches (millimeters) unless otherwise shown.

PERPENDICULAR CURB RAMPS FOR SIDEWALKS
(Sheet 2 of 2)
STANDARD 424001-12

WALNUT RIDGE

MUNDELEIN, ILLINOIS

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DESIGNED BY: A.K.Z.
DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

DESCRIPTION	DATE BY
REVISED PER VILLAGE REVIEW COMMENTS	06/20/25 AKZ

REVISIONS

DETAILS

SHEET NUMBER 55 OF 59 SHEETS

JOB No. 2535

Street Lighting Notes and Special Provisions

General

1. At least two (2) weeks prior to the installation of street lighting, contact the Village of Mundelein Engineering Department and the Village of Mundelein Public Works Department Facility Maintenance Division at (847) 949-3278 to schedule a pre-construction conference. The Public Works Department must also be notified a minimum of 24-hours prior to commencement of work. All street lighting components must be within the right-of-way or dedicated easement.
2. A street light cable inspection is required following the cable duct installation prior to backfill. Contact Village of Mundelein Engineering Department for scheduling.
3. The contractor shall call J.U.L.I.E. at (800) 892-0123 for utility locations prior to beginning any excavations.
4. Street lighting shall be based on a 110-volt AC system, with a maximum of ten (10) lamps per circuit. Streetlights shall be controlled by a central controller. The Controller shall be located three (3)-feet behind the sidewalk within the right-of-way or dedicated easement.
5. All underground circuit wiring shall be run in minimum one (1)-inch "Unit Duct" with three (3) #6 U.S.E. XLP Copper Conductors. No circuit wiring shall be run in side or backyards. Larger conductors may be required by the Village for compensation of line loss over long distances.
6. The electrical supply from the utility company pedestal to the streetlight controller shall be determined by length of run and placed in a two (2)-inch rigid conduit.
7. A #6 Stranded Copper Ground Cable shall be installed in the same trench and adjacent to the unit duct.
8. A 5/8-inch diameter by eight (8)-foot copper ground rod shall be installed at each streetlight and at the controller.
9. Street lighting cables shall be installed three (3)-feet behind the back of the curb, and a minimum of 24-inches below finished grade.
10. When circuit wiring must cross under permanent pavement (streets, driveways, sidewalks, etc.), the unit duct must be installed within a four (4)-inch PVC Schedule 40 conduit that shall extend a minimum of one (1)-foot beyond the edge of the concrete or blacktop.

Streetlight Controller

1. The controller box shall be a minimum 26-inches x 17-inches x 15-inches NEMA 3R Single Door Enclosure installed on a 30-inch long, four and a half (4 ½)-inch O.D. Spun Aluminum pedestal pole, with a square aluminum base.
2. The aluminum controller box shall have a one-quarter-inch stiffener plate installed in the base.
3. The controller box catalog cuts must be supplied to and approved by the Village prior to installation.
4. There shall be a maximum of ten (10) streetlights per branch breaker within the controller cabinet and branch breakers shall be FA Type.
5. The cabinet shall be equipped with a latching device operated by a "Universal Key."

Village of Mundelein Engineering Details January 2019

6. The cabinet shall be factory painted green and have a three (3)-inch x 11-inch stainless steel plate imprinted with "Street Lighting."
7. The equipment-mounting panel shall be half (½)-inch thick Arboron Material.
8. Exposed bus bars shall be insulated.
9. Connector screws shall be painted white for neutral bar, and green for ground bar connectors.
10. Power wiring screws shall be XLP 600 volts and control wiring shall be #12 MTW.
11. The power circuit shall be protected by Busman Brand Fast Acting KTK-20 Fuses in a BM Fuse Block.
12. All control wiring shall be stranded and marked with Brady Markers.
13. A photoelectric cell shall be located inside the controller cabinet in the lower right hand corner. Photocell shall be FA105M Fischer Pierce. The photocell shall control all lighting via an enclosed flange mount power relay.
14. A hand-off auto selector switch shall be installed in the controller circuit. A 120-volt, 60 AMP, electronically held multi-pole lighting contactor shall be used.
15. The controller shall be equipped with commercial grade, internal, GFCI Duplex Outlet with a rain tight horizontal mounting cover and a three (3)-inch gang box.
16. The controller box shall have a standard 125-volt outlet box lamp holder with pull chain mounted in the cabinet.

Residential Poles & Lamps - Existing Developments – Town & Country G.E.

1. Poles shall be reinforced concrete with a tapered exposed aggregate finish, Centrecon SEO-4.3 112 or approved equal.
2. The poles shall be direct bury models with a lower cable entrance able to support dual cable entry.
3. There shall be a three (3)-inch x six (6)-inch hand-hole on each pole. The bottom of the hand-hole shall be 16-inches above the finish grade. The hand-hole shall face away from the street.
4. Standard residential streetlight poles shall have a 14-foot mounting height.
5. Poles located at intersections with arterial or collector streets or highways shall have a 23-foot mounting height, Centrecon Model MEO-7-112, or approved equal.
6. The 14-foot poles shall be installed three (3)-feet behind the back of the curb. The 23-foot poles shall be installed eight (8)-feet behind the back of the curb center of radius.
7. The luminaire on 14-foot poles shall be a 100-watt HPS Town & Country style (General Electric) fixture or approved equal. Refractor lenses shall be polycarbonate.
8. The 23-foot poles shall have a 400-watt HPS Cobra Head fixture with a cut-off lens mounted on an eight (8)-foot davit arm, Model MO-AD8.
9. Photoelectric cells shall not be located on the Luminaires. A single photocell shall be located at the controller.

Village of Mundelein Engineering Details January 2019

10. Each pole shall have a Fuse-Tron inline fuse, with rubber boot on the load side of the circuit. Sufficient internal wiring shall be provided at each pole to provide ease of maintenance.
11. Internal wiring of pole and luminaire shall be ten (10) gauge THNN wire, minimum.
12. Maximum spacing between poles in a residential development shall be designed at 200-feet, measured along the centerline of the street. Additional lights must be installed at all intersections, road curves, and at the end of cul-de-sacs.
13. Poles shall not be located closer than 15-feet to any tree.
14. Poles shall not be placed within six (6)-feet of a driveway.

Street Lighting Standards

Streetlights shall be installed to conform to the Standards and Specifications developed by the Village Engineer.

Design References

All street or parking area lighting systems shall be designed and constructed in accordance with one (1) or more of the following references as they apply:

A. National Electric Code;
B. "Standard Specifications for Road and Bridge Construction" by Illinois Department of Transportation;
C. "Standard Specifications for Traffic Control Items" by Illinois Department of Transportation;
D. "Design Manual" by Illinois Department of Transportation;
E. Manufacturer – supplied literature; and
F. Municipal Electric Code.

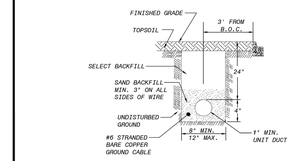
Residential Poles & Lamps – New Developments (Holophane)

1. Poles shall be Holophane Wadsworth Series with a 17-inch base. (Catalog # W14F5/17-CA/BKH.)
2. Standard residential streetlight poles should have a 14-foot mounting height.
3. Poles located at intersections with arterial or collector streets or highways shall have a 23-foot mounting height, Holophane Columbia Series. (Catalog # C22/20-CIS/BKH.)

4. The 14-foot poles should be installed three (3)-feet from the back of the curb to the center of the base. The 23-foot poles should be installed eight (8)-feet behind the back of the curb center of the radius.
5. The luminaries on 14-foot poles shall be a 100-watt HPS Holophane Utility Granville Series. (Catalog # GVU100HPMAB7RSBP.)
6. The luminaries on the 23-foot poles shall be a 400-watt HPS Holophane Esplanade Series Catalog # ESU400HPMT B4 P.S with a 72-inch Crossarm Catalog # WLC 72/1-CA/BKM utilizing a Holophane West Liberty Style Decorative Arm Fitter. (Catalog # WLLF/200 SCA/BK.)

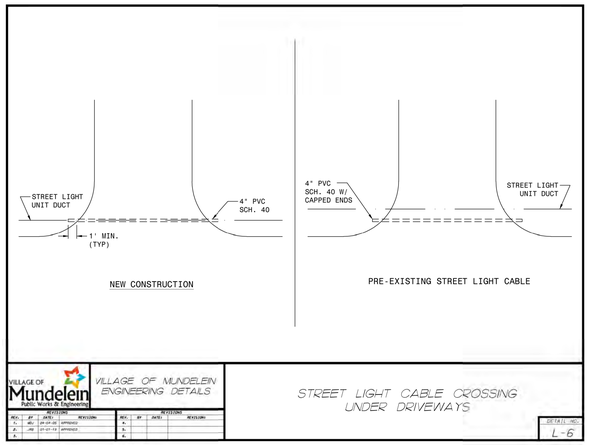
Village of Mundelein Engineering Details January 2019

7. Photoelectric controls shall not be used on the luminaries. A single photocell shall be located at the controller.
8. Each pole shall have a Fuse-Tron inline fuse, with rubber boot on the load side of the circuit. Sufficient internal wiring shall be provided at each pole for ease of maintenance.
9. Internal wiring of pole and luminaire shall be ten (10) gauge THHN wire, minimum.
10. Maximum spacing between poles in a residential development shall be designed at 200-feet, measured along the centerline of the street. Additional lights must be installed at all intersections, road curves, and at the end of cul-de-sacs.
11. Poles shall not be closer than 15-feet measured from any trunk of a tree.
12. Poles shall not be placed within six (6)-feet of a driveway.

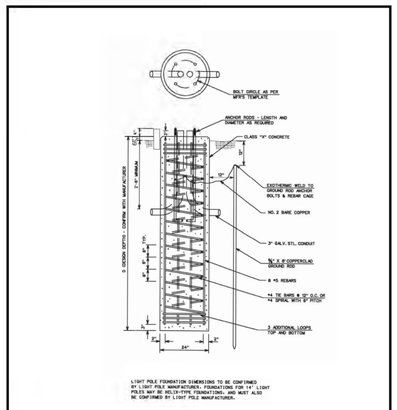


NOTE:
A CABLE INSPECTION IS REQUIRED PRIOR TO BACKFILL. CONTACT VILLAGE OF MUNDELEIN ENGINEERING DEPT. TO SCHEDULE.

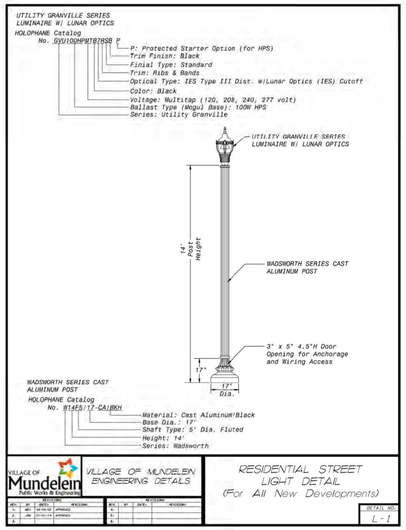
VILLAGE OF MUNDELEIN ENGINEERING DETAILS — STREET LIGHTING CABLE TRENCH DETAIL — DETAIL NO. L-5



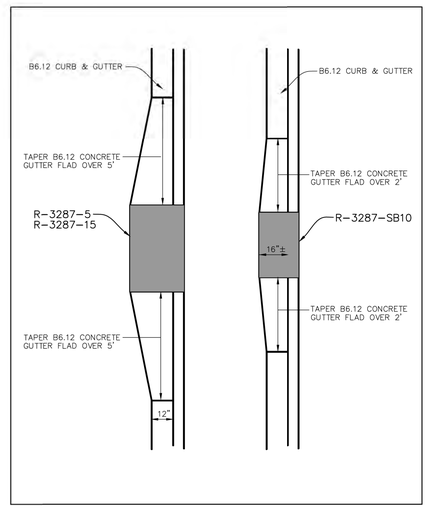
VILLAGE OF MUNDELEIN ENGINEERING DETAILS — STREET LIGHT CABLE CROSSING UNDER DRIVEWAYS — DETAIL NO. L-6



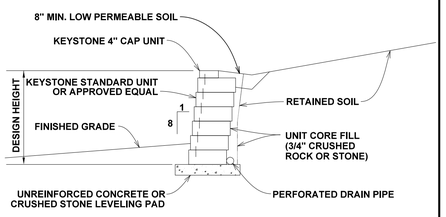
VILLAGE OF MUNDELEIN ENGINEERING DETAILS — LIGHTPOLE FOUNDATION DETAIL — DETAIL NO. L-9



VILLAGE OF MUNDELEIN ENGINEERING DETAILS — RESIDENTIAL STREET LIGHT DETAIL (For All New Developments) — DETAIL NO. L-1



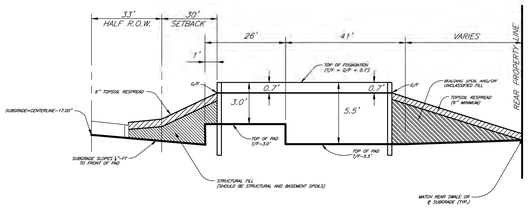
B-6.12 CURB TAPERS AT INLET STRUCTURE



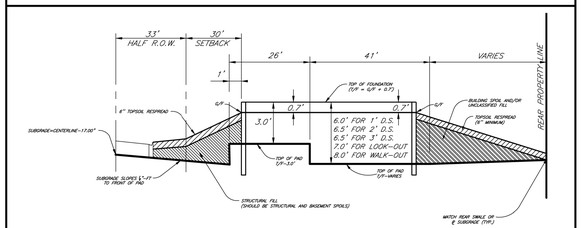
NOTE:
PROVIDE WEEP HOLES AT 25' INTERVALS

TYPICAL GRAVITY WALL SECTION (INTERLOCKING BLOCK)

STANDARD UNIT - 1" MINIMUM SETBACK



STANDARD FOUNDATION MASS-GRADING DETAIL



DROP SIDING / LOOK-OUT FOUNDATION MASS-GRADING DETAIL

MATERIAL STANDARDS

ITEM	BRAND	PRODUCT
FIRE HYDRANTS (TRAFFIC MODEL)	MUELLER SUPER CENTURION WATEROUS PACER	A-423 WB-67
GATE VALVES SPECIFY SIZE NON-RISING STEM, 2" NUT, M.J.JOINTS, OPEN LEFT	MUELLER (SIZE) AMERICAN FLOW CONTROL	A-2360-20L SERIES 2500
VALVE BOXES (3 PIECE)	EAST JORDAN TYLER / UNION	SCREW ADJUSTING EXTENSION TYPE
CURB STOPS (SPECIFY SIZE)	MUELLER FORD	300 BALL VALVE BALL VALVE
CORPORATION VALVE (SPECIFY SIZE)	MUELLER FORD	H-15000 FB600 (AWWA / CC THREAD)
MANHOLES / CATCH BASINS / INLETS IN OPEN AREAS AND PAVEMENT (SELF-SEALING LID W/ PROPER UTILITY MARKINGS)	NEENAH CLOSED LID SWALE AND DITCHES	R-1772 R-2502-C OR R-4340-B (SEE PLANS)
CURB FRAME & GRATES (BICYCLE SAFE)	NEENAH DEPRESSED B6.12 CURB B6.12 CURB	R-3287-5 R-3281-A R-3287-15 R-3287-SB-10 (SEE PLANS)
WATER SERVICE SADDLES (ALL SERVICE SADDLES SHALL BE DOUBLE STRAP; BRONZE, NYLON COATED OR STAINLESS STEEL)	MUELLER FORD	DRS2 FS 303
B-BOX (AT LEAST 1 1/4" TOP SECTION) ARCH PATTERN PLUG STYLE	MUELLER FORD	CURB BOX EA2

MATERIAL STANDARDS

WALNUT RIDGE
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DRAWN BY: D.S.H.
CHECKED BY: J.F.C.
ORIGINAL ISSUE: 04/11/25

REVISIONS

DATE	BY	DESCRIPTION
06/20/25	AKZ	REVISED PER VILLAGE REVIEW COMMENTS

DETAILS

SHEET NUMBER 56 OF 59 SHEETS
JOB No. 2535

STORMWATER BASIN DATA SUMMARY TABLE:	NORTHWEST	SOUTHWEST	SOUTHEAST	NORTHEAST
		(BOTH SW BASINS COMBINED) WATERSHED SPECIFIC RELELASE RATES		
POND BOTTOM	829.67 ft	831.60 ft	831.60 ft	832.50 ft
POND OUTLET	831.00 ft	832.00 ft	832.00 ft	833.00 ft
POND HWL	838.30 ft	836.00 ft	836.00 ft	839.50 ft
POND SPILLWAY ELEVATION	838.30 ft	836.00 ft	836.00 ft	839.50 ft
TOP OF BERM ELEVATION	839.50 ft	837.50 ft	837.50 ft	841.00 ft
DETENTION DESIGN:	OPERATING HEAD = 0.2' SPILLWAY WIDTH = 150'	OPERATING HEAD = 0.5' SPILLWAY WIDTH 75' EACH BASIN ZONE	OPERATING HEAD = 0.5' SPILLWAY WIDTH = 75'	OPERATING HEAD = 0.5' SPILLWAY WIDTH = 100'
HYDROLOGICALLY DISTURBED/TRB. AREA	8.06 ac	24.75 ac	14.11 ac	20.54 ac
REQUIRED DETENTION STORAGE				
2-YEAR	1.13 ac-ft	4.23 ac-ft	2.26 ac-ft	2.92 ac-ft
100-YEAR	3.71 ac-ft	13.39 ac-ft	6.91 ac-ft	9.76 ac-ft
DEPRESSIONAL STORAGE IMPACT	N/A	N/A	0.39 AC-FT	4.18 x 1.20 = 5.02 ac-ft
TOTAL STORAGE REQUIRED	3.71 ac-ft	13.39 ac-ft	7.30 ac-ft	14.78 ac-ft
	3.71 ac-ft provided at elevation 837.88	13.39 ac-ft provided at elevation 835.30	7.39 AC-FT ACCESSED IN CRITICAL DUR. MODELS (ELEVATION 835.34)	15.39 AC-FT ACCESSED IN CRITICAL DUR. MODELS (ELEVATION 839.18)
	4.05 ac-ft provided at spillway crest	16.67 ac-ft provided at spillway crest	9.03 ac-ft provided at spillway crest	16.45 ac-ft provided at spillway crest
OUTLET DESIGN:				
UPPER RESTRICTOR DIAMETER	4.00 in.	8.10 in.	4.00 in.	2.00 in.
RESTRICTOR INVERT ELEVATION	835.00 ft	834.27 ft	832.00 ft	833.00 ft
LOWER RESTRICTOR DIAMETER	2.65 in.	4.00 in.	BASIN IS OVER-RESTRICTED	BASIN IS OVER-RESTRICTED
RESTRICTOR INVERT ELEVATION	831.00 ft	832.00 ft	NO UPPER RESTRICTOR	NO UPPER RESTRICTOR
RUNOFF VOLUME REDUCTION				
PROPOSED IMPERVIOUS	3.25 ac.	13.03 ac.	7.09 ac.	8.65 ac.
PROVIDED STORAGE TO INFILTRATE	13,024 cu.ft.	60,287 cu.ft.	33,715 cu.ft.	37,352 cu.ft.
RVR QUANTITY	4,007 cu.ft./ac.	4,681 cu.ft./ac.	4,755 cu.ft./ac.	4,318 cu.ft./ac.
PERCENT OF ANNUAL RAINFALL EVENTS	92% +/-	94.5% +/-	95% +/-	93% +/-
INFILTRATION RATE	0.14 in/hr (0.01667 ft/hr)	0.10 in/hr (0.00833 ft/hr)	0.10 in/hr (0.00833 ft/hr)	0.07 in/hr (0.00833 ft/hr)
AREA TO INFILTRATE	11,761 SF	153,766 SF	85,377 SF	76,685 SF
BASIN INFILTRATION RATE	137 CU-FT/HR	1281 CU-FT/HR	711 CU-FT/HR	447 CU-FT/HR
DEWATERING TIME	94.9 HRS	47.0 HRS	47.4 HRS	83.5 HRS
WATER QUALITY VOLUME				
MINIMUM REQUIRED	0.271 ac-ft	1.088 ac-ft	0.5908 ac-ft	0.7208 ac-ft
PROVIDED IN BASIN BELOW OUTLET	0.299 ac-ft	1.384 ac-ft	0.7740 ac-ft	0.8575 ac-ft

WALNUT RIDGE

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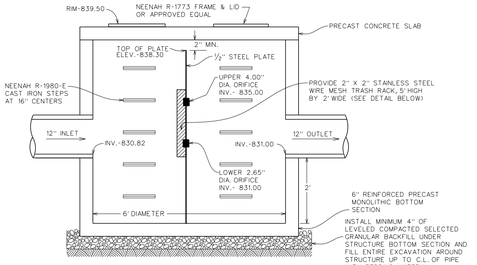
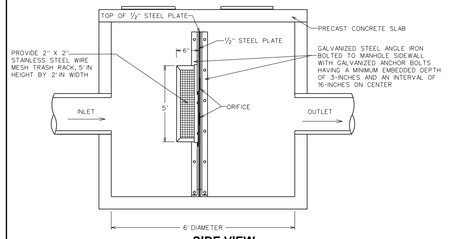
DETAILS

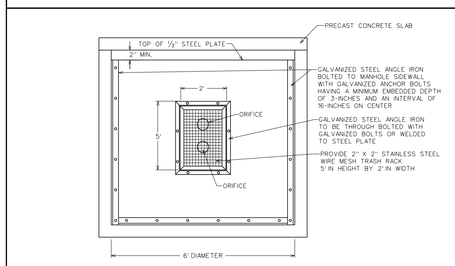
SHEET NUMBER 57 OF 59 SHEETS

JOB No. 2535





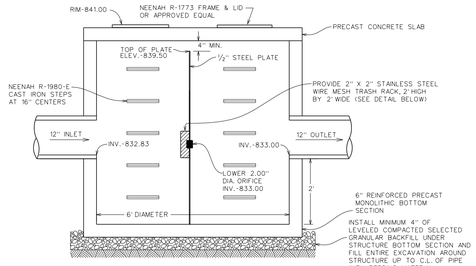
SIDE VIEW



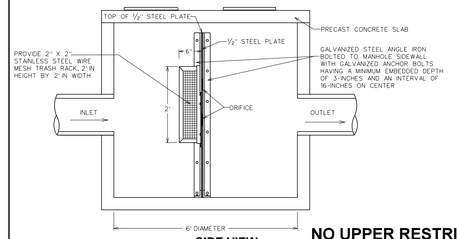
FRONT VIEW

STEEL PLATE AND TRASH RACK INSTALLATION FOR OUTLET CONTROL STRUCTURE

NORTHWEST BASIN OUTLET CONTROL STRUCTURE

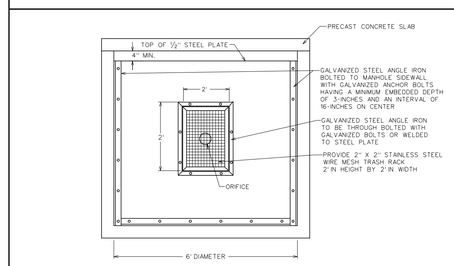


NO UPPER RESTRICTOR



SIDE VIEW

NO UPPER RESTRICTOR

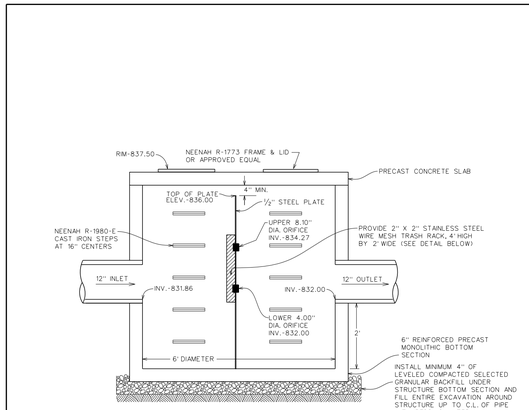


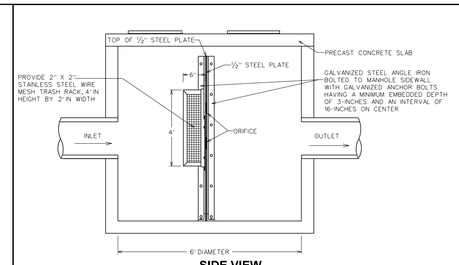
FRONT VIEW

NO UPPER RESTRICTOR

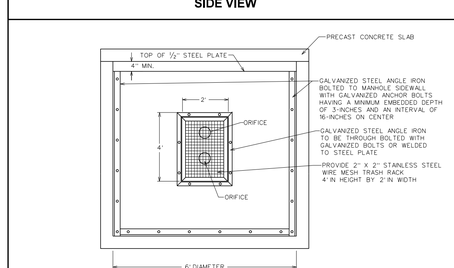
STEEL PLATE AND TRASH RACK INSTALLATION FOR OUTLET CONTROL STRUCTURE

NORTHEAST BASIN OUTLET CONTROL STRUCTURE





SIDE VIEW

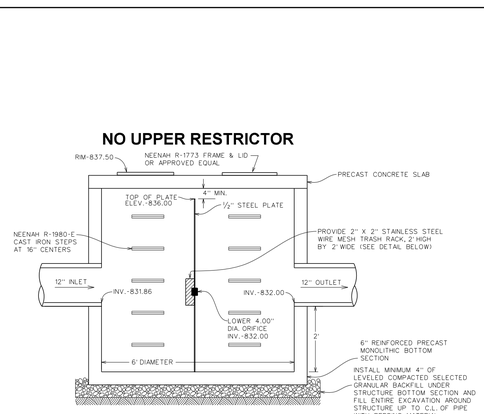


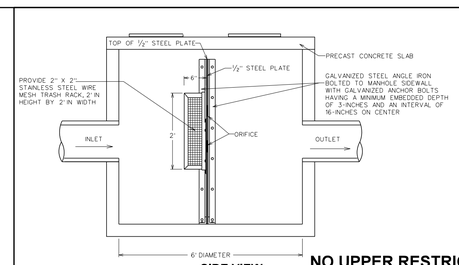
FRONT VIEW

STEEL PLATE AND TRASH RACK INSTALLATION FOR OUTLET CONTROL STRUCTURE

SOUTHWEST BASIN OUTLET CONTROL STRUCTURE

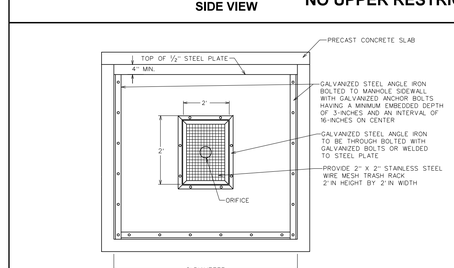
NO UPPER RESTRICTOR





SIDE VIEW

NO UPPER RESTRICTOR



FRONT VIEW

NO UPPER RESTRICTOR

STEEL PLATE AND TRASH RACK INSTALLATION FOR OUTLET CONTROL STRUCTURE

SOUTHEAST BASIN OUTLET CONTROL STRUCTURE

WALNUT RIDGE

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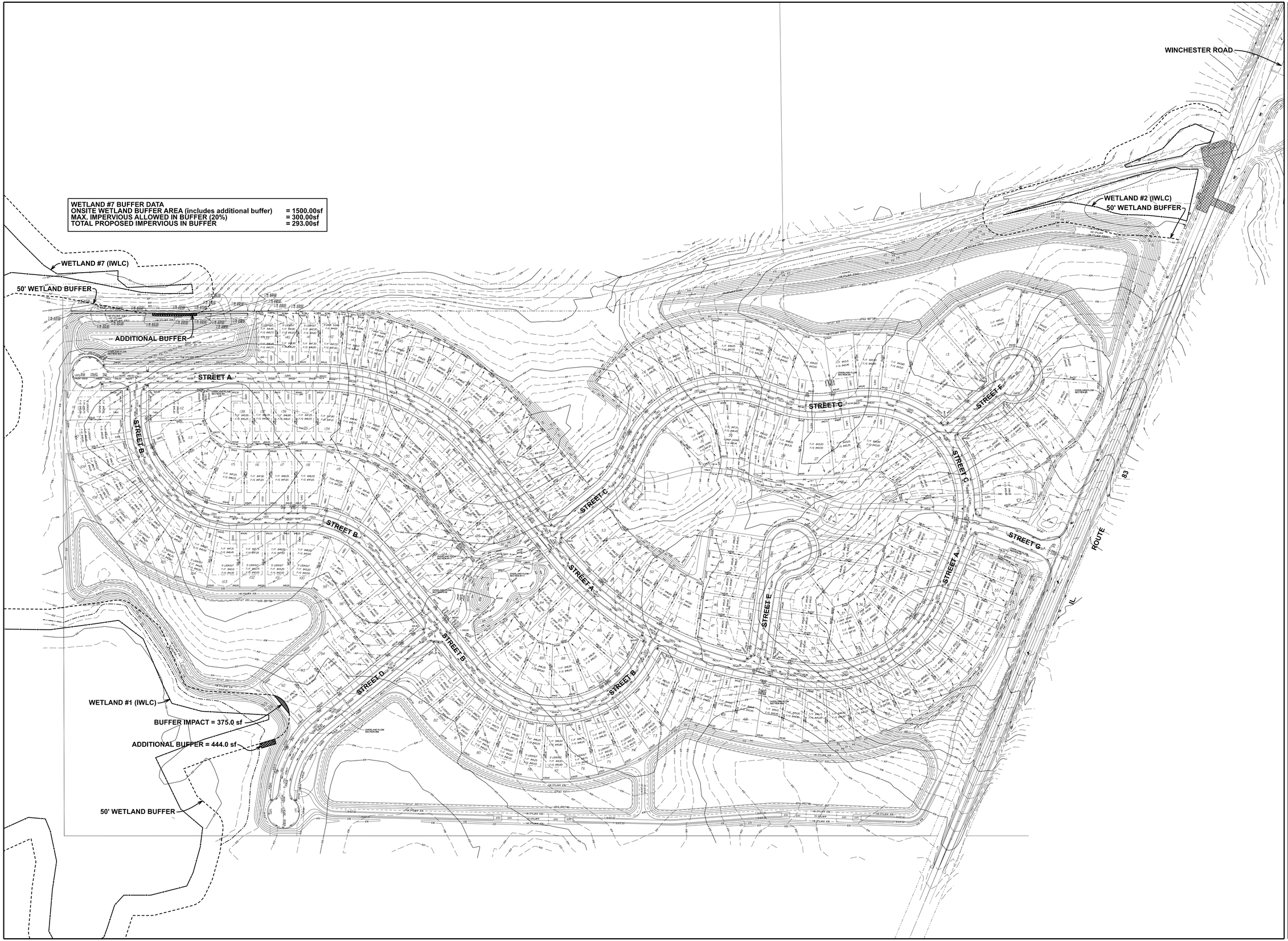

NORTH

100' 50' 0 100'

SCALE: 1" = 100'

WALNUT RIDGE

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REVISIONS

WETLAND BUFFER PLAN

SHEET NUMBER
59
OF 59 SHEETS

JOB No. 2535

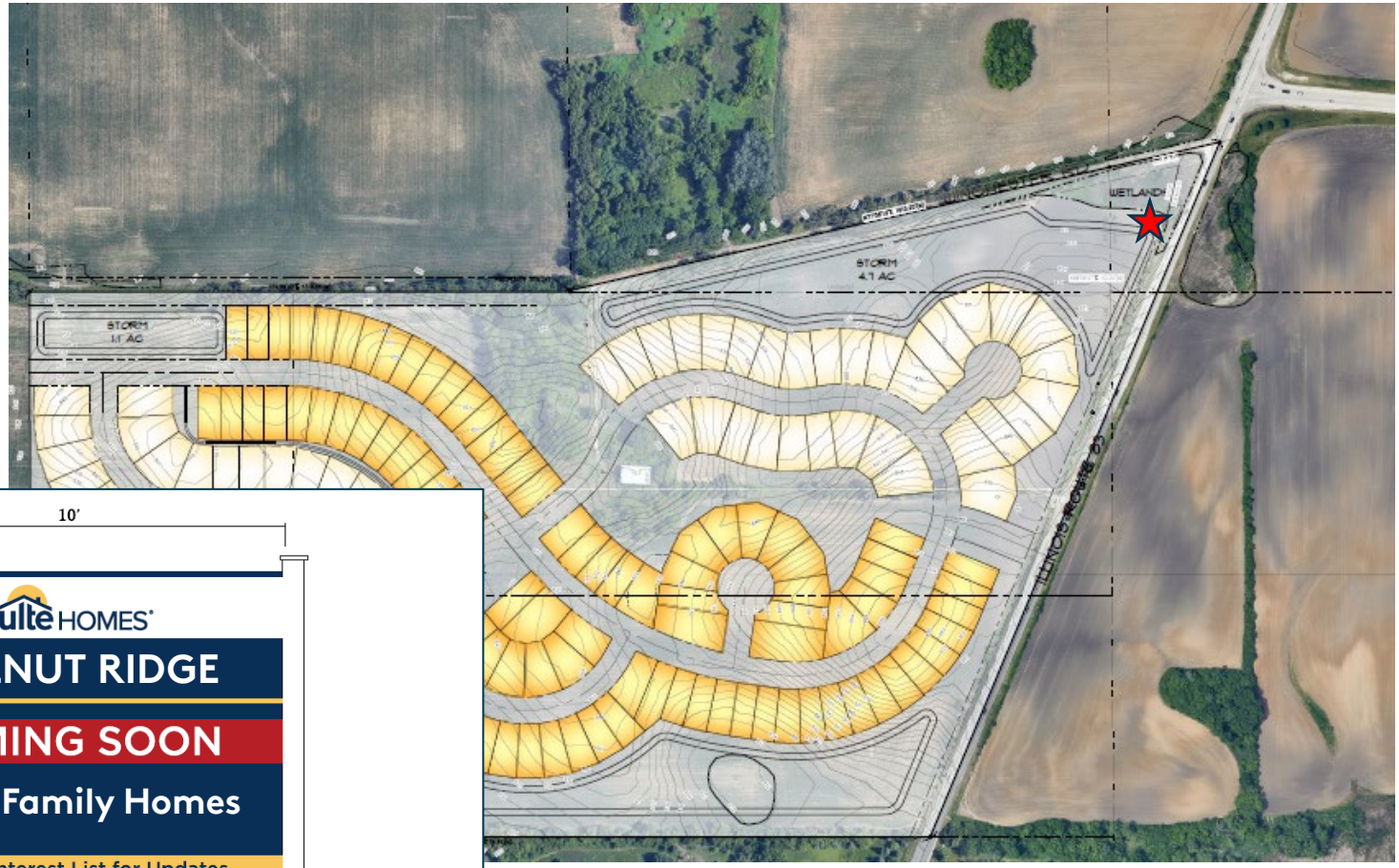
Walnut Ridge – Mundelein

Proposed Signage Plan

May 23, 2025

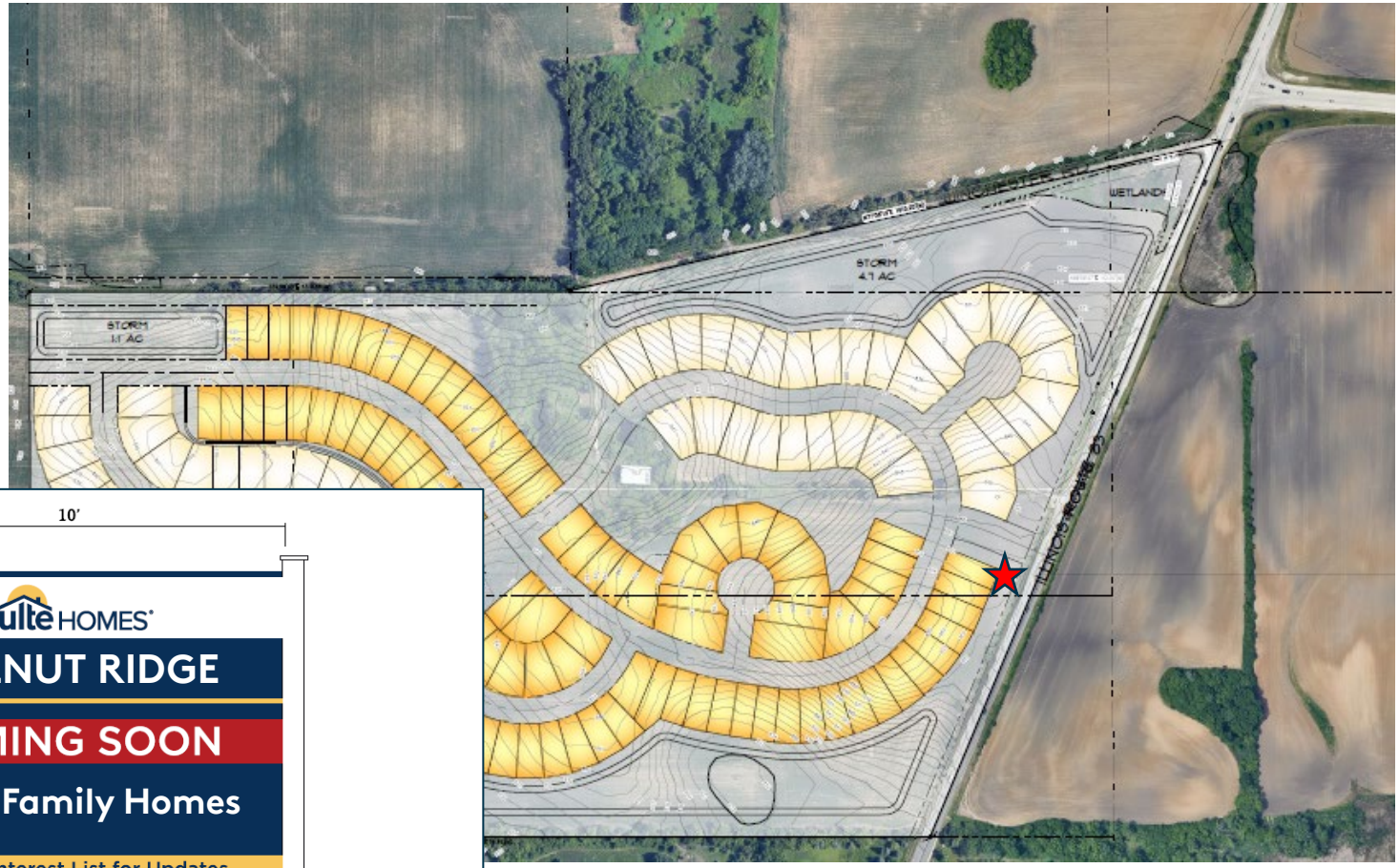
Confidential and Proprietary

Double Sided Billboard – IL Route 83 and Winchester Road



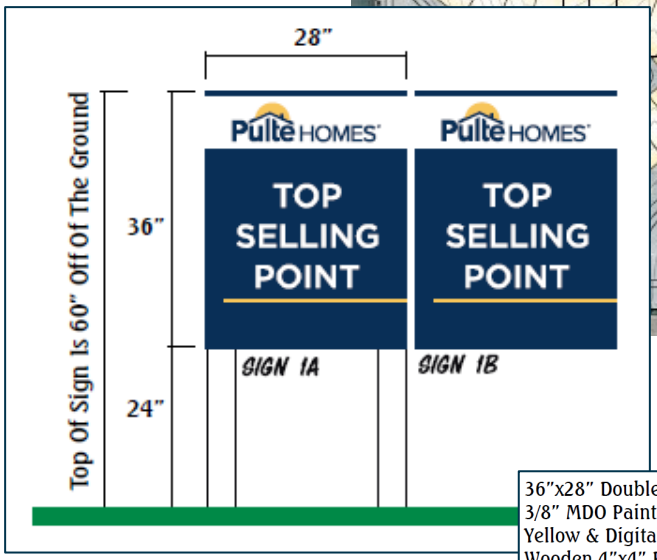
8'x10' Double Sided Informational Billboard.
3/8" MDO Painted Ronan Dark Blue w/White, Red, Yellow & Black Vinyl Mounted To (2) White Wooden 6"x6" Columns & White Wooden Toppers.

Double Sided Billboard – IL Route 83 and Community Entrance



8'x10' Double Sided Informational Billboard.
3/8" MDO Painted Ronan Dark Blue w/White, Red, Yellow & Black Vinyl Mounted To (2) White Wooden 6"x6" Columns & White Wooden Toppers.

Burma Shave Signs – IL Route 83

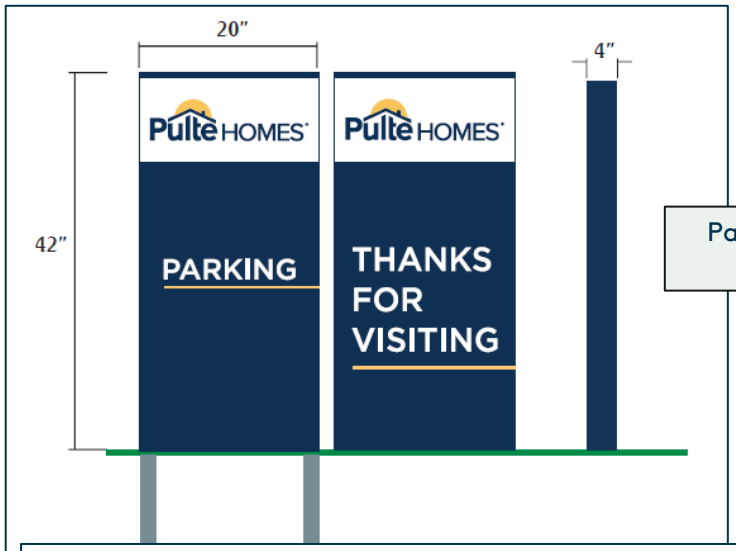


36"x28" Double Sided Burma Shaves. 3/8" MDO Painted Ronan Dark Blue w/White, Yellow & Digital Vinyl. MDO Mounted To (2) Wooden 4"x4" Post Painted White.

Burma Shaves: Top Selling Points will include top-rated schools, ideal location, etc.
Quantity: 4

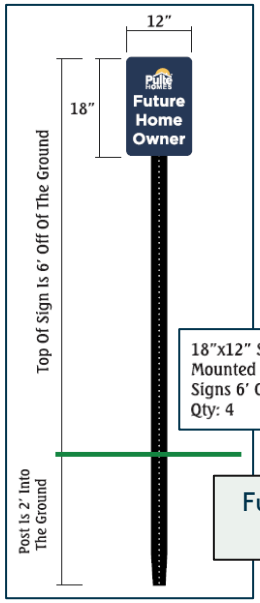
Confidential and Proprietary

Parking Signage – Lot # TBD



42"x20" Double Sided Custom Made Aluminum Box Sign w/Aluminum Square Tubing Frame. Sign 4" Deep w/Front, Back & Sides Faces Made Out Of .063 Aluminum Painted PMS 540. Digitally Printed Graphics Applied To The Front & Back Of Sign
Qty: 1

Parking Sign: to be installed at entrance to parking area



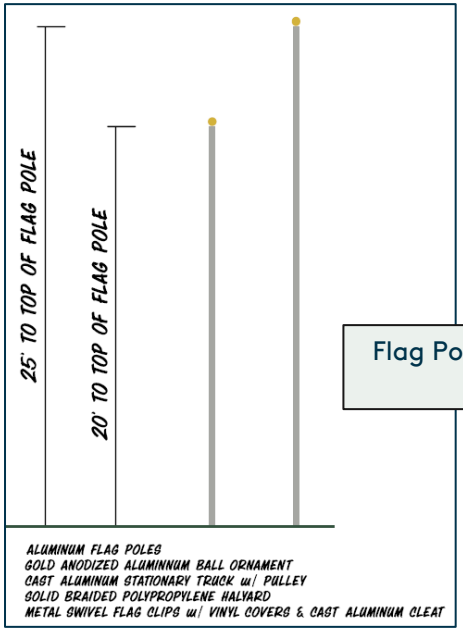
18"x12" Single Sided .080 Aluminum w/Digitally Printed Faces To Match Pulte's Colors & Laminated. Mounted To 8' Black U-channel Post. (2 Feet Of The Post Will Be In The Ground To Make The Signs 6' Off Of The Ground.)
Qty: 4

Future Homeowner Parking Signs: to be installed in the first 4 parking spaces

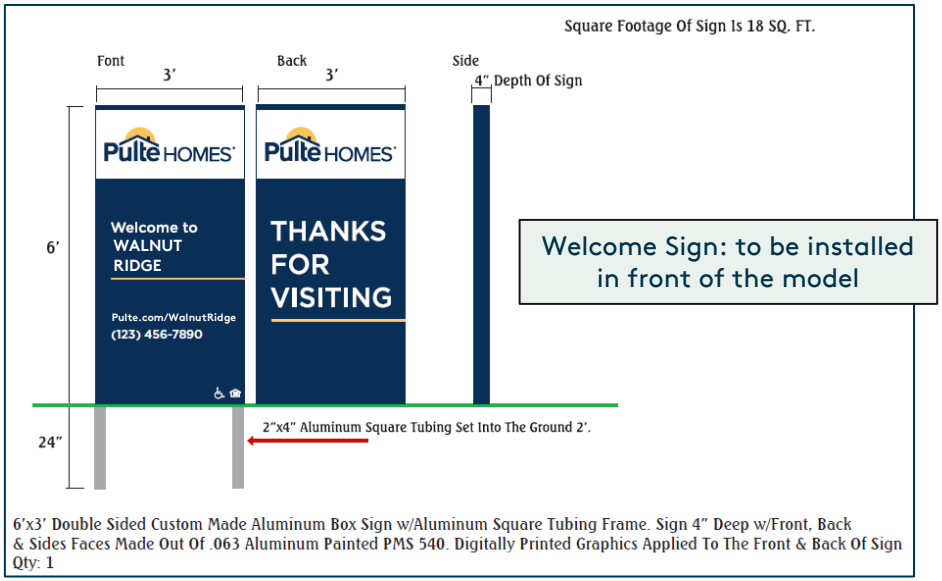
Model Signage – Lot # TBD

42"x20" Double Sided Custom Made Aluminum Box Sign w/Aluminum Square Tubing Frame. Sign 4" Deep w/Front, Back & Sides Faces Made Out Of .063 Aluminum Painted PMS 540. Digitally Printed Graphics Applied To The Front. Backside Blank. Qty: 1

Model ID Sign: to be installed near the model front door



Flag Poles: to be installed behind the Welcome Sign



6'x3' Double Sided Custom Made Aluminum Box Sign w/Aluminum Square Tubing Frame. Sign 4" Deep w/Front, Back & Sides Faces Made Out Of .063 Aluminum Painted PMS 540. Digitally Printed Graphics Applied To The Front & Back Of Sign Qty: 1

Welcome Sign: to be installed in front of the model

STORMWATER MANAGEMENT COMMISSION

October 14, 2024

Randy Szczesny
Szczesny Builders
N1610 N. Creekside Lane
Lake Geneva, WI 53147

Subject: SMC File #: IWLC-24-897
±80.56-Acre Property at Southwest Corner of Winchester Road & IL Route 83 and Associated ±6.75-Acre Utility Corridor along Winchester Road east of IL Route 83
Property PIN #'s 10-14-100-001, 10-14-100-002 & 10-14-100-003
Unincorporated Mundelein, Lake County, Illinois
PRELIMINARY WETLAND JURISDICTIONAL DETERMINATION

Dear Mr. Szczesny:

This letter responds to your request for a preliminary wetland jurisdictional determination (PJD) and isolated wetlands boundary verification for the subject property and associated utility corridor, received by the Lake County Stormwater Management Commission (SMC) on September 23, 2024. SMC's wetland staff reviewed available reference materials (see Addendum A) and performed a site reconnaissance on October 10, 2024 in the company of Caden LaFond, Alicia Metzger and Erin McKenna of V3 Companies (V3). The aquatic resources referenced in this letter are depicted on the enclosed Figures 9A and 9B: *Wetland & Waters Delineation*, by V3, dated 10-11-2024.

Our findings are as follows:

- **Areas 1-9 appear to be *Isolated Waters of Lake County* (IWLC) as defined in the Lake County Watershed Development Ordinance (WDO), which are subject to regulation by the SMC.** SMC concurs with the delineated boundaries of wetland Areas 1-2, and 4-8 as flagged by V3, and the approximate boundaries of farmed wetland Areas 3 and 9 as determined by V3 and shown on Figures 9A and 9B. Note that Area 8 appears to meet exclusion criterion A.4-*roadside ditches* under the definition of IWLC in in WDO Appendix A. You may request an IWLC exclusion determination for Area 8 from the community enforcement officer (EO, see contact information on page 2).

- No federally regulated aquatic resources appear to be present on the site, as currently defined in 33 U.S.C. 1251 et seq., Section 328.3(a).

This PJD has been approved by SMC's Chief Engineer and the findings are valid for a period of three (3) years from the date of this letter, unless new information warrants a revision before the expiration date. If you disagree with the findings of this PJD, you may request an approved jurisdictional determination (AJD) from the USACE-Chicago District Office.

For your information, this PJD represents SMC's professional opinion regarding the jurisdictional status of the aquatic resources on the subject site. We determined the jurisdiction of IWLC using the definition of IWLC contained in Appendix A of the WDO (as amended 7-11-23). We based the findings for potential federally regulated aquatic resources on our interpretation of the "Revised Definition of 'Waters of the United States' Conforming," dated 11-8-2023 (33 CFR Section 328.3(a)).

Permitting Considerations

1. This letter satisfies the requirement for a written jurisdictional determination under WDO §1001 for the indicated feature(s).

2. The surveyed boundaries of all existing aquatic resources on the site, including features constructed in dry land, need to be included on the proposed development plans for permitting purposes.

3. The wetland delineation exhibit needs to show the approximate location and extent of off-site wetlands/water bodies within 100 feet of the site boundaries based on available reference materials (WDO §1000.02.F.), and the delineation report should describe the relative quality of any off-site wetlands.

4. **If the property will remain unincorporated, a Site Development Permit (SDP) will be required from the Lake County Planning, Building & Development Department (PBD) for the proposed development.** In that case, please coordinate with Mr. Eric Steffen, PBD's EO, at esteffen@lakecountyil.gov for the SDP submittal requirements.

5. **If the property will be annexed into the Village of Mundelein, a Watershed Development Permit (WDP) will required from the Village of Mundelein for the proposed development.** In that case, please coordinate with Mr. Geoff Perry, the Village's EO, at gperry@gha-engineers.com for the WDP submittal requirements.

6. **In either case 4 or 5 above, SMC's written approval will be required for any proposed IWLC impacts from the proposed development.** Please coordinate with Mr. Glenn Westman, SMC's Principal Wetland Specialist, at gwestman@lakecountyil.gov for the IWLC submittal requirements.

We would like to be of assistance. If you have any questions regarding this PJD, please contact Mr. Westman at the above address.

Sincerely,

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

Brian Frank, P.E., CFM
Chief Engineer

Glenn H. Westman, S.P.W.S., CWS, CFM
Principal Wetland Specialist P-T

Enclosures: Figures 9A & 9B: Wetland & Waters Delineation (V3, 10-11-2024)
Addendum A - SMC PJD Field Report (10-10-2024)

cc: Kathy Chernich & ChicagoRequests@usace.army.mil, USACE-Chicago District
Eric Steffen, EO-Lake County PBD
Geoff Perry, EO-Village of Mundelein
Caden LaFond, V Companies

This document was digitally transmitted. Please print out a copy of the document and retain for your records. If you are unable to print the document, or desire a hard copy mailed be to you, please notify SMC at your earliest convenience.

Addendum A
Preliminary Jurisdictional Determination Field Report

Site Name: *Property at SWC of Winchester Rd & IL Route 83*

Date: *October 10, 2024 1:00 PM*

SMC #: *IWLC-24-897*

USACE #: *N/A*

Attendees:

SMC Representative:
Glenn Westman

Other SMC Representative(s):
Bill Santelik

PJD Requestor:
Name/Contact Info:
Szczesny Builders, Randy Szczesny - lakelab@comcast.net

Other Attendees:
Caden LaFond, Alicia Metzger & Erin McKenna, V3

Site Info:

Address/PIN#: *SWC IL 83 & Winchester Road, PIN #'s 1014100002, 1014100001, 1014100003*
Lat/Long: *42.296820, -88.0377740*
Description: *Mostly agricultural land (soybeans this year), central area is scrub-shrub and barn, scattered depressional wetlands/farmed wetlands.*

References: *Wetlands & Waters Report (V3, Preliminary 9-13-2024), Wetland & Waters Delineation (Figures 9A & 9B, V3, Revised 10-11-2024), FEMA Floodplain Map (2016), Aerial Photos (1939-2022,Lake County Online GIS), Topographic Map - 1' contours (Lake County Online GIS, 2007 & 2017), Lake County Wetland Inventory Map (Lake County Online GIS, 2002), Lake County Hydro Lines (Lake County Online GIS, 2002), Lake County Soil Surveys (SCS 1970 & NRCS 2005), USGS Quadrangle Maps (1960, 1972, 1993), USGS Flood of Record Map (HA-230, 1967), Lake County Storm Sewer Network Maps (SMC GIS, 2022); Lake County Wetland Restoration & Preservation Plan - Online Decision Support Tool (SMC, 2020), Topographic Wetness Index Map (ISWS, 2017).*

Disposition of Isolated Waters of Lake County (IWLC):

Site appears to contain IWLC: *Yes*
List wetland/water IDs from reference map: *Areas 1-9 appear to meet the definition of IWLC in WDO Appendix A.*
Potential IWLC Exclusions: *Area 8 on Fig. 9B appears to meet exclusion criterion A.4-roadside ditches under the defintion of IWLC in WDO Appendix A. IWLC exclusion for Area 8 may be requested from the EO.*
SMC representative concurs with staked/flagged IWLC boundaries: *Yes: Delineated Areas 1-2 & 4-8 & Approximate Boundaries of Farmed Wetland Areas 3 and 9.*
If SMC representative DOES NOT concur, please explain: *N/A*

Disposition of Federally Regulated Aquatic Resources:

Site appears to contain Federally Regulated Aquatic Resources [33 CFR 328.3(a)]: *No*
List wetland/water IDs from reference map and basis: *N/A*
Apparent Exclusions [33 CFR 328.3(b)]: *Area 8-Exempt Roadside Ditch on Fig. 9B appears to qualfy for exclusion under 33 CFR 328.3(b)(3).*

Comments: *Previous PJD by SMC for Winchester Rd-IL 83 intersection improvement used for reference (IWLC-21-450 7-19-2021). Previous AJD by USACE for berm development in Mundelein used for reference LRC-2020-00959, 11-18-2020).*

Attestment: *SMC has reviewed the information herein and CONCURS with determination.*

Signature of SMC Representative:

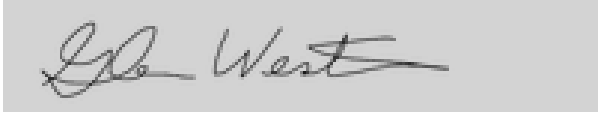


Photo 1

Area 7 – Off-Site to Northwest

Photo 2

Area 1 – West View

Photo 3

Area 3 -Farmed Wetland in Southeast Area of Site

Photo 4

Area 9 – Farmed Wetland in Northeast Area of Site

Photo 5

Area 2 – Northeast View

Photo 6

Area 4 – South View

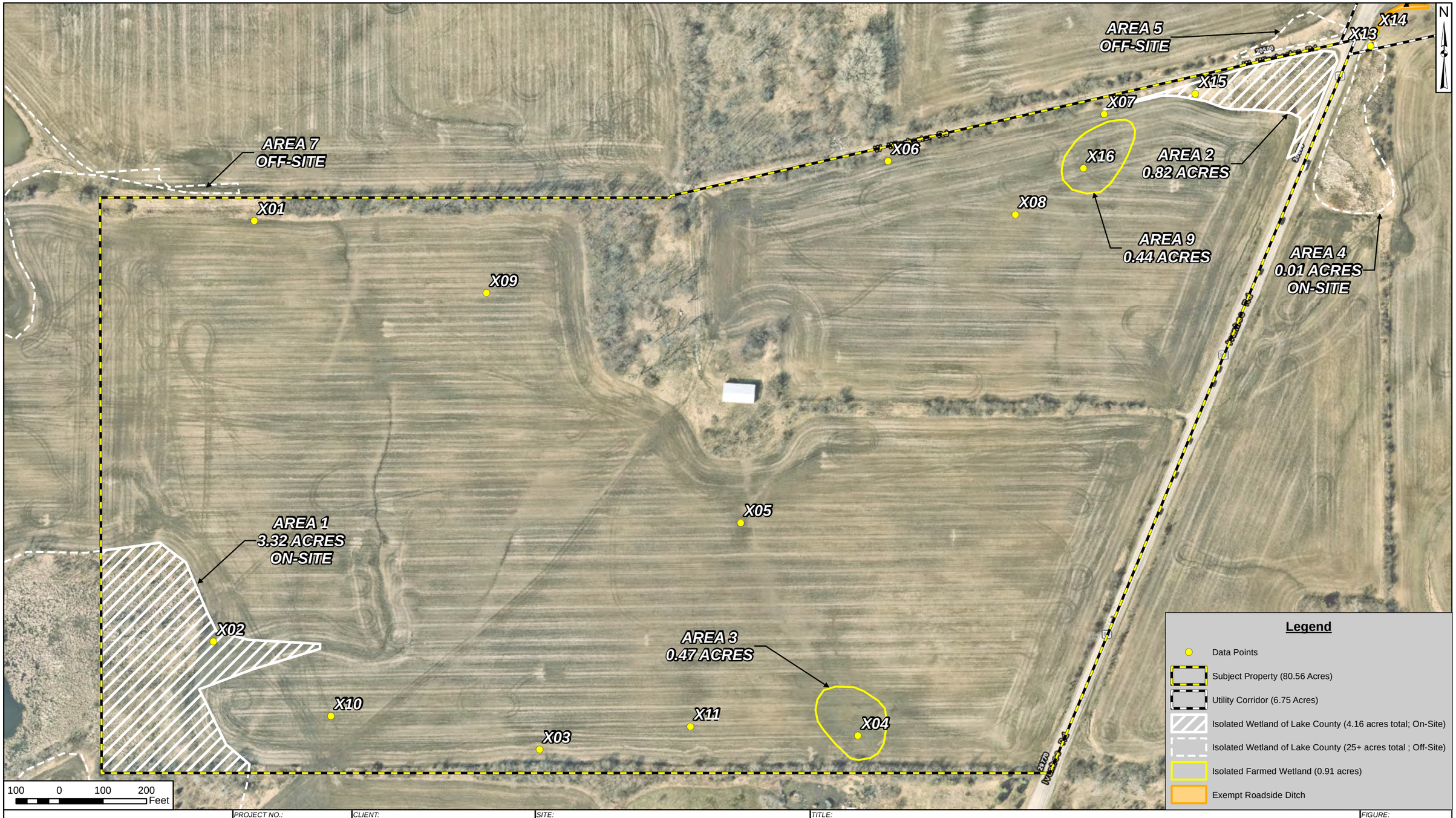
Photo 7

Area 5 – Off-Site to Northeast

Photo 8

Area 6 – West View

Photo 9 Area 8 – Roadside Ditch at Southeast Corner of Winchester Rd. & IL 83	



7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	10/11/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road Schaumburg, IL 60173
BASE LAYER:	Lake County Aerial Imagery (2022)
SITE:	Route 83 and Winchester Road Mundelein, Lake County, Illinois
TITLE:	**WETLAND & WATERS DELINEATION**
FIGURE:	9A

J:\2024\240994\Wetland\FIG9Adelin240994.mxd

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
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Visio, Vertere, Virtute...
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PROJECT NO.:	240994
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CLIENT:	Pulte Home Corporation 1900 E. Golf Road Schaumburg, IL 60173
BASE LAYER:	Lake County Aerial Imagery (2022)
SITE:	Route 83 and Winchester Road Mundelein, Lake County, Illinois
TITLE:	**WETLAND & WATERS DELINEATION**
FIGURE:	9B

J:\2024\240994\Wetland\FIG9Bdelin_240994.mxd

WETLAND & WATERS DELINEATION REPORT

PROJECT SITE:

Route 83 and Winchester Road

Mundelein, Lake County, Illinois

PREPARED FOR:

Pulte Home Corporation
1900 E. Golf Road
Schaumburg, Illinois 60173

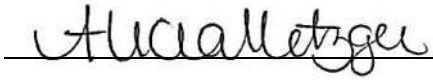
PREPARED BY:

V3 Companies
7325 Janes Avenue
Woodridge, Illinois 60517
630.724.9200

October 15, 2024

We hereby certify that this Wetland & Waters Delineation Report has been prepared by V3 Companies for use by Pulte Home Corporation, their affiliates, lenders, and assignees.

Project Staff:



Alicia Metzger, CPSC, PWS
Soil Scientist

Daniel Jablonski
Wetland Scientist

Caden LaFond
Wetland Scientist

Approved by:

Scott J. Brejcha, PWS
Wetland Consulting Group Leader
Natural Resources Group

Thomas E. Slowinski, PWS
Technical Director, Wetlands and Ecology
Natural Resources Group

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FIGURES

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FIGURE 2 – NWI MAP
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FIGURE 4 – HYDROLOGIC ATLAS MAP
FIGURE 5 – 12-DIGIT HUC MAP
FIGURE 6 – FEMA FIRM MAP
FIGURE 7 – FLOOD ZONES MAP
FIGURE 8 – SOIL SURVEY MAP
FIGURE 9A/9B – WETLAND & WATERS DELINEATION MAP

EXECUTIVE SUMMARY

The approximately 80.56-acre subject property and 6.75-acre utility corridor were investigated by V3 Companies (V3) on August 21, 2024, to determine the presence, extent, and quality of any wetlands or Waters under U.S. Army Corps of Engineers (USACE) and/or Lake County jurisdiction.

Delineation Summary

Eight areas were identified within the project area, as described below. Two off-site wetlands, Areas 5 and 7, were identified within 100 feet of the project area, per the Ordinance. A summary of the identified areas is provided in Table 1 and a summary of the data points is provided in Table 2.

- Area 1 (3.32 acres on-site) consists of an emergent wetland located in the southwest portion of the project area. Area 1 continues off-site to the south and west.
- Area 2 (0.82 acres) consists of an emergent wetland located in the northeast corner of the subject property.
- Area 3 (0.47 acres) consists of a farmed wetland located in the southern portion of the subject property.
- Area 4 (0.01 acres on-site) consists of an emergent wetland located in the western portion of the utility corridor, south of W Winchester Road, and continues off-site to the south.
- Area 5 consists of an off-site emergent wetland located north of W Winchester Road, north of the subject property.
- Area 6 (0.01 acres on-site) consists of an emergent wetland located in the utility corridor, north of W Winchester Road, and continues off-site to the north.
- Area 7 consists of an off-site emergent wetland located northwest of the subject property.
- Area 8 is located in the western portion of the utility corridor, south of W Winchester Road, and consists of a roadside ditch that is exempt from jurisdiction.
- Area 9 (0.44 acres) consists of a farmed wetland located in the northeast portion of the subject property.

Based on the Lake County SMC Preliminary Jurisdictional Determination (PJD) letter dated October 14, 2024, (Appendix VII) Areas 1, 2, 3, 4, 5, 6, 7, and 9 are subject to Lake County SMC jurisdiction and Area 8 is an exempt feature not subject to jurisdiction. The delineated boundaries of Areas 1, 2, 3, 4, 5, 6, 7, and 9 were field verified by Mr. Glenn Westman and Mr. William Santelik of Lake County SMC and Mr. Caden LaFond, Ms. Alicia Metzger, and Ms. Erin McKenna of V3 Companies on October 10, 2024.

Table 1. Aquatic Resource Summary Table

Area	On-Site Size (Acres)	Off-Site Size (Acres)	Native Mean Conservatism (NMC)*	Floristic Quality Index (FQI)*	Quality**	USACE Jurisdiction	Buffer Required
1	3.32	17.88	1.88	9.40	IWLC	No	50’
2	0.82	--	1.89	5.67	IWLC	No	50’
3	0.47	--	--	--	Farmed Wetland	No	30’
4	0.01	0.88	1.13	3.18	IWLC	No	50’
5	--	0.21	--	--	IWLC	No	50’
6	0.01	3.86	1.20	2.68	IWLC	No	50’
7	--	2.08	--	--	IWLC	No	50’
9	0.44	--	--	--	Farmed Wetland	No	30’
Total							

* Based on the Floristic Quality Assessment (FQA) methodology in Plants of the Chicago Region (Swink and Wilhelm, 1994).

** IWLC = Isolated Waters of Lake County (NMC ≤ 3.5 and FQI ≤ 20, Lake County jurisdiction); HQWLC = High Quality Waters of Lake County (NMC ≥ 3.5 or FQI ≥ 20, Lake County jurisdiction)

Table 2. Data Point Summary Table

Area	Data Point	Hydrophytic Vegetation?	Hydric Soils?	Wetland Hydrology?	Wetland (Y/N)
10	X01	N	N	N	N
1	X02	Y	Y	Y	Y
10	X03	N	Y	Y	N
3	X04	N	Y	Y	N
10	X05	N	Y	N	N
10	X06	N	Y	Y	N
10	X07	N	Y	Y	N
10	X08	N	N	N	N
10	X09	N	N	N	N
10	X10	N	N	N	N
10	X11	N	N	N	N
6	X12	Y	Y	Y	Y
4	X13	Y	Y	Y	Y
8	X14	Y	N	Y	N
2	X15	Y	Y	Y	Y
9	X16	N	Y	Y	N

Regulatory Summary

Pursuant to Section 404 of the Clean Water Act, the U. S. Army Corps of Engineers (USACE) has jurisdiction over the placement of fill or dredged material in all jurisdictional waters of the United States. On September 8, 2023, the Revised Definition of "Waters of the United States", which conforms to the 2023 U.S. Supreme Court Sackett decision, was published in the Federal Register, and became effective immediately. Under the revised definitions, the following areas qualify as "Waters of the US" subject to USACE jurisdiction:

1. Navigable waters; the territorial seas; or interstate waters;
2. Impoundments of these waters;
3. Tributaries of navigable waters, the territorial seas and interstate waters that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to navigable waters, the territorial seas, or interstate waters that are relatively permanent, standing or continuously flowing bodies of water, and with a continuous surface connection to those waters;
5. Interstate lakes or ponds not identified above that are relatively permanent, standing or continuously flowing bodies of water, and with a continuous surface connection to the waters identified in items 1-4 above;

The following areas are not jurisdictional "Waters of the United States":

1. Waste treatment systems;
2. Prior converted cropland;
3. Ditches, including roadside ditches, excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water
4. Artificially irrigated areas that would revert to dry land if irrigation ceased;
5. Artificial lakes and ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
7. Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Pursuant to the Lake County Watershed Development Ordinance (WDO), amended October 13, 2020, the Lake County Stormwater Management Commission (SMC) has authority over Isolated Waters of Lake County, including wetlands. Stormwater management reviews are conducted by the county in

unincorporated areas, while certified communities conduct stormwater reviews within their corporate limits. Wetland reviews are conducted by the SMC throughout the county.

If less than 1.0 acre of isolated wetland impacts are proposed, the project would likely qualify for a Category I permit from Lake County SMC. If isolated wetland impacts are between 1.0 acre and 2.0 acres, a Category II permit would be required. Wetland impacts greater than 2.0 acres or impacts to any High Quality Aquatic Resources (HQAR) will require a Category III permit, with a public comment period and additional regulatory scrutiny. If wetland impacts are less than 0.25 acre or less than 0.10 acre for a HQAR, then no mitigation is required. If impacts exceed 0.25 acre, then a 1.5:1 mitigation ratio would likely be required. Mitigation for impacts to isolated HQAR would be required at a minimum ratio of 3:1. Required buffer widths are shown in Table 1.

INTRODUCTION AND BACKGROUND

The approximately 80.56-acre subject property and 6.75-acre utility corridor were investigated by V3 Companies (V3) on August 21, 2024, to determine the presence, extent, and quality of any wetlands or Waters under U.S. Army Corps of Engineers (USACE) and/or Lake County jurisdiction. Identified wetland boundaries are marked in the field using pink wire flags labeled "Wetland Delineation". This report summarizes the results of the field investigation and provides technical documentation for all investigated areas.

The project area is located on the east and west side of Route 83, south of Winchester Road, between Illinois Route 60 and Adderly Lane in Mundelein, Lake County, Illinois (Section 11 and 14, T44N, R10E; 42.296820°N, −88.037740°W; Grayslake quadrangle, Figure 1).

Four wetlands are mapped in the project area on the on the National Wetlands Inventory (NWI) Map (Figure 2) including three palustrine, emergent, persistent, seasonally flooded (PEM1C) wetlands and one palustrine, emergent, persistent, semi-permanently flooded (PEM1F) wetland.

Seven wetlands are mapped in the project area on the Lake County Wetlands Map (Figure 3) including five wetlands, one potential farmed wetland, and one urban converted wetland.

The USGS Hydrologic Atlas (Figure 4) shows one, isolated, flooded area (associated with Area 3), in the southwest portion of the project area. No streams or creeks are mapped on or adjacent to the project area.

The 12-Digit Hydrologic Unit Code (HUC) Map (Figure 5) shows the project area is within three subwatersheds: Mill Creek subwatershed (HUC 071200040202), Bull Creek – Des Plaines River subwatershed (HUC 071200040302), and Squaw Creek – Fox River subwatershed (HUC 071200061007). The Mill Creek and Bull Creek – Des Plaines River subwatersheds are in the larger Des Plaines River watershed (HUC 07120004), and the Squaw Creek – Fox River subwatershed is in the larger Upper Fox watershed (HU 07120006).

The FEMA Flood Insurance Rate Map (FIRM) (Figure 6) shows flood zone A in the southwest portion of the project area associated with Area 3. This area continues off-site and connects to an off-site, isolated area identified as Below Lake, which does not contain a Waters of the U.S.

The Flood Zones of Lake County, Illinois (2022) Map (Figure 7) shows flood zone A in the southwest portion of the project area associated with Area 3.

The soil series mapped in the project area on the Soil Survey of Lake County, Illinois Map (Figure 8) are listed below.

Table 3. Soils Information

Soil Map Unit	Soil Name	Hydric?
67A	Harpster silty clay loam	Yes
103A	Houghton muck	Yes
146A/146B	Elliott silt loam	No
223B/223C2	Varna silt oam	No

Soil Map Unit	Soil Name	Hydric?
232A	Ashkum silty clay loam	Yes
330A	Peotone silty clay loam	Yes
531B/531C2/531D2	Markham silt loam	No
1103A	Houghton muck, undrained	Yes

The Wetland & Waters Delineation Map (Figure 9A – 9B) shows the location of all data points and identified areas surveyed by V3 Companies.

Wetland Delineation Methods

Wetland delineations are conducted following the methods given in the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Midwest Region*. Under the delineation procedures in this manual, an area must exhibit characteristic hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a wetland. If field investigation determines that any of the three parameters are not satisfied, the area usually does not qualify as wetland. Moreover, drainage ditches excavated in dry land are generally not considered jurisdictional waters of the United States by the Corps of Engineers (preamble to 33 CFR Parts 320 through 330, *Federal Register* Vol. 56, No. 219, 41217).

As part of a delineation report, data forms and technical information are required by the U.S. Army Corps of Engineers, to document the three parameters for any area determined to be wetland. Data forms for wetlands identified at the subject property are provided in **Appendix I**. The vegetation data calculated on the data forms reflects the changes made to the National Wetland Plant List as of May 1, 2016. Representative photographs of delineated wetlands are provided in **Appendix II**. A brief description of the field methods used and a description of the three wetland parameters are provided in **Appendix IV**.

Plant species lists are compiled for each area identified, focusing on the plant communities within each identified wetland area. This accumulated floristic data is analyzed using the Floristic Quality Assessment (FQA) methodology, which is an assessment technique for a rapid quality evaluation of vegetation in a defined area. Technical names in the FQA and this report follow the nomenclature of *The National Wetland Plant List: 2014 Update of Wetland Ratings* (Lichvar *et. al.,* 2014). A detailed explanation of the Floristic Quality Assessment method is provided in **Appendix IV**.

As part of the wetland delineation assessment, Illinois Department of Natural Resources (IDNR) and US Fish and Wildlife Service (USFWS) threatened and endangered species evaluations were conducted (**Appendix V**).

The IDNR confirmed that the Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location. A copy of the termination letter from the IDNR is included in **Appendix V**.

The USFWS Information for Planning and Consultation (IPaC) is a project planning tool used to streamline the USFWS environmental review process for Section 7 Consultation. An IPaC Species and Resource List generated for the project on August 16, 2024 did not identify any Critical Habitat in the project area. A list of the candidate, experimental, threatened, proposed endangered, and endangered species which may occur near the project area is summarized in **Table 4** below.

Table 4. T&E Species Information

Species Name	Status	Habitat Present In Project Area
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	No
Rufa Red Knot (*Calidris canutus rufa*)	Threatened	No
Whooping Crane (*Grus americana*)	Experimental	No
Karner Blue Butterfly (*Lycaeides melissa samuelis*)	Endangered	No
Monarch Butterfly (*Danaus plexippus*)	Candidate	No
Western Regal Fritillary (*Argynnis idalia occidentalis*)	Proposed Threatened	No
Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Threatened	No
Pitcher's Thistle (*Cirsium pitcheri*)	Threatened	No

The project area consists of agricultural land and non-high-quality wetland areas and the surrounding land use is dominated by commercial and agricultural use that would not support the listed species. Based on this information, V3 determined there are no listed species present based on the lack of habitat within the project area. A copy of the IPaC Species and Resource List is included in Appendix V.

Additionally, further consultation with USFWS regarding the Northern Long-eared Bat Determination Key will be required by the project during the permitting process.

FARMED WETLAND SLIDE REVIEW

As of January 2005, the Natural Resource Conservation Service (NRCS) and U.S. Army Corps of Engineers (USACE) have withdrawn from the January 1994, *Memorandum of Agreement Between the Departments of Agriculture, Interior, and Army and EPA Concerning the Delineation of Wetlands under Section 404 of the Clean Water Act and Subtitle B of the Food Security Act* (MOA), and the January 1995, *Illinois Interagency Implementation of the National Wetland MOA*. Therefore, NRCS no longer makes certified wetland determinations on agricultural lands where the land use is changing to non-agricultural use. However, in the Chicago District, the USACE requires a review of crop compliance slides in accordance with the National Food Security Act Manual (NFSAM) methodology for agricultural lands. Additionally, Lake County SMC has issued regulatory guidance (Regulatory Guidance Memorandum #2022-01) for Agricultural Land Wetland Determinations.

Following the Lake County SMC guidance, V3 used the precipitation data from the Barrington National Weather Service (WETS) Station to determine the appropriate Farm Service Agency (FSA) crop compliance slides to review. The slides were examined on August 30, 2024, using NRCS spectral response criteria and category definitions for wetland determinations.

Wetland signatures are an indication of ponding, flooding, or impacts of saturation for sufficient duration that meets wetland hydrology and possible wetland vegetation criteria. Wetland signatures include:

- Mapped on NWI
- Hydrophytic vegetation (observed as different color than crop or forage)
- Surface Water
- Drowned-out crops or crop damage due to wetness
- Differences in vegetation (within a field) due to different planting dates
- Isolated areas that are not farmed with the rest of the field (includes areas not planted due to wetness at the time of planting)
- Inclusion of wet areas as set-aside if other signs of wetness are evident
- Patches of greener vegetation (crop) during years of below normal precipitation
- Crop stress (can only be used if the reviewer believes that it is a valid indicator in that area)

One wet year during which the site was under agricultural production (2011; Figure A) was selected as the base aerial photograph to identify consistently wet areas present on the site in which wetland signatures could be distinguished. Seven (7) base maps including the National Wetlands Inventory (NWI), Lake County Wetlands Inventory (LCWI), and five normal precipitation years (2016, 2008, 2006, 2004, 2002; Figures B – F) were examined to determine how many years the wetland signatures identified in the base wet year

persist during the normal precipitation years. If the signature occurred in at least 50% of the years of normal rainfall, this area was determined to be a potential farmed wetland.

The Crop Compliance Slide Analysis (Table 5) lists the wetland indicators observed in each wetland signature during the wet and normal precipitation years. Potential farmed wetland areas that were examined by V3 and the final farmed wetland determination summary are included in Appendix VI. Non-farmed areas and existing wetlands are not included in the farmed wetland determination.

Table 5. Crop Compliance Slide Analysis

Wetland Signature	2011 (A)	NWI (2)	LCWI (3)	2016 (B)	2008 (C)	2006 (D)	2004 (E)	2002 (F)	Occurrence in Normal Years (%)	Potential Farmed Wetland (Y/N)
	Wet/Base	Normal								
1	Greener vegetation	X	X	Crop Damage	No Crop	X	Saturated	X	60%	Yes
2	Greener vegetation	X	PFW	X	No Crop	Crop Damage	No crop	Saturated	80%	Yes
3	Greener vegetation	X	X	X	No Crop	X	Saturated	X	40%	No
4	Greener vegetation	X	X	X	No Crop	X	X	X	20%	No

Farmed Wetland Determination Summary

Four farmed wetland signatures (Signatures 1, 2, 3, and 4) were observed during the wet/base year (2011; Figure A). Of the four wetland signatures observed during the aerial review, Signatures 1 and 2 occurred greater than 50% of the time during normal years and therefore qualifies as potential farmed wetland. All signatures were investigated in the field.

Based on the results of the field investigation and the presence of hydric soils, Signature 2 meets the criteria to qualify as farmed wetland. More details on this area can be found in the *Results of the Field Investigation* section of this report.

Table 6. Farmed Wetland Determination

Signature	Potential Farmed Wetland (Y/N)	Field Verified (Y/N)	Hydric Soil Criteria (Y/N)	Farmed Wetland (Y/N)	Area in *Results of Field Investigation*
1	Y	Y	Y	Y	Area 9
2	Y	Y	Y	Y	Area 3
3	N	Y	Y	N	--
4	N	Y	Y	N	--

RESULTS OF THE FIELD INVESTIGATION

JURISDICTIONAL AREAS

Area 1 – Isolated Emergent Wetland

Data Point X02

Area 1 (3.32 acres on-site; 17+ acres off-site) consists of an emergent wetland located in the southwest corner of the subject property. Area 1 continues off-site to the southwest.

Summary:

- Emergent Wetland
- Jurisdiction: Lake County SMC
- Quality: IWLC
- Vegetated Buffer Required: 50'

Vegetation: The dominant plant species at Data Point X02 are narrow-leaved cattail (*Typha angustifolia*), field horsetail (*Equisetum arvense*), American water plantain (*Alisma subcordata*), and rough barnyard grass (*Echinochloa muricata*). 100% of the dominant species are hydrophytic, so the vegetation criterion is satisfied. The floristic quality data and plant species inventory for Area 1 are provided below.

Conservatism-Based Metrics		Additional Metrics	
Mean C (native species)	**1.88**	Species Richness (all)	32
Mean C (all species)	1.47	Species Richness (native)	25
Mean C (native trees)	2.00	% Non-native	22%
Mean C (native shrubs)	3.00	Wet Indicator (all)	-0.94
Mean C (native herbaceous)	1.80	Wet Indicator (native)	-1.12
FQAI (native species)	**9.40**	% hydrophyte (Midwest)	94%
FQAI (all species)	8.31	% native perennial	50%
Adjusted FQAI	16.62	% native annual	28%
% C value 0	44%	% annual	31%
% C Value 1-3	38%	% perennial	69%
% C value 4-6	19%		
% C value 7-10	0%		

Species Acronym	Species Name (NWPL/Mohlenbrock)	Species(Synonym)	Common Name	C Value	Midwest WET indicator	WET indicator (numeric)	Habit	Duration	Nativity
alisub	*Alisma subcordatum*	*Alisma subcordatum*	American Water-Plantain	3	OBL	-2	Forb	Perennial	Native
amatub	*Amaranthus tuberculatus*	*Acnida altissima*	Rough-Fruit Amaranth	1	OBL	-2	Forb	Annual	Native
bidcer	*Bidens cernua*	*Bidens cernua*	Nodding Burr-Marigold	3	OBL	-2	Forb	Annual	Native
bidfro	*Bidens frondosa*	*Bidens frondosa*	Devil's-Pitchfork	1	FACW	-1	Forb	Annual	Native
cypesc	*Cyperus esculentus*	*Cyperus esculentus*	Chufa	0	FACW	-1	Sedge	Perennial	Native
echmur	*Echinochloa muricata*	*Echinochloa muricata*	Rough Barnyard Grass	4	OBL	-2	Grass	Annual	Native

eleery	*Eleocharis palustris*	*Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii; Eleocharis xyridiformis; Eleocharis macrostachya*	Common Spike-Rush	1	OBL	-2	Sedge	Perennial	Native
epicol	*Epilobium coloratum*	*Epilobium coloratum*	Purple-Leaf Willowherb	3	OBL	-2	Forb	Perennial	Native
equarv	*Equisetum arvense*	*Equisetum arvense*	Field Horsetail	0	FAC	0	Fern	Perennial	Native
equhye	*Equisetum hyemale*	*Equisetum hyemale*	Tall Scouring-Rush	1	FACW	-1	Fern	Perennial	Native
solgra	*Euthamia graminifolia*	*Solidago graminifolia; Solidago graminifolia nuttallii; Euthamia nuttallii*	Flat-Top Goldentop	4	FACW	-1	Forb	Perennial	Native
rhafra	*Frangula alnus*	*RHAMNUS FRANGULA*	Glossy False Buckthorn	0	FACW	-1	Shrub	Perennial	Adventive
frapen	*Fraxinus pennsylvanica*	*Fraxinus pennsylvanica subintegerrima; Fraxinus lanceolata*	Green Ash	4	FACW	-1	Tree	Perennial	Native
geulac	*Geum laciniatum*	*Geum laciniatum*	Rough Avens	3	FACW	-1	Forb	Perennial	Native
glymax	*Glycine max*	*GLYCINE MAX*	Soybean	0	UPL	2	Forb	Annual	Adventive
horjub	*Hordeum jubatum*	*HORDEUM JUBATUM*	Fox-Tail Barley	0	FAC	0	Grass	Perennial	Native
lemmio	*Lemna minor*	*Lemna minor*	Common Duckweed	5	OBL	-2	Forb	Annual	Native
lytsal	*Lythrum salicaria*	*LYTHRUM SALICARIA*	Purple Loosestrife	0	OBL	-2	Forb	Perennial	Adventive
pandic	*Panicum dichotomiflorum*	*Panicum dichotomiflorum*	Fall Panic Grass	0	FACW	-1	Grass	Annual	Native
pensed	*Penthorum sedoides*	*Penthorum sedoides*	Ditch-Stonecrop	4	OBL	-2	Forb	Perennial	Native
perhyr	*Persicaria hydropiper*	*Polygonum hydropiper*	Mild Water-Pepper	2	OBL	-2	Forb	Annual	Native
perlap	*Persicaria lapathifolia*	*Polygonum lapathifolium; POLYGONUM SCABRUM; PERSICARIA SCABRA*	Dock-Leaf Smartweed	0	FACW	-1	Forb	Annual	Native
phaaru	*Phalaris arundinacea*	*PHALARIS ARUNDINACEA*	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
popdel	*Populus deltoides*	*Populus deltoides*	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
rumcri	*Rumex crispus*	*RUMEX CRISPUS*	Curly Dock	0	FAC	0	Forb	Perennial	Adventive
salint	*Salix interior*	*Salix interior*	Sandbar Willow	2	FACW	-1	Shrub	Perennial	Native
salfra	*Salix X fragilis*	*SALIX FRAGILIS; SALIX X RUBENS*	Crack Willow	0	FAC	2	Tree	Perennial	Adventive
samcan	*Sambucus nigra ssp. canadensis*	*Sambucus canadensis*	Black Elder	4	FAC	-1	Shrub	Perennial	Native

solalt	*Solidago altissima*	*Solidago altissima*	Tall Goldenrod	1	FACU	1	Forb	Perennial	Native
typang	*Typha angustifolia*	*TYPHA ANGUSTIFOLIA*	Narrow-Leaf Cat-Tail	0	OBL	-2	Forb	Perennial	Adventive
vitrip	*Vitis riparia*	*Vitis riparia var. syrticola*	River-Bank Grape	1	FACW	-1	Vine	Perennial	Native
xanstr	*Xanthium strumarium*	*Xanthium strumarium var. canadense; Xanthium strumarium var. glabratum*	Rough Cockleburr	0	FAC	0	Forb	Annual	Native

Soils: The soil profile at Data Point X02 consisted of 0-10 inches of black (10YR 2/1) silty clay loam with 5% dark yellowish brown (10RY 4/6) redoximorphic concentrations and 5% gray (10YR 5/1) redoximorphic depletions. Below that, from 10 to 15 inches below the surface, the soil profile was gray (10YR 5/1) silty clay loam with 30% dark yellowish brown (10YR 4/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

Hydrology: The presence of one primary wetland hydrology indicator, B13, Aquatic Fauna, and five secondary wetland hydrology indicators, B6, Surface Soil Cracks, C8, Crayfish Burrows, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test, satisfies the hydrology criterion.

Conclusion: Data Point X02 satisfies all three criteria; therefore Area 1 qualifies as wetland.

Area 2 – Isolated Emergent Wetland

Data Point X15

Area 2 (0.82 acres) consists of an isolated emergent wetland located in the northeast portion of the subject property. Area 2 contains no visible pipes or culverts along Route 83 or Winchester Road.

Summary:

- Emergent and Farmed Wetland
- Jurisdiction: Lake County SMC
- Quality: IWLC
- Vegetated Buffer Required: 50’

Vegetation: The dominant plant species at Data Point X15 are rough barnyard grass (*Echinochloa muricata*) and narrow-leaved cattails (*Typha angustifolia*). The dominant species are hydrophytic, so the vegetation criterion is satisfied. The floristic quality data and plant species inventory for Area 2 are provided below.

Conservatism-Based Metrics		**Additional Metrics**	
Mean C (native species)	**1.89**	Species Richness (all)	13
Mean C (all species)	1.31	Species Richness (native)	9
Mean C (native trees)	0.00	% Non-native	31%
Mean C (native shrubs)	0.00	Wet Indicator (all)	-1.15
Mean C (native herbaceous)	2.43	Wet Indicator (native)	-1.33
FQAI (native species)	**5.67**	% hydrophyte (Midwest)	100%
FQAI (all species)	4.71	% native perennial	46%
Adjusted FQAI	15.72	% native annual	23%
% C value 0	54%	% annual	23%
% C Value 1-3	38%	% perennial	77%

% C value 4-6	8%		
% C value 7-10	0%		

Species Acronym	Species Name (NWPL/Mohlenbrock)	Species(Synonym)	Common Name	C Value	Midwest WET indicator	WET indicator (numeric)	Habit	Duration	Nativity
aceneg	*Acer negundo*	*Acer negundo var. violaceum*	Ash-Leaf Maple	0	FAC	0	Tree	Perennial	Native
alisub	*Alisma subcordatum*	*Alisma subcordatum*	American Water-Plantain	3	OBL	-2	Forb	Perennial	Native
echmur	*Echinochloa muricata*	*Echinochloa muricata*	Rough Barnyard Grass	4	OBL	-2	Grass	Annual	Native
juntor	*Juncus torreyi*	*Juncus torreyi*	Torrey's Rush	2	FACW	-1	Forb	Perennial	Native
pandic	*Panicum dichotomiflorum*	*Panicum dichotomiflorum*	Fall Panic Grass	0	FACW	-1	Grass	Annual	Native
perhyr	*Persicaria hydropiper*	*Polygonum hydropiper*	Mild Water-Pepper	2	OBL	-2	Forb	Annual	Native
phaaru	*Phalaris arundinacea*	*PHALARIS ARUNDINACEA*	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
popdel	*Populus deltoides*	*Populus deltoides*	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
potnod	*Potamogeton nodosus*	*Potamogeton nodosus*	Long-Leaf Pondweed	3	OBL	-2	Forb	Perennial	Native
rhacat	*Rhamnus cathartica*	*RHAMNUS CATHARTICA*	European Buckthorn	0	FAC	0	Shrub	Perennial	Adventive
rumcri	*Rumex crispus*	*RUMEX CRISPUS*	Curly Dock	0	FAC	0	Forb	Perennial	Adventive
schtab	*Schoenoplectus tabernaemontani*	*Scirpus validus creber*	Soft-Stem Club-Rush	3	OBL	-2	Sedge	Perennial	Native
typang	*Typha angustifolia*	*TYPHA ANGUSTIFOLIA*	Narrow-Leaf Cat-Tail	0	OBL	-2	Forb	Perennial	Adventive

Soils: The soil profile at Data Point X15 consisted of 0-24 inches of black (10YR 2/1) silty clay loam with 5% dark yellowish brown (10RY 4/6) redoximorphic concentrations underlain by 6+ inches, to a depth of 30+ inches below the surface, of dark gray (10YR 4/1) silty clay loam with 30% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

Hydrology: The presence of one primary wetland hydrology indicator A1, Surface Water to a depth of 0.5 inches, and three secondary wetland hydrology indicators, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test, satisfies the hydrology criterion.

Conclusion: Data Point X15 satisfies all three criteria; therefore Area 2 qualifies as wetland.

Area 3 – Isolated Farmed Wetland

Data Point X04

Area 3 (0.47 acres on-site) consists of an isolated farmed wetland located in the southern portion of the subject property.

Summary:

- Farmed Wetland
- Jurisdiction: Lake County SMC

- Quality: IWLC
- Vegetated Buffer Required: 30'

Vegetation: The dominant plant species at Data Point X04 are Palmer's amaranth (*Amaranthus palmeri*) and yellow nut-sedge (*Cyperus esculentus*). Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

Soils: The soil profile at Data Point X04 consisted of 0-24 inches of black (10YR 2/1) silty clay loam with 5% yellowish brown (10RY 5/6) redoximorphic concentrations. Below that, from 24 to 30+ inches below the surface, the soil profile was dark gray (10YR 4/1) silty clay loam with 20% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

Hydrology: The presence of five secondary wetland hydrology indicators, B6, Surface Soil Cracks, C8, Crayfish Burrows, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test, satisfies the hydrology criterion.

Conclusion: Data Point X04 fails the vegetation criterion and does not qualify as wetland; however, Area 3 qualifies as farmed wetland.

Area 4 – Isolated Emergent Wetland

Data Point X13

Area 4 (0.01 acres on-site) consists of an isolated emergent wetland located in the western portion of the utility corridor, south of W Winchester Road. Area 4 continues off-site to the south.

Summary:

- Isolated Emergent Wetland
- Jurisdiction: Lake County SMC
- Quality: IWLC
- Vegetated Buffer Required: 50'

Vegetation: The dominant plant species at Data Point X13 is common reed (*Phragmites australis*). 100% of the dominant species are hydrophytic, so the vegetation criterion is satisfied. The floristic quality data and plant species inventory for Area 4 are provided below.

Conservatism-Based Metrics		**Additional Metrics**	
Mean C (native species)	**1.13**	Species Richness (all)	16
Mean C (all species)	0.56	Species Richness (native)	8
Mean C (native trees)	0.00	% Non-native	50%
Mean C (native shrubs)	2.00	Wet Indicator (all)	-0.38
Mean C (native herbaceous)	1.40	Wet Indicator (native)	-0.63
FQAI (native species)	**3.18**	% hydrophyte (Midwest)	88%
FQAI (all species)	2.25	% native perennial	44%
Adjusted FQAI	7.95	% native annual	6%
% C value 0	75%	% annual	6%
% C Value 1-3	25%	% perennial	88%
% C value 4-6	0%		
% C value 7-10	0%		

Species Acronym	Species Name (NWPL/Mohlenbrock)	Species(Synonym)	Common Name	C Value	Midwest WET indicator	WET indicator (numeric)	Habit	Duration	Nativity
aceneg	*Acer negundo*	*Acer negundo var. violaceum*	Ash-Leaf Maple	0	FAC	0	Tree	Perennial	Native
bidfro	*Bidens frondosa*	*Bidens frondosa*	Devil's-Pitchfork	1	FACW	-1	Forb	Annual	Native
cypesc	*Cyperus esculentus*	*Cyperus esculentus*	Chufa	0	FACW	-1	Sedge	Perennial	Native
diplac	*Dipsacus laciniatus*	*DIPSACUS LACINIATUS*	Cut-Leaf Teasel	0	UPL	2	Forb	Biennial	Adventive
horjub	*Hordeum jubatum*	*HORDEUM JUBATUM*	Fox-Tail Barley	0	FAC	0	Grass	Perennial	Native
lytsal	*Lythrum salicaria*	*LYTHRUM SALICARIA*	Purple Loosestrife	0	OBL	-2	Forb	Perennial	Adventive
phaaru	*Phalaris arundinacea*	*PHALARIS ARUNDINACEA*	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
phrausu	*Phragmites australis ssp. australis*	*PHRAGMITES AUSTRALIS*	Common Reed	0	FACW	-1	Grass	Perennial	Adventive
popdel	*Populus deltoides*	*Populus deltoides*	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
rhacat	*Rhamnus cathartica*	*RHAMNUS CATHARTICA*	European Buckthorn	0	FAC	0	Shrub	Perennial	Adventive
salint	*Salix interior*	*Salix interior*	Sandbar Willow	2	FACW	-1	Shrub	Perennial	Native
salfra	*Salix X fragilis*	*SALIX FRAGILIS; SALIX X RUBENS*	Crack Willow	0	FAC	2	Tree	Perennial	Adventive
schtab	*Schoenoplectus tabernaemontani*	*Scirpus validus creber*	Soft-Stem Club-Rush	3	OBL	-2	Sedge	Perennial	Native
astsim	*Symphyotrichum lanceolatum*	*Aster simplex*	White Panicled American-Aster	3	FAC	0	Forb	Perennial	Native
taroff	*Taraxacum officinale*	*TARAXACUM OFFICINALE*	Common Dandelion	0	FACU	1	Forb	Perennial	Adventive
typang	*Typha angustifolia*	*TYPHA ANGUSTIFOLIA*	Narrow-Leaf Cat-Tail	0	OBL	-2	Forb	Perennial	Adventive

Soils: The soil profile at Data Point X13 consisted of 0-10 inches of black (10YR 2/1) silty clay loam mixed fill with 10% yellowish brown (10RY 4/6) redoximorphic concentrations. Below that, from 10 to 14+ inches below the surface, the soil profile was dark gray (10YR 4/1) silty clay loam mixed fill with 25% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A11, Depleted Below Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

Hydrology: The presence of two secondary wetland hydrology indicators, C9, Saturation Visible on Aerial Imagery, and D2, Geomorphic Position, satisfies the hydrology criterion at Data Point X13.

Conclusion: Data Point X13 satisfies all three criteria; therefore, Area 4 qualifies as wetland.

Area 5 – Off-Site Wetland

Area 5 consists of an off-site emergent wetland located at the northwest corner of Winchester Road and Route 83. This area was located within 100-feet of the project area and was determined to be hydrologically isolated from the project area based on topography.

Area 6 – Isolated Emergent Wetland

Data Point X12

Area 6 (0.01 acres on-site) consists of an emergent wetland located in the central portion of the utility corridor, north of Winchester Road. Area 6 continues off-site to the north.

Summary:

- Emergent Wetland
- Jurisdiction: Lake County SMC
- Quality: IWLC
- Vegetated Buffer Required: 50'

Vegetation: The dominant plant species at Data Point X12 is common buckthorn (*Rhamnus cathartica*). All of the dominant species are hydrophytic, so the vegetation criterion is satisfied. The floristic quality data and plant species inventory for Area 6 are provided below.

Conservatism-Based Metrics		Additional Metrics	
Mean C (native species)	**1.20**	Species Richness (all)	10
Mean C (all species)	0.60	Species Richness (native)	5
Mean C (native trees)	0.00	% Non-native	50%
Mean C (native shrubs)	0.00	Wet Indicator (all)	-0.70
Mean C (native herbaceous)	1.50	Wet Indicator (native)	-0.60
FQAI (native species)	**2.68**	% hydrophyte (Midwest)	100%
FQAI (all species)	1.90	% native perennial	40%
Adjusted FQAI	8.49	% native annual	10%
% C value 0	80%	% annual	10%
% C Value 1-3	20%	% perennial	90%
% C value 4-6	0%		
% C value 7-10	0%		

Species Acronym	Species Name (NWPL/Mohlenbrock)	Species(Synonym)	Common Name	C Value	Midwest WET indicator	WET indicator (numeric)	Habit	Duration	Nativity
cypesc	*Cyperus esculentus*	*Cyperus esculentus*	Chufa	0	FACW	-1	Sedge	Perennial	Native
echcru	*Echinochloa crus-galli*	*Echinochloa crusgalli*	Large Barnyard Grass	0	FACW	-1	Grass	Annual	Native
geulac	*Geum laciniatum*	*Geum laciniatum*	Rough Avens	3	FACW	-1	Forb	Perennial	Native
phaaru	*Phalaris arundinacea*	*PHALARIS ARUNDINACEA*	Reed Canary Grass	0	FACW	-1	Grass	Perennial	Adventive
phrausu	*Phragmites australis ssp. australis*	*PHRAGMITES AUSTRALIS*	Common Reed	0	FACW	-1	Grass	Perennial	Adventive
popdel	*Populus deltoides*	*Populus deltoides*	Eastern Cottonwood	0	FAC	0	Tree	Perennial	Native
rhacat	*Rhamnus cathartica*	*RHAMNUS CATHARTICA*	European Buckthorn	0	FAC	0	Shrub	Perennial	Adventive
rumcri	*Rumex crispus*	*RUMEX CRISPUS*	Curly Dock	0	FAC	0	Forb	Perennial	Adventive

astsim	*Symphyotrichum lanceolatum*	*Aster simplex*	White Panicled American-Aster	3	FAC	0	Forb	Perennial	Native
typang	*Typha angustifolia*	*TYPHA ANGUSTIFOLIA*	Narrow-Leaf Cat-Tail	0	OBL	-2	Forb	Perennial	Adventive

Soils: The soil profile at Data Point X12 consisted of 0-15 inches of black (10YR 2/1) silty clay loam mixed fill with 5% dark yellowish brown (10RY 4/6) redoximorphic concentrations. Below that, from 15 to 18+ inches below the surface, the soil profile was gray (10YR 5/1) silty clay loam with 15% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

Hydrology: The presence of two secondary wetland hydrology indicators, C9, Saturation Visible on Aerial Imagery, and D2, Geomorphic Position, satisfies the hydrology criterion.

Conclusion: Data Point X12 satisfies all three criteria; therefore Area 6 qualifies as wetland.

Area 7 – Off-Site Wetland

Area 7 consists of an off-site emergent wetland complex located northwest of the project area. This area was located within 100 feet of the project area and was determined to be hydrologically isolated from the project area based on topography.

Area 9 – Isolated Farmed Wetland

Data Point X16

Area 9 (0.44 acres on-site) consists of an isolated farmed wetland located in the northeast portion of the subject property.

Summary:

- Farmed Wetland
- Jurisdiction: Lake County SMC
- Quality: IWLC
- Vegetated Buffer Required: 30’

Vegetation: The area at Data Point X16 was unvegetated, so the vegetation criterion is not satisfied.

Soils: The soil profile at Data Point X16 consisted of 0-28 inches of black (10YR 2/1) silty clay loam, underlain by 24-32 inches of gray (10YR 5/1) silt loam with 20% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicator A12, Thick Dark Surface, and satisfies the soils criterion.

Hydrology: The presence of two primary wetland hydrology indicators, B4 Algal Mat or Crust, B8 Sparsely Vegetated Concave Surface, and secondary indicators B6, Soil Cracks, C9, Saturation Visible on Aerial Imagery, and D2, Geomorphic Position, satisfies the hydrology criterion at Data Point X16.

Conclusion: Data Point X16 fails the vegetation criterion and does not qualify as wetland; however, Area 9 qualifies as farmed wetland.

Additional Areas Investigated

Area 8 – Exempt Man-Made Roadside Ditch

Data Point X14

Area 8 is located within the utility corridor at the southeast corner of the Route 83 and W Winchester Road intersection and consists of a man-made roadside ditch that is exempt from jurisdiction.

Vegetation: The dominant plant species at Data Point X14 are river bulrush (*Schoenoplectus fluviatilis*), and common reed (*Phragmites australis*). The dominant species are hydrophytic, so the vegetation criterion is satisfied.

Soils: The soil profile at Data Point X14 consisted of 0-6 inches of black (10YR 2/1) mixed-fill silty clay loam, containing 5% dark yellowish brown (10YR 4/6) redox concentrations, underlain by 6-12 inches of 60% brown (10YR 5/4), 30% black (10YR 2/1) mixed-fill silty clay loam, containing 10% yellowish brown (10YR 5/6) redox concentrations. This profile does not meet a hydric soil indicator, so the soils criterion is not satisfied.

Hydrology: The presence of two secondary wetland hydrology indicators, D5 FAC-Neutral Test, and D2 Geomorphic Position, satisfies the hydrology criterion at Data Point X14.

Conclusion: Data Point X14 fails the soils criterion and does not qualify as wetland. Area 8 is a man-made roadside ditch, exempt from jurisdiction.

Area 10 – Upland

Data Points X01, X03, X05, X06, X07, X08, X09, X10, and X11

Area 10 consists of the upland areas located throughout the subject property.

Vegetation:

- The dominant plant species at Data Point X01 are Queen Anne's lace (*Daucus carota*), reed canary grass (*Phalaris arundinacea*), giant ragweed (*Ambrosia trifida*), and fall witch grass (*Leptoloma cognatum*). Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X03 are narrow-leaved cattail (*Typha angustifolia*) and Palmer's amaranth (*Amaranthus palmeri*). Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X05 are soybean (*Glycine max*), and Palmer's amaranth (*Amaranthus palmeri*). None of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X06 are Palmer's amaranth (*Amaranthus palmeri*), and yellow nut-sedge (*Cyperus esculentus*). Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X07 are Paler's amaranth (*Amaranthus palmeri*), and fall panic grass (*Panicum dichotomiflorum*). Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

- The dominant plant species at Data Point X08 is soybean (*Glycine max*). The dominant species is not hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X09 is soybean (*Glycine max*). The dominant species is not hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X10 is soybean (*Glycine max*). The dominant species is not hydrophytic, so the vegetation criterion is not satisfied.
- The dominant plant species at Data Point X11 is soybean (*Glycine max*). The dominant species is not hydrophytic, so the vegetation criterion is not satisfied.

Soils:

- The soil profile at Data Point X01 consisted of 0-28 inches of black (10YR 2/1) silty clay loam underlain by 4+ inches, to 32+ inches below the surface, of brown (10YR 3/3) silty clay loam. The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.
- The soil profile at Data Point X03 consisted of 0-16 inches of black (10YR 2/1) silty clay loam with 5% dark yellowish brown (10RY 4/6) redoximorphic concentrations underlain by 3+ inches, to 19+ inches below the surface, of dark gray (10YR 4/1) silty clay loam with 25% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.
- The soil profile at Data Point X05 consisted of 0-28 inches of black (10YR 2/1) silty clay loam underlain by 8+ inches, to 36+ inches below the surface, of gray (10YR 4/1) silty clay loam with 25% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicator A12, Thick Dark Surface, and satisfies the soils criterion.
- The soil profile at Data Point X06 consisted of 0-28 inches of black (10YR 2/1) silty clay loam with 5% yellowish brown (10RY 5/6) redoximorphic concentrations underlain by 6+ inches, to a depth of 30+ inches below the surface, of dark gray (10YR 4/1) silty clay loam with 30% yellowish brown (10YR 5/6) redoximorphic concentrations. This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.
- The soil profile at Data Point X07 consisted of 0-24 inches of black (10YR 2/1) silty clay loam, containing 5% dark yellowish brown (10YR 4/6) redox concentrations, underlain by 24-30 inches of dark gray (10YR 4/1) silty clay loam, containing 30% yellowish brown (10YR 5/6) redox concentrations. This profile satisfies hydric soil indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.
- The soil profile at Data Point X08 consisted of 0-20 inches of black (10YR 2/1) silty clay loam underlain by 6+ inches, to 36+ inches below the surface, of brown (10YR 3/3) silty clay loam. The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.
- The soil profile at Data Point X09 consisted of 0-18 inches of black (10YR 2/1) silty clay loam underlain by 6+ inches, to 24+ inches below the surface, of brown (10YR 4/4) silty clay loam. The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

- The soil profile at Data Point X10 consisted of 0-15 inches of black (10YR 2/1) silty clay loam underlain by 15+ inches, to 30+ inches below the surface, of brown (10YR 3/3) silty clay loam. The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.
- The soil profile at Data Point X11 consisted of 0-16 inches of black (10YR 2/1) silty clay loam underlain by 6+ inches, to 22+ inches below the surface, of brown (10YR 4/4) silty clay loam. The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

Hydrology:

- Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied at Data Point X01.
- The presence of four secondary wetland hydrology indicators, B6, Surface Soil Cracks, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test satisfies the hydrology criterion at Data Point X03.
- The presence of one secondary wetland hydrology indicator B6, Surface Soil Cracks, is not enough to satisfy the hydrology criterion at Data Point X05.
- The presence of one primary wetland hydrology indicator A1, Surface Water to a depth of 2+ inches, and five secondary wetland hydrology indicators, B6, Surface Soil Cracks, C9, Saturation Visible on Aerial Imagery, D1, Stunted or Stressed Plants, D2, Geomorphic Position, and D5, FAC-neutral Test satisfies the hydrology criterion at Data Point X06.
- The presence of primary wetland hydrology indicator A1, Surface Water, along with C9, Saturation Visible on Aerial Imagery, D1, Stunted or Stressed Plants, and D2, Geomorphic Position, satisfies the hydrology criterion at Data Point X07.
- Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied at Data Point X08.
- Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied at Data Point X09.
- Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied at Data Point X10.
- Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied at Data Point X11.

Conclusion: Data Points X01, X03 X05, X06, X07, X08, X09, X10, and X11 do not satisfy all three criteria and do not qualify as wetland.

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APPENDIX I

WETLAND DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X01**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.298740 | Long.: -88.041860 | Datum: NAD 1983

Soil Map Unit Name: Elliott silt loam (146B) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This location fails all three criteria and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.		☐	0.0%	
2.		☐	0.0%	
3.		☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.		☐	0.0%	
2.		☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. Daucus carota	30	☑	33.3%	UPL
2. Phalaris arundinacea	20	☑	22.2%	FACW
3. Ambrosia trifida	20	☑	22.2%	FAC
4. Leptoloma cognatum	20	☑	22.2%	UPL
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	90	= Total Cover		
Woody Vine Stratum (Plot size: 5')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	50	x 5 =	250
Column Totals:	90 (A)		350 (B)

Prevalence Index = B/A = 3.889

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X01**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-28	10YR 2/1						Silty Clay Loam	
28-32+	10YR 3/3						Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X02**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.296090 | Long.: -88.042220 | Datum: NAD 1983

Soil Map Unit Name: Ashkum silty clay loam (232A) | NWI classification: PEM1F

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? | Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location satisfies all three criteria and qualifies as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	10	☑ 20.0%	OBL
2. Equisetum arvense	15	☑ 30.0%	FAC
3. Alisma subcordatum	10	☑ 20.0%	OBL
4. Echinochloa muricata	15	☑ 30.0%	OBL
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	50	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	50 (A)		80 (B)

Prevalence Index = B/A = 1.600

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)
All of the dominant species are hydrophytic, so the vegetation criterion is satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X02**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR	2/1		10YR	4/6	5	C	M	Silty Clay Loam	
				10YR	5/1	5	D	M		
10-15	10YR	5/1		10YR	4/6	30	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☑ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of one primary wetland hydrology indicator, B13, Aquatic Fauna, and five secondary wetland hydrology indicators, B6, Surface Soil Cracks, C8, Crayfish Burrows, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test, satisfies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X03**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.295400 | Long.: -88.039450 | Datum: NAD 1983

Soil Map Unit Name: Ashkum silty clay loam (232A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
This location fails the vegetation criterion and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	10	☑ 28.6%	OBL
2. Amaranthus palmeri	25	☑ 71.4%	FACU
3.		☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	35	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	35 (A)		110 (B)

Prevalence Index = B/A = 3.143

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X03**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	2/1		10YR	4/6	5	C	M	Silty Clay Loam	
16-19+	10YR	4/1		10YR	5/6	25	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of four secondary wetland hydrology indicators, B6, Surface Soil Cracks, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test satsifies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X04**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.295480 | Long.: -88.036750 | Datum: NAD 1983

Soil Map Unit Name: Ashkum silty clay loam (232A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
This location fails the vegetation criterion and does not qualify as wetland. This area qualifies as farmed wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Amaranthus palmeri	15	☑ 60.0%	FACU
2. Cyperus esculentus	10	☑ 40.0%	FACW
3.		☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	25	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	25 (A)		80 (B)

Prevalence Index = B/A = 3.200

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X04**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR	2/1		10YR	5/6	5	C	M	Silty Clay Loam	
24-30+	10YR	4/1		10YR	5/6	20	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☑ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of five secondary wetland hydrology indicators, B6, Surface Soil Cracks, C8, Crayfish Burrows, C9, Saturation Visible on Aerial Imagery, D2, Geomorphic Position, and D5, FAC-neutral Test, satisfies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X05**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.296820 | Long.: -88.037740 | Datum: NAD 1983

Soil Map Unit Name: Ashkum silty clay loam (232A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This location fails the vegetation and hydrology criteria and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Glycine max	10	☑ 50.0%	UPL
2. Amaranthus palmeri	10	☑ 50.0%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	20	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	10	x 5 =	50
Column Totals:	20 (A)		90 (B)

Prevalence Index = B/A = 4.500

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
None of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X05**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-28	10YR	2/1							Silty Clay Loam	
28-36+	10YR	4/1		10YR	5/6	25	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicator A12, Thick Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of one secondary wetland hydrology indicator B6, Surface Soil Cracks, is not enough to satisfy the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X06**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.299100 | Long.: -88.036470 | Datum: NAD 1983

Soil Map Unit Name: Houghton muck (103A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉	No ○	
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks:
This location fails the vegetation criterion and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Amaranthus palmeri	15	☑ 60.0%	FACU
2. Cyperus esculentus	10	☑ 40.0%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	25	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	25 (A)		80 (B)

Prevalence Index = B/A = 3.200

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
Only 50% of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X06**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-28	10YR	2/1		10YR	5/6	5	C	M	Silty Clay Loam	
28-3+	10YR	4/1		10YR	5/6	25	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 2

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of one primary wetland hydrology indicator A1, Surface Water to a depth of 2+ inches, and five secondary wetland hydrology indicators, B6, Surface Soil Cracks, C9, Saturation Visible on Aerial Imagery, D1, Stunted or Stressed Plants, D2, Geomorphic Position, and D5, FAC-neutral Test satisfies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X07**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.299390 | Long.: -88.034640 | Datum: NAD 1983

Soil Map Unit Name: Houghton muck (103A) | NWI classification: PEM1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location fails the vegetation criterion and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. Amaranthus palmeri	15	☑	42.9%	FACU
2. Panicum dichotomiflorum	10	☑	28.6%	FACW
3.	10	☑	28.6%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	35	= Total Cover		
Woody Vine Stratum (Plot size: 5')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	25 (A)		80 (B)

Prevalence Index = B/A = 3.200

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
All of the dominant species are hydrophytic, so the vegetation criterion is satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X07**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR	2/1		10YR	4/6	5	C	M	Silty Clay Loam	
24-30+	10YR	4/1		10YR	5/6	30	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of one primary wetland hydrology indicator A1, Surface Water to a depth of 2+ inches, and four secondary wetland hydrology indicators, C9, Saturation Visible on Aerial Imagery, D1, Stunted or Stressed Plants, D2, Geomorpic Position, and D5, FAC-neutral Test, satisfies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X08**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.298760 | Long.: -88.035400 | Datum: NAD 1983

Soil Map Unit Name: Elliott silt loam (146B) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This location fails all three criteria and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. Glycine max	100	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size: 5')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
None of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X08**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR	2/1							Silty Clay Loam	
20-26+	10YR	3/3							Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X09**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Shoulder slope | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.298280 | Long.: -88.039890 | Datum: NAD 1983

Soil Map Unit Name: Varna silt loam (223C2) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This location fails all three criteria and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. Glycine max	100	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size: 5')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
None of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X09**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1						Silty Clay Loam	
18-24+	10YR 4/4						Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X10**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Shoulder slope | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.295610 | Long.: -88.041230 | Datum: NAD 1983

Soil Map Unit Name: Elliott silt loam (146A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This location fails all three criteria and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Glycine max	100	☑ 100.0%	UPL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
None of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X10**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 2/1						Silty Clay Loam	
15-30	10YR 3/3						Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X11**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Shoulder slope | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 42.295540 | Long.: -88.038170 | Datum: NAD 1983

Soil Map Unit Name: Elliott silt loam (146B) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This location fails all three criteria and does not qualify as wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. Glycine max	100	☑	100.0%	UPL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size: 5')				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	100	x 5 =	500
Column Totals:	100 (A)		500 (B)

Prevalence Index = B/A = 5.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
None of the dominant species are hydrophytic, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: X11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR	2/1							Silty Clay Loam	
16-22+	10YR	4/4							Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

[2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Neither primary nor secondary wetland hydrology indicators were observed, so the hydrology criterion is not satisfied.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X12**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.299920 | Long.: -88.026780 | Datum: NAD 1983

Soil Map Unit Name: Ashkum silty clay loam (232A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location satisfies all three criteria and qualifies as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rhamnus cathartica	80	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	80	= Total Cover	
Herb Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		240 (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)
All of the dominant species are hydrophytic, so the vegetation criterion is satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X12**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR	2/1		10YR	4/6	5	C	M	Silty Clay Loam	Mixed fill
15-18	10YR	5/1		10YR	5/6	15	C	M	Silty Clay Loam	Mixed fill

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of two secondary wetland hydrology indicators, C9, Saturation Visible on Aerial Imagery, and D2, Geomorphic Position, satsifies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X13**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.299810 | Long.: -88.032370 | Datum: NAD 1983

Soil Map Unit Name: Houghton muck (103A) | NWI classification: PEM1C

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location satisfies all three criteria and qualifies as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Phragmites australis	90	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		180 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X13**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR	2/1		10YR	4/6	10	C	M	Silty Clay Loam	Mixed fill
10-14+	10YR	4/1		10YR	5/6	25	C	M	Silty Clay Loam	Mixed fill

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A11, Depleted Below Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of two secondary wetland hydrology indicators, C9, Saturation Visible on Aerial Imagery, and D2, Geomorphic Position, satsifies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X14**

Investigator(s): A. Metzger, D. Jablonski | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Roadside ditch | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.299900 | Long.: -88.032330 | Datum: NAD 1983

Soil Map Unit Name: Markham silt loam (531C2) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location fails the soils criterion and does not qualify as wetland. This area is part of a roadside ditch.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Schoenoplectus fluviatilis	20	☑ 33.3%	OBL
2. Phragmites australis	40	☑ 66.7%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	60	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	40	x 2 =	80
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	60 (A)		100 (B)

Prevalence Index = B/A = 1.667

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)
All of the dominant species are hydrophytic, so the vegetation criterion is satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X14**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR	2/1		10YR	4/6	5	C	M	Silty Clay Loam	Mixed fill
6-12+	10YR	5/4	60	10YR	5/6	10	C	M	Silty Clay Loam	Mixed fill
	10YR	2/1	30							

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

The soil in this location does not meet a hydric soil indicator, so the soils criterion is not satisfied.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of two secondary wetland hydrology indicators, D2, Geomorphic Position, and D5, FAC-neutral Test satsifies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 21-Aug-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X15**

Investigator(s): Enter Investigator | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.299520 | Long.: -88.033860 | Datum: NAD 1983

Soil Map Unit Name: Houghton muck (103A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? | Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? | (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location satisfies all three criteria and qualifies as wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Echinochloa muricata	70	☑ 77.8%	OBL
2. Typha angustifolia	20	☑ 22.2%	OBL
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		90 (B)

Prevalence Index = B/A = 1.000

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)
The dominant species are hydrophytic, so the vegetation criterion is satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X15**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-24	10YR	2/1		10YR	4/6	5	C	M	Silty Clay Loam	
24-30+	10YR	4/1		10YR	5/6	30	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicators A12, Thick Dark Surface, and F6, Redox Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 0.5

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The presence of primary and secondary wetland hydrology indicators satisfies the hydrology criterion.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Route 83 & Winchester Road | City/County: Mundelein/Lake | Sampling Date: 10-Oct-24

Applicant/Owner: Pulte Home Corp | State: IL | Sampling Point: **X16**

Investigator(s): A. Metzger, C. LaFond, E. McKenna | Section, Township, Range: S 14 T 44N R 10E

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 42.299050 | Long.: -88.034820 | Datum: NAD 1983

Soil Map Unit Name: Houghton muck (103A) | NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This location fails the vegetation criterion and does not qualify as wetland; however, this area qualifies as farmed wetland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = 0.000

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: (Include photo numbers here or on a separate sheet.)
This location was unvegetated, so the vegetation criterion is not satisfied.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **X16**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-28	10YR	2/1							Silt Loam	
28-32	10YR	5/1		10YR	5/6	20	C	M	Silt Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

This profile exhibits hydric soil field indicator A12, Thick Dark Surface, and satisfies the soils criterion.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☑ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☑ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

eThe presence of primary and secondary wetland hydrology indicators satisfies the hydrology criterion.

APPENDIX II

REPRESENTATIVE PHOTOGRAPHS

PHOTO # 1

Date: 08/21/2024

View of Area 1, near Data Point X02, facing south.

PHOTO #2

Date: 08/21/2024

View of Area 1, near Data Point X02, facing north.

PHOTO #3

Date: 08/21/2024

View of Area 1, facing west.

PHOTO # 4

Date: 08/21/2024

View of Area 2, facing west.

PHOTO #5

Date: 08/21/2024

View of Area 2, near Data Point X15, facing southwest.

PHOTO #6

Date: 08/21/2024

View of Area 3, near Data Point X04, facing south.

PHOTO # 7

Date: 08/21/2024

View of Area 3, near Data Point X04, facing north.

PHOTO #8

Date: 08/21/2024

View of Area 8 and Area 4 off-site, near Data Points X13 and X14, facing south.

PHOTO #9

Date: 08/21/2024

View of off-site Area 5 located north of the subject property facing northeast.

PHOTO # 10

Date: 08/21/2024

View of off-site wetland Area 7, facing north.

PHOTO #11

Date: 08/21/2024

View near Data Point X01, facing north.

PHOTO #12

Date: 08/21/2024

View near Data Point X03, facing north.

PHOTO # 13

Date: 08/21/2024

View near Data Point X05, facing north.

PHOTO #14

Date: 08/21/2024

View near Data Point X06, facing west.

PHOTO #15

Date: 08/21/2024

View near Data Points X07 and X08, facing east.

PHOTO # 16

Date: 08/21/2024

View near Data Point X09, facing south.

PHOTO #17

Date: 08/21/2024

View near Data Point X10, facing north.

PHOTO #18

Date: 08/21/2024

View near Data Point X11, facing north.

PHOTO # 19

Date: 9/12/2024

View of Area 9, near Data Point X16, facing west.

APPENDIX III

REGULATORY INFORMATION

REGULATORY REQUIREMENTS

U.S. ARMY CORPS OF ENGINEERS

Pursuant to Section 404 of the Clean Water Act, the U. S. Army Corps of Engineers (USACE) has jurisdiction over the placement of fill or dredged material in all jurisdictional waters of the United States. On September 8, 2023, the Revised Definition of "Waters of the United States", which conforms to the 2023 U.S. Supreme Court Sackett decision, was published in the Federal Register, and became effective immediately. Under the revised definitions, the following areas qualify as "Waters of the US" subject to USACE jurisdiction:

1. Navigable waters; the territorial seas; or interstate waters;
2. Impoundments of these waters;
3. Tributaries of navigable waters, the territorial seas and interstate waters that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to navigable waters, the territorial seas, or interstate waters that are relatively permanent, standing or continuously flowing bodies of water, and with a continuous surface connection to those waters;
5. Interstate lakes or ponds not identified above that are relatively permanent, standing or continuously flowing bodies of water, and with a continuous surface connection to the waters identified in items 1-4 above;

The following areas are not jurisdictional "Waters of the United States":

1. Waste treatment systems;
2. Prior converted cropland;
3. Ditches, including roadside ditches, excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water
4. Artificially irrigated areas that would revert to dry land if irrigation ceased;
5. Artificial lakes and ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
7. Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

High Quality Aquatic Resources (HQARs) are aquatic areas considered to be regionally critical due to their uniqueness, scarcity, and/or value, and other wetlands considered to perform functions important to the public interest, as defined in 33 CFR 320.4(b)(2). These resources include Advanced Identification (ADID) sites, bogs, ephemeral pools, fens, forested wetlands, sedge meadows, seeps, streams rated Class A or B in the Illinois Biological Stream Characterization study, streamside marshes, wet prairies, wetlands supporting Federal or Illinois endangered or threatened species, and wetlands with a floristic quality index of 20 or greater, or mean C-value of 3.5 or greater. These areas generally are regarded as unsuitable for dredge or fill activities. See Appendix IV for definitions of the wetland types, and criteria used to evaluate the presence of HQARs during wetland delineations.

A Section 404 permit must be obtained before placing any fill material within a jurisdictional area. General permits, including nationwide and regional permits, are designed to expedite the processing of permits for minor non-controversial projects that are similar in nature and of minimal environmental impact. On January 13, 2021, the USACE reissued and modified 12 previous NWPs, issued 4 new NWPs, and reissued general conditions and definitions. These 16 NWPs went into effect on March 15, 2021. On December 27, 2021, the USACE reissued or issued 41 NWPs which went into effect on February 25, 2022. The 57 NWPs in effect will all expire on March 14, 2026. Wetland impacts greater than 0.5 acre may require authorization under an Individual Permit (IP), which requires greater scrutiny of the proposed project by the USACE and other concerned government agencies, and includes a public notice comment period available to the general public.

Lake County Requirements

Pursuant to the Lake County Watershed Development Ordinance (WDO), amended October 13, 2020, the Lake County Stormwater Management Commission (SMC) has authority over Isolated Waters of Lake County, including wetlands. Stormwater management reviews are conducted by the county in unincorporated areas, while certified communities conduct stormwater reviews within their corporate limits. Wetland reviews are conducted by the SMC throughout the county.

Before site development, a wetland delineation is required using the current USACE methodology. Review of delineations is conducted by a Certified Wetland Specialist. A Watershed Development Permit is required for any regulated development that creates a wetland impact within an area defined as a Waters of the U.S. or Isolated Waters of Lake County; or in buffer areas adjoining to Waters of the U. S. or Isolated Waters of Lake County (Article IV Section A.1).

The *Interagency Coordination Agreement* (ICA), signed by the USACE, the SMC and the Lake County Planning Building and Development Department (LCPBD) in June 2002, provides for a preliminary Jurisdictional Determination (JD) to be made by the SMC or a certified community within 30 days of a request. After a preliminary determination has been made to allow for site design and land use planning, the SMC or certified community then requests the final JD from the USACE. Permit applications based on a preliminary JD cannot be approved until after the final JD is made.

Vegetated upland buffers are required for all areas defined as Waters of the U.S. or Isolated Waters of Lake County, including isolated wetlands, lakes and ponds. Buffers are areas of predominantly vegetated land adjacent to drainageways, wetlands, lakes, ponds or other surface waters for the purpose of eliminating or minimizing adverse impacts to such areas. Buffer functions include controlling erosion, stabilizing banks and shorelines, maintaining or enhancing water quality, and providing habitat corridors for wildlife. Different buffer zones are required for linear channels or for various water bodies, including wetlands that may not be under U. S. Army Corps of Engineers jurisdiction (i.e., isolated wetlands). Buffer widths can vary widely depending primarily on the wetland size and perceived quality. Actual or proposed site design may affect buffer widths, which generally range from a 30 feet minimum to 100 feet for high quality areas, such as ADID wetlands. A preliminary determination of buffer width for each wetland is included in this report.

APPENDIX IV

DELINEATION METHODS AND FLORISTIC ANALYSIS

WETLAND DELINEATION METHODS

The site was field inspected and plant species lists were recorded to document the vegetation types present. A wetland indicator status is assigned to each plant species based on a regional list published by the U.S. Army Corps of Engineers. The categories are based on the estimated probability that a species would be naturally encountered in a wetland. Under the *Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Midwest Region*, the area is considered to be dominated by hydrophytic vegetation and representative of a wetland plant community by one of two methods, the dominance test or the prevalence index. The dominance test is satisfied if greater than 50% of the dominant plant species in a given area have a wetland indicator status of FAC, FACW, or OBL. The prevalence index assigns a numeric value to the wetland indicator status, and uses a weighted-average of the wetland indicator status of all plant species present in the sampling area. A wetland plant community is present if the prevalence index is less than 3.0.

Plant Wetland Indicator Status Categories

Indicator Category	Symbol	Indicator Definition
Obligate Wetland Plants	OBL	Plants that occur almost always (estimated probability greater than 99%) in wetlands under natural conditions, but which may also occur rarely in non-wetlands.
Facultative Wetland Plants	FACW	Plants that usually occur in wetlands (estimated probability 67% to 99%), but occasionally are found in non-wetlands.
Facultative Plants	FAC	Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands.
Facultative Upland Plants	FACU	Plants that usually occur in non-wetlands (estimated probability 67% to 99%) but occasionally are found in wetlands.
Obligate Upland Plants	UPL	Plants that occur almost always (estimated probability greater than 99%) in non-wetlands under natural conditions, but which may also occur rarely in wetlands.

In addition to being dominated by hydrophytic vegetation, each suspect wetland must also exhibit hydric soils and wetland hydrology. As defined in the Federal Register (*Federal Register, Volume 59*: July 13, 1994), "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." According to the National Technical Committee for Hydric Soils, documentation of the presence or absence of a hydric soil can only be determined through on-site investigation, not strictly by its classification of an area on soil survey maps. Soils are identified as hydric in the field if they possess certain indicators, as defined in the *Interim Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Midwest Region.* These field indicators are a regionally specific subset of the field indicators described in the *Field Indicators of Hydric Soils in the United States* (Version 8.2; NRCS, 2018). The absence of a field indicator in a soil does not exclude that soil from being classified as hydric. Soil series, soil color, the presence of mottling or gleying, and depth to water table are

determined and recorded in the field. These features, when present, may indicate a hydric soil when hydric soil field indicators are absent.

Determinations of hydrology are based on observations wetland hydrology indicators. There are two types of indicators, primary indicators and secondary indicators. A determination of wetland hydrology requires the presence of one primary indicator or two secondary indicators. Hydrology indicators are placed into four groups, these being observations of surface water or saturated soils, evidence of recent inundation, evidence of recent soil saturation, or evidence of other site conditions or data. A listing of the wetland hydrology indicators is provided in the table below.

Indicator	Category	
	Primary	Secondary
Group A – Observation of Surface Water or Saturated Soils		
A1 – Surface water	X	
A2 – High water table	X	
A3 – Saturation	X	
Group B – Evidence of Recent Inundation		
B1 – Water marks	X	
B2 – Sediment deposits	X	
B3 – Drift deposits	X	
B4 – Algal mat or crust	X	
B5 – Iron deposits	X	
B7 – Inundation visible on aerial imagery	X	
B8 – Sparsely vegetated concave surface	X	
B9 – Water-stained leaves	X	
B13 – Aquatic fauna	X	
B14 – True aquatic plants	X	
B6 – Surface soil cracks		X
B10 – Drainage patterns		X
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen sulfide odor	X	
C3 – Oxidized rhizospheres along living roots	X	
C4 – Presence of reduced iron	X	
C6 – Recent iron reduction in tilled soils	X	
C7 – Thin muck surface	X	
C2 – Dry-season water table		X
C8 – Crayfish burrows		X
C9 – Saturation visible on aerial imagery		X
Group D – Evidence from Other Site Conditions or Data		
D9 – Gauge or well data	X	
D1 – Stunted or stressed plants		X
D2 – Geomorphic position		X
D5 – FAC-neutral test		X

FLORISTIC QUALITY ASSESSMENT

Plant communities of the site were evaluated with the Floristic Quality Assessment (FQA) methodology, a widely-used technique used for rapid assessment of the floristic quality in a defined area or plant community. In using FQA, the presence of each plant species is recorded, generating a species inventory. This inventory is entered into computer software that was used to generate the species lists used in this report. Floristic quality calculations are also generated that provides a compilation of various floristic quality data, resulting in a determination of the floristic quality of the subject area.

The floristic quality data for an area partially indicates its quality as a natural area (i.e., relative to known or perceived pre-settlement or disturbance conditions). One indicator of the degree of disturbance or floristic quality in an area is the calculated Native Floristic Quality Index (Native FQI). A high Native FQI value indicates a high-quality natural area, but how high the Native FQI must be for an area to be of high quality is a subjective determination. In general, a wetland (or other defined area) with a Native FQI greater than 20.00 from a single observation may be considered a moderately high quality plant community. These areas have a high potential for containing more conservative or high-quality plant species. Therefore, adverse impacts to such areas, especially wetlands and subsequent proposals for compensatory mitigation, may be scrutinized carefully by the regulatory agencies.

A high number of native species with high coefficients of conservatism "C" (a subjective measure of quality based on habitat specificity and relative tolerance to disturbance; weedy species are highly disturbance tolerant, and are ranked lower) will result in a high Native FQI. The C value is based on the relative rarity of a species and/or the resiliency of a species following disturbance. Coefficients of conservatism for native plant species range from 0 for common, weedy species to 10 for rare, highly conservative species. Adventive species are not assigned a C value. Adventive species are non-native species that have entered the Chicago region since European settlement. These species generally do not lend themselves to increased floristic quality, but instead appear after a disturbance. Thus, a high proportion of these species in a given area or community may be an indication of a lower quality plant community.

The wetness coefficient (W, ranging from -5 to +5) refers to the corresponding wetland indicator status (e.g., OBL = obligate wetland species, -5; FAC = facultative species, 0; UPL = upland species, +5) for U.S. Fish and Wildlife Service Region 3 (Illinois, Michigan, Indiana, Missouri, Iowa, Wisconsin, and Minnesota). A wetland indicator status noted in brackets (e.g., [FACW]) is a modification of the Region 3 indicator status to apply locally in the 22-county Chicago region covered by *Plants of the Chicago Region*. The Wetness coefficient is useful in evaluating the general "wetness" affinity of a sampled plant community. If the average indicator status among all species present is in the FAC, FACW, or OBL classes, then the plant community may be considered hydrophytic.

HIGH QUALITY AQUATIC RESOURCES

U.S. Army Corps of Engineers, Chicago District

High Quality Aquatic Resources (HQARs) include Advanced Identification (ADID) sites (mapped in Kane, Lake and McHenry Counties), bogs, dune and swale complexes, ephemeral pools, fens, forested wetlands, sedge meadows, seeps, streams rated Class A or B in the Illinois Biological Stream Characterization study, wet prairies, wetlands supporting Federal or Illinois endangered or threatened species, and wetlands with a floristic quality index of 20 or greater, or mean C-value of 3.5 or greater. These definitions are listed below. If a given wetland meets one or more of these definitions, that wetland is considered a HQAR and an Individual Permit (IP) is required.

Advanced Identification (ADID) sites: Aquatic sites that have been identified by the Chicago District and U.S. Environmental Protection Agency, in advance of specific permit requests, as areas generally unsuitable for the disposal of dredged or fill material, because of a variety of factors, including high floristic values, water quality or storage functions, or similar wetland functions performed at elevated levels. ADID sites include various Waters of the U.S., including wetlands. An ADID map for the subject property is included with this report as Figure 3.

Bog: A low nutrient peatland, usually in a glacial depression, that is acidic in the surface stratum and often dominated at least in part by the genus *Sphagnum*.

Dune and Swale Complex: Areas usually parallel to the Lake Michigan shoreline and typified by sandy, linear, upland ridges alternating with low-relief wetland created over time during changes in the Lake Michigan's water levels.

Ephemeral pool: A seasonally inundated depression within a forested wetland or upland community, usually located on a moraine, glacial outwash plain, or in an area shallow to bedrock; also known locally as a "vernal pool." These areas may not be permanently vegetated.

Fen: A peatland, herbaceous (including calcareous floating mats) or wooded, with calcareous groundwater flow.

Forested wetland: A wetland dominated by native woody vegetation with at least one of the following species or genera present: *Carya* spp., *Cephalanthus occidentalis*, *Cornus alternifolia*, *Fraxinus nigra*, *Juglans cinerea*, *Nyssa sylvatica*, *Quercus* spp., *Thuja occidentalis, Betula nigra, Betula alleghaniensis, Betula papyrifera, Fagus grandifolia*..

Sedge meadow: A wetland dominated by at least one of the following genera: *Carex*, *Calamagrostis*, *Cladium*, *Deschampsia*, *Eleocharis*, *Rynchospora*, *Scleria*, or *Eriophorum*.

Seep: A wetland, herbaceous or wooded, with saturated soil or inundation resulting from the diffuse flow of groundwater to the surface stratum. [Seeps typically occur on slopes because of blocked vertical infiltration.]

Streams rated A or B in the Illinois Biological Stream Characterization study: The historical Class A and B rating system was replaced with the new Illinois Department of Natural Resources stream classification system that can be found at:
https://www2.illinois.gov/dnr/conservation/BiologicalStreamratings/pages/default.aspx

Wet prairie: A wetland dominated by native graminoid species with a diverse indigenous forb component that is seasonally saturated and/or temporarily inundated and may resemble a fen in its best development. Species found in a high-quality wet prairie include at least one of the following: *Calamagrostis canadensis*, *Spartina pectinata*, *Aster puniceus firmus*, *Beckmannia syzigachne*, *Chelone glabra*, *Eleocharis wolfii*, *Lysimachia quadrifolia*, *Oenothera perennis*, *Oenothera pilosella*, *Pedicularis lanceolata*, and *Solidago ohioensis*.

Wetlands Supporting Federal or Illinois Endangered or Threatened Species: An Agency Action Report is routinely requested from the Illinois Department of Natural Resources (IDNR) and from the U.S. Fish and Wildlife Service (USFWS) for wetland delineations. These reports indicate the likelihood of listed species (that is, those species considered legally protected as threatened or endangered) being found near or on a subject property, or possible encroachment into protected natural area reserves. If a listed species record is indicated for the site, an endangered and threatened species investigation may be required to evaluate the actual presence or absence of the species in question. This inquiry is preliminary and does not preclude the presence of otherwise unrecorded listed species.

Wetlands with a Floristic Quality Index of 20 or greater or a mean C-value of 3.5 or greater: Plant species inventories collected during wetland delineations are used to generate floristic quality values using the Floristic Quality Assessment method published in *Plants of the Chicago Region* (Swink and Wilhelm, 1994). These tables are included in this report for each of the areas identified as wetland.

APPENDIX V

THREATENED AND ENDANGERED SPECIES REVIEW

EcoCAT
Ecological Compliance Assessment Tool

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Applicant:	V3 Comapnies	*IDNR Project Number:*	2502333
Contact:	Caden LaFond	*Date:*	08/16/2024
Address:	7325 Janes Avenue, Woodridge IL Woodridge, IL 60517	*Alternate Number:*	240994

Project: Route 83 and Winchester Road
Address: Southwest corner of Route 83 and W Winchester road, Mundelein

Description: Potential site for residential development.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Consultation is terminated. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary. Termination does not imply IDNR's authorization or endorsement.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Lake

Township, Range, Section:
44N, 10E, 11
44N, 10E, 12
44N, 10E, 13
44N, 10E, 14

IL Department of Natural Resources Contact
Isabella Newingham
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Environmental Protection Agency
Bureau of Water Quality
1021 N. Grand Ave. E. P.O. 19276
Springfield, Illinois 62794

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337

In Reply Refer To: 08/16/2024 20:35:24 UTC
Project Code: 2024-0131656
Project Name: Route 83 and Winchester Road

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing

determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and

their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 485-9337

PROJECT SUMMARY

Project Code: 2024-0131656
Project Name: Route 83 and Winchester Road
Project Type: Residential Construction
Project Description: Potential site for residential development.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.2976687,-88.03856336429146,14z

Counties: Lake County, Illinois

ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

BIRDS

NAME	STATUS
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

INSECTS

NAME	STATUS
Karner Blue Butterfly *Lycaeides melissa samuelis* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6656	Endangered
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Western Regal Fritillary *Argynnis idalia occidentalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/12017	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Eastern Prairie Fringed Orchid *Platanthera leucophaea* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Pitcher's Thistle *Cirsium pitcheri* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8153	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

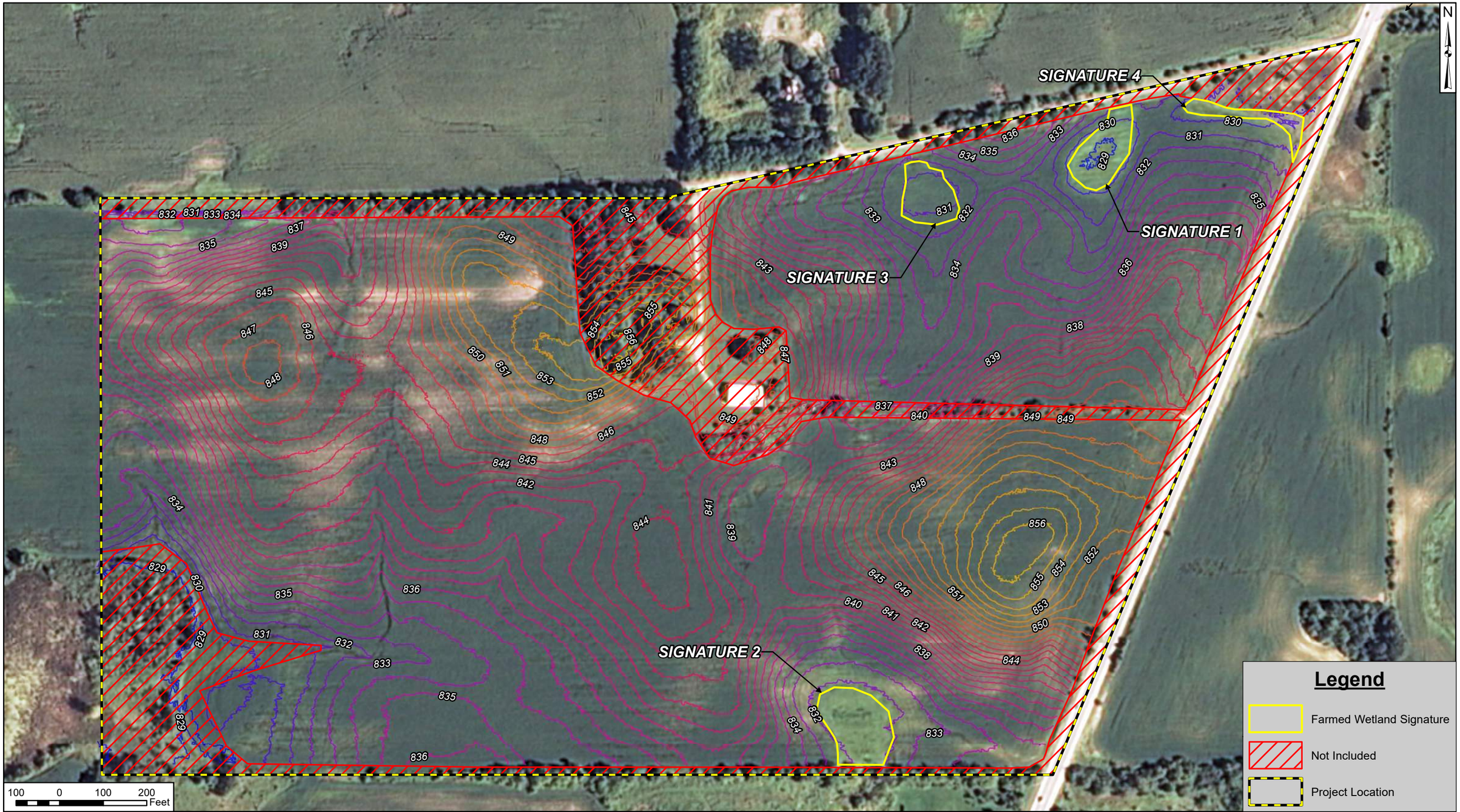
Agency: Private Entity
Name: Caden LaFond
Address: 7325 Janes Avenue
City: Woodridge
State: IL
Zip: 60517
Email clafond@v3co.com
Phone: 6309071606

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

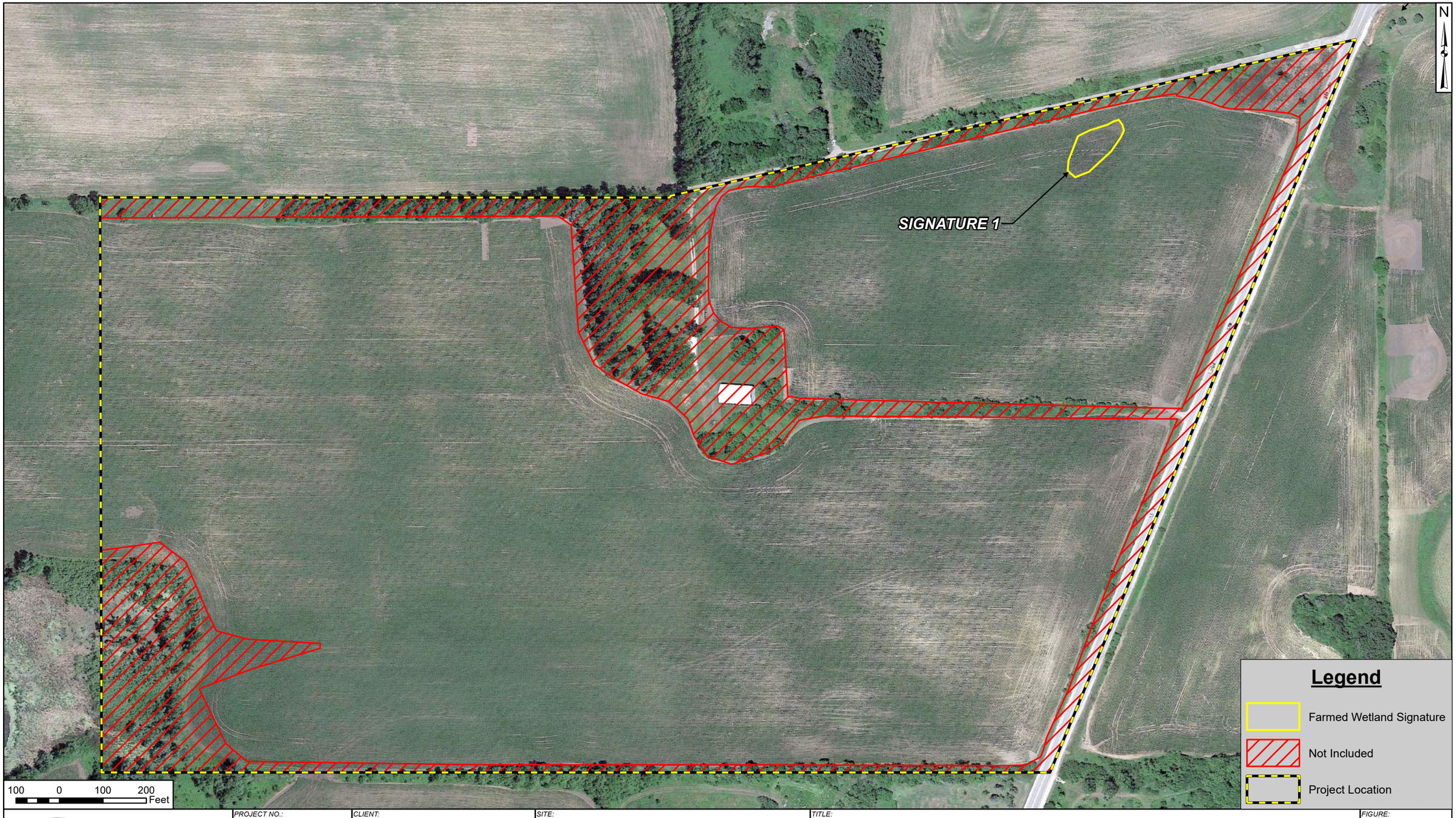
APPENDIX VI

FARMED WETLAND DETERMINATION



7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone www.v3co.com	PROJECT NO.: 240994	CLIENT: Pulte Home Corporation 1900 E. Golf Road Schaumburg, IL 60173	SITE: Route 83 and Winchester Road Mundelein, Lake County, Illinois	TITLE: **FARMED WETLAND DETERMINATION WET/BASE YEAR (2011)**	FIGURE: A
	CREATED BY: CJL				
	DATE: 10/07/2024	BASE LAYER: NAIP Aerial Imagery (2011)			
Visio, Vertere, Virtute... *"The Vision To Transform With Excellence"*	SCALE: See Scale Bar				

J:\2024\240994\Wetland\FWDet\FIGAwetbase240994.mxd



7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	09/10/2024
SCALE:	See Scale Bar

CLIENT:
Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER:
Google Earth
Aerial Imagery
(2016)

SITE:
Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE:
FARMED WETLAND DETERMINATION
NORMAL YEAR (2016)

FIGURE:
B

J:\2024\240994\Wetland\FWDet\FIGBnorm240994.mxd

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.: 240994
CREATED BY: CJL
DATE: 09/10/2024
SCALE: See Scale Bar

CLIENT: Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER: Lake County
Aerial Imagery
(2008)

SITE: Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE: **FARMED WETLAND DETERMINATION**
NORMAL YEAR (2008)

FIGURE: C

J:\2024\240994\Wetland\FWDet\FIGCnorm240994.mxd

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.: 240994
CREATED BY: CJL
DATE: 09/10/2024
SCALE: See Scale Bar

CLIENT: Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER: Lake County
Aerial Imagery
(2006)

SITE: Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE: **FARMED WETLAND DETERMINATION**
NORMAL YEAR (2006)

FIGURE: D

J:\2024\240994\Wetland\FWDet\FIGDnorm240994.mxd

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	10/11/2024
SCALE:	See Scale Bar

CLIENT:
Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER:
NAIP
Aerial Imagery
(2004)

SITE:
Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE:
FARMED WETLAND DETERMINATION NORMAL YEAR (2004)

FIGURE:
E

J:\2024\240994\Wetland\FWDet\FIGEnorm240994.mxd

7325 Janes Avenue
Woodridge, IL 60517
630.724.9200 phone
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	09/10/2024
SCALE:	See Scale Bar

CLIENT:
Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER:
Lake County
Aerial Imagery
(2002)

SITE:
Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE:
FARMED WETLAND DETERMINATION
NORMAL YEAR (2002)

FIGURE:
F

J:\2024\240994\Wetland\FWDet\FIGFnorm240994.mxd

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Woodridge, IL 60517
630.724.9200 phone
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"The Vision To Transform With Excellence"

PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	10/11/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road Schaumburg, IL 60173
BASE LAYER:	Lake County Aerial Imagery (2022)
SITE:	Route 83 and Winchester Road Mundelein, Lake County, Illinois
TITLE:	**FINAL FARMED WETLAND DETERMINATION**
FIGURE:	G

J:\2024\240994\Wetland\FWDet\FIGGfinal240994.mxd

Rt 83 and Winchester Rd - Topographic Wetness Index

Lake County, Illinois

LakeCounty

Map Printed on 8/30/2024

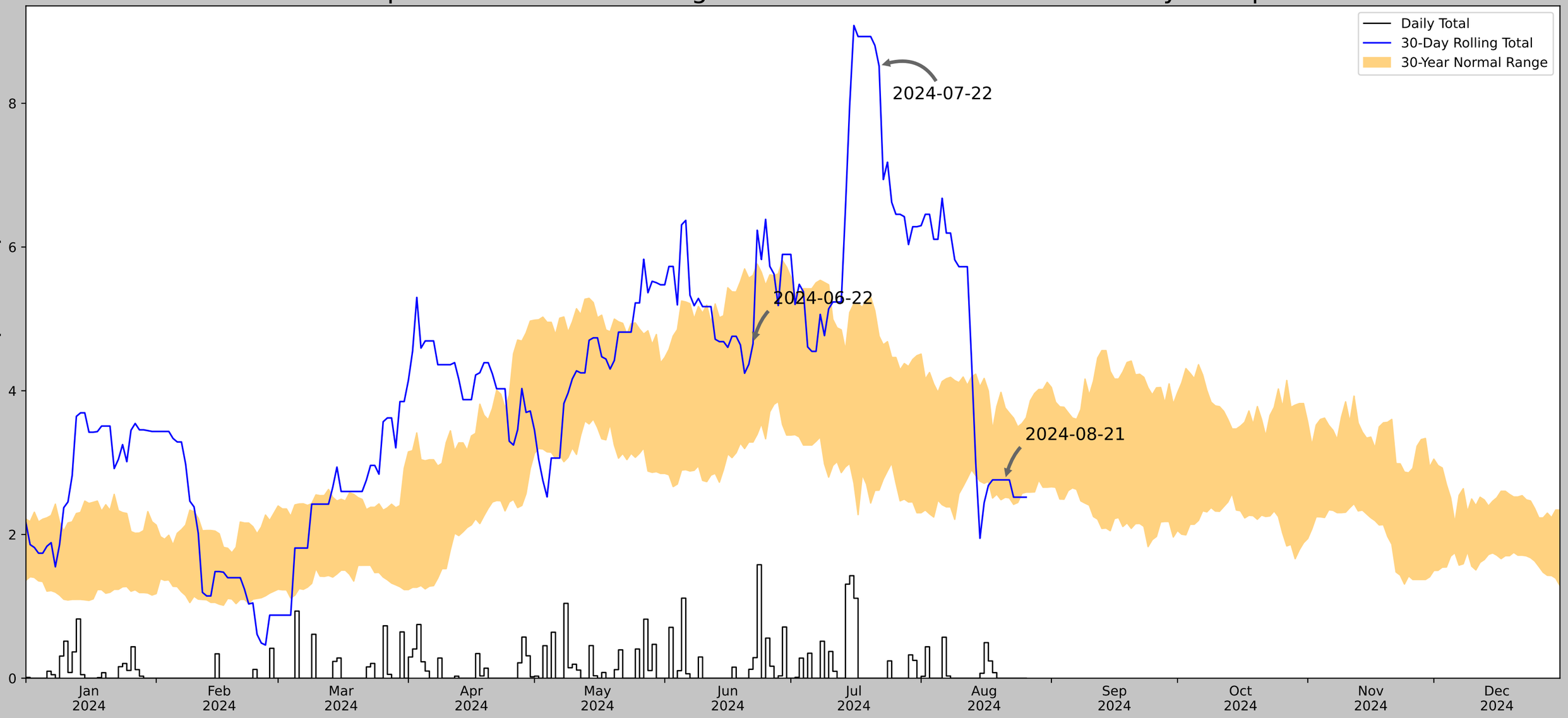
N

Override 1

Topographic Wetness Index

Disclaimer: The selected feature may not occur anywhere in the current map extent. A Registered Land Surveyor should be consulted to determine the precise location of property boundaries on the ground. This map does not constitute a regulatory determination and is not a base for engineering design. This map is intended to be viewed and printed in color.

Antecedent Precipitation vs Normal Range based on NOAA's nClimGrid-Daily Precipitation Data



Coordinates	42.299390, -88.034640
Observation Date	2024-08-21
Elevation (ft)	830.771
Drought Index (PDSI)	Mild wetness (2024-07)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-08-21	2.517348	3.76175	2.759904	Normal	2	3	6
2024-07-22	2.616357	4.759904	8.518701	Wet	3	2	6
2024-06-22	3.285741	5.605592	4.653974	Normal	2	1	2
Result							Normal Conditions - 14

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

	Station Count Summary
Minimum count of weather stations within 30 miles	7
Mean count of weather stations within 30 miles	13
Median count of weather stations within 30 miles	14
Maximum count of weathers stations within 30 miles	17

APPENDIX VII

PRELIMINARY JURISDICTIONAL DETERMINATION

STORMWATER MANAGEMENT COMMISSION

October 14, 2024

Randy Szczesny
Szczesny Builders
N1610 N. Creekside Lane
Lake Geneva, WI 53147

Subject: SMC File #: IWLC-24-897
±80.56-Acre Property at Southwest Corner of Winchester Road & IL Route 83 and Associated ±6.75-Acre Utility Corridor along Winchester Road east of IL Route 83
Property PIN #'s 10-14-100-001, 10-14-100-002 & 10-14-100-003
Unincorporated Mundelein, Lake County, Illinois
PRELIMINARY WETLAND JURISDICTIONAL DETERMINATION

Dear Mr. Szczesny:

This letter responds to your request for a preliminary wetland jurisdictional determination (PJD) and isolated wetlands boundary verification for the subject property and associated utility corridor, received by the Lake County Stormwater Management Commission (SMC) on September 23, 2024. SMC's wetland staff reviewed available reference materials (see Addendum A) and performed a site reconnaissance on October 10, 2024 in the company of Caden LaFond, Alicia Metzger and Erin McKenna of V3 Companies (V3). The aquatic resources referenced in this letter are depicted on the enclosed Figures 9A and 9B: *Wetland & Waters Delineation*, by V3, dated 10-11-2024.

Our findings are as follows:

- **Areas 1-9 appear to be *Isolated Waters of Lake County* (IWLC) as defined in the Lake County Watershed Development Ordinance (WDO), which are subject to regulation by the SMC.** SMC concurs with the delineated boundaries of wetland Areas 1-2, and 4-8 as flagged by V3, and the approximate boundaries of farmed wetland Areas 3 and 9 as determined by V3 and shown on Figures 9A and 9B. Note that Area 8 appears to meet exclusion criterion A.4-*roadside ditches* under the definition of IWLC in in WDO Appendix A. You may request an IWLC exclusion determination for Area 8 from the community enforcement officer (EO, see contact information on page 2).

- No federally regulated aquatic resources appear to be present on the site, as currently defined in 33 U.S.C. 1251 et seq., Section 328.3(a).

This PJD has been approved by SMC's Chief Engineer and the findings are valid for a period of three (3) years from the date of this letter, unless new information warrants a revision before the expiration date. If you disagree with the findings of this PJD, you may request an approved jurisdictional determination (AJD) from the USACE-Chicago District Office.

For your information, this PJD represents SMC's professional opinion regarding the jurisdictional status of the aquatic resources on the subject site. We determined the jurisdiction of IWLC using the definition of IWLC contained in Appendix A of the WDO (as amended 7-11-23). We based the findings for potential federally regulated aquatic resources on our interpretation of the "Revised Definition of 'Waters of the United States' Conforming," dated 11-8-2023 (33 CFR Section 328.3(a)).

Permitting Considerations

1. This letter satisfies the requirement for a written jurisdictional determination under WDO §1001 for the indicated feature(s).

2. The surveyed boundaries of all existing aquatic resources on the site, including features constructed in dry land, need to be included on the proposed development plans for permitting purposes.

3. The wetland delineation exhibit needs to show the approximate location and extent of off-site wetlands/water bodies within 100 feet of the site boundaries based on available reference materials (WDO §1000.02.F.), and the delineation report should describe the relative quality of any off-site wetlands.

4. **If the property will remain unincorporated, a Site Development Permit (SDP) will be required from the Lake County Planning, Building & Development Department (PBD) for the proposed development.** In that case, please coordinate with Mr. Eric Steffen, PBD's EO, at esteffen@lakecountyil.gov for the SDP submittal requirements.

5. **If the property will be annexed into the Village of Mundelein, a Watershed Development Permit (WDP) will required from the Village of Mundelein for the proposed development.** In that case, please coordinate with Mr. Geoff Perry, the Village's EO, at gperry@gha-engineers.com for the WDP submittal requirements.

6. **In either case 4 or 5 above, SMC's written approval will be required for any proposed IWLC impacts from the proposed development.** Please coordinate with Mr. Glenn Westman, SMC's Principal Wetland Specialist, at gwestman@lakecountyil.gov for the IWLC submittal requirements.

We would like to be of assistance. If you have any questions regarding this PJD, please contact Mr. Westman at the above address.

Sincerely,

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

Brian Frank, P.E., CFM
Chief Engineer

Glenn H. Westman, S.P.W.S., CWS, CFM
Principal Wetland Specialist P-T

Enclosures: Figures 9A & 9B: Wetland & Waters Delineation (V3, 10-11-2024)
Addendum A - SMC PJD Field Report (10-10-2024)

cc: Kathy Chernich & ChicagoRequests@usace.army.mil, USACE-Chicago District
Eric Steffen, EO-Lake County PBD
Geoff Perry, EO-Village of Mundelein
Caden LaFond, V Companies

This document was digitally transmitted. Please print out a copy of the document and retain for your records. If you are unable to print the document, or desire a hard copy mailed be to you, please notify SMC at your earliest convenience.

Addendum A
Preliminary Jurisdictional Determination Field Report

Site Name: *Property at SWC of Winchester Rd & IL Route 83*

Date: *October 10, 2024 1:00 PM*

SMC #: *IWLC-24-897*

USACE #: *N/A*

Attendees:

SMC Representative:
Glenn Westman

Other SMC Representative(s):
Bill Santelik

PJD Requestor:
Name/Contact Info:
Szczesny Builders, Randy Szczesny - lakelab@comcast.net

Other Attendees:
Caden LaFond, Alicia Metzger & Erin McKenna, V3

Site Info:

Address/PIN#: *SWC IL 83 & Winchester Road, PIN #'s 1014100002, 1014100001, 1014100003*
Lat/Long: *42.296820, -88.0377740*
Description: *Mostly agricultural land (soybeans this year), central area is scrub-shrub and barn, scattered depressional wetlands/farmed wetlands.*

References: *Wetlands & Waters Report (V3, Preliminary 9-13-2024), Wetland & Waters Delineation (Figures 9A & 9B, V3, Revised 10-11-2024), FEMA Floodplain Map (2016), Aerial Photos (1939-2022,Lake County Online GIS), Topographic Map - 1' contours (Lake County Online GIS, 2007 & 2017), Lake County Wetland Inventory Map (Lake County Online GIS, 2002), Lake County Hydro Lines (Lake County Online GIS, 2002), Lake County Soil Surveys (SCS 1970 & NRCS 2005), USGS Quadrangle Maps (1960, 1972, 1993), USGS Flood of Record Map (HA-230, 1967), Lake County Storm Sewer Network Maps (SMC GIS, 2022); Lake County Wetland Restoration & Preservation Plan - Online Decision Support Tool (SMC, 2020), Topographic Wetness Index Map (ISWS, 2017).*

Disposition of Isolated Waters of Lake County (IWLC):

Site appears to contain IWLC: *Yes*
List wetland/water IDs from reference map: *Areas 1-9 appear to meet the definition of IWLC in WDO Appendix A.*
Potential IWLC Exclusions: *Area 8 on Fig. 9B appears to meet exclusion criterion A.4-roadside ditches under the defintion of IWLC in WDO Appendix A. IWLC exclusion for Area 8 may be requested from the EO.*
SMC representative concurs with staked/flagged IWLC boundaries: *Yes: Delineated Areas 1-2 & 4-8 & Approximate Boundaries of Farmed Wetland Areas 3 and 9.*
If SMC representative DOES NOT concur, please explain: *N/A*

Disposition of Federally Regulated Aquatic Resources:

Site appears to contain Federally Regulated Aquatic Resources [33 CFR 328.3(a)]: *No*
List wetland/water IDs from reference map and basis: *N/A*
Apparent Exclusions [33 CFR 328.3(b)]: *Area 8-Exempt Roadside Ditch on Fig. 9B appears to qualfy for exclusion under 33 CFR 328.3(b)(3).*

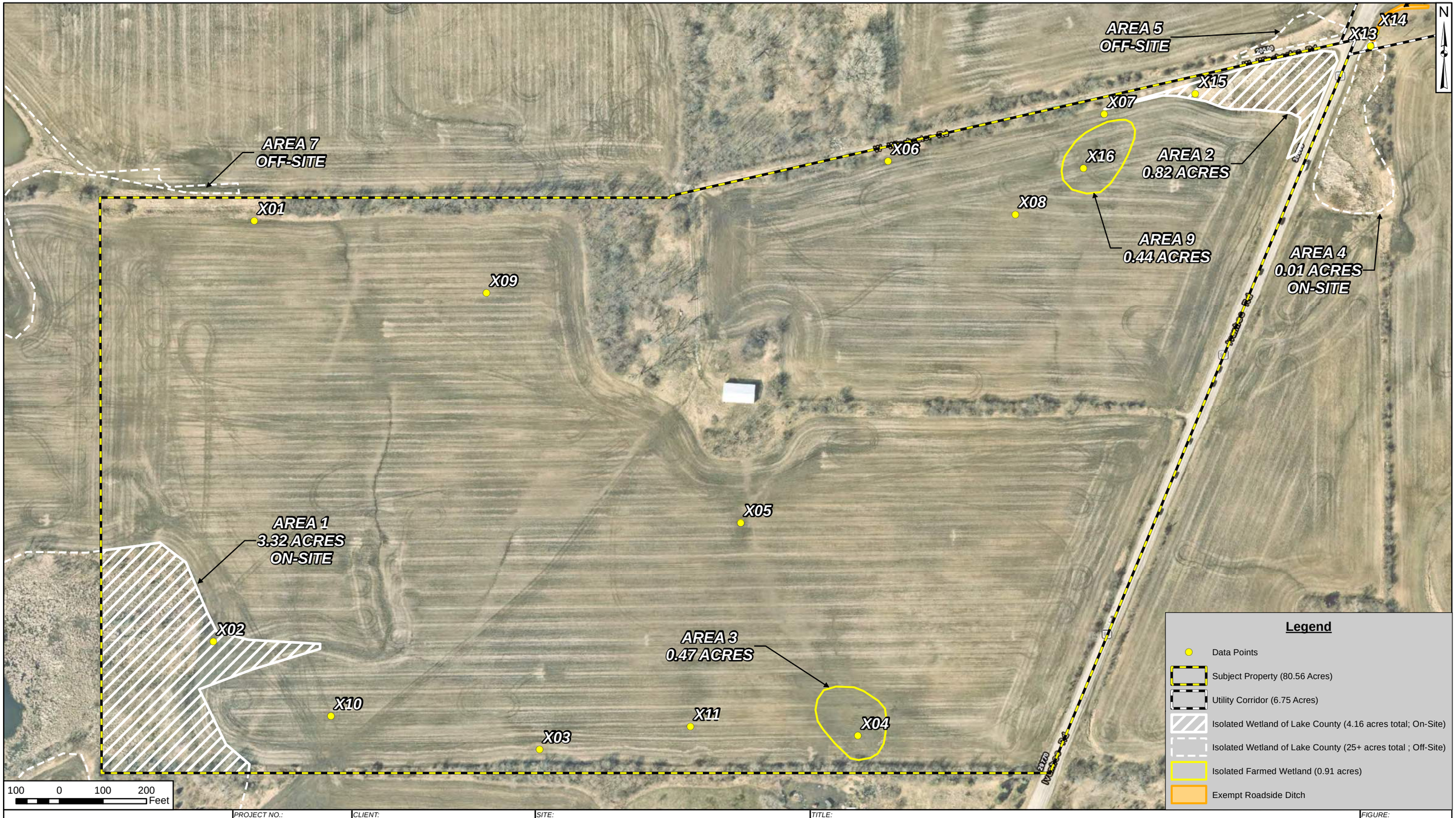
Comments: *Previous PJD by SMC for Winchester Rd-IL 83 intersection improvement used for reference (IWLC-21-450 7-19-2021). Previous AJD by USACE for berm development in Mundelein used for reference LRC-2020-00959, 11-18-2020).*

Attestment: *SMC has reviewed the information herein and CONCURS with determination.*

Signature of SMC Representative:

Photo 1 Area 7 – Off-Site to Northwest	**Photo 2** Area 1 – West View
Photo 3 Area 3 -Farmed Wetland in Southeast Area of Site	**Photo 4** Area 9 – Farmed Wetland in Northeast Area of Site
Photo 5 Area 2 – Northeast View	**Photo 6** Area 4 – South View
Photo 7 Area 5 – Off-Site to Northeast	**Photo 8** Area 6 – West View

Photo 9 Area 8 – Roadside Ditch at Southeast Corner of Winchester Rd. & IL 83	



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PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	10/11/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road Schaumburg, IL 60173
BASE LAYER:	Lake County Aerial Imagery (2022)
SITE:	Route 83 and Winchester Road Mundelein, Lake County, Illinois
TITLE:	**WETLAND & WATERS DELINEATION**
FIGURE:	9A

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PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	10/11/2024
SCALE:	See Scale Bar

CLIENT: Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER: Lake County
Aerial Imagery
(2022)

SITE: Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE: **WETLAND & WATERS DELINEATION**

FIGURE: 9B

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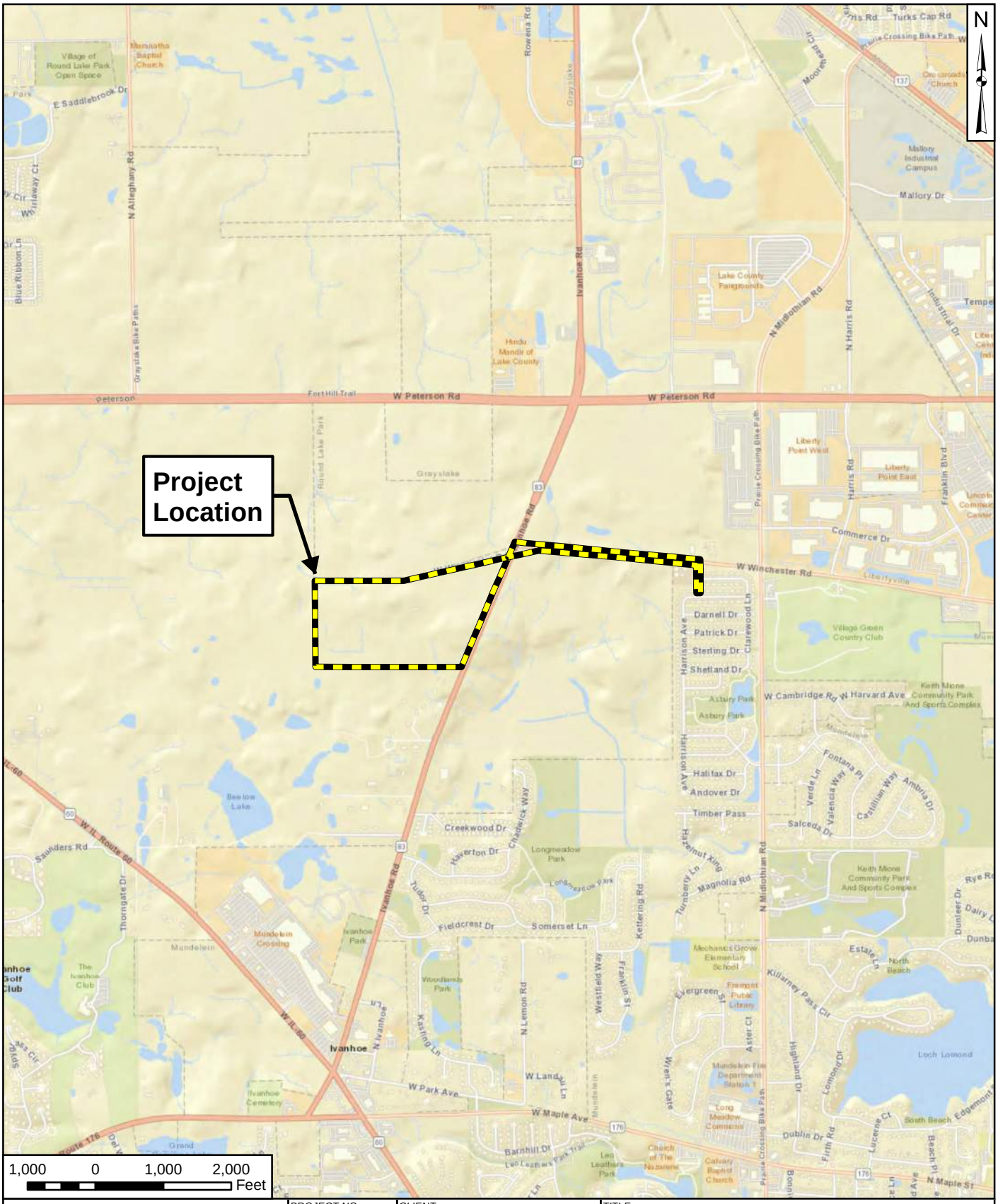
FIGURES



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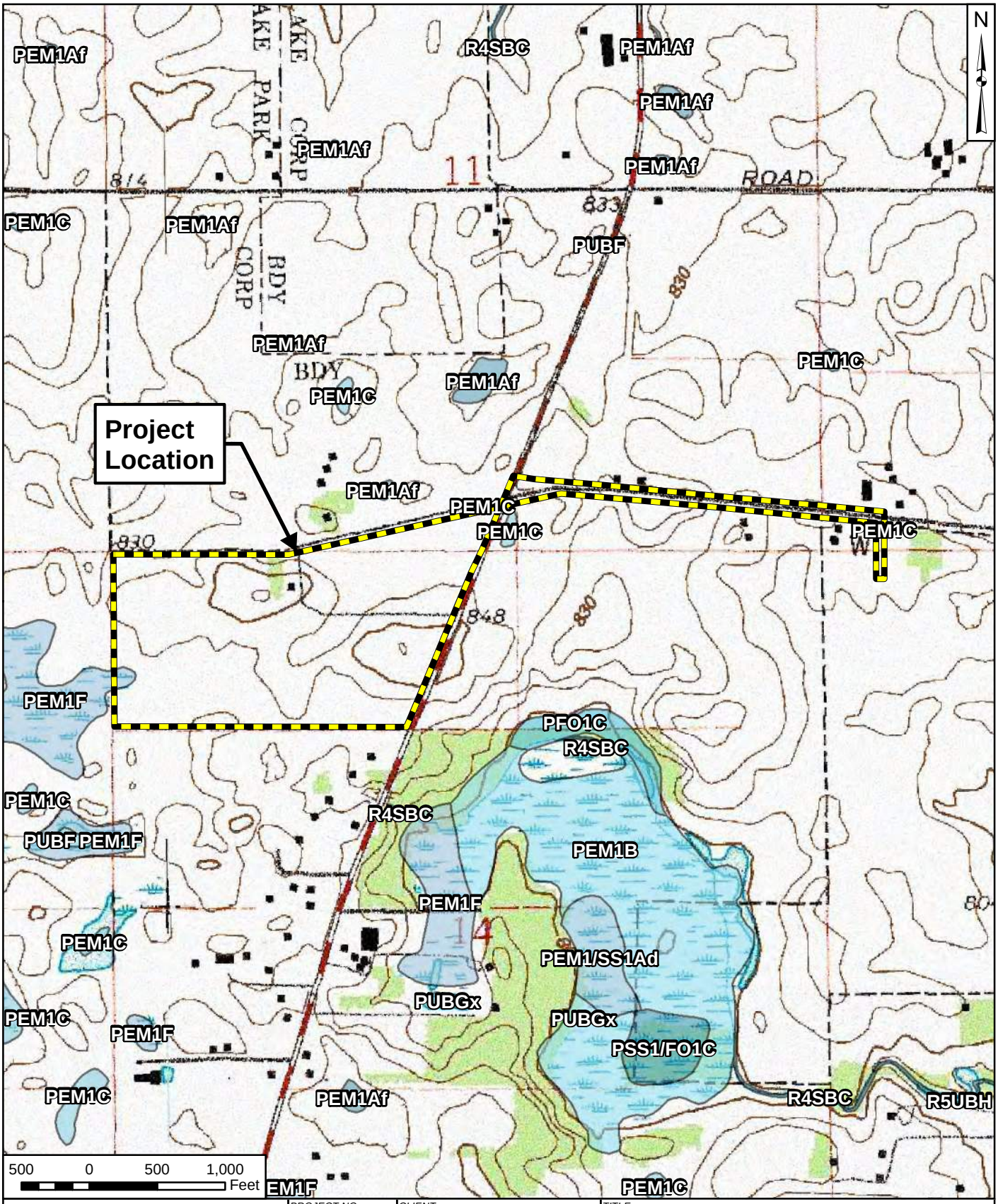
PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	08/16/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173
BASE LAYER:	ESRI World Street Map
TITLE:	**PROJECT LOCATION**
SITE:	Route 83 and Winchester Road Unincorporated Lake County, Illinois
FIGURE:	1

J:\2024\240994\Wetland\FIG1loc240994.mxd



7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone www.v3co.com	PROJECT NO.: 240994 CREATED BY: CJL	CLIENT: Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173	TITLE: **NATIONAL WETLANDS INVENTORY (NWI)**
	DATE: 08/16/2024	BASE LAYER: USGS Topographic Map Lake County Mosaic	SITE: Route 83 and Winchester Road Unincorporated Lake County, Illinois FIGURE: 2
Visio, Vertere, Virtute... *"The Vision To Transform with Excellence"*	SCALE: See Scale Bar		

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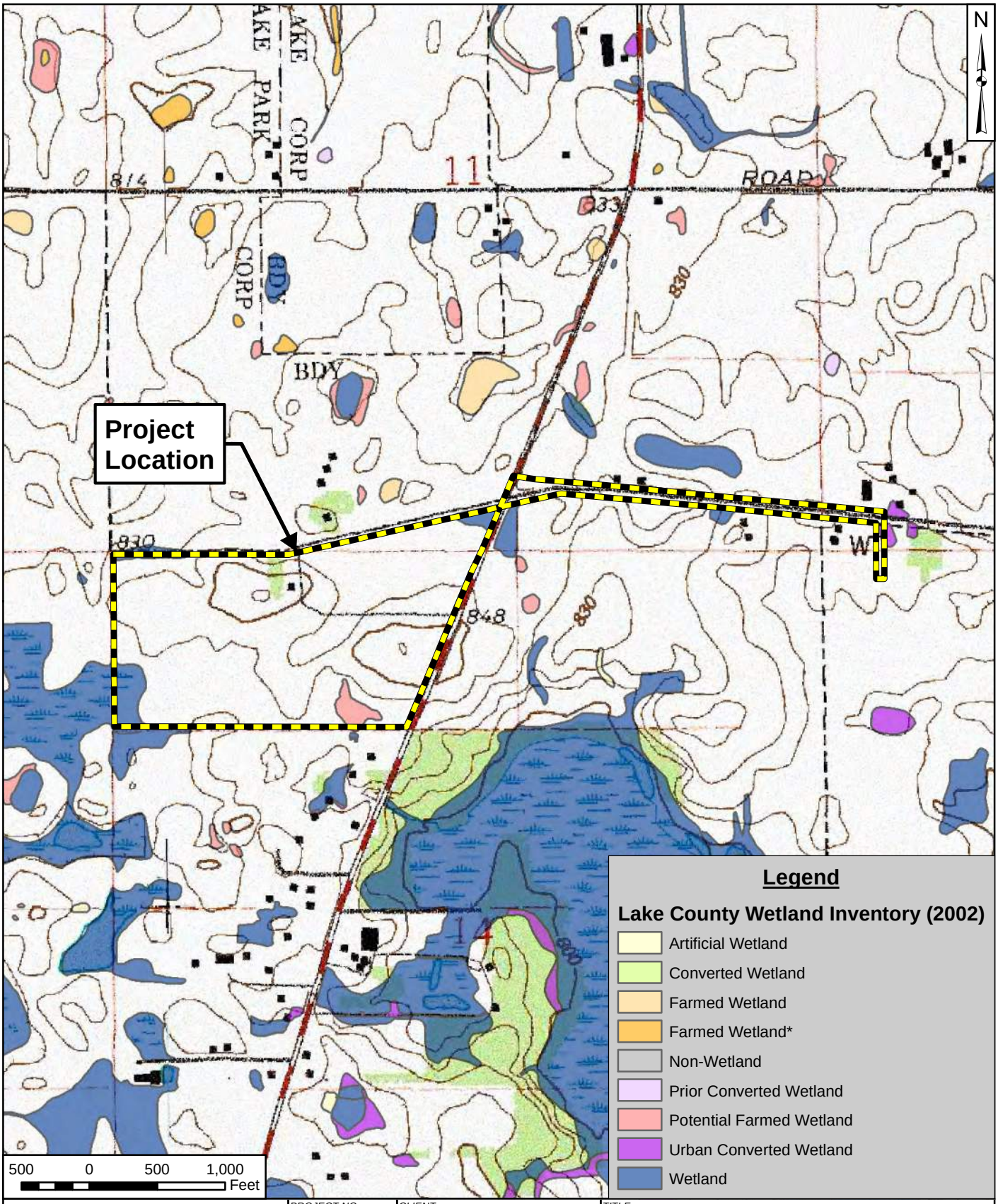

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PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	08/16/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173
BASE LAYER:	USGS Topographic Map Lake County Mosaic
TITLE:	**LAKE COUNTY WETLAND INVENTORY**
SITE:	Route 83 and Winchester Road Unincorporated Lake County, Illinois
FIGURE:	3

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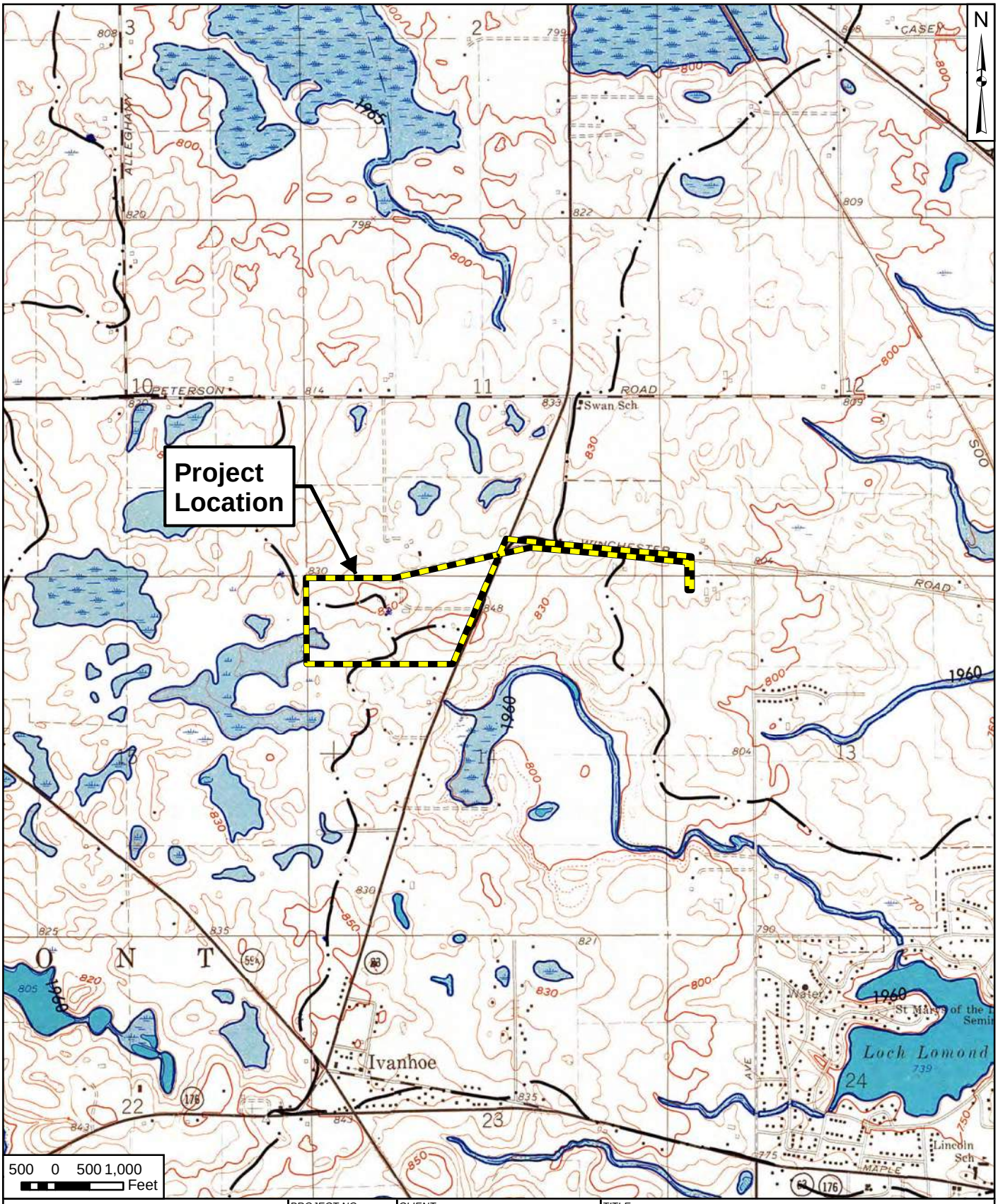
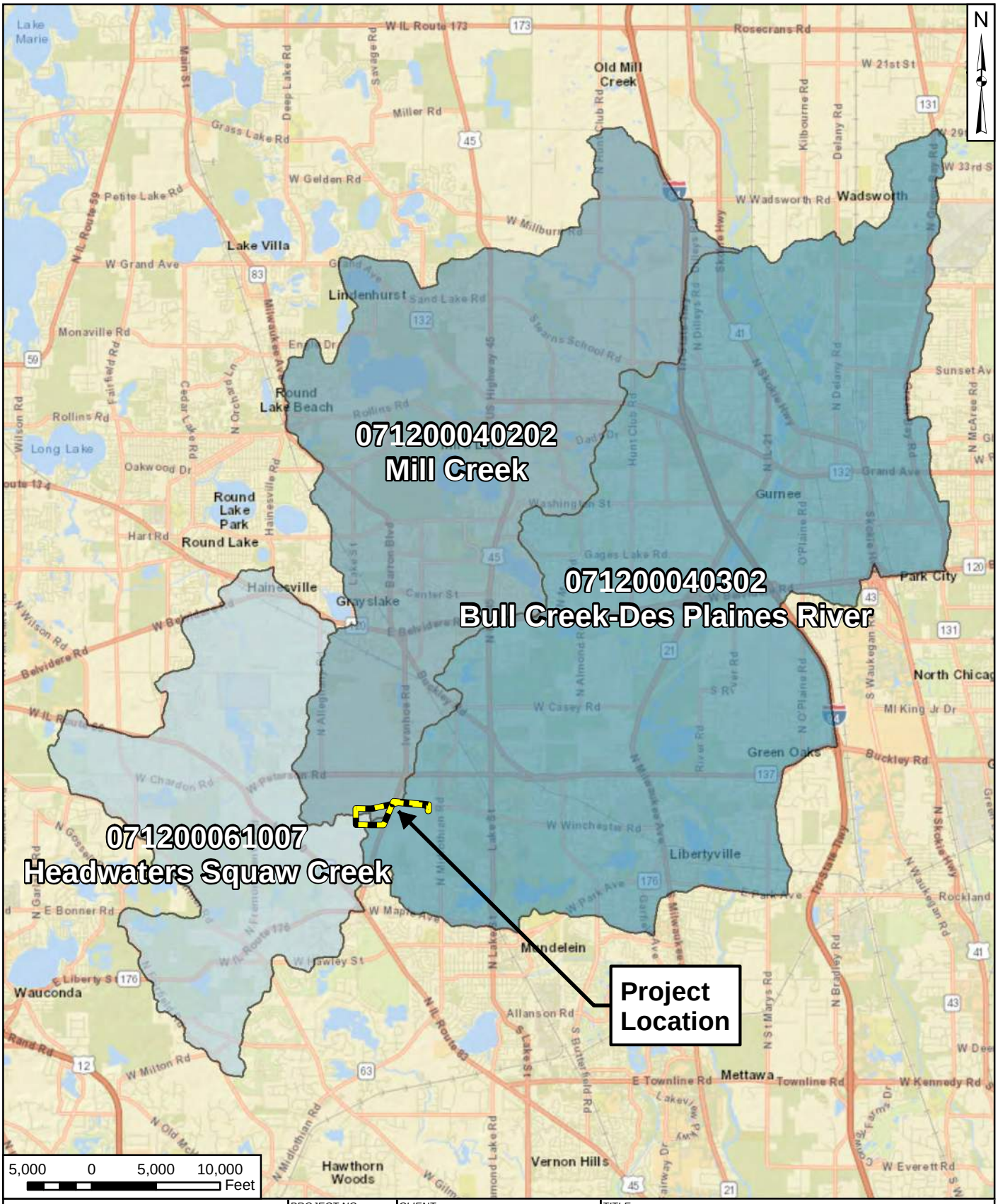


7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone www.v3co.com	PROJECT NO.: 240994 CREATED BY: CJL	CLIENT: Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173	TITLE: **USGS HYDROLOGIC ATLAS**
	DATE: 08/16/2024	BASE LAYER: USGS Hydrologic Atlas Grayslake Quad	SITE: Route 83 and Winchester Road Unincorporated Lake County, Illinois FIGURE: 4
Visio, Vertere, Virtute... *"The Vision To Transform with Excellence"*	SCALE: See Scale Bar		

J:\2024\240994\Wetland\FIG4hydro240994.mxd



7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone www.v3co.com	PROJECT NO.: 240994 CREATED BY: CJL	CLIENT: Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173	TITLE: **12-DIGIT HYDROLOGIC UNIT CODE (HUC)**
	DATE: 08/16/2024	BASE LAYER: USGS Hydrologic Atlas Grayslake Quad	SITE: Route 83 and Winchester Road Unincorporated Lake County, Illinois FIGURE: 5
Visio, Vertere, Virtute... *"The Vision To Transform with Excellence"*	SCALE: See Scale Bar		

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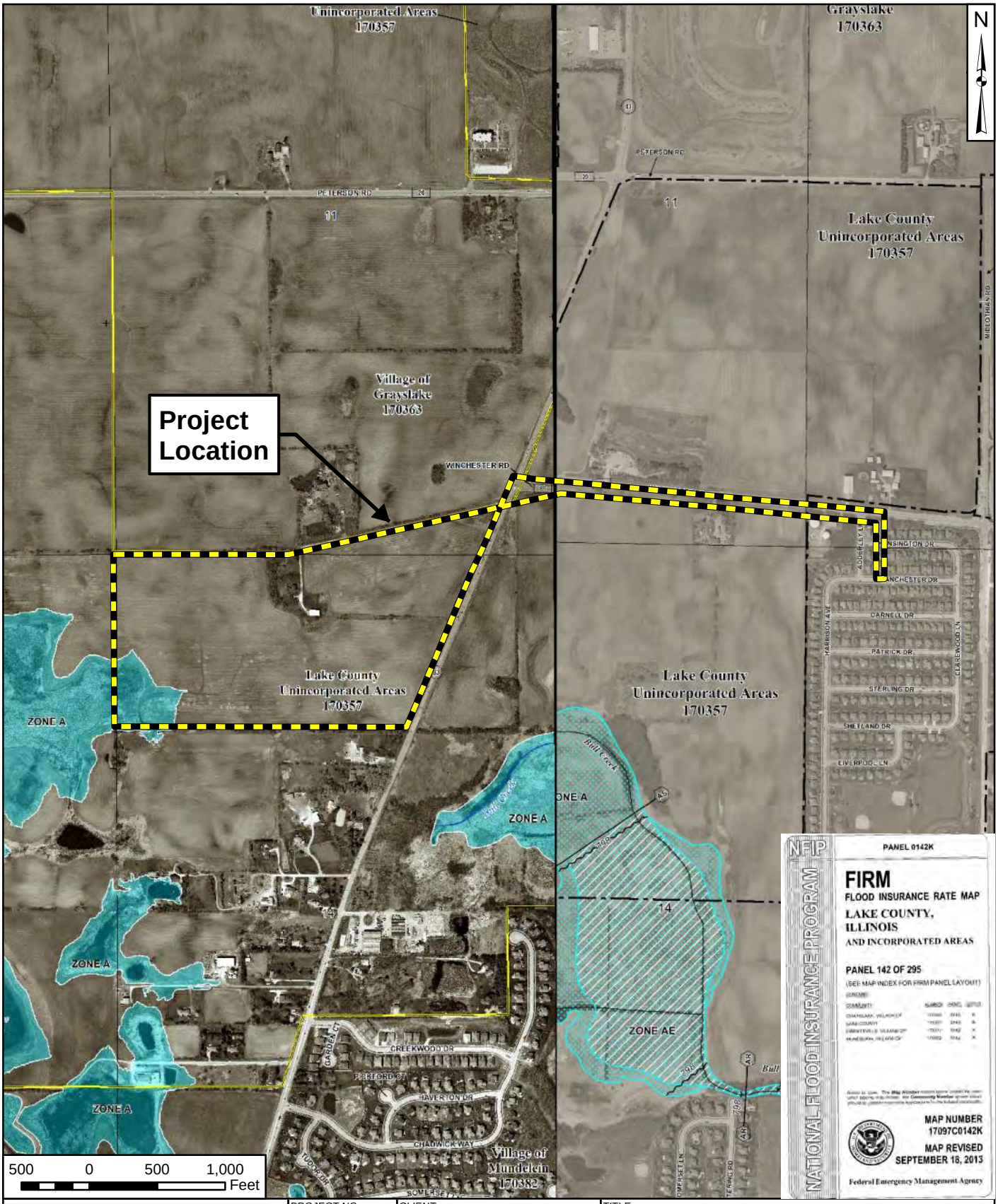

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PROJECT NO.:	PROP
CREATED BY:	AMM
DATE:	08/16/2024
SCALE:	See Scale Bar

CLIENT:
Pulte Home Corporation
1900 E. Golf Road, Suite 300
Schaumburg, IL 60173

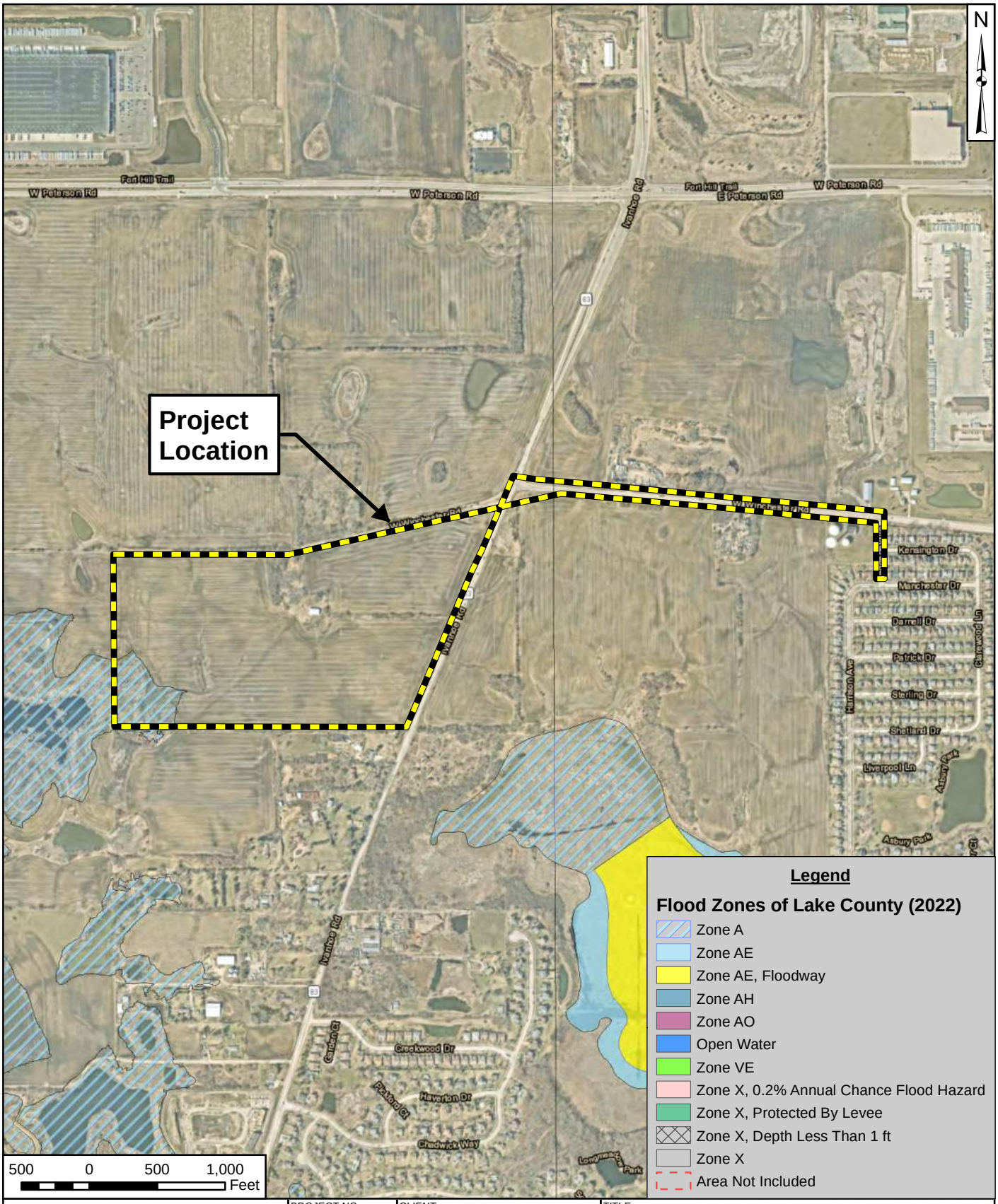
BASE LAYER:
FEMA FIRM Panel
17097C0141L
Effective 02/17/2016

TITLE:
FEMA FLOOD INSURANCE RATE MAP (FIRM)

SITE:
Route 83 and Winchester Road
Mundelein, Lake County, Illinois

FIGURE:
6

J:\2024\240994\Wetland\FIG6firm_240994.mxd



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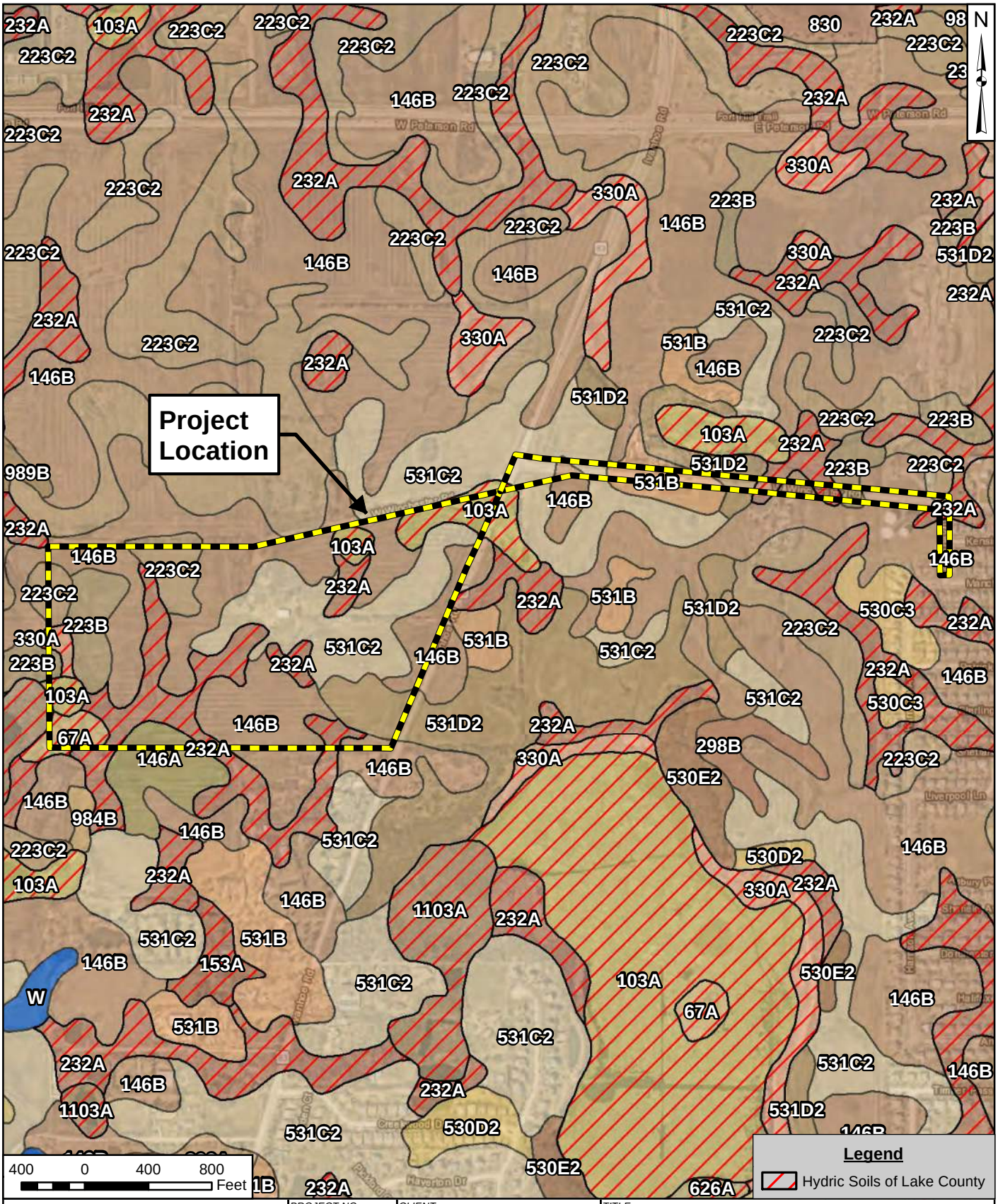
PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	08/16/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173
BASE LAYER:	ESRI Aerial Imagery

TITLE: **FLOOD ZONES OF LAKE COUNTY (2022)**

SITE: Route 83 and Winchester Road
Mundelein, Lake County, Illinois

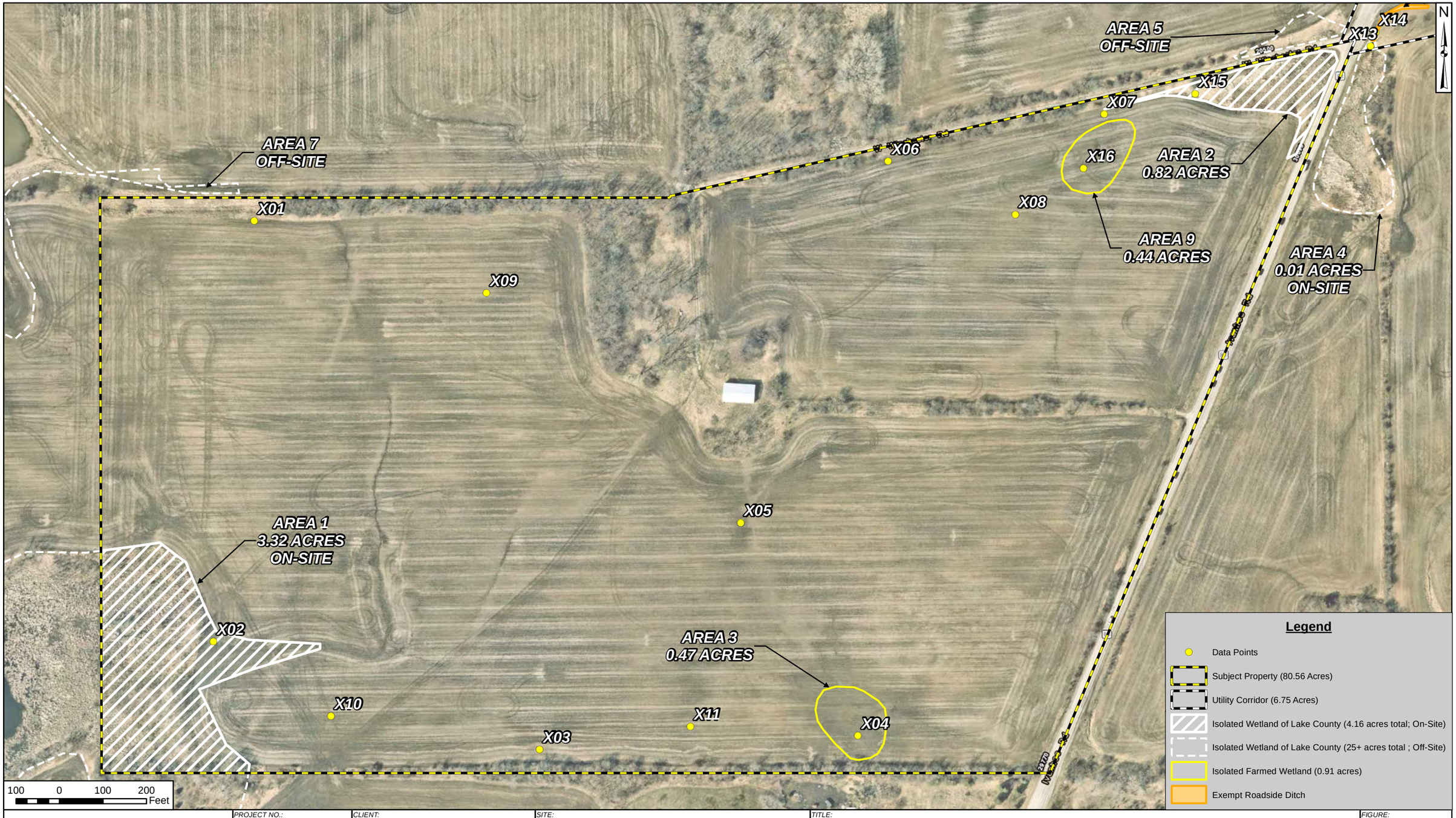
FIGURE: 7

J:\2024\240994\Wetland\FIG7nfhl_240994.mxd



7325 Janes Avenue Woodridge, IL 60517 630.724.9200 phone www.v3co.com	PROJECT NO.: 240994 CREATED BY: CJL	CLIENT: Pulte Home Corporation 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173	TITLE: **SOIL SURVEY OF LAKE COUNTY**
	DATE: 08/16/2024	BASE LAYER: ESRI Aerial Imagery	SITE: Route 83 and Winchester Road Mundelein, Lake County, Illinois
Visio, Vertere, Virtute... *"The Vision To Transform with Excellence"*	SCALE: See Scale Bar		FIGURE: 8

J:\2024\240994\Wetland\FIG8soil_240994.mxd



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PROJECT NO.:	240994
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DATE:	10/11/2024
SCALE:	See Scale Bar
CLIENT:	Pulte Home Corporation 1900 E. Golf Road Schaumburg, IL 60173
BASE LAYER:	Lake County Aerial Imagery (2022)
SITE:	Route 83 and Winchester Road Mundelein, Lake County, Illinois
TITLE:	**WETLAND & WATERS DELINEATION**
FIGURE:	9A

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PROJECT NO.:	240994
CREATED BY:	CJL
DATE:	10/11/2024
SCALE:	See Scale Bar

CLIENT:
Pulte Home Corporation
1900 E. Golf Road
Schaumburg, IL 60173

BASE LAYER:
Lake County
Aerial Imagery
(2022)

SITE:
Route 83 and Winchester Road
Mundelein, Lake County, Illinois

TITLE:
WETLAND & WATERS DELINEATION

FIGURE:
9B

J:\2024\240994\Wetland\FIG9Bdelin_240994.mxd

June 20, 2025

Ms. Isabel Guadarrama
Village of Mundelein
300 Plaza Circle
Mundelein, IL 60060

RE: Walnut Ridge Staff Comments

Dear Ms. Guadarrama:

Please find the following responses to the comments received May 23, 2025, related to our proposed annexation and development of Walnut Ridge at the SWC of Route 83 and Winchester Road.

Regarding annexation of the neighboring parcels:

1. *Please provide a preliminary draft of the Annexation Agreement for review.*
   A draft annexation agreement is being submitted by Rosanova & Whitaker.
2. *There is an error in the PINS listed on the Legal Description document. The last PIN should read: 10-15-200-002.*
   The PIN has been corrected.
3. *There is a typographical error on the first page of the Zoning Map Amendment Application. The last PIN listed should be 10-15-200-002.*
   The PIN has been corrected.
4. *The Plat of Annexation should include all the certificates/signature blocks required for recording.*
   The Plat has been updated.
5. *The limits of the Village of Mundelein are incorrect on the southern end on the Plat of Annexation.*
   The Village limits have been corrected.

6. Parcel 1 and Parcel 2 do not meet the annexation requirements. The annexed area must have at least a 300-foot width.

Per communication with the Village attorney, we do not believe there is an issue with the annexation property. There is an important distinction to be made between a) a long and narrow corridor being used to facilitate annexation of some other property; and b) contiguous properties under uniform ownership that happen to include a narrower segment historically reserved for an access corridor. The first scenario is intended to manipulate state law to extend the limits of the Village. The second scenario is a natural extension of municipal boundaries consistent with state law and resulting case law. The subject property falls into the latter category.

7. Village requests language in the Annexation and/or a plat that provides for potential dedication or easement for roadway access at the northeast corner of the site that may connect the property to the north and the property to the east.

There is no objection to including language regarding future access in the Annexation Agreement. The Annexation Agreement provides a good format to explain the purpose and intent of the provision, allowing appropriate flexibility in future site planning efforts. The actual granting of any easement or dedication of right-of-way for access would appropriately occur at the time that development is proposed and the property is being subdivided. Creation of easements or dedication of right-of-way prior to formalizing a plan for the property would be premature and necessarily lead to future amendments of those easements/dedications.

Regarding annexation and development of Walnut Ridge:

Building

1. All construction should follow the Village of Mundelein Building Codes.

All plans submitted for permit shall comply with applicable codes, and all construction shall follow approved plans.

Community Development

1. Please provide a preliminary draft of the Annexation Agreement for review.

A draft annexation agreement is being submitted by Rosanova & Whitaker.

2. The proposed "Top Selling Point" signs along the right-of-way are excessive and not supported by the Village. A couple of signs may be acceptable, but more than that will appear cluttered.

The number of signs has been reduced to two on each side of the entry road.

3. The Plat of Annexation should include all the certificates/signature blocks required for recording.

The Plat has been updated.

4. Preliminary Engineering Document: At the northwest corner, should the design extend to the hammerhead, or will Street A curve into Street B? Please clarify.
The design intent is for a T-intersection of Street A and Street B in the northwest corner. Street A is designed for future extension.

The site plan has been updated to remove the hammerhead at the NW corner. The intersection of Streets A and B is intended as a T-intersection, accommodating future expansion to the west.

5. Like Sheldon Woods, the Village requests a gateway sign easement. The location should be: 1) large enough area to accommodate a 4' x 12' sign outside of the IDOT right-of-way; 2) relatively flat area; and 3) have relatively close access to electricity.

A gateway sign easement has been added to the Preliminary Plat. The easement will be formally created with the Final Plat of Subdivision.

6. Abbeyville 7 remains as one of the elevations. The developer plans to replace it with a model that places greater emphasis on the entrance.

The elevation package has been updated to replace Elevation 7.

7. There are some lots that do not meet the required minimum lot width of 50 feet. While the Developer is pursuing a PUD and separate variances are not needed, this variance from the Zoning Ordinance should be called out in the Annexation Agreement.

The Zoning Ordinance measures lot width at the front building setback line, and all lots comply with the 50' minimum width at that location.

8. Add labels for planting types and species on the Landscape Plan – currently, the symbols indicate the category of plantings, but do not indicate which varieties are being planted at which locations. Section 20.60.060 of the Municipal Code covers species diversity requirements.

Plant species and details will be provided with the final landscape plans. The design will meet the ordinance and diversity requirements.

9. Need application and fee for Plat of Subdivision (preliminary and final). Will the Preliminary and Final Plat be done separately? The plats should follow the Lake County certification/signature block requirements for recording.

The application has been completed and was turned in by hand to Isabel at our last meeting with staff, on June 2, 2025. The fee will be submitted with our Final application package.

Engineering

1. Provide for roadway extension to the north for potential connection to a Winchester Rd. extension adjacent to this development.

As agreed upon in meetings with staff, a connection to Winchester is not provided within our site plan. As requested for the neighboring parcel, that Owner is agreeable to a future extension north to Winchester, and east into Walnut Ridge, which would allow travel from our community to Winchester.

2. Provide IDOT confirmation on full access for Street G.

This project was submitted for a Geometric Review by IDOT on 3/19/25, but as of correspondence on 6/17/25 it is still in their queue. We understand that full access to Route 83 is a critical component of the proposed plan. The Annexation Agreement can appropriately include conditions associated with IDOT access approval.

3. Driveways are too close for lots 40-46; increase cul-de-sac radius and/or remove an individual lot.

The south cul-de-sac has been significantly revised to remove several lots from the radiused curb.

4. Roadway network is overall too tight. Cul-de-sacs should be 55' radius and linear pavement should be 33' edge to edge.

Noted. We have requested a pavement width deviation pursuant to the PUD application.

5. Provide similar cul-de-sac design for Street A terminus as Street D.

The site plan has been updated with this revision.

6. Extend limits of Street D to southern property line and terminate at cul-de-sac.

The site plan has been updated with this revision.

Fire

1. Fire does not have concerns with having only one access point.

Noted.

2. The current locations of the tornado sirens are sufficient for this development.

Noted.

Police

1. The major area of concern with this project relates to the proposal of only one point of ingress and egress for vehicle traffic. The traffic study indicates that improvements are slated for the intersection of RT 83/Winchester Rd., to include a traffic signal. Should these improvements occur, the single access point for the subdivision is less of a concern. However, without the improvements and the installation of a traffic signal, the safety of the intersection would be concerning.

As of early June, 2025, Lake County DOT indicates the NICOR gas main revisions are nearly complete. The gas main relocation is a precursor to LCDOT's commencement of intersection improvements. LCDOT projects that intersection improvements will commence in mid-July and that construction of the improvements will take approximately four months. Pulte's improvement of Walnut Ridge is slated to commence in 2026, after completion of the Route 83/Winchester Road intersection improvements. If there are additional concerns with respect to timing of improvements, Pulte is happy to address those issues as part of the Annexation Agreement.

We believe the content above, and the materials being resubmitted with this letter, fully address the staff comments received in May for Walnut Ridge. We appreciate the continued collaboration with the Village of Mundelein as we endeavor to bring this project to fruition.

Sincerely,

Eric M. Friedman, AIA
Entitlement Manager

Enclosures: Walnut Ridge Preliminary Resubmittal Package, 6/20/25

1900 E. Golf Road, Suite 300 Schaumburg, Illinois 60173
847.230.5400 pultegroupinc.com

MEMORANDUM

To: Mr. Adam Boeche, PE, CFM
Director of Public Works & Engineering
Village of Mundelein

From: Mr. Geoffrey L. Perry, P.E.
Mr. John Briggs, P.E.

Date: May 27, 2025 PEARSON BROWN & ASSOC. REPLIES [6/10/25]

Re: Proposed Walnut Ridge Subdivision
Southwest Corner of Winchester Road and IL Route 83
Preliminary Stormwater Review #1

GHA completed a preliminary stormwater review of the proposed Walnut Ridge Subdivision, located at the southwest corner of Winchester Road and IL Route 83. This review was conducted to determine general compliance with the Lake County Watershed Development Ordinance ("WDO"). The following items were submitted for review:

- Preliminary Engineering Plans, prepared by Pearson Brown & Associates, Inc., dated April 11, 2025
- Preliminary Stormwater Management Report, prepared by Pearson Brown & Associates, Inc., dated April 11, 2025
- Wetland & Waters Delineation Report, prepared by V3 Companies, dated October 15, 2024

Based on our review, we offer the following comments:

1. A WDO Permit is needed for this development. Although this may be deferred to Final Engineering, we suggest it be completed at this time to summarize the design.

We will include during final.

2. A Drain Tile Survey, in accordance with §401.17 of the WDO needs to be submitted.

This has been included with the resubmittal, as it was not ready in time for the original submittal.

3. Per §500.07 of the WDO, pursuant to state law, a property owner of a parcel being subdivided adjacent to a state or county road right-of-way shall notify the proper highway authority in writing of the proposed subdivision, and request that the proper highway authority provide, at the cost of the highway authority or otherwise provided by law, the amount of additional capacity in any stormwater detention facility to be constructed in the subdivision for the future availability of the highway authority for meeting stormwater detention requirements of any future public construction on the highway.

The contract purchaser has been in contact with the County and IDOT regarding this subdivision.

The Route 83 and Winchester intersection improvements have their own stormwater proposed. Storage for the impervious area associated with the proposed IDOT widening for Walnut Ridge is included already in our onsite stormwater design.

4. The Wetland Jurisdiction has been completed. The Boundary Verification also needs to be completed by the Lake County Stormwater Management Commission.

Per the wetland consultant with V3: Based on the Lake County SMC Preliminary Jurisdictional Determination (PJD) letter dated October 14, 2024, (Appendix VII of the V3 wetland delineation report) Areas 1, 2, 3, 4, 5, 6, 7, and 9 are subject to Lake County SMC jurisdiction and Area 8 is an exempt feature not subject to jurisdiction. The delineated boundaries of Areas 1, 2, 3, 4, 5, 6, 7, and 9 were field verified by Mr. Glenn Westman and Mr. William Santelik of Lake County SMC and Mr. Caden LaFond, Ms. Alicia Metzger, and Ms. Erin McKenna of V3 Companies on October 10, 2024. This is per the issued PJD letter, included in the delineation report, clearly stating the boundaries of the wetlands were field verified by SMC. This report had been in the April submittal to Mundelein.

5. A Long-Term Stormwater Maintenance Plan needs to be submitted for review. Once approved, the plan needs to be recorded with the County. This can be deferred to Final Engineering.

We will defer this item to final as suggested.

6. A Drainage Statement, signed by the engineer, needs to be added to the cover sheet.

We have added a signed drainage statement to the cover sheet as requested.

7. The impacted wetland buffers need to be deed restricted.

We agree. This will be addressed on the final plat. None of these areas will exist on the homeowner lots.

8. Per §506.03 of the WDO, 100-year overland flow routes shall be provided on the site. An exhibit should be provided that shows existing and proposed 100-year overland flow routes. Calculations and cross sections should be provided per §506.03.D of the WDO to illustrate the design high water level in the overland routes (swales, parking lots, driveways between the structures, etc). All buildings and garages adjacent to the overland flow path should meet freeboard requirements.

Overland flow routes,sections and exhibits are already included in the storm report and plans. Please refer to Appendix 1 materials that include an overland flow route exhibit and the cross sections on the engineering plans. Existing overland information and ridgelines etc. are included on the Existing Conditions Exhibit as these were needed for the wetland hydrology calculations as well.

9. All slopes 10:1 and greater need to be labeled on the plans.

Please refer to the added general notes on the grading sheets.

10. The perimeter drainage swales will need to be better defined, i.e. have a 2-foot flat bottom, to alleviate offsite discharge potential.

Please refer to the added general notes on the grading sheets.

11. “80-150” calculations need to be provided for discharges into the IWLC.

Wetland hydrology [80/150 calculations] are already included in the report. Please refer to Appendix 4 Wetland Hydrology and also information included on the Existing Conditions exhibit.

12. Adequate Downstream Capacity needs to be confirmed for the discharges to the south.

It would appear the only route of concern would be the one from the proposed southeast basin outfall location since the southwest basin drains directly to the large offsite wetland BFE zone.

Per the WDO, we can demonstrate adequate downstream capacity by showing we are not increasing damage potential to adjoining property for a single 100yr event.

We performed a conservative 100yr runoff rate calculation for the 13.62 acres that are tributary to the proposed southeast basin outfall location. We estimated the flow at 23.32 cfs but there could be a small amount of attenuation due to the small depression so we can conservatively use 50% of this flow, or 11.66 cfs.

In the proposed case all this runoff is diverted and detained by the southeast stormwater basin. We are over-restricting flows from this basin so the 100yr peak release from our multi-duration analysis is less than 1 cfs at 0.74 cfs.

Therefore, we have demonstrated adequate downstream capacity since we are clearly not increasing damage potential downstream for single events up to the 100yr level.

13. How were the permeability range values on sheets 8, 18, 30, and 43 determined?

They are from the following sheets in the reports where the ranges are listed for the soil groups on the USDA/NRCS "Soil Quality Indicators" sheet. For some basin zone soils as discussed in the report, rate ranges were taken from the Lake County Soil Survey (such as stated on Sheet 43).

14. The narrative should include some discussion on the storm sewer design calculations, inlet capacity calculations, overland flow route design calculations, and compensatory storage calculations.

We have added detail for the Appendix 1 items. Compensatory storage is well summarized in the report in the Appendix 3 discussion.

15. In the Storm Sewer Design Calculations in Appendix 1, the design slope for the pipe from 48 to 46 is 0.4 resulting in a velocity of 45.67 ft/s. This slope should be corrected to 0.004.

Typo corrected.

16. The maximum allowable impervious area per lot should be clearly noted on the Plats.

We agree this information should be added to the plat of subdivision. The exhibits clearly note the maximum allowable impervious area considered in the design for all the lots with symbols and notes.

17. It would be helpful to summarize the pipe capacity calculations in profile form, which should also show the hydraulic grade lines.

The standard full-flow customary Manning's design should suffice for most if not all segments. We do not have excessively shallow storm sewer proposed and only minor losses would be expected at typical junctions etc. The HGL in this case is expected to closely follow within a few tenths of the top inside crown of the pipes.

18. In accordance with Appendix E of the WDO, an Engineer's Opinion of Probable Cost ("EOPC") needs to be provided for bonding. The EOPC needs to include stormwater components, which includes the erosion controls, storm sewer, grading and site restoration.

Understood. We will not have a stormwater EOPC until final but this is typical as bonding is not completed until that phase.

19. Northwest Basin

a. The proposed lower restrictor orifice has a diameter of 2.85" which may result in clogging. Please consider using vortex restrictors and/or use of a single, larger restrictor size. Restrictors less than 4" will need to include anti-clogging measures.

For this basin we found that using a singe 4" would exceed the 100yr allowable. Therefore, we plan on keeping the current design that does include anti-clogging measures already.

b.. The location of Inlet FES #24 needs to be moved, to avoid short circuiting of the basin.
We have relocated the FES location as requested.

20. Southwest Basin

a. The proposed lower restrictor orifice has a diameter of 3.65" which may result in clogging. Please consider using vortex restrictors and/or use of a single, larger restrictor size. Restrictors less than 4" will need to include anti-clogging measures.

This basin has now been modeled using HEC-HMS and the new lower restrictor is now proposed at the 4" minimum size.

b. Due to the watershed specific release rate, the 100-year unit area factor appears to be based on the MWRD WMO nomograph which may not be appropriate. The method for determining the 2-year unit area factor also appears not to be appropriate and is assumed to be over-conservative. An SMC-approved hydrograph-producing

runoff calculation method, such as PondPack should be used instead, in accordance with §501.01 of the WDO.

We have now modeled this basin with HEC-HMS as requested.

c. In paragraph 2 of page 12, “northwest basin zone” should be “southwest basin system zone”.

Corrected as requested.

d. In paragraph 4 of page 12, “0.15 cfs/ac” should be “0.15 ac-ft/ac”.

Corrected as requested.

e. In paragraph 4 of page 12, “0.30 cfs/ac” should be “0.30 ac-ft/ac”.

Corrected as requested.

f. The narrative should include some discussion on the equalizer pipe calculations.
Emergency Overflows and the Southwest Basin Equalizer Calculations are included and discussed in Appendix 2.

21. Southeast Basin

a. The RVR narrative on page 29 states that the bottom of the southeast basin is 4 in (0.33’) below the outlet elevation but exhibit SE-1 shows the outlet at 832 and the bottom at 831.6. Revise the narrative and calculations or the exhibit. Check to ensure that the bottom elevation contour area used in the RVR calculation is correct if the grading is revised.
We have revised Sheets 29 and 30 to be based on the plan depth of 0.4’. We confirmed the contour area of 831.60 is 1.91 ac and updated the calculations, RVR summary and Water Quality Summary. The basin data has also been updated on the plans.

22. Northeast Basin The proposed over-restricted orifice has a diameter of 2” which may result in clogging. Please consider using vortex restrictors and/or use of a single, larger restrictor size. Restrictors less than 4” will need to include anti-clogging measures.
Anti-clogging measures are included. We can propose a single 4” restrictor at the outlet elevation for this basin during final if it is acceptable to have the additional volume in the basin available but not 100% accessed in the proposed condition critical duration models.

23. Graphical lines should be added to Appendix O, reflective of the RVR credit goal, or credits achieved.
We have added the requested lines to the Appendix O charts in the report as requested.

24. Additional comments may result from review of the revised project documents.
Understood.

VILLAGE OF Mundelein
Incorporated in 1909

To: Commission Members

From: Colleen Malec, Senior Planner

For: Planning and Zoning Commission Meeting of July 16, 2025

Subject: PUBLIC HEARING - PZ2025-0027 - Text Amendments – Various Topics

Attachments:

1. Certificate of Publication - Text Amendments
2. Petitioner's Packet
3. Car Wash Research

Background:

From time to time, updates to the Zoning Ordinance are necessary to address emerging trends and technology, recurring conflicts, or to provide greater clarity in interpretation. The Community Development Department is proposing a series of amendments to the Zoning Ordinance to address these needs:

1. Murals – Allow in more districts and streamline process for smaller murals.
2. Car Washes – Remove as an allowed use within the Downtown Zoning District.
3. Truck Stops – Clarify definition and do not permit within any Village districts.
4. Business Incubators/Advanced Technology Hubs – Create new land use category.
5. Use Variations – Clarify Zoning Ordinance to explicitly allow variations for land use.

Amendments

1. **Murals**

Background: In 2018, the Village amended the zoning ordinance to establish regulations for murals, as the code previously did not address them. At that time, murals were permitted only as a Special Use in the Downtown zoning districts. This limited approach was intended as a pilot program to allow for oversight and to evaluate the impact of murals in a controlled area before considering broader implementation.

Staff proposes two changes to the existing mural regulations:

a. Expansion of Allowed Districts: Since adoption of the pilot regulations, three murals have been installed. One of said murals received a variation to be located in the Open Space (OS) zoning district. This demonstrated that murals can be appropriate outside the Downtown. Staff recommends allowing murals in all zoning districts except residential, as commercial, industrial, and open space areas attract public activity and can benefit from public art.

b. Streamlined Approval Process: Murals contribute to community identity, vibrancy, and walkability. To encourage public art (particularly by private property owners), Staff proposes reducing regulatory barriers for smaller murals. Under the current process, all murals require a Special Use Permit, which imposes costs, delays, and uncertainty due to public hearing requirements.

Staff recommends requiring a Special Use Permit only for murals exceeding 100 square feet. Murals under 100 square feet would instead require a building permit and be reviewed administratively for compliance with the existing Use Standards. This change would ease the process for small-scale projects while maintaining appropriate oversight. See Figures 1 and 2 below for square footage examples of local murals and walls.

Figure 1 – Large Mural Examples

Figure 2 – Small Mural Examples

Amendment Detail:

- Replace the current "*Mural*" land use with two uses: *"Large Mural (Over 50 SF)"* and *"Small Mural (Up to 50 SF)"*.
- Allow murals in certain zoning districts as follows:
    - *Large Mural (Over 100 SF)* – Special Use in all zoning districts except residential (R-1, R-2, R-3, R-4, R-5)
    - *Small Mural (Up to 100 SF)* – Permitted Use in all zoning districts except residential (R-1, R-2, R-3, R-4, R-5)

- Clarify "Mural" definition within *Generic Use Definitions* to include size distinction.
- Replicate the existing Use Standards for murals from the *Downtown Zoning District* chapter into the *Use Standards* chapter so they apply to all zoning districts:
    a. The surface on which the mural is to be applied must have appropriate structural integrity to support the chosen application method.

b. The mural shall be applied with materials manufactured with the expectation of long-term durability and exposure to the elements.
c. Painted murals shall be sealed with graffiti and UV resistant coating by the artist upon completion of the mural.
d. The mural shall be cleaned, when needed, and maintained in good condition at the expense of the property owner. If the mural becomes unsightly or is damaged or vandalized, it must be removed or restored to good condition by the property owner or as otherwise provided in the title approving the special use for the mural.
e. Murals shall not create a danger for motorists or pedestrians, nor shall it limit the use or enjoyment of an adjacent property or a property with a clear line of sight to the mural.

Car Washes

Background: Over the last 5 to 7 years, there has been a rising interest in constructing car washes. Thes car washes are generally automated and employ few workers. Due to lower costs of overhead and revenues from subscriptions, investors have flocked to these uses and are putting them up anywhere and everywhere possible. It was determined that review of the Zoning Ordinance relating to Car Washes and Car Wash Use Standards was necessary.

Research:

- Car Wash Magazine stated this benchmark in an April 10, 2023, article, *How many is too many?"* When weighing population, Navarro said a general rule of thumb is that you need at least 20,000 to 25,000 people to support one express car wash, but operators should consider not only how many car washes are in the area but the identity of them."

- Staff researched the zoning codes of almost 30 communities. Almost every community did not permit car washes within downtowns/denser development areas. Most were limited to industrial areas or major highway commercial locations. See the attached table.

The following is a summary of the car washes in the Village.

Figure 3: Village-Wide Car Wash Inventory

Zoning District	Auto Car Wash	Gas Station w/ Wash	Hand Car Wash
C-1 (Neighborhood Commercial)	-	-	-
C-2 (General Commercial)	**3**	**4**	-
C-3 (Heavy Commercial)	1	-	-
C-4 (Shopping Center)	**1**	-	-

C-5 (Downtown)	-	**2**	**1**
L-MU (Lakefront Mixed Use)	-	-	-
M-MU (Manufacturing Mixed Use)	-	-	**1**
M-1 (General Manufacturing)	-	-	**1**
Total:	**5**	**6**	**3**

Amendment Detail:

- Remove Car Wash and Car Wash Use Standards from all Downtown Zoning Districts.
- Only allow with a Special Use Permit stand-alone, automated car washes in the C2, C3, and M-MU Zoning Districts.
- Allow car washes to be accessory to a gas station in C2, C3, and C4 Zoning Districts.
- Definitions:
    - "Car wash, automated" means an establishment that is stand-alone, that engages in the washing and cleaning of passenger vehicles, recreational vehicles, or other light duty equipment, whether automatic or by hand, within an enclosed building.
    - “Car Wash, hand” means an establishment that engages in washing and cleaning passenger vehicles, recreational vehicles, or other light duty equipment that is conducted within an enclosed building.
    - "Gas station, standalone" means a business where flammable or combustible liquids or gases used as fuel for motor vehicles are stored and dispersed from fixed equipment into the fuel tanks of motor vehicles.
    - “Gas station, with car wash” means a business where flammable or combustible liquids or gases used as fuel for motor vehicles are stored and dispersed from fixed equipment into the fuel tanks of motor vehicles that also has an attached accessory car wash.

- Use Standards:
    - Property discharge to the sanitary sewer shall be established unless a separate waste water containment and removal service is approved by the Village, installed, and placed in operation.
    - Vehicles dropped off at the site shall have current plates and current registration.
    - Vehicles shall not be parked in a manner that blocks ingress and egress of the site, overhead doors, parking stalls, and the parking lot.
    - There shall be no sale of vehicles on the premises.
    - A noise abatement plan shall be submitted for properties adjacent to residential uses.
    - Require a separation of at least 3,000 feet for all standalone, automated car washes.
    - Require enhanced architectural design with at least 75 of the facade material to be brick or stone. EIFS, vinyl siding, corrugated metal panels are prohibited.
    - Utilize a recycled water system.

Truck Stops

Background: The Village has encountered recurring concerns related to the State of Illinois' classification of "truck stops" for video gaming purposes. Under state gaming regulations, any fuel-dispensing establishment located on a parcel of three or more acres may be considered a "truck stop," regardless of whether the site actually serves trucks. This has led to public confusion and concern that large gas stations (particularly those situated on parcels exceeding three acres) could qualify for video gaming licenses through a technicality. In any case, the municipality has full discretion and needs to be willing to grant a video gaming license, even if the business qualifies through the Illinois Video Game Act.

Staff does not interpret parcel size alone as determinative of a site's use or function. A gas station located on a larger lot does not inherently function as a truck stop, as staff evaluates the operational use of the land rather than its size. To address these concerns and eliminate ambiguity, staff recommends establishing a distinct definition for "Truck Stop" in the Zoning Ordinance and explicitly prohibiting the use in all zoning districts. This amendment will help ensure that truck stops are regulated separately from gas stations and other motor vehicle-related uses, such as car washes, based on actual use characteristics rather than acreage.

Staff recommends that the PZC discuss the optional language below, which would define a truck stop as any facility that includes truck fueling infrastructure or dedicated truck parking. The Commission may agree with this approach, or may determine that this criteria is too restrictive and that a facility should offer additional truck-oriented services (e.g. showers, overnight accommodations, repair facilities, etc.) to be classified as a "truck stop."

Amendment Detail:

- Add definition: "Truck Stop" means a facility primarily designed and intended to accommodate the fueling, servicing, and temporary rest of heavy-duty trucks and tractor-trailers engaged in interstate or long-haul travel. A truck stop might include amenities such as dedicated truck fueling stations, truck parking areas, overnight accommodations or showers for drivers, and convenience retail or restaurants. This use is distinct from a "Gas Station".

OPTIONAL LANGUAGE: The presence of truck fueling infrastructure or dedicated long-haul truck parking shall be considered indicative of a truck stop.

Business Incubators / Advanced Technology Hubs

Staff respectfully requests this particular topic for text amendments be continued to August 6, 2025, as there is more research to be conducted.

Use Variations

Staff was advised by legal counsel that it is best practice to explicitly address and allow **Use Variations**, which are variations from permitted or special use tables to allow a land use not

otherwise allowed in a particular zoning district. The current Zoning Ordinance does not distinguish between Use Variations and other types of variations (such as bulk or architectural standards), which could lead to ambiguity. Because some communities do not permit Use Variations at all, it is important to clarify that such requests are allowable within Mundelein. Amendment language to address this is currently being drafted by legal counsel.

Staff Comments

No comments from staff were received prior to the issuance of this report.

Public Comments

No comments from members of the public were received prior to the issuance of this report.

Recommendation:
No motion is requested at this time – staff is requesting a discussion. Based on the discussion, staff will bring the final language back to future meeting for a recommendation.

NOTICE OF HEARING BEFORE THE VILLAGE OF MUNDELEIN PLANNING & ZONING COMMISSION

NOTICE IS HEREBY GIVEN that on July 16, 2025, at 7:00 p.m., a public hearing will be held before the Village of Mundelein Planning and Zoning Commission at Mundelein Village Hall, 300 Plaza Circle, Mundelein, Illinois. The hearing will address a petition submitted by the Village of Mundelein proposing text amendments to Sections 20.08 (Ordinance Administration), 20.12 (Administrative Procedures), 20.16 (Applications and Approval Processes), 20.32 (Commercial Zoning Districts), 20.36 (Downtown Zoning District), 20.40 (Office Park and Manufacturing Zoning Districts), 20.44 (Special Purpose Zoning Districts, 20.48 (Use Standards), 20.56 (Off-Street Parking and Loading), 20.68 (Generic Use Definitions), and 20.72 (General Terms Definitions) of the Mundelein Zoning Ordinance regarding certain topics including but not limited to: car washes, murals, truck stops, application fees, business incubators, advanced technology hubs, and variation procedures, and any other topics relevant to this application, in accordance with the application on file with the Village of Mundelein.

If you cannot attend the meeting in-person and you wish to submit a question or comment to be provided to the Planning and Zoning Commission, please email your full name and your question or comment to planning@mundelein.org. Please put "Public Commentary" in the subject line. Comments received during the meeting, but after the public commentary portion has ended, will be provided to the Commission Members after the meeting.

CASE NO.: PZ2025-0027

The name and address of the Petitioner:
Village of Mundelein
300 Plaza Circle
Mundelein, IL 60060

This Notice is an invitation to all interested individuals to submit oral or written testimony or other evidence concerning the above case to the Village of Mundelein Planning and Zoning Commission at planning@mundelein.org. Comments received by 5:00 p.m. CT on July 9, 2025, will be included in the meeting agenda packet. Comments received after this date will be provided to the Commissioners on the day of the public hearing. For any questions, individuals are encouraged to contact the Village of Mundelein at (847) 949-3282.

The Planning and Zoning Commission's actions are not final for this case. The Planning and Zoning Commission will forward its findings and recommendations to the Village Board of Trustees for final consideration and action.

Dated at Mundelein, Illinois, this 1st day of July, 2025.

Terry Roswick /s/
Chairman
Planning and Zoning Commission

Published in Daily Herald June 30, 2025 (295783)

CERTIFICATE OF PUBLICATION

Paddock Publications, Inc.

Lake County

Daily Herald

Corporation organized and existing under and by virtue of the laws of the State of Illinois, DOES HEREBY CERTIFY that it is the publisher of the **Lake County DAILY HERALD**. That said **Lake County DAILY HERALD** is a secular newspaper, published in Libertyville, Lake County, State of Illinois, and has been in general circulation daily throughout Lake County, continuously for more than 50 weeks prior to the first Publication of the attached notice, and a newspaper as defined by 715 ILCS 5/5.

I further certify that the **Lake County DAILY HERALD** is a newspaper as defined in "an Act to revise the law in relation to notices" as amended in 1992 Illinois Compiled Statutes, Chapter 715, Act 5, Section 1 and 5. That a notice of which the annexed printed slip is a true copy, was published 06/30/2025 in said **Lake County DAILY HERALD**. This notice was also placed on a statewide public notice website as required by 5 ILCS 5/2.1.

BY _____
Designee of the Publisher of the Daily Herald

Control # 295783 *LAKE*

PADDOCK PUBLICATIONS, INC. Corporate SEAL ILLINOIS

PETITIONER INFORMATION

Business/Org. Name Village of Mundelein
Name
Title
Address 300 Plaza Cir
City, State, Zip Mundelein, IL 60060
Phone 847-949-3282
Email planning@mundelein.org

Signature:
Printed Name: Eric Guenther
Date: 6/25/25
Title: Village Administrator

SECTION(S) OF ZONING ORDINANCE: See list attached

PROPOSED TEXT AND JUSTIFICATION OF TEXT AMENDMENT (*Attach sheet if additional space is needed*)

See narrative attached

Column1	Downtown District	Car Washes Downtown	Other Districts	P/S	Definition
Libertyville	Yes	No	C3; I3	SUP	Car wash, self-serve means a building or portion thereof, providing space, water and equipment for the hand washing of vehicles.
Vernon Hills	No	No	B-1	SUP	None
Buffalo Grove	Yes	No	B2; B4	P	Car Wash (Automobile Wash): A building or portion thereof containing one or more bays for washing not more than one motor vehicle at one time using automatic production-line methods with a chain conveyor, blower, steam-cleaning device, or other mechanical devices; or providing space, water and equipment for the handwashing of autos, whether by the customer or the operator. Automobile Laundry: A building or portion thereof containing one or more bays for washing one or more motor vehicles at one time, using automatic production-line methods with a chain conveyor, blower, steam-cleaning device, or other mechanical devices; or providing space, water and equipment for the handwashing of autos, whether by the customer or the operator.
Lincolnshire	No	No	M1	P	Automobile Laundry: A building or portion thereof containing facilities for (Car Wash) washing motor vehicles, using automatic production-line methods with a chain conveyor, blower, steam cleaning device, or other mechanical devices; or providing space, water, and equipment for the hand washing of autos, whether by the customer or the operator. Vehicle Wash: A completely enclosed building or portion thereof containing equipment or providing space or water for cleaning vehicles defined in the Illinois Vehicle Code as first division and Class B vehicles up to, and including 8,000 pounds, as a special accessory use to another principal permitted or special use in the zoning district. (Ord. 97-1494-18 eff. 6/9/97)
Highland Park	Yes	No	B3; B4: I	P	Motor Vehicle Laundry: A use auxiliary to gasoline and diesel fuel stations, housed in a structure and capable of being utilized for the washing of motor vehicles whether by hand or by automation, where no motor vehicle conveyor or drive-through facility is incorporated into the process and where no more than two (2) vehicles are able to be washed on the premises at any given time. Motor Vehicle Washing Facility/Automobile Washing Facility: A use housed in a building, other than a Motor Vehicle Laundry, comprising the washing of automobiles and/or other motor vehicles, which may utilize such mechanical devices as a vehicle conveyor, hot air blowers, steam cleaners, and wax applicators — all located upon a single lot of record.
McHenry	Yes	No	C5	C	Automobile Laundry: A permanent commercial facility where motor vehicles are washed by hand, by mechanical devices or both, excluding temporary car washes organized for civic or charitable purposes.
Algonquin	Yes	No	B2 (and limited)	SUP	Car Wash: A building, or portion thereof, where motor vehicles are washed by a mechanical device.
Lake in the Hills	No	N/A	N/A	N/A	Automotive Service: Any use which cleans, services, repairs, fixes, alters, modifies or replaces in whole or parts of automobiles.
Oswego	Yes	No	B1	P	Car Wash: An establishment engaged in the cleaning or detailing of motor vehicles, recreational vehicles, and/or other similar vehicles whether automatic or by hand.
Arlington Heights	Yes	No	B3	SUP	None

Wheeling	Yes	MXC; MXT; MXI (SUP)	B1; B3	SUP	"Car wash" means an establishment providing washing, waxing or cleaning of light motor vehicles, including access and queuing lanes.
Des Plaines	Yes	No	C3; C4; M2	C*; C*; P	CAR WASH: A building or portion thereof where facilities for washing, cleaning and detailing automobiles are provided that involve machine or hand operated mechanical devices or equipment. "Car wash" shall not include any use that is otherwise listed specifically in a zoning district as a permitted or a conditional use.
Northbrook	Yes	No	C2; C5	SUP	AUTOMOTIVE DETAILING. Services including washing, detailing, waxing, or cleaning of passenger automobiles and trucks not exceeding one and one-half tons capacity, provided at non-automated establishments and performed by the business operator without the use of an automatic production line method, conveyor machines or any other large mechanical equipment typically found at car washing facilities.
Glenview	Yes	No	B2; B3; I2; PUD	CPPC	None
Hoffman Estates	Yes	No	F2; RPD	SUP	Automatic Car Wash Facilities: Any building, or portion thereof, containing facilities for washing automobiles in an automatic manner.
Oak Brook	Not clear	Not clear	Not Clear	Not Clear	CAR WASH: A building or portion thereof containing facilities for washing more than one (1) motor vehicle, using production line method.
Lemont	Yes	No	B3	P	CARWASH. Mechanical facilities for the washing or waxing of private automobiles, light trucks and vans, but not commercial fleets.
Cary	Yes	No	B2	C	None
Deerfield	Yes	No	C2	SUP	AUTOMOBILE LAUNDRY: A building or section thereof containing facilities for washing more than two motor vehicles, using production line methods or mechanical devices; or providing space, water and equipment for the hand washing of motor vehicles, either by the customer or the operator.
Schaumburg			B2; B4; M1	S; S; SUP	CAR WASH (Accessory): A building, or portion thereof, at an automobile dealership or motor vehicle repair and/or service facility containing facilities for washing one (1) or more vehicles using production line methods with a chain conveyor, blower, system cleaning device, or other mechanical devices. CAR WASH (Principal): A building, or portion thereof, containing facilities for washing one (1) or more vehicles using production line methods with a chain conveyor, blower, system cleaning device, or other mechanical devices.
Skokie	Yes	No	B3; M1; M2; M3	SUP	Car wash means a facility, apparatus, or structure designed and used for the washing of motor vehicles.
Elgin	Yes	Yes (C)	NB; AB; CC2; CI	C	Car wash means any land, structure [SR], building [SR] or portion thereof containing facilities for washing, cleaning, polishing, waxing, or drying one (1) or more motor vehicles [SR] using production line methods with a chain conveyor, blower, steam cleaning equipment, or other mechanical device; or providing space, water, equipment, or soap for the complete or partial hand washing of a motor vehicle. Car washes may include open vacuum bays and a maximum of one (1) open wash bay. The open wash bay shall be screened on both sides by a minimum six (6) foot wall of the same construction material as the principal building [SR].

Crystal Lake	Yes	No	B2	L	CARWASHES—Carwashesshallincludefull service and automatic and self-service and nonautomatic car washes, are establishments featuring a car wash system where vehicles are manually driven through a wash cycle, or washed manually using a wand or other hose. Incidental interior cleaning and exterior drying are performed by vehicle operator. This type of car wash does not have an on-site attendant and there is no gasoline, oil or other merchandise for sale. Full-service and automatic car washes An establishment featuring a conveyor system to move vehicles through the wash cycle. This type of car wash may include sales of gasoline, oil and other vehicle related merchandise. On-site attendants are required. Building size is limited by lot size, parking requirements, building and landscape setbacks or other site characteristics.
Bartlett	Yes	No	B2; B3; B4	SUP	CAR WASH: A building or portion thereof containing facilities for washing one (1) or more motor vehicles, using automatic production line methods with a chain conveyor, blower, steam cleaning device or other mechanical devices; or providing space, water and equipment for the hand washing of autos, whether by the customer or the operator.
Niles	Yes	No	C1; C2; C4; Ent-MU	SUP	Car Wash. A business for the washing and cleaning of passenger vehicles, recreational vehicles, and other light duty equipment, whether automatic, by hand, or self-service.
Elmhurst	Yes	No	C1; C2; C3; C3A; I1; I2	SUP	"Car wash" means a building, or portion thereof, containing facilities for washing more than one automobile at any one time, using production line methods with a chain conveyer, blower, steam cleaning device, or other mechanical devices; or providing space, water, equipment, or soap for the complete or partial hand-washing of such automobiles, whether by operator or by customer.
Downers Grove	Not clear	Not clear	Not Clear	Not Clear	None
Lombard	Not clear	Not clear	Not Clear	Not Clear	Car wash is a building, or portion thereof, containing facilities for washing one or more automobiles at any one time, using methods such as a blower, steam cleaning device, or other mechanical devices; or providing space, water, equipment, or soap for the complete or partial cleaning of such automobiles, whether by the operator or by the customer. Car wash, automatic is a car wash (as defined above) providing exterior cleaning and/or washing services on a drive-through or roll-over basis. Car wash, self-service is a car wash (as define above) providing equipment and/or facilities for the self-service cleaning and/or washing of automobiles and other motor vehicles. Car wash, full-service is a car wash (as defined above) providing exterior and interior washing and cleaning service for automobiles or other motor vehicles.

Glen Ellyn	Yes	Yes (SUP)	C2; C3; C5A; I1 (P)	SUP; SUP; SUP; P	AUTOMOBILE SERVICE STATION: See definition of "garage, service station." GARAGE, SERVICE STATION: Buildings and premises where gasoline, oil, grease, batteries, tires or motor vehicle accessories may be supplied and dispensed at retail and where, in addition, services and sales incidental to normal maintenance and repair of motor vehicles may be made, but such services and sales shall not include major mechanical and body work, straightening of body parts, painting, welding, storage of automobiles not in operable condition, or other work involving noise, glare, fumes, smoke or other nuisance factors.

This car wash in Fort Myers, Florida, is one of about 60,000 places to get your vehicle cleaned in the US — and many more options are on their way. *Photographer: Jeff Greenberg/Universal Images Group Editorial*

CityLab | Economy

Why Are There Suddenly So Many Car Washes?

Fueled by private equity and a subscription-based business model, the auto wash industry is flooding the US with new outlets. Some towns and cities have had enough.

By Patrick Sisson
February 21, 2024 at 7:00 AM CST

The town of Streetsboro, Ohio, just off the state's famous turnpike, owes a no insignificant part of its identity to automobiles and the industries that suppor them. About 6.5 million cars drive by every year, and the local retail mix is dominated by motels, gas stations and various drive-through businesses.

But in recent years, Mayor Glenn Broska has heard from a lot of constituents angry about one particular element of the autocentric landscape: car washes.

There are four full-service car washes in town, with a fifth on the way; three are bunched up on a mile-and-a-half stretch of Route 14. Social media

complaints about car wash overkill spurred town leaders to take action. Early last year, Streetsboro ended up enacting a moratorium on new car wash businesses.

“A car wash does not provide a lot of jobs for the community, and they take u a lot of space,” Broska said. “If you want to invest your dollars into a car wash then God bless you. But at the same time, I’m responsible for 17,500 people and have to be cognizant of their wishes.”

Other such “saturation bans” have emerged in nearby northeast Ohio cities such as Stow and Parma, *Cleveland Scene* reports. In Buffalo, New York, a surg of suburban car wash openings in 2023 triggered opposition from nearby residents and community members – including the owners of an existing car wash nearby. New Jersey, Louisiana and Alaska are also seeing their own car wash booms as national chains like Mister Car Wash and Zips Car Wash expand.

Last fall, the planning commission in Lebanon, Tennessee, rejected a permit build a new Mister Car Wash location, arguing that the largely automated facility wasn’t the best use for a prominent Main Street site. In response, the company is suing.

The omnipresence of the car wash in American life may be underappreciated: There are twice as many car wash outlets as McDonald's and Starbucks locations combined. *Photographer: Ernst Haas/Ernst Haas*

In a country with roughly 280 million private cars and trucks, can there be such a thing as too many car washes? A growing number of city leaders seem to think so. Unlike stores, restaurants or other businesses, most self-service c washes don't pay sales taxes to their host communities. And they don't bring much else to the table in terms of local benefits, critics argue; like drive-through-only fast-food outlets (which have also been the target of local bans), the latest generation of automated facilities provide few jobs even as they pump out noise, traffic congestion and vehicle emissions.

But where neighbors might see a too-crowded market, investors see the beginning of a boom. From the Snow Belt to the Sunbelt, companies are scrambling to add locations and grab a piece of a $14 billion-plus industry. With 60,000 locations across the US, the sector has been expanding at rough 5% annually, with some forecasts predicting the market to double by 2030. More car washes were built in the last decade than all the preceding years combined.

"I don't want to be too bullish and say there's no way this could fail," said Jeffrey Cicurel, director of capital markets at real estate brokerage JLL. "But Americans are moving to the suburbs, and Americans want quality retail, and car washes come with that."

A Boom Is Born

The car wash boom reflects a broader shift away from do-it-yourself car care habits. Like changing your own oil, soaping up the family auto in the drivewa has increasingly become an artifact of decades past: The number of washes done at professional facilities jumped from 50% in 1996 to 79% in 2021, according to the International Car Wash Association.

"We think this is the coffee market in the early '90s, when Starbucks got going," said Ian Rickwood, CEO and founder of Henley Investment Management, an international investment and fund management firm that ha its eyes set on US car washes. "One came to town, and people said, '$5 for a coffee, surely nobody will buy more than one cup a day.' And of course, another one opened and another one opened and the category expanded because people began to change their habits."

And while Covid-19 radically disrupted driving patterns, it failed to stop Americans from washing their cars, Cicurel said. “Car washes have ridden tha momentum for the past four years. Retail fundamentals are stronger than the have ever been.”

A neon sign advertises Elephant Car Wash in Seattle, Washington, which opened in 1956. *Photographer: Kevin Schafer/Moment Mobile ED*

Roughly 50 investment groups nationwide have been buying or building sites seeking to consolidate independent locations or build out their own brands, said Eric Wulf, CEO of the International Car Wash Association. More than $75 million was invested in three expansion plans just last fall. The myriad financial challenges of 2023, including rising interest rates, led to a slowdown in merger and acquisition activity, but the hurdles aren’t structural, said Wulf

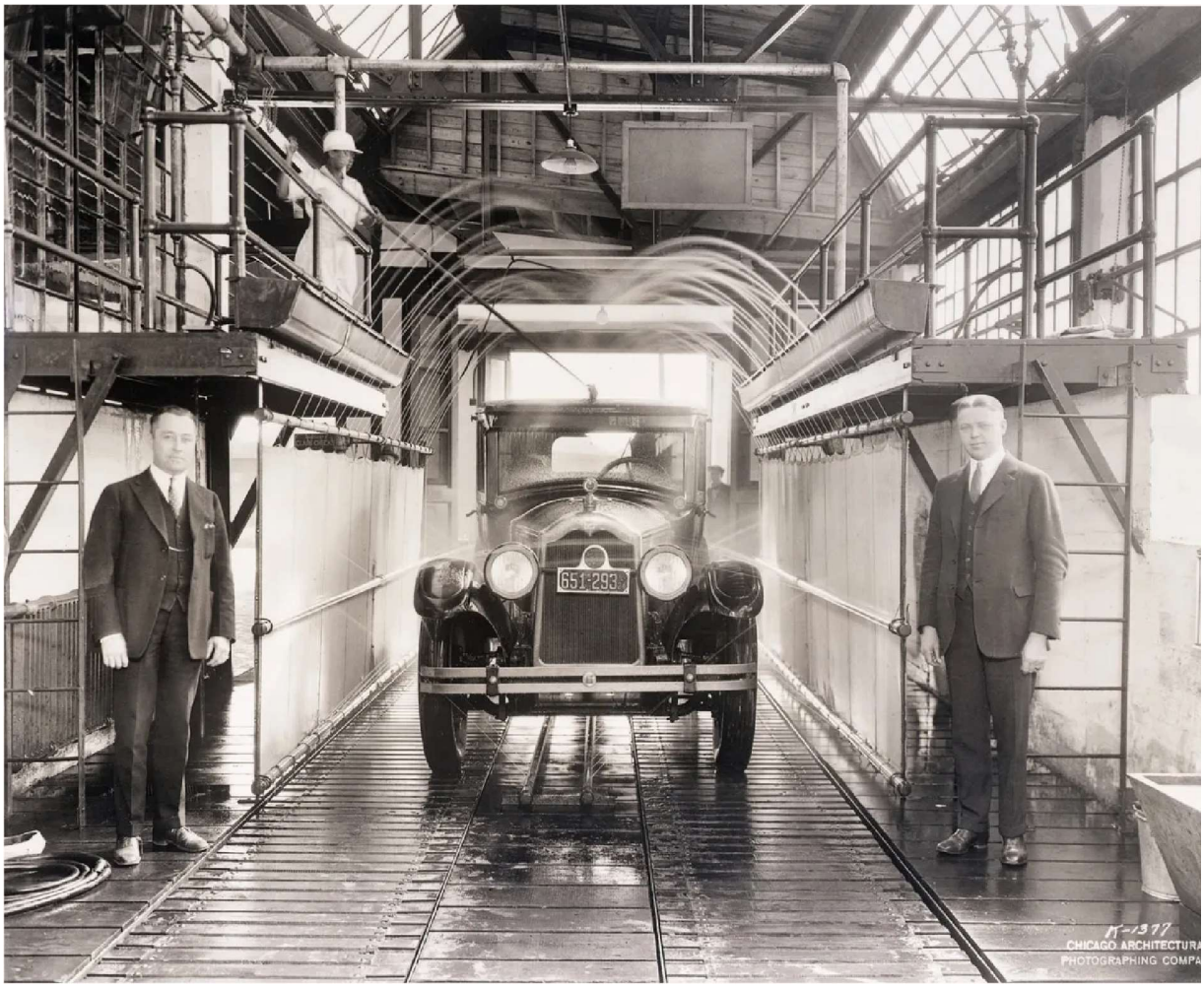
This is just a pause in the cycle. Backers still radiate optimism over a scalable industry that can see revenues average $1.5 million a location.

“I can’t think of another category, particularly of retail, that has been on the tear of development like car washing has over the last five to 10 years,” said Wulf. “Sure, there’s a risk of overbuilding and saturation in some places, but think the demand has simply surprised towns and cities.”

The Rise of ‘Automobile Laundries’

The superabundance of the American car wash speaks both to the century-long dominance of private automobiles and their enduring role as emblems o affluence that need to be kept clean.

Not long after the first horseless carriages arrived, entrepreneurs began launching businesses to scrub off the dust and mud of that era’s unpaved roads. The first patent for a car wash, the Hanley Vehicle-Washer, was filed in 1900; “auto laundries” and “auto wash bowls” appeared in US cities soon thereafter.



A Chicago car wash in 1925. The growth of private automobile ownership fueled the correspondi development of car wash technology. *Photographer: Bettmann via Getty Images*

The industry entered its mechanized era with the arrival of the Minit-Man Automatic Car Washer in 1946 – a Rube-Goldberg-like collection of chain conveyors, brushes, vacuums and blowers that could scrub 750 cars a day wi a "Niagara torrent of water," as a 1947 issue of *LIFE* proclaimed.

In the 1960s and '70s most car washes were mom-and-pop businesses, and th industry was known for eccentric owners and unintentionally hilarious low-budget TV spots (not to mention the 1976 film and accompanying disco hit). Some locations –especially those with playful signage like the showering pink elephant that announced Seattle's Elephant Car Wash chain, or the Googie-style architecture of numerous Southern California car washes – have been th subjects of historic preservation efforts.

In recent years, car wash evolution has mirrored trends in technology and business practices, namely the replacement of human workers with machine A chain called Benny's in Baton Rouge, Louisiana, is credited with pioneering the "express exterior" model, with automated payment kiosks. These mostly unmanned tunnels now make up a bulk of the industry's revenues, said Wulf since they allow owners to slash labor and maintenance costs and obtain bull savings on chemicals and other supplies. Even the industry that manufacture the technology and machines used at these locations has consolidated and vertically integrated, with Dover and National Car Wash Solutions dominating the market.

Water use has also declined as technology has improved: According to Rickwood, current technology uses about 50 gallons a wash, 80% of which is recycled. Going DIY with a hose and a bucket typically requires 150 gallons.

Cleaning Up With Subscriptions

But the industry's biggest recent innovation involves its business model, whic has increasingly focused on membership and recurring revenue.

Mister Car Wash, a chain picked up by private equity firm Leonard Green & Partners that has gone public and now has more than 400 US locations, was a early developer of subscription offerings. Users pay a monthly fee for unlimited washes, with plans starting around $20 a month before adding

services like waxes and wheel polishes. (A basic a-la-carte wash runs for abou $10 each.)

In analyzing usage patterns, the industry soon found that the convenience of wash memberships translated to higher profits. A typical non-member may come in three or four times a year, while a typical member gets that many washes each month. But at $20 a month, that's a huge jump in annual spending – more than enough to cover the costs of accommodating heavy users who may scrub their SUVs dozens of times a month.

"They eat their lunch via subscriptions," said JLL's Cicurel of car wash operators.

A Houston Mister Car Wash location in 2000. The company was a pioneer in building the subscription model. *Photo by Karen Warren/Houston Chronicle via Getty Images*

Thirty or 40 years ago, the business model was more manual and mercurial. large location might require a staff of up to 50 workers to handle all the steps in a longer and more labor-intensive wash-and-dry process. and operators were vulnerable to the vagaries of weather: A single rainy weekend, when the bulk of washes took place, could really hurt profits.

Now, washes can take just 90 seconds, labor costs have been automated dow and recurring revenue from memberships has eliminated weather risks. Plus, the tax reforms enacted in 2017 by former president Donald Trump allowed car wash owners to claim 100% depreciation on new equipment – a generous subsidy to further investment. While that incentive was written to shrink ove time, the tax proposal currently in Congress would restore the 100% depreciation allowance.

"If private equity thinks it's sexy, they're gonna throw money at it, right?" sai Emil Khodorkovsky, founder and CEO of Forbix, a real estate firm that just acquired a car wash in Santa Monica, California. "It's a basic business. It isn't complicated finance. Certain actors are getting squeezed but this one still has much higher-yielding return than an apartment building or a retail center."

What other industry can offer locations with up to 80% subscription-based revenue and an earnings before interest, taxes, depreciation and amortizatio margin of 50%? Amazon can't ship a car wash, Rickwood said. And the growt potential is massive. About 15% of the current car wash market is membershi based, he estimates; when customers go from non-members to members, tha results in 13 times more consumption and 10% more revenue. If just 10% of th total market shifted into the membership category, that would boost the total number of washes in the US from 2 billion to 3 billion a year.

"It's a ubiquitous category, whether you're wealthy or lower income, you still use car wash," he added. "If you're lower income, you often take more pride your car because it's probably the most expensive possession that you've got and you want to preserve value in it. So it's not purely discretionary."

A driver exits a car wash in San Bruno, California, in 2020. *Photo By Paul Chinn/The San Francisc Chronicle via Getty Images*

Rickwood sees opportunity in establishing the firm's AquaSonic car wash brand in the US, starting with central Florida. The firm used algorithms to place their first pair of Tampa-area locations; their long-term plan calls for opening 100 washes by 2028.

To meet demand, megawashes have popped up, such as the Flagship Carwas One Loudoun in Ashburn, Virginia – a sprawling 65,000-square-foot comple that could fit a football field inside. Such "destination" facilities can offer indoor play places for kids, electric vehicle charging and other services.

Far From Washed Up

The industry's growing footprint has not gone unnoticed. Complaints have erupted about traffic tie-ups, noise and chemical odors around locations, among other issues.

City leaders have a limited number of car wash countermeasures at their disposal, such as withholding special use permits and enacting zoning chang to limit new locations. But it's hard to argue about consumer preference. "Th average person may ask, 'Why do I need more car washes?'" said Wulf. "The

simple answer staring right at them is because there's enough demand for them. There are so many more people who want their car washed."

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Still, some experts are now warning investors to steer clear of the sector, and locations in overcrowded markets have shuttered. "It will be a survival of the fittest in some trade areas, where there are some car washes that are gonna s with five of us in this small 3-mile radius, there's just not enough meat on the bone for everyone to eat," said Michael Corey, chief development officer at Zips Car Wash.

But growth forecasts paint a rosy picture over the long term, and industry backers see room for more expansion: Most consumers travel just 3 miles to get a car wash. "Statistics have proven that while more car washes are being built, more people are also washing their cars," Thomas Coffman, a partner with Miracle Car Wash Advisors, told *Car Wash* magazine.

Then there's the international potential: Wulf sees opportunities in German, Dutch, Canadian and Australian markets; Rickwood has heard of expansions Saudi Arabia. As private vehicle ownership expands globally, car washes are sure to follow close behind.

That leaves people like Streetsboro's Mayor Broska as members of a dwindlin minority: He still washes his car with a bucket of soapy water in his driveway.

"This is America; people are going to make money," he said. "And they figure out how to make money with a car wash."

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America's Love Affair With (Clean) Cars

Car Washes Help Maintain What May Be the Second-Largest Investment Many Will Make

June 29, 2021
Written by: Andy Hait and Earlene Dowell

For many Americans, their car, SUV or pick-up truck is the second-most expensive item (after a house) that they will purchase and maintaining that investment on wheels is paramount. And because many see their cars as an extension of their personality, maintaining an image by keeping their cars clean also matters.

While some may cherish pulling out a hose, wash mitt and soap to give their "baby" a customized shine, others opt for a more convenient ritual: trips to the local car wash.

California had more car washes than any other state and the highest total car wash sales ($1.6 billion) in 2017, according to the 2017 Economic Census. However, the District of Columbia, which had few car washes for its population, ranked first in average sales ($879,000) per car wash.

According to the 2019 County Business Patterns [https://data.census.gov/cedsci/table?g=0100000US,.04000.001&n=811192&tid=CBP2019.CB1900CBP] program, there were 16,976 Car Washes [https://www.census.gov/naics/?input=811192&year=2017&details=811192] with paid employees in the United States, 6.8% or 1,074 more than in 2015.

These businesses had 163,178 workers (up from 153,970 in 2015) who earned an average annual salary of $21,911 (up from $18,703 in 2015).

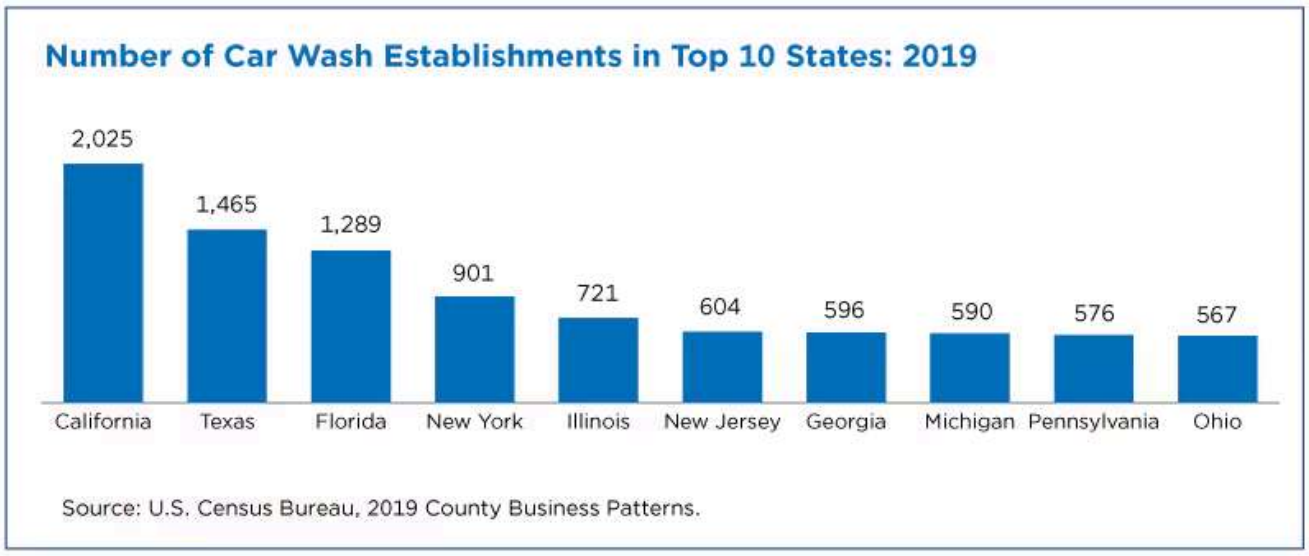
California, the state with the largest population and a legendary love of the automobile, not surprisingly ranked first in the number of car washes and car wash employees in 2019 (2,025 and 24,851, respectively).

But Florida added the most car washes — 225 or 21.1% — from 2015 to 2019. The District of Columbia saw the highest percentage increase in the number of car washes, up 30.0%, from 10 to 13 during the same period.

Still, New Hampshire may be among the best for car wash workers. The Granite State had one of the nation's highest average annual payroll per car wash employee in 2019: $32,407, compared to $21,911 for the nation.

The District of Columbia had the lowest car wash-to-population ratio — one for every 54,288 people — which may make it a prime location for new car wash businesses.

In contrast, Wyoming had one car wash for every 10,335 people.



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Car Washes Are Mostly Small Businesses

Like many service businesses, small businesses dominate the car wash industry. Car washes with fewer than five employees made up the biggest share of the industry: 9,048 of the total 16,976 number of establishments.

These small car washes also grew the most in numbers from 2015 to 2019 (up 379 or 4.4%) and paid the most among car washes (an average $30,372).

But car washes with 20 to 49 workers employed the highest share of workers in 2019: 56,621 of the total 163,178 car wash employees.

In addition to these small employer businesses, there may be additional very small businesses with no paid employees. Unfortunately, data on these tiny operations are not published separately in our Nonemployer Statistics [https://www.census.gov/programs-surveys/nonemployer-statistics.html] (NES).

Data on the 72,135 Other Automotive Repair and Maintenance [https://www.census.gov/naics/?input=81119&year=2017&details=81119] businesses are available from NES but this industry includes car washes as well as automotive lube shops and other types of automotive repair and maintenance businesses.

Services That Car Washes Provide

California had more car washes than any other state *and* the highest total car wash sales ($1.6 billion) in 2017, according to the 2017 Economic Census [https://data.census.gov/cedsci/table?g=0100000US,.04000.001&n=811192&tid=ECNBASIC2017.EC1700BASIC] . However, the District of Columbia, which had few car washes for its population, ranked first in average sales ($879,000) per car wash.

Car washes in Indiana reported the highest ratio of car wash sales for each dollar of payroll in 2017 ($4.44 vs. $3.10 for the nation). Employees of car washes in Maine were the most "productive," generating $94,234 in sales per employee compared to $60,099 for the nation.

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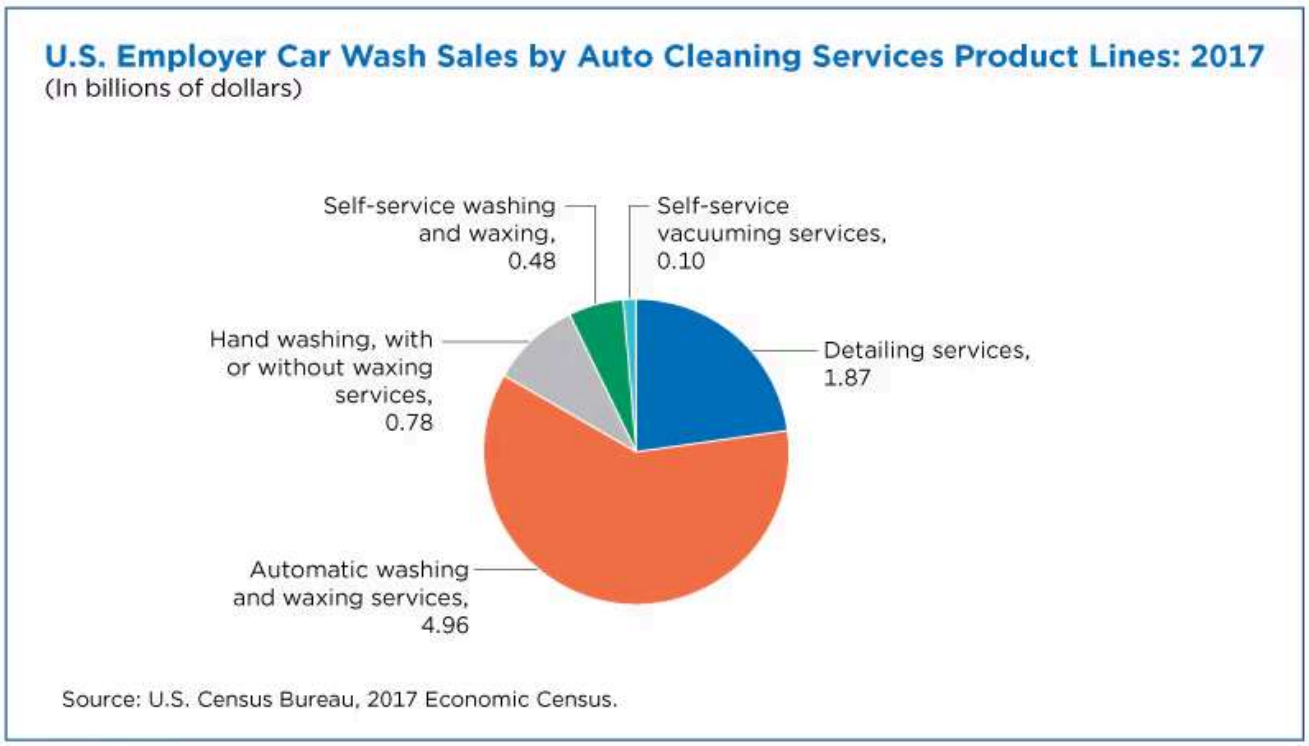
Washing and Cleaning Services for Automobiles and Light-Duty Trucks [https://data.census.gov/cedsci/table?g=0100000US&n=811192&napcs=S0000.00&tid=ECNNAPCSIND2017.EC1700NAPCSINDPRD] made up the bulk of car wash sales: 84.2% of the $9.7 billion of total sales of car washes in 2017. But that's not the only service they provided. In 2017, 1,414 car washes nationwide provided Washing and Cleaning Services for Heavy Trucks and Buses, making up 8.1% of industry sales.

Within the broad washing and cleaning category, Automatic Washing and Waxing Services made up nearly $5.0 billion of the $9.7 billion (51.0%) of total car wash sales in 2017. Detailing Services was $1.9 billion (19.2%), and Hand Washing (with or without waxing services) was $777.2 million or 8.0% of total car wash sales.



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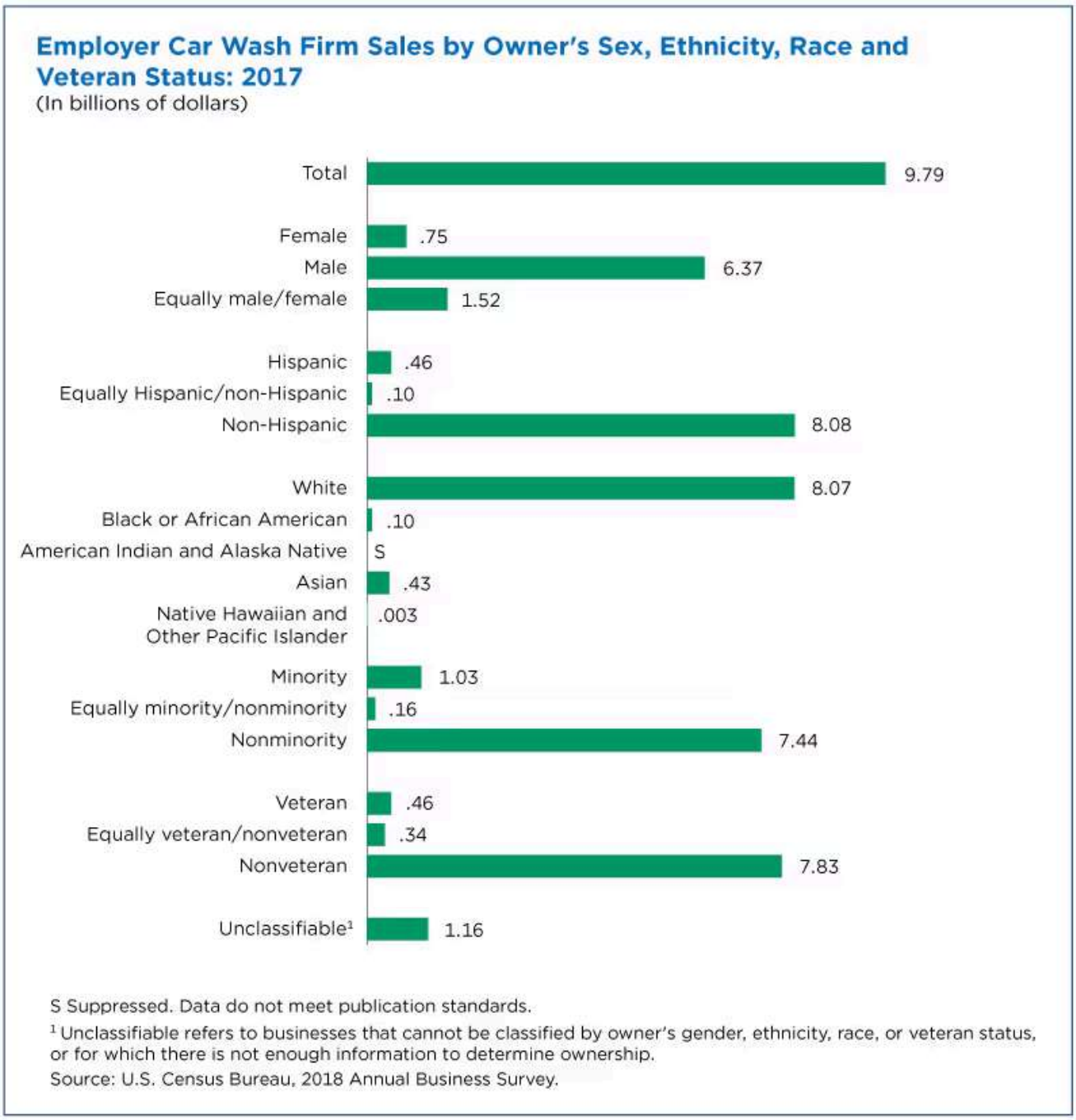
Who Owns Car Washes?

According to data from the 2018 Annual Business Survey [https://data.census.gov/cedsci/table?g=0100000US,.04000.001&n=811192&tid=ABSCS2017.AB1700CSA01] , car washes (like many other small services businesses) were primarily owned by non-Hispanic White men who were not veterans.

These owners also made up the vast majority of sales of car washes.



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Car washes were also typically individually owned and operated and were not part of a larger corporation with dozens or hundreds of locations.

According to the 2017 Economic Census Concentration Ratios [https://data.census.gov/cedsci/table?g=0100000US&n=811192&tid=ECNSIZE2017.EC1700SIZECONCEN] report, the top 50 companies in the car wash industry only accounted for 20.4% of the industry's total sales. In comparison, the top 50 Automobile Parts and Accessories Stores [https://data.census.gov/cedsci/table?y=2017&n=441310%3A811192&tid=ECNSIZE2017.EC1700SIZECONCEN] (where car owners often buy products to wash their own cars) accounted for 62.2% of the total sales of the industry.

A study by Consumer Reports [https://www.consumerreports.org/car-maintenance/the-cost-of-car-ownership/] showed that as owners hang on to cars longer because the price and features included in new motor vehicles continue to rise, businesses like car washes that help them maintain their investment are expected to keep rising.

Data from Census Bureau programs can help entrepreneurs identify areas that are not fully served by existing businesses. Responses to Census business surveys help us enrich those resources.

Andrew W. Hait is a survey statistician/economist at the Census Bureau.

Earlene K.P. Dowell is a program analyst at the Census Bureau.

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America Counts Story

What is a Small Business?

January 19, 2021

Newly released "Establishment and Firm Size" data from the 2017 Economic Census show how important small businesses are to the U.S. economy.

[https://www.census.gov/library/stories/2021/01/what-is-a-small-business.html]

America Counts Story

Many Small Businesses Not Requiring Workers To Get Tested, Vaccinated

March 02, 2021

First results from Phase 4 of the Census Bureau's Small Business Pulse Survey show the majority of respondents do not require workers get tested or vaccinated.

[https://www.census.gov/library/stories/2021/03/majority-of-small-businesses-not-requiring-employees-get-tested-or-vaccinated.html]

America Counts Story

Businesses Lease Cars, Office Space, Furniture and … Workers

May 20, 2021

The nation's 3,769 employee-leasing businesses had 2.7 million workers and generated $177.8 billion in revenue in 2017.

[https://www.census.gov/library/stories/2021/05/businesses-lease-cars-office-space-furniture-and-workers.html]

More stories

Population

Population

States With High Median Ages May Not be as Uniformly Old as You Think

June 26, 2025

A state's median age does not tell the whole story. Florida has the fifth highest median age yet also has counties younger than the national median.

[https://www.census.gov/library/stories/2025/06/young-old-counties.html]

An Aging Nation: U.S. Median Age Surpassed 39 in 2024

June 26, 2025

Median age rose in 85% of the nation's 387 metro areas from 2020 to 2024 and was higher than the national median of 39.1 in almost half of metro areas.

[https://www.census.gov/library/stories/2025/06/metro-areas-median-age.html]

Employment

Trends in Self-Employment Among Hispanic Workers

June 18, 2025

Census Bureau data show that among younger and foreign-born workers, Hispanic workers are self-employed at higher rates than non-Hispanic workers.

[https://www.census.gov/library/stories/2025/06/hispanic-self-employment.html]

Housing

Property Insurance Costs Can be High in Every U.S. Region

June 10, 2025

American Community Survey data show the price of property insurance varied widely across the nation, but every region had pockets of high cost.

[https://www.census.gov/library/stories/2025/06/property-insurance.html]

Page Last Revised - April 10, 2024

CAR WASH

MAGAZINE STORIES

How Many Is Too Many?

The commonly cited metric of being five miles apart is being challenged as the industry grows.

April 10, 2023

7 minute Read

By Tom Gresham

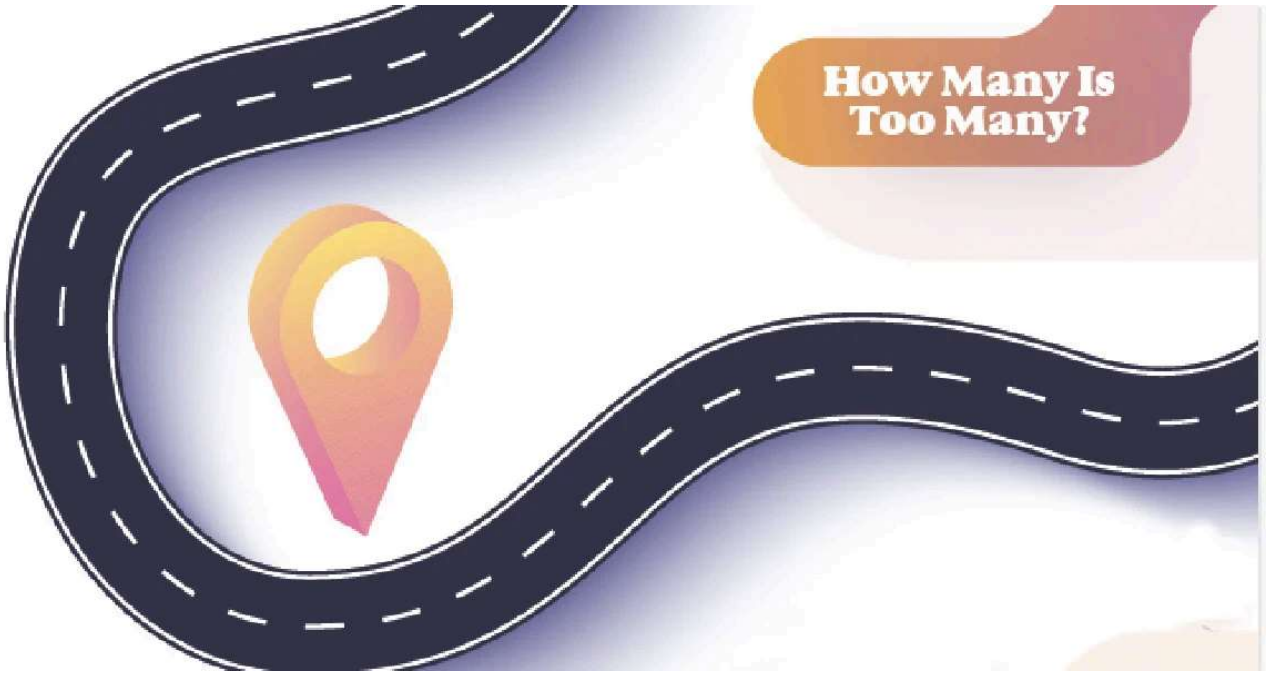
The question of how many car washes an area can support is an eternal one, and the answer can depend on a slew of factors and considerations that are both quantitative and qualitative, making the decision both a science and an art.

The car wash industry's rapid growth has made the question more pressing for operators as prime locations grow more sought after and potentially crowded. Among the results of that growth is that some of the old ways of evaluating location density have evolved and perspectives have changed about consumers' appetite for car washes and how many can thrive in the same competitive landscape.

"Statistics have proven that while more car washes are being built, more people are also washing their cars," said Thomas Coffman, a partner with Miracle Car Wash Advisors.

Adam Garcia, founder and CEO of New Path Construction and Consulting, said the car wash industry is entering a new phase of competitiveness as the density of washes seems poised to grow.

“It’ll be interesting to see how some of these groups perform now that we’re seeing standalone car washes go up across the street from each other,” he said.



Lessons from other industries

Examples abound of competitors in a range of industries opening locations in close proximity to each other. The act can seem counterintuitive, but retail experts say nearby competing operations do not necessarily bring red flags to a potential new location. In fact, Garcia said, the presence of competitors in certain industries, such as the gas station field, can be a promising sign for future success. In its published guidance on site selection, Phillips 66 advises those considering sites: “Don’t be afraid of competition.”

“Healthy competition indicates that there is demand in the area,” according to the multinational energy company.

The reason that competing businesses with similar offerings frequently appear in relatively close proximity to each other — rather than spread evenly apart — can be explained in part by Hotelling’s Model of Spatial Competition, a theory that originated in the 1920s. Harold Hotelling, who created the theory, said, “When competing on location, each business wants the central point as it is the most strategic spot that allows it to be as close to as many customers as possible. Since every business has the same mindset, they will be competing with one another, which eventually causes similar businesses to end up in a cluster focused on one specific point.”

The marketplace is filled with examples of highly successful competitors that frequently locate near each other. For example, according to research by retail expert Marc Smookler conducted in Texas, CVS and Walgreens pharmacies were located an average drive time of just three minutes apart, Walmart and HEB (a major Texas grocery chain) were located a little more than three minutes apart and Home Depot and Lowe’s were spaced an average drive time of eight minutes apart.

Among the lessons that car washes should take from other industries on location density is that the higher the density of operators, the more you will need to separate yourself from competitors in distinctive ways within the general industry formula — the way that McDonald’s and Wendy’s differ from each other, Garcia said.

“They both provide burgers, they both provide fries, but there’s a nuance within each of those that would make people choose one over the other at different points in time,” Garcia said.

Similarly, Garcia said gas stations offer a telling example for car washes. When competitors choose to locate close to each other, they must fight to find an advantage just to hold their own. The competition can be too stiff for at least one of those involved, particularly if the customers do not merit the number of locations. The chief question in these more saturated markets then is if there is enough to go around for everyone.

“Gas stations have had to face the issue of, ‘If there are 30,000 cars on this street, but there's another guy on the cross section of that street, we may only capture half of that car count,’” Garcia said. “Then the question becomes, is that half good enough for your pro forma? That's the analysis that they have to start doing at that point.”

That level of competitiveness and high density of locations has pushed gas stations to raise their offerings, Garcia said, in areas such as membership perks, credit cards, interior design, drink selections, snacks and prepared food.

“People are really upping the game, and I think on the car wash side it’s going to have to be the same thing,” Garcia said. “There’s going to have to be some value-added service because if you want to have a car wash in a good area then chances are that someone else is going to be there. You’ve got to beat them or at least capture half of the volume, so how are you going to do that?”

Population and traffic

An old commonly cited metric for car wash density was that washes should be five miles apart — a measurement that experts say is outdated and lacks critical context, such as population and traffic considerations.

“If we have a market where we're highly populated with a high density there, then we can make a case that we can build multiple express exterior car wash locations relatively close to each other,” said Rafael Navarro, director of consulting services for Sonny’s.

Fewer shorthand metrics are used now, as owners favor a sophisticated study of a range of factors. For instance, Navarro said the capability to drill into census data is critical to understanding locations and looking beyond surface metrics to analyze valuable demographic information. How many potential marketing targets are there? What’s the median household income? How many retirees are there?

“A lot of variables from a census data perspective can help paint a better picture for somebody that's looking to build in a market,” Navarro said.

When weighing population, Navarro said a general rule of thumb is that you need at least 20,000 to 25,000 people to support one express car wash, but operators should consider not only how many car washes are in the area but the identity of them.

“If you get into a market with 60,000 people and four express washes — maybe it’s a Tidal Wave or a Mr. Car Wash — now not only do you have more players in that market than it can support, you have heavy players that are driving home heavily their monthly memberships subscription,” Navarro said. “That makes capturing a little piece of that market share that much more difficult.”

In addition to population, traffic count is a key piece of the puzzle. How important? ICA’s 2022 Car Wash Consumer Study found that 77% of customers surveyed found out about the wash that they currently use because they drove past it.

In that vein, car washes should seek locations with “valuable” activity in high-volume areas that attract customers who might be quick to add a car wash visit to their errands, such as in weekly needs shopping areas with large centerpiece stores such as Walmart, Target or major groceries, Navarro said. After all, convenience is the primary driver of preference for one car wash over another, according to the ICA Car Wash Consumer Study.

“If you don't have people driving by a site, nobody's going to see it and you're not going to be able to build brand awareness as quickly as you would like,” Navarro said.

Forecasting density in a fluid marketplace

Anticipating population growth and the pace of development is invaluable, and sophisticated technology has transformed that evaluation. Coffman, for instance, said Miracle uses “data- driven technology to understand the greatest pockets of growth and retail density to find the new centers of gravity for people to wash their cars.”

As Garcia said, “Density is important, but the forecasted density is sometimes even more important.”

The competitive dynamics of a site can change quickly, too.

“Business verticals that are searching for prime locations take into consideration competition/population ratio, but it is inevitable that competition will continue to develop,” Coffman said. “Identifying the right piece of real estate is hard enough, but much harder if competition is building down the street right before you break ground on a site.”

The market is so competitive that there is pressure to move quickly when owners identify a good site because somebody else is liable to see the value that you see and come along and snatch it up, Navarro said.

As a result, Navarro said too many owners select a bad location for their car wash out of an urgency to participate in a booming industry.

“Obviously, good locations are harder to find, but going into a bad location, you're going to pay the price for however long you're tied to it,” Navarro said. “The biggest thing that I tell folks is to have patience.”

Garcia said the car wash industry’s evolving approach to density is being watched closely.

“I think everybody's looking and saying, ‘Hey, is this gonna work?’” Garcia said. “And, if it does, I think you’re going to see a massive boom in car wash construction, even more so than today, because we will see that more locations can be supported than we knew.”

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